

THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

convenes the

CAMP LEJEUNE COMMUNITY ASSISTANCE
PANEL (CAP) WORKING MEETING

June 11, 2014

The verbatim transcript of the
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-- "uh-huh" represents an affirmative response, and "uh-uh" represents a negative response.

-- "*" denotes a spelling based on phonetics, without reference available.

-- "^" represents unintelligible or unintelligible speech or speaker failure, usually failure to use a microphone or multiple speakers speaking simultaneously; also telephonic failure.

P A R T I C I P A N T S

(alphabetically)

BOVE, DR. FRANK, ATSDR
BRUBAKER, MATT, FMG LEADING
BURK, TONIA, ATSDR
COOPER, PHILLIP, ATSDR
ENSMINGER, JERRY, COMMUNITY MEMBER
EVANS, MARK, ATSDR
FLETCHER, LCDR. CHRIS, ATSDR
FORREST, MELISSA, NAVY/MARINE CORPS
FORRESTER, TINA, ATSDR, DIVISION OF COMMUNITY HEALTH
INVESTIGATIONS
FRESHWATER, LORI, CAP MEMBER
GILLIG, RICHARD, ATSDR
IKEDA, ROBIN, ATSDR, ACTING DIRECTOR
MASLIA, MORRIS, ATSDR
MOORE, SUSAN, ATSDR
MURRAY, CAPT. ED, ATSDR
ORRIS, CHRIS, CAP MEMBER
PARTAIN, MIKE, COMMUNITY MEMBER
RAGIN-WILSON, ANGELA, ATSDR, DIVISION OF TOXICOLOGY AND
HUMAN HEALTH SCIENCES
ROBINSON, ROB, ATSDR
RUCKART, PERRI, ATSDR
STEPHENS, JIMMY, ATSDR ACTING DEPUTY DIRECTOR
STEVENS, SHEILA, ATSDR, CAP LIAISON
WILDER, LYNN, ATSDR
WILKINS, KEVIN, CAP MEMBER
YARBROUGH, ALAN, ATSDR

1 then I'll come back and get the list, and we can
2 figure out, okay, given whatever the number of
3 people is, we can figure out what might make the
4 most sense.

5 **MR. ENSMINGER:** Are you guys buying?

6 **DR. IKEDA:** Are we buying? Unfortunately, no.

7 **MR. ENSMINGER:** Well.

8 **DR. IKEDA:** Oh, well, there were a couple
9 different things that we were thinking about. One
10 is we wanted to do something immediately after this
11 meeting, which I know closes at 4:00 o'clock. We
12 could potentially order something like, you know,
13 something not very healthy. But eat it in the
14 cafeteria, which is a nice space. You've all seen
15 the cafeteria. Or, since you're staying at the JW
16 Marriott, there's a number of restaurants within
17 walking distance there, and if you wanted to go back
18 to your hotel room for a while, then we could do
19 something within walking distance. Anyway so I'll
20 just leave the list, and I'll turn it back to Matt.
21 Matt Brubaker from FMG Leading. Those of you who
22 were at the last meeting met -- we introduced him
23 last meeting. He's serving as our backup
24 facilitator. He's facilitating this meeting and
25 he'll be playing the same role tomorrow. Thanks.

1 **MR. BRUBAKER:** Thank you. And again, thanks
2 for being here today, to humor me as I get to know
3 you folks and begin to provide some support to this
4 team. I'd love to spend a little bit more time than
5 you probably usually do in the introduction process,
6 just like I'm probably asking two or three questions
7 about who you are, why you're here, a little bit
8 about your background and why you're motivated to
9 participate in this group.

10 It's only fair that I share a little bit about
11 myself with you. As Robin mentioned, I'm part of --
12 in fact I'm the Chief Operating Officer of a
13 consulting firm called FMG Leading. My practice is
14 in coaching and developing leaders and their teams
15 and guiding group process. Three kids. Two teenage
16 girls and an infant son. I can tell you a story
17 about that some time, as you do the math. I'll be a
18 Social Security college dad. Live in Philadelphia
19 and love to get down here to Atlanta every now and
20 then to see what's happening down here.

21 **MR. ENSMINGER:** You live in filth-adelphia?

22 **MR. BRUBAKER:** No comment.

23 **MR. ENSMINGER:** Really?

24 **MR. BRUBAKER:** It is a -- it is a special
25 place. In the Philadelphia suburbs actually. My

1 neighborhood abuts Valley Forge National Park.

2 **DR. BOVE:** What suburb?

3 **MR. BRUBAKER:** Oh, Valley Forge. In fact my
4 neighborhood touches Valley Forge Park, so I do my
5 morning runs in, in -- yeah, in and out -- exactly.
6 The Audubon, to be precise.

7 **MR. ENSMINGER:** Do you take the sure-kill
8 expressway to work?

9 **MR. BRUBAKER:** I try not to. You guys have
10 been to our fair city, I can tell.

11 **MR. ENSMINGER:** Well, I'm from Hershey.

12 **MR. BRUBAKER:** I didn't know that. Small
13 world.

14 **MR. ENSMINGER:** Right outside of Hershey.

15 **MR. BRUBAKER:** In Pennsylvania.

16 **MR. ENSMINGER:** That's where I grew up. I grew
17 up on a dairy farm.

18 **MR. BRUBAKER:** It's beautiful country up there.

19 **MR. ENSMINGER:** That's why I joined the Marine
20 Corps; I needed a break.

21 **MR. BRUBAKER:** So if you wouldn't mind, as we
22 go around the table, first of all names and roles
23 would help me and I think would probably help some
24 of the other new folks as well, just to hear your
25 name and hear your role. But as you go around I'd

1 also like to hear from you why you're motivated to
2 participate in this forum. What it is about the
3 work, what it is about the mission or the purpose of
4 this CAP that particularly interests or draws you
5 into it. And if there's a personal dimension to
6 that, please feel free to share that. Again, it
7 helps me understand why you're here. I think it
8 also provides an opportunity for others to
9 understand the human beings that are sitting around
10 the table, not just the issues that will be
11 discussed today. So if you wouldn't mind I'm going
12 to go in order. Chris, would you mind?

13 **LCDR. FLETCHER:** So I'm Chris Fletcher, a
14 health assessor at ATSDR. I'm working with vapor
15 intrusion. The part that I have with that is the
16 data management and data mining of the various data
17 sources. My motivation for working in this
18 particular meeting today is to provide information
19 to the CAP so they see what we're running into and
20 how many sources there are, and kind of give them an
21 idea as to the level of difficulty we're running
22 into as we go through all that, and to show them the
23 progress that we've made to date.

24 **MR. BRUBAKER:** Thank you.

25 **MR. ROBINSON:** I'm Rob Robinson, a health

1 assessor here at ATSDR. I am also a coauthor on the
2 drinking water evaluation part of the PHA. So today
3 I'd like to discuss where we are with that document.
4 But I guess overall, historically, why I got into
5 the public health field and why I think most of my
6 colleagues did is in order to help people or the
7 environment, and I try to bring that to work each
8 day.

9 **MS. FORREST:** Hi, I'm Melissa Forrest, and I'm
10 new. I am replacing Glenn Markwith from the Navy
11 and Marine Corps Public Health Center. Glenn
12 retired.

13 **MR. ENSMINGER:** Lucky him.

14 **MS. FORREST:** So congratulations to Glenn.

15 **MR. ENSMINGER:** Unlucky you. What'd you do,
16 draw the short straw?

17 **MS. FORREST:** No, sir. I volunteered. I was
18 happy to come. And so my role is, as Glenn's was,
19 to come and, you know, observe and take back your
20 questions and your concerns to the Marine Corps and
21 the Navy and hopefully get you the answers and the
22 information you need. And I would say something
23 that does motivate me is I've been working at the
24 public health center for 19 years now, and it's a
25 wonderful job. I'd say we bridge the gap between

1 environmental issues, environmental exposures and
2 public health issues, and it's been a really
3 exciting job for the last 19 years. So that's my
4 goal.

5 **MR. BRUBAKER:** Thank you.

6 **MR. WILKINS:** Kevin Wilkins. I'm a Marine
7 Corps veteran and Camp Lejeune victim.

8 **MS. FRESHWATER:** And a man of few words. My
9 name is Lori Freshwater. My nickname is Lou, so I
10 go by either. I lived on base between around '81 to
11 around '83-'84, and my mother had two babies with
12 neural tube defects who died, and it devastated the
13 family. And then my mother recently -- well, I
14 guess I can't say recently now, but in January of
15 '13 passed away from two types of acute leukemia.
16 So clearly that's what motivates me to be here, but
17 I also -- I'm a writer who recently got my master's
18 in English literature and writing. And I'm
19 motivated to leave a history of what happened on the
20 record, as much as I can. And I want to do some
21 good. I feel like everybody in this room has an
22 opportunity to step up and be a hero, and I mean
23 that. I verge on sentimentality sometimes but I
24 actually do believe that. I think that we have a
25 chance to help the future, and that's -- if there's

1 no justice, there can be some redemption, and we can
2 find redemption in helping the science. So that's
3 why I'm here.

4 **MR. ENSMINGER:** I'm Jerry Ensminger. I'm a
5 retired Marine. I spent nearly a quarter of a
6 century of my life serving in the Marine Corps. My
7 only daughter to have either been conceived, carried
8 or born while we lived on the base was Janey, my
9 second daughter. When Janey was six, she was
10 diagnosed with leukemia. I literally watched my
11 child die a little bit at a time for nearly two and
12 a half years. And when she finally did die, it was
13 painful. I went for -- she died in 1985, ironically
14 the same year that the Department of the Navy and
15 Marine Corps saw it fit to take those poison wells
16 offline.

17 I didn't find out about the water
18 contamination, anything about it, until 1997, when
19 ATSDR issued their public health assessment. And
20 you know, I just said, oh, my God. You know, here's
21 a possible answer to that nagging question that
22 every parent who ever has a child that's diagnosed
23 with a long-term catastrophic illness has, and that
24 is, what happened? Why? And when I heard the TV
25 report about ATSDR's public health assessment, I

1 said oh, my God, here's a possible answer to that
2 nagging question. And that wasn't 'til 1997, three
3 years after I retired.

4 That's when my fight began. And I've got to
5 say that every initiative that we have undertaken
6 has been like pulling teeth, and I don't know why.
7 Now, when I heard that TV report, I got a possible
8 answer to my question but I also realized that there
9 were thousands, if not hundreds of thousands, of
10 other people out there that were now literally
11 spread out all over the world that had their own
12 nagging question, and I swore that evening when I
13 walked out on my farm, that night. I was thinking
14 about this, the very night that I heard that report
15 on the news, that it was my duty to give those
16 people some possible hope of getting an answer to
17 their own nagging question. And that's been my
18 mission since 1997. I've got almost another whole
19 career in this, 17 years this August.

20 **MR. BRUBAKER:** Thanks.

21 **MR. PARTAIN:** Well, my name is Mike Partain,
22 and up until seven years ago, Camp Lejeune meant
23 nothing more to me than just the name on my birth
24 certificate. That all changed in April of 2007 when
25 I was diagnosed with male breast cancer. There's no

1 history of the disease in my family, male or female.
2 And I was subsequently tested to -- for the BRCA
3 hereditary markers and found to be negative. We
4 were all puzzled why I developed the disease, and I
5 do not drink, don't smoke and, you know, it just was
6 a big enigma for my family.

7 That question was answered about two months
8 after my diagnosis, when I saw Jerry on CNN, after
9 he testified in Congress about the children born at
10 Camp Lejeune between January of 1968 and December of
11 1985, and how those children had been exposed to
12 toxins in the drinking water. And my birthday's
13 January 30, 1968. So I had my moment where, you
14 know, life as I knew it completely turned
15 upside-down. Yeah, an epiphany.

16 My background is in history. My BA is in
17 history. I work as a claims investigator with State
18 Farm Insurance. And I got involved shortly after my
19 chemotherapy completed, and I've been involved in
20 this now seven years.

21 I recently began my master's degree in history,
22 which coincidentally is going to be focusing on
23 environmental history, specifically Camp Lejeune.
24 Thank you.

25 **MR. ORRIS:** My name is Chris Orris, and like

1 Mike, most of life my birth certificate said I was
2 born in Camp Lejeune, which made for an interesting
3 topic if it ever came up. My father still actually
4 works on the base at Camp Lejeune as a civilian.
5 My -- between my two parents, they did 56 years in
6 the Marine Corps.

7 And I'd never heard about the toxic water at
8 Camp Lejeune until 2011, when all of a sudden I
9 started becoming weak, and nobody could figure out
10 why. And then a cardiologist looked at my heart and
11 said that I had a congenital birth defect that had
12 gone undiagnosed for 36 years, and that I had two
13 years to live. And so unless I did a Warden
14 procedure to get that fixed.

15 **MR. ENSMINGER:** Did you do it?

16 **MR. ORRIS:** I did do it.

17 (multiple speakers)

18 **MR. ORRIS:** But it wasn't until after my
19 surgery when I saw the Act signed by President
20 Obama, and then I watched *Semper Fi*, the movie, that
21 I understood what had occurred. And I said, you
22 know, if I have not known about it, and my family
23 hales from the Jacksonville and New Bern area, you
24 know, how many other people have not heard about it.

25 And my career as an auditor for major financial

1 institutions, and I want to apply my expertise in
2 trying to figure out what has happened and what has
3 occurred as well. That's what I'm here for as well
4 as to raise more public awareness about it and to
5 make sure that every person who was affected knows
6 about it and knows what they can do to help
7 themselves. So that's why I'm here.

8 And I want to personally thank you and Mike for
9 everything that you have done so far.

10 **MR. ENSMINGER:** You're welcome. I'll bet those
11 companies love seeing you walk in the door. Do you
12 wear body armor?

13 **DR. FORRESTER:** Good morning. My name is Tina
14 Forrester, and I've been at ATSDR for over 23 years,
15 and I've probably worked 50, 60 -- 50 to 60 sites
16 and had about five different jobs here. And I've
17 never left because I feel that serving the public
18 and helping them with their health issues has been a
19 really rewarding career and really important job
20 working directly with the public, and I don't know
21 many other places where you can do that.

22 My role in this project is that for the last
23 two and a half years I've been the acting director
24 for this division. And what I bring to the table is
25 that I will make sure you have the right team to

1 answer the question, ensure you have the proper data
2 to be analyzed, to be sure that we understand how
3 the exposures occurred so that we make all those
4 assumptions in our health risk assessment and that
5 we get the product done when we say we're going to
6 get it done. So if you have issues or concerns,
7 please let me know. And thank you for coming and
8 spending a whole day with us.

9 **MR. ENSMINGER:** Speaking of getting the product
10 done when you say it's going to get done, nobody's
11 given us a date when the public health assessment's
12 going to be reissued, so.

13 **DR. FORRESTER:** We have some information in the
14 slides today to give you a timeline. We're very
15 close on the first half of the health assessment, to
16 go into the discussion about the peer review
17 process, which you all engage with with us.

18 On the second piece, it may be a little more
19 difficult because the data mining may take a while.
20 I'm sure you want us to be thorough on the data
21 analysis so -- the job is big. And we'll make sure
22 we have the right data. But I can assure you that
23 every day that this team, and there is probably five
24 to six people, and then I bring more in the
25 division. Our division is very small. I've got

1 probably over a third of the division working on
2 Camp Lejeune. They are all very dedicated folks,
3 and I think you've got the best support you could
4 possibly get to do this project.

5 **MR. ENSMINGER:** Well, give us the documents;
6 we'll help.

7 **MR. GILLIG:** My name is Rick Gillig. I'm the
8 branch chief of the branch that this project is
9 being -- or these projects are being conducted in.
10 I've worked in public health for over 30 years, in
11 part because I felt a calling to work in an area
12 where I'm providing a service and benefit to
13 society.

14 In short, today, with the hope and expectation
15 that we can open up better lines of communication.
16 We can't do public health without input from the
17 communities we serve. That's very important to all
18 of us, and I'm hoping when we leave this room today
19 sharing information with each other, talking,
20 providing questions to us after we leave the room.
21 We just need to improve our communications.

22 **MR. BRUBAKER:** We also have some guests and
23 some participants who are sitting on the outskirts.
24 Perhaps have each of you go around and just state
25 your name and your role in the process as well.

1 **SUSAN MOORE:** My name is Susan Moore, and I'm
2 branch chief for the branch that has done most of
3 the water modeling, and we are supporting the
4 (indiscernible).

5 **PHILLIP COOPER:** My name is Phillip Cooper.
6 I'm the team leader with this branch, and this
7 project falls under my team.

8 **CAPTAIN MURRAY:** I'm Ed Murray. I'm the Acting
9 Director for the Division of Toxicology and Human
10 Health Sciences, another division of ATSDR.

11 **ALAN YARBROUGH:** My name is Alan Yarbrough.
12 I'm Acting Deputy Director for Division of Community
13 Health, with Tina Forrester.

14 **LYNN WILDER:** Hi, I'm Lynn Wilder. I'm the
15 Associate Director for Science in the Division of
16 Community Health Investigations.

17 **MR. MASLIA:** My name is Morris Maslia. I've
18 been at ATSDR for over 22 years.

19 **MR. ENSMINGER:** Say what?

20 **MR. MASLIA:** Over -- I've been at ATSDR for
21 over 22 years and with federal service for over 35
22 years. I led the team that did the water
23 modeling -- drinking water study. And I'd like to
24 just (indiscernible).

25 And I have been with other federal agencies,

1 and I've stayed with ATSDR because my -- we have not
2 only an ability but also a responsibility to
3 facilitate the public's understanding of some highly
4 technical issues and presenting them with, with
5 information. And that's what I aim to do in tasks
6 that are assigned to me.

7 And currently I'm facilitating some of our
8 staff that are doing some technical work on the soil
9 vapor investigation. I wouldn't say overseeing
10 that, but coordinating that, I think, would be a
11 better word.

12 **MS. SHEILA STEVENS:** Morning, I'm Sheila
13 Stevens. I'm the Camp Lejeune CAP coordinator. I
14 just met Chris this morning. So I was doing this
15 work for the policy. About two years ago I came
16 back specifically to work with Camp Lejeune, and I
17 wanted to do this work, so I'm glad to be doing
18 this. I'm a prior military person. I find this
19 work very interesting. It's not boring and it keeps
20 me busy and I'm glad to be here.

21 **MR. ENSMINGER:** I'm laughing.

22 **DR. JIMMY STEPHENS:** Hi, I'm Jimmy Stephens.
23 I'm the Acting Deputy Director of NCEH-ATSDR.

24 **DR. BOVE:** My name is Frank Bove. I started
25 working with ATSDR in '91 and still here. And

1 almost been working to some degree on Lejeune since
2 then.

3 **MS. RUCKART:** Perri Ruckart, I'm in the
4 division that does the health studies. I've been
5 working on Camp Lejeune since about 2003. And I
6 just wanted to see today how -- what we're talking
7 about, my corresponding health studies and
8 (indiscernible).

9 **DR. RAGIN-WILSON:** My name is Angela
10 Ragin-Wilson. I'm the Branch Chief for
11 Environmental Epidemiology Branch, and we're the
12 branch that conducts the health studies at Camp
13 Lejeune.

14 **MR. BRUBAKER:** Okay, thank you for taking the
15 time to introduce yourselves. It's extremely
16 helpful to me, not that that's your job, but the
17 role that I'm here to provide is to simply guide the
18 process and, as instructed to, to ensure that the
19 greater resource of all of your time and more
20 experience, citing in your passion can be channeled
21 towards productive means. To me it's a humbling
22 place to sit around a table with this many people
23 with this much insight and technical skill, this
24 much personal impact from the situation at hand and
25 have the opportunity to bring that together. And so

1 my role in it is to, number one, to guide the
2 process, and number two, to remind you that behind
3 the issues and the concerns and the data and the
4 problems that we have to solve is a bunch of human
5 beings who are deeply passionate about the reasons
6 we're in the room.

7 So my role will be to invite you to show up
8 today and first of all, represent the science, the
9 history, the stories, the pain, the fear, the hope,
10 all of that. Represent that; that's why you're
11 here. And number two, remember that every other
12 person sitting around the table is a human being
13 with some of that behind the story as well.

14 And so again, thank you for being here and
15 thanks for allowing me to catch up. Right before we
16 take a restroom break and grab a cup of coffee, Rick
17 has put together a summary of why this meeting has
18 been called. And I'd like to invite you -- I think
19 it's on a paper.

20 Let's just clarify objectives and rules for
21 today, and if you have a question about these, let's
22 get aligned in the front end so that when we've
23 achieved the time at 4:00 o'clock, we can look back
24 and say yes, we did those things or no, we didn't.

25 **MR. GILLIG:** So everyone should have a handout

1 on the purpose of today's meeting. So the first
2 purpose that I've identified was that we want to
3 ensure that you all understand how we're collecting
4 the data. There's a lot of different sources of
5 data out there so we want you to have an
6 understanding of how we're collecting it, reviewing
7 it and how that'll fit into our investigation.

8 Chris is making the first presentation and he's
9 providing a general overview of those 16 data
10 sources that we've talked about on the conference
11 calls and at previous CAP meetings.

12 We want to make sure that you understand how we
13 are assessing the data. Again, there's an awful lot
14 of information out there. We don't need all of it.
15 We want to focus on what is pertinent to soil vapor
16 intrusion. We have two presentations today to help
17 with that. Tonia and Mark are presenting later on
18 this afternoon.

19 Tonia will give us a general overview of how
20 ATSDR does its vapor intrusion investigations at
21 sites. And Mark will provide a general overview of
22 the process that he proposes to investigate vapor
23 intrusion at Camp Lejeune.

24 We're going to provide you an update on our
25 evaluation of exposures to contaminants in drinking

1 water. We've done that at previous CAP meetings.
2 Rob is going to update us on where he is with his
3 work on that topic. We -- you've provided input in
4 previous meetings on exposure scenarios and
5 conditions that we need to be aware of. We welcome
6 that input. So as we discuss our approach, again,
7 if you have suggestions, things that we need to take
8 into consideration, we welcome that. And as I
9 stated earlier, we want to open up constructive and
10 effective dialogue with you all. It helps us do our
11 work in a better fashion. It will alleviate some of
12 your anxieties, some of your concerns, so we are
13 very open to that. And I hope we leave today's
14 meeting with a better understanding of -- you having
15 a better understanding of what we're doing, us
16 having a better understanding of your concerns and
17 then moving forward.

18 **MR. BRUBAKER:** Thanks. So there's certainly a
19 lot of territory to cover in terms of content.
20 There's also enough time built into the agenda for
21 interaction after each presentation to make sure
22 there's dialogue and input on each of these key
23 issues. No doubt we'll make sure that we're moving
24 forward and getting everybody out of here on time.
25 We're also at a place where we can take a quick

1 break. I know some of you need a chance to get
2 coffee or use the restroom. We'll stop now and
3 reconvene at 10:00 o'clock promptly. Yes?

4 **MR. ENSMINGER:** Can we get the gate-keeper,
5 which is Robin, to get the key master to turn the
6 thermostat down, so that this is more comfortable in
7 here?

8 **MR. BRUBAKER:** We'll work on that.

9 **DR. IKEDA:** We've already turned it down. It's
10 not any better? We've turned it down.

11 **MR. PARTAIN:** It's pretty hot in here.

12 **MR. BRUBAKER:** Before we break, restrooms are
13 two hallways in that direction, on the right.

14 **MR. ENSMINGER:** There's a little cross hallway.
15 You gotta make a right.

16 (Break, 9:53 to 10:09 a.m.)

17 **DEMONSTRATION/DISCUSSION OF DATA SOURCES**
18 **BEING USED FOR SVI PROJECT**

19 **MR. BRUBAKER:** Welcome back, folks. We're
20 ready to reconvene and our first section's the
21 demonstration and discussion of the data sources.
22 I'll hand it over to you, Chris.

23 **LCDR. FLETCHER:** Okay. So, as I said earlier,
24 my part in this is looking through the data sources
25 and trying to find the relevant documents, which is

1 a big -- we'll jump right in here.

2 So what we're looking for, these are the types
3 of data we're looking for: indoor air, ambient air,
4 sub-slab data, soil gas and shallow ground water.
5 The reason we're looking for those is, if we find
6 sufficient quantity of quality data, we find what we
7 need, we could do dose calculations, and Mark's
8 going to get into that later. We're also looking to
9 do some estimating using Morris, as was spoken about
10 earlier. It just depends on what we find and if
11 it's enough that we can use that to do those things,
12 so.

13 **MR. PARTAIN:** Hey, Chris, when you say quality
14 data, what are you talking about? Can you define
15 that?

16 **LCDR. FLETCHER:** Quantitative data --

17 **MR. PARTAIN:** As far as --

18 **LCDR. FLETCHER:** So a lot of what we're
19 finding, and I'll get into this in a few slides, a
20 lot of what we're finding is PID and FID reading.
21 That's photo ionization and flame ionization
22 detection, which is more or less a yes or no answer,
23 is it present or not. And if that's all we find,
24 there's no way to modify it unless Morris has some
25 tricks up his sleeve that I'm not aware of. But I'm

1 not a modeler.

2 **MR. ENSMINGER:** Well --

3 **LCDR. FLETCHER:** So we're looking for numbers
4 statistical but -- or not statistical but analytical
5 results.

6 **MR. PARTAIN:** And are you finding those
7 analytical results?

8 **LCDR. FLETCHER:** Some.

9 **MR. ENSMINGER:** We got shallow soil vapor
10 readings around buildings. I mean there's --
11 they're all through these reports that were done by
12 Department of Navy contractors. And I mean, those
13 were taken in just a few inches into the grounds at
14 the surface. You can construct a model from those,
15 could you not, Morris?

16 **MR. MASLIA:** You could construct -- you could
17 construct some scenarios, some what we would refer
18 to as simple models, in other words they look at
19 basic key factors for basic principles. You can't
20 construct a numerical model, like what we used for
21 drinking water. And that's another -- an approach.
22 If you go into the modeling literature you'll see
23 that that is an approach is to look at key
24 components, key factors. We don't necessarily
25 calibrate with models but if you -- you know, is it

1 above a certain standard or limit, or way below. If
2 you get within a certain range of a standard or
3 limit, those models are not useful because they
4 cannot be applied. So that's why you want to go
5 through a scenario testing type approach.

6 **MR. ENSMINGER:** And we have documented
7 evidence.

8 **MR. MASLIA:** Okay.

9 **MR. ENSMINGER:** Yeah, we've got documented
10 evidence that the Department of the Navy and the
11 Navy Environmental Health Center possessed a
12 Hewlett-Packard gas chromatograph mass spectrometer
13 back in 1981. And it was brought down to Camp
14 Lejeune to do vapor -- ambient air quality samples
15 in the former daycare center. I also have a
16 message, it was dated in 1985, where they were
17 expediting the funding to purchase a gas
18 chromatograph mass spectrometer for the base
19 laboratory.

20 Now, somebody in the Department of the Navy and
21 Marine Corps has to answer some questions as to why
22 they weren't doing these vapor readings whenever
23 they were cited in a 1988 report as being required
24 or needed for the protection.

25 **MR. PARTAIN:** One thing I'd like to --

1 **MR. ENSMINGER:** And that was in May 1988
2 feasibility or remedial investigation feasibility
3 study by environmental science and engineering firm.

4 **MR. GILLIG:** And we did ask the Navy
5 specifically for the results of that and were told
6 they did not have results.

7 **MR. ENSMINGER:** Well, then they're in violation
8 of CERCLA, because those tests, the last piece of
9 paperwork we got is a letter dated in October of
10 1988, was written by the chief of staff -- or not
11 chief of staff, the assistant chief of staff of
12 facilities, Colonel Baltzell, requesting funding to
13 contract an outside source contractor to come in and
14 execute the ambient air quality monitoring in these
15 buildings that were identified in that report. And
16 then ten years later they had to evacuate those
17 buildings, some of them. And then subsequently they
18 demolished like seven of them; they were that bad.

19 So October '88 that letter went out. So that
20 means that those air quality samples either got done
21 late '89, '88 or sometime during 1989. Camp Lejeune
22 was declared a Superfund site on 4 October, 1989.
23 Well within their, quote/unquote, document retention
24 period. So those documents pertained to
25 contamination. Anything pertaining to contamination

1 or pollution on a Superfund site is required to
2 become part of the administrative record and be
3 maintained for 50-plus years. So the Department of
4 the Navy and Marine Corps are admitting that they're
5 in violation of CERCLA.

6 **MR. GILLIG:** And we still are in the discovery
7 review, or the data discovery and review process, so
8 at the end of that process we'll see what we have.

9 **MR. ENSMINGER:** And when they evacuated
10 building 1101 in 1999, for the benzene gasoline
11 fumes in there, and prior to that there's reports of
12 complaints about fumes in those buildings for years.
13 Why didn't they take their gas chromatograph mass
14 spectrometer in there and test the air then? Were
15 they playing ostrich? They stick their head in the
16 sand and hoped this all went away? Probably.

17 **MR. PARTAIN:** Well, one thing that would be
18 telling, Chris, and I'd like to see what the data
19 points and the actual readings that you get from the
20 GCMS, that are useful for what you need to do, have
21 that plotted out over time. And also the readings
22 where you're getting a yes/no indicator from -- I
23 can't remember the name of it.

24 **LCDR. FLETCHER:** PID --

25 **MR. PARTAIN:** Yeah, the PID indicator -- plot

1 those out concurrently and see if that shows a
2 pattern. And I'd like to see that.

3 **LCDR. FLETCHER:** That's what we're hoping to do
4 with the data.

5 **MR. PARTAIN:** Okay. 'Cause I mean, it would be
6 very interesting, especially if you're seeing a lot
7 of hits in testing and there's no analytical testing
8 behind it. I'd be very curious --

9 **LCDR. FLETCHER:** I agree. That's something we
10 hope to do, and part of what -- the end result of
11 what I'm trying to do is hopefully a large database
12 with everything in it. I haven't been able to find
13 one source where everything is succinctly stored,
14 and so that's part of what we're going to do as we
15 extract the data from all the PDFs. We're
16 constructing an Access database so hopefully at the
17 end of it we can do a search building-by-building
18 and by date or date range, and we'll find what's
19 available.

20 **MR. PARTAIN:** When you construct that table or
21 that graph or however format is comes out, would you
22 be able to share that with us so we can see it too?

23 **LDCR. FLETCHER:** I certainly think we will.

24 **MR. PARTAIN:** Okay. And Jerry's point about
25 the Superfund and the CERCLA retention requirements,

1 like Jerry said, we have documented evidence where
2 they said they ordered the testing, they were
3 carrying and conducting -- carrying out the testing
4 but yet there's no analytical results.

5 Is there something that y'all should have at
6 ATSDR -- I don't know if Robin's still in the room
7 or not. No? Okay. I mean, obviously there's a
8 problem. You know, you guys -- this is the data and
9 information that ATSDR needs to conduct their health
10 studies. It's supposedly in the administrative
11 record; it's missing. So to me, there should be a
12 letter sent out on behalf of ATSDR to EPA asking why
13 this isn't in here, and also to the Navy/Marine
14 Corps, and get a formal answer to that question.
15 Because if they're in violation of the law, what
16 good is the law if no one does anything to follow up
17 and enforce it?

18 **MR. ENSMINGER:** Yeah.

19 **MR. PARTAIN:** So that -- I mean, that --

20 **MR. ENSMINGER:** And that's to cover you.
21 That's to cover you as well. That's just not some
22 vendetta we're on. I mean, that's to cover your
23 back sides too.

24 **MR. GILLIG:** Yeah.

25 **MR. ENSMINGER:** Because you can't do your

1 Congressionally mandated mission unless these people
2 are following the law. And if they're not following
3 the law, you need to highlight that, because
4 somebody's going to come back to you and say, hey,
5 here's the recommendations that this got done in
6 this report, and here is where the Department of the
7 Navy and Marine Corps, in a public meeting,
8 announced that they were going to conduct these.
9 And here is a letter going to headquarters up in
10 (indiscernible) at Norfolk requesting the funding to
11 contract that out to an outside contractor. Now,
12 where are the analytical results for these tests?
13 And if you don't have them, you need to respond in
14 kind, in writing, signed by an official, stating
15 that you do not have those results, and that will
16 cover you. And that'll also put them on the spot,
17 where they need to be.

18 **MR. PARTAIN:** Who knows, maybe they'll produce
19 the test results.

20 **MR. GILLIG:** Well, you know we're -- as Chris
21 will point out, we are going through volumes and
22 volumes of data. And if they're in there, we'll
23 find them.

24 **MR. ENSMINGER:** If they put them in there.

25 **DR. FORRESTER:** Some key words around -- that

1 defines that, you know, like the date or --

2 **MR. ENSMINGER:** What do you mean?

3 **MR. PARTAIN:** Well, the letter -- I mean, the,
4 the TRC meeting and the letter --

5 **MR. ENSMINGER:** You got the report, then you
6 got -- that was in May of '88, RIFS, which is
7 Remedial Investigation Feasibility Study. It was
8 issued by Environmental Science and Engineering,
9 where they cited those protective measures that
10 needed to be taking place while the contamination
11 sites were being cleaned up, to prevent any further
12 human exposures.

13 Then you had the August of 1988 TRC meeting,
14 which is the Technical Review Committee meeting,
15 where the Assistant Chief of Staff of the four
16 facilities, Colonel Baltzell, announced publicly
17 that those protective measures were going to be
18 executed, including the ambient air quality
19 sampling. And then we've got a like a point paper
20 that was done by the Naval hospital about why they
21 couldn't do it. And then we have the letter from
22 Colonel Baltzell in October, going to lam div (ph),
23 requesting the funding to get -- to hire an outside
24 contractor to come in and execute these tests.

25 **MR. GILLIG:** Yeah, I think you shared all those

1 documents with us.

2 **MR. ENSMINGER:** Yeah. I mean, you've got a
3 beautiful paper trail as enclosures to your letter.

4 **DR. FORRESTER:** So we can do some cross-
5 referencing that include dates.

6 **MR. ENSMINGER:** Oh, yeah.

7 **DR. FORRESTER:** These key words and other
8 things and see if anything shows up in the searches.

9 **MR. ENSMINGER:** But that would be somewhere
10 between October of '88 until oh, Lord knows.

11 **MR. GILLIG:** And again, we are looking at all
12 the data so if results are out there, then we should
13 find it.

14 **MR. PARTAIN:** Hopefully a letter -- you know, a
15 letter to what we were talking about goes out sooner
16 than later so we don't run into other delays waiting
17 for a response or waiting -- or when you're almost
18 done, here's some data we found.

19 **MR. ENSMINGER:** Yeah.

20 **MR. GILLIG:** I may be wrong on this but I
21 believe we have already sent a letter to them asking
22 specifically for the results of the sample --

23 **MR. ENSMINGER:** Did they respond back to you?

24 **MR. GILLIG:** They responded back that they --

25 **DR. FORRESTER:** Didn't have it.

1 **MR. GILLIG:** If I recall they did not --

2 **MR. ENSMINGER:** Did they give you a letter?

3 **DR. FORRESTER:** We gave this to you all, I'm
4 sure.

5 **LCDR. FLETCHER:** You remember what -- the
6 July 13th response -- or July 2013 response to our
7 June 13th letter requesting specifically that.

8 **MR. ENSMINGER:** They got you a letter back?

9 **MR. GILLIG:** Yes, sir.

10 **MR. ENSMINGER:** That they don't have them, a
11 negative response.

12 **DR. FORRESTER:** No, that's not what they said.
13 They said they didn't know where the data was.

14 **MR. GILLIG:** Yeah, they couldn't locate the
15 data. I don't know the specific wording.

16 **MR. PARTAIN:** But then, if they can't locate
17 the data, then the next step is, okay, EPA, this is
18 supposed to have been in the administrative record.
19 Why aren't they compliant? I mean, if it was in the
20 administrative record, they wouldn't have a problem
21 locating it.

22 **MR. ENSMINGER:** I mean, these would be the data
23 points that you would need for a model.

24 **MR. GILLIG:** Well, and these -- I agree,
25 they're some of the data points. There's a lot of

1 data out there and a lot of --

2 **MR. ENSMINGER:** A lot of different sites.

3 **MR. GILLIG:** -- a lot of things to look at.

4 **MR. ENSMINGER:** Yeah, a lot of different sites
5 and different plumes. I mean, you got 1601 down on
6 the south end, then you got 903 and 901 up in the
7 north end. You got the fuel farm in between. I
8 mean, the place is a nightmare.

9 **MR. PARTAIN:** So but, you know, like I said, if
10 they put it in the administrative record where it
11 belonged, we wouldn't be dealing with this issue
12 right now. So if they -- if their response back to
13 you all is oh, we can't find it and we don't have
14 it, I would think the next -- I'm assuming the EPA
15 is the one that would be the next recourse, saying,
16 hey, this is not being done. It's not here. Put
17 them on notice and try to put a little pressure, see
18 what happens.

19 **LCDR. FLETCHER:** Okay. So this next slide is
20 the slide after, again to try to illustrate the
21 variety, the location and how difficult it is to
22 move through all of our data sources.

23 As you can see here I've got several bubbles
24 indicating the number of data sources that we have.
25 The sizes aren't exact. They don't mean much other

1 than I have a larger source or a smaller source.
2 But they don't mean -- they don't correlate the
3 number of documents in each key source.

4 The light green circles are U.S. Marine
5 Corps-owned data. The dark blue circles are
6 Department of the Navy-owned data. You see an EPA
7 bubble, a North Carolina Department of the
8 Environment and Natural Resources database. The
9 documents that ATSDR's data mining technical work
10 group owns. There's a contractor database and a
11 contractor with the U.S. Marine Corps specifically
12 there at Camp Lejeune. And then in Marine Corps
13 colors, the petitioner's documents, which is
14 anything that we've received from the CAP.

15 So as you can see, there's quite a few
16 databases where they overlap. That is an indication
17 that the documents for the data within that data
18 source are located in other data sources. Where the
19 circles are stand-alone, they are indeed a
20 stand-alone source of data on base, particularly on
21 the left side, where you've the Camp Lejeune public
22 works MCI East
23 Regional Geospatial Information & Services Division
24 G-F.

25 **MR. PARTAIN:** So these stand-alones are not

1 intersecting with any of the other prior document
2 libraries?

3 **LCDR. FLETCHER:** That's correct. So if you
4 look in the center, where the official document
5 inventory, it houses the DART archive, which is in
6 itself constantly being added to; although I think
7 we're at the end of that, so it's been something
8 that's updated since we started this project two
9 years ago. And they're migrating that into the
10 official document inventory. There's overlap of the
11 environmental management database. There's an
12 overlap of NIRIS. There's overlap of North Carolina
13 DENR and there's overlap of US EPA.

14 **MR. PARTAIN:** Now, these stand-alones, and what
15 concerns me is the Naval hospital, the hygiene
16 database, the fire department and the safety. I
17 mean, that's where I would expect to find some of
18 these data points.

19 **LCDR. FLETCHER:** Right. And these are all data
20 sources that we are reviewing.

21 **MR. PARTAIN:** The -- I mean, where are they
22 housed? At Lejeune? I mean, is the Naval
23 (indiscernible)?

24 **LCDR. FLETCHER:** The safety database and the
25 fire department database are onboard at Camp

1 Lejeune. They're only accessible -- and I'm going
2 to get into details on all of these as I go through
3 my slides. But the industrial hygiene database, we
4 do have a copy of that.

5 **MR. ENSMINGER:** I got a question. Does the
6 base quality control laboratory have their own
7 files?

8 **LCDR. FLETCHER:** I don't know of a base quality
9 control lab but I'll ask.

10 **MR. ENSMINGER:** I saw the message requesting
11 the funds to purchase it, emergency funds, was in
12 '85.

13 **MR. PARTAIN:** 'Cause Julian might know.

14 **LCDR. FLETCHER:** So now I'm going to -- the
15 rest of my slides kind of go through each of those
16 one at a time and hopefully shed a little more light
17 on it.

18 So the Official Document Inventory is a
19 database of documents. It's available through a web
20 portal. It does require clearance to get into so
21 it's not open to the public. The reports and
22 information from Camp Lejeune, mostly CERCLA
23 documents, that contains NIRIS and UST documents.
24 At the time I downloaded the index in September of
25 2012, when we first started this, it had a little

1 over 15,000 documents in the database. Since then
2 they've added additional documents, and we're
3 keeping up with that as they add documents, and
4 reviewing those additional document titles. Here's
5 a screen shot of what it looks like in the database.
6 So it's just a list of documents. I've got full
7 access to everything in there. And so we're
8 reviewing that.

9 **MR. PARTAIN:** Now, I do know that, from prior
10 conversations, that you said they're restricted.
11 What about getting an index or an inventory, like a
12 spreadsheet of each of these databases so we know
13 what's in there?

14 **LCDR. FLETCHER:** I do have that. I've got an
15 index of the document titles from the official
16 document inventory.

17 **MR. PARTAIN:** And can we get those or is that
18 classified too, or are we allowed to get --

19 **LCDR. FLETCHER:** I don't know that it's
20 classified but that's not my data to share.
21 That's -- I believe we're going to have to refer you
22 to the source on that or I can ask if we can provide
23 it as part of what we're --

24 **MR. PARTAIN:** Well, as the CAP -- as the CAP --
25 I mean, we would like to request -- I know, I

1 understand that we don't have access to the
2 inventories themselves but we would like an index of
3 what's in each of these inventories. And that's a
4 starting point so we can at least look and see
5 what's in there.

6 **MR. ENSMINGER:** Yeah, I mean, you guys have
7 already asked the Department of the Navy and Marine
8 Corps in the letter. That's been out, what, a
9 couple weeks? Did you get any reply back?

10 **MS. SHEILA STEVENS:** Jerry, that letter is
11 on -- it's supposed to be signed by Robin, and I
12 need to check on that.

13 **MR. ENSMINGER:** No, I'm --

14 **MS. SHEILA STEVENS:** But that letter, that was
15 that piece I was telling you about, that CERCLA,
16 RCRA we kept going back and forth on. And it
17 shouldn't -- it should be done. It should be up for
18 signature. But yes, it should be done. But yeah,
19 it's taking a while.

20 **LCDR. FLETCHER:** So the next source of data
21 that we're reviewing is the NIRIS database, which is
22 a database of documents and some actual data,
23 outside of documents. Again, available through a
24 web portal. Also a web portal that I have access
25 to, not available to the public. Mostly CERCLA

1 administrative records are contained within. Mostly
2 UST and solid waste management documents in there.
3 At the time I downloaded my index in February of
4 2013, there was 5,489 documents on that. Since then
5 there have been a few documents added. We're also
6 looking into those additional document titles to see
7 what may be of interest to vapor intrusion.

8 **MR. ENSMINGER:** What is their excuse for not
9 releasing these documents publicly?

10 **LCDR. FLETCHER:** Most of these documents
11 contain or have the potential to contain personally
12 identifiable information, which is names, Social
13 Security Numbers, dates that they worked, locations
14 on the base, as well as in some instances, they've
15 got underground utilities locations, which would be
16 a security issue. That's what the Department of the
17 Navy perceives as a security issue (indiscernible)
18 terrorist acts. So that's not information they want
19 in the public domain.

20 **MR. ENSMINGER:** Let me tell you something, you
21 remember when the water model was going to be
22 released, and all the stink about any map showing
23 any locations of any water wells, that thumb drive
24 right there, which I got from the Washington Post
25 the other day? The 11th document in the first

1 document file is a map of every water supply well
2 that has ever existed onboard Camp Lejeune.

3 Now, an FOUO is not, is not, a legitimate FOIA
4 exclusion. So they need to release these documents.

5 **LCDR. FLETCHER:** So here's a screen shot of a
6 NIRIS database, what it looks like --

7 **MR. ENSMINGER:** It was supposed to be part of
8 the administrative record anyhow.

9 **LCDR. FLETCHER:** Not that exciting, just a list
10 of document titles, and we can download each of
11 those documents as we identify the need to.

12 **MR. MASLIA:** (Indiscernible) project. That's a
13 double-sided portal. The titles are the same on
14 most (indiscernible), and there is a public access
15 entry to NIRIS. And then there's --

16 **MR. ENSMINGER:** Is it on the Navy facility's?

17 **MR. MASLIA:** It should -- it should be. A
18 little history on this, when they went from what we
19 refer to it as the Baker or whoever did the CERCLA
20 thing. And then the Navy housed or their contractor
21 housed the CERCLA administrative records. And then
22 NIRIS took it over or they put it into NIRIS because
23 of some federal law for naming conventions. They
24 created a double entry type of web portal, okay?
25 One was an official entry, and then one was for the

1 public entry.

2 Now, what we were told back then, and obviously
3 more documents have been put in since when we were
4 dealing with it, is that there were identical
5 documents on both sides, okay. It's just that the
6 public side may not be able to retrieve the document
7 and see the title and all that. On our side, we
8 went in and retrieved the document. I don't know in
9 the last two or three years what that -- that
10 specifically with the NIRIS. I know that was in
11 double public and private entry.

12 **MR. GILLIG:** Yeah, and I believe getting the
13 actual document on the public side --

14 **MR. MASLIA:** Yeah.

15 **MR. GILLIG:** -- you can get like an abstract --

16 **MR. MASLIA:** Yes.

17 **MR. GILLIG:** Obtaining the document is --

18 **MR. MASLIA:** Right.

19 **LCDR. FLETCHER:** So Morris jogs my memory on
20 something else I need to bring up about these -- all
21 of these data sources is that there are -- there is
22 a lot of duplication between data sources. And each
23 data source has its own unique naming convention.
24 Sometimes they're numbers; sometimes it's just the
25 document title or a different version of the

1 document title. So it's extremely difficult to
2 reconcile documents from one data set to the next.
3 It literally requires opening the document and
4 comparing them side by side to see that we got them
5 all. And I'll get into a little bit more of how
6 we're going about overcoming that, as we get further
7 along in the slide set.

8 The next data set is the Document Archive
9 Retrieval Tool, commonly called DART. This is an
10 archive of the Environmental Management Division's
11 documents, which were housed in building 1101, also
12 referred to as the building 1101 documents, and a
13 few other various locations on the base. It's just
14 their archived documents that they've been scanning
15 in.

16 At the time we did an index retrieval on that,
17 there were a little over 9,000 document titles. A
18 few have been added since then, and we are -- we've
19 gained copies of those as well. And again, like the
20 other data sources, we've got full access to this
21 database or data source, just as we did with the
22 others. No, there's no web portal on this so I
23 don't have a screen shot to show you. This is just
24 an internal accessible-only model for Camp Lejeune
25 data source.

1 The next data source is the Underground Storage
2 Tank Portal. I've heard some other names, and I
3 think they may have come from the CAP, about a
4 leaking UST portal. Anything that's got to do with
5 underground storage tanks is in this portal.
6 There's no secondary portal. And I have asked
7 when -- when that question came to me from our
8 management, I made sure to ask my Camp Lejeune
9 contacts if there was a second portal, and there's
10 not.

11 **MR. MASLIA:** Just to clarify what occurred is
12 the concept of having a portal took place, which was
13 July of 2003. They referred to the physical in the
14 reports as leaking underground, okay. Once they
15 officially contracted out for this in the
16 maintenance of the portal, which was contained by --
17 what's the contactor -- but anyway, it's in our
18 documents.

19 **MR. PARTAIN:** Caplin, I think.

20 **MR. MASLIA:** What?

21 **MR. PARTAIN:** Caplin.

22 **MR. MASLIA:** Caplin, yeah, yeah. In Caplin's
23 log, there are a couple of different names. But
24 anyway, Caplin, who is the contractor that maintains
25 the portal for them. And the water modeling there

1 is an official title. But generally it contains
2 anything that's leaking or -- and/or underground
3 storage tanks.

4 **LCDR. FLETCHER:** Exactly. So there's a screen
5 shot of that portal.

6 Next slide. So at the time we did our export
7 there were 1,974 documents that ATSDR already owned
8 as part of the data mining technical workgroup for
9 the drinking water. So we included those in the
10 review. At the time we first looked at this, there
11 were an additional -- in addition to that 1,535
12 documents, there were an additional 439 that had
13 been uploaded to the UST portal. So we've got all
14 those.

15 Since then they've continued to add more
16 documents, some with current sites beyond our line
17 in the sand, which is July 2013. And they've added
18 some that have to do with sites prior to that date.
19 So we just requested a dump of everything else
20 they've got, an export of all the recently added
21 documents. So we'll be sure to include all of those
22 in our review as well.

23 **MR. PARTAIN:** The 439 documents, what are the
24 dates on those documents? Are those newly generated
25 documents or is this stuff --

1 **LCDR. FLETCHER:** Not necessarily. As they
2 update their UST portal, it could be documents that
3 were in someone's office, in hard copy, that had to
4 do with something historically which may be recent
5 or not so recent history, that they've scanned in.
6 It could also be a site that they just found last
7 week, and they've started a new file for that.

8 **MR. PARTAIN:** Okay.

9 **LCDR. FLETCHER:** Which is why we've requested a
10 complete export of everything in it.

11 **MR. PARTAIN:** Are you segregating the new
12 documents from the old? 'Cause we have the 1,535,
13 we have an index for that. And I'd like to see what
14 the new documents were -- are, titles and dates.

15 **LCDR. FLETCHER:** We, we are not segregating
16 those. I've just kind of separated them here to
17 give an idea to let you know what we're looking at
18 what you've already seen. Let you know what we're
19 working on.

20 **MR. PARTAIN:** But I mean, going back to -- and
21 I guess I understand that we're still fighting the
22 objections about releasing the documents but having
23 a workable index of what's in there, with dates and
24 titles, you know, would be something that we can
25 work with, 'cause we do have the 40,000 documents we

1 got from USA Today. So we've got a large set that
2 we can start looking through, but we need the index.
3 And then that's something, you know, that I've been
4 asking for since this whole document archive or
5 document, for lack of a better word, was first
6 discussed. And it's been about a year now, so if I
7 ask for an index of these new documents and
8 everything. So I hope it's not another year before
9 we get it.

10 **LCDR. FLETCHER:** We're working to complete that
11 list and share it with the CAP as soon as we can.

12 **MR. PARTAIN:** But the Navy and the Marine Corps
13 should have -- I mean, I don't --

14 **LCDR. FLETCHER:** I believe they should have a
15 list.

16 **MR. PARTAIN:** I don't think they're going to be
17 operating within the blind without some type of
18 index or some -- it's like going back with Morris,
19 when he was doing his water model, when the UST
20 portal came up. They let Morris flounder around for
21 how many months, I don't remember, without direction
22 how to run the damn thing. And they, oh, by the
23 way, here's the instruction manual. Are they doing
24 this again? I mean, I just, I cannot believe --

25 **LCDR. FLETCHER:** Some sources I can export and

1 index some titles, others I cannot. Where I cannot,
2 that takes us time to go through and create the
3 index on our side. So that's what partly taking
4 some time to put together, and that's why there's a
5 delay in that. You can't just instantly hand that
6 out because it doesn't exist.

7 **MR. PARTAIN:** Well, and the Navy doesn't have
8 one or whoever owns the documents, they don't have
9 one for themselves?

10 **LCDR. FLETCHER:** I specifically requested that,
11 because like you, it seems to me like there would be
12 one.

13 **MR. PARTAIN:** And they responded in writing or
14 just a telephone call, no, or what?

15 **LCDR. FLETCHER:** I believe it's in writing. We
16 don't typically write internal letters. I think
17 I've got pretty open communication with the folks at
18 Camp Lejeune, my counterparts there. And we openly
19 email back and forth, which is a matter of public
20 record. So I believe I've got that in an email but
21 I'd have to go look to find out.

22 **MR. PARTAIN:** 'Cause I mean, you know, and I
23 understand not putting everything in writing like
24 that; you have to have some type of verbal
25 communication. But when you get to choke points

1 such as document libraries and indexes and
2 everything, that's where we do need to have a paper
3 trail, 'cause I mean, it's a critical point. I
4 mean, 40,000 documents, if you -- and as was
5 mentioned earlier, trying to target specific
6 documents creates other problems. Understanding,
7 yes, you're looking for just data points to fit in
8 to what you need for the vapor intrusion, but -- and
9 I'll use the benzene and the public health
10 assessment from back in 2009 -- you know, we kept
11 hearing the same things: Oh, we've gone over
12 everything; we've looked at everything. And by
13 doing a separate investigation with a different mind
14 set, we uncovered the fact -- and established that
15 benzene was indeed in the water, where it had been
16 missed by ATSDR for over a decade. And, you know,
17 if you're just targeting that one specific thing,
18 you might be missing details that lead to other
19 sources of information, other data points or other
20 document libraries that haven't been disclosed.
21 'Cause frankly, you know, it has been proven over
22 and over again, the Navy and the Marine Corps have
23 not been forthright. They have not been trustworthy
24 in their dealings with us. And we keep finding
25 things.

1 **LCDR. FLETCHER:** Well, I saw with the vapor
2 intrusion that they've been responsive and very open
3 with everything that I've -- with all the requests
4 that I've made for data and data sources. So if you
5 know of a data source that I'm not discussing today
6 or isn't in that slide --

7 **MR. PARTAIN:** Well, that's the problem. We,
8 you know, it's you have to ask the -- it's the right
9 question at the right time in the correct manner and
10 fashion, and hope that they're in their good graces
11 when they reveal it. As in the case in the vapor
12 intrusion -- I mean, the UST portal, that was found
13 by a complete accident. I mean, we have in writing
14 in 2009, when Senators Burr and Hagan asked the Navy
15 specifically how much fuel had been -- I mean, what
16 was the fuel loss at Hadnot Point. The response
17 from Headquarters Marine Corps was: According to
18 our inventory records, we lost 30- to 50,000-gallons
19 of fuel, which is a correct answer because -- if you
20 rely on the fact that their inventory records is the
21 caveat in the question. According to our inventory
22 records. Well, yes, that is a truthful statement,
23 according to the inventory records, but what they
24 didn't answer was the question. They knew that they
25 had lost 1.5 million gallons of fuel estimated, but

1 because we didn't ask the question correctly, they
2 didn't answer it that way. They just said according
3 to our inventory records.

4 So they may be being truthful to you but it
5 comes down to, you know, with these document
6 libraries, you know, too many things have appeared
7 over the past five years that should have been
8 disclosed a long time ago. And when we deal with
9 things like this, I want something concrete, to be
10 able to look at, such as an index and, you know, the
11 archival inventory so we can understand what's
12 there.

13 And, you know, it's just like with the bubbles
14 that you're showing up here. The naval hygiene
15 unit, the industrial hygiene unit, that's where I
16 would expect to see a lot of this data because they
17 were the ones that were tasked and regulated to do
18 these -- the GCMS readings. And that seems to be
19 segregated completely away from the other stuff at,
20 at Camp Lejeune. So are these readings sitting
21 somewhere in Norfolk? I don't know. I mean,
22 obviously if I had that, then we'd have this
23 information. But you have to do -- you have to
24 approach this with an investigative mindset to look
25 for and, and dig up these documents. If you just

1 rely on their good graces, no, you're not going to
2 find anything else.

3 **LCDR. FLETCHER:** Well, I think you've learned a
4 lot, through your interaction with Morris and his
5 group earlier, and I think we have a better
6 understanding of what we're looking for now.

7 **MR. PARTAIN:** Oh, yeah, you have a better
8 understanding. FOUO, you can't show this to anyone.
9 They've done everything they can to exclude the CAP
10 from seeing anything that comes out, and that's a
11 problem. So anyways, the index is something that
12 I -- what type of time frame do you think you could
13 get together an index for us to start looking at?

14 **LCDR. FLETCHER:** I'm hoping that within a few
15 weeks we'll have the rest of it put together.

16 **MR. PARTAIN:** Okay.

17 **LCDR. FLETCHER:** Again, it's -- the differences
18 and nomenclature, the way they've named documents
19 and when they've uploaded and changed names and when
20 we've downloaded them, it's difficult to reconcile
21 that list to make sure we've got everything
22 accurately reflected on the list that we hand to you
23 and for us for our own use.

24 **MR. PARTAIN:** Well, I understand it's gonna
25 change. But just getting something that we can

1 start working with is, is important too. And within
2 a few weeks would be great. I'd love to see
3 something in a few weeks.

4 **MR. GILLIG:** Mike, the index we provided back
5 in early May, is that --

6 **MR. PARTAIN:** Yeah, the index -- what I'd like
7 to see as far as an index for each of these document
8 libraries.

9 **MR. GILLIG:** Each of the data sources.

10 **MR. PARTAIN:** Yes. And like for example with
11 the one here, with this 439 additional documents
12 that have been uploaded and everything, I'd like to
13 see what those are, where they came from, what
14 they're -- you know, what they're dealing with,
15 because they may have -- okay, here's your DVD,
16 Senator Burr, and then that disseminated down to us,
17 and then a week or two after they gave it -- or gave
18 us that information, they loaded up some key
19 documents that have a lot of pertinent information
20 that we are now not seeing. I mean, 439 documents
21 to be uploaded, I mean, that's a lot. And that's
22 why I asked you if this was recent material, because
23 if it was all dated 2013-'14, okay, they're doing
24 the -- you know, this ongoing study. But if we're
25 seeing documents from the 70s, 80s, 90s, that are

1 being uploaded, as far as that 439, I have some
2 concerns with that, 'cause that should have been
3 there to begin with.

4 **DR. FORRESTER:** Can I go back and clarify --

5 **MR. PARTAIN:** Yeah.

6 **DR. FORRESTER:** -- what, what you want in the
7 next two weeks is an index for each database.

8 **MR. PARTAIN:** Yes.

9 **DR. FORRESTER:** I promise you we cannot get all
10 that done. If we index what we've -- already are
11 using, we can get those done in the next two weeks.
12 We're hiring three or four more contractors to help
13 us through the data.

14 **MR. PARTAIN:** Okay.

15 **DR. FORRESTER:** It's just -- it's a mess we've
16 got.

17 **MR. PARTAIN:** I mean, this is going on what
18 Chris said.

19 **LCDR. FLETCHER:** No, I thought you were asking
20 for the update from our recent site visited --

21 **DR. FORRESTER:** No, he wants --

22 **LCDR. FLETCHER:** You want an index of every --

23 **DR. FORRESTER:** -- every report.

24 **LCDR. FLETCHER:** -- every database?

25 **MR. PARTAIN:** Well, yeah, I think the database.

1 'Cause that's where --

2 **LCDR. FLETCHER:** I couldn't even give you a
3 guess on that.

4 **MR. PARTAIN:** 'Cause that goes back to my point
5 that there's -- I'm sure the Navy and the Marine
6 Corps have an index for each of these document bases
7 and databases. You know, you just don't plug things
8 into a computer and forget about them or put them in
9 a box and squirrel them in a corner. You got to
10 know what's there. And, you know, that's where
11 maybe something should be put in writing, formally
12 say, hey, and get that formal response and
13 disseminate that to the CAP too. But no, I thought
14 Chris was saying that you all had it all organized
15 already but --

16 **LCDR. FLETCHER:** No.

17 **MR. GILLIG:** No.

18 **MR. PARTAIN:** So when do you think you -- when
19 would be a time frame to expect something like that?

20 **DR. FORRESTER:** Contractors are not coming on
21 'til the end of June.

22 **LCDR. FLETCHER:** Our contract doesn't reflect
23 that we're asking to make an index.

24 **DR. FORRESTER:** I know but we, we can work on
25 the contract. I'm just saying I can't give you a

1 time frame right this minute. We have to see the
2 magnitude of the job.

3 **LCDR. FLETCHER:** We'll also have to get
4 contractors access to these data sources.

5 **DR. FORRESTER:** But maybe we can get Morris to
6 help us too, and ask, see if they have them.

7 **MR. ORRIS:** Well, can we get a list from the
8 update that you sent back in May reflecting which
9 documents are new?

10 **LCDR. FLETCHER:** That's what we're working
11 toward.

12 **MR. ORRIS:** Okay. Okay. That would be a good
13 start. And especially --

14 **LCDR. FLETCHER:** It's something we'll work on.

15 **MR. ORRIS:** -- highlighting that those
16 documents are newly uploaded.

17 **MS. FORREST:** So are you asking for me to go
18 back and ask if they have an index for each of these
19 individual --

20 **MS. FRESHWATER:** I was just wondering who
21 went -- who is -- what is staff that goes to the
22 actual visits, who actually goes to the base?

23 **DR. FORRESTER:** Some of these people in this
24 room have been.

25 **LCDR. FLETCHER:** So most recently the May site

1 visit was myself, Captain Parham, Commander
2 LeCoultre, and then two other staff that are working
3 with us, helping us review the documents here. So
4 they're all health assessors. Dr. Tonia Burk will
5 be in later, met with us as well.

6 **MS. FRESHWATER:** How long were you there?

7 **LCDR. FLETCHER:** We were there a week. And
8 that was -- what that was -- the purpose of that
9 visit was to review and scan documents that were
10 available in hard copy only for us to bring back
11 here and include in our investigation.

12 The identification of those documents was based
13 on a title search that we did back in, I guess,
14 early 2013, where we had all the large document
15 indices, and we had a set of keywords we used to try
16 to identify. And then we went through and looked at
17 each title individually to identify documents that
18 might have something to do with vapor intrusion.
19 And we were very liberal in that search so that we
20 could request the full documents, so when we got
21 them here, we can look through those full documents
22 and better determine which are going to be useful
23 and which are not. So there's going to be a lot of
24 fat to cut off from that large request.

25 **MS. FRESHWATER:** So do you feel like -- how

1 many more times do you feel you need to go to get
2 all of the things on -- scanned that are still hard
3 copied?

4 **LCDR. FLETCHER:** I think at this point we've
5 been through everything. I don't foresee the need
6 for a return site visit, not for scanning hard-copy
7 documents, but I wouldn't rule it out completely,
8 just I don't want to tell you no, and then need to
9 go back.

10 **MS. FRESHWATER:** But it is --

11 **LCDR. FLETCHER:** Everything that I'm aware of
12 that exists, we've been through at this point.

13 **MR. GILLIG:** That and the base has contractors
14 that are busy scanning documents. So if we can get
15 them to scan the documents, and we learn of
16 additional documents that are of interest, we don't
17 have to send a team out to scan if they can send it
18 to us electronically or on disk.

19 **MR. ENSMINGER:** They're still scanning
20 hard-copy documents?

21 **LCDR. FLETCHER:** I think there's the last few
22 documents that they're trying to go through and
23 scan. I think those are -- there's a subset of
24 documents they're working on. We looked through
25 those while we were there and scanned what we

1 needed, what we felt was important to vapor
2 intrusion.

3 **MS. FRESHWATER:** I'm sorry, Jerry, about how
4 many did you, like round about, did you scan
5 yourself?

6 **LCDR. FLETCHER:** We brought back several
7 hundred.

8 **MR. ENSMINGER:** When did the -- you know,
9 you've been through these documents. When did they
10 actually put forth a concerted effort down there to
11 start testing ambient air quality in the buildings?

12 **LCDR. FLETCHER:** I don't know. I haven't been
13 through the documents at that level yet so I don't
14 know. We're still searching -- with the tens of
15 thousands of documents, we're still searching for
16 documents that have data. And once we get to that
17 level, we can see which of these tens of
18 thousands -- there will be a smaller stack of
19 documents to go through. Then we'll start reading
20 through the documents we've identified.

21 **MR. ENSMINGER:** Well, I've seen some of this
22 stuff that ATSDR's published, and it showed a
23 starting date of 2001 for vapor intrusion. Why that
24 date?

25 **MR. GILLIG:** That is the date EPA came out with

1 guidance on how to investigate and assess vapor
2 intrusion. That's why we used that 2001 date.

3 **MR. ENSMINGER:** Does that mean that that didn't
4 exist before or what?

5 **MR. GILLIG:** It means the methodology for
6 investigating vapor intrusion was -- it was not EPA
7 guidance until, in 2001, I believe, is when EPA
8 issued their first guidance.

9 **MR. ENSMINGER:** I'm totally convinced that
10 there are a lot of buildings down there on that base
11 right now that are still dangerous.

12 **DR. FORRESTER:** And again, that's one of the
13 goals of this process, past, present and if there's
14 future to address in the health assessment.

15 **MR. ENSMINGER:** Especially 1201, 1202. That's
16 base maintenance and base motors. Those shops.

17 **MS. FRESHWATER:** And that's why I brought up
18 this school, the TTT -- TT2 school, because I know,
19 you know, there was a tank underneath my school, and
20 if they put the new one near it, I'd like to know
21 that those kids now aren't getting poisoned. Just
22 'cause they tear down the building, we now know that
23 doesn't mean that the kids are safe.

24 **MR. GILLIG:** Yeah, you had mentioned that in
25 the CAP meeting -- the last CAP meeting.

1 **MR. ENSMINGER:** Well, I remember when the water
2 model for TT was released, and Morris and them did a
3 brief evaluation of vapor intrusion threat at Tarawa
4 Terrace, and the EPA about had a crap hemorrhage
5 over that one, so.

6 **MS. FRESHWATER:** Thanks, Jerry.

7 **LCDR. FLETCHER:** So jumping back into the
8 slides, this is a screen shot of UST portal. Again,
9 this is a list of documents, documents associated
10 with each site.

11 The Environmental Management Library, these are
12 hard-copy documents. They've got a library of, I
13 guess, recently produced documents that they keep up
14 with that are eventually scanned in.

15 **MR. ENSMINGER:** Was that the vault?

16 **LCDR. FLETCHER:** No, sir, no, sir, not the
17 vault. This is the EMD's, the actual environmental
18 management folks. The vault is a separate building
19 over in the industrial area where they keep maps and
20 blueprints, as-builts, that pertain to the
21 buildings.

22 This is the Environmental Management Library
23 where they store the various components that they
24 have that make up the environmental checks and
25 balances there on base. So the indoor air

1 monitoring stuff is in there, the UST folks. I
2 think there's a public works representative in
3 there. And there are others.

4 The online version, which they do have an
5 online version, it's an internet -- intranet site,
6 sorry, only available with, I guess, clearance and
7 not available to the public. It's their -- where
8 they keep the working files, what they refer to as
9 working files. We would call them draft files or
10 draft documents. And it's got links to CERCLA
11 records. But there's not a tremendous amount of
12 stand-alone data there that's not duplicated
13 somewhere else.

14 **MR. ENSMINGER:** Do you have access to that?

15 **LCDR. FLETCHER:** Yes, sir. I've got full
16 access to all these documents.

17 Some of the files have been converted to PDF.
18 Everything we're getting is pretty much PDF. I
19 wouldn't say a hundred percent of it but most of it
20 is, which doesn't make it easy for data extraction.
21 We went in 2014, back in May -- this is what I was
22 just discussing a minute ago, that we went in and --

23 **MR. MASLIA:** Chris, just to clarify, there were
24 graphic image PDFs and not -- that's what we ran
25 into. They're just graphic scans.

1 **MR. PARTAIN:** They're not searchable.

2 **MR. MASLIA:** No, and even if you do OCR, where
3 you start dealing with numbers and it's not
4 recognizing them, so they're not -- they're -- so
5 that's what makes you have to, then, go in page by
6 page and see that they're graphic image PDFs.

7 **MR. ENSMINGER:** Yeah, we've been there. We did
8 page by page, all those on that disk.

9 **LCDR. FLETCHER:** So here's a screen shot of the
10 EMD library. It's a SharePoint site. If you're
11 familiar with Microsoft programs, a SharePoint
12 site's (indiscernible). So you see there some of
13 the different groups they have or at least their
14 acronyms.

15 The next data source we're looking through, or
16 will eventually, is for the Installation Development
17 Division. They do not have a web portal. They
18 don't have an exportable index of document titles.
19 It's only available on base.

20 Basically what our intention is to send them
21 the documents, or rather, the building numbers of
22 interest, once we have a complete list, which is a
23 pretty long list at this point, of buildings that
24 we're looking at. And then request documents
25 relevant to those buildings.

1 Next data source, the Industrial Hygiene
2 Database. There's no web portal to this. They have
3 two Microsoft Access databases. They kind of
4 divided them up to pre and post-2000. I don't know
5 why; that's just the what they did. So we've got
6 them both. The pre-2000 database has approximately
7 22,000 records; the post-2000, approximately 26,000
8 records. Most of this database was put together for
9 OSHA sampling and OSHA compliance for its personnel
10 monitoring. There is some air monitoring and some
11 general area monitoring, and we're looking through
12 that now.

13 Just a quick snapshot, to help you understand
14 what we've got in there, out of the pre -- in the
15 pre-2000 database, out of 22,000 approximate records
16 that are in there, when you search by building
17 number, there are only 146 records that deal with
18 building 1101. Similarly in the post-2000 database,
19 there are only 480 records that deal with building
20 1101. There's not a tremendous amount of data in
21 there but we are looking and considering looking at
22 all the data that is in there. Again, we search
23 that by building number.

24 The next source is the Base Safety Database.
25 There is a web portal they use in ESAMS, I think

1 that's how they commonly refer to it on base. It's
2 just an acronym for Enterprise Safety Application
3 Management System. It maintains records back to
4 2008 when they started using ESAMS. Prior to that
5 they kept hard-copy records and managed those, I
6 guess, per their record storage guidance. There's
7 no way of exporting those documents from that
8 system. We've done a search including building
9 numbers, and so far have returned no results when we
10 searched their system.

11 This database, the title looks like it would
12 have a lot, I think, of what the CAP is expecting.
13 But what is in it is -- basically it's an OSHA
14 reporting system where they track inspections,
15 inefficiencies, and incident and mishap reporting.
16 It's kind of a triage system for workers. When
17 workers call in and say, hey, I think there's
18 something going on over here; I want you to take a
19 look at it. This is where the call is tracked.
20 Then they farm that out to someone else on base to
21 go have a look at.

22 **MS. FRESHWATER:** So if someone smells gas in
23 the building, they do that?

24 **LDCR. FLETCHER:** If they smell gas these days,
25 I'm pretty sure they'll call the base 9-1-1 system,

1 which I'll get into in a minute. They could have
2 called base safety in the past or they might still
3 call base safety now.

4 **MR. ORRIS:** And there's no archival?

5 **LCDR. FLETCHER:** Prior to 2008, there are no
6 archive records that I am aware of, and I have asked
7 for those. They apparently --

8 **MR. ORRIS:** I find that hard to believe.

9 **MR. ENSMINGER:** There's no what?

10 **MR. ORRIS:** There's no archival records prior
11 to 2008.

12 **MR. ENSMINGER:** For what?

13 **MR. ORRIS:** This database.

14 **LCDR. FLETCHER:** The Base Safety Database.

15 **MS. FRESHWATER:** It's only 2008.

16 **MR. ENSMINGER:** Really.

17 **MS. FRESHWATER:** No hard copies, nothing?

18 **LCDR. FLETCHER:** I've asked and they said no.

19 **MR. PARTAIN:** They're probably with the well
20 logs.

21 **MR. ENSMINGER:** Yeah, they're in the fly ash
22 dump.

23 **MR. MARK EVANS:** Well, they're probably
24 following a protocol which mandates them to maintain
25 those records for a certain period of time.

1 **MR. ENSMINGER:** No, no, wait a minute. Not if
2 you're a Superfund site.

3 **MR. MARK EVANS:** (Indiscernible). That part of
4 it isn't being (indiscernible).

5 **LCDR. FLETCHER:** So here's a screen shot of the
6 Base Safety Database portal. There's a couple of
7 parts in this where we can go in and do some
8 searching and we've done some. We'll do a little
9 more but so far we've not returned anything useful.

10 So Camp Lejeune Fire Department, no web portal
11 or index of document titles. This is an emergency
12 reporting database, anybody contacted the fire
13 department. We've sent our building numbers to the
14 fire department, and they've sent back a few
15 records, which I haven't had time to look at yet.
16 I've got them sitting in my email account, ready for
17 me to look at them.

18 They only keep the most recent three years of
19 calls in their database. Anything prior to that --
20 I think they told me there's an archive system that
21 is in an antiquated system and nobody can retrieve
22 documents from that anymore.

23 **MS. FRESHWATER:** What does that mean?

24 **LCDR. FLETCHER:** I really don't know. That's
25 all they've been able to tell me when I asked the

1 question can you access them.

2 **MR. MASLIA:** We ran into this. They -- even as
3 -- and I say recent, when we were doing the testing
4 in 2004 and 2005, the water utility data system was
5 still using floppy disks and DOS. So when the
6 floppy disk drive went out they would not get
7 approval to buy a floppy disk replacement to read.
8 And my suspicion is that's the same issue here. I
9 won't tell you how they (indiscernible); that's a
10 story for another time. But that is, I will say,
11 probably they say they can't retrieve it; it's
12 probably either -- it may even be on an old DOS
13 system or --

14 **MR. ENSMINGER:** Probably.

15 **MR. MASLIA:** -- or Windows 3-point-something,
16 with floppy disks. And you do have the issue with
17 floppy disks they're probably brittle.

18 **MR. ENSMINGER:** MS-DOS was their main operating
19 system in the past.

20 **MR. MASLIA:** Yeah, and so that's most likely
21 what they are referring to.

22 **MS. FRESHWATER:** Can we get clarification on
23 it?

24 **LCDR. FLETCHER:** I've already taken the note
25 and I'll get some clarification on it.

1 **MS. FRESHWATER:** Thank you.

2 **LCDR. FLETCHER:** So other sources, the
3 contractor sources, which they've got numerous
4 contractors. CH2M Hill and CATLIN are their largest
5 contractors, they use most frequently. They
6 maintain the analytical databases and databases'
7 documents as well as GIS data. They do not have an
8 exportable index of document titles.

9 So far any time we've made a request, they've
10 needed to go to their contractor and pass their
11 request to them, it's been responded, so I feel like
12 we've gotten what we need from those data sources.

13 Camp Lejeune Public Works, they maintain
14 as-built drawings and design and this is the vault,
15 for everyone else in the room, that Jerry mentioned
16 earlier. We'll request drawings and data from them
17 later, as we investigate buildings of interest.

18 **MR. ENSMINGER:** Were you at the vault?

19 **LCDR. FLETCHER:** I've been in the vault, yes,
20 sir.

21 **MR. ENSMINGER:** Do they still have armed guards
22 at the vault?

23 **LCDR. FLETCHER:** Not when I was there, sir.

24 **MR. ENSMINGER:** They used to.

25 **LCDR. FLETCHER:** Additionally we're going to

1 review the documents gathered through the Data
2 Mining Technical Workgroup, which was the data water
3 modeling, Morris's documents. Hopefully those
4 documents we will have seen and may have filtered
5 some out and may have filtered some in through our
6 search already as we go through their source of
7 data. These documents all came from NIRIS or the
8 EMD library, building 1101, and some of the other
9 sources that we were looking at. But we're going to
10 include these documents as we do keyword searches,
11 to make sure that we don't miss anything there.

12 Other sources that we remain to look through
13 are the US EPA documents, the site administrative
14 record. There is no web portal for these. I think
15 at some point we'll have a site visit, I guess, for
16 lack of a better word, to the regional office, to
17 review their hard-copy documents, which is here in
18 Atlanta so that should be easy.

19 **MR. ENSMINGER:** Yeah. Not many there so you
20 won't have any problem flipping through them.

21 **LCDR. FLETCHER:** That's what I've been told.
22 We're going to take a scanner and go do our best.

23 So the North Carolina Department of Environment
24 Natural Resources has an administrative record.
25 They have a web portal available to the public, so

1 for those of you on the CAP, you want to jot that
2 down.

3 **MR. ENSMINGER:** Where is that?

4 **LCDR. FLETCHER:** There on the bottom, sir.
5 They call it CARA, which is, I think, a
6 manufacturer -- the company they bought their web
7 portal software through. I don't know what CARA
8 stands for. I don't think it is anything
9 meaningful. Anyway so that's what they call it,
10 their CARA portal, at the very -- the bottom there.

11 So they've got a little over 6,200 document
12 titles that have something to do with Camp Lejeune.
13 I've got an export of that sitting on my desk top.
14 That's in the queue to look at. What the North
15 Carolina folks have told me is that most of those
16 documents are their comments and write-ups and
17 mark-ups on documents that we most likely will have
18 already seen in the NIRIS database. So we'll do a
19 comparison of titles and review those documents if
20 necessary.

21 **MR. ENSMINGER:** How long have you known about
22 this?

23 **LCDR. FLETCHER:** A few months.

24 **MR. ENSMINGER:** Okay, now, the reason I asked
25 that, this goes back to what you said earlier about

1 improving communications with the CAP. Why couldn't
2 we have been told this, that this was accessible
3 months ago? I mean, this is what -- I mean, you
4 want to improve the communications? We need -- I
5 mean, you could have sent this to us via email,
6 where we could have been looking at this stuff
7 months ago.

8 **MR. GILLIG:** I apologize, Jerry.

9 **MR. ENSMINGER:** But, you know, that's my main
10 beef with the communications and the lack of them.
11 I mean, we have no back and forth between you guys
12 and us at all. We want to help.

13 **MS. FRESHWATER:** Free labor.

14 **MR. ENSMINGER:** Unfortunately it's free.

15 **MR. GILLIG:** We gave you cookies.

16 **MR. ENSMINGER:** And Mike's not allowed to have
17 any.

18 **LCDR. FLETCHER:** So here's a screen shot of the
19 North Carolina database portal. You can see they've
20 got some different search criteria you can use at
21 the top, and then it displays a list of documents at
22 the bottom. And you can open those documents and
23 save them to a hard drive.

24 **MR. ORRIS:** And that's a public access?

25 **LCDR. FLETCHER:** Yes, sir.

1 **MR. GILLIG:** Yes.

2 **LCDR. FLETCHER:** Does everyone have that web
3 address written down?

4 **DR. FORRESTER:** It's in the hand out.--

5 **LCDR. FLETCHER:** So the next resource is one I
6 mentioned earlier, the MCI East Regional Geospatial
7 Information Services. No web portal, no index of
8 document titles. They don't really have documents
9 per se as they do GIS files, different layers to put
10 into our mapping software. The layers that they
11 have anything to do with Camp Lejeune will be made
12 available to me, and I've requested them all. So we
13 have them all.

14 The last source is the Petitioners' Documents
15 or documents submitted by the CAP. Those are
16 included in our keyword searching and in our review,
17 and will be given special attention to make sure
18 that we're looking at what you found in your
19 searching and highlighted as noteworthy. So we will
20 definitely review the documents and include the data
21 contained within.

22 That does it for the data sources that I'm
23 aware of today. If we uncover other data sources as
24 we go, we'll update you as we go. Or if you uncover
25 data sources that I haven't discussed today, you can

1 please share that with me. I'll be sure to look
2 through them. What questions do you have for me?

3 **MS. FORREST:** I have a question about the Navy
4 action items; you had Navy/marine Corps. It looked
5 to me like throughout your presentation you
6 identified the databases that had an index. Isn't
7 that what you're asking me to do? So you're just
8 asking for the Navy/Marine Corps to look at your
9 presentation and verify where you've indicated that
10 there is or is not an index? That's what I'm
11 confused on.

12 **DR. FORRESTER:** Can you verify which one --
13 they want to know actually the title of every
14 document in the database, right?

15 **MR. PARTAIN:** No, we want the index.

16 **MS. FORREST:** They want an index. And Chris
17 has indicated under each one of these data sources
18 whether or not an index was available, which sounds
19 exactly like the action item you just --

20 **LCDR. FLETCHER:** So I think you're asking --
21 they want a copy of the index that we know exist.
22 And for the sources where I don't have an index,
23 because I've been told it isn't exportable, they
24 want an index of those documents from those sources.
25 Is that right?

1 **MR. ENSMINGER:** Yeah.

2 **MR. PARTAIN:** Correct. Thank you.

3 **LCDR. FLETCHER:** No questions? I answered them
4 all. Excellent, my work is done here.

5 **MR. ENSMINGER:** You think.

6 **MR. GILLIG:** We're just getting started. So as
7 you see, there's a ton of data sources. There's
8 thousands of documents in each of these and it takes
9 us a lot of time to go through them. I mean,
10 they're all PDF documents, and when it comes down to
11 it, we're going to have to extract that manually.
12 And what that means is open an Excel spreadsheet on
13 one screen, open the PDF on the other, and type into
14 the Excel spreadsheet what we're seeing in the PDF
15 document. Then once that's all done, throw it in a
16 database, which that's actually a pretty easy step,
17 put it in the database. Then we can start running
18 statistics and take it from there.

19 **MR. ENSMINGER:** You're not telling us anything.
20 We've done it. We've been through it.

21 **MS. FRESHWATER:** Can she -- can you help
22 facilitate the updates to us as we -- as he goes? I
23 mean, even if it's small gains. You said you had
24 emails that you hadn't opened. You know, even if
25 it's a small gain, it would be worth getting it in

1 little bits instead of --

2 **LCDR. FLETCHER:** Progress updates?

3 **MS. FRESHWATER:** Yeah.

4 **LCDR. FLETCHER:** Yeah, I'll be happy to do
5 that.

6 **MR. GILLIG:** We can cover that on the monthly
7 calls.

8 **MS. FRESHWATER:** Okay. That would be great.

9 **MR. ENSMINGER:** We went through all the CERCLA
10 and CLW documents, page by page --

11 **LCDR. FLETCHER:** I know your pain.

12 **MR. ENSMINGER:** Huh?

13 **LCDR. FLETCHER:** I know your pain with document
14 review. It's not an easy process.

15 **MR. ENSMINGER:** Hey, but we found some real
16 gems. On documents that you would have never
17 thought that there was any useful information on
18 them. All of a sudden somebody in a meeting blurts
19 something out. Wow.

20 **MR. PARTAIN:** I mean, you were asking about us
21 discovering things, that's how we find it. And I
22 mean, we're not going to rely on the Navy/Marine
23 Corps to send us an email saying, hey, and by the
24 way we had this document archive --

25 **MR. ENSMINGER:** We found this damning

1 information you guys might be interested in. Oh,
2 really?

3 **MR. BRUBAKER:** Yeah, it's -- allow me to make
4 an observation here. There are really two strong
5 competencies represented in what I hear coming from
6 the citizen CAP members and the ATSDR folks.
7 There's a macro -- how do we sift the ocean, get it
8 on the one map that we can trust foundation. Then
9 there's a very different form of search in there,
10 that you were describing, which is find something,
11 looks interesting, sniff it out, follow it and see
12 where it leads. Both of them seem to have value and
13 have produced valuable results. My question for you
14 guys, since we're a little early, is what agreements
15 do you need to have with each other, knowing that
16 both of those methods are going to be required in
17 order to really get this thing forward? I hear a
18 request for incremental updates, you know, there's a
19 couple of letters and things that need to be
20 exchanged. What agreements do y'all need to have
21 with each other about how you're going to work this
22 on both fronts? Macro, verifiable, solid database,
23 reference and simultaneously give us something new
24 to look at so we can see if there's anything
25 interesting.

1 **MR. PARTAIN:** Well, the monkey wrench in that
2 whole process is on the part of the Navy and the
3 Marine Corps.

4 **MR. ENSMINGER:** Access to the documents.

5 **MR. PARTAIN:** Because as -- you know, shortly
6 after we prove the value of what we've been doing
7 for the past seven years, mainly going through the
8 documents, putting stories together and helping
9 Morris do what he was doing with the water model,
10 the Marine Corps and the Navy started putting in,
11 oh, this is FOUO, you can't show this to anybody, or
12 this is going to show the distribution points of the
13 water towers and lines and utilities. That's
14 protected under the Patriot Act; you can't release
15 that. That's what we've been running into for the
16 past, what, three years now? About three and a half
17 years. So and it has also hampered communications
18 of ATSDR to the CAP, because, you know, every time
19 ATSDR gets into a document archive or something like
20 that, the Navy is putting conditions to not show us
21 or not reveal a particular document to us.

22 **MS. FRESHWATER:** Because they know that Mike
23 knows more than they do.

24 **MR. ENSMINGER:** Well, I mean --

25 **MS. FRESHWATER:** They know that he can find

1 things that they're not even aware is there.

2 **MR. ENSMINGER:** I mean, look at the water --
3 the stuff about the water systems when the water
4 model was released. Oh, you cannot reveal the
5 location of any wells, the water towers, which are
6 humongous things that are painted red and white
7 checkered, that you can see from the highway as
8 you're driving by. And then when I testified to the
9 Judiciary Committee in the Senate, I told Chairman
10 Leahy, I said, I want to know when, you know, when
11 are they going to develop a cloaking device for
12 these water towers, okay? I mean, it's crazy.

13 **MS. FRESHWATER:** I know. They're not in
14 camouflage.

15 **MR. ENSMINGER:** It's crazy. I mean, it is --
16 all it is is them protecting their butt.

17 **MR. MARK EVANS:** I was actually doing a lot of
18 work in the national ground water data information
19 in databases, and the rules changed. Unfortunately
20 as a result of both the Patriot Act, basically all
21 that information used to be widely available.
22 That's how basically it's all gotten out there. But
23 that changed. And then there went -- they went
24 through this process of actually restricting data
25 sources like that. So the rules changed. That's

1 all I can say.

2 **MR. ENSMINGER:** Well, I mean, here they are
3 raising Cain --

4 **MR. MARK EVANS:** It's not like they're trying
5 to hide --

6 **MR. PARTAIN:** Well, the Patriot Act was --

7 **MR. ENSMINGER:** No, wait a minute, wait a
8 minute. When they came out and put their foot down
9 about releasing different information on the water
10 model, and they -- I mean, they, they dug their
11 heels in on this one. And I went to the USGS's
12 website, and right there on their website was the
13 grid coordinates for every damn well that was
14 located on Camp Lejeune, even the closed ones, and
15 they're still there.

16 **MR. PARTAIN:** The law was passed but the actual
17 enforcement was not an issue until the interactions
18 of the CAP with ATSDR.

19 **MR. MARK EVANS:** Well, like I said, it did
20 change and different agencies have implemented those
21 changes at different points.

22 **MS. FRESHWATER:** Can you deputize us? So we
23 can get clearance?

24 **MR. ORRIS:** As an auditor for Fortune 5 banks,
25 I can tell you flat out that they never restrict

1 access to any document, and the ones that they do
2 try to restrict access to are the ones I'm always
3 interested in. And it's very disappointing that
4 documents are restricted and that we cannot review
5 them. That raises very big red flags for me.

6 **MS. FRESHWATER:** And that they won't come to
7 this meeting still.

8 **MR. ORRIS:** Yes. I mean, we should have full
9 access.

10 **MR. BRUBAKER:** So again, the question -- and
11 then we can move past it and talk about what we'll
12 do next, if it's getting close to -- the question is
13 are there any other agreements that need to be made
14 about how document processing and database
15 architecture needs to be achieved in a collaborative
16 way? I heard a request for incremental updates and
17 I heard some specific deliverables around letters
18 and clarification and formal requests for data, and
19 I believe those are all owned by individuals at the
20 table. Is there anything else we need to
21 collectively agree to before we can move forward
22 with the agenda?

23 **MR. ENSMINGER:** Well, we got the letter now,
24 that was signed and it's going out.

25 **MS. SHEILA STEVENS:** And I will also send it

1 out electronically to all the CAP members.

2 **MR. BRUBAKER:** Excellent.

3 **CAPTAIN MURRAY:** I want to say something. When
4 people go out and the doors are shut, they
5 automatically lock except for that one, so just push
6 it.

7 **MR. ENSMINGER:** I came in that door and it was
8 open.

9 **CAPTAIN MURRAY:** Well, they may have that one
10 padded if something was wrong, but just push because
11 the handles are...

12 **MR. BRUBAKER:** Excellent. So we have a choice
13 here. We're a little bit ahead of time.

14 **MR. ENSMINGER:** Let's go eat. I gotta make
15 some more phone calls.

16 **MR. BRUBAKER:** Are you guys comfortable
17 adjourning for a 90-minute lunch, reconvene at
18 1:00 o'clock?

19 **MR. ENSMINGER:** That's a typical time --

20 **MR. BRUBAKER:** We can meet a half an hour
21 earlier.

22 **MR. ENSMINGER:** No, that's a typical military
23 lunch is an hour and a half. It is.

24 **MR. BRUBAKER:** Ninety-minute lunch. We'll
25 reconvene sharp at 1:00 o'clock.

1 (Lunch recess 11:22 a.m. to 12:58 p.m.)

2
3 **MR. BRUBAKER:** We're ready to begin our
4 afternoon session.

5 **OVERVIEW OF SOIL VAPOR INTRUSION EVALUATION**

6 **PROCESS**

7 **MR. BRUBAKER:** The first item on the agenda is
8 an Overview of Soil Vapor Intrusion Evaluation
9 Process.

10 **DR. BURK:** Hi, I'm Tonia Burk. I've been with
11 ATSDR for about seven years now, and a large portion
12 of that time I've spent working with vapor intrusion
13 issues, researching the topic, reviewing a lot of
14 the reports that go through our agency, and going to
15 conferences and trainings, that sort of thing. So
16 I'm just going to give you a, pretty much, a quick
17 four-slide overview, or five-slide overview, of the
18 vapor intrusion process and how we assess these
19 sites.

20 The first slide is -- this is a generic figure
21 of what vapor intrusion sites look like. We tend to
22 have a source, which is either in the ground water
23 or, or somewhere in the soil zone. And the vapor
24 that vaporizes from the ground water or the vapors
25 that are present in the soil, they are pulled up

1 into buildings because of the pressure difference.

2 When you have ventilation systems, where the
3 house is heated, or even in some cases air
4 conditioned, there can be pressure like a vacuum.
5 And the house sucks up, or the building sucks up,
6 vapors into the building through the cracks in the
7 foundation and the slab or through the crawl space.

8 And the way that we assess these sites is we
9 try to figure out how much attenuation is occurring
10 from the chemicals in the soil area or the ground
11 water area to the indoor air area, because we're
12 mainly interested in the indoor concentrations and
13 what people are exposed to for our health
14 assessment.

15 There's a lot of factors that affect this
16 process, hydrogeological factors, such as if you
17 have bedrock or a solidish clay area, that would
18 block the vapors. And if you have high soil
19 moisture, that can sort of block the vapors flowing
20 through the soil pores. If you have gravel or sand,
21 the vapors -- it's very porous and the vapors just
22 flow right through there easily.

23 The next slide, another factor that affects the
24 vapor intrusion process a lot is what type of
25 chemical you have, whether it's chlorinated or

1 whether it's petroleum or oily. And the main two
2 differences would be this: one, whenever you have a
3 high level of chlorinated chemicals or chlorine
4 chemicals, they'll separate into a separate phase
5 like an Italian dressing, you have the oil and the
6 water phase. So it's important to separate phase.
7 But chlorinated chemicals are denser than water so
8 that separate phase will sink to the bottom of the
9 ground water.

10 If you have petroleum, it's lighter than water
11 so it tends to float on top of the ground water
12 surface, the aquifer surface, like an oil slick
13 underneath the ground. And petroleum, it degrades
14 with oxygen really easily. It, it tends to degrade
15 as it approaches the surface because oxygen is
16 defusing in from the surface. And the chlorinated
17 chemicals it takes a lot longer for them to degrade.
18 Petroleum tends to degrade over a period of decades
19 pretty substantially, but chlorinated chemicals
20 require much longer to degrade.

21 **MR. ENSMINGER:** Well, we found documents where
22 they have found pockets of gasoline at the Hadnot
23 Point fuel farm that showed no weathering and no
24 breakdown whatsoever. This stuff was pristine.

25 **DR. BURK:** Okay. And that's one of the things

1 that we have to look at. If there's no oxygen
2 that's penetrating through it, it doesn't degrade.
3 If it's very deep, it doesn't degrade very quickly.
4 And the more volatile chemicals tend to come off as
5 it weathers, like benzene, its vaporizes off faster
6 than other less volatile chemicals. So I haven't
7 looked at the data for the site. I'm only just sort
8 of giving technical assistance. Mark may be able to
9 provide more information.

10 **MR. ENSMINGER:** And also at Camp Lejeune, they
11 had confining layers of clay that were incomplete
12 layers that would go for a ways and then just fizzle
13 out, and you had deep sand that would allow a DNAPL
14 to go down deep. But by the same token, any of
15 those areas where you had a confining layer of clay,
16 it was keeping them up there.

17 **DR. BURK:** That can occur and is called a
18 perched aquifer.

19 **MR. ENSMINGER:** So you're going to have to have
20 the geology of all -- where all these plumes are
21 located for your evaluation.

22 **DR. BURK:** So given that we have all these
23 factors that make it difficult to assess vapor
24 intrusion and how we have the subsurface
25 heterogeneity and all these building factors, how do

1 you put a number to vapor intrusion to how much is
2 getting into the actual air? The method that is
3 used by EPA and all the guidance that's out there is
4 attenuation. They measure the attenuation from the
5 source zone, which is either in the soil or ground
6 water, they measure that attenuation as it moves to
7 the indoor air. So they do a ratio of the indoor
8 air to -- indoor air concentration to the
9 concentration in the media. So for example a soil
10 gas, a sub-slab gas attenuation factor would be the
11 ratio of the indoor air concentration to the soil
12 gas concentration beneath the slab, and similarly
13 for water.

14 And there's really a great deal of variability
15 from vapor intrusion. Over a year there tends to be
16 a change in a factor of about 100, because in warm
17 weather you may open the windows and doors and have
18 a lot more dilution of the air. In the winter you
19 may run the heating a lot, and that's pulling a
20 vacuum from underneath and pulling all the vapors
21 indoors. So it can change a lot from season to
22 season, and even from day to day, if it rains or if
23 there's barometric pressure changes from the
24 weather, that can change.

25 So any time they do measurements they usually

1 do measurements for 24 hours or eight hours,
2 whatever people are exposed during the day. And
3 that's just going to be an estimate of what people
4 are exposed to but it does vary a lot.

5 So the approach that most of the guidances use
6 is called multiple lines of evidence approach. The
7 EPA has draft guidance, and they've been trying to
8 finalize it for 12 years. We have a draft guidance
9 we just received peer review comments on and we're
10 trying to get through those as fast as we can.
11 We've only had them -- we got the last few this
12 week. So we're still working on those to come out
13 with a guidance that's easier for our health assess
14 research teams. EPA's guidance is 200 pages so it's
15 really complex. Ours is like 38 pages, I think.

16 But the meaning of multiple lines of evidence
17 approach is generally that you have to have a site-
18 specific approach for each site. You have to look
19 at all the factors that are affecting vapor
20 intrusion, and you want to assess what the range of
21 exposures people are experiencing at the site in
22 indoor air, because there's not just one level that
23 they're exposed to. And I already mentioned some of
24 the things that can affect it: seasonal changes,
25 ground water depth and flow direction, distance from

1 the plume. And also if they've got any mitigation
2 systems or remediation like soil vapor extraction,
3 that's obviously going to make a big difference in
4 how the vapors are flowing and what's there and
5 what's going to be over time.

6 And also we have to deal with the fact that if
7 you do indoor air measurements, a lot of times
8 there's background sources, such as gasoline is used
9 frequently in Tiki torch fuel, a lot of commercial
10 products, dry cleaning clothes. A lot of these
11 chemicals are present as background indoor air in
12 normal homes that aren't exposed to chemical
13 environmental sources at greater than ten to minus
14 four cancer risk level. So we just have to try to
15 figure out what/where the source is.

16 And then after we look at that, we can also do
17 modeling and compare the model results to what we've
18 seen in the sample data, to sort of calibrate the
19 model, so to speak, and to see if all the
20 assumptions that were made in the model are matching
21 up with what we're actually measuring. And that's
22 pretty much how we try to assess how much
23 uncertainty is in the indoor air levels we're using
24 to assess vapor intrusion.

25 **MR. ENSMINGER:** Now, are you talking about

1 going to Camp Lejeune and actually going and taking
2 samples?

3 **DR. BURK:** I've not been really involved in
4 that part of the project, but usually we use samples
5 collected by EPA or contractors. We are not
6 sampling -- we're not equipped to sample in our
7 division. We do have a small exposure
8 investigations unit that does that, but that's
9 different. I don't know what they're criteria is
10 for doing that.

11 **MR. GILLIG:** Jerry, at this point, we have not
12 planned on collecting samples, indoor air samples,
13 at Camp Lejeune. We want to see what data's out
14 there, so we're still in that process.

15 **DR. FORRESTER:** And also we need the old data
16 for the historical part. We can't reconstruct the
17 past so we need the old data sets. The problem is
18 even if we did exposure investigation, we couldn't
19 collect enough data over time to show all the
20 variability. We don't want just a snapshot in time.
21 You want to make sure that all potentials exposure.
22 So reviewing the data sets that we have, better
23 answer the question.

24 **MR. PARTAIN:** Well, we do know that an exposure
25 took place.

1 **DR. FORRESTER:** Yes.

2 **MR. PARTAIN:** And that there was results -- or
3 you know, resulting exposures to personnel on the
4 base. In the process of doing this vapor intrusion
5 study or investigation, if, you know, what are you
6 going to do with it if you find that -- you know,
7 you have some findings in the Hadnot Point area or
8 even in Tarawa Terrace, where these contamination
9 plumes are? Would ATSDR then look to see if any
10 current personnel and families are being exposed? I
11 mean, that's something -- these contaminants are
12 still in the ground, and, you know, we have a
13 pathway that was recently ongoing up until the early
14 2000s.

15 **DR. FORRESTER:** We found ongoing exposure for
16 most sites. Our general approach is to recommend
17 additional sampling or if it's critical, recommend
18 mitigation immediately.

19 **MR. ENSMINGER:** You got to look at what land
20 use and building use controls have already been put
21 in place also.

22 **DR. FORRESTER:** I think Mark will explain a lot
23 more of this in his presentation to the whole
24 process, from past to present to looking at the
25 future.

1 **MR. PARTAIN:** I know things have been done at
2 Hadnot Point but my concern would be Tarawa Terrace
3 and the PCE, TCE plume from ABC One-Hour Cleaners.
4 And I mean, they've bulldozed the houses over there
5 and rebuilt houses up and everything, but are those
6 families still in danger? That's one thing I'd like
7 to see come out of this as an end point.

8 **MR. ENSMINGER:** Well, at Hadnot Point, you
9 know, especially in the industrial area, those
10 buildings were constructed in '41 and '42 for the
11 most part. And I can attest to the fact that over
12 all those years, I mean, they were going in those
13 buildings and drilling holes to mount different
14 pieces of equipment to the floor, and the slabs
15 cracked. I mean, you know, those -- the decks in
16 those buildings were just horrendous, and those were
17 avenues for all that stuff to come right up into the
18 buildings. They had utilities, especially
19 utilities.

20 I mean, they had a pipeline that came from the
21 fuel farm, came down Ash Street and then cut across
22 by building 1111 and 1114, and went all the way down
23 through the industrial area down to building 1601
24 down in the southern end of the area. I mean,
25 those -- and those were fuel lines so that they

1 could transfer fuel without doing it through a
2 vehicle; they did it through pipe lines. And those
3 pipe lines were -- yeah, conduits.

4 **MS. FRESHWATER:** When I was on base last
5 October I was riding around, looking at some of the
6 wells and just trying to get a sense of space
7 between things. And I know that when I was riding
8 around the fencing, where -- I think it was 201,
9 201, where they had fenced it off, and right along
10 the fences there were still buildings where they
11 were storing, it looked to me like vehicles, you
12 know. And I just thought, well, where do they
13 decide to put that fence? The, the guys that are
14 still working in that building are safe on the other
15 side of that fence? But yet it's dangerous if you
16 walk on that side. You know, it just -- it was a
17 little worrisome to see that they were -- they still
18 had guys working that close, quite literally on the
19 other side of that fence. And it was not -- I mean,
20 there were guys in there. It wasn't a place not
21 being, you know, used just to store vehicles or
22 anything.

23 So I would just like to say I second, third,
24 whatever, that I have a lot of concerns, just since
25 I've been trying to catch up with vapor intrusion,

1 so I wouldn't be clueless when I walked in here,
2 completely clueless at least. And it's definitely
3 raised the alarm in my mind, and I can understand, I
4 think, why it's such a -- it can be such a
5 controversial issue with EPA, because, you know,
6 it's -- a lot of money's going to be involved with a
7 lot of places, a lot of dry cleaners across the
8 country and all that kind of stuff.

9 And that was my next question to you. It seems
10 to me, from what I've been able to read, that the
11 EPA really hasn't kind of come down with hard
12 guidelines yet or that it's kind of a moving target.
13 Is that true now still?

14 **DR. BURK:** That's correct. They have a draft
15 guidance and they put it out for public comment
16 about a year ago, and they still haven't come out
17 with a date that they're planning to finalize it.

18 **MR. ENSMINGER:** That's done on purpose.

19 **DR. BURK:** It's taking a long time. And
20 that -- I mean, the guidance that they have out was
21 published in 2002 and they haven't published
22 anything since then, other than a series of
23 technical documents. If you Google EPA and the word
24 vapor, the first thing that comes up is the EPA
25 vapor intrusion website, and it has a dozen or so

1 documents on there about vapor intrusion. And
2 they're saying that when we come out with a guidance
3 it's going to mainly be based on these documents.

4 **MS. FRESHWATER:** Right. I think I looked at
5 those.

6 **DR. BURK:** And they have a FAQs page about
7 frequently asked questions, that's really helpful
8 for understanding most of the aspects of the
9 technical stuff and a screening spreadsheet. And
10 they also have a petroleum vapor intrusion guidance
11 that's in draft, and that petroleum guidance is
12 available at EPA's underground storage tank website.
13 There's a link to that EPA vapor intrusion website.
14 And that -- they're proposing a screening process
15 for if there's ground water that's -- if there's
16 contaminated ground water with petroleum, if it's
17 more than six feet deep, they're saying that
18 generally oxygen will degrade anything before it can
19 migrate to indoors, and then it can be screened out.
20 And they're saying that there's -- I'm sorry,
21 15 feet. And if there's an LNAPL six feet, they're
22 saying it can be screened out. But I'm less
23 familiar with the petroleum vapor intrusion work and
24 how well that guidance is being received, so I can't
25 say anything for certain.

1 **MS. FRESHWATER:** Just my gut. When I'd
2 started -- I was looking through that site and just
3 my gut was anything that looks like this means that
4 there's going to be a lot of cost involved with what
5 they say.

6 **DR. BURK:** Yes. And because there's so much
7 variation, like over space, from one house to the
8 next, there can be a hundred-fold difference in the
9 vapor intrusion, just because, you know, like you
10 said, there may be this clay layer under one, may be
11 the heating and air conditioning's different in
12 one. But it's really -- it's much harder than
13 drinking water where you can just look at what's
14 coming out of the well and see what people are
15 drinking.

16 **MS. FRESHWATER:** I printed something out, and
17 they said that rodent tracks -- they've seen rodent
18 tracks become a pathway.

19 **DR. BURK:** I've heard that.

20 **MS. FRESHWATER:** Very difficult to know which
21 house has rodent tracks.

22 **MR. PARTAIN:** Well, we've also had, was it last
23 year, where families have -- well, one family in
24 particular gave documents showing that the fuel --
25 fuel oil storage tank, that they used for the

1 heating of the house, had leaked and leaked
2 petroleum products under the house, and they
3 actually ended up demolishing the house or had it
4 fenced off. And a lot of these houses on base had
5 those tanks, and they've been in there, what, since
6 1950s and --

7 **MR. ENSMINGER:** 'Forty.

8 **MR. PARTAIN:** 40s and 50s, and those were
9 leaking too. They weren't picked up under Morris's
10 study because they were too small, didn't really,
11 from what I -- I don't want to misquote Morris, but
12 they -- when we discussed it with him, it was
13 basically too small to really affect the ground
14 water and where it wouldn't show up in his model,
15 and yet this is something that would affect the
16 vapor intrusion, I would think.

17 **DR. BURK:** Yes, we have a source that's just
18 right under the industrial buildings.

19 **MR. PARTAIN:** Yeah, these tanks were -- were
20 they above-ground, Jerry?

21 **MR. ENSMINGER:** Underground.

22 **MR. PARTAIN:** Underground, so.

23 **DR. BURK:** I haven't heard of many sites where
24 they just gave up and demolished buildings because
25 of vapor intrusion.

1 **MR. ENSMINGER:** They had to do that.

2 **MR. PARTAIN:** There's at least eight at Camp
3 Lejeune, industrial buildings. And then this one
4 house that this family --

5 **MR. ENSMINGER:** Several houses.

6 **MR. PARTAIN:** -- notified us about. So and
7 we've got the documents on that too.

8 **DR. BURK:** Okay. Usually the, the vapor
9 extraction systems that they installed work pretty
10 well, similar to radon systems.

11 **MR. PARTAIN:** Well, they were trying all kinds
12 of measures, like they did the trenching around
13 1101. They made some trenching around it, trying to
14 draw the fluids out and the vapors out, and nothing
15 worked apparently. You got that.

16 **DR. BURK:** But we do --

17 **MR. ENSMINGER:** Yeah, they drilled a monitoring
18 well inside a building.

19 **MS. FRESHWATER:** Seems like the perfect place
20 to study.

21 **DR. BURK:** Yes, they usually, when they have a
22 slab in a building, they usually drill several, I
23 think, per so many hundred square feet, they'll
24 recommend that sub-slab gas port be drilled in a
25 certain amount of area under the buildings, so that

1 they can actually see. 'Cause it does vary across
2 the slab. A lot of times you can have like
3 structural supports that are underneath the slab
4 like concrete walls, so to speak, so it can block
5 off vapors from moving from one side to the other.
6 Which we have like the venting system that's causing
7 the air to be pulled up more on one side of the
8 house than the other, under the slab.

9 **MR. PARTAIN:** Now, did we provide y'all with
10 the documents from what I was talking about, with
11 the family that found their house bulldozed, fenced
12 off, and it was from the UST from their home? Did
13 we give those to them?

14 **DR. BURK:** Do you have them, Chris?

15 **MR. GILLIG:** That doesn't sound familiar.

16 **MR. PARTAIN:** I mean, is that something that
17 you would value for your vapor intrusion project?

18 **MR. GILLIG:** Yes.

19 **MR. PARTAIN:** Okay. Then we'll find them and
20 give them to you.

21 **MR. ENSMINGER:** They're on those thumb drives.

22 **MR. PARTAIN:** Oh, they are?

23 **MR. ENSMINGER:** Yes.

24 **DR. BURK:** Well, I'm going to stay in the room.
25 So if you guys come up with any other questions, I'd

1 be happy to answer.

2 **MR. BRUBAKER:** Thank you, great. Little be
3 ahead of schedule, we'll turn to Mark for a deep
4 discussion of the process. Would you like to come
5 up here?

6
7 **DISCUSSION ON SOIL VAPOR INTRUSION EVALUATION PROCESS**

8 **DR. EVANS:** Okay. Basically we're going to --
9 in order to implement the process, the timings
10 described, we're going to have identify the
11 buildings of concern, looking at a building's
12 specific air contaminants, building characteristics
13 that may affect VI. The main industrial buildings
14 are going to have completely different exposure
15 characteristics in terms of intrusion than, for
16 instance, say any small residential structure.
17 We're going to have to define the exposure factors
18 for the building occupants, who's in those
19 buildings. Are they, in terms of the industrial
20 area, are they civilian workers, are they military
21 personnel, how long are they there, kind of, how
22 much are they occupying those buildings? And that
23 actually gets back to characterizing the specific
24 contaminants. For most of the -- the most
25 conservative screening values that we're looking at

1 are basically for lifetime exposures, very long-term
2 exposures, for cancer evaluation. So if a Marine is
3 on base for three years, that's different than, for
4 instance, a civilian worker that may be there 15
5 years. Eight hours a day versus in a barracks or a
6 residential occupation. So basically we have to
7 identify the populations and the exposure factors of
8 those populations, how they're being exposed, who's
9 exposed, how often and how long.

10 **MR. ENSMINGER:** And you got to take into
11 consideration they were drinking it also.

12 **MS. FRESHWATER:** Yeah, that was my next
13 question, the --

14 **DR. EVANS:** If the vapor intrusion occurred in
15 areas where they, for instance, on base, so yes,
16 absolutely. It's a potential for a cumulative
17 exposure. So basically what are the contaminate
18 concentrations that we can ascertain, either current
19 or historic? And then finally determine if those
20 potential vapor intrusion exposures occurred at
21 levels of health concern.

22 So we're not starting from zero on this
23 process. There is a really extensive vapor
24 intrusion study that was conducted at the base
25 beginning about 2007. So beginning about 2008

1 they've been collecting indoor air samples, soil gas
2 samples, ground water samples. And the process was
3 iterative. Basically they identified all the
4 buildings within a hundred feet of contaminated
5 ground water, and then used a variety of different
6 screening levels to determine whether or not they
7 needed to take the next step which was to install
8 soil gas monitoring or indoor air monitoring.

9 And one of the things they did, Tonia again
10 mentioned, the attenuation factors. For many of
11 these buildings they actually calculated
12 building-specific soil gas to indoor air attenuation
13 factors. So that's actually something -- and that's
14 empirical data that can be used both for current
15 exposures as well as evaluating historic exposures,
16 so that's a really valuable piece of information
17 that takes us beyond typical modeling to the point
18 that we're doing -- we can do semi-empirical kinds
19 of evaluations of historical data.

20 **MS. FRESHWATER:** I have a stupid question.
21 When you say they, is that the Marine Corps or the
22 EPA?

23 **DR. EVANS:** It was the Marine Corps -- CH2M
24 Hill, through the Marine Corps, was contractor for -
25 - to the base.

1 **MS. FRESHWATER:** CH?

2 **DR. EVANS:** CH2M Hill is a large environmental
3 consulting firm.

4 **MS. FRESHWATER:** Thank you.

5 **DR. EVANS:** So on top of that, they actually,
6 as a result of that process, they've expanded the
7 number of soil vapor extraction treatment systems
8 that they've put in different buildings, so I think
9 that they're up to about 20. Twenty different
10 buildings have treatment systems for extracting soil
11 vapors. And this process is continuing. So they've
12 monitored the effectiveness, efficacy of those
13 systems to make sure that they are protective of
14 current conditions.

15 **MS. FRESHWATER:** Do we know those buildings?

16 **DR. EVANS:** Yeah.

17 **MS. FRESHWATER:** Are there any schools?

18 **DR. EVANS:** No. And so we've got a lot of data
19 there, okay? And that runs the gamut from indoor
20 air, beginning about 2008, and through current
21 conditions. They're continuing to monitor that
22 different times of the year. So that's a really
23 good data set.

24 There are several problems with that, from a
25 vapor intrusion perspective. Again, this started in

1 2008, so any assessment of historical conditions.
2 By the time they actually were doing this vapor
3 intrusion assessment, the major proportion of the
4 fuels in the industrial area had already been
5 remediated, either extracted or they reduced the
6 footprint of free product. I mean, it's continuing
7 but they've essentially instituted remediation
8 procedures which make direct linear interpolation of
9 current conditions backwards very difficult.

10 **MR. PARTAIN:** Well, a lot of the early -- when
11 you say remediation of fuel and everything, they
12 were having all kinds of problems with their
13 remediation protocols. When the air (indiscernible)
14 deactivated, the stuff was coming up in building
15 1101.

16 **MR. ENSMINGER:** They tried to blame it on that.

17 **DR. EVANS:** Well, they were --

18 **MR. ENSMINGER:** I thought you said you can
19 calculate back from --

20 **DR. EVANS:** What, what we can do, we do have
21 several lines of evidence. The next piece of
22 information we got, beyond this kind of current
23 vapor intrusion study, is we've got the modeling
24 that ATSDR and Georgia Tech did for looking at
25 LNAPLs and ground water contaminants for the fuel

1 facility area, for Hadnot Point, okay? So I'll
2 illustrate this in a couple slides. But again,
3 that's another piece of information that we can use
4 for looking at historic exposures.

5 Then finally we've got a lot of environmental
6 sample data, and that's actually what we're trying
7 to document with looking at all of the available
8 records and data points and things like that. But
9 that includes ground water, air, soil gas, et
10 cetera.

11 So these are the kinds of exposure scenarios
12 that we're going to be looking at, at least for the
13 buildings that look like they're going to be a
14 potential problem. Civilian workers, these are
15 actually the same exposure factors that Rob will
16 discuss for the drinking water. So we're trying to
17 be consistent across there, in terms of duration,
18 frequency, lifetime, body weights, things like that.

19 Next slide. This is an example of some of the
20 building-specific information from the CH2M Hill
21 vapor intrusion study. That's building 3, which is
22 related to the former dry cleaning --

23 **MR. ENSMINGER:** Dry cleaner.

24 **DR. EVANS:** -- area, building 25, in the Hadnot
25 Point area. And this illustrates -- and it's a

1 really busy slide, and I put it in there on purpose
2 because it illustrates that there's a lot of data.
3 I think those green dots are indoor air samples in
4 the building, and they're continuing to sample
5 those. The yellow squares inside the building are
6 soil gas values. So we've got that -- so already
7 that shows you that we can describe empirical
8 attenuation factors from soil gas to indoor air.
9 And then there's a variety of different either soil
10 gas or ground water values in different monitor
11 wells around the perimeter of these buildings.

12 **MR. ENSMINGER:** And some of that stuff is sky
13 high.

14 **DR. EVANS:** Some of the values are, but keep in
15 mind that the ground water values are attenuated
16 before they get -- there's a factor of about a
17 thousand to 10,000 reduction in terms of the
18 attenuation from the ground water to the indoor air.

19 **MR. ENSMINGER:** Well, they used those ionized
20 iron shavings, slurry, to --

21 **DR. EVANS:** To try to remediate.

22 **MR. ENSMINGER:** Yeah. But it's still flowing.

23 **DR. EVANS:** Yeah, oh, yeah. And there's --

24 **MR. ENSMINGER:** I mean, it's headed toward the
25 river.

1 **DR. EVANS:** There's still contamination there.

2 **MR. ENSMINGER:** And it drops off deep --

3 **DR. EVANS:** Right.

4 **MR. ENSMINGER:** -- after building 3.

5 **DR. EVANS:** And the other point that I'll add
6 is --

7 **MR. ENSMINGER:** 'Cause I'm on the RAB.

8 **DR. EVANS:** -- in the fuel facility area,
9 Morris's group already did ground water modeling.
10 So we've got historical models, and this -- I'll
11 show you what this looks like, but in this area,
12 they didn't do that. And so they're currently
13 working on that now. They're doing an analytical
14 model. This is basically PCE and TCE for the --
15 from the former dry cleaner. And they only
16 started -- they only switched to PCE in that
17 facility in 1970.

18 **MR. ENSMINGER:** Yeah, they went from petroleum
19 varsol.

20 **DR. EVANS:** In other words, basically cleaner,
21 mineral spirits. So anyways, but there is a DNAPL
22 there, and so we're looking at -- we know what kind
23 of -- in this case, we actually have a really good
24 idea of when the DNAPL was instituted, and then
25 when -- so we can look at transport post-1970 for

1 this area, although we'll have to look at the varsol
2 from about '41.

3 Okay, next slide. Okay, this is actually some
4 of the results from some of the hydrocarbon plume
5 modeling that Georgia Tech did. And this is
6 actually looking at the footprint basically of
7 either free product or LNAPL, circa 1951, I believe.
8 And so you can see that there is actually a spatial
9 outline of where the footprint is as well as a
10 saturation level. So keep in mind what they call
11 free product in the ground really isn't pure
12 gasoline; it's some mixture of gasoline and water,
13 even though it's much lighter than water and it's
14 floating on top of it. So the saturation levels go
15 from very low, and this is in percent, to about
16 20 percent. Okay, so we can use it.

17 So this -- yeah, next. So from that footprint,
18 then, they did their contaminant modeling. And this
19 is pretty difficult to see but in the -- it begins
20 about 1951, and then there's different type of --
21 this is all upper most layer. And you can see that
22 the spread basically, if you will, of the LNAPL and
23 the dissolved component of benzene in ground water.
24 And because of the way they did this modeling, this
25 is actually -- it's on a 50-foot grid. And so

1 basically beneath -- we've got model data points for
2 concentration values under each of these buildings,
3 actually multiple data points under each of these
4 buildings. And so this is a really good point to
5 start in terms of looking at historical
6 reconstructions of vapor intrusion into the
7 buildings.

8 And next -- and okay, this is similar for the
9 site 88, the dry cleaning building. That's a
10 footprint of the PCE distribution, the DNAPL. And
11 again, this is what we're having them expand now,
12 looking at the expansion of the dissolution of PCE
13 and TCE from that footprint and the down-gradient
14 migration into subsequent -- down-gradient
15 buildings.

16 Okay, next. So basically the site 22, which is
17 the fuel facility, site 88, it's got (indiscernible)
18 you all are well aware. But this is the Hadnot
19 Point fuel facility vapor intrusion evaluation. So
20 for this, the primary contaminants are BTEX.
21 There's also some PCE and TCE in different areas but
22 much lower levels than the other area. So what
23 we're going to be looking at, basically, it's
24 historic vapor intrusion air exposures based on
25 modeled and measured LNAPL and ground water

1 contaminations, using the models and the model
2 results that we currently have available, comparing
3 those and correcting those with indoor air models,
4 basically, the EPA, there's a biovapor model
5 produced by the API, the American Petroleum
6 Institute, or the EPA has got similar models.
7 Basically all -- they're all based on the Johnson
8 and Ettinger transport model from subsurface to
9 indoor air.

10 We've got building-specific data. When CH2M
11 Hill conducted their vapor intrusion study, as
12 illustrated in that past slide, there is a lot of
13 characteristics of the specific buildings. They had
14 the number of windows, the number of doors, the
15 opening. They went inside, they evaluated the
16 integrity of the slab as well as -- because they
17 actually measured the attenuation factors, we know
18 what those attenuation factors are from soil gas to
19 indoor air. So that's really good empirical data.

20 And then we can compare that with -- if we come
21 up with any good historic air data. Most of the air
22 data I've seen so far, as Chris mentioned, was PID
23 or FID data, which is piddly or diddly, I guess.
24 'Cause it's nonquantitative data, that you can't
25 actually use in doing any kind of quantitative

1 evaluation. To your point about looking at that
2 data in a temporal sense, very difficult to do
3 because they were measuring different areas,
4 different times. Most of the data that I've seen
5 are either nondetects or nonquantitative detections,
6 which means to say the it's -- the value --

7 **MR. PARTAIN:** There's something in there but we
8 don't know what.

9 **DR. EVANS:** -- the value says less than. In
10 most cases all it says is we can sniff a little bit
11 of gasoline and that's about it.

12 Again, many of these buildings were mechanical
13 transport vehicle maintenance things. They had many
14 indoor air sources, so that was actually one --
15 again, that was something that was described and
16 quantified in the CH2M Hill study uses. Now, some
17 of them we'll have to go back to historic uses but
18 some of those main buildings haven't changed that
19 much.

20 So and then -- wait a minute. What was that
21 last thing? Oh, and then the recent air exposures
22 are based on measured current air evaluations. So
23 there's a lot of data there. As I said they also
24 conducted efficacy studies for the soil vapor
25 extraction treatment systems. For the most part, we

1 looked at all those and they're all working.
2 There's one or two questionable values. But again,
3 what we have to be concerned about here,
4 particularly for the venting, is, you know,
5 long-term exposures. If somebody was exposed for a
6 day, it's way different than exposed to levels for
7 15 or 20 years, because what we're looking at in
8 terms of that is the cancer risks, which are based
9 on chronic exposures.

10 **MS. FRESHWATER:** So like if you're pumping gas?

11 **DR. EVANS:** If you're pumping gas, you get a
12 real snootful all at once.

13 **MS. FRESHWATER:** So but -- but I mean, if
14 you -- I'm saying if you measured that same thing in
15 a building, it would look like big danger but we do
16 it every day.

17 **DR. EVANS:** Every day, right. And so -- and
18 that's part of the problem with looking at some of
19 this, this historic data. It's not in context,
20 right? I mean, they may have gone -- well, let
21 me -- there's one other thing. Basically they were
22 using the OSHA standards as their benchmark, and
23 there's two problems with that. First, the OSHA
24 standard is not protective of health, okay? So
25 their detection levels were way too high, which is

1 why we're getting so many nondetects, okay? And the
2 other point, which actually goes to their industrial
3 hygiene program, is that OSHA excludes fuel
4 facilities, of which some portions of this were.
5 And it also is not to be applied to vapor intrusion,
6 because OSHA condition -- OSHA considers vapor
7 intrusion an action or activity for which the work
8 is not a normal workplace activity so they don't
9 consider their standard to include vapor intrusion.
10 So we actually have to make sure that we're
11 separating benzene in the air from vapor intrusion
12 versus benzene in the ambient air or something like
13 that or pumping gas.

14 **MR. ENSMINGER:** So Hill environmental used OSHA
15 standards?

16 **DR. EVANS:** No, no, they didn't. Their data
17 is, is a good quantitative data set.

18 **MR. ENSMINGER:** Okay.

19 **DR. EVANS:** It was the base industrial hygiene
20 that was using OSHA standards. I mean, that is
21 standard operating procedure every place. I mean,
22 that's unfortunately somebody needs to send them a
23 memo.

24 **MR. ENSMINGER:** I'll do that.

25 **MS. FRESHWATER:** I knew that was coming.

1 **DR. EVANS:** This is kind of the process for
2 site 88, the building 25 area, and the buildings --
3 there's a number of buildings associated there. The
4 difference is the primary contaminants are PCE, TCE,
5 and the difference is we don't have, you know, to
6 the extent modeling but we're in the process of
7 acquiring it for looking at the historical stuff.
8 So we'll have to look at -- there's a little bit of
9 benzene in varsol but it's much lower than there is
10 in gasoline. It's on the few parts per million
11 level as opposed to gasoline, that's about a
12 percent.

13 **MR. ENSMINGER:** Yeah.

14 **DR. EVANS:** So anyway, so that's what we're
15 doing there. Same basic process but again, we're
16 having to do some modeling to look at historic
17 exposures. Then we've got the building-specific
18 data, we've got the recent data, and we'll have
19 similar ground water, indoor air models. A little
20 bit different because we're looking at chlorinated
21 hydro -- chlorinated solvents versus hydrocarbons,
22 but same basic principles.

23 Okay, next. So this is where we are. Identify
24 the buildings of concern, confine the exposure
25 factors, and then look at the contaminant

1 concentrations from current and historic.

2 And then finally, when appropriate, include
3 cumulative exposures. For many cases -- okay, next
4 is just a ubiquitous slide.

5 **MR. ENSMINGER:** I didn't see any illustrations
6 of the DNAPL plumes. You had the LNAPLs there.

7 **DR. EVANS:** There was one with the building 25.

8 **MR. ENSMINGER:** Yeah, but I'm talking about --

9 **DR. EVANS:** There are other DNAPL plumes in the
10 industrial --

11 **MR. ENSMINGER:** Big ones, yeah.

12 **DR. EVANS:** -- facilities. Yeah, but they're,
13 at least, based on the CH2M Hill evaluation of
14 buildings, it doesn't look like there's significant
15 vapor intrusion. The build -- they're not over the
16 buildings in those.

17 **MR. ENSMINGER:** They're what?

18 **DR. EVANS:** Right now, we're looking at all of
19 them, but we're going to concentrate on the worst
20 ones first. And then we'll step through the
21 process, looking at the different levels of
22 exposure.

23 **MS. FRESHWATER:** So what kind of activity is
24 there on Tarawa Terrace?

25 **DR. EVANS:** Basically the same process.

1 **MS. FRESHWATER:** But I mean, are there any
2 buildings --

3 **DR. EVANS:** The CH2M Hill study identified
4 several buildings in there that were evaluated.
5 Nothing that came and went through the multiple -- I
6 don't know if they're doing any there -- any
7 continuous air modeling -- air monitoring, because
8 the soil gas levels -- basically what they looked at
9 is whether or not there was contaminated ground
10 water close to a building. And then if it was, then
11 they looked at the levels. And if the levels were
12 above a very conservative screening level, for
13 ground water to indoor air, then they conducted soil
14 gas samples. And then if those -- then they looked
15 at those levels to find out if they -- if the soil
16 gas levels exceeded screening levels to get the
17 indoor air. And if they did, then they measured
18 indoor air. So they measured indoor air -- although
19 the process was base wide, how far they went on each
20 step depended on what they found.

21 **MS. FRESHWATER:** So they built on what --

22 **DR. EVANS:** Right.

23 **MS. FRESHWATER:** -- evidence they were
24 finding --

25 **DR. EVANS:** Right.

1 **MS. FRESHWATER:** -- and that kind of led
2 them --

3 **DR. EVANS:** Right. And from that, they -- you
4 know, the bases installed about 20 different SVE
5 systems. And then they're continuing to monitor the
6 different building, efficiency of the systems and
7 things like that.

8 **MS. FRESHWATER:** Okay, so what about where
9 there aren't buildings? I mean, this, I guess,
10 might, you know, be a kind of a more broad question.
11 Can you get vapor intrusion -- like when the guys
12 are in the field? When they're --

13 **DR. EVANS:** It would be vapor extrusion, then.

14 **MS. FRESHWATER:** Extrusion.

15 **DR. EVANS:** And, and no, you --

16 **MS. FRESHWATER:** You have to have that
17 pathway --

18 **DR. EVANS:** Well, you've got to have a
19 condition where --

20 **MR. PARTAIN:** A gas chamber.

21 **DR. EVANS:** -- the atmosphere is contained --

22 **MS. FRESHWATER:** Right.

23 **DR. EVANS:** -- and so that it can accumulate.

24 **MS. FRESHWATER:** Right.

25 **MR. PARTAIN:** You have to have a gas chamber.

1 **DR. EVANS:** Otherwise, otherwise it's basically
2 dissipated too fast.

3 **MS. FRESHWATER:** In the air, okay.

4 **DR. EVANS:** Right.

5 **MS. FRESHWATER:** 'Cause I had a guy ask me
6 about that in particular, 'cause he used to camp out
7 on the field, and he was like I drank out of, bulls?
8 Is that the right thing, Kevin?

9 **MR. PARTAIN:** Buffalos.

10 **MS. FRESHWATER:** Huh?

11 **MR. PARTAIN:** Buffalos.

12 **MS. FRESHWATER:** Yeah, he called it bulls, so.

13 'Cause he was at Geiger and he said --

14 **MR. PARTAIN:** Evidently he had too much water.

15 **MS. FRESHWATER:** Yeah. He was at Geiger so he
16 didn't think he had been exposed. And I had to, you
17 know, remind him that he was a non-Geiger all the
18 time.

19 **DR. EVANS:** It just depends on where they
20 filled those buffalos. But anyway, so we've got a
21 lot of stuff to evaluate. There's both data,
22 there's models, and --

23 **MR. PARTAIN:** When looking at that, Mark --
24 when you're looking at the data -- and excuse me, my
25 eyes are burning, dried out here some kind of -- is

1 there any sign posts or indicators that you would be
2 looking for to show that things aren't on the
3 up-and-up as far as testing? Is there any red flags
4 that would show up or that you've seen as far as how
5 they conducted tests? I know we talked about the
6 PID and FID.

7 **DR. EVANS:** Right. No, actually for my
8 evaluation -- I mean, CH2M Hill has produced a
9 number of different reports and --

10 **MR. PARTAIN:** Well, I'm more concerned with --
11 yeah, the contractor reports I'm not worried about
12 per se. This early OSHA, the hygiene unit testing
13 and things that were done, it just concerns me
14 that -- you know, without seeing the documents, I
15 don't know. Something doesn't seem right,
16 especially when they have the capability of testing,
17 why are they doing that? I mean, is there a reason
18 why they're doing what they're doing?

19 **DR. EVANS:** Well, I mean, it's pretty standard
20 actually.

21 **MR. PARTAIN:** Okay.

22 **DR. EVANS:** You know, and I mean, I've seen
23 this at other bases and other institutions and
24 agencies. It's like that's how they -- they'll go
25 in there first with a PID or FID and find out what

1 they've got.

2 **MR. PARTAIN:** Well, to me, if they walk in
3 there and oh, there's something there, then you
4 follow up with another test. And from what I'm
5 hearing, there's no other tests done.

6 **DR. EVANS:** Well, in most cases, though, what
7 they were finding was basically nondetects at that
8 level or in a few cases some nonquantitative
9 detections. And so based on that data, it's like it
10 didn't appear to warrant a lot of follow-up.

11 **MR. PARTAIN:** So on the buildings, again, we do
12 know that eight buildings were ultimately
13 demolished. On the buildings where they did have
14 issues and did take action, what was different in
15 their procedure of walking in there with a PID or
16 FID, that made them do something different? What
17 happened? Can you tell that from the documents or?

18 **DR. EVANS:** No. Well, for instance, when did
19 they demolish building 25?

20 **MR. PARTAIN:** I don't think they demolished
21 that. I'm talking about the ones on top of the fuel
22 plumes, the building 1101, 1102.

23 **DR. EVANS:** Okay, well, those are still there.

24 **MR. PARTAIN:** Well, no. I forgot.

25 **MR. MASLIA:** Building 25 was refurbished --

1 **MR. PARTAIN:** That's the dry cleaner one.

2 **MR. MASLIA:** Was turned into housing --

3 **DR. EVANS:** Okay, so it's still there.

4 **MR. PARTAIN:** Yeah, 1102, I think, is the one
5 I'm talking about, where they turned it into -- it
6 was a fleet data management center, and then it
7 ended up being a warehouse, and then they couldn't
8 do anything with it, and I believe they demolished
9 it.

10 **DR. EVANS:** Well, several of -- actually I got
11 the records for several of those buildings, I
12 haven't gotten them all, but when I was going
13 through this I asked Charity Richeck (ph) for kind
14 of the history of several of the buildings, just to
15 find out what was --

16 **MR. PARTAIN:** And that's what I'm after. I
17 want to -- what made it, you know, obviously a
18 different course of action was taken in those areas.
19 Why there are not other buildings in --

20 **DR. EVANS:** In my -- I don't know, I would be
21 speculating. If I had to speculate I would say it
22 was because mediating the ground water basically
23 required them to get rid of the building.

24 **MR. PARTAIN:** Okay.

25 **DR. EVANS:** And in other areas they could --

1 like to building 25, the DNAPL plume is actually
2 kind of beginning at the edge of the building and
3 then off because the tanks were not directly under
4 the building; they were kind of just outside the
5 building footprint. So that's where the plume
6 started. So I don't think -- I mean, I don't think
7 they had to destroy that, although several documents
8 keep referring to former building 25, I thought.

9 **MR. PARTAIN:** It may have been repurposed.

10 **MR. ENSMINGER:** Well, building 25 is gone.

11 **MR. PARTAIN:** Okay.

12 **DR. EVANS:** That's what I thought. When did
13 they -- when did they demolish that?

14 **MR. ENSMINGER:** Oh, Lord. Geez, I don't know.
15 I'd have to go back and check my records --

16 **DR. EVANS:** Okay.

17 **MR. ENSMINGER:** -- but it's a parking lot.

18 **DR. EVANS:** Yeah, that's what I thought.
19 'Cause that's what the maps --

20 **MR. ENSMINGER:** It's a parking lot for the
21 barracks.

22 **DR. EVANS:** Yeah. There were --

23 **MR. ENSMINGER:** They put a bentonite -- they
24 put a bentonite seal under it.

25 **DR. EVANS:** Right.

1 **MR. ENSMINGER:** And they couldn't -- they
2 couldn't stop the flow because right down at
3 building 3, that's the gradient. Right there at
4 building 3, the confining layer discontinued and it
5 just dropped off, I mean, down the --

6 **DR. EVANS:** Yeah.

7 **MR. ENSMINGER:** And it's going now, it's down
8 past McHugh Boulevard under the theater, what area
9 the pool was at down there. But it's down
10 underneath there and it's headed toward New River.

11 **DR. EVANS:** But the flip side of that is it's
12 actually getting much deeper so the likelihood of
13 vapor intrusion is actually going down in those --

14 **MR. ENSMINGER:** Yeah, true but --

15 **DR. EVANS:** -- in those buildings further down
16 gradient.

17 **MR. ENSMINGER:** It's just headed out toward the
18 shrimp, you know.

19 **MR. PARTAIN:** Threatened shrimp.

20 **DR. EVANS:** They're self-frying.

21 **MR. PARTAIN:** Spontaneous combustion.

22 **MR. ENSMINGER:** No, not with chlorinated
23 solvents.

24 **MR. PARTAIN:** But I mean, that's what I'm
25 getting at. I'd like to see what the determination

1 rationale was for them to do something further. I
2 mean, even with the, you know, the data points,
3 maybe we should look at the buildings they did
4 demolish and trace back those histories and see what
5 exactly happened to hit that triggering point so we
6 can get an idea of what they were doing.

7 **DR. EVANS:** Well, from my perspective, from a
8 public health perspective, when the building's gone,
9 there's no more exposure at that building, and so I
10 don't care. But what I would care about is --

11 **MR. PARTAIN:** They may affect other buildings
12 that may be a borderline. That's what I'm getting
13 at.

14 **DR. EVANS:** What I would care about is the
15 previous history --

16 **MR. ENSMINGER:** That's right.

17 **DR. EVANS:** -- of that building. And so to
18 that extent, yes, we will have to look at former
19 uses. But why they, you know, demolished some
20 buildings and not others --

21 **MR. PARTAIN:** I'm curious about them. Like I
22 said, to get to the point of why they're going in to
23 do that, I mean, there's a tipping point somewhere,
24 and, you know, it would be nice to know what that
25 tipping point is and what that rationale -- and

1 protocol --

2 **DR. EVANS:** Yeah.

3 **MR. PARTAIN:** -- for them to do that, because
4 there may be other buildings where borderline, where
5 they didn't do it, and there was an exposure that
6 could be a problem.

7 **DR. EVANS:** And like I said, I would expect
8 it's a cost-benefit thing.

9 **MR. PARTAIN:** Exactly.

10 **DR. EVANS:** The cost of the building versus the
11 cost of the remediation.

12 **MR. ENSMINGER:** Well, and that RIFS that was
13 written by Environmental Science and Engineering in
14 May of 1988, they actually named the buildings that
15 they were pinpointing for the precautionary measures
16 to be taken and testing the ambient air quality in.
17 They're actually listed in that report.

18 **MR. BRUBAKER:** Additional questions?

19 **MS. FRESHWATER:** We -- at the last CAP meeting,
20 we talked about other forms of exposure like the
21 guys swimming in pools and, you know, steam and all
22 that. Where does that fit?

23 **MR. GILLIG:** That's in Rob's presentation.

24 **MS. FRESHWATER:** Thank you.

25 **MR. BRUBAKER:** Thank you. We're a little ahead

1 of schedule here, and we are up for a short break.
2 Want to take about a ten-minute break?

3 **MR. GILLIG:** Can we wait just a second?

4 **MR. BRUBAKER:** Please.

5 **MR. GILLIG:** Do you want to move forward to the
6 goals for the vapor intrusion project?

7
8 **GOALS FOR SOIL VAPOR INTRUSION PROJECT**

9 **MR. GILLIG:** So, we have shared these goals via
10 protocols, via the CAP meetings in the past. I just
11 want to make sure we're all onboard with these goals
12 for the vapor intrusion project. We've talked about
13 the need to evaluate the health risks of past and
14 current exposures; the presentations have talked
15 about the procedures we want to apply to determine
16 if mitigation has reduced exposures in those
17 buildings where mitigation systems have been
18 installed; and obviously we want to identify any
19 current vapor intrusion exposures, and if we find
20 those exposures, make recommendations so that those
21 exposures are mitigated. Did we miss anything when
22 we talked about these as the goals for the vapor
23 intrusion project?

24 **MR. ENSMINGER:** Well, it's like I said, before
25 you make any recommendations to them, you got to

1 look at what controls they've already got in place
2 for land use and building use, so you don't make
3 yourself look -- and, you know, get embarrassed.

4 **MR. PARTAIN:** And on the current exposures, I
5 mean, I would assume that there is some type of
6 central point or collective point for complaints,
7 current complaints. You know, hey, come home, my
8 house smells like gas or I walk into the office, it
9 smells, you know, funny in here. Are you guys
10 requesting those call-ins to see if there's patterns
11 and things like that?

12 **LCDR. FLETCHER:** That's information we would
13 glean from the fire department and 9-1-1 call center
14 as well as the ESAMS, the basic database. That's
15 where those two will be.

16 **MR. ENSMINGER:** Or if you have to come in to
17 work and turn the faucet on and let it run for ten
18 minutes to get the oil sheen off of the water you're
19 using to make the coffee with.

20 **DR. EVANS:** I would expect those data may
21 reside in different places. The complaints in the
22 industrial buildings probably would be in a
23 different place than they would have for the
24 residential buildings.

25 **MR. PARTAIN:** It'd be curious to see if -- I

1 mean, testing may not be showing those borderline
2 testing I mentioned earlier, but there may be
3 consistent complaints coming out of buildings, hey,
4 there's a funny smell in here. I smell gas or what
5 have you. And, you know, like I say, you've got
6 family housing in Tarawa Terrace where one house
7 after family after family after family is calling in
8 and saying there's something smelling in this house.
9 They may not be doing anything about it but the fact
10 that there's complaints may be showing something too
11 and should be brought out and documented and looked
12 into.

13 **LCDR. FLETCHER:** That's from a document that
14 you're giving us today?

15 **MR. PARTAIN:** No, I'm just asking if you guys
16 are looking at that. The one we have we're talking
17 about was the family that came back and saw the
18 house demolished and cordoned off with a fence
19 saying, you know, environmental hazard, don't go
20 here, don't enter. And then they went and got --
21 FOIA'd some documents about their house and found
22 that, so we do have those.

23 **MR. ENSMINGER:** Yeah, that really did happen.
24 This guy's a retired chief warrant officer five,
25 when they made the superwarrant officer. He was

1 supply type. Their first home was the old houses,
2 we called them the cracker boxes across the Wallace
3 Creek there by the Marston Pavilion. They were the
4 original houses for officers that were built on the
5 base. Of course the junior officers are relegated
6 to living in the old stuff. He retired out of the
7 Marine Corps and got a job with a defense logistics
8 agency, and he had to go to a meeting down at Camp
9 Lejeune. So he got down there, and got there early,
10 so he thought he'd go down memory trail, and drive
11 over and look at the -- their old house, the one
12 where they lived when -- two of their three children
13 were conceived in that -- while they lived there.
14 And he drove down the street, got there and there
15 was this orange plastic fence around where their
16 house used to be, and there was a hole in the
17 ground. And signs on the fence: hazardous waste
18 site, contaminated site; keep out. This guy went
19 ballistic 'cause one of his children was born with a
20 heart defect.

21 **DR. EVANS:** Do you know approximately what year
22 that was?

23 **MR. ENSMINGER:** That was recent.

24 **DR. EVANS:** That he went back?

25 **MR. ENSMINGER:** That just happened, last --

1 this past year.

2 **MR. PARTAIN:** And again, he FOIA'd the
3 documents on the houses and provided them to Jerry
4 and I.

5 **MR. ENSMINGER:** They're on that data -- that
6 thumb drive.

7 **MS. FRESHWATER:** I used to babysit in those
8 houses.

9 **MR. PARTAIN:** I mean, that -- going back to my
10 point, that's something that I don't know if you
11 guys are looking at that or, you know, looking into
12 something like that as a possible line of
13 investigation to get --

14 **DR. EVANS:** We're trying to get records of odor
15 complaints, evacuations, things like that. I mean,
16 I've already requested the evacuations for building
17 1101, and we'll find out when it was occupied and
18 when it wasn't, things like that. So yes, we're
19 looking for that kind of thing.

20 **MR. ENSMINGER:** Well, that was the fleet
21 logistic service building. I mean, that's where --
22 everything that was ordered on that base went
23 through there. I mean, that thing was manned for
24 years and years and years.

25 **MR. ORRIS:** Are you requesting that information

1 from one of the talked-about databases? Is that
2 where you're going to find that?

3 **DR. EVANS:** Hopefully.

4 **MR. ORRIS:** Is that the Camp Lejeune fire
5 department database?

6 **DR. EVANS:** There may be --

7 **MR. PARTAIN:** That would be one of them,
8 probably.

9 **DR. EVANS:** -- there may be some in there;
10 there may be some of the other -- there are some
11 other databases.

12 **MR. ORRIS:** 'Cause I thought that there was
13 only three years of reports for that database.

14 **MR. PARTAIN:** Yeah, we do have some documents
15 that reference the fire department being called out,
16 and Jerry and I have talked to former --

17 **MR. ENSMINGER:** Well, wait a minute, wait a
18 minute. When you think rationally about this, there
19 was a PowerPoint that was put together by a
20 contractor. We have the one from the industrial
21 hygienist but there was another one that was done by
22 the -- a report that was written by the contractor.
23 It was like a PowerPoint presentation. And that
24 contractor cited that there had been complaints for
25 many years about vapors in those buildings. So that

1 stuff's recorded and written down somewhere or they
2 wouldn't have gotten that.

3 **MR. GILLIG:** Are you talking about 1101 or --

4 **MR. PARTAIN:** Yeah.

5 **MR. GILLIG:** We have that. I think you
6 provided that to us.

7 **MR. PARTAIN:** Yeah, that's in the documents we
8 gave you.

9 **MR. ORRIS:** I find it hard to believe that 9-1-
10 1 calls would not be kept for more than three years.
11 That has to be a --

12 **MR. ENSMINGER:** Back in them days there were no
13 9-1-1.

14 **MR. ORRIS:** Well, even now, you know, you can't
15 tell me that they don't keep it from 2010.

16 **MR. ENSMINGER:** Well, they do now, yeah. I
17 mean, back at the time that this was going on --

18 **MR. PARTAIN:** No, wait. This was in the late
19 90s when the one surfaced.

20 **MR. ORRIS:** Yeah, I mean, even there in the 90s
21 with these vapor intrusion complaints, you know,
22 from a legal standpoint, you know, if there's a
23 crime committed with 9-1-1, there has to be a record
24 of that somewhere. Somebody's keeping these
25 documents somewhere or these phone calls.

1 **MS. FRESHWATER:** What are the immediate
2 physical symptoms that show up for when, just
3 hypothetically say there's a sky high reading for
4 vapor intrusion in the building. Do people get
5 headaches? Do they develop asthma? What are the
6 immediate symptoms that show up?

7 **DR. EVANS:** (Indiscernible).

8 **MS. FRESHWATER:** What?

9 **DR. EVANS:** It depends on what contaminant it
10 is.

11 **MS. FRESHWATER:** So --

12 **DR. EVANS:** So yes, typically with
13 hydrocarbons, you know, there will be irritation,
14 things like that.

15 **MS. FRESHWATER:** Eyes --

16 **MR. ENSMINGER:** Eyes burning, nose burning.

17 **MS. FRESHWATER:** So all the things I would
18 assume --

19 **MR. PARTAIN:** My skin's turning red like I
20 usually do, okay.

21 **DR. EVANS:** Well, one other thing that is of
22 concern, when I mentioned like long-term exposures
23 to benzene, that is the -- there are some short-term
24 exposure levels that we're looking at too, but
25 typically for benzene, they're quite a bit higher

1 than the chronic level. For TCE that is not the
2 case, where short-term exposures can't, for a
3 certain subset of the population, can be
4 significant. So we have to look at it a little
5 differently for those contaminants.

6 **MR. PARTAIN:** Well, to wrap up the thing about
7 the call-ins and stuff, if you guys do identify
8 where this stuff is or where it's housed, I mean,
9 I'd like to, you know, be able to look at it and see
10 what was being called in -- you know, 'cause to me
11 that's the -- that could lead to further
12 investigation of where and what was going on and
13 identifying hot spots of problems and stuff. But
14 it's just curious that -- you know, that it only
15 goes back three years and the other database didn't
16 seem to have anything in it either. That
17 information's somewhere, and it's probably pertinent
18 and important; otherwise, you know, it just seems
19 that, as with a lot of things with Camp Lejeune, the
20 really -- when you get to the point where you can
21 really find a pattern, that documentation's missing.

22 **DR. EVANS:** One of the things that I run into
23 commonly at these facilities is we can't hold
24 historic record keeping practices to the same
25 standard that we expect of modern digital types of

1 information. So I mean, in many cases that's why
2 it's hard to find older data, because it was written
3 down, it never got entered into any kind of
4 database, it's in somebody's file. How many people
5 have turned over since that file was created? Who
6 knows.

7 **MR. ENSMINGER:** But they can find it.

8 **MR. PARTAIN:** Yeah, but the thing is, Mark,
9 with that is --

10 **MS. FRESHWATER:** Yeah, but I mean, if I can --

11 **MR. PARTAIN:** We have documentation brought
12 back --

13 **MR. ENSMINGER:** They can find the pay records
14 when they paid guys on Guadalcanal, by God, they can
15 find the records from 1980s.

16 **MR. PARTAIN:** And when you look at the
17 historical documentation, very early on, I think
18 '83-'84, Bob Alexander was -- and he's on record
19 talking about the need to put all these documents
20 together and start storing them and keeping them,
21 they don't. And then going back to the CERCLA
22 document retention requirements, you know, this
23 is --

24 **MR. ENSMINGER:** Well, you're forgetting one
25 thing, Mike, that was the destruction file.

1 **MR. PARTAIN:** Yeah. That was the circulator
2 file. But they -- you know, they identified them
3 then, and then by '89 they were required to retain
4 these documents for 50 years. And a lot of the
5 vapor intrusion issues that we're talking about
6 occur after 1989. And if you're dealing with
7 someone calling in on 9-1-1, hey, you know, I've got
8 fuel smell here in this building, it's on an
9 identified IR site, there's no reason why those
10 documents shouldn't be there. And we know they
11 happened because, like Jerry mentioned, they're
12 referenced in the contractors' reports as numerous
13 reports.

14 **MR. ENSMINGER:** And see that's another thing
15 that we really keyed on when we were doing our
16 document searches, was what other correspondence was
17 referenced in that document.

18 **MR. PARTAIN:** I mean, that's how we constructed
19 the infamous Walmire (ph) letter. I mean, we were
20 able to -- we don't have the letter. There's just
21 no record of it being preserved, even though it
22 should have been, but you can see where it's
23 referenced in a chain of letters. And you get a
24 pretty good idea that it's an action plan to
25 remediate the ground water before they disclosed it

1 to the media and everything back in 1983.

2 **MR. ENSMINGER:** '81.

3 **MR. PARTAIN:** Well, it goes back to '81. He
4 wrote it in May of '83. But going back to my point,
5 like I said, it just seems to me, especially if
6 we're looking at vapor intrusion, that's the
7 beginning point of investigation. You've got all
8 these complaints, especially if you see patterns
9 where particular buildings are showing up. Yeah, we
10 know they were destroyed but there may be marginal
11 buildings that escaped because of the way they were
12 testing with the sniffers, not doing the full thing,
13 which may have been the protocol at the time, but,
14 you know, it's something we need to look into, make
15 sure in order to not only provide adequate warning
16 for those who worked there but also for people who
17 are still being potentially exposed on the base.

18 **MS. FRESHWATER:** My brother had severe asthma.
19 We had to take him to the emergency room all the
20 time, and we ended with my mom going to the
21 emergency room with him turning blue. And when we
22 moved off base it went away.

23 I don't think my house was over a plume. I was
24 in Paradise Point, over by the river, so, you know,
25 I'm not -- I don't know, but I know anecdotally, a

1 lot of people I talked to had asthma as children on
2 base, and nosebleeds. That's another thing that I
3 hear a lot, and my stepfather's nose was bleeding
4 all the time.

5 **MR. MASLIA:** Well, there was TCE intermittently
6 at Paradise Point. That was part of the water
7 model. It was resolved but TCE was the one compound
8 that did exceed the MCL.

9 **MS. FRESHWATER:** Well, it's hard for me to
10 imagine that it wasn't connected in some way, you
11 know, because it really did literally go away.

12 **MR. MASLIA:** But I mean, that's a case of the
13 drinking water.

14 **MR. PARTAIN:** And that's another point. You
15 know, when we're talking about doing the historical
16 investigations and documents for -- I mean, from the
17 get-go, they insisted that there was no transferring
18 between Hadnot Point and Holcomb Boulevard until we
19 started finding the documents and the document
20 references and trails that something was going on,
21 booster pumps and the golf course, and lo and
22 behold, oh, yeah, they were transferring water up.

23 And as Morris and the CAP started pressing the
24 Marine Corps, first it went from never to maybe
25 sometimes to oh, we were, you know, doing it during

1 the summer months. And, you know, God knows what
2 the frequency was. But those were things that would
3 not be developed unless we'd asked those hard
4 questions and really dig into the documents.

5 **MS. FRESHWATER:** And I guess, you know, I know
6 we can't go through medical records but wouldn't it
7 be great to know what areas reported emergency room
8 visits for asthma, you know.

9 **MR. ENSMINGER:** Well, we're speculating now.

10 **MR. PARTAIN:** That's why I'm going after with
11 the call-ins on the smell -- you know, the vapor.

12 **MS. FRESHWATER:** Yeah.

13 **MR. ENSMINGER:** Okay.

14 **MR. ORRIS:** Even if you were to find that these
15 records were still on tape, it's pretty common to
16 keep some of those records on tape during that time
17 period, if that's something if you found it on tape
18 you would transcribe it and take a look at it?
19 'Cause I would imagine from the 80s and the 90s
20 you're going to find these 9-1-1 calls on tape logs,
21 recorded at the facility. Which of course there
22 isn't a document then, you're just going to have a
23 tape.

24 **MR. ENSMINGER:** Well, look at the school
25 records. ATSDR went down to some place in

1 Georgia -- where, Alabama or Georgia?

2 **DR. BOVE:** It was at a fort.

3 **MS. RUCKART:** Fort Benning?

4 **MR. ENSMINGER:** Yeah, Benning. And they were
5 on microfiche, then when they got them out they fell
6 apart.

7 **MS. RUCKART:** But those were really old. I
8 mean, you're talking about --

9 **MR. ENSMINGER:** It's like the parchment from
10 the Egyptian tombs. You pick it up and --

11 (multiple speakers)

12 **MR. ORRIS:** I mean, if they're retrievable, if
13 you come across that. And I would imagine that
14 you're going to come across that; that's probably
15 going to be somewhere there. Would you be able to
16 transcribe that and use that in the investigation?

17 **DR. EVANS:** I would have to defer that question
18 to Chris.

19 **MR. PARTAIN:** Well, I think we've beat that --
20 beat it in the ground enough.

21 (multiple speakers)

22 **MR. MASLIA:** (Indiscernible) are potentially
23 linked from the drinking water. And I'll say from
24 the 70s to the late 80s they wrote everything down

1 in --

2 **MR. ENSMINGER:** Log books.

3 **MR. MASLIA:** Log books, okay. And 'cause
4 that's where we found a lot of the critical --

5 **MR. PARTAIN:** Pump data?

6 **MR. MASLIA:** Pumps going on and off and all
7 that sort of stuff going on, in those log books.

8 **MR. ENSMINGER:** Transferring water.

9 **MR. MASLIA:** When Booz, Allen, Hamilton,
10 whatever they called the... After that, when they
11 went through for the drinking water, of course, they
12 were just keying and filtering on the drinking water
13 but they found the log books. So again, there may
14 be -- but my gut feeling is that they kept -- you
15 know, you're an operator and a call comes in, my gut
16 feeling tells me that they would have jotted that
17 down on a log book, because if you look at the water
18 treatment plant, emergency or all that, every time a
19 vehicle dropped a point of oil some place, they
20 would call in and say, you know, the utility vehicle
21 is broken down or this dog barked or this one calls
22 in that their grandmother passed away. I mean, they
23 would take -- they were under orders to write down
24 any call that they got in.

25 **MR. ENSMINGER:** Yeah. You know, and talking

1 about all these data sources that you got, you know,
2 there's got to be a simplified way of -- for them to
3 make all those sources connected. I know you guys
4 can't do it 'cause you don't have the staff or the
5 expertise to do it, but they do. I mean, DOD has a
6 budget and they have contractors that can do this
7 kind of stuff. Didn't they do some of that stuff
8 for the water model?

9 **MR. MASLIA:** Yeah, they did it inhouse but like
10 Booz, Allen, Hamilton, when they came on base, and
11 at that time they set up a screening mechanism as to
12 which building to look at -- or they looked at all
13 the buildings, but if they had entered keywords and
14 stuff like that. But they set up -- it was
15 basically I think they used an Access database,
16 okay? So for example if they had a keyword, they
17 could do either a report or a search in Access, and
18 then they would identify if there's a document for a
19 certain building, dot, dot, dot, dot, dot, and where
20 that was when they found it, the date and all that
21 sort of stuff. So I don't know. They may, again,
22 you're right, DOD has not only the budget but the
23 contractual mechanisms to do that and all that, and
24 that actually, I think, would cut enormous time off
25 of our effort if there was -- I'm calling it Access,

1 but that's a generic term. It can be an SQL
2 database or whatever, where they would put all these
3 (indiscernible), websites, database and all that,
4 and we could go through and put in either keywords
5 or key buildings or whatever, and see if it pops up
6 anywhere in these records, individually.

7 It's like for instance when we start searching,
8 we did this, you know, search a file, individually
9 searching databases, we found doubt.

10 **MR. ENSMINGER:** Why don't we request that? I
11 mean, let's put the burden on the perpetrator here.

12 **MS. FORREST:** Yeah, that's what I was about to
13 say, why not just ask for it all?

14 **MR. ENSMINGER:** No, no. Get them to -- I mean,
15 even these databases that were, you know, that were
16 MS-DOS or whatever, have them make those things
17 readable instead of you guys trying to do this.
18 They've got the assets.

19 **DR. BOVE:** I think we're talking about a
20 relational database here. So that you can put one
21 query and it finds --

22 **MR. ENSMINGER:** It goes through all of these
23 16 --

24 **MR. MASLIA:** Yeah, you know, you could do it
25 now, you know, you could generate a report or

1 whatever, and say it searched XYZ databases, and
2 yes, this popped out. And then you can go and
3 further, you know, either pull that document and
4 actually read that document or whatever, but you
5 normally would have a dozen or half a dozen
6 databases.

7 **MR. PARTAIN:** More than that.

8 **MR. MASLIA:** More than that, and that's what
9 I'm saying. That's what's a relational data --

10 **MR. ENSMINGER:** You could marry these all
11 together.

12 **MS. FORREST:** Is this something you want me to
13 take back as a request or that you're planning to
14 send them, you know, an official request for -- from
15 you -- the ATSDR? How do you want me to do this?

16 **DR. FORRESTER:** Well, I mean, the CAP is asking
17 for this.

18 **MR. ENSMINGER:** Well, yeah, I think this is
19 something that should be strongly considered, to
20 ease your work loads.

21 **MS. RUCKART:** Think about the timeline. You
22 know, that's what you're getting at.

23 **MS. MOORE:** Well, it'll speed the timeline or
24 slow it down.

25 **MR. ENSMINGER:** It'll speed it.

1 **MS. MOORE:** 'Cause we would continue doing what
2 we're doing entering data, but by the time they make
3 the database, we would be stopping at that point.

4 **MR. GILLIG:** I was going to ask Morris how long
5 did it take --

6 **MR. ENSMINGER:** How long did it take?

7 **MR. MASLIA:** I'll give you an example from our
8 experience. Remember we had an expert panel end of
9 March -- April of 2005, okay? That was the first,
10 and one of the recommendations from them was for
11 the, at the time, the Marine Corps needed to do more
12 to assist us in data archeology. That was the
13 finding in that report.

14 By November they had not only a contract with
15 Booz, Allen, Hamilton, they had two full colonels,
16 one from Washington and one from the air base
17 overseeing the project. They had developed a search
18 protocol. They had a building with furniture and
19 everything else for Booz, Allen, Hamilton, and they
20 were going through buildings.

21 **MS. MOORE:** But how long did it take to do the
22 work?

23 **MR. MASLIA:** Oh, I don't --

24 **MS. MOORE:** You're saying they got the contract
25 but --

1 **MR. MASLIA:** Well, I'm saying from our
2 typical -- I mean, from ATSDR's standpoint the
3 contractual mechanism usually takes longer than the
4 work. In other words within six months they already
5 had -- they already had within six months they
6 already had some --

7 **MR. ENSMINGER:** Useable data.

8 **MR. MASLIA:** Boxes and all that sort of stuff.
9 (multiple speakers)

10 **MR. MASLIA:** My experience is --

11 **MR. ENSMINGER:** Yeah, but I don't want to speed
12 it up --

13 **MR. MASLIA:** -- they had the contractual
14 mechanism --

15 **MR. ENSMINGER:** -- at the sake of the quality
16 either.

17 **MR. MASLIA:** -- at Lejeune and up at
18 Headquarters.

19 **MR. GILLIG:** Well, my understanding is that
20 they did get a contractor onboard who tried to do
21 this.

22 **MR. MASLIA:** Oh, really, okay.

23 **MR. GILLIG:** And the project was never
24 completed.

25 **MR. MASLIA:** Oh, okay.

1 **MR. ENSMINGER:** By design or?

2 **MR. GILLIG:** My understanding was the
3 contractor said this is such a difficult undertaking
4 that they walked away from the project.

5 **MR. ENSMINGER:** And who was the contractor?

6 **MR. GILLIG:** I don't know who the contractor
7 was. We actually have a staff person whose brother
8 worked for the contractor.

9 **MR. ENSMINGER:** Well, Booz, Allen, Hamilton is
10 the biggest contractor for the department.

11 **MR. GILLIG:** And I don't think it was --

12 **MR. ENSMINGER:** They've got assets out the ying
13 yang. It wouldn't hurt to try.

14 (multiple speakers)

15 **MS. FORREST:** So you want me to take back a
16 request for the DOD to combine all the databases of
17 information, that Chris presented on earlier, into
18 one manageable searchable database for --

19 **MR. MASLIA:** No, no, no.

20 **MR. GILLIG:** Leave the databases --

21 **MR. MASLIA:** You don't want to do any
22 combining. You either want a searchable relational
23 database approach that you can search --

24 **MS. FORREST:** So you want us to make --

25 **MR. MASLIA:** Databases or web portals or

1 anything else.

2 (multiple speakers)

3 **MR. MASLIA:** Physically search that. You can
4 search the title, okay, in other words you can get a
5 hit on the title and assess whether that's
6 potentially useful documents to start going through.

7 **MR. GILLIG:** Well, that's kind of the process
8 we're using, the keyword searches. A relational
9 database, my experience with two -- building two
10 relational databases --

11 **MR. MASLIA:** Right.

12 **MR. GILLIG:** -- is that it takes a considerable
13 amount of time because you're entering specific data
14 into a database that allows linkages. And we're
15 talking about a lot of documents. It would be
16 wonderful if we had that. But I would assume we're
17 talking about multiple years to develop a relational
18 database.

19 **MS. MOORE:** That's what -- I think it could
20 possibly -- I don't know but it could be years. But
21 we don't want to stop for two years --

22 **MR. MASLIA:** Oh, no, I was not suggesting --

23 **MS. MOORE:** I mean, the military could do that.

24 **DR. FORRESTER:** Chris should talk a little bit
25 about the strategy of the very up-front, up-front of

1 going through the databases, about identifying the
2 titles of concern and then keyword searching them.
3 We didn't really talk about that. How did you go
4 from 40 to --

5 **LCDR. FLETCHER:** So what we did was with those
6 databases that had exportable indices, we have a
7 list of keywords that we used to go through and
8 search those indices that we thought would highlight
9 documents of interest. Then after that, to make
10 sure we didn't miss anything, because the title was
11 misspelled, we read all the titles and made our
12 request from that. So that's how we narrowed from
13 the approximately 40,000 titles to approximately
14 4,500 titles that are being requested.

15 **DR. FORRESTER:** And then the second layer --

16 **LCDR. FLETCHER:** So the next layer, once we get
17 those, we're running those through a PDF compressor,
18 'cause everything's coming as PDF, or there are a
19 few cases like a Word document, which we just
20 converted to PDF. So we run those through a PDF
21 compressor, it's a software that performs an optical
22 character recognition, OCR, and compresses the file
23 to make it a little faster to search. And stick all
24 those in one big folder, and we can keyword search
25 those with building numbers or words like vapor, a

1 large list of keywords that we've developed. And
2 we're getting hits on those that -- so we're going
3 back on the documents that are identified in that
4 search and looking at those to see what they can
5 show us. In most cases they have data or in some
6 cases they have data. In some cases it's a computer
7 misidentifying a word. So we still have to have a
8 human filter to go through and just to look at those
9 documents.

10 **MS. FRESHWATER:** So that work can be
11 continuing, even if it does -- I mean, everything
12 kind of moves, no offense, but in geological time
13 anyway, so why not have that, you know, for the
14 history and for -- and to make sure we're not
15 missing anything, you know. Just to -- I would say.
16 I would support asking for it.

17 (multiple speakers)

18 **MR. ORRIS:** For future work that might need to
19 be done. All right, I can see the value of building
20 it now. Trying to use it for the current water
21 vapor studies but having it available for anything
22 in the future would certainly cut down the time,
23 geological time.

24 **MS. FRESHWATER:** Yeah.

25 **MR. ORRIS:** And, you know, because that --

1 **MR. ENSMINGER:** It's called glacial speed.

2 **MR. ORRIS:** That comes back to there are real
3 people with real illnesses and real needs that are
4 counting on the work that's being done here, and you
5 know, if we can save time, now or in the future,
6 then I think that that should be looked into.

7 **MS. FRESHWATER:** Yeah, I mean, I have -- I've
8 started writing on other Superfund sites connected
9 to the military, and I have people contacting me
10 about Hawaii. You know, you and I both wrote about
11 St. Louis. So I think the work here is valuable to
12 have for all kinds of reasons, to make it easier in
13 the future to search it. Who knows what'll show up
14 in the science later.

15 **MS. FORREST:** So I take it back. That's all I
16 can do is I wouldn't begin to be able to speak to
17 what they're contracting mechanisms are and the time
18 this would take. I'm not an expert on linking
19 databases.

20 **MS. FRESHWATER:** Take it back with a pretty
21 please.

22 **MR. BRUBAKER:** So to summarize what I just
23 heard you agree to, and again, I'm probably the
24 least educated person on this that relates to the
25 content, but what I heard you agree to together was

1 a parallel process or a redundant process to what's
2 happening already, to gain some further future
3 efficiency. And you're going to bring that back.
4 Who in the room do you need access to or to
5 collaborate with to attribute that gets framed in
6 the cleanest way possible? Do you need a partner or
7 follow-up support from somebody or do you think you
8 have what you need?

9 **MS. FORREST:** They're going to -- here's what I
10 was going to take back, that the CAP wants the
11 Marine Corps, DOD, to link the existing databases
12 that Chris is using in the study so that the
13 information will be more manageable and searchable,
14 that Chris would be continuing on with his project,
15 you know, in identifying the important records, with
16 his mechanism. But that once this was done, it
17 would be a secondary search that could be done in
18 addition to it, to make sure that nothing was
19 missed. Now, is that going to explain it well
20 enough?

21 **MR. BRUBAKER:** Is that clean enough to get the
22 message across to them?

23 **MS. MOORE:** Well, if it gets done, I mean, I
24 don't know if we tied --

25 **MS. FORREST:** I don't know, maybe --

1 **MS. MOORE:** So I mean, that's a good point,
2 though, I mean.

3 **MS. FORREST:** I mean, why are they going to do
4 it if --

5 **MS. MOORE:** But we have to continue our process
6 to do all of our modeling stuff. And then, you
7 know, for the future studies, there might be studies
8 down the road, whatever. It would be a good
9 database for those studies for sure.

10 **MS. FORREST:** I think there's going to have to
11 be justification as to what it's needed for here.
12 That's going to be my guess.

13 **MR. MASLIA:** The justification is
14 (indiscernible) DOD.

15 **MS. FORREST:** No, what I'm saying is the
16 reason -- well, how you're going to use it in your
17 current study. Not just --

18 **MR. MASLIA:** For what we can ask. We used that
19 when we did the water model. We asked for Eric to
20 provide us with -- to help us get any data that we
21 need to do our job or our mission. I'm just saying
22 that's what we have used in the past. We have used
23 the memorandum of understanding with DOD as the
24 justification --

25 **MS. MOORE:** But we can move forward.

1 **MR. MASLIA:** Yes. I'm not suggesting we're not
2 moving forward. I'm suggesting it doesn't have --

3 **MR. GILLIG:** We have access to the data. What
4 we're talking about being built would be a
5 relational database, which would be for future
6 endeavors, future investigations, at Camp Lejeune.
7 That relational database would be a great ally.
8 We're proceeding with our search process and we're
9 feeling pretty good that we're getting the data we
10 need. We don't want to hold it up to narrow this
11 relational database --

12 **MR. MASLIA:** I wouldn't say (indiscernible) the
13 water modeling standpoint. I mean, I know we went
14 through anytime during the water modeling endeavor,
15 we would keep going back through, and I can't tell
16 you how many times I researched and researched -- I
17 mean, you know ran through searches again and again
18 and again. And so my guess is you will not be
19 searching only once. You can call it QA/QC, you can
20 call it something else but I know for a fact that's
21 how we found the booster pump. It must have been on
22 the fifth time we went through, because as you go
23 through, you keep refining terms and keep refining
24 as you're trying to piece these together. That's
25 just -- I mean, searching databases.

1 **MS. MOORE:** When you searched you
2 (indiscernible).

3 **MR. MASLIA:** Yeah, yeah, so I'm saying that
4 would be another -- not only in the future but as to
5 be able to repeat or refine or QA/QC or keyword what
6 we've done as to modeling.

7 **DR. BOVE:** So in other words what your
8 description was was accurate. But it's possible it
9 would be using it as --

10 **MS. FORREST:** I think you're more likely to get
11 support, and this is just my idea, it's not -- I
12 haven't talked to anybody. If it's tied directly to
13 something that you're doing, just it's going to be
14 useful in the future? Well I mean, we all have to
15 understand budgets are limited. I mean, so there's
16 a lot of things that could be really useful in the
17 future. If it's directly tied to something that
18 you're doing, I think you're going to have more --
19 you know, I'm just telling you --

20 **MS. FRESHWATER:** What about if you say if this
21 many Marines were dying and getting sick in a
22 foreign country, would you get the database?

23 **MS. FORREST:** I can, I can take it back. All
24 I'm trying to say is just saying that it will -- it
25 might be useful in the future --

1 **MR. ORRIS:** You could sell it as a quality
2 control.

3 **DR. BOVE:** What you just said, as a secondary
4 QC process, and that process this would be useful.

5 **MS. FORREST:** But then I heard right behind me
6 that, well, we might not use it because we don't
7 want to slow down our --

8 **MS. MOORE:** No, no.

9 **MS. FORREST:** -- project.

10 **MS. FRESHWATER:** No, she just doesn't want to
11 stop what she's doing.

12 **MS. MOORE:** It's not that we wouldn't use it.
13 It's just I don't want someone to --

14 **MR. BRUBAKER:** If I can jump in, I didn't hear
15 anything you said in there as suggesting we had to
16 stop.

17 **MS. FRESHWATER:** What we have now is slow and
18 we need to go faster 'cause people are getting sick
19 every day. A lot of people are hitting --

20 **MS. FORREST:** I think we just have to be able
21 to say how it's going to be used, what it's going to
22 be used for. Just it's going to be great for the
23 future is, I just don't perceive it.

24 **MR. ENSMINGER:** And I don't want to hear
25 anything about DOD budgets, because they spend more

1 money on toilet paper than they do on their
2 health-related stuff.

3 **MS. FORREST:** And I don't want to speak to the
4 budget because that's not my budget. I'm just
5 telling you, as my experience as a government
6 employee, and, you know, getting projects through.
7 The more you can justify it and relate it to how
8 you're actually going to use it -- the more --

9 **MR. BRUBAKER:** This is a great example of
10 dynamic (indiscernible). Now I'm a half
11 strategist-half facilitator. There's a -- let's
12 find this and track it down and let's make the best
13 case we possibly can to ensure we get what we need
14 the right way. So I hear you guys doing some great
15 collaborating here about something redundant that
16 you can use for quality assurance, can be very
17 valuable to you in the future. So my advice would
18 be to establish a small subgroup to nail this down
19 and get it in writing, circulate it among the team
20 so you're sure you're clear on what you're asking
21 for so that it can be articulated, get it done. And
22 it sounds to me like you've achieved a pretty clear
23 sense of what that needs to be. Make your first ask
24 your best ask.

25 **MR. ENSMINGER:** I know the sure-fire way of

1 getting this done.

2 **MS. FRESHWATER:** Why not just ask for it now
3 and say we need it now, period. I mean, if you ask
4 for it now, we need it now, period, and get us
5 working on it. They're not going to call up and ask
6 if she's still working.

7 **MR. PARTAIN:** And Matt, with all due respect,
8 you haven't seen the end products we're dealing at
9 Headquarters, Marine Corps and Navy. It'll go to a
10 black hole and come out, no.

11 **MS. FRESHWATER:** So I would say ask for it now
12 because we need it.

13 **MS. FORREST:** And that's what I was trying to
14 say.

15 (multiple speakers)

16 **MR. BRUBAKER:** Okay. We've sort of lost the
17 thread of discussion and I think we've reached a
18 good stopping point for a 15-minute break. We're
19 going to come back and move to the water modeling
20 discussion. We also have some logistics.

21 **MS. SHEILA STEVENS:** First, for lunch tomorrow
22 I have a boxed lunch menu, so if you could write
23 your name and circle what you want, and it's either
24 sandwich or a salad. And there's a price associated
25 with that so, you know, you can figure out how you

1 want to pay for that, that would be great. And if
2 there's any questions about that or if you need any
3 different accommodations and you don't care for
4 this, I will certainly --

5 **MR. ENSMINGER:** Where are we going to eat this
6 at?

7 **MS. RUCKART:** We're bringing it in, Jerry.

8 **MS. SHEILA STEVENS:** We're going to bring it
9 in. We'll get it picked up and brought to here and
10 we'll either eat in this room or we can eat in a
11 different room.

12 **MR. PARTAIN:** Are we holding the meeting here
13 in this room tomorrow?

14 **MS. RUCKART:** No, no, no.

15 **MR. ENSMINGER:** Oh, I thought we were having a
16 picnic outside or something.

17 **MS. SHEILA STEVENS:** And then for those that
18 wanted to eat dinner, we were able to get
19 reservations at Maggiano's. It's a lovely Italian
20 restaurant, and I do have the menu --

21 **MR. ENSMINGER:** When's this?

22 **MS. SHEILA STEVENS:** This evening at 6:30.

23 **MR. ENSMINGER:** Where's Maggiano's?

24 **MS. SHEILA STEVENS:** Maggiano's, it's near the
25 hotel. They do have a shuttle that can drive you

1 there. It's within walking distance if you want to
2 walk, but it's a good walk.

3 **MR. MASLIA:** Well, through the parking lot it's
4 under a mile. Around the walkways it's probably a
5 mile and a half.

6 **MR. BRUBAKER:** So we'll reconvene at a quarter
7 till 3:00.

8 (Break, 2:35 till 2:52 p.m.)

9 **MR. BRUBAKER:** The final topic on our agenda,
10 we'll turn to Rob, I believe, for the discussion of
11 drinking water assessment.

12 **MS. FRESHWATER:** Can -- sorry. Have we settled
13 with her on that last topic? Did we -- or do you
14 feel comfortable?

15 **MS. FORREST:** I was going to go back and
16 present what I gave as my summary.

17 **MS. FRESHWATER:** Is that okay if we finish that
18 up?

19 **MR. BRUBAKER:** Sure.

20 **MS. FORREST:** That you're requesting the Marine
21 Corps DOD to link all the databases of information
22 to make the information more manageable and
23 searchable for future studies, and it will also be
24 used as a secondary search to ensure nothing was
25 missed in the initial review conducted by Chris and

1 company.

2 **LCDR. FLETCHER:** I can live with that.

3 **DR. FORRESTER:** For the public health
4 assessment.

5 **MS. FORREST:** Is where it will be used.

6 **MS. FRESHWATER:** Yeah.

7 **MS. FORREST:** The secondary research for the
8 public health assessment.

9 **MS. FRESHWATER:** Yes.

10 **DR. FORRESTER:** And does that pass your test as
11 far as --

12 **MS. FORREST:** Yeah, I just didn't want to just
13 put it up there like oh, it'd be great to have.

14 **MS. FRESHWATER:** Right.

15 **MS. FORREST:** Which would just lead to
16 connect --

17 **MS. FRESHWATER:** You feel good with that?

18 **MS. FORREST:** It makes sense to me.

19 **MS. FRESHWATER:** Okay.

20 **MR. BRUBAKER:** Excellent. Thanks, Chris. All
21 right, that's good.

22

23 **DISCUSSION OF ASSESSING EXPOSURES TO CONTAMINANTS IN**

24 **DRINKING WATER**

25 **MR. ROBINSON:** I'm Rob Robinson, and today I'm

1 going to be speaking about the drinking water
2 evaluation portion of the public health assessment.
3 I have about 12 years of environmental health
4 experience, and five of those years have been with
5 the Agency of Toxic -- ATSDR. And Mark Johnson,
6 who's our Region 5 director, he's also a major
7 contributor to this portion of the document.

8 So the two main objectives of this drinking
9 water evaluation were to evaluate exposure using
10 ATSDR's historical reconstruction concentrations for
11 the model values. And those model values shows that
12 individuals were exposed to elevated levels of VOCs,
13 and these elevated levels occurred for a long period
14 of time.

15 Science has also evolved so we are able to use
16 new studies in this evaluation as well as updated
17 exposure parameters. For this we're going to follow
18 the normal process that we would with any other
19 site, using our public health assessment guidance
20 manual protocol.

21 The second main objective of the drinking water
22 evaluation was to review the drinking -- the lead in
23 drinking water data and -- to see what individuals
24 were exposed to, and to make sure that the base
25 was -- the actions that the base were taking were

1 adequate to protect health.

2 So we'll discuss these three things today.
3 We'll start with a flow chart of our drinking water
4 evaluation process. We'll share how we are
5 evaluating exposures and health risks to VOCs in the
6 drinking water and we'll discuss the re-evaluation
7 of lead.

8 So this is the flow chart. In order to develop
9 a document, this is the process it goes through
10 here. It begins with the data discovery. Then we
11 go into the exposure evaluation. Then we start to
12 draft the document. Then we submit that document
13 for review. I'd like to elaborate a little bit on
14 that text box, in particular the third bullet, which
15 is the external peer review, because this will be
16 the first time that the CAP sees the document.

17 Now, the peer review is -- it's driven and
18 initiated by the Office of Science. It's not an
19 internal -- it's not driven by the program. And
20 what they do is they select three subject matter
21 experts to review and provide comments on the
22 document. And again, you guys will be seeing it at
23 this stage as well, and you'll be able to provide
24 comments. Usually individuals are given a month to
25 review but we haven't decided exactly how long we're

1 going to give for this document yet. So after the
2 review is done, we will do the final release for the
3 drinking water evaluation.

4 So the second -- we're going to look at the VOC
5 exposure evaluation, go over that. And it's kind of
6 four components of that process. The first is to
7 screen chemical concentrations against comparison
8 values. And this is a table that is an example of
9 the comparison values that we would use for the VOC
10 evaluation. And we take in our known data and
11 compare it against these values to determine our
12 contaminants of concern, that warrant further
13 investigation.

14 When available, we like to use our comparison
15 values because they're strictly health-based values,
16 whereas, say, the EPA or other agencies might have
17 other considerations. Like with the development of
18 the maximum containment levels, they have to take
19 into account economic factors or remediation
20 technology, things like that. There's still
21 certainly a health-based component on the maximum
22 contaminant levels but that's our sole focus here at
23 ATSDR.

24 Okay, next we, after the screening, we look
25 at -- determine the exposure pathways for the

1 affected groups.

2 Next slide. So this is our past completed
3 pathway that shows that people were exposed to
4 contaminated ground water through the drinking
5 water, and they were exposed by breathing it and
6 absorption through the skin as well by showering or
7 other household uses such as dish washing, meal
8 preparation and laundry.

9 There's also future potential pathway that
10 deals with the existing contamination plumes on base
11 because they have the potential to migrate to
12 existing drinking water supply wells. However, this
13 pathway is unlikely because of the extensive
14 modeling -- or monitoring, rather, that's going on
15 at the base right now.

16 **MR. PARTAIN:** Rob?

17 **MR. ROBINSON:** Yes.

18 **MR. PARTAIN:** On the notes section.

19 **MR. ROBINSON:** Sure.

20 **MR. PARTAIN:** Low levels of benzene may have
21 lasted until May of 1996 at Hadnot Point.

22 **MR. ROBINSON:** Correct, in the drinking water.

23 **MR. PARTAIN:** What are we talk -- I know that's
24 chemical 4 but that's the first time I'm seeing it
25 written down like this.

1 **MR. ENSMINGER:** From where?

2 **MR. ROBINSON:** Well, that was -- I mean, this
3 is, again, we're using -- for all of our exposure
4 evaluation, we're using the historical
5 reconstruction concentrations.

6 **DR. BOVE:** So it's a couple parts per billion.

7 **MR. PARTAIN:** Say again, Frank? I can't hear
8 you.

9 **DR. BOVE:** There were -- yeah.

10 **MR. MASLIA:** There were -- I think it was --

11 **MR. PARTAIN:** Was one of the --

12 **MR. MASLIA:** -- 603. Well 603, at least in
13 here you need to -- I want to be careful that I
14 explain this correctly. But well 602 was the one
15 that had the benzene -- measured benzene hits.

16 **MR. PARTAIN:** Yeah.

17 **MR. MASLIA:** Okay. I'm talking about from the
18 data that we received from the Marine Corps.

19 **DR. BOVE:** Yeah.

20 **MR. MASLIA:** Well 603 always had nondetects,
21 okay? Whatever. And nondetects, of course, are
22 based on the resolution of the (indiscernible) limit
23 of whatever method they used, and that changes the
24 type. In other words what's a nondetect in 1960 may
25 be a detect in 1970 and 1980 because of changes. So

1 all the information we obtained from the Marine
2 Corps file, 603 always had nondetects.

3 In simulating, reconstructing, the
4 concentrations in the drinking water supply wells
5 for 602 had benzene concentrations 'til they shut it
6 off and we had it in the model. 603, if you look at
7 the well log, which is in the back of Chapter A,
8 Supplemental chapter -- Supplemental 1, I think, you
9 will see that was kept running through 1996, I
10 believe. So as a consequence, the model shows low
11 levels, okay? Now, when it shows 2, 3, 4, if you --
12 you know, how do you interpret that? If there's a
13 detection limit of five or ten, that would be
14 considered a nondetect so it's consistent with the
15 field data, okay, so -- but it's got a numerical
16 value. And that's what you see in, I think it's
17 appendix 3 or 7. Three is the drinking water so it
18 must be appendix 7. Has all the wells in there.
19 And if you go to 603, you'll see it's pumping
20 through '96 or whatever, and you'll see those small
21 hits of benzene.

22 **DR. BOVE:** But it's never above the MCL.

23 **MR. PARTAIN:** Okay. Now, this chart here, is
24 this specifically -- is this base-wide or only
25 Hadnot Point?

1 **MR. ROBINSON:** Again, we're using Morris's, so
2 it's Tarawa Terrace, Hadnot Point and Holcomb
3 Boulevard.

4 **MR. PARTAIN:** Because the reason why I bring
5 that up 'cause that was my point --

6 **MR. ROBINSON:** Sure.

7 **MR. PARTAIN:** -- but Tarawa Terrace, the model
8 of Tarawa Terrace, you've got it here, January 1985.
9 Well, we've got PCE exposures with Tarawa Terrace to
10 1987, according to the model, correct me if I'm
11 wrong, Morris. And also there were detection --
12 actual measurable quantities of benzene that showed
13 up in Tarawa Terrace throughout 1986. So that needs
14 to be corrected there. Was it just 1986, TT, with
15 the benzene? 'Cause, I know they were having like
16 eight --

17 **MR. MASLIA:** Well --

18 **MR. PARTAIN:** -- periodic readings.

19 **MR. MASLIA:** -- 2 and 8, that was from those
20 JTC reports.

21 **MR. PARTAIN:** Yeah.

22 **MR. MASLIA:** And the last file we got was
23 through 1980 -- '86, and there were occasional hits.
24 I don't remember --

25 **MR. PARTAIN:** And it was the (unintelligible).

1 **MR. MASLIA:** -- whether it was the well or the
2 treatment plant.

3 **MR. PARTAIN:** No, it was it treatment plant
4 that was coming up with it.

5 **MR. MASLIA:** It was the treatment -- it was the
6 treatment plant.

7 **MR. PARTAIN:** Because there were -- there are
8 some notes in the files where they were talking
9 about it.

10 **MR. MASLIA:** Yeah.

11 **MR. PARTAIN:** And they didn't do anything about
12 it but it was actual treated water.

13 **MR. MASLIA:** -- treatment plant. Just for
14 clarification, we modeled through '87 because at
15 Tarawa Terrace they shut off two or three heavily
16 contaminated wells between February and May of 1985.

17 **MR. PARTAIN:** Twenty-three.

18 **MR. ENSMINGER:** Twenty-three.

19 **MR. MASLIA:** -- 23. And one other one.

20 **MR. ENSMINGER:** Twenty-five but 25 stayed
21 pumping.

22 **MR. MASLIA:** But they kept the other wells
23 going through '87, and so as they shut off the
24 contaminated wells, the ones that were low level, of
25 course, contamination -- and those 'til they shut

1 down the treatment plant in '87. So that's why --
2 but in Hadnot Point all the wells were shut down.

3 **MR. ENSMINGER:** Well, they turned 25 back on.

4 **MR. MASLIA:** What? No. Twenty-five was
5 going -- yeah.

6 **MR. ROBINSON:** Yeah, and Mike, we kind of
7 looked at them separately. You know, this one --
8 this is a table, Hadnot Point section, so it should
9 have been more clear on the slide, I agree.

10 **MR. PARTAIN:** You said it was Hadnot Point?
11 Okay.

12 **MR. ROBINSON:** Yeah, 'cause it -- see at the
13 bottom.

14 **MR. PARTAIN:** Jerry broke the fan.

15 **MR. MASLIA:** Just for clarification, Tarawa
16 Terrace, we do not -- never did -- we did not
17 simulate benzene, okay, because at the time we were
18 doing -- this was 2007 and prior, okay, we were
19 repeatedly told that there were no benzene sources.

20 **MR. ENSMINGER:** 645.

21 **MR. PARTAIN:** No, you're talking about TT,
22 Jerry.

23 **MR. MASLIA:** I'm talking about Tarawa Terrace.

24 **MR. ENSMINGER:** Yeah, but they were
25 transferring water. After '85 they were -- started

1 transferring water from the Holcomb Boulevard --

2 **MR. MASLIA:** But we were not -- but that was
3 still during that same time period when we were told
4 that Holcomb Boulevard was a clean system, an
5 unexposed system. There was no reason to
6 incorporate Holcomb Boulevard for the transfer of
7 water. It was only after we completed Tarawa
8 Terrace, then when we started looking at the Hadnot
9 Point documents, that we started piecing together --

10 **MR. ENSMINGER:** 645.

11 **MR. MASLIA:** -- 645.

12 **DR. BOVE:** Right, so somehow that needs to be
13 factored in.

14 **MR. MASLIA:** But we never could establish
15 whether 645 was in fact a source or not.

16 **MR. PARTAIN:** Well, there was a couple wells
17 that were showing up. There was an L well that was
18 up around Lejeune Boulevard that showed -- that they
19 shut down, I think, in the 90s, and then 645, 603.

20 **MR. MASLIA:** My point was for Tarawa Terrace --

21 **MR. PARTAIN:** All right, I'm talking about
22 Hadnot Point.

23 **MR. MASLIA:** -- the reason why there is no
24 reconstructed benzene there. We were not looking at
25 VOCs.

1 **MR. ROBINSON:** Yeah. Everything from the ABC
2 Cleaner.

3 **MR. MASLIA:** Yeah, exactly, yeah.

4 **MR. ROBINSON:** Anymore on this slide before we
5 move forward?

6 **MR. PARTAIN:** No. That is -- you're saying
7 that that's for Hadnot Point.

8 **MR. ROBINSON:** Hadnot Point. Yeah.

9 **MR. PARTAIN:** Okay. Just why I wanted to make
10 sure.

11 **MR. ROBINSON:** Yeah, yeah. I'm sorry, it
12 should have been indicated better on the slide.

13 **MR. ENSMINGER:** Are you going to annotate
14 occupations that had higher than normal exposure to
15 water?

16 **MR. ROBINSON:** We will get to that. I mean, we
17 are conservative in our assumptions.

18 **MR. ENSMINGER:** Because I know that --

19 **MR. ROBINSON:** Certain exposure parameters to
20 try to account for some of those things. But the
21 additional exposure scenarios that were brought up
22 at the last CAP meeting, we're looking at those
23 separately. And right -- currently we're
24 determining the best models to use to try to
25 re-create exposure scenarios.

1 **MR. ENSMINGER:** You know, the cooks -- the
2 folks, the civilians that worked in the industrial
3 laundry, the people in medical fields, where they
4 were washing their hands constantly, doctors,
5 corpsmen, those are high exposure --

6 **MS. FRESHWATER:** The groundskeepers at the golf
7 course, probably.

8 **MR. PARTAIN:** The galleys.

9 **MR. ROBINSON:** The golf course was actually
10 addressed in a previous ATSDR document, Chapter A.
11 And they were deemed by their -- as not a
12 significant source because they were --

13 **MR. ENSMINGER:** Open air.

14 **MR. ROBINSON:** -- open air exposure.

15 **MR. ENSMINGER:** But I know the people that
16 worked in that laundry, that industrial laundry,
17 where they washed all the sheets and pillowcases,
18 all the coveralls, the tablecloths and all that
19 stuff. According to one of my sources that knew all
20 those people, that worked with them, and he's
21 retired now -- he didn't work with them but he
22 carpooled with them -- every one of those people is
23 dead now from cancer.

24 **MR. ROBINSON:** Was there dry cleaning services
25 in those facilities?

1 **MR. ENSMINGER:** No, no. This was strictly
2 wash. But every sheet, every pillowcase was
3 pressed. I mean, when you're -- you steam, I mean,
4 and plus those big giant washing machines. I mean,
5 you're talking about a virtual gas chamber inside
6 that place.

7 **MR. ROBINSON:** Right, and that's some of the
8 information that's really been beneficial for us.

9 **MR. PARTAIN:** And same thing with the galley.

10 **MR. ENSMINGER:** Same thing with the cooks and
11 the mess halls.

12 **MR. PARTAIN:** Matter of fact, (unintelligible)
13 was being interred over at Arlington in about five
14 days. He was -- oversaw the galleys for 1985-1986.
15 He died of a brain tumor.

16 **MR. ROBINSON:** So the -- and this gets to those
17 points. But these were the four main exposed groups
18 or populations that we felt really represented to
19 those exposed on base. Children who resided on base
20 with their families, adults who resided on base,
21 workers who were employed on the base but lived off
22 base, and then the Marines who trained and lived on
23 base.

24 **MR. PARTAIN:** And when you say workers, you've
25 got to include the Marines with the laundry and the

1 food preparation.

2 **MR. ROBINSON:** Yes, exactly, and that's why
3 there's some bullets under there, because we are --
4 those were brought up in the last CAP meeting, and
5 so now we are including those in our --

6 **MR. ENSMINGER:** You got swimming pools under
7 Marines trained. Is that because -- for Marines
8 only?

9 **MR. ROBINSON:** Well, they'll be included in
10 that component. I mean, we'll also look at the
11 regular adult population because I'm assuming --
12 that's another -- some more information --

13 **MR. ENSMINGER:** The kids too.

14 **MS. FRESHWATER:** You should look at the
15 children because I spent every sing -- like three,
16 four months at the officers' club pool, every day of
17 my life, like all day. I mean, all of my friends
18 and I. That's where we lived.

19 **MR. ROBINSON:** Yeah. And those were the --
20 those were Hadnot Point, the pools were Hadnot
21 Point.

22 **MS. FRESHWATER:** I don't know what the --

23 **MR. ENSMINGER:** No.

24 **MR. PARTAIN:** No, Tarawa Terrace.

25 **MS. FRESHWATER:** No, it was officers' club.

1 **MR. ROBINSON:** Tarawa Terrace?

2 **MR. ENSMINGER:** Holcomb.

3 **MR. ROBINSON:** Holcomb?

4 **MR. ENSMINGER:** No, what years?

5 **MR. ROBINSON:** What years?

6 **MS. FRESHWATER:** It would have been '81
7 through '85.

8 **MR. ENSMINGER:** No, that was Holcomb Boulevard
9 water.

10 **MS. RUCKART:** Even prior to that too. There's
11 people prior to --

12 **MS. FRESHWATER:** Yeah, I mean, not just for me
13 but --

14 **DR. BOVE:** Yeah, yeah.

15 **MR. ENSMINGER:** Well, but wait a minute now.
16 The area pools, the big training pools, the ones
17 that are closed in at Lejeune, they -- I forget
18 whether that was area 5, the pool that's right down
19 from the building 33, that Mark was talking about.
20 You go down across McHugh, what they call it now,
21 but we used to call it the main service road,
22 there's a training pool down there. They opened
23 that on -- in the evenings and on weekends for
24 dependents.

25 **MR. ROBINSON:** Okay.

1 **MR. ENSMINGER:** Dependent swimming, during the
2 winter, the colder months. 'Cause I know damn well
3 you weren't in the pool in January at the officers'
4 club.

5 **MS. FRESHWATER:** You don't know that.

6 **MR. ROBINSON:** And that indoor pool, that was
7 supplied water by Hadnot Point.

8 **MR. ENSMINGER:** Hadnot Point, yeah.

9 **DR. BOVE:** But what Mike was saying was that --
10 or maybe it was Jerry -- workers who were employed
11 in laundry and food preparation, but there were also
12 Marines doing those tasks.

13 **MR. PARTAIN:** Yeah, that's --

14 **MR. ROBINSON:** Yeah, sure.

15 **MR. PARTAIN:** On these bullet points, you
16 should be Marines and workers who worked at the
17 laundry, blah-blah. And then on the pool area, it
18 would be Marines, dependents and civilians who
19 utilized the pools.

20 **MR. ROBINSON:** Yeah, and we'll -- they'll --
21 we'll transfer them to the applicable populations.
22 But they were just kind of up there to show that we
23 are considering them. So yes, we understand that
24 there will be workers who were employed at the base
25 but lived on base as well, and they might be

1 dependents. So those would be included in adults
2 who resided on base, that did laundry or food
3 preparations. But there also might be, like you
4 say, Marines who were trained and that also worked
5 in the food preparation or dish washing, so they
6 would also be included in that exposure evaluation.

7 **MS. RUCKART:** What about the civilian employees
8 who worked in areas other than these?

9 **MR. ROBINSON:** I'm sorry, the civilian
10 employees who worked --

11 **MS. RUCKART:** Who worked in other areas?

12 **MR. ROBINSON:** Those would generally be
13 considered adults who resided on base. I mean,
14 'cause they would get an entire exposure -- their
15 exposure duration would be like a full day, because
16 at work, and then you also come home.

17 **MS. RUCKART:** But they would live off base.

18 **MR. ROBINSON:** Well, if they worked -- if they
19 worked on base and lived off base, they would be
20 included in the workers here.

21 **MS. RUCKART:** Okay, those are just two
22 categories, not the only categories.

23 **MR. ROBINSON:** Yeah.

24 **MS. RUCKART:** Okay. Because I thought those
25 were the only two, but that's just an example.

1 **MR. ROBINSON:** Yes, correct.

2 **MR. ENSMINGER:** That's Holcomb. It's on the
3 north side of Wallace Creek.

4 **MR. ROBINSON:** So after we determine the
5 exposure pathways and affected groups, we calculate
6 doses. Sorry I've lost my place. I apologize. All
7 right, here we go. And this is the inputs that we
8 use for our dose calculations. It's a table of all
9 of them. And most of these numbers are generally
10 accepted values but some are site-specific numbers,
11 where we use your valuable input combined with other
12 data sources, such as the Marine-in-training
13 ingestion rates as well as the civilian worker
14 exposure duration.

15 And then we use these with -- and plug them
16 into Oak Ridge National Laboratory's risk assessment
17 information system, RAIS, chemical risk model to
18 produce our doses. Next slide, please.

19 **MR. ENSMINGER:** Wait a minute. 4.3 liters of
20 water a day for a Marine in training?

21 **DR. BOVE:** Because they're not assume --

22 **MR. ROBINSON:** Because they're not in rigorous
23 training -- seven days a week, kind of. So it's
24 average as a -- if you -- notice the asterisk, and
25 this is information that you provided, that we used

1 to develop this number, combined with the fluid
2 replacement guidelines of the military, on that
3 reference right there.

4 **MR. ENSMINGER:** And how did you come up with
5 the inhalation number?

6 **MR. ROBINSON:** The inhalation was a standard
7 one that our senior toxicologists felt that that was
8 most appropriate for each age group.

9 **MR. ENSMINGER:** No, no, wait a minute, .5?
10 What's that, parts per billion, .5?

11 **MR. ROBINSON:** The inhalation is liters per
12 meter cubed.

13 **DR. BOVE:** But this is standard for how long a
14 shower or is that a 10-minute shower?

15 **MR. ROBINSON:** I believe they're ten minutes.
16 That's usually --

17 **DR. BOVE:** So what we're talking about is one
18 shower a day.

19 **MR. ENSMINGER:** No, that's bull.

20 **DR. BOVE:** Well, wait, wait, wait. It's not --
21 I'm asking the question.

22 **MR. ROBINSON:** Yeah, Mark would have to give
23 you the specifics. He did the VOC exposure
24 evaluation.

25 **DR. BOVE:** Well, I mean, but this is just for

1 everyone. So it would probably be one shower or
2 bath a day, right? The bath would be higher than
3 the shower, so actually I don't know why the child
4 fits in one higher. But putting that aside --

5 **MS. MOORE:** That K over there, that's the
6 volatilization rate.

7 **MR. ROBINSON:** Okay, okay. So that's -- so
8 that's not the amount of air.

9 **MS. MOORE:** The inhalation rate --

10 **MR. ROBINSON:** That's correct, yeah, you're
11 right.

12 **DR. BOVE:** Is it the ten, the --

13 **MR. ROBINSON:** Oh, yeah, so the inhalation
14 rates are per body weight. Those varied dependent
15 upon -- see, if you'll notice, the Marine in
16 training is higher than the regular civilian worker,
17 adult resident, to take --

18 **MR. ENSMINGER:** For what?

19 **MR. ROBINSON:** -- into account.

20 **MR. PARTAIN:** Where?

21 **MR. ENSMINGER:** For inhalation?

22 **MR. ROBINSON:** See, this column here.

23 **MR. ENSMINGER:** What's that, IR?

24 **MR. ROBINSON:** It's inhalation rate divided by
25 body weight.

1 **MR. ENSMINGER:** Yeah, but it's based on one
2 shower.

3 (multiple speakers)

4 **MR. ROBINSON:** That isn't the ingestion rate,
5 though. Sorry, I apologize. I'm sorry, Mark.

6 **MS. MOORE:** There's no inhalation on here, I
7 don't think.

8 **MR. PARTAIN:** But what's the .5 inhalation
9 column, then? What does that mean?

10 **MR. ROBINSON:** That's a K. Ks are usually
11 constants, so.

12 **DR. BOVE:** Yeah, that's a constant.

13 **MS. MOORE:** Volatilization rate.

14 **MR. ROBINSON:** And the volatilization factor.
15 So that's the rate that the chemical volatilizes.

16 **MS. MOORE:** Right out of the water 'cause you
17 can look at it for the dermal -- that's used for
18 dermal exposure. You want to see how much is left
19 in the water and how much volatilizes out. So
20 that's what there -- that's not an inhalation rate.

21 (multiple speakers)

22 **DR. BOVE:** Right. That was the problem.

23 **MS. MOORE:** Everybody's looking for something
24 that's not there.

25 **MR. ENSMINGER:** I mean, we took two showers a

1 day.

2 **MR. ROBINSON:** Yeah. And we have that
3 information. We incorporated that into it. If not,
4 we will certainly include that, especially Marine-
5 in-trainings, in their exposure parameters.

6 **MR. ENSMINGER:** Yeah, we had PT in the
7 mornings, and then we came back to the barracks, got
8 our showers, went to the mess hall, ate chow,
9 morning chow, back for formation, then went to work.
10 Then worked all day. And you were a pig if you got
11 off work all day and went back to the barracks and
12 changed into your civvies and went out on liberty.
13 Then you ended up with a GI shower.

14 **DR. BOVE:** I would assume two showers a day.

15 **MR. ENSMINGER:** With scrub brushes and Fels-
16 Naptha soap.

17 **MR. ORRIS:** What, what is that ADAF for TCE?
18 What are those numbers representing there?

19 **MR. ROBINSON:** This is an age-dependent
20 adjustment factors for mutagenic chemicals. You'll
21 use those because younger groups for, say, TCE, are
22 more susceptible in those stages of life. So you
23 want to be more conservative in your evaluation with
24 that. And to account for that you multiply by
25 higher -- you use a higher multiplier.

1 **MR. ORRIS:** That's just a multiplier?

2 **MR. ROBINSON:** Yeah.

3 **MR. ORRIS:** Okay.

4 **MR. ROBINSON:** Now, does that? Okay.

5 **UNIDENTIFIED SPEAKER:** It's just for mutagens.
6 So it's not for every -- it's not like for benzene
7 and like that. Just TCEs.

8 **MR. ROBINSON:** And so these are examples of
9 some of the equations that we used in our dose
10 calculations. Just to kind of show you what we were
11 dealing with. And again, they're generally accepted
12 equations that are pulled straight from the Oak
13 Ridge Lab website, which is at the bottom. And if
14 you'd like to try to re-create our process, I'm
15 happy to show you in that website exactly the path
16 to take to reach the chemical risk model.

17 **DR. BOVE:** It might be useful to actually run
18 through one, maybe not today.

19 **MR. ROBINSON:** Sure.

20 **DR. BOVE:** A typical Marine working, you know,
21 on the field three days a week, taking two showers a
22 day, for TCE. Just run through the calculation once
23 and show what you get out of it.

24 **MR. ROBINSON:** Yeah, sure.

25 **DR. BOVE:** That might be helpful. If not

1 tomorrow ...

2 **MS. FRESHWATER:** Yeah, I don't understand that
3 but I'll understand the larger mechanics of it.

4 **DR. BOVE:** Well, I think, then, you can see how
5 the -- you know, as you go through it, you have to
6 show what assumptions you're making at each point.

7 **MR. ROBINSON:** Gotcha, okay.

8 **MR. ENSMINGER:** And I believe -- isn't the
9 state of California -- I think they are -- if you're
10 living, actually living, where they have
11 contaminated water, I think the state of
12 California's standard is seven liters of water a
13 day, isn't it?

14 **MS. MOORE:** The only time I've ever seen that,
15 Jerry, is like for migrant workers. They have
16 (unintelligible) when they work in the fields all
17 day, like Arizona, and it is about that, about seven
18 liters.

19 **DR. BOVE:** If you're talking about the document
20 that they produced years ago, that incorporates
21 showering, the seven-liter equivalent.

22 **MR. ENSMINGER:** Oh, okay. You got this broken
23 out from drinking to showering -- oh, okay.

24 **MS. MOORE:** (Unintelligible) migrant workers in
25 fields 12 hours a day.

1 **DR. BOVE:** Yeah, I'm not sure what you read but
2 I could be wrong.

3 **MR. ROBINSON:** So from those equations we will
4 calculate doses as -- we'll take those doses to
5 determine any potential non-cancer health effects
6 that we might expect to see. And we'll compare
7 those doses to different studies, and whether it be
8 animal or human epidemiological studies, to see
9 where they are in relation to effects levels.

10 And we'll take those doses to multiply them by
11 cancer -- multiply them by cancer slope factors to
12 determine cancer risk. And that's pretty much the
13 extent of the VOC evaluation.

14 So for our lead and drinking water evaluation,
15 we looked at the annual water quality reports of the
16 base. We did basically a summary of their base-wide
17 sampling. And they provide this to all the
18 residents each year. We also discussed the sampling
19 remediation efforts with the environmental
20 management division personnel on the base, and we
21 also looked at the North Carolina drinking water
22 watch website. And this is where they house all the
23 raw data that they provide the state in order to
24 comply with the lead and copper rule sample, the
25 lead and copper rule. And so we'll take those raw

1 data and we'll run them through EPA's IEUBK model.
2 And that will allow us to evaluate the risk for
3 children.

4 CDC in 2012 came out with guidance that focused
5 on the primary prevention of lead because they feel
6 that there -- they -- there's no proven safe level
7 of lead in the blood. So CDC and ATSDR now are --
8 recommend reducing lead exposure wherever possible.

9 Next slide, please. So the remaining timeline,
10 'cause we're going back to include all the exposure
11 scenarios that you provided last CAP meeting, and to
12 ensure that we get everything right, our internal
13 review process has already begun for most of the
14 document but we expect to complete that in fall.
15 And the peer review --

16 **MR. ENSMINGER:** Really? I see you left plenty
17 of time. The whole summer and fall for your
18 internal review process.

19 **MR. ROBINSON:** Sure. Well, again, because of
20 those additional scenarios that we wanted to enter
21 that we included. We're having to go back and, and
22 determine the best models to --

23 **MR. ENSMINGER:** Oh.

24 **MR. ROBINSON:** -- to use for evaluating those.

25 **MR. ORRIS:** And this meeting -- is this falling

1 under the expedited review process, as discussed in
2 the last meetings?

3 **MR. ROBINSON:** This is. I mean, it will be --
4 with this site everything's as expedited as
5 possible.

6 **MR. PARTAIN:** Glacially expedited.

7 **MR. ROBINSON:** So then the peer review again,
8 that's when you guys will be seeing it for the first
9 time. We expect to begin in the winter. And then
10 we'll take your comments, make changes and then have
11 it out for public comment by the spring of 2015.
12 Yeah, I mean, it starts in December.

13 **DR. FORRESTER:** This is just one part of the
14 health assessment, not the whole thing.

15 **MR. ENSMINGER:** No.

16 **DR. FORRESTER:** So I just want to make that
17 clear, 'cause there won't be the introduction --

18 **MR. ENSMINGER:** No, no. This is water -- yeah.

19 **DR. FORRESTER:** Yeah. We could wait 'til we
20 finish it all but I don't think you want to do that.
21 You want to keep moving. Makes sense.

22 **MR. PARTAIN:** A question. How is Morris's
23 water model and the results from that water model
24 being utilized in this drinking water portion of the
25 public health assessment?

1 **MR. ROBINSON:** I mean, they are the basis for
2 our VOC evaluation. Those are the numbers that we
3 are using for all our dose calculations and
4 everything.

5 **MR. ENSMINGER:** What do you think, they just
6 threw them out?

7 **MR. PARTAIN:** Just want to make sure.

8 **MR. ENSMINGER:** That's it.

9 **MR. BRUBAKER:** Questions, comments,
10 interaction?

11 **MR. ENSMINGER:** Nope. Git 'er done. Can't
12 wait to see it.

13 **MS. FORREST:** I'm kind of dreading it.

14 **MR. GILLIG:** Yes.

15 **MS. FORREST:** I'm kind of dreading it. I don't
16 know if I'm ready for that.

17 **MR. BRUBAKER:** Questions on any of the
18 presentations, any of the projects?

19 **MR. ENSMINGER:** We asked our questions all --
20 as we went along, we asked our questions, made our
21 comments.

22 **MR. BRUBAKER:** All right. Excellent work.
23 Plans for the meals are both handled as far as I
24 understand, and we need -- is there anything
25 outstanding on that?

1 **MS. SHEILA STEVENS:** I'll collect money
2 tomorrow.

3 **MR. BRUBAKER:** Yes, you know what you signed up
4 for; bring some cash to pay for your lunch.
5 Excellent, well, our meeting's adjourned.

6
7 (Whereupon, the meeting was adjourned, 3:30 p.m.)

8

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CERTIFICATE OF COURT REPORTER**STATE OF GEORGIA****COUNTY OF FULTON**

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of June 11, 2014; and it is a true and accurate transcript of the proceedings captioned herein.

I further certify that I am neither relation nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 16th day of July, 2014.

STEVEN RAY GREEN, CCR, CVR-CM, PNSC
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