CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN DIEGO REGION

IN RE THE MATTER OF)
)
TENTATIVE CLEANUP AND ABATEMENT)
ORDER NO. R9-2011-0001)
)
)
)

VIDEOTAPED DEPOSITION OF DAVID BARKER

Volume II, Pages 209 - 430

San Diego, California

March 2, 2011

Reported By: Anne M. Zarkos, RPR, CRR,
CSR No. 13095

March 17, 2011

In re: ***Tentative Cleanup and Abatement***

Deposition of: David Barker, Volume 2
Date of Deposition: March 2, 2011

Dear Counsel:

The original transcript of the above referenced witness will be sent from our office to Christian Carrigan, Esq., via UPS, on March 17, 2011.

If you have any questions or concerns, please do not hesitate to call this office.

Sincerely,

Karli Peña
Production Assistant

LAWYER'S NOTES

PAGE NO. LINE NO.

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DEPOSITION OF DAVID BARKER,

taken by the Attorney for NASSCO, commencing at the hour of 9:04 a.m. on Wednesday, March 2, 2011, at 600 West Broadway, Suite 1800, San Diego, California, before Anne M. Zarkos, RPR, CRR, CSR No. 13095, Certified Shorthand Reporter in and for the State of California.

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I N D E X

WITNESS: DAVID BARKER, Volume 2

E X H I B I T S

E X H I B I T S

1230	RWQCB Staff Report on the Establishment of Shipyard Sediment Cleanup Levels for NASSCO and Southwest Marine, Inc., dated February 17, 1999; six pages	361
1231	RWQCB Final Report for Shipyard Sediment Cleanup Levels, NASSCO & Southwest Marine Shipyards, dated February 16, 2001; 34 pages	366
1232	RWQCB Addendum No. 1 to Cleanup and Abatement Norder No. 85-91 for Paco Terminals, Inc.; 13 pages	381
1233	RWQCB Staff Report for Cleanup and Abatement Order No. 98-08 for The Aerostructures Group of BF Goodrich Aerospace and The BF Goodrich Company, dated March 26, 1998; 17 pages	387
1234	PowerPoint slides from San Diego Bay Contaminated Marine Sediments Assessment and Remediation Workshop dated June 18, 2002; 27 pages	389

ALL EXHIBITS TO BE BOUND SEPARATELY

THE VIDEOGRAPHER: Good morning. The time on the record is 9:04 a.m. Today's date is March 2nd, 2011. My name is Abel Sibrel with Peterson Reporting, Video and Litigation Services. The court reporter today is Anne Zarkos of Peterson Reporting, located at 530 B Street, Suite 350, San Diego, California 92101. 09:04:48 09:04:49 09:04:53 09:04:58 09:05:01 09:05:04

This begins the videotaped deposition of David Barker, Volume 2, testifying in the matter of In Re Tentative Cleanup & Abatement Order No. R9-2011-0001; taken at 600 West Broadway, Suite 1800, San Diego. 09:05:09 09:05:12 09:05:14 09:05:19 09:05:30

Will counsel please identify yourselves and state whom you represent. 09:05:30 09:05:34

MR. RICHARDSON: Kelly Richardson of Latham & Watkins for NASSCO. 09:05:35 09:05:36

MS. TRACY: Jill Tracy for SDG&E. 09:05:39

MS. REYNA: Kristin Reyna for the City of San Diego. 09:05:44 09:05:46

MR. DART: Matt Dart for BAE. 09:05:46

MS. WITKOWSKI: Jill Witkowski for San Diego CoastKeeper and Environmental Health Coalition. 09:05:46 09:05:46

MS. FITZGERALD: Leslie Fitzgerald for the San Diego Unified Port District. 09:05:50 09:05:52

MS. VARCO: Suzanne Varco for Star & Crescent. 09:05:54

MR. CARRIGAN: Cris Carrigan for the San Diego 09:05:58

Water Board and for the witness, Mr. Barker. 09:05:58

THE VIDEOGRAPHER: Thank you. The court 09:06:02

reporter may now swear in the witness. 09:06:02

*** 09:06:02

DAVID BARKER, 09:06:02

having first been duly sworn, testified as follows: 09:06:13

*** 09:06:13

FURTHER EXAMINATION 09:06:13

BY MR. RICHARDSON: 09:06:15

Q. Good morning, Mr. Barker. 09:06:15

A. Good morning. 09:06:17

Q. As we were wrapping up yesterday, we were 09:06:17

discussing the technological feasibility of the DTR and 09:06:20

CAO, and the economic feasibility analysis in the DTR and 09:06:23

CAO. And I have a few follow-up questions on that. 09:06:27

A. Okay. 09:06:31

Q. And to confirm, you are the -- designated as the 09:06:34

Cleanup Team's person most knowledge for both 09:06:36

technological feasibility and economic feasibility; 09:06:39

correct? 09:06:41

A. Yes. 09:06:41

Q. Yesterday we discussed confined aquatic disposal 09:06:46

facilities and near shore confined disposal facilities. 09:06:49

A. Yes. 09:06:53

Q. And I have a couple questions about the 09:06:54

permitting process for those. What would be the agencies that would be involved in approving that process? 09:06:56 09:06:59

A. The -- let me take the first scenario, which would be confined aquatic disposal facility. And this would be a containment facility constructed in San Diego Bay. And the agencies involved, let's see, would be -- would -- would be -- break my answer up into two phases. The Phase 1 is construction of the facility. The construction of the facility would trigger the need to obtain a 401 Water Quality Certification from the San Diego Water Board. 09:07:06 09:07:15 09:07:19 09:07:23 09:07:40 09:07:42 09:07:47 09:07:54 09:08:00

And the agencies involved in that process would include the Corps of Engineers and the resource agencies as well as the San Diego Water Board. And the certification would be required as part of the process of obtaining an Army Corps of Engineers 404 permit. 09:08:06 09:08:10 09:08:16 09:08:22 09:08:27

In this certification, the board would likely issue that in the form of waste discharge requirements. And the requirements would regulate possibly in the same set of waste discharge requirements both the -- any dredging associated with the project as well as the -- any fill that would be put in the bay. 09:08:36 09:08:40 09:08:45 09:08:51 09:08:55 09:08:59

And the -- then in the next phase of the project, which would be the -- for the long-term regulation of the facility after it was constructed, this 09:09:06 09:09:11 09:09:17

would be issued in the form of waste discharge requirements. And as part of that process, a -- a monitoring program would be established, and the resource agencies would be consulted and have input into the board's process for establishing that program. 09:09:22 09:09:25 09:09:35 09:09:40 09:09:44

Q. And that's for a confined aquatic disposal facility? 09:09:49 09:09:52

A. Yes. 09:09:53

Q. When you mentioned resource agencies, can you define what agencies that would consist of? 09:09:53 09:09:56

A. Let's see. On the state side, it would be the California Department of Fish and Game. And then on the federal side, it would include NOAA and U.S. Fish and -- Fish and Wildlife and the Army -- oh, excuse me. I guess the corps -- well, they have a resource agency branch within their agency. So Army Corps of Engineers. 09:09:59 09:10:02 09:10:06 09:10:16 09:10:20 09:10:23

Q. Would U.S. EPA also be involved? 09:10:29

A. Potentially, they could be. Although, in the board's establishment of these facilities in the past, the EPA has not played a major role. 09:10:34 09:10:37 09:10:41

Q. Would the State Lands Commission be involved? 09:10:47

A. There would be a potential for that. But in the past, there -- they have not been actively involved. 09:10:51 09:10:54

Q. The Port of San Diego? 09:11:00

A. Port of San Diego, since it possibly is 09:11:05

constructed within lands under their jurisdiction might very well be consulted and be part of the process. 09:11:10 09:11:15

Q. What about the California Coastal Commission? 09:11:21

A. I'm just going on past experience. I don't remember them being part of the process, though I guess there might be -- there -- there might be involvement by them. 09:11:28 09:11:31 09:11:38 09:11:45

Q. Okay. And how about a near shore confined disposal facility; what agencies would be involved in that process? 09:11:50 09:11:53 09:11:57

A. Near shore confined disposal facility, so this -- the scenario here would be construction of a -- a landfill on land. The -- the San Diego Water Board would issue waste discharge requirements for the establishment of the landfill and the monitoring program. 09:11:57 09:12:02 09:12:09 09:12:16 09:12:21

Q. And I'm sorry to interrupt, Mr. Barker. I want to be sure we're talking about the same near shore confined disposal facility. I'm talking about an in-water facility that's constructed where land is created. 09:12:27 09:12:30 09:12:32 09:12:34 09:12:36

A. Oh, where land -- 09:12:37

Q. And remember yesterday you described such a circumstance involving Convair lagoon potentially for this site. 09:12:37 09:12:40 09:12:43

A. Yes. Okay. 09:12:44

Q. So that's -- that's what I will refer to today as a near shore confined disposal facility. 09:12:44 09:12:45

A. Okay. Then I would say the same answer that I gave on the -- for the first scenario would apply. 09:12:48 09:12:51

Q. Okay. 09:12:56

A. I might add if the waste is hazardous waste, there's a potential for Department of DTSC to get involved. 09:13:02 09:13:08 09:13:16

Q. Okay. And then in this circumstance where land is being created in the tidelands, would there be some process involved with coastal development? 09:13:17 09:13:20 09:13:24

A. I have no personal experience with that. So I -- to draw on. So it would be kind of a learning experience for me. But it's possible that that would be so. 09:13:27 09:13:31 09:13:35 09:13:39

Q. Okay. 09:13:41

And you described two phases of the -- of the process. In what order would the agencies consider the -- whether to grant permits to develop a near shore confined disposal facility? 09:13:42 09:13:44 09:13:50 09:13:54

A. Which agency would rule first? 09:13:59

Q. Yeah. I'm trying to understand just what the process flow is. 09:14:03 09:14:04

Do some agencies have to act and then others act or does everyone act at once? 09:14:06 09:14:08

A. That's a very good question. The -- I don't think all of the agencies act at once. On the -- when the State issues its 401 Certification, the State coordinates that issuance with resource agencies. And this is issued in advance of the Corps issuing its 404 Permit. 09:14:12 09:14:16 09:14:22 09:14:26 09:14:32 09:14:35

And while we obtain the advice of -- we consult with U.S. Fish and Wildlife, the Corps, and -- Corps of Engineers. But that's not their final say on the project; although, typically, that's when they're issuing any of their major concerns, so we kind of know what they are. But I think the Corps also consults with them before it finalizes its decision on the 404 Permit. 09:14:38 09:14:44 09:14:50 09:14:57 09:15:01 09:15:05 09:15:08

Q. Okay. So if I understand correctly, the 401 Certification process would start first. 09:15:12 09:15:15

A. Yes. 09:15:17

Q. And that would involve the Regional Board, Army Corps of Engineers, U.S. Fish and Wildlife service, Department of Fish and Game, essentially the resource agencies? 09:15:17 09:15:20 09:15:24 09:15:27

A. Yes. 09:15:28

Q. And once that process includes, then the Army Corps of Engineers can then issue its 404 Permit for dredge fill operations; correct? 09:15:28 09:15:30 09:15:35

A. Right. Right, yes. 09:15:36

Q. And then presumably at some point after that, there would have to be some coastal development process with the agencies that regulate coastal development; correct? 09:15:37 09:15:40 09:15:42 09:15:45

A. I have no personal experience with that process. So I can't really give you an accurate answer. 09:15:48 09:15:51

Q. Okay. 09:15:55

A. And then again, what we just talked about was the 401 Certification. And then there is yet another permitting process for the -- for after the -- to regulate the facility after it's constructed. 09:15:57 09:16:01 09:16:05 09:16:11

Q. Is that permitting process done in advance of -- of the disposal of the contaminated sediment in the bay? 09:16:14 09:16:16

A. Yeah. Typically, it would be in advance, yes. 09:16:21

Q. Okay. And that's the WDR -- 09:16:26

A. Yes. 09:16:29

Q. -- process you described. 09:16:30

A. Yes. Yes. 09:16:31

Q. WDR stands for? 09:16:32

A. Waste discharge requirements under the California Water Code. 09:16:34 09:16:36

Q. Okay. So if I'm understanding correct, that's the permit that allows the sediment to be placed in the -- in the bay? 09:16:37 09:16:40 09:16:43

A. Yeah. 09:16:44

Q. And requires the long-term monitoring associated with it? 09:16:45 09:16:48

A. Yes. Right, yes. 09:16:48

THE COURT REPORTER: Sir -- 09:16:49

MR. RICHARDSON: Do you know -- I'm sorry. 09:16:49

THE COURT REPORTER: Try to wait until he's finished before you answer. 09:16:55 09:16:57

THE WITNESS: Okay. 09:16:58

THE COURT REPORTER: Thank you. 09:16:59

BY MR. RICHARDSON: 09:16:59

Q. Do you know roughly how long that permitting process would take? 09:17:00 09:17:01

A. It -- I'm thinking back to Convair Lagoon. And I don't remember it as being a lengthy permitting process. It was fairly straightforward since the cleanup levels had already been set by the board. There wasn't a lot of controversy associated with it. So I would say it was a six-month process, something like that. Maybe less. 09:17:07 09:17:18 09:17:24 09:17:33 09:17:40 09:17:46 09:17:49

Q. Okay. And so how long typically does it take to issue a 401 Cert? 09:17:52 09:17:55

A. They can be issued very quickly. I would -- I mean, there's some statutory deadlines involved in that, like a 21-day public notice period. I'm guessing two months, something like that. 09:17:58 09:18:03 09:18:06 09:18:16

Q. Two months at best; right? 09:18:18

A. Right. 09:18:22

Q. So there's an application process? 09:18:22

A. Yes. 09:18:25

Q. The Regional Board staff reviews the application. 09:18:26 09:18:28

A. Right. 09:18:29

Q. Regional Board staff then develops the conditions under which they deem it to meet 401 of the Clean Water Act? 09:18:29 09:18:30 09:18:33

A. Right. And -- and then they issue a certification. 09:18:34 09:18:34

Q. And then that's out for public notice? 09:18:37

A. Yeah. Once the certification -- yeah. It's put in final form, and then it's -- oh. 09:18:41 09:18:45

The public notice is of the board's intent to issue the certification. So this notice is issued earlier on in the process. Once the staff has decided the application is complete and ready to proceed with developing the final document, they'll post notice of that intent on the board's website, and then the certification is issued. 09:18:52 09:18:55 09:18:58 09:19:02 09:19:06 09:19:09 09:19:14

Q. So there's an application? 09:19:17

A. Yes. 09:19:18

Q. The application is reviewed. 09:19:18

A. Yes. 09:19:20
Q. The application is deemed complete. 09:19:20
A. Yes. 09:19:23
Q. There's public notice. 09:19:23
A. Yes. 09:19:24
Q. And then there's a public comment period. 09:19:25
A. Right. 09:19:27
Q. And then there's a hearing on the 401 Cert, or it can be issued by staff. 09:19:27 09:19:30
A. It can be issued by the executive officer, yes. 09:19:31
Q. Okay. 09:19:35
A. Without a hearing. 09:19:36
Q. That sounds like more than two months to me. Is that the case? 09:19:37 09:19:40
A. The -- it's one of these programs where the workload is very high. And the staff resources are low. And it -- the -- just depends on how complex the proposal is and that type of thing. I would say for this type of thing, that might be optimistic. 09:19:41 09:19:44 09:19:51 09:19:55 09:19:58
Q. For two months? 09:20:01
A. For two months, yeah. 09:20:02
Q. So maybe on the -- on the short end, two months. 09:20:04
A. Yeah. 09:20:06
Q. On the average? 09:20:06
A. Oh, I could -- I'd have to consult with my staff 09:20:09

to get that. I -- any number I would give would -- I would just be kind of hazarding a guess. 09:20:13 09:20:21

Q. That's fair. I don't want you to guess. 09:20:24

Do you know roughly the maximum amount of time it would take to issue a 401 Cert? 09:20:27 09:20:29

A. Well, yeah. Some of the certifications on the more complicated projects go on for a year or more. As part of this process, the -- if habitat is destroyed as part of construction of whatever the project is, then there's mitigation required for that. And there is a lot of -- can be a lot of back and forth as to what that mitigation would be. 09:20:32 09:20:36 09:20:44 09:20:57 09:21:01 09:21:06 09:21:09

Q. And so would there be mitigation associated with the CDF, confined disposal facility, for the site at Convair Lagoon? 09:21:13 09:21:15 09:21:20

A. There -- yes, there could -- that could trigger the need for that, yes. 09:21:21 09:21:25

Q. Wouldn't you view that process as a fairly complicated process? 09:21:29 09:21:31

A. Yes. It's certainly some controversy associated with it. So it could be, yes. 09:21:34 09:21:40

Q. There's an existing cap at Convair Lagoon? 09:21:44

A. Yes. 09:21:46

Q. And that cap has contamination on top of it? 09:21:46

A. Yes. Yeah, it does. Although, there's a big -- 09:21:49

been a lot of investigation underway to deal with the continued discharges onto the cap. And so that's on the way to getting resolved. But yeah. Currently, there are contaminants on top of the cap. 09:21:56 09:22:03 09:22:07 09:22:11

Q. Do you know how long it took for the Regional Board to issue the last 401 Certification for San Diego Bay? 09:22:16 09:22:19 09:22:22

A. No, I do not. I'm trying to -- oh. Yeah. There was one that we issued for BAE to conduct dredging activities, maintenance dredging at their site. And we did -- had a kind of a expedited review process to try to meet BAE's time frame for getting that work done. And I recall it was about a two-month process. 09:22:24 09:22:32 09:22:41 09:22:49 09:22:54 09:23:02

Q. And did that 401 Certification involve placement of contaminated sediment back in San Diego Bay? 09:23:05 09:23:07

A. I -- I don't recall. No, I don't think it did, no. 09:23:10 09:23:13

Q. Are there any other 401 Certifications currently pending for San Diego Bay? 09:23:14 09:23:17

A. I'm -- I -- I -- I don't know. There well could be, yes. 09:23:19 09:23:23

Q. So after the 401 Cert is issued, then there's a 404 permitting process? 09:23:26 09:23:29

A. Yes. 09:23:31

Q. How long does that process usually take? 09:23:31

A. I -- I think it follows fairly quickly after the State issue -- or the board issues its 401 Certification process. But I -- I can't give you any firm time frames based on -- on my experience. We tend to, once we get our work done on the certification, the staff moves on to their next one, and the corps does whatever the corps is going to do on the project. 09:23:33 09:23:43 09:23:47 09:23:54 09:24:00 09:24:03 09:24:06

Q. And do you know, is there a public comment period for the 404 Permit? 09:24:08 09:24:10

A. I don't know that. I assume that there probably is, yes. 09:24:13 09:24:14

Q. Do you know how long the -- that usually takes to issue a 404 Permit? 09:24:16 09:24:18

A. No, I do -- do not know. 09:24:22

Q. After the 404 Permit is issued, then there's a process for -- there may be a process for coastal development permitting, but you're not aware of that; is that correct? 09:24:23 09:24:26 09:24:30 09:24:33

A. Yes. 09:24:33

Q. So that -- you would not be aware of how long that process takes? 09:24:34 09:24:36

A. No. I don't have experience with that. As I'm -- now that you're mentioning it, I do remember that process becoming triggered by the Convair Lagoon project, getting a coastal permit from the Coastal Commission. 09:24:37 09:24:39 09:24:43 09:24:50

Q. Do you recall the nature of that process? 09:24:54

A. No. 09:24:57

Q. Do you recall the time it took for the Coastal Commission to rule on that? 09:24:58 09:25:00

A. No. I don't know. 09:25:04

Q. Okay. 09:25:09

A. I don't know. 09:25:10

Q. After this coastal development permit process, then WDRs would be issued for the construction and long-term monitoring of the CDF; is that correct? 09:25:11 09:25:13 09:25:17

A. Yes. 09:25:22

Q. How long does the process usually take? 09:25:22

A. For the waste discharge requirements, the process -- well, with the two -- two projects that have been constructed so far, I remember it being not a length -- being a fairly quick process. And by quick, I would say once the complete application was turned in -- and this -- this would include any documentation for compliance with CEQA -- that the board drafted the requirements and got them adopted within a three to four-month period. 09:25:24 09:25:29 09:25:37 09:25:43 09:25:47 09:25:55 09:25:59 09:26:05 09:26:14

Q. Okay. So if I understand correctly for the WDR process, there would be an application first? 09:26:15 09:26:18

A. Yes. 09:26:21

Q. The Regional Board staff would review that 09:26:22

application. 09:26:27

A. Yes. 09:26:27

Q. When the Regional Board staff concludes that the application is deemed complete, it would be out for public notice? 09:26:29 09:26:30 09:26:32

A. Yes. 09:26:33

Q. After the public notice period, the Regional Board's executive officer or the Regional Board will issue a final WDR; correct? 09:26:33 09:26:35 09:26:38

A. The waste discharge requirements can only be issued by the board members themselves at their regularly scheduled public hearings, yeah. 09:26:41 09:26:44 09:26:48

Q. So there would be an adjudicatory -- 09:26:51

A. Yes. 09:26:53

Q. -- hearing on the WDRs? 09:26:54

A. The draft WDRs, yes. 09:26:55

Q. And then if approved by the board, they would be final? 09:26:58 09:27:01

A. That's correct. 09:27:01

Q. You mentioned the CEQA process. 09:27:02

A. Yes. 09:27:04

Q. At some point in the process, I guess CEQA may be triggered? 09:27:05 09:27:07

A. Yes. When the State issues waste discharge requirements under, I think it's Water Code Section 13261 09:27:08 09:27:11

or somewhere in that vicinity, that action triggers -- 09:27:24
the board needs to certify compliance with the 09:27:31
requirements of CEQA in adopting the permit. 09:27:35
Q. And does CEQA have statutorily mandated public 09:27:41
review periods? 09:27:46
A. Yes, it does. 09:27:47
Q. Do you know, Mr. Barker, whether any of these 09:27:51
stages of the permitting process are subject to challenge 09:27:53
by interested parties? 09:27:57
A. I think any of the stages. The typical stage 09:27:59
that is done is where -- where the board has drafted 09:28:07
waste discharge requirements that are proposed for board 09:28:16
adoption. And then we circulate them for review and -- 09:28:19
and set a period for interested persons to submit 09:28:25
comments. 09:28:28
Q. And if interested persons are not happy with the 09:28:30
result at the Regional Board, they have an opportunity to 09:28:32
appeal that decision to the State Board; is that correct? 09:28:35
A. That is correct, yes. 09:28:38
Q. And if they don't like the decision out of the 09:28:39
State Board, they have the opportunity to appeal to a 09:28:41
judge; correct? 09:28:44
A. That is correct. 09:28:44
Q. Do you have any experience permitting a confined 09:28:48
disposal facility in San Diego Bay? 09:28:51

A. Yes. The Convair Lagoon and the Campbell facility. 09:28:53 09:29:00 09:29:03

Q. My understanding is that both of those are confined aquatic disposal facilities -- 09:29:04 09:29:07

A. Okay. 09:29:09

Q. -- as compared to a near shore confined disposal facility. 09:29:09 09:29:13

A. Okay. 09:29:13

Q. So I'm -- Sorry. 09:29:13

So I'm asking specifically, do you have any experience permitting a near shore confined disposal facility? 09:29:13 09:29:15 09:29:18

A. For the type that you've described, no, I do not. 09:29:19 09:29:21

Q. If a confined aquatic disposal facility or a near shore confined disposal facility are selected for appropriate repository from the contaminated sediments from the NASSCO site, would dredging be allowed to occur at NASSCO until this permitting process is complete? 09:29:25 09:29:29 09:29:33 09:29:37 09:29:40

A. There's a -- there's a possibility that could be done where the material is dredged and staged at some location and stockpiled for disposal. Although, the creation of that stockpile, where the stockpile exceeded a certain number of days, might trigger itself the need 09:29:50 09:29:51 09:29:51 09:30:08 09:30:12

to obtain waste discharge requirements for that. There is -- I'll just stop there. 09:30:16 09:30:27

Q. For confined disposal facilities or confined aquatic disposal facilities, are sediments typically staged before they're placed into those units? 09:30:29 09:30:32 09:30:36

A. The two sites for -- for the aquatic disposal facility, my experience with that was the -- the sediments were not dredged out of the bay and stockpiled on land. They were -- there was some dredging involved, but it was mostly to concentrate the material that would be contained within the cap. And so I don't -- don't remember any staging involved with those. 09:30:40 09:30:48 09:30:53 09:30:57 09:31:01 09:31:03 09:31:08

Q. Has a location for staging been identified in the shipyard matter? 09:31:14 09:31:17

A. Not as yet, no. 09:31:21

Q. Excuse me. 09:31:22

If the permitting process that we described previously is implemented for a confined disposal facility, isn't there a reasonable likelihood that that would delay the actual dredging of the shipyard? 09:31:31 09:31:35 09:31:39 09:31:41

A. It could. 09:31:44

Q. Would you agree that it's likely? 09:31:46

A. I would -- there's certainly a potential for that, as best I could speculate. It -- it would be highly dependent on how quickly various parties came into 09:31:53 09:31:57 09:32:11

agreement and how quickly people really wanted to move on it. 09:32:15 09:32:18

Q. Would it also depend on what other interested persons such as the public would view? 09:32:20 09:32:25

A. Yes. 09:32:27

Q. Maybe neighboring landowners? 09:32:31

A. Yes. 09:32:33

Q. After the construction of the confined disposal facility, what agency would have land use authority over that? 09:32:37 09:32:41 09:32:44

MR. CARRIGAN: Vague. Go ahead. You can answer if you understand the question. 09:32:48 09:32:49

THE WITNESS: Yes. The board's waste discharge requirements could have restrictions on types of land use activities at the site. And so I have some experience with that. 09:32:52 09:32:56 09:33:05 09:33:11

The -- you were -- the question was, what type of land use restrictions might there be? 09:33:14 09:33:22

BY MR. RICHARDSON: 09:33:25

Q. It's actually who would have the authority over the land use. 09:33:27 09:33:31

MR. CARRIGAN: Calls for a legal conclusion. You can answer if you know. 09:33:32 09:33:34

THE WITNESS: You know, if the facility is constructed on lands under the jurisdiction of the 09:33:35 09:33:38

Port District, certainly they would have jurisdiction. 09:33:41
And that's about -- I don't have anything to add to that. 09:33:49
BY MR. RICHARDSON: 09:33:53
Q. Okay. So if I understand correctly, the -- the 09:33:54
Regional Board staff would have some type of restrictions 09:33:57
on the use of -- 09:33:59
A. The waste discharge requirements could -- could 09:34:00
have some restrictions, yes. 09:34:01
MR. CARRIGAN: Let him finish his question 09:34:03
before you answer. Just as a formality. 09:34:05
THE WITNESS: Okay. 09:34:07
MR. CARRIGAN: Okay. 09:34:09
BY MR. RICHARDSON: 09:34:09
Q. And so the Port District or whatever entity has 09:34:10
control over the land use may also have restrictions; 09:34:13
correct? 09:34:16
A. Yes. Or -- yes. As I'm speaking, another 09:34:22
agency could be the State Lands Commission if it's 09:34:27
constructed on lands ultimately owned by the State. 09:34:32
And -- yeah. 09:34:36
Q. So there may be some process with the State 09:34:41
Lands Commission to get approval to construct the -- 09:34:42
A. Yes, possibly so. 09:34:45
Q. You mentioned habitat mitigation earlier. Is it 09:34:48
common for habitat mitigation land to be required if a 09:34:50

CDF is selected as the remedy? 09:34:54

A. Yes. It's where habitat is removed from the bay as a result of a construction of a project, it's common to have some type of mitigation for that -- be part of the process. 09:35:00 09:35:05 09:35:08 09:35:16

Q. So a CDF removes some form of navigable water in the bay; correct? 09:35:20 09:35:26

A. Yes, it could, yes. I suppose a scenario might be where the containment facility is exactly on top of the other facility. But it's likely that this would probably be bigger than that, yeah. 09:35:28 09:35:34 09:35:37 09:35:42

Q. So there would be some type of offset -- 09:35:44

A. Yes. 09:35:46

Q. -- for taking that? 09:35:46

A. Yes. 09:35:48

Q. And then if there's eelgrass in the area, there may be some offset for eelgrass? 09:35:49 09:35:51

A. Yes, that's correct. 09:35:55

Q. Any other species mitigation that might be required? 09:35:56 09:35:59

A. I can't think -- think of any right now. I think, if I recall, it was an eelgrass type of mitigation where eelgrass beds were established in another part of the bay to compensate. 09:36:03 09:36:06 09:36:12 09:36:16

Q. So if I understand correctly, throughout this 09:36:19

permitting process there would be some negotiation involving the mitigation that would be necessary -- 09:36:21 09:36:24

A. Yes. 09:36:25

Q. -- for the creation of a CDF? 09:36:26

A. Yes. 09:36:28

Q. Is there a banking system for credits for the types of systems that would need to be mitigated? 09:36:40 09:36:42

A. Yes, there is. There are mitigation banks that have been established where a project proponent as part of a -- 401 Certification has to mitigate for impacts. And they can purchase mitigation credits from these, what are called mitigation banks, yeah. 09:36:44 09:36:47 09:36:53 09:36:59 09:37:06

Q. Got it. 09:37:08

And for the type of mitigation that would be required for a confined disposal facility in San Diego Bay, are there currently credits available? 09:37:09 09:37:11 09:37:15

A. I'm not aware -- aware of any. These are -- the ones -- the banks I'm aware of are mostly -- they're inland facilities. And I'm not aware of a San Diego Bay mitigation bank. 09:37:18 09:37:22 09:37:26 09:37:30

Q. Okay. 09:37:33

I want to talk for a minute about the design issues regarding a CAD or a CDF. 09:37:33 09:37:35

A. Okay. 09:37:41

Q. Is it correct that the contaminated sediment 09:37:42

must be isolated on all sides, top and bottom? 09:37:44

A. It -- the key goal of the project is to separate 09:37:48
the material from San Diego Bay waters, basically to -- 09:37:54
to separate it from the beneficial uses of San Diego Bay, 09:38:03
to fully contain it. 09:38:09

Q. Okay. So one of the design issues is ensuring 09:38:10
that the -- there's no sea water intrusion, for example, 09:38:13
into the CDF? 09:38:16

A. Yes. That -- that -- that could be a 09:38:23
consideration, yes. 09:38:25

Q. Well, if there is sea water intrusion into the 09:38:26
CDF contaminated sediments, there would be potential 09:38:29
release; correct? 09:38:31

A. Potential releases, yes. 09:38:33

Q. So I would think it would be very important to 09:38:34
ensure that there's no connectivity -- 09:38:36

A. Yes. 09:38:38

Q. -- between the bay and the CDF. 09:38:38

A. Right. Yes. 09:38:39

Q. And is that true for groundwater also? 09:38:40

A. I don't remember that coming up with groundwater 09:38:43
with the Convair Lagoon cap or the Campbell cap. It was 09:38:48
mostly dealing with containing the contaminants and 09:38:51
separating them from the San Diego Bay marine 09:38:57
environment, yes. 09:39:01

Q. Okay. But if there is groundwater connectivity with the contaminated sediments in the CDF, then it would create a potential exposure pathway; right? 09:39:02 09:39:06 09:39:11

A. Are you referring to connectivity with upland groundwater sources or -- or... 09:39:14 09:39:16

Q. Correct. 09:39:20

A. Okay. I -- yeah, possibly, there could be a pathway. A mitigation for that is that the groundwater along the bay, except for a small portion in South Bay -- this is on the upland side -- doesn't have beneficial uses assigned to it. So it's kind of a neutral zone in a way. 09:39:20 09:39:28 09:39:34 09:39:39 09:39:42 09:39:48

Q. So if there was -- if there were contaminants migrating from a CDF into groundwater underneath upland areas, that would not be a concern to the Regional Board? 09:39:49 09:39:52 09:39:57

A. The concern would -- there might be some concern over some type of nuisance condition that could develop from that. But the concern with that scenario wouldn't be the same as if it was an actively used groundwater aquifer for drinking purposes. 09:40:03 09:40:07 09:40:10 09:40:18 09:40:23

But if it's -- again, these are groundwater basins that have no beneficial uses assigned to it. So typically, the board's -- on the upland side when there's discharges that go into them, it's mostly a risk-based type of cleanup versus insistence on cleaning all the 09:40:25 09:40:29 09:40:32 09:40:38 09:40:42

groundwater up to meet a particular standard. So just the water quality concerns are less. 09:40:46 09:40:53

Q. Okay. So if there were releases from a CDF into the groundwater in a nonbeneficial use area -- 09:40:55 09:41:00

A. Yes. 09:41:03

Q. -- would the Regional Board require sampling of the groundwater? 09:41:04 09:41:07

A. It's possible that we would, yes. 09:41:11

Q. Some type of risk evaluation to determine whether there are significant risks associated with that migration? 09:41:14 09:41:17 09:41:20

A. It's -- it is possible, yes. And another scenario might be where there's a pathway to groundwater, and then that pathway includes, just due to the tidal fluctuations, where the groundwater moves the contaminants to some other location type scenario as well, possibly for re-entry into the bay. So yeah. 09:41:22 09:41:28 09:41:34 09:41:39 09:41:45 09:41:49

Q. So on -- on balance, it sounds like a design criteria would be trying to ensure that there's not a groundwater intrusion. 09:41:55 09:41:57 09:41:59

A. Yes. Certainly a consideration of that pathway, yes, would be incorporated. 09:42:01 09:42:03

Q. Okay. 09:42:05

And the monitoring that may be required for a CDF, I assume that there would be some type of water 09:42:06 09:42:09

analysis in the area. 09:42:13

A. Yes. The -- although it might -- it might be more in the form of sediment monitoring, I think. I -- the primary concerns would be making sure the containment facility is not eroding in some manner. And just having a monitoring system that could detect leakage from the facility in some way. Mussel type of monitoring, it might be considered, sediment monitoring. 09:42:18 09:42:37 09:42:44 09:42:48 09:42:54 09:42:59 09:43:12

Q. So by mussel monitoring, you mean sampling mussels -- mussel tissue from mussels that are collected at the sight to see if they're accumulating pollutants? 09:43:19 09:43:23 09:43:24

A. Well, it's more mussels are sometimes used as sentential organisms, where they're not necessarily native to the site but are transplanted there and suspended in the water column. And then periodically, say, after three months or something, the mussels are collected and the tissues analyzed to see if there's indication of contaminants in the water column. 09:43:30 09:43:32 09:43:36 09:43:39 09:43:44 09:43:48 09:43:52

Q. For a near shore confined disposal facility where land is being created, would there be some potential for aboveground monitoring, for example, of vapors or anything else? 09:43:58 09:44:01 09:44:04 09:44:07

A. It's -- I don't want to say no. It's -- it's possible, yes. 09:44:15 09:44:22

Q. Would another design consideration be the 09:44:22

potential for settlement over time of materials in the CDF? 09:44:24 09:44:29

A. Yes, sloughing or where the containment facility loses its integrity and form, yes. 09:44:30 09:44:35

Q. So that could possibly be erosion by currents in the bay? 09:44:40 09:44:44

A. Yes. 09:44:45

Q. Erosion by storm events? 09:44:45

A. (Nods head.) 09:44:48

Q. Is that also a yes? 09:44:48

A. Yes. 09:44:49

Q. Erosion by vessel wash? 09:44:51

A. Yes. Yeah, physical disturbance from vessel movement, yes. 09:44:56 09:45:00

Q. Issues related to erosion from sea level rise? 09:45:02

A. I -- no experience with that. But it's possible, yes. 09:45:12 09:45:17

Q. Has the public responded in any way to the Regional Board on confined aquatic disposal facilities and confined near shore disposal facilities? 09:45:22 09:45:25 09:45:29

MR. CARRIGAN: Overbroad. Vague. 09:45:33

THE WITNESS: I can just answer that from the two projects I've had experience with. The -- the public concerns with the Campbell facility were that they didn't feel the board's cleanup levels were stringent enough, 09:45:36 09:45:37 09:45:50 09:45:55

and they wanted the facility design to achieve a more stringent level by covering more contaminants. So that was the -- it wasn't with the construction of the facility. 09:46:00 09:46:07 09:46:12 09:46:16

On Convair Lagoon, I -- there were similar concerns that came up where -- and this time it was more from a resource agency that wanted the facility bigger than what was dictated by the board's cleanup level. So the -- but both of these projects were for where the contaminants were in place, not for where the contaminants were being moved from another part of the bay to them. 09:46:20 09:46:27 09:46:29 09:46:33 09:46:36 09:46:42 09:46:45 09:46:48

Q. So if I stand -- understand that correctly, for the Shipyard Sediment Site, the sediment would be dredged up, moved to somewhere else in the bay, and then placed there? 09:46:52 09:46:54 09:46:58 09:47:01

A. Yes. 09:47:01

Q. And so have you received any views from the environmental groups on moving contaminated sediment from one part of San Diego Bay and moving it to a different part? 09:47:02 09:47:05 09:47:09 09:47:12

A. No, not as yet, no. 09:47:12

Q. So you don't know how they would view that process? 09:47:14 09:47:16

A. No, I -- no, I don't know. 09:47:16

Q. If a problem occurred at some point in the future with a confined aquatic disposal facility or a near shore confined disposal facility, and contamination is observed outside so that there is a problem, would there be any way to distinguish the contamination among the pre-existing pollution at the site as compared to the NASSCO sediment, as compared to the sediment that's placed there from the BAE shipyard? 09:47:22 09:47:23 09:47:27 09:47:31 09:47:34 09:47:39 09:47:43 09:47:46

A. It would be -- part of it -- it's kind of a -- it would not be a straightforward process to do that. It just depends on how the waste -- the facility's constructed -- constructed, how the waste is segregated there, all those types of factors might -- there's a certain type of PCB waste there. Maybe there's differences between that and the type of PCBs that are in NASSCO's or the shipyard sediment. 09:47:48 09:48:07 09:48:11 09:48:14 09:48:18 09:48:26 09:48:28 09:48:32

Q. So a molecule of copper that's found outside of a CDF -- 09:48:37 09:48:41

A. Mm-hmm. 09:48:42

Q. There would be no way to distinguish that molecule of copper from something that's pre-existing at the site, something that came from NASSCO, something that came from BAE? 09:48:42 09:48:45 09:48:48 09:48:51

A. Right. It would be a difficult process. 09:48:52

Q. If not impossible; right? 09:48:54

A. Right. 09:48:56

Q. For confined aquatic disposal facilities or near shore confined disposal facilities, would the Regional Board or some other agency require financial assurance for the long-term maintenance and monitoring? 09:48:59 09:49:03 09:49:05 09:49:07

A. That's possible. There's a set of regulations that would govern the design of the facility. And the regulations are, I think -- believe they are in either Title 23 or Title 27, depending on if it's considered a hazardous waste facility or a designated waste facility. Both of those are defined terms in California Code of Regulations. And-- and they have financial assurance elements as part of those regulations, yes. 09:49:11 09:49:15 09:49:23 09:49:28 09:49:32 09:49:38 09:49:42 09:49:47

Q. We also discussed dredging at length yesterday. I'd like to ask a few follow-up questions -- 09:49:58 09:50:01

A. Yes. 09:50:04

Q. -- on that technology. 09:50:04

Did the Cleanup Team evaluate any difficulties that we've not already discussed concerning the dredging to background conditions? 09:50:06 09:50:11 09:50:15

MR. CARRIGAN: Vague. 09:50:17

THE WITNESS: I am just thinking back to yesterday. I -- I think we covered the -- the broad spectrum of the issues associated with that. I can't think of anything -- anything else. 09:50:20 09:50:30 09:50:33 09:50:37

BY MR. RICHARDSON: 09:50:42

Q. For example, there were structural stability 09:50:43

concerns around structures; correct? 09:50:45

A. Yes. 09:50:48

Q. There was an issue of fines, the percent fines, 09:50:48

and whether there would be resuspension? 09:50:51

A. Yes, right. 09:50:53

Q. I have a question about the magnitude of -- of 09:50:55

the potential dredging if we go to background. 09:50:58

A. Okay. 09:51:01

Q. Do you know how many cubic yards of sediment 09:51:02

would require to be dredged if the Regional Board ordered 09:51:05

cleanup to background conditions? 09:51:09

A. I think there are estimates on that in -- in the 09:51:13

record. I don't know them off the top of my head. 09:51:16

Q. Would you agree that approximately a million 09:51:19

cubic yards? 09:51:21

A. It sounds -- sounds right. 09:51:23

Q. Are you aware of any other sites in 09:51:27

San Diego Bay where more than a million cubic yards of 09:51:28

sediment were dredged? 09:51:32

A. For a cleanup project, no. There's been sizable 09:51:36

maintenance dredging projects. But I don't even think 09:51:41

they approached a million cubic yards. 09:51:45

Q. Would you agree that under these circumstances, 09:51:53

dredging a million cubic yards of contaminated sediment would be technologically infeasible? 09:51:55 09:51:59

MR. CARRIGAN: Vague. 09:52:02

THE WITNESS: I think our position was we've -- we've mostly approached that from the economic feasibility side of the equation, just -- and the benefits associated with that and concluded it was not feasible from that perspective. 09:52:03 09:52:12 09:52:15 09:52:19 09:52:23

A million cubic yards of dredged material and disposing of that would be a challenge. There's no argument there. Not -- and an expensive challenge. And the board has not had regulatory experience with dealing with that volume of material and -- and -- and regulating its disposal. So it would be new territory for the board, as well. 09:52:29 09:52:33 09:52:37 09:52:46 09:52:50 09:53:00 09:53:04

BY MR. RICHARDSON: 09:53:05

Q. And among those challenges, a significant challenge would be just the management and handling of a million cubic yards of sediment; correct? 09:53:05 09:53:07 09:53:12

A. Yes. 09:53:15

Q. Such as finding a place to dewater it? 09:53:15

A. Exactly. Dewatering, staging, the transport of it, the -- all of those considerations. 09:53:18 09:53:21

Q. The truck trips? 09:53:23

A. Yes. 09:53:24

Q. Finding a landfill to take a million cubic yards? 09:53:25 09:53:27

A. Yes, yes. 09:53:28

Q. Let's talk about the alternative cleanup levels for a moment. So I'm going to refer you to Finding 31 of the CAO. 09:53:34 09:53:37 09:53:40

A. Okay. 09:53:41

Q. In Section 31 of the DTR. 09:53:42

A. Okay. Let me just turn to that. 09:53:45

Q. While you're looking for that, as we discussed, you have been designated as the Cleanup Team's person most knowledgeable regarding the alternative cleanup analysis; correct? 09:53:57 09:54:01 09:54:05 09:54:08

A. Yes. 09:54:08

Q. Do you believe you are the Cleanup Team's person most knowledgeable regarding the cleanup levels? 09:54:10 09:54:13

A. Yes. 09:54:15

Q. And why is that? 09:54:16

A. Just because of my participation over a long period of time in the development of the levels, my supervision of the staff that put together the technical analysis supporting them, yes. 09:54:17 09:54:22 09:54:30 09:54:34

Q. Thank you. And I said Section 31, but I meant Section 32 of the DTR. 09:54:37 09:54:40

A. Okay. 09:54:42

Q. My apologies. 09:54:42
A. All right. 09:54:43
Q. So you oversaw the development of Section 32 of the DTR; is that correct? 09:54:44 09:54:46
A. Yes. 09:54:47
Q. And that is also Finding 31 -- sorry -- 32 of the order; correct? 09:54:48 09:54:52
A. Finding 32 of the order, that is correct. 09:54:53
Q. Great. Thank you. 09:54:58
I want to take a moment to discuss the analytical process that was used to develop the alternative cleanup levels. 09:55:02 09:55:04 09:55:07
A. Okay. 09:55:09
Q. Starting with the development of the surface weighted average concentrations. And we call these capital S-W-A-C, small S, SWACs; correct? 09:55:09 09:55:11 09:55:15
A. Yes. 09:55:21
Q. So when I say SWAC, you'll know what I'm refer -- referring to? 09:55:21 09:55:23
A. Yes. 09:55:24
Q. So starting with the development of SWACs for the different polygons at the shipyard site. 09:55:25 09:55:27
A. Okay. 09:55:30
Q. First, each polygon was based on a sampling point located in the vicinity of that polygon; correct? 09:55:35 09:55:38

A. Yes. 09:55:42

Q. And is it correct that the Cleanup Team first developed SWACs under current conditions? 09:55:42 09:55:44

A. Yes. 09:55:53

Q. Then the Cleanup Team ranked those polygons for consideration in the remedial footprint. 09:55:53 09:55:56

A. Yes. 09:55:58

Q. Then the Cleanup Team performed the economic feasibility analysis that we previously discussed to confirm that alternative cleanup levels are protective; correct? 09:55:59 09:56:02 09:56:04 09:56:07

A. That's correct. 09:56:08

Q. And then there was an assessment of that protectiveness of cleanup on aquatic dependent wildlife, aquatic wildlife, and human health; correct? 09:56:09 09:56:11 09:56:15

A. That's correct, yes. 09:56:19

Q. And the assumption was that the remedial footprint area will equilibrate to background conditions; correct? 09:56:20 09:56:22 09:56:26

A. The -- the area within the proposed footprint, yes, that's correct. 09:56:27 09:56:35

Q. So what does the surface weighted average concentration, or SWAC, of a primary CoC represent? 09:56:36 09:56:39

A. It represents the -- the averaging of that constituent over the entire site. It's -- it's kind of a 09:56:44 09:56:52

way to -- maybe I'll just stop there. 09:57:01

Q. No. I think that's helpful. 09:57:08

So the -- is it correct to say that the critters at the shipyard, the aquatic dependent wildlife, and certain other prey species move about the site and about San Diego Bay; correct? 09:57:10 09:57:14 09:57:18 09:57:23

A. Yes, that's correct. 09:57:24

Q. And so the purpose of the SWAC is to assess the exposure of any one of those critters site-wide; is that correct? 09:57:26 09:57:29 09:57:33

A. That is correct. 09:57:34

Q. And so referring you to page 32-8 of the DTR. 09:57:41

A. Yes. 09:57:49

Q. The last full paragraph. 09:57:49

A. All right. 09:57:51

Q. If you'd take a moment to review that, I just have a few questions on it. 09:57:52 09:57:54

A. Okay. 09:58:42

Q. In the middle of the paragraph, there's a sentence that reads, "Based on this, a SWAC for sediments is a more appropriate method for evaluating the exposure to chemicals that fish and lobsters incur during forging. In turn, this approach allows more" -- "much more accurate and realistic estimation of the bioaccumulation of chemicals from site sediments and prey items." 09:58:43 09:58:45 09:58:49 09:58:52 09:58:56 09:58:59 09:59:02

Do you agree with that sentence? 09:59:05

A. Yes, I do. 09:59:08

Q. Looking now at page 32-15. 09:59:10

A. Okay. Thanks. 09:59:23

Q. Can you explain how the Cleanup Team determined whether the alternative cleanup levels that are proposed would result in the post remedial protection of the beneficial use of aquatic dependent wildlife? 09:59:24 09:59:26 09:59:30 09:59:34

A. The certain prey species, receptors of concern, were evaluated. And the species were selected in consultation with the resource agencies for San Diego Bay. And -- and -- and then an estimation was made of the -- the exposure of those prey items to the level of contaminants represented by the alter -- alternative cleanup levels through various modeling equations. 09:59:39 09:59:50 09:59:59 10:00:04 10:00:11 10:00:22 10:00:27 10:00:31

And -- and a risk evaluation was done in that process. And through the use of a hazard quotient. And a hazard quotient of less than one indicates that the chemical is unlikely to cause adverse ecological effects to the receptor of concern. And then a value greater than one indicates that the receptor's exposure, that some fraction of the population might experience adverse effect. 10:00:33 10:00:36 10:00:44 10:00:50 10:00:56 10:01:00 10:01:09 10:01:13

Q. Okay. 10:01:14

A. Okay. And the -- the calculations and the analysis of that were done in a very transparent manner where a reader could read through the text and kind of follow along. 10:01:15 10:01:18 10:01:24 10:01:27

Q. Painfully so. 10:01:28

A. Painfully so. 10:01:30

Q. I agree with you. 10:01:31

So that was very helpful. Thank you. Thank you. 10:01:33 10:01:34

A. Okay. 10:01:35

Q. So if I understand the process, there's a NOAEL -- I'm referring, by the way, to page 32-15 in the middle paragraph. There's a NOAEL, which is a No Observed Adverse Effect Level? 10:01:36 10:01:37 10:01:43 10:01:46

A. Right. 10:01:48

Q. Below which adverse effects never occur. 10:01:48

A. Yes. 10:01:51

Q. There's a LOAEL, Lowest Observed Adverse Effects Level? 10:01:51 10:01:55

A. Right. 10:01:55

Q. And at that level, it's the lowest concentration where you do observe effects; correct? 10:01:55 10:01:59

A. Right. Yes. 10:02:01

Q. So there's some uncertainty between, where the effects are actually taking place; correct? 10:02:01 10:02:03

A. Yes. 10:02:06

Q. And this section, if I understand correctly, 10:02:10

used the geometric mean to address that uncertainty. 10:02:11

A. Yes, it did. Yes. 10:02:17

Q. And as we discussed yesterday, the geometric 10:02:18

mean is a more conservative approach than taking the 10:02:20

algebraic mean to -- 10:02:24

A. Yes. The -- yes, that's correct. 10:02:28

Q. So is it your opinion that the use of the 10:02:30

geometric mean here is a valid approach -- 10:02:33

A. Yes. 10:02:35

Q. -- to assessing aquatic dependent wildlife 10:02:36

risks? 10:02:39

A. Yes, it is. 10:02:40

Q. By using the surface weighted average 10:02:40

concentrations. 10:02:43

A. Yes. 10:02:43

Q. And comparing those to the geometric mean? 10:02:44

A. Yes. Yes, I think all of this was a realistic 10:02:47

and conservative assessment. 10:02:49

Q. Are you also aware that the use of the geometric 10:02:51

mean TRV is endorsed by U.S. EPA? 10:02:55

A. Yes. 10:02:59

Q. And that's a more reliable approach than using 10:03:04

either the no L or the low L numbers; correct? 10:03:07

A. Yes. Yes, it is. 10:03:10

Q. Did the Cleanup Team use a geometric mean TRV for the basic risk assessment? 10:03:14 10:03:19

A. I -- I don't -- I can't answer that. 10:03:22

Q. Do you know if it's been calculated? 10:03:31

A. No, I do not. 10:03:34

Q. Okay. Let's -- why don't we ask a few more questions, then we'll take a short break. 10:03:37 10:03:43

A. Okay. All right. 10:03:46

Q. We're going to move into the alternative remedies analysis. 10:03:47 10:03:49

A. Okay. 10:03:51

Q. So this is Finding 30 -- sorry. This is part of Finding 30 of the -- of the CAO -- 10:03:58 10:04:02

A. Okay. 10:04:04

Q. -- and -- and DTR. And shows up elsewhere in the document analysis of the alternative cleanup levels and so on. 10:04:05 10:04:09 10:04:14

But to confirm, as we discussed previously, you were designated as the Cleanup Team's person most knowledgeable regarding alternative remedies analysis; correct? 10:04:16 10:04:16 10:04:19 10:04:22

A. Yes. 10:04:23

Q. And that's including dredging, capping, aquatic disposal, and monitoring natural attenuation; correct? 10:04:23 10:04:28

A. Yes. 10:04:31

Q. And do you believe you -- you are the Cleanup Team's person most knowledgeable on these subjects? 10:04:32 10:04:36

A. Yes. 10:04:39

Q. And why is that? 10:04:39

A. Based on my experience in supervising the staff putting the DTR together, as well as at other sites in San Diego Bay. 10:04:43 10:04:52 10:04:55

Q. I want to ask you questions regarding alternative remedies. I'm asking for your response in your capacity as the Cleanup Team's person most knowledgeable on this subject. Do you understand? 10:04:57 10:05:00 10:05:03 10:05:06

A. Yes. 10:05:08

Q. Were you involved in drafting Chapter 30 of the DTR? 10:05:10 10:05:12

A. Yes, or -- yes, reviewing drafts prepared by other staff. 10:05:16 10:05:24

Q. So you had ultimate responsibility for -- 10:05:25

A. Yes. 10:05:26

Q. -- Chapter 30? 10:05:27

A. Yes. 10:05:29

MR. CARRIGAN: Counsel, now might be a good time to go off the record. 10:05:29 10:05:31

MR. RICHARDSON: Yeah, that's fine. 10:05:32

THE VIDEOGRAPHER: Off the record. Time is 10:05:34

10:05 a.m. 10:05:36

(A recess was taken.) 10:05:43

THE VIDEOGRAPHER: Back on the record. Time is 10:25:49
10:25 a.m. 10:25:51

BY MR. RICHARDSON: 10:25:55

Q. Mr. Barker, before we broke, we were discussing 10:25:55
the alternative remedies analysis in the DTR. Other than 10:25:58
yourself, was there anyone else in the Cleanup Team that 10:26:02
was involved in the development of that discussion? 10:26:05

A. Yes. Tom Alo of the staff, Julie Chan, 10:26:08
Craig Carlisle. 10:26:19

Q. Anyone else? 10:26:23

A. Those were the principal people. 10:26:31

Q. And you supervised the development of this 10:26:35
analysis? 10:26:37

A. Yes. 10:26:37

Q. What was Mr. Alo's role? 10:26:38

A. Mr. Alo performed risk -- the risk calculations 10:26:40
in it. 10:26:45

Q. Anything else that Mr. Alo did? 10:26:50

A. And did the research on the modeling equations 10:27:03
we used, participated in discussions on what type of -- 10:27:07
of assumptions should be made for setting up the modeling 10:27:14
equations, et cetera. 10:27:23

Q. Anything else that you recall Mr. Alo doing? 10:27:26

A. No. 10:27:29

Q. What did Ms. Chan do in connection with this analysis? 10:27:31 10:27:33

A. Basically assisted me in overseeing Tom's work on it. And just providing another perspective on how the analysis was set up. She also -- there's a set of regulations dealing with criteria that must be met for alternative cleanup levels that go beyond the risk-based equations. 10:27:34 10:27:38 10:27:53 10:27:59 10:28:05 10:28:10

For example, where alternative levels have a ceiling where they're supposed to be as close to background as is technologically or economically feasible. So she worked with me in analyzing that side of the issue. 10:28:13 10:28:17 10:28:20 10:28:24 10:28:30

Q. Anything else that you recall that she did in connection with this analysis? 10:28:34 10:28:36

A. No. 10:28:39

Q. And what did Mr. Carlisle do in this analysis? 10:28:41

A. Just participated in Cleanup Team discussions on how the analysis was being put up and explained in the DTR. 10:28:44 10:28:48 10:28:53

Q. Okay. Anything else that you recall him doing? 10:28:54

A. There was a number of spreadsheet calculations that are supporting all of the assumptions that are in the appendices. And actually, now I'm remembering 10:29:01 10:29:04 10:29:07

Mr. Carlisle and Barry Pulver on our staff and Vicente Rodriguez just helped to organize the appendices and get the spreadsheets in the right format, et cetera. So it was pretty much a team effort. 10:29:13 10:29:21 10:29:26 10:29:30

Q. Okay. So the roles of Mr. Pulver and Mr. Rodriguez were largely administrative. 10:29:35 10:29:39

A. Yes, that's correct. 10:29:41

Q. But Mr. Carlisle would have the ownership of the spreadsheets and manipulate them. 10:29:42 10:29:46

A. Yes, or just -- yeah, reviewing them for accuracy and that type of thing, yes. 10:29:49 10:29:50

Q. Okay. 10:29:52

A. He worked with Tom Alo in kind of correlating the spreadsheets, making sure the results of them were accurately reflected in the -- in the chapter, yeah. 10:29:55 10:29:59 10:30:02

Q. Was there anyone else involved with the development of this section other than the Cleanup Team? 10:30:07 10:30:09

A. Yes, yes. This was -- we worked with the -- consulted with resource agencies on the modeling equations that were used, on some of the assumptions that were made, to be sure that they were consistent with them, that it was a conservative scientific-based analysis. 10:30:12 10:30:26 10:30:33 10:30:38 10:30:43 10:30:46

We also worked with the consultants of the dischargers named in the order, to collaborate with them 10:30:48 10:30:52

where we could to try to come to agreement on how the analysis should be done, that type of thing. 10:30:58 10:31:03

Q. Okay. So there -- would it be fair to say the resource agencies were involved in ensuring that the alternative remedies being considered were protected? 10:31:05 10:31:07 10:31:10

A. Yes, yeah. Now, they have not provided their formal comments on the DTR as yet. But we've certainly tried to coordinate with them along the way, yeah. 10:31:13 10:31:18 10:31:25

Q. Okay. 10:31:30

In discussing the different types of remedial alternatives, we discussed dredging yesterday. We discussed the confined aquatic disposal facilities today and the confined near shore disposal facilities today. 10:31:31 10:31:33 10:31:39 10:31:42

And I had an additional question on the latter two. Are you aware of any circumstance where the Regional Board ordered a discharger to establish a CDF or a CAD as compared to sites where the discharger requested to construct a CAD or CDF? 10:31:48 10:31:50 10:31:57 10:32:01 10:32:07

A. No, no. As a matter of fact, in the Water Code there is a section in there that basically prohibits the Regional Board from dictating a method of compliance with a -- a -- as far as what alternative is selected by a party to comply with the board's requirements. We don't have the jurisdiction to say, you must build a confined disposal facility instead of hauling material to an 10:32:12 10:32:15 10:32:21 10:32:25 10:32:33 10:32:37 10:32:42

upland disposal source. 10:32:45

Q. So as the Regional Board you have the authority 10:32:47
to issue the cleanup levels, and then it's the 10:32:50
discharger's responsibility to figure out how to meet 10:32:52
those standards? 10:32:55

A. Exactly. 10:32:56

Q. So again, we've discussed dredging. We've 10:32:57
discussed these disposal facilities. Now let's discuss 10:33:00
another remedial alternative that was analyzed in the 10:33:05
DTR, and that is natural attenuation or natural recovery. 10:33:07

A. Yes. 10:33:11

Q. What is natural attenuation or natural recovery? 10:33:13

A. Natural attenuation would refer to the ability 10:33:16
of contaminants to bind to, in this case, sediment 10:33:22
particles and to -- in a way that they are not 10:33:31
biologically available. And also, it could refer to 10:33:37
the -- the dispersion of contaminants over time, the 10:33:46
burial of contaminants through natural sediment 10:33:59
deposition processes that take place in water bodies. 10:34:03

Q. That was very helpful. 10:34:07

A. Okay. 10:34:08

Q. Thank you. 10:34:08

I'll refer you to page 30-1 of the DTR. In the 10:34:09
last paragraph, it indicates that natural recovery is a 10:34:15
readily -- this is a quote, "Readily employable and 10:34:19

proven remediation strategy." 10:34:22

A. Let's see. We're on -- 10:34:26

Q. Page 30-1. 10:34:27

A. Okay. Hold on. 10:34:28

Q. The very last paragraph. 10:34:30

A. All right. 10:34:31

Q. I think I gave you a courtesy copy earlier. 10:34:32

A. Okay. Let me see if I can locate that. Hang on a second. 10:34:35 10:34:39

Q. Whatever is easier. 10:34:40

A. Okay. I'll just find it here. 30-1. And we are in the -- 10:34:41 10:34:45

Q. Very last paragraph, full -- full paragraph. 10:34:53

A. Okay. Let me just check that. 10:34:54

MR. RICHARDSON: Yeah. 10:34:56

MS. TRACY: Kelly, what page are you on? 10:34:57

MR. RICHARDSON: Page 30-1 of the DTR. 10:34:59

MS. TRACY: Thank you. 10:35:00

MR. RICHARDSON: And I'm in the last full paragraph. 10:35:03 10:35:04

THE WITNESS: Okay. I see that. 10:35:16

BY MR. RICHARDSON: 10:35:23

Q. Okay. So it says that the natural recovery among other alternatives are readily employable and proven remediation strategies. Do you agree with that? 10:35:23 10:35:26 10:35:29

A. Yes. 10:35:33

Q. Why does the Cleanup Team believe that natural recovery is a proven technology? 10:35:34 10:35:36

A. It's a strategy -- sometimes at contaminated sediment sites, it's -- a determination is made it's -- that it's better to control the source of the problem and just -- and not disturb the contaminants and let natural processes take care of any environmental effects associated with it. And it's -- not all sediment sites are cleaned up. Some are just documented but just left in place. 10:35:39 10:35:44 10:35:51 10:36:02 10:36:08 10:36:13 10:36:20 10:36:26

Q. So sometimes the remedy itself might cause more environmental problems than simply allowing -- 10:36:28 10:36:30

A. Yes. 10:36:33

Q. -- the natural attenuation? 10:36:33

A. Yes. As we've discussed, for example, when sites are dredged, benthic communities are destroyed in the process. 10:36:35 10:36:38 10:36:43

Q. And there's resuspension and air emissions and traffic issues and other things; correct? 10:36:43 10:36:46

A. Yes. Yes, that's correct. 10:36:48

Q. In your position at the Regional Board, have you been involved in any sediment remediation projects in which natural recovery was employed? 10:36:50 10:36:51 10:36:55

A. Yes. Yes, I have. 10:37:04

Q. And which ones were those? 10:37:07

A. There were -- the two that come to mind are over in the shelter -- or excuse me -- the Commercial Basin portion of the bay at Shelter Island Boatyard and Eichenlaub Marine were two such facilities where the board recognized there were contaminants in the sediment but indicated that it was -- that natural processes would attenuate the problem. 10:37:09 10:37:15 10:37:19 10:37:25 10:37:32 10:37:36 10:37:40

Q. And what were the contaminants of concern at those sites, do you recall? 10:37:42 10:37:46

A. I believe there's a spreadsheet. 10:37:52

Q. In Exhibit 1210, is that the table? 10:37:55

A. Yes. I'd like to just look at that to brief my -- it's that big spreadsheet, Chris. Yeah, thank you. Let's see. Those were copper, mercury, and TBT for Shelter Island Boatyard. And the same for Eichenlaub Marine. 10:37:57 10:38:01 10:38:11 10:38:23 10:38:35

Q. Okay. And those three chemicals of concern are three of the five primary chemicals of certain at the NASSCO site; correct? 10:38:37 10:38:39 10:38:42

A. That's correct, yes. 10:38:44

Q. Is this remediation completed? 10:38:46

A. Yes. 10:38:48

Q. So these sites are closed? 10:38:48

A. Yes, they're closed sites. 10:38:50

Q. So would you view that as successful? 10:38:51

A. In the context of when that decision was made, which was in the early '90s. I guess it's always possible to go back and re-examine a site and establish different criteria, might yield a different decision. 10:38:57 10:38:59 10:39:03 10:39:08

Q. Okay. Is -- is the Regional Board opening -- reopening either of those sites? 10:39:12 10:39:14

A. There are no plans to do that, no. 10:39:15

Q. Okay. Are you aware of any -- I'm sorry. Before we leave this table since we have it open, we're in Exhibit 1210. 10:39:17 10:39:22 10:39:25

I also see on this table, Mr. Barker, that for a number of the other Commercial Basin sites, natural degradation, which I assume is a natural attenuation method, was used for TBT. 10:39:27 10:39:30 10:39:34 10:39:38

A. Yes. 10:39:41

Q. Is that correct? 10:39:42

A. Yes. 10:39:42

Q. Okay. 10:39:43

A. Yeah. I think the board theorized there was a pathway of degradation from tributyltin form back to elemental tin. 10:39:43 10:39:47 10:39:53

Q. And those would be the Bay City Marine Site; correct? 10:39:57 10:39:59

A. Yes. 10:40:02

Q. And the Driscoll Boatyard Site? 10:40:02

A. Yes, yes. Now that you've brought that up, that's another example where the board recognized a natural environmental process to address a contaminant of concern. 10:40:05 10:40:07 10:40:10 10:40:18

Q. Okay. 10:40:18

Are you aware of any California State guidance that addresses the use of natural attenuation as a remedy? 10:40:19 10:40:22 10:40:24

A. California State guidance, the guidance I'm aware of is mostly -- deals with attenuation of contaminants in soil overlying groundwater. There may be some fate and transport type guidance the State has for surface water applications of that. But none are really coming to mind. 10:40:28 10:40:32 10:40:38 10:40:47 10:40:54 10:40:59

Q. Any guidance issued by the Regional Board for natural attenuation? 10:41:00 10:41:03

A. Let's see. There is a very old cleanup policy that's in the Basin plan that might have some reference to that. And I -- I can't recall it in detail. But that's one place that I would look. 10:41:11 10:41:17 10:41:22 10:41:26

Q. Okay. Anything else you can think of? 10:41:29

A. No. There's -- there's -- no. 10:41:31

Q. What type of circumstances do you believe would be appropriate for implementation of some type of natural 10:41:34 10:41:37

recovery remedy? 10:41:42

A. Circumstances? 10:41:44

Q. Site conditions. What type of site conditions would be appropriate for a natural recovery? 10:41:47 10:41:48

A. The scenario we're discussing is a contaminated marine sediment site? 10:41:52 10:41:56

Q. Correct. 10:41:57

A. Okay. I guess the susceptibility of the -- the contaminants of concern to natural, I guess, degradation processes such as for tributyltin, or natural processes might make a contaminant less harmful to marine organisms. The -- the -- any physical -- the considerations on physical disturbances at the site might be a consideration. The levels of contaminant in the sediment would be a consideration. Those are the ones that come to mind immediately. 10:41:58 10:42:09 10:42:16 10:42:25 10:42:29 10:42:47 10:42:51 10:42:57 10:43:05

Q. What about situations where significant environmental harm will result from active dredging; would that be a factor? 10:43:09 10:43:10 10:43:14

A. Yeah. I -- I think any time dredging of contaminated sediments is done, there needs to be some thought given to balancing the benefits that would accrue from that versus the effects that dredging will have on existing habitat in -- in the bay. 10:43:16 10:43:22 10:43:27 10:43:34 10:43:40

Q. Would you also agree that situations where 10:43:44

there's minimal risk to -- to human health or aquatic dependent wildlife or aquatic life would also be a good circumstance for use of natural recovery? 10:43:46 10:43:50 10:43:54

MR. CARRIGAN: Incomplete hypothetical. You can answer. 10:43:56 10:43:59

THE WITNESS: I believe that that would be a -- a consideration in the final decision. It wouldn't necessarily dictate that no cleanup should occur. But it would be a consideration, certainly. 10:44:00 10:44:04 10:44:08 10:44:13

BY MR. RICHARDSON: 10:44:15

Q. Okay. And sites where there's an imminent substantial risk would be less likely to implement a natural recovery; correct? 10:44:15 10:44:19 10:44:23

A. Yes, that's right. 10:44:25

Q. What about in areas where there's observed natural recovery occurring; would that be one of the factors that you would take into consideration? 10:44:26 10:44:29 10:44:33

A. Certainly, that would be a -- a consideration, yes. 10:44:37 10:44:40

Q. Okay. On page 30-2 of the DTR, in the second full paragraph, it says -- the very first sentence is that, "Monitored natural recovery is not a passive no-action or no-cost remedy." Do you see that? 10:44:41 10:44:49 10:44:55 10:44:58

A. Yes. 10:45:02

Q. Why is that? 10:45:02

A. Because it's -- it's not a -- a remedial method where the natural recovery is not monitored. There would be costs associated with monitoring whether the -- the theoretical natural recovery is, in fact, occurring. 10:45:09 10:45:21 10:45:26 10:45:32

Other considerations would be physical disturbances to the site, whether contaminants are spreading to previously uncontaminated areas at levels that might be harmful, et cetera. 10:45:39 10:45:42 10:45:46 10:45:50

Q. Okay. So the steps for determining -- sorry. 10:45:52

The steps once monitoring natural attenuation is selected may include some type of risk evaluation? 10:45:58 10:46:02

A. Yes. 10:46:06

Q. Some form of site characterization? 10:46:07

A. Yes. Yes. 10:46:09

Q. Maybe predictive modeling? 10:46:10

A. Yes, all of that, yes. 10:46:12

Q. Okay. And then some level of monitoring? 10:46:13

A. Yes. 10:46:15

Q. Probably long -- longer term monitoring? 10:46:16

A. Yes, it would. 10:46:18

Q. So why -- why is monitoring so important for a natural recovery remedy? 10:46:20 10:46:23

A. I think monitoring is important to document that the natural recovery is -- is occurring. And also to ensure that it's resulting in a -- kind of a permanent 10:46:27 10:46:31 10:46:39

protection of the -- the beneficial uses. 10:46:46

And again, physical disturbances to a site, the contaminants reemerging from burrowing organisms that might bring it to the surface and make it bioavailable again. All of that is a consideration. 10:46:56 10:47:01 10:47:06 10:47:09

Q. So all that's why it's a no cost -- not a no cost or no action remedy. 10:47:12 10:47:15

A. Exactly. 10:47:17

Q. It does involve cost? 10:47:18

A. Yes. 10:47:20

Q. It does involve actions? 10:47:20

A. Yes. 10:47:22

Q. Understood. 10:47:23

If we look at DTR page 30-3. 10:47:23

A. Yes. 10:47:29

Q. There's a sentence that says, "Active efforts are underway to control sources" in the middle paragraph. Do you see that? 10:47:32 10:47:34 10:47:37

A. Okay. We're on the middle -- 30-3. 10:47:40

Q. Yes, paragraph beginning "based on." 10:47:43

A. Active effort, yes. 10:47:45

Q. What are those efforts to control sources? 10:47:50

A. Let's see. This would be sources of discharges to the area, control of point source discharges, the establishment of TMDLs for Chollas Creek. 10:47:59 10:48:18 10:48:26

Q. Do you think that those source control measures will be effective? 10:48:35 10:48:39

MR. CARRIGAN: Vague. 10:48:40

MS. REYNA: Asked and answered. 10:48:45

THE WITNESS: Yes, I do. 10:48:49

BY MR. RICHARDSON: 10:48:51

Q. Are you aware of any sources influencing the sediment at the site for which active efforts are not underway? 10:48:51 10:48:54 10:49:00

A. The -- no. I am -- I am not aware. 10:49:08

Q. Further down that paragraph, it states that, "Complete control of site sources has not yet been fully demonstrated to a level that would assure adequate rates of recovery." 10:49:19 10:49:20 10:49:26 10:49:29

Do you know what site sources that statement is referring to? 10:49:31 10:49:33

A. I -- I believe it's referring to discharges in the vicinity of the shipyard, the influence of Chollas Creek on shipyard contaminant levels, discharges from MS4 storm drains. 10:49:39 10:49:45 10:49:51 10:50:03

Q. Okay. Are you aware of any other sources that have not been controlled in which you believe would interfere with the implementation of natural recovery? 10:50:05 10:50:08 10:50:10

A. Not specifically. I'm -- I'm aware of sources where work is underway on those. 10:50:24 10:50:27

Q. Okay. 10:50:33

Reading the last sentence of this paragraph, is it true that the Cleanup Team rejected proposing implementation of monitored natural recovery solely on the basis that complete source control had not been demonstrated? 10:50:35 10:50:38 10:50:41 10:50:44 10:50:48

A. No. I -- no, no. That was not the -- the only consideration. 10:50:49 10:50:57

Q. And what were the other considerations? 10:51:01

A. The levels, the types of contaminants in the sediment, the risks to human health and aquatic dependent wildlife that the -- were the results of the risk analysis, the results of the sediment quality triad analysis and -- that indicated some sites might -- some sampling areas might -- were like -- indicated adverse effects to marine organisms were likely. Those kinds of considerations. And yeah. 10:51:05 10:51:09 10:51:22 10:51:30 10:51:34 10:51:41 10:51:51 10:51:55

Q. So if I understand correctly, the Cleanup Team did not believe that natural attenuation would result in correcting the problems that you just noted? 10:52:00 10:52:02 10:52:08

A. Yes, yes. We did not think that would be a permanent fix to -- as a strategy to address the whole site. At the same time, we were open in our thinking that the remedies to address the site might be a mixture of remedies, where some portion of the site might be 10:52:12 10:52:15 10:52:21 10:52:28 10:52:35

dealt with through a natural attenuation type action, but that that might not be appropriate for the whole site. 10:52:38 10:52:47

Q. Who on the Cleanup Team concluded that natural attenuation should not be used as a remedy for the site? 10:52:52 10:52:56

A. I don't know that it was a specific person rather than a -- kind of a consensus decision, yeah. 10:53:00 10:53:03

Q. But you as the person that oversaw the development of this chapter ultimately had the authority to make that decision? 10:53:14 10:53:16 10:53:18

A. Yes, yes. Well, again, I -- in the period of time this was put together, I was answerable to -- well, part of the time, anyway, answerable to the assistant executive officer. And then for a period of time, that position was vacant. And then now I'm answerable to Mr. Gibson, yeah. 10:53:20 10:53:26 10:53:35 10:53:42 10:53:45 10:53:52

Q. Are there any other reasons that we have not discussed that monitored natural attenuation was not selected? 10:53:57 10:53:59 10:54:03

MR. CARRIGAN: Overbroad. 10:54:03

THE WITNESS: I mean, there could be some reasons that are kind of a subset of the statements that I've made. For instance, PCBs are an element of concern where there's a lot of documentation that PCBs can biomagnify through the food chain and present a risk to human health. And that's a side -- side -- or a -- you 10:54:11 10:54:14 10:54:18 10:54:25 10:54:31 10:54:35

know, a subset of the results of the health risk calculations, yeah. 10:54:41 10:54:45

Q. Okay. So that would fit within the Cleanup Team's belief that natural attenuation would not result in protecting those beneficial uses? 10:54:46 10:54:49 10:54:52

A. Right, yes. 10:54:56

Q. And source control, as discussed here on page 30-3, is -- is -- 10:54:57 10:55:00

A. Could I -- one other thought on what we were just discussing is the fact that this -- that this site is at an active shipyard site where vessels and -- passing over the area that could lead to disturbances of the sediments. Maybe there would be maintenance dredging activities conducted for various reasons. And so this -- this is not a quiescent, quiet area of the bay. So disturbances are one factor, and physical disturbances are one factor in determining whether monitored natural recovery is an appropriate remedy. 10:55:03 10:55:07 10:55:10 10:55:17 10:55:21 10:55:24 10:55:31 10:55:40 10:55:44 10:55:48

Q. Thank you for that. That's helpful. And we'll come back to that. 10:55:55 10:55:56

A. Okay. 10:55:58

Q. On page 30-3, there's a discussion of source control as one of the reasons why monitored natural attenuation was not selected; correct? 10:55:59 10:56:01 10:56:04

A. On page? 10:56:06

Q. 30-3. We just reviewed that section. 10:56:07

A. Yes. 10:56:10

Q. But isn't the issue of on-site or off-site source control issues relevant to any remedy that's selected at the site? 10:56:11 10:56:19 10:56:23

A. Yes -- yes, it is, due to potential for recontamination, yes. 10:56:24 10:56:26

Q. So you wouldn't begin dredging an area prior to source control if there's a risk that area could be recontaminated; right? 10:56:29 10:56:32 10:56:36

MR. CARRIGAN: Incomplete hypothetical. 10:56:38

THE WITNESS: Well, from -- from a very broad viewpoint, remedial -- source control before remediation is a -- kind of a -- is the ideal condition to obtain to -- to avoid the need to go back and re-cleanup a site after it's already been cleaned up. But there's different gradations as to when source control conditions are at a level where it's appropriate to proceed with cleanup. 10:56:39 10:56:41 10:56:50 10:56:56 10:57:03 10:57:06 10:57:11 10:57:15

BY MR. RICHARDSON: 10:57:17

Q. Can you point me to any federal, state, or local guidance document or policy that would recommend active remediation of a site before source control? 10:57:19 10:57:25 10:57:27

A. I think the documents I've read on that were EPA publications. And they -- they talked -- these documents 10:57:32 10:57:38

discussed it in -- in very broad terms. They didn't get into subtle discussions about situations where source control was less than 100 percent obtained. Source control -- I mean, there's different scenarios. Source control efforts can be underway and coordinated with a decision to remediate and -- and have that -- and have that -- the result from that be that the site was not recontaminated. So yeah. 10:57:43 10:57:53 10:58:00 10:58:07 10:58:10 10:58:14 10:58:19 10:58:23

Q. An inability to control the off-site sources, though, shouldn't be a reason to favor one remedy over another, should it? 10:58:32 10:58:36 10:58:39

MR. CARRIGAN: Vague. Incomplete hypothetical. 10:58:41

THE WITNESS: The -- oh. The inability to control off-site sources. In one -- in one way of thinking, it would be the same consideration. Are these off-site sources, whatever remedy is selected, going to re-deposit contaminants at a site where they accumulate to levels that would present the need for another remedial action. So from that perspective, the analysis would be -- would be the same. 10:58:43 10:58:45 10:58:55 10:59:01 10:59:04 10:59:09 10:59:12 10:59:19

I don't know if you would view -- I guess one could view the possibility of disturbances at a site as being a -- kind of an off-site type factor that would say, you know, that would factor into a monitored natural recovery in a way that -- and it might not be as relevant 10:59:26 10:59:30 10:59:35 10:59:43 10:59:46

for another remedial method. 10:59:55

BY MR. RICHARDSON: 10:59:59

Q. Okay. I'm just -- I don't quite understand 11:00:00

that. So -- 11:00:02

A. Yeah. 11:00:04

Q. If we have off-site sources that are continuing 11:00:04

to contaminate a site, it will continue to contaminate 11:00:06

the site whether we do natural recovery, dredging, 11:00:09

capping, or any other remedy; right? 11:00:12

A. Right. That's correct. Yeah. 11:00:14

Q. I'm having trouble understanding how that could 11:00:15

influence a decision on which remedy to select. 11:00:18

A. Oh, you're having trouble where there are 11:00:22

off-site sources? 11:00:25

Q. Why that would favor any type of dredging. For 11:00:32

example -- I'll give you an example. If you dredge the 11:00:34

site and there's recontamination, then you may simply 11:00:36

have to dredge it again. 11:00:40

A. Yes. 11:00:41

Q. So that would be an ineffective remedy and you'd 11:00:41

have remedy failure. 11:00:45

A. Yeah. 11:00:46

Q. So if you choose capping, as is the case with 11:00:47

Convair Lagoon, where sources weren't controlled and 11:00:50

there's additional pollution on top of the cap, there's 11:00:53

further remediation necessary. 11:00:56

A. Yes. 11:00:58

Q. In monitored natural attenuation those pollutants would continue to add to the area that we're trying to naturally attenuate; correct? 11:00:59 11:00:59 11:01:02

A. Yes. 11:01:05

Q. So to me that, factor doesn't support any of the remedies that could be implemented at a site; correct? 11:01:05 11:01:07

MR. CARRIGAN: Vague. 11:01:11

THE WITNESS: Other than, say, for example, from just a contaminant level viewpoint, where you dredge and remove contaminants from a site and then that mass of contaminants is out of the system, recontamination might occur at -- at a -- at some rate, where -- but the marine environment might be less stressed in that scenario because a certain mass of pollutants was removed. 11:01:14 11:01:19 11:01:25 11:01:30 11:01:39 11:01:48 11:01:54

And yes, source contaminants are still coming into the site, but there's a lower -- they're accumulating at lower levels, if you're kind of following what I'm trying to describe. 11:01:58 11:02:01 11:02:05 11:02:09

Q. I think so. 11:02:11

A. Okay. 11:02:12

Q. So if there's natural attenuation occurring at a rate that has the capacity to assimilate the additional pollution that comes on site, then it would not disfavor 11:02:13 11:02:15 11:02:19

natural attenuation; correct? 11:02:23

A. Yes, that's -- yes. 11:02:25

Q. Okay. DTR page 30-3 again, in that same 11:02:28

paragraph at the -- near the end states that, "Natural 11:02:34

recovery processes are active at the site, but the 11:02:37

natural recovery may not be fully effective in all areas 11:02:41

of the Shipyard Sediment Site." 11:02:44

A. Yeah. 11:02:46

Q. Do you see that? 11:02:46

A. Let's see. Hang on. 11:02:47

Q. It's in the same paragraph we've been 11:02:51

discussing. 11:02:53

A. Okay. Yeah. There, I guess that's referring to 11:02:53

site characteristics. There could be parts of the site 11:03:05

that are in quiet areas of the site, not as subject to 11:03:08

physical disturbances, and other areas where there's a 11:03:14

lot of physical disturbance. 11:03:18

Q. Okay. So natural recovery would be more likely 11:03:23

to occur in areas where there's less of the physical 11:03:26

disturbances? 11:03:28

A. Right. 11:03:29

Q. I'll hand you a courtesy copy of the portion of 11:03:36

the Tentative Cleanup & Abatement Order. 11:03:39

A. Okay. 11:03:44

Q. We're looking at Attachment 2 to the order. 11:03:44

A. Okay. 11:03:46

Q. The polygons targeted for remediation. 11:03:48

A. Yes. 11:03:51

Q. The statement that -- in the DTR that some areas of the site may not have -- strike that. 11:03:53 11:03:58

The natural recovery may not be occurring in certain areas of the site. 11:04:07 11:04:10

A. Yeah. 11:04:12

Q. Could you mark on the diagram where you believe natural recovery is not occurring? 11:04:16 11:04:19

A. I don't know that I could. I could -- I would be -- I could point to areas where there's a potential for it to not be occurring. The area over in Chollas Creek where, I think, there's testing of vessel engines in that area -- 11:04:22 11:04:31 11:04:33 11:04:41 11:04:51

Q. If I can pause, Mr. Barker, are there any areas where you know natural attenuation is not occurring? 11:04:54 11:04:58

A. No, no. I don't think we've -- we've not studied it in that level of detail. So no. 11:05:01 11:05:05

Q. Very fair. So if I could ask you, then, the areas that you believe may not be having natural attenuation occur. 11:05:08 11:05:11 11:05:14

A. Okay. 11:05:16

Q. Could you mark -- as you describe them, could you mark them on the diagram so I can follow along with 11:05:16 11:05:19

you? 11:05:21

A. Okay. I would -- I would want to include any area where there is ship traffic moving in and out of -- of dry dock facilities or that type of vessel traffic. 11:05:22 11:05:30 11:05:34

Q. Okay. So to your understanding, can you circle on there where that type of activity would be occurring? 11:05:45 11:05:48

A. I -- I assume over in NA09, NA15, NA17, and possibly over in NA06. 11:05:52 11:06:05

MR. CARRIGAN: Counsel, is your question limited to the NASSCO portion of the site? 11:06:09 11:06:10

MR. RICHARDSON: Just the NASSCO portion of the site, correct. 11:06:12 11:06:14

BY MR. RICHARDSON: 11:06:15

Q. If you could, we're going to come back to this. So if you mind just circling those areas where you think -- 11:06:15 11:06:16 11:06:20

A. Okay. 11:06:20

Q. -- there could be no natural attenuation occurring? 11:06:21 11:06:24

A. Okay. And then -- 11:06:24

Q. Can I give you a pen? Is that a pencil or a pen? 11:06:26 11:06:27

A. It's a pen. 11:06:28

Q. It's a pen. Okay. Nice pen. 11:06:29

A. And then over in the NA20, NA22 area. 11:06:35

Q. Okay. Will you circle that also? 11:06:44

A. Yeah. 11:06:47

Q. And what's the basis for your belief that those areas would not have natural attenuation occurring? 11:06:47 11:06:49

A. Over on the Chollas Creek side. It's just from -- I've -- just general knowledge that NASSCO's indicated there's testing activities that disturb the sediment. And I think on one of the triad samples, there was some measurement to impact the benthic communities, but the -- there was -- there was a correlation of that with the physical disturbance in the area, yeah. 11:06:52 11:06:56 11:07:05 11:07:08 11:07:13 11:07:19 11:07:22

Q. Okay. So there are physical disturbances in the area of NA20 and NA22, in your opinion, from shipyard activities? 11:07:25 11:07:28 11:07:33

A. Yes. 11:07:33

Q. And would there also be physical disturbances associated with turbulent flow from Chollas Creek? 11:07:35 11:07:37

A. Yes. Another potential disturbance area might be NA19, just from ship movements going into the graving dock there. I'm not knowledgeable on all the pathways that NASSCO used to move vessels around its yard. But any area where sediment is stirred up from -- from ship movements would not be an optimal area for natural recovery. 11:07:44 11:07:55 11:08:02 11:08:10 11:08:14 11:08:19 11:08:22

Q. That's helpful. Thank you. 11:08:24

The DTR states that monitored natural attenuation may not be fully effective in certain parts -- 11:08:27 11:08:29 11:08:32

A. Yeah. 11:08:33

Q. -- of the site. So the Cleanup Team is not discounting the possibility that natural attenuation alone could be an effective remedy at the site; correct? 11:08:33 11:08:36 11:08:39

MR. CARRIGAN: Document speaks for itself. 11:08:44

THE WITNESS: I think the Cleanup Team's taken the position that we don't think the NASSCO portion of the site that natural recovery alone is an appropriate remedial action for that site. 11:08:49 11:08:51 11:08:56 11:09:00

BY MR. RICHARDSON: 11:09:03

Q. But the Cleanup Team doesn't know if it's actually occurring. They're just erring on the side of conservatism; correct? 11:09:05 11:09:08 11:09:10

A. There's been information submitted from -- in the exponent report -- report that talks about sediment deposition processes covering the contaminants up and gradually over time reducing their bioavailability through that process. But other than that, as I said, no detailed studies beyond that. 11:09:13 11:09:17 11:09:23 11:09:28 11:09:35 11:09:40

Q. And that's discussed in part on page 20-3 at the start of that paragraph; correct? Where it talks about one- to two-centimeter per year of surface sediment 11:09:43 11:09:47 11:09:50

layer. 11:09:54

MR. CARRIGAN: 30-3? 11:09:55

MR. RICHARDSON: I'm sorry. 30-3, yes. 11:09:59

THE WITNESS: Yes, that's correct. 11:10:00

BY MR. RICHARDSON: 11:10:01

Q. So that sentence reads, "Sedimentation rates in the range of one to two centimeters per year suggests that the surface sediment layer will be actively improved by natural deposition." 11:10:05 11:10:08 11:10:11 11:10:15

A. Yes. 11:10:16

Q. And you agree with that conclusion? 11:10:17

A. Yes. 11:10:22

Q. Doesn't that indicate that following source control, any existing contamination would eventually be buried by natural processes? 11:10:23 11:10:26 11:10:34

MR. CARRIGAN: Vague. 11:10:36

THE WITNESS: I don't know that all contamination would be covered by natural processes. There's been a pathway suggested in the exponent report where that process could -- could be taking -- taking place. But the kind of detailed study to document that that should be the remedial solution for the problem, that information has not been studied in detail. The -- it was the Cleanup Team's opinion that, based on the available information in our consideration of the ship 11:10:42 11:10:43 11:10:48 11:10:51 11:11:01 11:11:06 11:11:14 11:11:19 11:11:23

movement traffic in an active shipyard scenario, that natural recovery by itself was not an appropriate remedy. 11:11:29 11:11:36

Q. Okay. So the concern is that the movement of ships throughout the shipyard may stir up sediment and -- and risk the ongoing natural degradation? 11:11:42 11:11:45 11:11:48

A. Yes. And the -- I guess the period of time the natural recovery would take to remedy adverse effects would be -- was a consideration. The possibility of burrowing marine organisms bringing contaminants to the surface would -- would also be a consideration. The persistence of the -- some of the contaminants, particularly PCBs, was consistent -- was a consideration. 11:11:52 11:11:55 11:12:03 11:12:09 11:12:14 11:12:22 11:12:28

Q. And we'll come back to those here in a moment. 11:12:35

A. Okay. 11:12:37

Q. Two sentences later after the sentence I just described to you, it says, "Elevated chemical concentrations are generally restricted to a limited spatial area within the pier areas." 11:12:38 11:12:40 11:12:42 11:12:44

Do you see that statement? 11:12:47

A. Okay. Excuse me. We are in the same paragraph? 11:12:48

Q. In the same paragraph, two sentences after the previous one we discussed. 11:12:51 11:12:53

A. Okay. Okay. "Elevated chemical concentrations are generally restricted to a limited spatial area." Okay. 11:12:55 11:13:00 11:13:05

Q. Within the piers; correct? 11:13:05

A. Right. 11:13:07

Q. And do you agree with that statement? 11:13:07

A. Yes. I believe the contamination is -- is mostly near-shore contamination. 11:13:09 11:13:15

Q. Okay. I want to -- I'm sorry. Do you have more? 11:13:18 11:13:20

A. No. 11:13:20

Q. I want to look at the next sentence, as well. "Bioavailability of site chemicals to benthic organisms appears to be limited based on lack of observed toxicity or benthic community degradation relative to reference conditions in most areas." 11:13:22 11:13:24 11:13:30 11:13:33 11:13:36

Do you see that? 11:13:39

A. Yes. 11:13:40

Q. Do you agree with that statement? 11:13:42

A. Yes. I think on the -- I don't recall the number of stations where likely -- where triad measurements were taken that yielded where the analysis indicated likely adverse effects on benthic organisms. But it was not -- it was a few of the sites, not -- the vast majority did not have that result. 11:13:43 11:13:47 11:13:54 11:14:02 11:14:08 11:14:14

Q. And do you recall, were there any benthic effects different than reference at the entire NASSCO site? 11:14:16 11:14:18 11:14:21

MR. CARRIGAN: Vague. Overbroad. 11:14:24

BY MR. RICHARDSON: 11:14:25

Q. For any of the four benthic community analyses 11:14:25

performed at the NASSCO site for all the stations at the 11:14:30

NASSCO site. 11:14:33

A. Relative to reference. 11:14:34

Q. Was there a single one different relative to 11:14:35

reference? 11:14:38

A. I -- I don't recall that. 11:14:38

Q. Can you find it in the DTR for me? 11:14:39

A. I guess this would -- this would be back -- I 11:14:45

think the results of those calculations are back in the 11:14:50

sediment triad results chapter. 11:14:56

Q. Correct. 11:15:00

A. Yeah. I don't recall where the table was or 11:15:01

that type of thing. 11:15:04

Q. Okay. I'll refer you to Table 18-12. 11:15:08

A. Okay. 11:15:11

Q. On page 18-23. 11:15:12

A. Okay. 11:15:21

Q. Do you see the table? 11:15:22

A. Yes. 11:15:23

Q. And then the Table 18-13, there's the benthic 11:15:24

community line of evidence results. Do you see that? 11:15:28

A. Table 18-13, yes. 11:15:30

Q. So for all of the stations at NASSCO other than Stations NA20 and 22, there was no difference than reference for all benthic community measures; correct? 11:15:37 11:15:42 11:15:46

A. Oh, to the reference. And your -- your statement was again that the -- with regard to 18-13? 11:15:58 11:16:12

Q. All stations at NASSCO but two showed absolutely no difference than reference in all benthic community tests; correct? 11:16:19 11:16:23 11:16:27

MR. CARRIGAN: Document speaks for itself. 11:16:29

THE WITNESS: Let me just -- I'm just trying to recall my memory on some of this. 11:16:49 11:16:51

BY MR. RICHARDSON: 11:16:54

Q. Maybe if you look at Table 18-12, you can see the differences from reference are highlighted. 11:16:56 11:16:59

A. Yes, right. 11:17:02

MR. CARRIGAN: Is this preliminary for some question for Mr. Barker in his capacity -- I mean, we've covered this ground with the PMK that the Cleanup Team designated for this topic already. 11:17:04 11:17:07 11:17:09 11:17:12

MR. RICHARDSON: Yes. This is relevant to our discussion of cleanup methods and natural attenuation. 11:17:14 11:17:15

THE WITNESS: Okay. 11:17:18

BY MR. RICHARDSON: 11:17:19

Q. So do you see on Table 18-12? 11:17:19

A. Yes. Right. 11:17:21

Q. Highlighted squares mean that they're different than reference; correct? 11:17:22 11:17:24

A. Yes. 11:17:25

Q. So all stations, NA1 through NA19 as NASSCO there was no difference than reference for all benthic measures? 11:17:25 11:17:30 11:17:34

A. Right. Yes. 11:17:35

Q. And then in Table 20-1. 11:17:35

A. 20-1? 11:17:38

Q. Yeah. 11:17:40

A. Okay. Hang on. Okay. 11:17:40

Q. We looked at this table yesterday, Mr. Barker. 11:17:50

A. Okay. 11:17:53

Q. And we had looked at the benthic macroinvertebrate total abundance and benthic macroinvertebrate total richness -- 11:17:54 11:17:56 11:17:59

A. Yes. 11:18:00

Q. -- and all of the toxicity tests. 11:18:00

A. Yes. 11:18:02

Q. And we had concluded yesterday that none of those CoCs had any statistical relationship to any of those metrics; correct? 11:18:03 11:18:06 11:18:12

A. Yes. 11:18:14

Q. So my question -- my question to you, Mr. Barker, is that in light of all these characteristics 11:18:14 11:18:18

that we just discussed, the active deposition of sediments at the site of one to two centimeters per year, the limited elevation of concentrations in most of the shipyard, the limited bioavailability, no impact shown to correlate to benthic risks at the site, wouldn't all of those factors support natural recovery? 11:18:21 11:18:25 11:18:29 11:18:31 11:18:37 11:18:40

MR. CARRIGAN: Incomplete hypothetical. Misstates facts in evidence. 11:18:43 11:18:45

THE WITNESS: I mean, those would all be considerations in a decision for natural recovery in the scenario you've described are favorable considerations. There are other factors dealing with the human health risk and the conclusions of the risk analysis for effects to aquatic dependent wildlife that... 11:18:51 11:18:52 11:18:58 11:19:04 11:19:12 11:19:22

BY MR. RICHARDSON: 11:19:28

Q. So this gets back to your concern that monitored natural attenuation won't result in the protection of the beneficial uses. 11:19:28 11:19:31 11:19:34

A. Yes. 11:19:35

Q. And then you raised another concern about the movement of ships at the shipyard and the potential disturbance of the sediment; correct? 11:19:36 11:19:37 11:19:40

A. Yes. 11:19:42

Q. Were there any -- but beyond those factors, is there anything else that would affect your conclusion 11:19:42 11:19:45

whether to adopt monitored natural attenuation? 11:19:47

MR. CARRIGAN: Asked and answered. 11:19:51

THE WITNESS: At the -- the stations where there were likely results predicted for impacts to -- for biological effects, part of that decision was on other legs of the triad, other than just whether or not the benthic community was similar to reference. And the Cleanup Team wasn't of the mind that -- that effects to benthic organisms would be fully addressed by natural recovery being the selected method for the whole site. 11:19:57 11:20:00 11:20:09 11:20:14 11:20:18 11:20:32 11:20:42 11:20:46

MR. RICHARDSON: Okay. 11:20:50

THE WITNESS: I'm not sure if I'm answering your question or not. 11:20:53 11:20:55

MR. RICHARDSON: I think, David -- or Mr. Barker, we should come back to that. 11:20:56 11:20:57

A. Okay. 11:20:59

Q. I -- I understand we're out of tape. So if we could take a short break. 11:20:59 11:21:01

A. Okay. 11:21:02

Q. Okay. Thank you. 11:21:03

A. All right. 11:21:03

MR. RICHARDSON: Off the record. 11:21:03

THE VIDEOGRAPHER: This ends Videotape No. 1 in the deposition of David Barker. The time off the record is 11:21 a.m. 11:21:05 11:21:08 11:21:10

(A recess was taken.) 11:21:20

THE VIDEOGRAPHER: This begins Videotape No. 2 11:42:18
in the deposition of David Barker. The time on the 11:42:20
record is 11:42 a.m. 11:42:23

BY MR. RICHARDSON: 11:42:26

Q. Mr. Barker, before the break I was asking you 11:42:27
about certain characteristics and whether they are 11:42:29
favorable to the potential effectiveness of natural 11:42:34
recovery. So I want -- I want to review those quickly 11:42:36
and make sure that I understand what your testimony is. 11:42:38

Those characteristics at the shipyard, one was 11:42:43
active deposition of sediments that we discussed, one to 11:42:47
two centimeters per year. 11:42:49

A. Right. 11:42:52

Q. A second one was the limited elevated 11:42:53
concentrations of chemicals around certain areas of the 11:42:57
shipyard. Third was the limited bioavailability of the 11:43:00
chemical to benthic organisms. 11:43:03

Do you agree that those characteristics are 11:43:07
favorable to the potential effectiveness of natural 11:43:10
recovery at the site? 11:43:16

A. Yes, I do. 11:43:21

Q. You mentioned before the break that you had a 11:43:24
couple concerns, though, about natural attenuation. And 11:43:27
one was the ship traffic in the shipyard and the 11:43:30

potential for disturbances related to that; correct? 11:43:36

A. Yes. 11:43:39

Q. And the concern there is, I guess, if ships move around, it may stir up the sediment and could cause further impacts. 11:43:39 11:43:42 11:43:45

A. Right. 11:43:46

Q. Are you aware of any studies that have been conducted to assess the extent to which physical disturbances are occurring at the site? 11:43:51 11:43:53 11:43:55

A. No, I am not. 11:43:59

Q. You previously marked on -- and we should label this as an exhibit. What are we at, 1224? 11:44:03 11:44:10

THE COURT REPORTER: Yes. 11:44:15

MR. RICHARDSON: So could we label this as 1224. 11:44:15

(Exhibit 1224 was marked.) 11:44:15

BY MR. RICHARDSON: 11:44:22

Q. I'm labeling, Mr. Barker, the tentative cleanup & abatement order diagram that you marked on previously as Exhibit 1224 to make it easier to refer to. 11:44:22 11:44:25 11:44:26 11:44:30

A. Okay. 11:44:31

Q. You previously marked on that diagram areas where you expected there to be physical disturbances; correct? 11:44:32 11:44:34 11:44:36

A. Yes. Oh, excuse me, there was -- I wanted to 11:44:37

mark NA19, as well. 11:44:45

Q. Okay. And on there did you also mark NA20 and 11:44:50
NA22 by Chollas Creek? 11:44:55

A. Yes, yes. Yes, I did. 11:45:02

Q. Okay. 11:45:04

A. Okay. This is mostly just due to some 11:45:07
uncertainty, again, with where the ship traffic actually 11:45:18
is. But I see a dotted line extending out to NA28 that 11:45:22
might be for some type of dry dock facility there that -- 11:45:32
so ships moving in and out of that facility might impact 11:45:40
other polygons there that we haven't discussed. 11:45:44

Q. Okay. So the floating dry dock goes up and 11:45:50
down, which would potentially disturb the sediments in 11:45:53
the area? 11:45:56

A. Right. And a ship moving in and out of a 11:45:57
floating dry dock. Another activity might -- maintenance 11:46:00
dredging that might be conducted at various areas of the 11:46:07
site. 11:46:10

Q. Are you aware of any maintenance dredging that's 11:46:11
occurred at NASSCO at all? 11:46:14

A. I believe in past years, not frequently, but 11:46:17
NASSCO has done maintenance dredging there. 11:46:20

Q. Do you recall if that was related to the 11:46:28
floating dry dock expansion? 11:46:30

A. I -- I don't recall. It may have been. 11:46:32

Q. Are you familiar with the term "mature benthic community"? 11:46:43 11:46:44

A. I have heard the term. 11:46:51

Q. Okay. Have you heard the term "Stage 3 benthic community"? 11:46:52 11:46:54

A. Yes, in terms of the -- I hope I'm pronouncing this correctly -- the SPI profile or -- I can't remember the exact acronym for that. I could look it up. 11:46:59 11:47:04 11:47:13

Q. Okay. Would that be the sediment profile imaging, SPI? 11:47:17 11:47:19

A. Yeah, SPI. Yes, exactly. 11:47:21

Q. Great. So mature Stage 3 benthic community is the last successional stage of the development of the benthic community; correct? 11:47:22 11:47:25 11:47:28

A. Right. 11:47:31

Q. So generally where you see a mature Stage 3 benthic community, it means there's a healthy benthic community; correct? 11:47:32 11:47:33 11:47:37

A. It could be that, yes. 11:47:39

Q. Is there a Stage 4 benthic community? 11:47:40

A. I'm not aware of that. I -- I could turn to the part of the report that discusses that. 11:47:44 11:47:46

Q. Okay. Let's -- let's do that. Let's look at page 32-38 of the DTR. 11:47:48 11:47:52

A. Thirty -- oh, it's in the next. 11:48:03

Q. It's a diagram of the shipyard site. 11:48:07
A. Okay. 11:48:11
Q. Do you see that? 11:48:13
A. Yes, uh-huh. 11:48:14
Q. It may be helpful to put the Exhibit 1224 next to it so you can compare the two. 11:48:15 11:48:18
A. Okay. 11:48:22
Q. Do you see in Figure 32-3 on page 32-38 that a solid triangle represents areas where there's a Stage 1 and Stage 3 benthic community? 11:48:23 11:48:31 11:48:35
A. Yes. You're asking me to look at the legend? 11:48:38
Q. Yes. 11:48:45
A. Yes, right. 11:48:46
Q. I'm asking you to familiarize yourself with the section of the DTR, including this figure. 11:48:46 11:48:49
A. Okay. All right. 11:48:50
Q. Am I correct in that you supervised the drafting of this section of the DTR? 11:48:53 11:48:56
A. Yes. 11:48:59
Q. Do you see that throughout most of the NASSCO shipyard there are Stage 3 mature benthic communities? 11:49:05 11:49:07
A. Yes. 11:49:14
MR. CARRIGAN: Document speaks for itself. 11:49:14
BY MR. RICHARDSON: 11:49:16
Q. That was yes? 11:49:16

A. Yes. I do. 11:49:20

Q. There are some areas, though, where there are only Stage 1 benthic communities, particularly along Chollas Creek and along certain portions of the shipyard. Do you see those locations? 11:49:22 11:49:24 11:49:31 11:49:37

A. Where there are only Stage 1, yes. Uh-huh. 11:49:39

Q. Okay. And you previously testified, correct, that you -- that you would anticipate there would be physical disturbances along NA20 and NA22; correct? 11:49:42 11:49:46 11:49:50

A. NA-- yes, that's correct. 11:49:54

Q. Based on this information concerning the successional stages of the benthic communities, wouldn't you agree that ship disturbances result in localized issues in portions of the site, but there is no evidence of significant physical disturbances throughout the site? 11:50:05 11:50:07 11:50:13 11:50:17 11:50:20

MR. CARRIGAN: Incomplete hypothetical. Document speaks for itself. 11:50:23 11:50:24

THE WITNESS: If I may, I'd like to read -- re-read the text in the DTR that summarized interpretation of this table. 11:50:35 11:50:37 11:50:43

Q. Okay. 11:50:44

A. Just -- I think it's just half a paragraph or so. 11:50:45 11:50:47

Q. Absolutely. Take your time. 11:50:47

A. Okay. And the -- the question was? 11:51:56

MR. RICHARDSON: Can you read that back? 11:52:23

(The record was read.) 11:52:25

MR. CARRIGAN: Renew objections. 11:52:25

THE WITNESS: I believe the analysis there 11:52:36
indicated in areas, yeah, where there was known physical 11:52:38
disturbance only Stage 1 communities were observed such 11:52:42
as the engine test area we -- we discussed earlier over 11:52:46
on the Chollas Creek side at Piers 4 and 5. 11:52:51

BY MR. RICHARDSON: 11:52:57

Q. And those are described as limited areas; 11:52:57
correct? 11:53:00

A. Yes. 11:53:00

Q. And that the SPI analysis showed that there were 11:53:00
healthy mature Stage 3 communities present throughout 11:53:03
both shipyards; correct? 11:53:06

A. That's correct, yes. 11:53:08

Q. I have a courtesy copy for you of an excerpt 11:53:21
from the Exponent report 2003. 11:53:25

A. Exponent report for 2003. Okay. 11:53:29

Q. Yeah. And that is Master Exhibit 4. I'm having 11:53:31
you look at page 15-3. 11:53:47

A. Okay. 11:53:51

Q. The first full paragraph on that page says, "If 11:53:55
off-site sources were to be controlled, natural recovery 11:53:58
of benthic macroinvertebrate communities would be 11:54:01

expected to occur within a three to five-year period." 11:54:05
Do you see that? 11:54:07
A. Uh-huh. 11:54:09
Q. Do you have any reason to disagree with that 11:54:11
finding? 11:54:13
A. The -- I would say that finding needs more 11:54:22
study. I would not agree or disagree with it. 11:54:26
Q. Okay. So we'd need further analysis to 11:54:36
determine whether Exponent was correct in their 11:54:38
assessment? 11:54:40
A. Yes, that's right. 11:54:41
Q. And some of that assessment would involve the 11:54:46
factors we discussed previously, correct, such as 11:54:48
sedimentation rate and physical disturbances and so on? 11:54:51
A. Yes, exactly. 11:54:55
Q. If we assume that sedimentation rate, as 11:54:56
discussed in the DTR, is roughly two centimeters per 11:54:58
year, if my math is correct, after five years that would 11:55:03
be roughly ten centimeters; correct? 11:55:06
A. Uh-huh. 11:55:09
Q. Almost all marine organisms at the site live 11:55:12
within the upper ten centimeters; correct? 11:55:16
A. The vast majority do. There might be some 11:55:20
burrowing organisms that go deeper than that. 11:55:23
Q. So wouldn't this deposited layer, if there 11:55:30

were -- strike that. 11:55:35

If there were source control, wouldn't the 11:55:37
deposited layer that occurs over five years allow for the 11:55:41
development of a healthy benthic community? 11:55:45

MR. CARRIGAN: Incomplete hypothetical. Lacks 11:55:48
foundation. 11:55:50

THE WITNESS: Yeah. Let me -- let me think on 11:55:59
that a second, if you would. Yeah, it -- yeah, it could. 11:56:01
The -- I don't know that ten centimeters is a -- an 11:56:34
assured protective barrier to the beneficial uses of the 11:56:51
bay. 11:56:57

For example, in Convair Lagoon, the cap is -- 11:56:59
the aqueous cap is 3 feet thick, which is more than ten 11:57:03
centimeters. So it's a -- it's a contained, engineered 11:57:08
structure to assure, you know, maintenance of a certain 11:57:11
thickness cover and -- and permanent segregation of the 11:57:17
waste from the beneficial uses of the bay. 11:57:22

That same assurance from -- in natural recovery 11:57:24
situations doesn't -- doesn't exist because it's -- it's 11:57:28
not within an engineered containment structure. You're 11:57:37
relying on natural processes and the environment. And it 11:57:41
gets down to the -- I think the assurance of the decision 11:57:49
makers as to what degree of risk are the -- is acceptable 11:57:53
for possible future effects from the contaminants that 11:58:00
are left in place there. 11:58:04

BY MR. RICHARDSON: 11:58:08

Q. Okay. Thank you. That's helpful. 11:58:08

The DTR indicates that there are mature benthic communities throughout the shipyard. 11:58:12 11:58:15

A. Yeah. 11:58:17

Q. Assuming source control is achieved, with the addition of sedimentation for five years, would you expect there to be continued mature benthic communities? 11:58:18 11:58:21 11:58:26

MR. CARRIGAN: Incomplete hypothetical. 11:58:31

THE WITNESS: Yeah, there -- there could be continued healthy communities there, depending on, you know, under your scenario there's source control. And I guess I'm considering there's not harmful levels of contaminants deposited at the site, et cetera. 11:58:37 11:58:38 11:58:42 11:58:47 11:58:50

BY MR. RICHARDSON: 11:58:54

Q. How long is the implementation of the proposed remedy under the cleanup and abatement order expected to take? 11:58:57 11:59:01 11:59:05

A. I think it was -- I'd have to refer to the -- there is a schedule in the order. 11:59:06 11:59:09

Q. Okay. I'll give you a courtesy copy of that schedule. It's Section 35. 11:59:12 11:59:14

A. Okay. Okay. It's -- right now it's scheduled to take five years to complete it. 11:59:16 11:59:29

Q. And did you oversee the development of 11:59:34

Section 35 of the DTR? 11:59:37

A. Yes. 11:59:39

Q. So if we assume source control and we assume that there is some sedimentation occurring at the site, there's no reason to expect that a dredging remedy would be implemented more quickly than natural attenuation; right? 11:59:49 11:59:52 11:59:59 12:00:02 12:00:06

A. There -- part of the reason for extending the schedule was based on endangerment of the lease turned from the dredging activity. There's a possibility that the resource agencies would just do the site-specific considerations, allow dredging in the window of September 15th through March 31st, so that more dredging could occur where that five-year schedule could be compressed less. So there's -- I just wanted to bring that out. 12:00:24 12:00:30 12:00:38 12:00:43 12:00:50 12:00:53 12:00:57 12:01:04 12:01:09

The -- and then the other thing is, it's really -- I don't -- an analysis has not been done to show exactly how long natural recovery would take to attain the same sediment quality conditions that's envisioned under the cleanup abatement order as dredging has been -- as the dredging would obtain. So I don't think I can answer your question precisely as to which would take longer, that type of thing. 12:01:12 12:01:20 12:01:30 12:01:39 12:01:45 12:01:50 12:01:55 12:01:59

Q. Okay. But I'm asking with the assumptions that 12:02:02

are in the DTR of sedimentation rate, and from the SPI data that we have that there are already mature benthic communities throughout the shipyard. 12:02:04 12:02:09 12:02:12

A. Yeah. 12:02:15

Q. I'm asking, is it true that it's possible that natural attenuation could occur over the course of the next five years? 12:02:15 12:02:18 12:02:21

MR. CARRIGAN: Incomplete hypothetical. 12:02:23

THE WITNESS: Well, I guess -- well, the line of risk we're talking about is the line dealing with benthic organisms. 12:02:29 12:02:32 12:02:37

MR. RICHARDSON: Correct. 12:02:41

THE WITNESS: And there are -- there are other lines of risk with human health, aquatic dependent wildlife that to meet all those concerns might take a longer period of time than five years, but maybe five years might be a process that could deal with the effects to benthic organisms. 12:02:41 12:02:42 12:02:47 12:02:50 12:02:54 12:03:01

BY MR. RICHARDSON: 12:03:05

Q. And if there's source control and there's ongoing sedimentation at rates approximating those in the DTR, wouldn't it protect the other beneficial uses, as well? 12:03:05 12:03:07 12:03:13 12:03:17

MR. CARRIGAN: Incomplete hypothetical. Vague. 12:03:18

THE WITNESS: Yeah. Any -- any natural process 12:03:26

that is making the -- reducing the exposure of the contaminants and making them less bioavailable would improve the protection for all of the beneficial uses over time. 12:03:28 12:03:34 12:03:39 12:03:43

BY MR. RICHARDSON: 12:03:43

Q. The question is how long of a time it would take? 12:03:44 12:03:46

A. Yes. And -- and again, the permanence of the remedy. 12:03:46 12:03:52

Q. Okay. 12:03:53

A. Yeah. 12:03:53

Q. You mentioned the schedule may be compressed. Have we assessed -- has the Cleanup Team assessed how much the schedule can be compressed from the five-year period? 12:03:53 12:03:56 12:03:59 12:04:02

A. I've had some limited discussions with the Army Corps of Engineers and the U.S. Fish and Wildlife on whether they would be willing to consider dredging within the window. And they said that they would. 12:04:02 12:04:06 12:04:12 12:04:15

They had a lot of -- of conditions on that, but that they recommended when the parties get ready to actively seek 401 Certification and the dredging requirements, that early consultation processes be initiated to get in their early review on that. And it could lead to permission from those agencies to conduct 12:04:21 12:04:28 12:04:34 12:04:38 12:04:43 12:04:50

dredging in those -- for a part or maybe even all of those seasons. 12:04:55 12:04:59

Q. So there are certain seasons where historically dredging has not occurred -- 12:05:01 12:05:04

A. Yes. 12:05:06

Q. -- because of protection of the least tern? 12:05:06

A. Yes, exactly. 12:05:08

Q. And so now for the site, the resource agencies may conclude that there would not be an impact on the least tern so that -- 12:05:09 12:05:12 12:05:15

A. Yeah. 12:05:16

Q. -- so the dredging can occur? 12:05:16

A. Yeah. They indicated there was some potential for that. 12:05:17 12:05:19

Q. Is that because least terns aren't found at the shipyard? 12:05:21 12:05:25

MR. CARRIGAN: Calls for speculation. 12:05:26

THE WITNESS: I think it's on a seasonal basis that the they make this decision; that they were careful to say that this dredging window, September 15th through March 31st, is not a federal regulation. It's just a consideration that they have out, and they discuss some scenarios that would -- where they could loosen their interpretation of that. 12:05:26 12:05:28 12:05:35 12:05:40 12:05:43 12:05:47 12:05:51

One thing they brought up was that if the 12:05:55

dredging activity was located a certain distance away from known least tern nesting areas would be a consideration for them. 12:05:58 12:06:01 12:06:06

Q. Are there any known least tern nesting areas at the shipyard? 12:06:09 12:06:12

A. I -- in my conversation with them, I was kind of surprised to learn that they -- they were indicating they didn't think there were. But it was only a very preliminary discussion. And I don't have any detailed knowledge on the locations of where they are. 12:06:13 12:06:19 12:06:21 12:06:25 12:06:28

Q. So they did not think there were? 12:06:31

A. Yeah. They were indicating some potential for possibly allowing dredging within that window, yeah. 12:06:33 12:06:36

Q. You testified earlier that -- that dredging would destroy the existing benthic community at the site; correct? 12:06:45 12:06:49 12:06:52

A. Yes. 12:06:52

Q. And after looking at the diagram in Section 32, 30 -- Figure 32-3, there are mature benthic communities throughout the shipyard; correct? 12:06:54 12:07:02 12:07:07

A. Yes. 12:07:09

Q. And based on the benthic community table that's -- analysis tables that we looked -- analysis tables that we looked at previously, there are healthy benthic communities existing at NASSCO that are 12:07:11 12:07:14 12:07:16 12:07:20

indistinguishable from reference; correct? 12:07:24

A. Correct, yes. 12:07:26

Q. And natural recovery would not involve the destruction of those existing benthic communities; correct? 12:07:27 12:07:32 12:07:34

A. To my knowledge, no. 12:07:35

Q. Assuming all else equal, isn't that one more factor to support natural recovery over dredging? 12:07:41 12:07:44

MR. CARRIGAN: Vague. 12:07:48

THE WITNESS: The factor that existing habitats are not disrupted as a result, yes, it is -- it is a factor. I might augment my answer a little bit, is that when benthic habitat is destroyed as a result of dredging, it's not a permanent destruction. Benthic communities re-establish themselves over time. 12:07:52 12:07:54 12:07:59 12:08:16 12:08:19 12:08:23

BY MR. RICHARDSON: 12:08:26

Q. Got it. And when benthic communities re-establish over time, is there some risk that invasive species will become the dominant species? 12:08:27 12:08:29 12:08:32

A. I -- I don't have personal knowledge on that. But it -- I suppose that could happen. 12:08:38 12:08:43

Q. Okay. Mr. Barker, we previously entered into an exhibit -- as an exhibit the Bay City Marine cleanup and abatement order. It's exhibit 1214, I believe. 12:08:59 12:09:03 12:09:07

A. Okay. 12:09:12

Q. I'm happy to give you another courtesy copy if you'd like. You've got it there. 12:09:19 12:09:22

A. Okay. Got it. 12:09:24

Q. And that's the cleanup and abatement order for the Bay City Marine site in San Diego Bay; correct? 12:09:35 12:09:37

A. Correct. 12:09:40

Q. And you were involved in the Bay City Marine site? 12:09:41 12:09:43

A. Yes. 12:09:43

Q. And you're familiar with the details of the cleanup that occurred there? 12:09:44 12:09:45

A. I'm familiar with the -- up to the point where the cleanup order was adopted by the board. And then the oversight of the actual cleanup efforts was shifted to another unit of the board. And I have less knowledge on all the activities that took place at that time. 12:09:49 12:09:53 12:10:00 12:10:02 12:10:06

Q. Okay. Well, I'd like to introduce as Exhibit 1224, Addendum No. 3 to that order. 12:10:14 12:10:17

THE COURT REPORTER: It's 1225. 12:10:34

MR. RICHARDSON: 1225. Thank you. 12:10:37

(Exhibit 1225 was marked.) 12:10:38

BY MR. RICHARDSON: 12:10:47

Q. Are you familiar with this addendum? 12:10:48

A. Let me review it just for a second. 12:10:50

Q. Absolutely. 12:10:52

A. Yes, I am familiar with it. 12:11:10

Q. If you could turn to page 5 and you look at paragraph 17 -- 12:11:18 12:11:21

A. Okay. 12:11:22

Q. -- for me, and I'll have a few questions for you on that. 12:11:22 12:11:24

A. Page 5, number 17. Okay. 12:11:26

Q. So TBT levels at this site decreased markedly over some relatively short period of time; correct? 12:11:45 12:11:49

A. That's correct. 12:11:53

Q. And the following page, page 6, paragraph B, the first sentence indicates that TBT undergoes rapid natural degradation in the environment. Do you see that? 12:11:54 12:12:00 12:12:05

A. Yes. 12:12:08

Q. So the Bay City Marine site, TBT, tributyltin, was not treated as a CoC for purposes of the cleanup order; correct? 12:12:15 12:12:25 12:12:30

A. Yes. 12:12:31

Q. And is that because natural degradation would occur for TBT? 12:12:31 12:12:34

A. Yes. 12:12:35

MR. CARRIGAN: Document speaks for itself. 12:12:35

THE WITNESS: Yes. At -- at that time, that was the board's view, yes. 12:12:38 12:12:40

BY MR. RICHARDSON: 12:12:42

Q. Does the board believe that TBT no longer undergoes natural degradation? 12:12:46 12:12:49

MR. CARRIGAN: Calls for speculation. The board that sits -- 12:12:53 12:12:58

MR. RICHARDSON: Staff. 12:12:59

MR. CARRIGAN: -- and adjudicates? 12:13:00

MR. RICHARDSON: Apologies. Yeah. Thank you for clarification. 12:13:00 12:13:00

BY MR. RICHARDSON: 12:13:01

Q. Does the Cleanup Team believe that TBT undergoes rapid natural degradation? 12:13:01 12:13:05

A. I don't believe the DTR discusses that with respect to TBT. I don't -- I don't think that got a lot of discussion in the -- in the process. 12:13:13 12:13:18 12:13:27

Q. At the Bay City Marine site, was the site ever remediated for TBT? 12:13:29 12:13:32

A. I don't believe so. I believe the -- the focus of the remediation was on the remaining constituents called out by the cleanup order. 12:13:35 12:13:37 12:13:43

Q. And the order, to your knowledge, has not been reopened to address TBT concerns at the site? 12:13:45 12:13:47

A. No. 12:13:50

Q. So this is an example of one of those instances that you discussed previously where the Regional Board 12:13:55 12:13:57

concluded that natural attenuation was an appropriate remedy? 12:14:02 12:14:05

A. Yes, that's correct. For part, not all the constituents of concern. But for one of the -- I think there were three constituents. 12:14:05 12:14:11 12:14:14

Q. And monitored natural attenuation or natural recovery is used throughout the state from time to time to close contaminated sites; correct? 12:14:28 12:14:30 12:14:33

A. Yes. 12:14:38

Q. I'll introduce this as Exhibit 1226. 12:14:41

(Exhibit 1226 was marked.) 12:14:44

BY MR. RICHARDSON: 12:15:09

Q. Mr. Barker, I'm handing you a case closure summary from the State Water Resources Control Board for a site on Bodega Highway. Do you see that? 12:15:10 12:15:13 12:15:18

A. Yes. 12:15:23

Q. Are you familiar with the site? 12:15:25

A. No. 12:15:31

Q. Okay. Would you turn to page 5. 12:15:31

A. Okay. 12:15:37

Q. Turn your attention to the first full paragraph of the page. After you've had a chance to review that, I'll have a few questions for you. 12:15:42 12:15:44 12:15:47

A. On page 5; correct? 12:15:49

Q. Yeah, the first full paragraph on page 5. 12:15:50

A. Okay. Okay. 12:15:53

Q. And then do you see the diagram or chart that's labeled "Groundwater Concentrations in Trench"? 12:16:19 12:16:23

A. Yes, I do. 12:16:26

Q. What is "biodegradation"? 12:16:37

A. I would consider that the -- the -- the uptake of constituents and -- where natural processes degrade the constituents, maybe change the chemical form of the constituents over time. 12:16:41 12:16:50 12:17:05 12:17:10

Q. To a less toxic or nontoxic degree? 12:17:14

A. Yes. 12:17:17

Q. And this -- these two charts show what appear to be pollutant concentration of benzine over time. Would you agree? 12:17:19 12:17:22 12:17:28

MR. CARRIGAN: I'd like to record to reflect that this document is a draft report. Go ahead. 12:17:29 12:17:30

THE WITNESS: Yeah. This document is indicating that benzine levels in the groundwater are decreasing over time. Yeah. At -- yeah. Based on that one chart there. 12:17:42 12:17:46 12:17:50 12:17:59

BY MR. RICHARDSON: 12:17:59

Q. Understood. And so where natural attenuation processes are occurring such as biodegradation, you would expect to see a decline in the concentrations over time; correct? 12:17:59 12:18:02 12:18:06 12:18:08

MR. CARRIGAN: Incomplete hypothetical. 12:18:09

THE WITNESS: Yes, I would. Yeah. 12:18:13

BY MR. RICHARDSON: 12:18:15

Q. But isn't it also common that there would be some data variability as there is in this chart that shows some concentrations going up and other concentrations going down? 12:18:16 12:18:19 12:18:22 12:18:24

MR. CARRIGAN: Incomplete hypothetical. 12:18:25

THE WITNESS: Yes. In groundwater quality trends, it's quite common to see fluctuations in data sets over time. But trends can nevertheless emerge from that. 12:18:29 12:18:30 12:18:34 12:18:40

BY MR. RICHARDSON: 12:18:40

Q. So as an expert in -- in remediation of sites, you would be looking for a similar trend to determine whether natural attenuation were occurring at a site; correct? 12:18:41 12:18:43 12:18:46 12:18:49

MR. CARRIGAN: Incomplete hypothetical. 12:18:51

THE WITNESS: That certainly would be one level. One consideration is seeing the concentration of the substance decreasing, yes. 12:18:54 12:18:58 12:19:02

BY MR. RICHARDSON: 12:19:05

Q. Albeit in the presence of some variability? 12:19:06

A. Yes. 12:19:08

Q. We previously discussed today what a surface 12:19:21

area weighted average concentration or SWAC is; correct? 12:19:25

A. Yes. 12:19:30

Q. And we discussed how SWACs were used in the DTR to determine the appropriate cleanup approach; correct? 12:19:30 12:19:34

A. Yes. 12:19:36

Q. And my understanding is that the goal is to ensure the organisms that are exposed to areas throughout the site aren't exposed at levels that could create risks to them or to anything else in the food chain. 12:19:37 12:19:40 12:19:44 12:19:48

A. Right. 12:19:50

Q. How is a SWAC calculated? 12:19:52

A. Rather than -- I'd like to turn to the area of the DTR just to freshen my memory on that. But basically, it's a surface weighted average concentration, the general approach was that -- I think there were 66 sample sites, something like that, 65, 66. 12:19:56 12:20:00 12:20:04 12:20:11 12:20:15

The -- each -- there was a -- a methodology for -- to represent the geospatial picture of that data through a technique called Tyson polygons. And in simple terms, the way the process worked is the polygons were developed, and each sample site was assumed to represent a certain geospatial area within the site. 12:20:23 12:20:32 12:20:48 12:20:59 12:21:07 12:21:14

And then a -- based on that, a site-wide concentration was determined, a weighted average concentration, through the whole site. I could probably 12:21:19 12:21:28 12:21:33

get more precise with that by referring to the DTR. But in general terms, that was it. 12:21:36 12:21:40

Q. I think that's very helpful. 12:21:42

A. Okay. 12:21:43

Q. So I'm -- I'm going to try to do this in layman's terms. 12:21:44 12:21:45

So in layman's terms, you take a concentration of a station. 12:21:47 12:21:48

A. Yeah. 12:21:49

Q. And you multiply it by the area that that station represents. 12:21:49 12:21:51

A. Right. 12:21:52

Q. And you sum that up for whatever the study area includes. 12:21:53 12:21:56

A. Exactly. 12:21:56

Q. And you divide by the total area. 12:21:57

A. Yes. 12:22:00

Q. Okay. So in Master Exhibit 1, the cleanup and abatement order, could you look at Table 2, the alternative cleanup levels. 12:22:00 12:22:07 12:22:12

A. Table 2? 12:22:15

Q. Table 2. 12:22:16

A. Of the? 12:22:17

Q. Of the -- on page 15 of Master Exhibit 1. 12:22:17

A. Okay. 12:22:27

Q. Do you see that? 12:22:32
A. Yes. 12:22:33
Q. And on that table, do you see that alternative 12:22:33
cleanup levels on a SWAC basis? 12:22:36
A. Table 2, yes, I see -- see that. 12:22:45
Q. The SWAC levels? 12:22:46
A. Yes. 12:22:47
Q. You'll want to keep that in front of you as we 12:22:48
go through the next phase of questions. 12:22:50
A. Okay. 12:22:52
MR. RICHARDSON: In fact, you know what, 12:22:53
actually now is a good breaking point. It's a little bit 12:22:53
earlier than we anticipated. 12:22:55
THE WITNESS: Okay. 12:22:56
MR. RICHARDSON: Would you like to take lunch 12:22:56
now? 12:22:57
THE WITNESS: Sure. 12:22:58
MR. RICHARDSON: If I engage, I think we're 12:22:59
going to be probably be another half hour, 45 minutes at 12:23:00
least. 12:23:04
THE WITNESS: Okay. Yeah, that would be fine 12:23:05
with me. 12:23:06
MR. RICHARDSON: Okay. So why don't we go off 12:23:06
record. 12:23:06
THE VIDEOGRAPHER: Off the record. Time is 12:23:07

12:23 p.m. 12:23:08

(A recess was taken.) 12:23:21

THE VIDEOGRAPHER: Back on the record. Time is 1:31 p.m. 01:31:44 01:31:46

BY MR. RICHARDSON: 01:31:48

Q. Before the break, Mr. Barker, we were looking at the cleanup and abatement order, Master Exhibit 1, Table 2. Do you see that? 01:31:54 01:31:57 01:32:03

A. Yes, I do. 01:32:05

Q. I have a courtesy copy if you want, either one of you. 01:32:06 01:32:09

A. Okay. 01:32:10

Q. And this table represents the post remedial surface weighted average concentrations cleanup levels for the site; correct? 01:32:14 01:32:19 01:32:24

A. Yes. 01:32:26

Q. And there are five chemicals of concern listed: Copper, mercury, HPAHs, PCBs, and tributyltin; correct? 01:32:30 01:32:33

A. Right. 01:32:40

Q. Earlier, we discussed the supplemental triad study that was conducted in July 2009. Do you recall that study? 01:32:41 01:32:48 01:32:53

A. Yes, I do. 01:32:54

Q. And that we often refer to as the "now testing"? 01:32:55

A. Yes. 01:32:58

Q. And that study looked at five stations that previously had been sampled during the 2001/2002 period; correct? 01:33:01 01:33:03 01:33:08

A. Yes. 01:33:09

Q. And are those stations listed in DTR page 32-33? 01:33:11

A. DTR page? 01:33:27

Q. 32-34. Sorry. 01:33:28

A. Okay. 01:33:32

Q. And it's those five stations SW-06, SW-19, SW-30, NA-23, and NA-24? 01:33:33 01:33:37

A. Yes. 01:33:41

Q. I'll introduce this as Exhibit 1227. 01:33:58

(Exhibit 1227 was marked.) 01:34:00

BY MR. RICHARDSON: 01:34:15

Q. Mr. Barker, this table summarizes the data from the 2001/2002 investigation at these five stations, as well as the 2009 investigation results for these five stations for the five primary CoCs. Do you see that? 01:34:24 01:34:29 01:34:34 01:34:39

A. Yes. 01:34:44

Q. I can represent that this chart is an accurate summary of the data collected from both of those studies. 01:34:45 01:34:47

A. Okay. 01:34:55

Q. The chart also includes the surface areas for each of the five stations in the second column. Do you see that? 01:34:55 01:34:57 01:35:01

A. Yes. 01:35:07

Q. The chart also includes a representation of the percentages, percent changes, in the SWACs from 2001 sampling, 2002 sampling events to the 2009 sampling events. Do you see that? 01:35:13 01:35:18 01:35:23 01:35:27

A. Yes. 01:35:29

Q. We'll mark this as Exhibit 1228. 01:35:47

(Exhibit 1228 was marked.) 01:35:49

BY MR. RICHARDSON: 01:35:59

Q. Mr. Barker, I'm handing you a series of tables that are marked in the lower right-hand corner A through E; A, B, C, D, E. Do you see that in the lower right-hand corner? 01:36:03 01:36:08 01:36:13 01:36:20

A. Yes, I do. 01:36:21

Q. Would you verify that you -- the document I handed you has all those pages, A through E? 01:36:22 01:36:23

A. Yes, it has all of the pages A through E. 01:36:32

Q. I'll represent to you that I've taken this data and that it accurately represents the data collected from the 2001/2002, as well as the 2009 studies. 01:36:37 01:36:39 01:36:42

A. Okay. 01:36:48

Q. Let's start with the page labeled "A" in the right-hand corner. 01:36:49 01:36:52

A. All right. 01:36:53

Q. This shows the concentrations of the five 01:36:59

stations and the percent change in the surface weighted average concentration for those stations. Do you see that? 01:37:01 01:37:06 01:37:09

A. Yes. 01:37:09

Q. The concentrations on a surface weighted basis changed from 183 BPM to 167 BPM. Do you see that? 01:37:12 01:37:16

A. Yes. 01:37:23

Q. Are you aware of any active remediation of these polygons between 2001 and 2009? 01:37:23 01:37:26

A. Oh, 2009. No, I'm not aware. 01:37:36

Q. Wouldn't you agree that this data suggests that there has been some natural attenuation occurring in these areas of the shipyard? 01:37:45 01:37:47 01:37:52

MR. CARRIGAN: Incomplete hypothetical. 01:37:54

THE WITNESS: It -- it could suggest that. I would caveat that answer with the observe -- observation that sediment contaminant levels can fluctuate up and down even when the same sediment at the same point is sampled at the same time. 01:37:57 01:38:09 01:38:12 01:38:25 01:38:29

BY MR. RICHARDSON: 01:38:34

Q. Very fair. And we'll come back to that. 01:38:35

A. Okay. 01:38:37

Q. Would you also look at Table 2 in -- sorry -- in the cleanup and abatement order. 01:38:39 01:38:46

A. Table -- 01:38:48

Q. Master Exhibit 1. 01:38:49
A. Okay. 01:38:50
Q. Just keep that in front of you. 01:38:51
A. All right. Okay. 01:38:52
Q. What is the surface weighted average 01:38:54
concentration on a post remedial basis for copper? 01:38:56
A. Is -- would be 159 milligrams per kilogram. 01:39:04
Q. And that's the concentration at which after 01:39:09
remediation occurs we'd like to see the site? 01:39:11
A. Yes. 01:39:13
Q. And so the surface weighted average 01:39:17
concentration in these areas that were sampled in 2009 01:39:19
are 167.8. And our ultimate goal for the site is 159; is 01:39:23
that correct? 01:39:30
MR. CARRIGAN: Misstates the document. 01:39:31
THE WITNESS: Okay. The pre-remedial SWAC you 01:39:33
indicated was 167 for copper? 01:39:39
BY MR. RICHARDSON: 01:39:42
Q. The -- the 2009 -- 01:39:43
A. Oh, the -- 01:39:44
Q. I'm sorry. I'll be more clear. 01:39:44
If you look on Exhibit 1228. 01:39:47
A. Okay. 01:39:49
Q. Page A, the 2009 data shows that the surface 01:39:50
weighted average concentration at that sampling event was 01:39:55

167.8. 01:39:58

A. Yes. 01:40:00

Q. On Table 2 of the cleanup and abatement order, 01:40:02
Master Exhibit 1, the cleanup levels for the site on a 01:40:04
surface weighted average concentration basis are 159 for 01:40:09
copper; correct? 01:40:13

A. Correct. 01:40:15

Q. So because these numbers are fairly close to 01:40:17
each other, wouldn't you agree that the site remedial 01:40:22
goals in Table 2 would be met within some reasonable 01:40:28
time? 01:40:32

MR. CARRIGAN: Vague. Incomplete hypothetical. 01:40:33

THE WITNESS: Oh, could be met at those five 01:40:38
stations? 01:40:41

MR. RICHARDSON: (Nods head.) 01:40:45

THE WITNESS: Yeah. If this data is, in fact, 01:40:58
that reductions are caused -- being caused by natural 01:41:04
recovery. And if that were to continue, it's -- it's 01:41:07
possible that the concentrations would eventually 01:41:15
decrease below the SWAC levels at those five sites. 01:41:21

Although, I don't know that that would be -- 01:41:29
result in the attainment -- the permanent attainment of 01:41:40
the SWAC. It would -- for the reasons we discussed 01:41:43
earlier, where contaminants, site physical disturbances 01:41:48
could result in -- in the re-exposure of contaminants to 01:41:59

the beneficial uses of the bay. 01:42:06

BY MR. RICHARDSON: 01:42:09

Q. Okay. We'll -- we'll come back to that, as 01:42:10

well. 01:42:13

A. All right. 01:42:13

Q. But assuming that the reduction of 16 parts per 01:42:14

million that occurred from 2002 to 2009 is a result of 01:42:20

natural attenuation, then wouldn't you agree that it 01:42:24

would continue to naturally attenuate to the cleanup 01:42:29

goals within some reasonable time? 01:42:32

MR. CARRIGAN: Incomplete hypothetical. 01:42:36

THE WITNESS: That's a possibility, yes. 01:42:42

BY MR. RICHARDSON: 01:42:44

Q. Well, let's -- let's look at the page labeled B 01:42:44

in the right-hand corner of Exhibit 1228. 01:42:50

A. Level -- 01:42:57

Q. It's the second page. It should say "B" -- "B" 01:42:58

as in boy in the lower right-hand corner. 01:43:00

A. Okay. Got it. 01:43:03

Q. So this table lists the mercury concentrations 01:43:05

at these five stations sampled in 2001, 2002, as well as 01:43:09

2009. Do you see that? 01:43:15

A. Yes. 01:43:18

Q. I'll represent to you that now that all the data 01:43:19

in all the five tables came from the studies conducted in 01:43:22

2001, 2002, and 2009, and are accurate. 01:43:25

A. Okay. 01:43:29

Q. The surface weighted average concentration during the 2001/2002 study period for these five stations was 1.5 milligrams per kilogram. Do you see that? 01:43:35 01:43:36 01:43:42

A. Yes, I see that. 01:43:49

Q. And the surface weighted average concentration in 2009 was 0.8. Do you see that? 01:43:50 01:43:52

A. Yes. 01:43:55

Q. This amounts to a reduction in mercury concentrations at these locations on a surface weighted average basis of 49 percent. Do you see that? 01:43:56 01:43:58 01:44:02

A. Yes. 01:44:05

Q. As was the case with copper, wouldn't you agree that this shows natural attenuation is already occurring at the site? 01:44:08 01:44:12 01:44:16

MR. CARRIGAN: Incomplete hypothetical. 01:44:17

THE WITNESS: It -- it could so -- show that. There might be other factors at play that could also influence contaminant levels that are factors other than natural attenuation, such as sediment site where there's been some physical disturbance to it, causing sediment to redistribute itself and affect levels, et cetera, at a site. 01:44:22 01:44:25 01:44:29 01:44:38 01:44:46 01:44:51 01:44:58

BY MR. RICHARDSON: 01:44:58

Q. Okay. And I think you previously testified that physical disturbances could act to worsen conditions at the site. Here -- here physical disturbances could actually cause an improvement at the site? 01:44:59 01:45:01 01:45:05 01:45:08

A. Or -- I mean, at a particular station, it might show that contaminant levels went down, but the contaminants that were at the station may have been redeposited at other locations in the bay, perhaps affecting previously uncontaminated areas. 01:45:11 01:45:15 01:45:22 01:45:28 01:45:35

Q. Is there any evidence that that's occurring at these five stations that were sampled? 01:45:39 01:45:41

A. I don't know that it would be possible to analyze that effect based on this data. But I -- I -- I'd have to look at a map and see exactly where these stations are and do a more thorough analysis of it. Maybe it would involve getting more sediment data at other locations, as well. But... 01:45:44 01:45:50 01:46:02 01:46:05 01:46:13 01:46:23

Q. Was there a further answer, Mr. Barker? I didn't want to interrupt you. 01:46:50 01:46:52

A. I mean, hypothetically speaking, if a source is controlled and there is sediment deposition occurring at a site, eventually contaminants would be buried by that sediment, absence other complicating factors and reasons. 01:46:55 01:46:59 01:47:07 01:47:13

Q. Okay. I understand. So sedimentation would be one of the natural processes -- 01:47:18 01:47:21

A. Yes. 01:47:23
Q. -- that could attenuate the pollution. 01:47:23
A. Exactly. 01:47:26
Q. Let's look back at Table 2 and look at the mercury surface weighted average cleanup level. 01:47:26 01:47:30
A. Okay. 01:47:33
Q. Do you see that? 01:47:41
A. Yes, I see it. 01:47:42
Q. And is that 0.68 milligrams per kilogram? 01:47:43
A. Yes, that's correct. 01:47:47
Q. And the 2009 surface weighted average concentration at these polygons is 0.8? 01:47:48 01:47:51
A. Yes, that's correct. 01:48:02
Q. So the site conditions for these five polygons are approaching the cleanup level of 0.68; correct? 01:48:03 01:48:06
A. It would seem so from this information, yes. 01:48:14
Q. Okay. If you'd turn to "C." On Exhibit 1228, page C, we have a table showing the HPAH concentrations in the 2001, 2002 and 2009 sampling events. 01:48:16 01:48:28 01:48:33
Do you see that the surface average weighted concentration for this area in 2001/2002 was 2,823? 01:48:43 01:48:46
A. I do. 01:48:51
Q. And the 2009 sampling shows that the surface weighted average concentration at that time was 2,293? 01:48:51 01:48:54
A. Yes. 01:48:59

Q. And that this represented a decrease of about 18.8 percent? 01:49:01 01:49:03

A. Yes. 01:49:05

Q. Would you agree that this data shows natural attenuation of HPAHs at these five stations? 01:49:06 01:49:08

MR. CARRIGAN: Incomplete hypothetical. 01:49:12

THE WITNESS: It -- that's one -- one possibility to explain the trend of the data, yes. 01:49:15 01:49:19

BY MR. RICHARDSON: 01:49:23

Q. Okay. 01:49:23

If we look at Table 2, the alternative cleanup levels, what is the cleanup level for HPAHs on a surface weighted average concentration basis? 01:49:23 01:49:27 01:49:32

A. It's 2,451 micrograms per kilogram. 01:49:34

Q. So the 2009 data of 2,293 micrograms per kilogram is actually lower than the required surface weighted average concentration of the alternative cleanup levels for HPAHs; correct? 01:49:42 01:49:48 01:49:52 01:49:56

A. Yes, at -- at -- at -- those five sites, yes. 01:49:59

Q. So would you agree that the site-wide cleanup goal for these five sites on a SWAC basis have already been achieved through natural attenuation? 01:50:03 01:50:07 01:50:13

MR. CARRIGAN: Incomplete hypothetical. 01:50:15

THE WITNESS: I -- I don't know -- 01:50:18

MR. CARRIGAN: Misstates the document and the 01:50:19

data in the document. 01:50:21

THE WITNESS: I don't know that I could agree 01:50:24
with that. The -- the SWAC base levels in Table 2 are 01:50:25
based on site weighted average levels over the 01:50:34
approximately 65 polygon areas of the site that were -- 01:50:44
and reflects averaging over all of those areas. 01:50:56

And it's -- and while the magnitude of the 01:50:59
number from the -- on the SWAC basis of the five stations 01:51:07
shows a number less than the number that was based on 01:51:12
averaging over many -- a much larger area, the five 01:51:18
station SWAC is less than that number. But whether that 01:51:24
means the intent of the SWAC-based goals have been met, 01:51:28
I -- I think you would need to look at -- at the whole 01:51:36
picture, basically. 01:51:40

BY MR. RICHARDSON: 01:51:42

Q. So if I understand correctly, you're saying that 01:51:45
we'd want to know whether throughout the site -- 01:51:48

A. Yes. 01:51:52

Q. -- we're seeing -- 01:51:52

A. The same. 01:51:53

Q. -- a similar natural attenuation that's 01:51:53
occurring -- appears to be occurring at these five 01:51:55
stations? 01:51:57

A. Yes, yes, we would. 01:51:58

Q. If we are seeing natural attenuation at the 01:52:00

other stations consistent with what's observed in these five stations, then would you agree that the target level would be met through natural attenuation? 01:52:03 01:52:07 01:52:09

MR. CARRIGAN: Assumes facts not in evidence. 01:52:12

THE WITNESS: Yeah. Again, if source control is adequate and there is sediment deposition taking place at all locations throughout the study area, you -- you could see a -- a reduction in the SWAC levels at the site to levels below those specified in the cleanup and abatement order, Table 2. 01:52:17 01:52:22 01:52:28 01:52:34 01:52:44 01:52:49

Then I think the -- along with that observation and the data, I think the attention would shift to the permanence of the achievement of the cleanup goals. Is -- would site disturbances re-expose contaminants and where -- where the -- where -- to the extent that the -- that natural deposition was not a permanent success, remedial success. 01:52:52 01:52:58 01:53:04 01:53:07 01:53:23 01:53:28 01:53:34

BY MR. RICHARDSON: 01:53:37

Q. Great. And we'll come back to that. 01:53:38

A. Okay. 01:53:40

Q. Moving to the next chart on page D of Exhibit 1228. This table lists the PCB concentrations from the 2001/2002 study, and from the 2009 study. 01:53:43 01:53:48 01:53:59

Do you see that? 01:54:03

A. Yes, I see that. 01:54:04

Q. And looking at the chart, the surface weighted average concentration for PCBs in the first study in 2001/2002 was 247 nanograms per gram; is that right? 01:54:06 01:54:09 01:54:14

A. Yes, that's correct. 01:54:23

Q. And the 2009 surface weighted average concentration for these five stations is 188.7. 01:54:26 01:54:29

Do you see that? 01:54:34

A. Yes. 01:54:35

Q. This represented a decrease of approximately 24 percent. Do you see that? 01:54:36 01:54:39

A. I do, yes. 01:54:41

Q. Wouldn't you agree that this data also shows natural attenuation is already occurring at the site on a SWAC basis for PCBs? 01:54:44 01:54:47 01:54:50

MR. CARRIGAN: Incomplete hypothetical. 01:54:52

THE WITNESS: It's similar to my other responses. I would say that it's possible that the reduction in levels is occurring from natural recovery. There could be other factors at play. I -- I would note that, for example, at NA23, it shows PCBs increasing at that station. And you would -- and if natural recovery were occurring uniformly across the five stations, you wouldn't -- I would think ideally you would not see an increase in PCB concentrations. 01:54:56 01:54:58 01:55:02 01:55:12 01:55:16 01:55:25 01:55:36 01:55:41 01:55:45

Q. But Mr. Barker, didn't you testify with respect 01:55:47

to Exhibit 1226 in looking at the chart on page 5 that there is some natural variability that occurs even in the presence of natural attenuation? 01:55:50 01:55:54 01:55:57

A. Yes. 01:56:00

Q. So is the mere presence of a single data point that exceeds the prior data point doesn't mean natural attenuation is not occurring; correct? 01:56:01 01:56:04 01:56:08

A. Yeah. That fact alone doesn't mean that sediment isn't being deposited at the site. 01:56:19 01:56:21

Q. You want to look at the whole data set; right? 01:56:24

A. Right, yes. 01:56:27

Q. Okay. 01:56:28

If we can look at Table 2, what is the post remedial alternative cleanup level on a SWAC basis for PCBs? 01:56:28 01:56:31 01:56:35

A. It's 194 micrograms per kilogram. 01:56:37

Q. So isn't it true that the -- for these five stations, the surface weighted average concentration in 2009 is below the post remedial alternative cleanup levels for PCBs? 01:56:42 01:56:44 01:56:46 01:56:52

A. That the 2009 SWAC calculated at the five stations, yes, that -- that number is less than the 194 micrograms per kilogram. 01:56:57 01:57:00 01:57:08

Q. Okay. 01:57:12

Let's look at page E of Exhibit 1228. This 01:57:12

table is a list of the tributyltin or T -- TBT concentrations at these five stations from the 2001/2002 study and the 2009 study. 01:57:22 01:57:27 01:57:32

A. Yes. 01:57:34

Q. Do you see that? 01:57:34

A. Yes. 01:57:35

Q. Looking at the chart, it shows that the surface weighted average concentration for TBT in the 2001/2002 time frame was 82.1 micrograms per kilogram. Do you see that? 01:57:36 01:57:40 01:57:47 01:57:51

A. Yes. 01:57:51

Q. And the 2009 data shows that the surface weighted average concentration for TBT at that time was 23.3 micrograms per kilogram. Do you see that? 01:57:51 01:57:55 01:57:59

A. Yes. 01:58:03

Q. And this represents a decrease of approximately 72 percent. Do you see that? 01:58:03 01:58:06

A. Yes. 01:58:08

Q. Wouldn't you agree that this data shows that natural attenuation is already occurring at the site for TBT? 01:58:10 01:58:12 01:58:15

MR. CARRIGAN: Incomplete hypothetical. 01:58:16

THE WITNESS: Attenuation as you're using the word, that could include degradation of waste products. Yes, it does suggest that could be occurring here, yes. 01:58:23 01:58:26 01:58:32

BY MR. RICHARDSON: 01:58:35

Q. I'd like to refer you back to Table 2 of the 01:58:37

cleanup and abatement order. 01:58:42

A. Okay. 01:58:43

Q. And I'm at Table 2. What is the surface 01:58:44

weighted average concentration cleanup level for 01:58:46

tributyltin? 01:58:49

A. 110 micrograms per kilogram. 01:58:51

Q. So would you agree that the 2009 data shows that 01:58:53

the site has lower TBT concentrations on a surface 01:58:56

weighted average concentration basis for these five 01:59:00

stations than the alternative cleanup level? 01:59:04

A. Yes, that the calculated SWAC for the five 01:59:07

stations in 2009 yielded a result less than the 01:59:13

110 micrograms per kilogram. 01:59:21

Q. And isn't -- I'm sorry. Go ahead. 01:59:24

A. Just alternative cleanup level in the order. 01:59:27

Q. Thank you. 01:59:31

And isn't that consistent with your findings at 01:59:32

the boatyard site in Exhibit 1210 that TBT does naturally 01:59:34

degrade? 01:59:40

A. It -- it -- yeah. It provides some reason for 01:59:41

further inquiry into the observation there to, you know, 01:59:54

that that is a possibility. Yeah. 01:59:58

Q. Okay. And that possibility was realized at the 02:00:03

Bay City Marine site; correct? 02:00:05

MR. CARRIGAN: Vague. 02:00:08

MR. RICHARDSON: I agree. Let me rephrase to make sure the record's clear. 02:00:10 02:00:12

BY MR. RICHARDSON: 02:00:13

Q. Isn't it true that the Regional Board staff concluded that TBT would naturally degrade at the Bay City Marine site? 02:00:13 02:00:17 02:00:19

A. Let me get that exhibit in front of me. Hang on a second. I want to qualify my answer. 02:00:23 02:00:27

Q. It's Exhibit 1210. 02:00:31

MR. CARRIGAN: 1214? 02:00:33

MR. RICHARDSON: I think it's 1210. 02:00:34

MR. CARRIGAN: 1210 is the one with the chart on it, isn't it? 02:00:36 02:00:40

MR. RICHARDSON: Correct. That's it. 02:00:41

MR. CARRIGAN: Oh, okay. 02:00:44

THE WITNESS: There was a -- I think there was an exhibit where we had the complete order for Bay City Marine. That's it. Let me just glance at this a second. 02:00:45 02:00:47 02:00:52

MR. RICHARDSON: Which exhibit -- 02:01:00

MR. CARRIGAN: 1214. 02:01:01

THE WITNESS: I just want to -- I just wanted to refresh my memory on our basis for the findings that we had on degradation of tributyltin. The -- 02:01:02 02:01:36 02:01:40

BY MR. RICHARDSON: 02:01:47

Q. You may be wanting to refer to Exhibit 1225, 02:01:48

then. 02:01:51

A. Okay. 02:01:51

Q. Finding No. 8 -- 18 -- 18B, as in boy. 02:01:52

A. Oh, 18B. Okay. Yeah. Okay. 02:01:56

Yeah. The data for making these conclusions was 02:02:09

limited at the time but nonetheless, we made them. One 02:02:18

thing that we did not do is there was not post 02:02:26

remediation monitoring at any of the Commercial Basin 02:02:29

sites to verify that the assumptions being made to derive 02:02:34

the cleanup levels were, in fact, occurring at the site 02:02:44

after the cleanup. 02:02:47

For example, that there were -- that the 02:02:49

degradation of tributyltin down to elemental tin, that 02:02:54

wasn't verified with on-site post remedial sampling. It 02:02:59

was -- conclusions were drawn that that would occur, and 02:03:04

the cleanup order was issued. 02:03:09

Q. Okay. 02:03:11

A. So whether it actually occurred there or not, we 02:03:11

never got data to indicate whether it did or did not. 02:03:14

Q. But there was an independent finding that TBT 02:03:18

undergoes rapid -- 02:03:21

A. Yes. 02:03:23

Q. -- natural degradation in the environment 02:03:23

correct? 02:03:24

A. Yes, that's correct. 02:03:25

Q. And this data that we're seeing on Exhibit 1228, page E, is consistent with that finding, isn't it, where we see a 72 percent reduction in TBT over the course of seven years? 02:03:26 02:03:29 02:03:35 02:03:39

A. Yeah. Yes. It -- it indicates that trend is -- that that might be the reason for that trend there, yes. Could be other reasons, but maybe that's a primary reason. 02:03:40 02:03:46 02:03:50 02:03:53

Q. Okay. Looking at this data collectively, we sample the total of five stations in the 2009 testing; correct? 02:03:54 02:03:58 02:04:02

A. Yes. 02:04:02

Q. The post remedial SWAC numbers for at least these five areas have been met for three of the CoCs; correct? 02:04:08 02:04:12 02:04:16

MR. CARRIGAN: At the five stations? 02:04:23

MR. RICHARDSON: At the five stations, right. 02:04:25

THE WITNESS: Let's see. So -- so far we examined tributyltin and copper, mercury, PCBs. And one of those was not below the level, I think. And the other three were, yeah. 02:04:27 02:04:28 02:04:39 02:04:44

BY MR. RICHARDSON: 02:04:46

Q. Okay. So of the two that were not, copper, the 02:04:47

goal is 159. And we are at 167. 02:04:49

A. Yeah. 02:04:53

Q. Which seems marginally above the goal? 02:04:54

A. Right. 02:04:56

Q. And then the second one is mercury at .8, when the cleanup level is .7 or .68, which again seems marginally above the goal; correct? 02:04:57 02:04:59 02:05:03

A. Uh-huh. 02:05:06

Q. Was that yes? 02:05:06

A. Yes. 02:05:07

Q. And then the remaining three are all below the alternative cleanup levels; correct? 02:05:07 02:05:10

A. Yes. 02:05:13

Q. Yesterday we discussed Exhibit 1206, which was the directive of the Regional Board to conduct the assessment at the shipyard site that ultimately resulted in the 2001/2002 test data; correct? 02:05:22 02:05:31 02:05:36 02:05:39

A. Correct. 02:05:42

Q. And in that study, if you recall from our discussion yesterday, it required an evaluation of the potential natural processes that could support a no action alternative, including dispersal of contaminants by natural processes and natural detoxification of contaminated sediments, restricting access to the site, monitoring of water sediments and organisms. 02:05:43 02:05:46 02:05:50 02:05:57 02:06:02 02:06:04 02:06:08

Do you recall that? 02:06:15

A. Yes. 02:06:16

Q. So NASSCO was directed to look at this. The work plan listed the factors that NASSCO was supposed to consider in evaluating natural attenuation. NASSCO then dutifully did so and came up with the 2003 report that is Master Exhibit 4. I'm giving you an excerpt of that as a courtesy copy. 02:06:18 02:06:21 02:06:24 02:06:31 02:06:42 02:06:51

A. Okay. 02:06:52

Q. The paragraph in the center of that page starts "a comparison." Do you see that? 02:06:53 02:06:55

A. Let's see. Okay. I see it, yes. 02:07:00

Q. Do you recall what Exponent recommended for the remedial alternative to be applied at the NASSCO shipyard? 02:07:05 02:07:07 02:07:10

A. I believe they called for monitored natural recovery. 02:07:11 02:07:17

Q. And is it correct that dredging would destroy the existing benthic communities at the site? I believe you've already testified on this. I'm just confirming your testimony. 02:07:27 02:07:32 02:07:38 02:07:40

A. Right. Not permanently. I mean, yes, destroy them initially, and they may re-establish themselves later, yes. 02:07:41 02:07:43 02:07:47

Q. And you testified that you don't know what type 02:07:48

of species would re-establish after the -- 02:07:49

A. That's correct. 02:07:52

Q. -- benthic community was destroyed; is that correct? 02:07:52 02:07:55

A. Correct. 02:07:56

Q. So the work plan required NASSCO to look at natural attenuation. NASSCO did the study under Regional Board's direction. NASSCO's consultant, Exponent, recommended that natural attenuation be selected as the remedy. The 2009 data suggests on all five accounts, all the CoCs that were studied, that natural attenuation is occurring. 02:07:56 02:07:58 02:08:02 02:08:07 02:08:10 02:08:15 02:08:20

Do you agree, then, that natural attenuation is at least a viable remedial alternative for the NASSCO site? 02:08:25 02:08:27 02:08:30

MR. CARRIGAN: Misstates facts in evidence. 02:08:31

THE WITNESS: No. The -- the staff -- I mean, when we looked at the Exponent report, we -- we were not in agreement that the entire remediation effort could be -- that -- could be addressed through natural recovery. 02:08:41 02:08:45 02:08:50 02:08:57 02:09:01

We weren't ruling it out for, perhaps, certain areas of the site where, for example, where dredging could not occur and removal, that natural recovery might be employed. But we did not believe the site was an 02:09:02 02:09:09 02:09:16 02:09:22

appropriate site to address with natural recovery as the sole remedial alternative. 02:09:27 02:09:34

BY MR. RICHARDSON: 02:09:37

Q. And I can appreciate, Mr. Barker, that you didn't have the benefit in 2003 of the 2009 data. 02:09:37 02:09:39

A. Yes. 02:09:43

Q. But now that you do have the benefit of the 2009 data, that does show significant reductions in the CoCs, indeed some of the CoCs below the alternative cleanup levels that are ordered to be met in the cleanup and abatement order. 02:09:44 02:09:46 02:09:50 02:09:53 02:09:55

A. Right. 02:09:56

Q. Doesn't that now mean that at least it's a potentially viable option to remediate the site through monitored natural attenuation? 02:09:56 02:09:59 02:10:02

MR. CARRIGAN: Misstates facts in evidence. 02:10:06

THE WITNESS: I -- I believe our concerns with the disturbances at the site are -- would still -- and the fact that we believe those disturbances are such that -- that we would probably still reach the same -- we would reach the same conclusion that natural recovery should not be used as the sole remedial alternative for the site. 02:10:08 02:10:10 02:10:18 02:10:21 02:10:32 02:10:36 02:10:44

BY MR. RICHARDSON: 02:10:47

Q. On several occasions you've raised this concern 02:10:54

about the potential for physical disturbances. 02:10:57

A. Yes. 02:11:01

Q. And I'm trying to understand that better. If I recall, you testified that where there are physical disturbances such as NA-20 and NA22, we see benthic communities that are not mature. They're Phase 1 or Stage 1 benthic communities. 02:11:01 02:11:05 02:11:11 02:11:15 02:11:17

A. Correct. 02:11:21

Q. But throughout most of the shipyard, as is reported in the DTR and consistent with your prior testimony, most of the shipyard has mature Stage 3 benthic communities. And I thought you suggested that that meant there would not be physical disturbance or at least not significant physical disturbance in those areas. Isn't that correct? 02:11:21 02:11:22 02:11:25 02:11:28 02:11:31 02:11:35 02:11:37

A. I guess it -- relative to areas at the site where there have been physical disturbances, I guess the -- it's a more healthier benthic community at the locations that -- where -- that were away from known physical disturbances. 02:11:43 02:11:49 02:11:53 02:11:59 02:12:06

Q. And those areas that were away from known physical disturbances indicate no difference compared to reference conditions for the benthic communities; correct? 02:12:07 02:12:10 02:12:12 02:12:15

A. Yes. I believe that was what the data -- data 02:12:16

indicated. 02:12:20

Q. Okay. We'll come back to a few of those issues. 02:12:21

But for now why don't we move on to another topic, 02:12:24

remediation of other sediment sites throughout San Diego 02:12:32

and California. 02:12:35

A. Okay. 02:12:36

Q. As we discussed previously, you have been 02:12:36

designated as the Cleanup Team's person most 02:12:38

knowledgeable regarding other sediment remediations in 02:12:40

San Diego and California; correct? 02:12:43

A. Correct. 02:12:45

Q. As we discussed, you've been designated as the 02:12:47

Cleanup Team's person most knowledgeable. Do you believe 02:12:49

that you are the Cleanup Team's person most 02:12:54

knowledgeable? 02:12:56

A. Yes. 02:12:57

Q. And why is that? 02:12:57

A. Just due -- primarily due to my work experience 02:13:00

on this project, as well as other sediment cleanup sites 02:13:06

on San Diego Bay. 02:13:13

Q. And from Exhibit 1210, my understanding is you 02:13:20

worked on most, if not all, the sites listed in this. 02:13:23

A. Yes, that's correct. 02:13:27

Q. Are you familiar with Resolution 92-49? 02:13:40

A. Yes. 02:13:43

Q. This is Master Exhibit 5. Do you have a copy there? 02:13:51 02:13:56

MR. CARRIGAN: It's -- what's the title of it? 02:13:59

MR. RICHARDSON: It's the 92-49. 02:14:01

MR. CARRIGAN: I don't. That's the one thing you didn't provide me with a copy of. 02:14:03 02:14:04

MR. RICHARDSON: A courtesy copy? I'm not sure I have extra copies of this. Can we get the Master Exhibit 5? 02:14:06 02:14:07 02:14:09

THE COURT REPORTER: That was not in our exhibits, actually. 02:14:14 02:14:15

MR. RICHARDSON: Okay. 02:14:16

MR. CARRIGAN: 1208 is the one -- 02:14:17

MR. RICHARDSON: 1208, did I give you that? 02:14:20

MR. CARRIGAN: It might have gotten introduced. 02:14:21

MR. RICHARDSON: Oh, yes, I did. I -- I introduced it as 1208. I think you can have my copy. I just want to make sure that I did not interlineate. 02:14:24 02:14:24 02:14:31

MR. CARRIGAN: It doesn't say NASSCO is liable on it, does it? If it does, you better not hand it over to me. 02:14:34 02:14:36 02:14:40

MR. RICHARDSON: I'm looking closely. No. This is a clean copy. I wrote 1208 on the top but -- 02:14:41 02:14:43

MR. CARRIGAN: Thank you. 02:14:46

MR. RICHARDSON: You're welcome. And we should 02:14:48

be sure this gets introduced as Master Exhibit 5. 02:14:50

BY MR. RICHARDSON: 02:15:05

Q. So you're familiar with this document? 02:15:06

A. Yes. 02:15:08

Q. Would you look at paragraph 7? 02:15:10

A. Paragraph 7. Okay. 02:15:13

Q. Can you explain to me what paragraph 7 is intended to do? 02:15:23 02:15:27

MR. CARRIGAN: Calls for a legal conclusion. 02:15:29

THE WITNESS: The intent of paragraph 7 is establishing that it is in the interest of the people of the state for the State Water Board to provide guidance through the Resolution 92-49 to -- to the boards. 02:15:44 02:15:46 02:15:52 02:16:00

BY MR. RICHARDSON: 02:16:11

Q. So it's a consistency provision. 02:16:11

A. Yes, a consistency provision. 02:16:13

Q. So the goal is regardless of the type of discharge, the State wants to ensure that there are standard policies and procedures applicable to investigations and cleanup of sites? 02:16:15 02:16:17 02:16:19 02:16:21

A. Exactly. That's -- that is true. 02:16:23

Q. Okay. So let's look at Section 2A-9. It's on page 7 of 21. 02:16:24 02:16:32

A. Okay. 2A. 02:16:39

Q. Paragraph 9. 02:16:46

A. 2A -- okay. 02:16:46
Q. I'll give you a minute to read it and refresh your recollection. 02:16:51 02:16:53
A. Okay. 02:16:58
Q. Okay. So this states that, "The Regional Water Board shall prescribe cleanup levels which are consistent with appropriate levels set by the Regional Water Board for analogous discharges that involve similar waste, site characteristics, and water quality considerations." Do you see that? 02:16:59 02:17:01 02:17:06 02:17:09 02:17:12 02:17:16
A. Yes. 02:17:17
Q. So in essence, would you agree that Resolution 92-49 requires the Regional Boards to treat similar sites similarly? 02:17:18 02:17:20 02:17:24
MR. CARRIGAN: Calls for a legal conclusion. 02:17:28
THE WITNESS: It suggests that that -- it should be a goal, yes. 02:17:33 02:17:35
BY MR. RICHARDSON: 02:17:37
Q. This is back to the consistency purpose of 92-49; right? 02:17:37 02:17:39
A. Right. 02:17:42
Q. Did the Cleanup Team follow Resolution 92-49 when it evaluated what cleanup levels to set for the site? 02:17:43 02:17:46 02:17:50
A. Yes, pretty much yes. The -- in evaluating 02:17:57

cleanup levels and the alternative levels, the staff followed the principles in Resolution 92-49. I might point out there's a lot of material in Resolution 92-49 that deals with soil and groundwater that wasn't directly applicable. And so we -- we looked at what -- what we felt was applicable and followed those principles. 02:18:02 02:18:07 02:18:14 02:18:18 02:18:21 02:18:27

Q. Is the Cleanup Team required to follow 92-49 at the site? 02:18:33 02:18:36

MR. CARRIGAN: Calls for a legal conclusion. 02:18:37

THE WITNESS: Yes. We believe that the setting of cleanup levels needs to be consistent with the principles in Resolution 92-49. As part of the process, we actually asked for a legal opinion from the State Board Office of Chief Counsel. And I -- I think in the administrative record, that was one of the documents that was included, was a legal opinion that they issued that -- where they concluded that the policy was applicable to the sediment cleanup site. 02:18:39 02:18:45 02:18:49 02:18:58 02:19:00 02:19:04 02:19:10 02:19:13 02:19:18

BY MR. RICHARDSON: 02:19:24

Q. As we go through the additional lines of questions here, you may want to just keep that one paragraph 9 in front of you. I'll keep referring back to it. 02:19:28 02:19:30 02:19:32 02:19:35

A. Okay. All right. 02:19:35

Q. Is it fair to say that the Cleanup Team 02:19:35

evaluated other sites in San Diego Bay where sediment cleanup levels had been established to see if the shipyard site had analogous discharges that involved similar waste, had similar characteristics, and had similar water quality considerations? 02:19:38 02:19:43 02:19:47 02:19:50 02:19:53

A. Yes. Very much so. The staff board -- well, the staff focused on levels that had been set at the Campbell Shipyard. And actually, there was an effort during the 1990s to examine assigning those same levels to the Shipyard Sediment Site, in cleaning up the site to reach those goals. And for various reasons, that was ultimately determined not to -- to be not appropriate and that a site-specific study needed to be done. 02:19:55 02:20:03 02:20:14 02:20:17 02:20:22 02:20:27 02:20:35 02:20:39

Q. And we'll go through that in more detail here in a moment. So that was sites in San Diego Bay. 02:20:44 02:20:46

Did you undertake a similar process for sites elsewhere in California? 02:20:48 02:20:50

A. I don't -- I don't recall that. I just recall San Diego Bay. And we may have done some document searches. I think there was a shipyard up in the San Francisco Bay area that we at least looked at. Those are the only two that I remember. 02:20:53 02:20:58 02:21:03 02:21:08 02:21:15

Q. I'm sorry. The San Francisco Bay Shipyard, and what was the second site? 02:21:23 02:21:27

A. Well, the Campbell Shipyard Site. 02:21:28

Q. Oh, Campbell. 02:21:30

A. And as -- in -- in producing the latest version 02:21:31
of the DTR, there was at various areas in the document, 02:21:36
there's footnotes that indicated that such and such a 02:21:42
factor was consistent with what was being done at a -- at 02:21:45
various sites around the country, up in Oregon and 02:21:51
Washington area or back in the Hudson River in New York. 02:21:55
So yeah. 02:22:00

Q. So in general, for the analysis of 92-49 in 02:22:02
paragraph 9 where it says similar sites should be treated 02:22:07
similarly -- 02:22:11

A. Yeah. 02:22:11

Q. -- your analysis included the San Francisco Bay 02:22:11
Shipyard and the Campbell Shipyard; is that correct? 02:22:15

A. Yeah, primarily so. Yeah. 02:22:21

Q. Any others? 02:22:23

A. I would say within the DTR, the sites that are 02:22:28
called out in that document. I don't recall the names of 02:22:35
all of them. But certainly they would be included in a 02:22:38
complete response, should be. 02:22:44

Q. But you don't recall what those are off the top 02:22:48
of your head? 02:22:50

A. Names of them, no, I don't. But they are 02:22:51
footnoted at various places in the DTR. 02:22:53

Q. Looking at paragraph 9 again, how does the 02:23:00

Cleanup Team interpret the phrase "analogous discharges"? 02:23:04

MR. CARRIGAN: Calls for a legal conclusion. 02:23:09

THE WITNESS: I would say analogous discharges would be discharges with the same types of characteristics. Certainly, we were -- paid close attention to the Campbell shipyard discharge because there were obvious similarities with that facility and NASSCO and BAE. 02:23:10 02:23:14 02:23:18 02:23:28 02:23:31 02:23:35

BY MR. RICHARDSON: 02:23:42

Q. Paragraph 9 also refers to analogous site characteristics or similar site characteristics. What would be the characteristics that the Cleanup Team looked at? 02:23:42 02:23:47 02:23:51 02:23:54

A. This would be -- I -- I think with site characteristics, we probably focused more on San Diego Bay, Campbell Shipyard Site. It's the same water body, same type of sediment there, that type of thing. 02:23:56 02:23:59 02:24:03 02:24:07 02:24:11

Q. Same historic uses? 02:24:12

A. Yes. 02:24:14

Q. Same types of commercial and industrial activities? 02:24:17 02:24:20

A. Types of -- the level of the activities may have differed. Campbell shipyard is not the same size, for example, as NASSCO. But again, similarities in the 02:24:23 02:24:25 02:24:29

operations, yes. 02:24:34

Q. Okay. And another similar site characteristic 02:24:36
that you may look at, not necessarily you did look at, at 02:24:38
Campbell or any other site, but types of characteristics 02:24:41
you would look at, would you look at the receptors at the 02:24:46
site? 02:24:48

A. Yes. 02:24:49

Q. And you said water body, what water body? 02:24:51

A. Yes. 02:24:54

Q. Other geographic conditions? 02:24:55

A. Yes. Yeah, we consider that. 02:24:57

Q. Geologic and hydrogeologic conditions? 02:25:01

A. Yeah, certainly that would -- I don't recall -- 02:25:06
I believe, yeah, we did look at that. There was a fairly 02:25:11
complete assessment report for the Campbell site done 02:25:15
that had extensive technical information in it. 02:25:20

Q. But you would deem it important to look at the 02:25:23
geologic and hydrogeologic -- 02:25:26

A. Yes. 02:25:28

Q. -- conditions in assessing whether sites are 02:25:28
similar? 02:25:31

A. Yes. 02:25:31

Q. You would also look at sediment characteristics? 02:25:31

A. Yes. 02:25:35

Q. Such as fines? 02:25:35

A. Yes, the pattern and distribution of contaminants, et cetera. 02:25:36 02:25:38

Q. Okay. 92-49, paragraph 9, also refers to similar water quality considerations. 02:25:43 02:25:47

A. Paragraph 9. Okay. 02:25:51

Q. And so which factors would the Cleanup Team use in assessing whether a site is similar with respect to water quality considerations? 02:25:54 02:25:57 02:26:00

A. Well, the types of beneficial uses assigned to the water body. The types of applicable water quality standards that would apply to the water body, whether the water body was an enclosed bay, an estuary kind of similarity. 02:26:02 02:26:08 02:26:17 02:26:25 02:26:36

Q. Would you also look at beneficial uses? 02:26:36

A. Yes. 02:26:39

Q. The level of contamination relative to background? 02:26:39 02:26:42

A. Yes, that could be a consideration, yes. 02:26:42

Q. How about the presence of municipal storm water outfalls? 02:26:45 02:26:49

A. Yes, yeah. 02:26:55

Q. Potential sources of urban runoff? 02:26:56

A. Yeah. 02:27:00

Q. Other potential sources of contamination? 02:27:01

A. Now we're -- we're saying where we would 02:27:08

compare -- in our comparison of analogous sites, yeah, all of those factors could enter into the comparison. 02:27:13 02:27:18

Q. Any others you can think of for that? 02:27:22

A. No. 02:27:24

Q. Okay. In paragraph 9 also refers to similar wastes. 02:27:24 02:27:28

Can you tell me what waste characteristics that the Cleanup Team evaluates when determining whether a site involves similar wastes? 02:27:30 02:27:33 02:27:37

A. The source of the wastes, what type of activities are occurring that are generating the waste, and are those activities similar or similar chemicals and products used in -- in the activity, that kind of thing. 02:27:39 02:27:41 02:27:46 02:27:53

Q. The type of CoCs that are involved? 02:27:57

A. Yes. 02:28:00

Q. Just a few more minutes, and then we'll take a break. 02:28:06 02:28:09

A. Okay. 02:28:10

Q. I'm sorry. Actually, now is a good time to take a break. We're heading into a new line of questions. So does that work for you? 02:28:16 02:28:19 02:28:19

A. All right. Yes. 02:28:20

Q. Five minutes? 02:28:20

A. It's fine. Yes. 02:28:21

THE VIDEOGRAPHER: This ends Videotape No. 2 in 02:28:22

the deposition of David Barker. The time off the record is 2:28 p.m. 02:28:24 02:28:27

(A recess was taken.) 02:28:30

THE VIDEOGRAPHER: This begins Videotape No. 3 in the deposition of David Barker. The time on the record is 2:45 p.m. 02:45:45 02:45:47 02:45:50

BY MR. RICHARDSON: 02:45:52

Q. Mr. Barker, if you would, would you look at Exhibit 1210? 02:45:55 02:45:57

A. Exhibit 1210. Okay. 02:46:00

Q. These are the verified responses and objections to NASSCO's second set of special interrogatories. 02:46:03 02:46:05

A. All right. 02:46:09

Q. Do you see that? 02:46:10

A. Yes. 02:46:11

Q. After page 14, there is a verification page. Is this your signature on the verification page? 02:46:11 02:46:15

A. Yes, it is. 02:46:18

Q. Do you understand that by verifying these responses, you represent that you know the contents and declare the information contained in them to be true and correct? 02:46:19 02:46:21 02:46:24 02:46:27

A. Yes, I do. 02:46:27

Q. And attached to Exhibit 10 is a table that we've been referring to throughout these two days of 02:46:29 02:46:31

deposition. You verified the information contained in 02:46:36
that table was true and correct, as well. 02:46:39
A. Yes. 02:46:41
Q. And according to the response to 02:46:46
Interrogatory 14, the sites in this chart are the sites 02:46:48
in San Diego Bay where contaminated sediment has been 02:46:52
remediated. Do you agree with that? 02:46:56
A. Yes. 02:46:59
Q. In looking at this chart, Exhibit A to 02:47:08
Exhibit 1210, do any of these sites involve analogous 02:47:11
discharges to the NASSCO site? 02:47:18
A. Yes, they do. Or yes, somewhat analogous, yeah. 02:47:21
Q. I mean analogous in the sense that under 02:47:29
paragraph 9 of Exhibit 1208 that they are analogous sites 02:47:31
for purposes of 92-49. 02:47:38
MR. CARRIGAN: Calls for a legal conclusion. 02:47:41
THE WITNESS: Yes. There are some -- some -- 02:47:43
some characteristics that would warrant examination. 02:47:45
BY MR. RICHARDSON: 02:47:52
Q. Okay. Let's look at the Campbell Shipyard Site. 02:48:02
A. Okay. 02:48:05
Q. Do you agree that the Campbell shipyard site 02:48:10
involves analogous discharges? 02:48:13
A. Yes. 02:48:16
Q. To the NASSCO site? 02:48:16

A. Yes, some similarities, yes, right. 02:48:19
Q. So they're both shipyards; correct? 02:48:23
A. Right. 02:48:26
Q. They had similar historic operations; correct? 02:48:28
A. Yes, right. 02:48:30
Q. Similar NPDS permits? 02:48:32
A. (Nods head.) 02:48:35
Q. Correct? 02:48:36
A. Yes. 02:48:36
Q. Do you agree that the Campbell site involves similar wastes? 02:48:39 02:48:42
A. Yes. I -- I think there -- there would be a lot of similarity between the wastes. They -- there may be differences in the variety of the waste, but there would certainly be common elements for sure. 02:48:48 02:48:51 02:48:55 02:48:58
Q. And on Exhibit A to Exhibit 1210, the pollutants of concern listed for the Campbell Industries Shipyard Site were the same as those for the NASSCO site; correct? 02:49:01 02:49:05 02:49:12
A. I think there -- there are some differences. 02:49:17
Q. Okay. All five primary CoCs at the NASSCO site are included within the Campbell site; correct? 02:49:22 02:49:26
A. I believe so, yes. 02:49:29
Q. Okay. Do you agree that the Campbell site involved similar site characteristics to the shipyard site? 02:49:30 02:49:35 02:49:38

A. Some similar characteristics, yeah. 02:49:42
Q. Such as? 02:49:46
A. The same water body. The same type of sediment 02:49:50
on the -- although the distribution of the sediment 02:49:59
particle sizes, there may have been differences in that. 02:50:06
But -- so those would be the two things, same type of 02:50:10
receptors, as we discussed previously, receptors of 02:50:17
concern. 02:50:23
Q. Located geographically fairly close to each 02:50:24
other; right? 02:50:26
A. Yes. 02:50:27
Q. It's less than a mile? 02:50:27
A. Yes. 02:50:29
Q. And the Campbell site was approximately 13 acres 02:50:30
of water; correct? 02:50:32
A. I -- I -- I don't know that to be a fact. That 02:50:37
sounds right. I'd have to consult our documents to see. 02:50:39
Q. I'll introduce this as 1229. 02:50:54
(Exhibit 1229 was marked.) 02:50:57
BY MR. RICHARDSON: 02:51:16
Q. Mr. Barker, I'm handing you the conceptual work 02:51:19
plan for the Campbell Shipyard Site. Do you see that? 02:51:22
A. Okay. 02:51:28
Q. And the number in the lower right-hand corner, 02:51:30
the Bates number indicates this was produced by the 02:51:33

Cleanup Team; correct? 02:51:35

MR. CARRIGAN: I'll represent to you, David, 02:51:41
that's what that Bates number means. 02:51:42

THE WITNESS: Okay. Then that is correct. 02:51:45

BY MR. RICHARDSON: 02:51:46

Q. All right. Thank you. If we look at page 02:51:47
ending in three digit numbers 811. 02:51:49

A. 811. I have it. Yes. 02:51:58

Q. In the first paragraph, this indicates that 02:52:00
there was approximately 13 acres of tidelands; correct? 02:52:03

A. Yes, it does. 02:52:07

Q. And at 18-32, there's a diagram showing the site 02:52:10
in relation to other areas in San Diego Bay. 02:52:16

Do you see that? 02:52:22

A. On page 18-32. Okay. And this -- your comment 02:52:25
on that? 02:52:46

Q. Do you see where the Campbell site's located? 02:52:48

A. Yes, I do. 02:52:51

Q. And do you know where the NASSCO shipyard is 02:52:52
located? 02:52:53

A. Yes, I do. 02:52:54

Q. And can you see that based on the scale shown in 02:52:55
the bottom of the page that it's less than a mile between 02:52:58
the two sites? 02:53:00

A. Yes. 02:53:02

Q. So they're geographically located close to each other. 02:53:03 02:53:05

A. Yes. 02:53:06

Q. And there's approximately 13 acres of submerged tidelands at Campbell. Do you know the approximate water area of the NASSCO leasehold? 02:53:06 02:53:12 02:53:17

A. I could consult the DTR. I think that figure is listed there. 02:53:20 02:53:23

Q. Okay. And it's about 40 acres; does that sound right? 02:53:24 02:53:28

A. That sounds right. 02:53:29

Q. So a little bit larger but same order of magnitude as Campbell? 02:53:30 02:53:32

A. Yes. 02:53:35

Q. Okay. And if we look at Exhibit 1209, this is the cleanup and abatement order issued to Campbell shipyard. Do you see that? 02:53:38 02:54:08 02:54:12

A. Yes, I do. 02:54:30

Q. Okay. If you'd look at paragraph 27 on page 14 of the order, which is Bates labeled last three digits 360. 02:54:31 02:54:37 02:54:42

A. 360. Okay. 02:54:44

Q. Paragraph 27. 02:54:47

A. All right. 02:54:49

Q. Do you see this indicates that there are storm 02:54:49

drain outfalls located in the area of the Campbell shipyard? 02:54:54 02:54:58

A. Yes, I see that. 02:55:08

Q. Okay. And there's a total of four, one within the Campbell shipyard immediate area, and three in the immediate area around the shipyard; correct? 02:55:09 02:55:12 02:55:15

A. Yes. 02:55:18

Q. And then at the NASSCO Shipyard Site, there are also MS4 discharges, as well; correct? 02:55:18 02:55:21

A. Yes. 02:55:24

Q. That would be SW9. 02:55:25

A. Yes. 02:55:27

Q. Plus storm water discharges that drain into Chollas Creek. 02:55:27 02:55:32

A. That's correct, yes. 02:55:33

Q. Okay. Do you agree that Campbell site involves similar water quality considerations as the shipyard -- as the NASSCO site? 02:55:36 02:55:39 02:55:41

A. Yes, I do. 02:55:45

Q. And so that's both in the same water body; correct? 02:55:49 02:55:52

A. Same types of beneficial uses and water quality standards, similar receptors of concern. 02:55:52 02:55:55

Q. Would you also agree it has similar potential for recontamination? 02:56:10 02:56:13

A. There is -- the last time I reviewed the Campbell site, it's been some years. And we -- at that time that order was issued, we weren't paying as much attention to recontamination from MS4 drains as perhaps we should have. The storm water program was kind of in its infancy at that time. 02:56:18 02:56:24 02:56:32 02:56:36 02:56:42 02:56:47

Q. So if you look at page 8 -- 02:56:59

A. Okay. 02:57:00

Q. -- of Exhibit 1229. 02:57:01

A. Exhibit 8. 02:57:03

Q. I'm sorry. Page 8 of Exhibit 1229. This is back to the conceptual work plan. 02:57:04 02:57:09

A. Okay. Oh, excuse me. All right. Exhibit. All right. 02:57:11 02:57:34

Q. Under Section 2.4, doesn't this indicate that there was a potential recontamination from Switzer Creek between the Campbell leasehold and Tenth Avenue Marine Terminal? 02:57:34 02:57:38 02:57:43 02:57:46

A. Okay. Yes, it does. 02:57:54

Q. And isn't that similar to the shipyard site in that the -- there is potential of recontamination at NASSCO from Chollas Creek adjacent to the NASSCO shipyard? 02:57:56 02:57:58 02:58:02 02:58:05

A. Yes, somewhat similar, yes. There may be some differences, whereas Switzer Creek emptied, I believe, 02:58:06 02:58:16

into the Campbell site more directly than Chollas Creek, which is -- well, I guess it flows through part of NASSCO's leasehold. But it's off to the -- to the immediately adjacent to it. 02:58:21 02:58:25 02:58:30 02:58:34

Q. Isn't it true that for the -- the Campbell Shipyard Site, the discharge was to the south of that shipyard as well? 02:58:37 02:58:39 02:58:42

A. Yes. That is true. 02:58:44

Q. Okay. So based on our discussion of the similarities between the Campbell Shipyard Site and the NASSCO site, would you agree that it should be considered an analogous site for purposes of your analysis under Resolution 92-49, paragraph 9? 02:58:45 02:58:49 02:58:52 02:58:56 02:59:00

MR. CARRIGAN: Calls for a legal conclusion. 02:59:02

THE WITNESS: Yeah. I -- I believe there are similar -- similarities between the -- the sites where certainly cleanup work at the Campbell site should be -- is kind of a relevant consideration. 02:59:05 02:59:07 02:59:12 02:59:18

BY MR. RICHARDSON: 02:59:25

Q. Okay. I'll introduce this as Exhibit 1230. 02:59:26

(Exhibit 1230 was marked.) 02:59:41

BY MR. RICHARDSON: 02:59:55

Q. Mr. Barker, I'm handing you a staff report on the establishment of shipyard sediment cleanup levels -- 02:59:55 02:59:58

A. Okay. 03:00:01

Q. -- for NASSCO and Southwest Marine, dated February 17, 1999. Do you see that? 03:00:01 03:00:04

A. Yes. 03:00:07

Q. Do you recall this document? 03:00:07

A. Yes, I do. 03:00:08

Q. Did you work on the preparation of this document? 03:00:09 03:00:10

A. Let's see. I -- I had staff under my supervision that was working on it, yes. 03:00:11 03:00:21

Q. Would you look at page -- Bates page last three numbers 257. 03:00:30 03:00:34

A. 257. Okay. 03:00:35

Q. The very last full paragraph. 03:00:37

A. Yes. I see that. 03:00:40

Q. The staff report notes that it was appropriate to apply cleanup levels developed for Campbell site to the NASSCO and Southwest Marine sites. 03:00:43 03:00:45 03:00:48

A. Yes. 03:00:50

Q. And that it's based on similarities between physical, biological, and chemical conditions. 03:00:51 03:00:53

A. Yes. 03:00:56

Q. At Campbell and NASSCO. 03:00:56

A. Yes. 03:00:58

Q. And the fact that Campbell Shipyard is physically located in San Diego Bay just north of NASSCO? 03:01:00 03:01:02

A. Yes. 03:01:08

Q. Do you see the bullets under that paragraph? 03:01:09

A. Yep. 03:01:14

Q. Where it notes, "Campbell and NASSCO are comparable in terms of site activities, waste materials, and matrices"? 03:01:15 03:01:17 03:01:20

A. Yes. 03:01:22

Q. That Campbell and NASSCO are similar -- sorry -- the same hydrodynamic and biogeographic zones. 03:01:23 03:01:24

A. Yes. 03:01:29

Q. And that Campbell and NASSCO are influenced by a similar suite of pollutants from off site? 03:01:29 03:01:31

A. Yes. 03:01:34

Q. On page 658. 03:01:36

MR. CARRIGAN: 258? 03:01:45

MR. RICHARDSON: Sorry. Two -- 258. Page 258. 03:01:46

MR. CARRIGAN: The very next page. 03:01:49

MR. RICHARDSON: The very next page. 03:01:50

BY MR. RICHARDSON: 03:01:53

Q. The very last sentence of the first paragraph, do you see that? It begins "it is appropriate." 03:01:54 03:02:00

A. The very last sentence of the first. 03:02:09

Q. Yeah, the first paragraph discusses Shelter Island Boatyard. 03:02:09 03:02:10

A. Yeah. I got it. 03:02:14

Q. The very last paragraph says it's appropriate to apply the Shelter Island Boatyard mercury cleanup levels, 4.2 milligrams per kilogram, to the NASSCO site. 03:02:14 03:02:14 03:02:18

A. Yes. 03:02:22

Q. And then it lists the explanations for that. 03:02:22

A. Yes. Okay. 03:02:24

Q. Do you see that? 03:02:25

A. Yes, I do. 03:02:26

Q. And the boatyards are similar to the shipyards in terms of site activities, waste materials, and matrices? 03:02:26 03:02:30 03:02:30

A. Yes. 03:02:31

Q. The boatyards and shipyards are both in San Diego Bay? 03:02:32 03:02:34

A. Uh-huh. 03:02:35

Q. And that the data from the 11 stations used to derive Shelter Island Boatyard mercury level is comparable to the 15 stations used to derive the Campbell cleanup levels? 03:02:35 03:02:39 03:02:39 03:02:44

A. Yes. 03:02:45

Q. Do you agree that the analysis in these last two pages we've been discussing was the -- your staff's attempt to comply with the provisions of 92-49 that similar sites be treated similarly? 03:02:48 03:02:51 03:02:55 03:03:00

A. Yes. And it was kind of an attempt to also 03:03:03

expedite cleanup of the site by taking advantages of a biological study, effect study done at one site and weighing the benefits of just applying those results at another site and obtaining a -- a quicker cleanup in the process. 03:03:11 03:03:18 03:03:26 03:03:29 03:03:34

Q. Okay. We'll come back to that. 03:03:36

A. Okay. 03:03:38

Q. Would you agree that the cleanup levels for the shipyard site are significantly lower than the levels established for Campbell and Shelter Island? 03:03:40 03:03:43 03:03:55

MR. CARRIGAN: Vague. 03:03:59

THE WITNESS: If I could just examine that -- 03:04:00

MR. RICHARDSON: It will be Exhibit 8 to Exhibit 1210. 03:04:05 03:04:07

THE WITNESS: That big spreadsheet. 03:04:08

MR. RICHARDSON: Yeah. 03:04:09

MR. CARRIGAN: I keep thinking I have that out. 03:04:10

THE WITNESS: Okay. 03:04:12

MR. CARRIGAN: Oh, there it is. 03:04:24

THE WITNESS: Okay. Got it. All right. Cleanup levels at Campbell, yes, they are -- they are -- the proposed levels at the shipyard site are more stringent than the Campbell levels, yes. 03:04:26 03:04:33 03:04:44 03:04:49

BY MR. RICHARDSON: 03:04:51

Q. Okay. I'll introduce this as 1231. 03:04:55

(Exhibit 1231 was marked.) 03:05:02

MR. CARRIGAN: I'm going to leave 1210 out. 03:05:15

MR. RICHARDSON: What's that? 03:05:17

MR. CARRIGAN: I said I'm going to leave 1210 out. 03:05:18 03:05:19

MR. RICHARDSON: Yes. Please do. 03:05:20

BY MR. RICHARDSON: 03:05:32

Q. Mr. Barker, I've handed you the final Regional Board report for the shipyard sediment cleanup levels for NASSCO dated February 16th, 2001. Do you see that? 03:05:32 03:05:35 03:05:38

A. Yes, I do. 03:05:42

Q. Are you familiar with this document? 03:05:46

A. I recall the document. I haven't looked at it in a long time. 03:05:47 03:05:50

Q. Was it developed under your direction? 03:05:53

A. Yes, it was. 03:05:56

Q. Between 1999 draft report that we just looked at and this 2001 final report, did the staff recommendation to use the Campbell and Shelter Island cleanup levels change? 03:06:06 03:06:09 03:06:14 03:06:17

A. I'd have to freshen my memory. I believe what happened is a -- a peer review panel was set up to peer review the -- the issue of was it appropriate to use the Campbell cleanup levels at the NASSCO and BAE shipyard site. And there were, as I recall -- recall, there were 03:06:23 03:06:28 03:06:36 03:06:47 03:06:51

three reviewers on this panel. And they each submitted an opinion on that. 03:06:57 03:07:02

Q. And if you -- I'm sorry. 03:07:05

A. That's all. 03:07:07

Q. Okay. If you'd look at page 19 of the report. 03:07:08

A. Okay. 03:07:12

Q. With Bates number 988. 03:07:13

A. 988. 03:07:16

Q. There's a discussion, I believe, of the peer review panel you're referring to. 03:07:18 03:07:20

A. Yes. 03:07:22

Q. So did that peer review panel include Mr. Steve Bay of Southern California Coastal Water Research Project? 03:07:22 03:07:24 03:07:26

A. Yes. 03:07:29

Q. And the review panel also included Russell Ferry of Moss Landing Marine Laboratories. 03:07:30 03:07:32

A. Yes. 03:07:37

Q. And Todd Thornberg of Hart Krauser? 03:07:37

A. Yes. 03:07:40

Q. And they peer reviewed the validity of using the Campbell and Shelter Island cleanup levels for the NASSCO site; correct? 03:07:40 03:07:43 03:07:47

A. Yes. 03:07:47

Q. On the next page, I understand this to be a 03:07:52

summary of each of those peer reviewer's thoughts on -- 03:07:58
on that issue. 03:08:00
A. Yes. 03:08:02
Q. And if I understand Mr. Bay's conclusion of 03:08:03
SCCWRP, he concluded that using the Campbell cleanup 03:08:07
levels was appropriate. There was insufficient data to 03:08:10
allow him to conclude whether he should apply the 03:08:16
Campbell and -- strike that. Start that one over. 03:08:19
MR. CARRIGAN: I was just going to say document 03:08:24
speaks for itself. Go ahead. You can characterize it, I 03:08:26
guess. 03:08:29
THE WITNESS: Yeah. 03:08:30
BY MR. RICHARDSON: 03:08:30
Q. Did Mr. Bay conclude that there was insufficient 03:08:30
data to allow him to find that we should use the Campbell 03:08:33
cleanup levels at NASSCO? 03:08:37
A. Yes. I -- I believe -- believe that was the 03:08:48
results of his review. 03:08:50
Q. Okay. And did Mr. Ferry conclude that the AET 03:08:54
approach was not appropriate for either Campbell or the 03:08:58
NASSCO site? 03:09:01
A. Let's see. I vaguely recall that. But I'd -- 03:09:06
I'd have to review this in more detail to -- I know there 03:09:17
was a question on the number of stations. And perhaps 03:09:22
that -- the adverse effects threshold procedure was 03:09:26

criticized by Mr. Ferry. But I -- without reading this, I would -- I would -- would just be speculating. I think that's correct, but I -- I don't know that. 03:09:36 03:09:44 03:09:48

Q. But the AETs were eventually used at the Campbell shipyard site; correct? 03:09:49 03:09:52

A. That's correct. Yes, that's correct. 03:09:55

Q. And then the third peer reviewer, Mr. Thornberg at Hart Krauser, is it correct that he concluded that it was appropriate to use the Campbell levels for the shipyard site? 03:09:58 03:10:05 03:10:07 03:10:10

A. I believe that's correct, yes. 03:10:10

Q. So we had one expert say don't use them; one expert said don't use them; and one expert said, "I need more data before I decide"; is that correct? 03:10:11 03:10:14 03:10:17

A. Yes, yes. 03:10:20

Q. Experts. 03:10:21

A. Yes. 03:10:22

Q. So if you look at page -- I'm sorry. Just a moment -- 975, Bates No. 975. 03:10:27 03:10:36

Do you recall what staff's final recommendation was to the executive officer and Regional Board after reviewing these three different peer reviews of the LAET approach? 03:10:48 03:10:52 03:10:54 03:11:00

A. I'd have to review it. I -- I -- I think that our recommendation led to the -- a decision to develop 03:11:04 03:11:07

site-specific levels there. 03:11:13

Q. So it sounds like, in essence, you agreed with 03:11:21
one of the expert's findings that -- that we should-- we 03:11:24
have insufficient data and need more analysis. 03:11:27

A. Yes, yes. In the end we kind of reluctantly let 03:11:31
go of the proposal to use Campbell levels at the site. 03:11:35

Q. Who reluctantly let go of using Campbell's? 03:11:44

A. The staff did. But on balance, based on the 03:11:49
concerns being expressed, we felt that it was no longer a 03:11:55
viable alternative to use those levels at the site; that 03:12:02
there was too much criticism of that from experts working 03:12:08
in the field, and to the point where we felt our board 03:12:14
would not be comfortable moving forward with that 03:12:22
proposal. 03:12:25

Q. By "experts in the field," do you mean 03:12:27
Russell Ferry of Moss Landing? 03:12:32

A. Yes, and Steve Bay, yes. 03:12:34

Q. My understanding is Steve Bay simply concluded 03:12:36
there was insufficient data to determine whether 03:12:38
Campbell Shipyard AETs applied. 03:12:40

A. I -- again, I haven't read through the document. 03:12:43
I -- he may have also had some concern about the possible 03:12:48
differences at the site that might yield a different AET 03:12:58
result if the tests were conducted right at NASSCO's site 03:13:03
versus the Campbell site. 03:13:11

Q. So Mr. Bay and Mr. Thornberg did not object to the AET approach; only Russell Ferry of Moss Landing did; correct? 03:13:13 03:13:17 03:13:24

A. The more you're asking me this, the more I'm thinking I want to read this document to refresh my memory. The AET approach is -- I don't think either Steve Bay or Russell Ferry are strong advocates of that approach being the sole basis for determining a cleanup level. So... 03:13:25 03:13:28 03:13:30 03:13:40 03:13:45 03:13:48

Q. Okay. We can come back to that. That's fine. 03:13:51

A. All right. 03:13:54

Q. So the conclusion was staff recommended that a further study be done, and the board eventually issued 13267 orders that we discussed yesterday -- 03:13:55 03:13:59 03:14:02

A. Yes. 03:14:05

Q. -- requiring the shipyards -- 03:14:05

A. Yes. 03:14:06

Q. -- to do a study; correct? 03:14:06

A. Yes. Right. I might add I've just glanced at page 20 here where it looks like it gets into a summary of their -- each individual's opinion. And I noted that Steve Bay observed that contamination patterns differ among the -- the sites, and relationship between effects and chemicals may differ between the sites. So it sounds like he was uncomfortable with using samples collected at 03:14:08 03:14:11 03:14:15 03:14:20 03:14:25 03:14:31 03:14:34

another site in lieu of site-specific data. 03:14:38

Q. Right. So it sounds like he wanted 03:14:42

site-specific data, but he would accept the AET approach 03:14:45

in Bullet 2. He just needed more data to do so. 03:14:48

A. Yeah. It sounds like that, yeah. 03:14:53

Q. Okay. And we've looked at the 2003 Exponent 03:14:54

report that is introduced as a master exhibit. 03:14:58

And it's my understanding, correct, that that 03:15:01

report was submitted in response to this 13267 that we 03:15:04

just referenced to? 03:15:10

A. Yes, that's correct. 03:15:11

Q. So generally where a site uses a site-specific 03:15:15

study to come up with cleanup levels, it's generally more 03:15:19

accurate and conservative? 03:15:22

A. Yes. Yes. 03:15:24

Q. Moving forward to the issuance of the cleanup 03:15:28

and abatement order in 2005, is it your recollection that 03:15:30

the findings in that order were based on the Exponent 03:15:37

2003 study? 03:15:42

A. Yes. That was the -- the data that we -- we 03:15:47

used in the report came from -- from the 2003 Exponent 03:15:50

study. I don't know that the findings didn't agree with 03:15:55

every conclusion in the study. But certainly the -- the 03:16:01

data was used, yes. 03:16:06

Q. Okay. Was the Resolution 92-49 comparison 03:16:09

between Campbell and the NASSCO site as to the appropriate application of the AETs revisited in the 2005 tentative CAO? 03:16:16 03:16:20 03:16:25

A. I don't recall that it was. I think it was back in 2001 when we issued the investigative order, we basically let go of that concept as a viable option. 03:16:26 03:16:32 03:16:38

Q. And that was let go also in the first release of the Cleanup Team's Draft Technical Report in 2008; correct? 03:16:42 03:16:45 03:16:49

A. Yes. 03:16:50

Q. However, in the current CAO and DTR, there is a discussion of AETs; correct? 03:16:53 03:16:56

A. Yes, there is. 03:16:59

Q. So the DTR has used the apparent effects threshold approach developed for the Campbell Shipyard Site but with site-specific NASSCO data; correct? 03:17:00 03:17:04 03:17:07

A. Yes. I just caveat my answer. Along with another sediment chemistry threshold methodology referred to as SSMEQ and along with employment of a conservative, I guess, safety factor for the advance -- or excuse me -- adverse effects threshold, yeah. Yeah. 03:17:12 03:17:17 03:17:26 03:17:32 03:17:38

Q. So the LAET you're referring to, the lowest apparent effects threshold, you mentioned conservative factors. So the DTR used the LAET model but put some level of additional conservatism in it? 03:17:42 03:17:46 03:17:49 03:17:54

A. Absolutely, yes. 03:17:58

Q. And what was that conservatism? 03:18:00

A. It applied a 60 percent of -- of the -- whatever the calculated LAET value was for a chemical that was 60 percent of that was -- it had a safety factor of 60 percent multiplied, times to further reduce it. 03:18:03 03:18:07 03:18:14 03:18:18

Q. Okay. So if my understanding is correct, at the Campbell shipyard they used an apparent effects threshold. 03:18:25 03:18:27 03:18:30

A. Yes. 03:18:30

Q. We used the lowest apparent effects threshold, which is the lowest number that -- 03:18:31 03:18:33

A. Yes. 03:18:35

Q. -- there is an apparent effect. 03:18:35

A. Yes. 03:18:36

Q. And then we took a 40 percent safety buffer below that and used that as our measure of protectiveness? 03:18:36 03:18:41 03:18:43

A. A 60 percent. 03:18:44

Q. So it's 60 percent of that number. It's 40 percent below the lowest number; correct? 03:18:45 03:18:47

A. Okay. Yes. 03:18:50

Q. And that -- both the SSMEQ and that LAET approach are reliable predictors of likely benthic impairment; correct? And I'd refer you to page 32-34 of 03:18:51 03:18:57 03:19:03

the DTR. 03:19:11

A. Okay. Yeah. Okay. Yes. That was our -- the staff's conclusion, that we could employ those thresholds at the shipyard site to address concerns about impacts to the benthic community. 03:19:12 03:19:32 03:19:37 03:19:43

Q. So using those two measures are likely predictors of any like -- of any benthic impairment at other locations throughout the shipyard? 03:19:45 03:19:48 03:19:51

A. Yes, of, yeah, likely benthic impairment. 03:19:53

Q. That's one of the issues that were tested in the 2009 now sampling; correct? 03:19:57 03:20:00

A. Exactly. 03:20:02

Q. And it confirmed this statement; correct? 03:20:02

A. Yes, it did. 03:20:04

Q. Comparing the lowest apparent effects threshold, LAET levels, found in Table 32-19. 03:20:06 03:20:11

A. 32-19. 03:20:20

Q. Comparing those numbers with the cleanup levels from the Campbell Shipyard Site in Exhibit 1210, Exhibit A. 03:20:25 03:20:27 03:20:32

A. Okay. 03:20:33

Q. Would you agree that the -- the NASSCO LAET screening value, 60 percent screening value, are lower than the Campbell cleanup levels for everything but PCBs? 03:20:38 03:20:42 03:20:49

A. Let's see. Copper, the 60 percent value is 03:20:57

lower. 03:21:04

Q. Lower at the shipyard site? 03:21:05

A. Lower at the shipyard site. 03:21:06

Q. So the numbers are 552 milligrams per kilogram at the shipyard site -- sorry -- 159 at the shipyard site. 03:21:08 03:21:11 03:21:17

A. I'm not sure. Let's see. The 60 percent LAET at the shipyard site was 552 for copper. And at the Campbell site, it was two -- 231 parts per -- 03:21:24 03:21:27 03:21:36

Q. For the dredge it was 810; correct? 03:21:42

A. Or excuse me. 810, correct. 03:21:45

Q. Okay. And then for HPAHs? 03:21:48

A. Let's see. Three columns up. Okay. It was -- at the shipyard site, they calculated 60 percent of the LAET was 15.3 parts per million. And then at Campbell site, HP -- that was for HPAHs. And at the Campbell site it was 44 parts per million. So that's more conservative. 03:21:55 03:22:04 03:22:07 03:22:13 03:22:20 03:22:22

Q. Thank you. And then for TBT? 03:22:24

A. Okay. TBT at the shipyard site, 60 percent of the LAET value was calculated at 1,110 micrograms per kilogram. And at the Campbell site it was 5.75 milligrams per kilogram. 03:22:25 03:22:29 03:22:37 03:22:47

Q. So for all those CoCs, the 60 percent LAET approach at the shipyard site is significantly below the 03:22:54 03:22:59

Campbell cleanup levels; correct? 03:23:02

A. Yes. 03:23:04

Q. Let's look at the Commercial Basin harbor boatyards. 03:23:05 03:23:09

A. Okay. 03:23:10

Q. In Exhibit A to Exhibit 1210 again, do you agree that the seven Commercial Basin boatyards -- I'm going to list them and I may pronounce it wrong -- Eichenlaub Marine? 03:23:15 03:23:25 03:23:34 03:23:36

A. Eichenlaub Marine. 03:23:38

Q. Shelter Island Boatyard, Bay City Marine, Driscoll Boatyard, Kettenburg Marine, Koehler Kraft, and Mauricio and Sons are all within the Commercial Basin boatyard category you described previously? 03:23:40 03:23:43 03:23:49 03:23:52

A. Yes. 03:23:54

Q. So if I refer to these jointly as the Commercial Basin boatyards, will you understand that I'm referring to these seven sites? 03:23:56 03:23:59 03:24:01

A. Yes, I do. 03:24:02

Q. Good. Because we don't have to go through each one independently then. 03:24:03 03:24:05

A. Yes. That is good. 03:24:08

MR. BENSHOOF: Concur. 03:24:13

BY MR. RICHARDSON: 03:24:14

Q. Do you agree that the Commercial Basin boatyards 03:24:14

sites involve analogous discharges to the shipyard site? 03:24:17
A. Similar types of waste, the volumes involved 03:24:26
would -- would not be similar. They're smaller 03:24:30
facilities. 03:24:32
Q. They're all involved in vessel repair and 03:24:35
construction. 03:24:37
A. Construction, yes. 03:24:38
Q. Similar historical operations? 03:24:40
A. Yes. 03:24:42
Q. Similar storm water discharges. 03:24:42
A. (Nods head.) 03:24:46
Q. Did you agree that similar storm water 03:24:49
discharges? 03:24:51
A. I -- I don't recall storm water discharges being 03:24:53
part of the consideration over at the boatyards. I know 03:25:02
there's MS4 storm drains that empty into the basin. I 03:25:05
don't recall how many or where those were located. 03:25:11
Q. And then storm water from the facilities would 03:25:16
be similar? 03:25:18
A. I would think so, at least -- again, you know, 03:25:20
the land area is not the same, so the volume of run-off 03:25:25
wouldn't be the same. But maybe in -- some of the same 03:25:29
types of potential for contaminants to get into the storm 03:25:35
water, yeah. 03:25:39
Q. Do you agree that the Commercial Basin boatyard 03:25:44

sites involve similar wastes as the NASSCO site? I can refer you to Exhibit A of 1210. 03:25:46 03:25:53

A. Yeah. I -- yeah. I would say there are similar waste types. There may be a -- a -- a bigger variety of wastes at NASSCO than at the smaller boatyards. But certainly common elements. 03:25:56 03:25:59 03:26:04 03:26:09

Q. Okay. And those pollutants of concern that are common are copper, mercury, and TBT across all of the Commercial Basins? 03:26:11 03:26:14 03:26:18

A. Yes. Yes. 03:26:19

Q. And that those are similar to the NASSCO site? Let me rephrase. 03:26:20 03:26:27

Those three CoCs are three of the five primary CoCs at NASSCO; correct? 03:26:28 03:26:30

A. Yes. Yes. 03:26:33

Q. Do you agree that the Commercial Basin boatyard sites involve similar site characteristics to NASSCO? 03:26:38 03:26:40

A. I -- I mean, they are in -- discharges into the same water body, different parts of the bay. I don't -- I don't know if there's differences in the sediment particle sizes, et cetera, the distribution of contaminants might be different. But the same beneficial uses and receptors of concern would be -- they would be the same at both sites, same water body involved. 03:26:44 03:26:53 03:27:00 03:27:04 03:27:07 03:27:11 03:27:17

Q. Same receptors, same general receptors? 03:27:24

A. Yes. 03:27:27

Q. And same potential for release of anti-fouling paints; correct? 03:27:28 03:27:31

A. Yeah. Yes. 03:27:40

Q. Also subject to tidal action? 03:27:41

A. Yes. 03:27:44

Q. Subject to currents, subject to turbulence from boats? 03:27:44 03:27:50

A. Yes. Although the size of the vessels is not the same. It's also a part of the bay that's not as -- as open to -- it's in kind of an enclosed part of the bay over at Commercial Basin. It's not out in the main bay channel. 03:27:51 03:27:54 03:27:59 03:28:04 03:28:09

Q. Do you agree that the Commercial Basin boatyard sites involve similar water quality considerations as the shipyard site? 03:28:12 03:28:14 03:28:17

A. Yes, I do. 03:28:18

Q. So that would be the same water body, same factors we've been discussing? 03:28:20 03:28:22

A. Yes. 03:28:24

Q. Same receptors? 03:28:24

A. Right. 03:28:25

Q. Same beneficial uses? 03:28:26

A. Same water quality standards that would be applicable. 03:28:28 03:28:29

Q. Also subject to influences from storm drains? 03:28:31
A. Yes. 03:28:35
Q. Based on our discussion of the Commercial Basin boatyard sites, should they be considered a similar site to NASSCO for purposes of the analysis under Resolution 92-49, paragraph 9? 03:28:39 03:28:44 03:28:50 03:28:53
MR. CARRIGAN: Calls for a legal conclusion. 03:28:56
THE WITNESS: Yeah. There's a basis for -- for looking at what was done at those sites. They're not as similar as Campbell was to the sites. But yes, there's -- there's elements of the issues we've been discussing that could be relevant to the shipyards. 03:28:57 03:29:06 03:29:09 03:29:14 03:29:19
BY MR. RICHARDSON: 03:29:24
Q. Let's turn to the Paco Terminals site. If I could introduce this as 1232. 03:29:25 03:29:30
(Exhibit 1232 was marked.) 03:29:32
BY MR. RICHARDSON: 03:29:52
Q. Mr. Barker, I handed you a copy of Addendum 1 to cleanup and abatement order for the Paco Terminals site; do you see that? 03:29:52 03:29:55 03:29:59
A. Addendum 1, yes, I do. 03:30:00
Q. Are you familiar with this document? 03:30:02
A. I recall the document. It's been many years since I've looked at it. Yes. 03:30:08 03:30:11
Q. But you worked on the site; correct? 03:30:13

A. That is correct. 03:30:15
Q. This is one of the sites listed in Exhibit A to 03:30:15
Exhibit 1210; correct? 03:30:17
A. Yes, it is. 03:30:19
Q. Do you agree that the Paco Terminals site 03:30:26
involved analogous discharges to the shipyard site? 03:30:28
A. No, no. It -- there was a chemical that was the 03:30:39
same, copper, at the Paco Terminals site. It was a 03:30:50
copper ore that was being spilled into the bay, yeah. 03:30:55
But it's -- it was a different type of waste than what 03:31:01
would be down at a shipyard. 03:31:05
Q. And what type of ore was used at the 03:31:11
Paco Terminals site? 03:31:15
A. I -- I recall it had a name for it called 03:31:17
chalcopyrite, which was kind of rock copper ore, kind of 03:31:21
a -- a very water -- if I recall this right, water 03:31:29
insoluble form of copper. 03:31:37
Q. Okay. Let's look at Exhibit 1219. 03:31:54
A. 1219. 03:31:58
Q. Which is the cleanup and abatement order for 03:31:59
Paco Terminals. 03:32:01
A. Okay. 03:32:03
Q. I'm looking at Bates number page 386. 03:32:12
A. Okay. 03:32:15
Q. Do you see that? 03:32:15

A. Just -- we're getting it right now. 03:32:18
Q. Okay. 03:32:19
MR. CARRIGAN: I've shuffled these too many 03:32:30
times today already. Maybe it's getting late in the day. 03:32:32
BY MR. RICHARDSON: 03:32:38
Q. If you could turn to page 386 Bates number. 03:32:39
A. 386. Okay. 03:32:42
Q. Paragraph 2. 03:32:45
A. Paragraph 2. I -- I see my memory was correct. 03:32:46
It's chalcopyrite. 03:32:53
Q. That's impressive. What is chalcopyrite? 03:32:55
A. Cupriferous sulfide ore. 03:32:59
Q. Okay. So a type of copper ore? 03:33:02
A. Yes. Yes, it is. 03:33:04
Q. Do you agree that the copper found at NASSCO in 03:33:08
the sediment was also associated with the minimal -- 03:33:11
mineral chalcopyrite, was found to be exclusively 03:33:15
associated with the mineral, both mineral ores are 03:33:22
respective metals and minerals themselves were associated 03:33:25
with particles of smelter slag in the sediment. And I'll 03:33:29
refer you to Master Exhibit 4A. 03:33:33
So in shorthand, isn't it also chalcopyrite the 03:33:42
same copper that was found at Paco Terminals that's found 03:33:47
at the shipyard site? 03:33:50
A. I don't -- I don't know that to be the case. 03:33:51

The -- at a shipyard there's different types of waste products that could have copper in them. One would be vessel hull bottom paints which have a very -- a type of copper in them that is a very bioavailable form that is actually designed to kill marine organisms and keep them growing from the bottom of a hull, whereas the chalcopyrite ore at Paco wasn't that type of product. Now, there may be some forms of copper at a shipyard that uses the chalcopyrite form of copper. I don't know. 03:34:00 03:34:10 03:34:13 03:34:22 03:34:28 03:34:36 03:34:41 03:34:46 03:34:51

Q. So you don't recall whether that specific issue was studied during the 2001/2003 shipyard site investigation? 03:35:03 03:35:07 03:35:14

MR. CARRIGAN: Vague. 03:35:14

THE WITNESS: I -- it -- it may have -- there may have been some information in the Exponent report on that. I just don't recall it. 03:35:15 03:35:20 03:35:23

BY MR. RICHARDSON: 03:35:25

Q. Okay. So if Exponent did study it and found that the predominant copper at the site is chalcopyrite -- 03:35:25 03:35:28 03:35:31

A. Yeah. 03:35:31

Q. -- then you would agree that the contaminants are the same for -- or similar for the Paco Terminals site and NASSCO? 03:35:33 03:35:35 03:35:38

A. Yeah. It -- yeah. It -- yeah. That would 03:35:39

certainly be a basis for that. 03:35:40

Q. Okay. And Paco Terminals is roughly a couple 03:35:43
miles from the shipyard site; does that sound about 03:35:47
right? 03:35:51

A. Yes, it is. 03:35:53

Q. And the Paco Terminals had storm drain outfalls 03:35:55
located in its area; correct? 03:35:58

A. The Paco site, yeah, there were storm drains in 03:36:02
the area, yes. 03:36:05

Q. Similar to the NASSCO site has storm drains in 03:36:07
its area? 03:36:10

A. Yes. 03:36:11

Q. Do you agree that Paco Terminals site involves 03:36:13
similar water quality considerations as the NASSCO site? 03:36:16

A. Yes, the same water body is involved, same 03:36:21
beneficial uses. 03:36:24

Q. Assuming that the predominant form of copper at 03:36:30
both sites is chalcopyrite, and based on the other 03:36:35
discussions we've had concerning the two sites, would you 03:36:39
agree the Paco Terminals site should be considered as an 03:36:41
analogous site to NASSCO for purposes of paragraph 9 of 03:36:45
Resolution 92-49. 03:36:49

MR. CARRIGAN: Calls for a legal conclusion. 03:36:52

THE WITNESS: Let me -- let me get the 03:36:58
resolution in front of me again to examine that. 03:36:59

MR. CARRIGAN: It's Exhibit 1208. 03:37:11

THE WITNESS: It's possible I have it here. 03:37:17

MR. CARRIGAN: Should be one with a tab on it. 03:37:20

THE WITNESS: Okay. It's not this one. 03:37:22

MR. CARRIGAN: There it is. 03:37:47

THE WITNESS: Okay. Thank you. 03:37:49

Yeah. I'm just noting that paragraph 9 of 03:37:59
Resolution 92-49 indicates prescribed cleanup levels 03:38:03
which are consistent with appropriate levels set by the 03:38:08
board at analogous sites. One thing I would like to 03:38:14
point out is that the science of deriving and prescribing 03:38:18
cleanup levels for marine sediments is an evolving 03:38:23
science. 03:38:30

For instance, the considerations in the cleanup 03:38:31
levels at the Commercial Basin boatyards and at 03:38:35
Paco Terminal, the methodologies used were not as 03:38:39
sophisticated as the tools we've used in -- in the NASSCO 03:38:45
study. And the scientific basis for those levels is not 03:38:49
as firm as it is for the NASSCO study. 03:38:55

So it's a little simplistic to go to a site, for 03:38:58
example, where the cleanup level was set 15 years ago, 03:39:06
and even though it's an analogous site, and use that as a 03:39:12
basis for dictating what would be an appropriate level 03:39:16
at, say, the NASSCO site. 03:39:22

Q. But you would agree that 92-49, paragraph 9, 03:39:25

requires you to look at the other sites -- 03:39:30
A. Yes. 03:39:32
Q. -- for similarities; correct? 03:39:32
A. Yes. 03:39:34
MR. CARRIGAN: Calls for a legal conclusion. 03:39:34
THE WITNESS: Okay. 03:39:36
BY MR. RICHARDSON: 03:39:36
Q. I'd like to introduce this as 1233. 03:39:46
(Exhibit 1233 was marked.) 03:39:48
BY MR. RICHARDSON: 03:39:58
Q. I'm going to give you a moment to look at this 03:39:58
document. 03:40:00
A. Okay. All right. 03:40:01
Q. I handed you the staff report for the cleanup 03:40:07
and abatement order for the BF Goodrich site. 03:40:09
A. Yes. 03:40:15
Q. Dated March 26, 1998. Do you see that? 03:40:16
A. Yes, I do. 03:40:19
Q. Are you familiar with this report? 03:40:20
A. This report, no. No, I'm not. It was done -- 03:40:24
the work done on this site was in a different unit in the 03:40:29
office than what I was involved with. 03:40:33
Q. So this report was not developed under your 03:40:35
supervision? 03:40:37
A. That's correct. 03:40:37

Q. Are you generally familiar with this site? 03:40:40
A. I -- I know of the site. I've done inspections 03:40:42
over the years there. But I'm not familiar with the 03:40:47
details of the cleanup conducted there. 03:40:49
Q. Do you recall that this is an upland tidal marsh 03:40:57
site? 03:41:00
A. Yes, I do know that. 03:41:00
Q. Do you recall that this site was bounded on 03:41:04
three sides by sensitive riparian uses including a 03:41:07
national wildlife refuge? 03:41:13
A. I -- I recall that they were in the vicinity, 03:41:16
yes. 03:41:18
Q. So do you believe this site, the BF Goodrich 03:41:20
site to have similar site characteristics as the NASSCO 03:41:24
site? 03:41:30
A. I don't -- I can't offer an opinion on it 03:41:31
really. I -- I haven't read this report or -- and I 03:41:34
haven't done detailed -- any work on the board's behalf 03:41:40
at that site. 03:41:45
Q. Okay. Well, let's -- as the person most 03:41:46
knowledgeable on the issue of sediment sites -- 03:41:49
A. Okay. 03:41:50
Q. -- in San Diego Bay, I have a few questions for 03:41:51
you. 03:41:52
A. All right. 03:41:53

Q. And maybe we can together look at the staff report and help answer some questions. 03:41:53 03:41:55

A. Okay. All right. 03:41:57

Q. First, would you agree that because this was in a national wildlife refuge area that that is dissimilar to the NASSCO area, not -- not the same as the NASSCO site? 03:41:58 03:42:00 03:42:07 03:42:12

A. Yes. 03:42:12

Q. Actually, there may be an easier way to do this. Let's look at this exhibit. I'm going to introduce this as 1234. 03:42:18 03:42:22 03:42:30

(Exhibit 1234 was marked.) 03:42:31

BY MR. RICHARDSON: 03:42:53

Q. Mr. Barker, I'm handing you a set of slides that appear to be prepared by Pete Peuron of the Slick (ph) Program of the San Diego Regional Board. 03:42:54 03:43:02 03:43:07

A. Okay. 03:43:09

Q. Do you see that? 03:43:10

A. Yes, I do. 03:43:11

Q. These numbers are not paginated, so I apologize. A few pages in, maybe five or six pages in, there's a slide that starts "big differences." 03:43:17 03:43:29 03:43:31

A. Big differences, okay. Got it. 03:43:39

Q. So this slide says, "There are big differences between this site and other sediment sites." 03:43:43 03:43:46

A. Okay. 03:43:47

Q. The estuarian conditions, there are different receptors, different physical and chemical environment, dynamic often non-equilibrium condition, small impacted area, easy to access sediment. 03:43:48 03:43:52 03:43:56 03:43:58

A. Yes. 03:44:01

Q. For the reasons described on this slide related to the BF Goodrich Sediment Site, would you agree that this site is significantly different than the NASSCO site? 03:44:02 03:44:04 03:44:09 03:44:12

A. Yes, I would. 03:44:13

Q. Thank you, Mr. Barker. 03:44:18

A. Yes. 03:44:19

Q. Mr. Barker, I have some follow-up questions. I think it will be more efficient if I organize those thoughts and reserve the right to come back and ask them to you later in the deposition. 03:44:40 03:44:43 03:44:47 03:44:50

A. Okay. 03:44:51

Q. If that makes sense, we can allow another party to ask questions now. 03:44:51 03:44:53

MR. CARRIGAN: Yeah. Let's go off the record. 03:44:54

THE VIDEOGRAPHER: Off the record. Time is 3:44 p.m. 03:44:56 03:44:57

(A recess was taken.) 03:45:04

THE VIDEOGRAPHER: Back on the record time is 03:48:50

3:48 p.m. 03:48:51

*** 03:48:52

EXAMINATION 03:48:52

BY MS. EVANS: 03:48:53

Q. Good afternoon, Mr. Barker, my name is 03:48:53
Sarah Evans, as I indicated off the record. Our office 03:48:55
represents Star & Crescent Boat Company, along with 03:48:57
Suzanne Varco who has been switching in and out with me 03:49:00
here. We're going to switch gears entirely and talk 03:49:05
about issues related just to our client, Star & Crescent 03:49:06
Boat Company. 03:49:08

A. All right. 03:49:10

Q. First, have you reviewed any documents related 03:49:10
to the corporate history of San Diego Marine Construction 03:49:12
Company? 03:49:15

A. Yes, I have. Documents that are in the 03:49:16
administrative record and some supplementary documents 03:49:21
that have been added. Also, the sections of the DTR that 03:49:26
address that, yes. 03:49:33

Q. So all the documents related to San Diego Marine 03:49:34
Construction Company you reviewed are either in the 03:49:37
administrative record, the supplemental record, or in 03:49:39
Exhibits 1 and 2. 03:49:41

A. That's correct, yes. 03:49:43

Q. How about documents relating to the corporate 03:49:44

history of Star & Crescent Boat Company as a division of the San Diego Marine Construction Company? 03:49:46 03:49:50

A. As a division. 03:49:54

MR. CARRIGAN: Assumes facts not in evidence. Go ahead. 03:49:55 03:49:56

THE WITNESS: I -- I've reviewed the findings and conclusions in the DTR. I haven't looked at all of the documents myself, personally. 03:49:58 03:50:05 03:50:11

BY MS. EVANS: 03:50:13

Q. Which ones have you personally looked at on that topic? 03:50:14 03:50:17

A. Okay. The ones that were referenced in the responses to the interrogatories, if I'm phrasing that correctly. 03:50:18 03:50:28 03:50:31

Q. Any others? 03:50:33

A. No. 03:50:34

Q. Okay. Have you looked at any additional documents related to Star & Crescent Boat Company since completing the discovery responses? 03:50:34 03:50:39 03:50:42

A. No, I have not. 03:50:45

Q. Do you have plans to do so? 03:50:46

A. I -- yes, I do have plans to -- to do that, yes. 03:50:48

Q. What types of plans do you have on that? 03:50:52

A. Types of plans to look at documents. 03:50:55

Q. Why do you intend to look at additional 03:50:57

documents? 03:50:59

A. Just I have a crushing workload at the office. 03:51:00

I'm not always able to look at everything at the same 03:51:03

time. And -- but I eventually catch up with events. 03:51:09

Yeah. 03:51:13

Q. But nothing specific, no specific documents that 03:51:14

you haven't yet gotten a chance to review, but that you 03:51:17

intend to review related to Star & Crescent Boat Company? 03:51:20

A. That's correct. 03:51:23

Q. Who provided you the documents that you did 03:51:24

review which are in the administrative records or in 03:51:27

Exhibits 1 and 2? 03:51:30

A. The ones that are in the administrative record 03:51:32

were -- were in the Regional Board files. And I reviewed 03:51:35

them as those documents were scanned. The other 03:51:43

documents, any documents that were attached to our 03:51:51

responses to the interrogatories were -- would have -- I 03:51:55

would have seen those. 03:52:01

Q. How about for Star & Crescent Investment 03:52:03

Company; have you seen any -- or have you reviewed any 03:52:05

documents related to its corporate history? 03:52:08

A. I don't believe so. 03:52:11

Q. Have you ever seen the Star & Crescent Boat 03:52:14

Company articles of incorporation from 1976? 03:52:16

A. I -- I don't recall seeing that. 03:52:20

Q. How about any minutes of meetings for Star & Crescent Boat Company? 03:52:22 03:52:24

A. I -- I don't recall that. 03:52:26

Q. How about any offers between Star & Crescent Investment Company and Star & Crescent Boat Company? 03:52:27 03:52:30

A. Also, I don't recall that. 03:52:35

Q. So you don't recall reviewing any of those three types of documents in preparing any -- Exhibits 1 or 2? 03:52:36 03:52:40

A. No. I don't recall that, no. 03:52:45

Q. And if we can turn to Exhibit 1 which is the tentative order. 03:52:48 03:52:51

A. Okay. 03:52:52

Q. If you'd go to page 2. 03:52:53

A. Exhibit 2, okay. 03:52:58

Q. In that first paragraph, it indicates that Star & Crescent and other discharging parties "caused or permitted discharge of waste to Shipyard Sediment Site." 03:53:03 03:53:07 03:53:12

A. Right. 03:53:15

Q. Do you know who authored that statement as it relates to Star & Crescent? 03:53:16 03:53:18

A. As it relates to Star & Crescent, legal -- I guess legal counsel had investigated the change in responsible parties that has occurred at the San Diego Marine construction site, which is currently referred to as the BAE site, that have occurred over the years. And 03:53:21 03:53:33 03:53:47 03:53:55 03:53:59

based upon advice from counsel, after they reviewed the various documents, that was added there, yeah. 03:54:02 03:54:08

Q. Do you have any understanding as to what the basis of that statement is other than what legal counsel has told you? 03:54:12 03:54:16 03:54:21

A. Just the statements that support that in the DTR, I have some familiar -- familiarity with that, that there was a -- a successor in interest covering the years from, I believe it was 1914 to 1972. 03:54:22 03:54:27 03:54:31 03:54:37

Q. When you say that, what do you mean by -- by your familiarity with that successor in interest during that time frame? 03:54:44 03:54:47 03:54:50

A. Just that I have reviewed the statements in the DTR supporting this, the facts that are in the DTR. And that's it. 03:54:51 03:54:56 03:55:02

Q. Other than the statements in the DTR that support that, have you reviewed any other documents related to that statement about the successor in interest liability of Star & Crescent? 03:55:03 03:55:04 03:55:07 03:55:10

A. No, I have not, no. 03:55:12

Q. So you haven't reviewed any of the underlying documents? 03:55:13 03:55:15

A. That's correct. 03:55:15

Q. So other than the statements in the DTR, you don't know of any documents that support that statement 03:55:18 03:55:21

in the tentative order that Star & Crescent Boat Company caused. 03:55:25 03:55:28

MR. CARRIGAN: Asked and answered. Go ahead. 03:55:29

THE WITNESS: I -- I would just refer to whatever responses we provided in the response to the interrogatories on these issues. 03:55:31 03:55:34 03:55:39

BY MS. EVANS: 03:55:41

Q. Nothing else? 03:55:41

A. That's correct, from myself, yes. 03:55:43

Q. Do you know of any witnesses who have information about the statement that Star & Crescent caused or permitted discharge of waste to the Shipyard Sediment Site? 03:55:47 03:55:50 03:55:52 03:55:55

A. There are witnesses that have inspected the Southwest Marine site and conducted inspections there between the years of -- that I'm aware of between 1970 -- the early 1970s that would have covered the period that the DTR discusses that -- 03:56:03 03:56:12 03:56:18 03:56:27 03:56:37

Q. Star & Crescent? 03:56:43

A. -- Star & Crescent had responsibility for the site. 03:56:44 03:56:48

Q. And I think my question is a little bit more narrow. 03:56:54 03:56:56

Do those witnesses -- do you understand that those witnesses have information that it was Star & 03:56:57 03:57:00

Crescent Boat Company that did those discharges? 03:57:02

A. No, I do not know. 03:57:04

Q. Just they know about discharges that occurred? 03:57:05

A. Yes, that's correct. 03:57:08

Q. But not who was responsible for them? 03:57:09

A. Right. 03:57:11

Q. Do you know of any witnesses who have any 03:57:11

information about Star & Crescent Boat Company's 03:57:15

responsibility for those discharges referred to in the 03:57:18

tentative order? 03:57:21

A. I -- I know that -- that the -- the lands were 03:57:22

leased from the Port District, and the Port District had 03:57:31

knowledge about who the -- the leases were issued to. So 03:57:34

that would be one group we would go to, to get that type 03:57:45

of information. 03:57:49

Q. Any other groups that you think might be 03:57:51

witnesses for that type of information? 03:57:53

A. I am not aware of any. 03:57:55

Q. I assume that your responses to those questions 03:58:01

would be the same as they relate to the information on 03:58:04

page 4 at paragraph 5 about Star & Crescent on Exhibit 1. 03:58:06

A. On page -- 03:58:10

Q. Four? 03:58:12

A. Of this cleanup order? 03:58:13

Q. Yes. 03:58:14

A. Okay. Yes. The same type of -- 03:58:15

Q. As far as -- I should -- let me clarify that. 03:58:24

I assume your -- the basis for the statement 03:58:26

there on page 4 that Star & Crescent caused or permitted 03:58:30

the discharge of waste to be deposited where they were 03:58:35

discharged into San Diego Bay were the ones we've already 03:58:38

discussed? 03:58:40

A. Yes. 03:58:41

Q. And do you know who authored that statement on 03:58:43

page 4? 03:58:46

A. On page 4? 03:58:48

Q. Yes. 03:58:49

A. This finding was constructed with the advice of 03:58:52

legal counsel. 03:58:56

Q. Do you know who authored it? Was it legal 03:58:59

counsel? 03:59:01

A. I think it was a collaboration between legal 03:59:03

counsel and the technical staff. 03:59:05

Q. Were you involved in that collaboration? 03:59:08

A. Peripherally, yes. 03:59:12

Q. When you say "peripherally," what was your 03:59:13

involvement? 03:59:15

A. I'm kind of the supervisor of the Cleanup Team. 03:59:15

And so I had awareness that such a finding was being 03:59:19

developed and the basis for it. 03:59:22

Q. And you're -- the basis for it, we've already talked about, is the information that was in the supplemental -- or I'm sorry -- in the administrative -- 03:59:25 03:59:27 03:59:29

A. Record. 03:59:33

Q. -- record. 03:59:33

A. And then the text that's written in the DTR and -- and -- yes, basically. 03:59:35 03:59:39

Q. Okay. 03:59:43

Later in that same paragraph on page 4, it says that, "Star & Crescent Investment Company, formerly San Diego Marine Construction Company, transferred all assets and liability to Star & Crescent Boat Company." Do you see that? 03:59:44 03:59:47 03:59:52 03:59:55 03:59:58

A. Okay. We're in finding -- 04:00:00

Q. Five. 04:00:02

A. -- five. 04:00:03

Q. Near the bottom? 04:00:04

A. Near the bottom. 04:00:05

Q. That's "Star & Crescent Investment Company (formerly San Diego Marine Construction Company)" -- 04:00:10 04:00:15

A. Okay. 04:00:16

Q. -- "transferred all of its assets and liabilities to Star & Crescent." 04:00:18 04:00:20

A. Right. Yes. 04:00:22

Q. Who drafted that statement? 04:00:22

A. I -- I don't know the person. It was -- whatever was done there was done upon advice of legal counsel who reviewed various corporate documents and made -- 04:00:24 04:00:28 04:00:31 04:00:37

Q. Did you review -- oh, go ahead. 04:00:37

A. -- made recommendations to us. 04:00:38

Q. Did you review those corporate documents when discussing the recommendations? 04:00:39 04:00:43

A. When -- did I personally, no. 04:00:44

Q. Do you know what the basis is of the statement that all assets and liabilities were transferred from Star & Crescent Investment Company? 04:00:47 04:00:49 04:00:53

A. I guess just from a very general viewpoint that I understood Star & Crescent was a successor in interest. And -- but that's it. 04:00:56 04:00:59 04:01:08

Q. And that understanding is based upon information we've just talked about? 04:01:10 04:01:11

A. Yes, exactly. 04:01:13

Q. And nothing else? 04:01:14

A. None that I'm aware of, no. 04:01:15

Q. Do you -- other than what we've discussed regarding the Port District, do you know of any witnesses who had information that would support the statement that Star & Crescent Investment Company transferred all its assets and liabilities? 04:01:20 04:01:23 04:01:26 04:01:28 04:01:32

A. I'm not aware of any, no. 04:01:34

Q. Other than the alleged transfer of all of Star & Crescent Investment Company's assets and liabilities, are you aware of any other basis of liability for Star & Crescent Boat Company here as a discharging party? 04:01:35 04:01:37 04:01:40 04:01:42 04:01:47

A. I -- there could be, but I'm -- I'm not aware of it. 04:01:48 04:01:51

Q. Were you involved in the decision to name Star & Crescent as a responsible party in the tentative order? 04:01:52 04:01:53

A. I was part of that decision process, yes. 04:01:57

Q. When you say you were part of it, how -- what was your involvement? 04:02:01 04:02:03

A. Just -- it was -- some of our decision making were decisions made by me. Others were kind of consensus-based decisions that we all looked at a set of facts and jointly decided. 04:02:04 04:02:08 04:02:11 04:02:16

Q. And how would you classify this decision to name Star & Crescent Boat Company? 04:02:18 04:02:21

A. This was kind of a collaboration decision based heavily upon advice from legal counsel. 04:02:23 04:02:27

Q. And was it based upon anything else? 04:02:29

A. No. 04:02:31

Q. Who was involved in the collaborative decision? 04:02:32

A. Well, it would have been myself, other 04:02:37

Cleanup Team members, which would be Julie Chan, Craig Carlisle, our legal counsel, Mr. Carrigan. 04:02:40 04:02:46

Q. Just the three? 04:02:51

A. Just who? 04:02:52

Q. Just the three of you? 04:02:53

A. Just the three -- 04:02:55

MR. CARRIGAN: That's four already. 04:02:58

MS. EVANS: Oh, I'm sorry. 04:02:58

THE WITNESS: That's four. 04:02:59

BY MS. EVANS: 04:02:59

Q. Just the four of you then? 04:03:00

A. I would say those are the primary people involved. 04:03:01 04:03:03

Q. Do you know when that decision was made? 04:03:08

A. It was made during the time leading up to it the late -- the issuance of the latest version of the DTR. But it had been under consideration for some time prior to that. 04:03:10 04:03:17 04:03:26 04:03:32

Q. Do you know approximately how long? 04:03:33

A. I can't hazard a guess. I began hearing about Star & Crescent during 2009, myself. 04:03:37 04:03:41

Q. When you say you "began hearing" about -- 04:03:46

A. Or excuse me. 2010. Yeah. 04:03:48

Q. When you say you began hearing about Star & Crescent during 2010, do you mean Star & Crescent Boat 04:03:50 04:03:51

Company, Star & Crescent Investment Company, or do you know? 04:03:54 04:03:58

A. I just remember hearing "Star & Crescent." 04:03:58

Q. Have you seen any email or other written document where it was discussed about naming any Star & Crescent entity as a responsible party in the tentative order? 04:04:03 04:04:06 04:04:08 04:04:12

MR. CARRIGAN: Objection to the extent it calls for advice of legal counsel. Then I'll instruct you not to answer if it does. 04:04:13 04:04:14 04:04:18

THE WITNESS: Okay. 04:04:20

MS. EVANS: Obviously. 04:04:20

MR. CARRIGAN: Other than something from me. 04:04:21

THE WITNESS: Okay. I don't -- I don't remember other sources of communication on Star & Crescent. 04:04:23 04:04:26

BY MS. EVANS: 04:04:28

Q. And were you involved in any factual investigation before Star & Crescent was named as far as naming Star & Crescent Boat Company here? 04:04:29 04:04:31 04:04:35

A. Just -- no. I was not involved in it other than I would just get periodic updates from legal counsel on it. 04:04:39 04:04:45 04:04:49

Q. And other than the -- the documents we talked about as being in the administrative record, are you aware of any other written documentation that supports 04:04:52 04:04:54 04:04:56

naming Star & Crescent Boat Company as a responsible party? 04:04:59 04:05:02

A. Other than documents in the administrative record as it was supplemented, I am not aware. 04:05:02 04:05:05

Q. Thank you. I don't have any other questions. 04:05:09

A. Well, thank you. 04:05:11

MR. CARRIGAN: Let's go off the record. 04:05:15

THE VIDEOGRAPHER: Off the record. Time is 4:05 p.m. 04:05:16 04:05:17

(A recess was taken.) 04:05:36

THE VIDEOGRAPHER: Back on the record time is 4:06 p.m. 04:06:11 04:06:12

*** 04:06:12

EXAMINATION 04:06:12

BY MS. REYNA: 04:06:14

Q. Good afternoon, Mr. Barker. My name is Kristin Reyna, and I'm one of the attorneys who represents the City of San Diego in this case. 04:06:14 04:06:16 04:06:18

A. Good -- good afternoon. 04:06:21

Q. I have hopefully just a -- just a few questions for you this afternoon. The first category that I'd like to ask you a few questions about is the designation of the City as a responsible party based on its trusteeship of the site. 04:06:22 04:06:24 04:06:28 04:06:32 04:06:35

A. Okay. 04:06:36

Q. Did you have any involvement in the formulation or drafting of the allegations naming the City as a responsible party based on its past trusteeship of the site? 04:06:38 04:06:40 04:06:44 04:06:48

A. Limited involvement on that aspect. 04:06:51

Q. Can you describe the involvement? 04:06:55

A. Just being -- well, first of all, could I turn to the finding on that? Which is -- excuse me, the City. 04:06:57 04:07:03

Q. If you'd like to refer to the -- the tentative cleanup and abatement order or the Draft Technical Report, feel free. 04:07:13 04:07:14 04:07:18

MR. CARRIGAN: Finding 4. 04:07:21

THE WITNESS: Okay. 04:07:21

MR. CARRIGAN: Relates to the City. 04:07:21

THE WITNESS: Okay. Let me just take a couple of minutes to review. Okay. All right. Yes. On that aspect of the finding, I was aware of -- that that factor was being introduced into the finding. I was not in a -- so I was just aware of it. And we were -- this was another situation where we were looking to the advice of legal counsel in evaluating that consideration. 04:07:22 04:07:24 04:07:34 04:07:42 04:07:48 04:07:57 04:08:03

BY MS. REYNA: 04:08:07

Q. Aside from legal counsel, do you know if there was anyone else on the board staff who was involved in formulating or drafting the allegation against the City 04:08:10 04:08:12 04:08:15

regarding its past trusteeship of the site? 04:08:19

A. Okay. So we're talking about the sentence from 04:08:23

the early 1900s through February 1963? 04:08:26

Q. (Nods head.) 04:08:30

A. Okay. When the relevant tidelands were 04:08:31

transferred from the City of San Diego to the 04:08:33

Port District. Yeah. 04:08:35

No. This was something, a statement we 04:08:37

introduced into the finding and -- and just upon advice 04:08:45

from legal counsel on the matter. 04:08:51

Q. So to your -- to your knowledge, neither you nor 04:08:54

anyone on the board staff performed any evaluation 04:08:56

yourselves of whether -- 04:09:01

A. No, I. 04:09:03

Q. -- to name the City in -- in that respect. 04:09:05

MR. CARRIGAN: Let her finish. 04:09:07

THE WITNESS: Okay. 04:09:08

MS. REYNA: -- in the tentative Cleanup & 04:09:09

Abatement Order. 04:09:09

MR. CARRIGAN: Misstates testimony. Now you can 04:09:10

answer. 04:09:11

THE WITNESS: Okay. No. I can speak for myself 04:09:12

that I was not heavily involved with that at all. 04:09:16

BY MS. REYNA: 04:09:19

Q. And I think as you said, you were really just 04:09:19

aware of it. 04:09:22

A. Yes, that's correct. 04:09:22

Q. Are you aware of what, if any, factors were evaluated in naming the City in the tentative cleanup and abatement order based on its past trusteeship of the site? 04:09:28 04:09:31 04:09:35 04:09:39

A. Oh, based on its -- just -- just -- 04:09:40

Q. Just on the trusteeship. 04:09:42

A. Yeah. Just -- I'm aware of when the -- I was aware of the logic behind that and that -- why the period of -- through February 1963 was selected. And -- and -- but that's -- that's about it. 04:09:44 04:09:48 04:09:53 04:10:00

Q. And what was the logic? 04:10:01

A. Well, I think it's based on the date when the San Diego Port District was formed and took over responsibility for the tidelands. 04:10:05 04:10:08 04:10:13

Q. But beyond that -- 04:10:19

A. Beyond that. 04:10:21

Q. -- you're not aware of any other evaluation. 04:10:21

A. Right. 04:10:24

Q. I'd like to switch gears now and ask you a few questions relating to Chollas Creek. 04:10:30 04:10:33

A. All right. 04:10:36

Q. And if it helps, if you -- you can feel free to reference the DTR -- 04:10:36 04:10:39

A. Okay. 04:10:42

Q. -- in Section 4 on that. I don't know 04:10:42

whether -- I only have a few questions. I don't know if 04:10:45

you'll need to or not. 04:10:48

A. All right. 04:10:49

Q. But please feel free to do that. 04:10:49

A. Okay. Thank you. 04:10:52

Q. Do you believe that Chollas Creek has 04:10:53

contributed to the contamination at the site beyond the 04:10:54

polygon NA22? 04:10:58

A. Oh, let me -- 04:11:03

Q. Please. 04:11:04

MR. CARRIGAN: Do you want to see the map? 04:11:05

THE WITNESS: Yeah, I'd like to see the map. 04:11:07

MR. CARRIGAN: I know I've got it. Let's see. 04:11:09

MS. REYNA: I can tell you in the DTR it's on 04:11:15

page -- it starts on page 4-14 where it discusses the 04:11:17

Chollas Creek outflow plume in the city section. And 04:11:21

then I think there's a good map. 04:11:24

MR. CARRIGAN: Probably be helpful. 04:11:30

MS. REYNA: For the proposed remedial footprint. 04:11:31

THE WITNESS: Okay. Okay. 04:11:34

MS. REYNA: On page 33-2. 04:11:36

THE WITNESS: Okay. 04:11:38

MS. REYNA: Which kind of shows the whole site, 04:11:39

but at least you can see the polygons. 04:11:40

THE WITNESS: Yeah. 04:11:46

MR. CARRIGAN: There we go. 04:11:50

THE WITNESS: So NA22. Okay. I see that. And 04:11:50

could I ask for a repeat of the question? 04:11:56

BY MS. REYNA: 04:11:59

Q. Sure. 04:11:59

Do you believe that Chollas Creek has 04:12:00

contributed to the contamination at the site beyond the 04:12:02

polygon NA22? 04:12:05

A. Yes, I do believe that, yes; that in the DTR it 04:12:07

alleges that in Section 4.7.1.3. 04:12:14

Q. Are all of the bases for this opinion laid out 04:12:22

in Section 4.7.1.3 of the DTR? 04:12:25

A. Yes. Yes. 04:12:31

Q. You're not aware of any other additional bases 04:12:33

for that opinion? 04:12:35

A. There -- there may be some discussion of this 04:12:45

also in the finding on the United States Navy related to 04:12:50

the effect of discharges from that facility to the 04:12:57

Shipyard Sediment Site. That facility discharges into 04:13:01

Chollas Creek. 04:13:06

And as -- as far as Chollas Creek and its 04:13:07

influence on the Shipyard Sediment Site, I guess 04:13:14

primarily it's addressed in Section 4. But there's 04:13:16