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RESTORATION ADVISORY BOARD
FOR
NAS JRB / ARS WILLOW GROVE

- - -

Willow Grove, Pennsylvania
Wednesday, January 12, 2005

- - -

Meeting held in the above-captioned matter at the Naval Air Station Joint Reserve Base, on the above date, beginning at approximately 6:00 p.m., before Kimberly A. Overwise, a Registered Professional Reporter, Certified Shorthand Reporter, and Notary Public.

- - -

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PRESENT:

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Jim Edmond

4

Russ Turner

5

Ed Boyle

6

Charanjit Gill

7

April Flipse

8

Jeff Dale

9

Yuriy Neboga

10

Kevin Kilmartin

11

Mark Stephens

12

Hal Dusen

13

Ron Sloto

14

Rick Myers

15

Jim Vetrini

16

Timothy Frederick

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Arnold Haggerty

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Kaye Maxwell-Martin

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Cpt. Rick Cline

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LTCDR. Jeff Killian

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AGENDA

1. Welcome Community Members
Naval Air Station Items/Comments
(Jim Edmond)
2. Air Force News
3. Navy Updates
 - a. Draft Site Management Plan
Status and Purpose (Ed Boyle)
 - b. Draft RI Addendum for Site 5
Groundwater Status and Trends
(Kevin Kilmartin)
 - c. Decision Document Status (Russ Turner)
Site 1 Soil NFA ROD
Site 1 Groundwater PRAP
 - d. Draft RI Addendum Site 5 Soil
Soil Analytical Results (2004 samples)
(Jeff Dale)
4. Closing Remarks
 - a. RAB Member Questions & Comments
 - b. Set Date for Next RAB Meeting
(04 May 2005)
 - c. Meeting Adjourned



1
2 MR. EDMOND: Again, thank you
3 all for coming. This is our 24th RAB
4 meeting, about seven years now, I guess.
5 You guys have been good coming back and
6 back. We appreciate it. I know that
7 today some folks had called me and told
8 me they weren't coming, so we're going to
9 try -- it just so happens that this
10 meeting, the way I've had them scheduled,
11 it falls the same as a Sewer Board
12 meeting. So we're switching it up to the
13 first Monday of the month -- I mean first
14 Wednesday of the month instead of the
15 second to avoid conflicts with the Sewer
16 Board meeting.

17 A couple things I want to let
18 everyone know. The administrative record
19 used to be in the administrative building
20 over in Horsham. Now that Horsham has
21 built a library, I've taken the
22 administrative record out of Horsham
23 Municipal Building. I've talked to the
24 librarian. We're going to have it
25 indexed and put into the reference



1
2 section of the library. When it was in
3 the municipal building, we had trouble
4 with contractors and people coming in and
5 taking a look at something they wanted to
6 see and walking off with our reports. So
7 now it will be indexed. It will be
8 checked out just like any other book at
9 the library.

10 Also, on the bottom of your
11 agenda you'll see a web site. That's our
12 EMS web site for the Air Station. What
13 we are putting on there is you'll see an
14 icon for the administrative record.
15 You'll be able to click on that. Ninety
16 percent of the administrative record will
17 be electronically available read only or
18 to print. Also, what we're going to try
19 and start doing is we're going to put
20 another icon in there that says draft IR
21 documents. In this austere DOD budget
22 we're in now, we're trying to save some
23 money, taxpayers' money. What we're
24 going to do is put the draft documents on
25 there. And if you have a computer,



1
2 you'll be able to download them yourself
3 instead of us printing them up and
4 mailing them to you. We'll save on
5 mailing charges and printing charges.
6 Also, you can contact me and send me your
7 comments directly by e-mail.

8 So that's about everything I
9 have. The Air Show is going to be
10 Memorial Day weekend. I think the theme
11 is Let Freedom Roar if I'm not mistaken,
12 XO.

13 CPT. CLINE: Right.

14 MR. EDMOND: There will be a
15 concert on Thursday night, a country band
16 by the name of Lone Star. On Friday
17 night, there will be a twilight show --

18 CPT. CLINE: Hang on. This is
19 important. They're good?

20 RAB MEMBER: Yeah, they're
21 good.

22 CPT. CLINE: It's free.

23 RAB MEMBER: It was on my
24 calendar already, but it's definitely on
25 now.



1
2 MR. EDMOND: On Friday night,
3 there will be an air show with fireworks
4 and then a normal show Saturday and
5 Sunday. The Blue Angels are the headline
6 act. That's about everything going on
7 here at Willow Grove. I'm going to turn
8 it -- go ahead.

9 MR. STEPHENS: Could you tell
10 me what the name is of the library?

11 MR. EDMOND: Horsham Library.

12 MR. STEPHENS: And the address?

13 MR. EDMOND: It's on Babylon
14 Road -- I'm going to have to get you the
15 number -- in Horsham. It just opened a
16 month and a half ago.

17 MR. STEPHENS: Because we
18 publish that information also, the
19 location of the admin record.

20 MR. EDMOND: I'll forward that
21 to you tomorrow.

22 That's about it. I'm going to
23 turn it over to Gill, I guess, Gill or
24 Hal, give a quick update on what the Air
25 Force is doing. Then we'll break into



1
2 the Navy's presentation.

3 MR. GILL: I do want to thank
4 you for coming. And since the last RAB
5 meeting, we haven't made enough progress
6 at one of our sites, POL site, so we will
7 have a presentation next RAB meeting.
8 And we'll give you the results of the
9 latest sampling. And I don't know if you
10 remember from the last meeting. We do
11 have one active site, which is the POL
12 site. And that site is divided into
13 eight different sections. We call them
14 zones. They're A through H zones. And I
15 guess presently we are implementing
16 chemical oxidation process to clean up
17 the site. And we have -- so far we have
18 done three applications on two of the
19 zones and we are going to be doing the
20 rest of them this year. Hopefully by THE
21 end of the year we'll have completed
22 that. So we'll have some numbers and
23 some sampling results next time, next
24 presentation.

25 MR. EDMOND: And I can vouch



1
2 for people working out there. I was
3 running today and there were people out
4 in the field, scared me. What's that?
5 The guy was on one of those quad runners
6 going from well to well I guess putting
7 the oxidation in.

8 MR. GILL: It is a bad
9 condition back there, all the mud and all
10 that. These guys do their best to do
11 that. And that's all we have so far. So
12 next presentation -- next RAB meeting we
13 should have some presentation.

14 MR. EDMOND: Thanks, Gill.
15 We'll turn it over to Mr. Turner or to
16 Ed, Ed Boyle from EFANE.

17 MR. BOYLE: Evening, everyone.
18 We have four things on the agenda for
19 tonight: The site management plan, the
20 groundwater at Site 5, and soil at Site
21 5, and the status of decision document.
22 Now, that will be for Site 1 soil.
23 Really, the status of decision document
24 Site 1 will be wrapped up in with the
25 site management plan.



1
2 Okay. What is the site
3 management plan? It's a requirement from
4 the federal facility agreement. That's a
5 document that provides an outline for all
6 responsibilities for the Navy and the
7 regulators. It provides requirements for
8 review time for documents. It outlines
9 the status of all the sites. And that
10 presently hopefully is in the final
11 stages. It's been ongoing for several
12 years now, but right now it's with PADEP
13 and they should be signing it. And the
14 Navy, Secretary of the Navy, signed it
15 and sent it to PADEP. And they'll send
16 it back to the Navy after they sign it.
17 Then we'll sign it and send it to EPA.
18 And that document should be finalized in
19 the next month, but part of that document
20 requires us to complete a site management
21 plan.

22 So what is a site management
23 plan? It's a tool for planning. It's
24 setting priorities for environmental
25 investigations and remedial response



1
2 activities. It also establishes
3 schedules for implementation of
4 installation and restoration work.

5 What does a site management
6 plan include? It varies. I mean,
7 there's no real set format for it, but
8 this one in particular has six sections.
9 There's an introduction, which describes
10 the facility description, the history of
11 the site, reported organization, where
12 everything's at.

13 The second section is the
14 CERCLA process. It describes all the
15 different reports of CERCLA. It
16 describes what a site inspection is, RI,
17 remedial investigation, what a
18 feasibility study is, removal actions,
19 treatability studies. It goes into a
20 brief description of all the different
21 processes of CERCLA, which is the
22 Comprehensive Environmental Response,
23 Compensation and Liability Act.

24 The third section would be the
25 site description. And this is important.



1
2 It goes into detailed history of all work
3 that's been done up till today. That's
4 very helpful so the community can look at
5 this one document and get a snapshot of
6 all the sites at the Base.

7 And the fourth section is a
8 site ranking. It describes the Navy
9 procedure for ranking the sites. And
10 that's based on the relative risk. The
11 Navy has a standard procedure for ranking
12 all their sites in the Navy so that it
13 will get equal funding for the same risk
14 sites. And this is based on, you know,
15 risk to human health and the environment.
16 And each one of those relative risks for
17 each site is copied as an addendum in
18 this plan.

19 And thirdly is the -- I mean
20 the fifth thing, rather, is the site
21 management schedules. And Russ is going
22 to go into that in a little bit. And the
23 next section would be references.

24 How is the site management used
25 and by whom? The document is used by the



1
2 Navy regulators and the community. It's
3 great information, like I said before,
4 for planning and scheduling. You know,
5 anyone can take this document basically
6 and get a good idea of what we're going
7 to be doing in the next year at the site,
8 what the issues are riskwise, and what
9 the Navy feels are the problems at the
10 site.

11 And the last part, the periodic
12 updates and the status and schedule, the
13 updates, there's no really set standard
14 for updates. I mean, some activities
15 update on a yearly basis and depending on
16 what issues are going on, but typically
17 it's updated every other year.

18 Any questions?

19 MR. TURNER: Regarding
20 scheduling for Ed, he asked me to cover
21 it. If you guys remember, at the last
22 RAB meeting we talked about the PRAP for
23 Site 1 soils, PRAP meaning proposed
24 remedial action plan. Now that's been
25 finalized. That was -- at that time in



1
2 October, it was in a 30-day public
3 comment period. Under the law, the
4 Navy's required to put it out a certain
5 amount of time. No comments came in so
6 we had that over the Christmas holiday
7 and finalized it. That's actually been
8 submitted to the Navy today as final.
9 I'm sorry. That was final at the time.
10 No comments came back. So the document
11 after that is a record of decision.
12 Okay. So we're also working over that
13 beginning of the holidays. We turned
14 over the record of decision draft to the
15 Navy and to the regulators, EPA and DEP,
16 to April, today. So they'll look at
17 that. We anticipate that ROD to take
18 several weeks for the review process to
19 go through. And that ROD will be
20 finalized we think April 6 of this year
21 if things go according to plan.

22 Site 2, the other site we're
23 working on, we submitted a remedial
24 investigation for the antenna field
25 landfill. Site 2 if you're familiar over



1
2 the years -- some of the RAB members
3 probably remember Site 2. We have
4 prepared a revised remedial investigation
5 report for that site if you remember
6 because there were some drums found at
7 the edge of the site. So other remedial
8 investigators went in two years ago and
9 found that we need to expand that site to
10 include these drums that were found. The
11 drums have been removed, soil samples
12 have been taken, and it's included now in
13 the revised RI, which is in the hands
14 really of the -- it's actually in our
15 hands. The Navy gave us comments back
16 last week. We have some questions and
17 we're going to meet with Ed and his human
18 health risk assessor, eco risk assessor.
19 Those are the issues up in the air right
20 now. We're meeting actually Friday
21 morning. So with that one, depending on
22 how that goes through comments, we should
23 have a draft for regulatory review on
24 February 11. That's the current plan.
25 That's what the schedule says.



1
2 Okay. The next site, we're
3 going to be talking about two aspects of
4 the site tonight, but for Site 5, the
5 former fire training area, we had an FS
6 submitted for review in the fall. We're
7 currently waiting for regulatory
8 comments, but that's not the only thing
9 that's happening there. That draft --
10 this is a groundwater feasibility study
11 we're doing for Site 5. I hope I
12 mentioned that. That currently is
13 scheduled for the end of February. If
14 things go according to plan, we'll have
15 that draft for -- we'll have a final for
16 the public February 28 if things go well.

17 Meanwhile, there are two other
18 things happening at Site 5. We did a
19 soil addendum to the remedial
20 investigation. I don't want to talk too
21 much about that because Jeff is going to
22 talk about that, what's happening, what's
23 current with the soil at Site 5, which is
24 different than the groundwater. The FS
25 is for groundwater. And Kevin --



1
2 however, it's been a number of years
3 since we did a full round of groundwater
4 sampling, so Kevin is going to speak
5 about groundwater at Site 5. In a
6 nutshell, unless there are questions,
7 that's about it for schedule then.

8 MR. EDMOND: Jeff?

9 Jeff Dale is our technical
10 review manager from EFANE, Engineering
11 Field Activity Northeast, another Navy
12 agency. This will be the second handout
13 I passed out.

14 MR. DALE: As you may recall,
15 I'm Jeff Dale. I'm a hydrologist with
16 EFA Northeast. I support Ed Boyle in the
17 remedial program. Fortunately, I don't
18 have to do FFAs and site management
19 plans. I get to do the fun stuff with
20 the dirt and the water. And I'm
21 basically going to cover Site 5 soil, a
22 five-minute review, where they stored and
23 burned waste liquids for fire training
24 exercises from roughly during the war
25 through the early '70s. And it's at the



1
2 west end of the runway near Horsham Road.
3 And these are not unique. About
4 95 percent of our project sites have fire
5 training areas. Many of them are more
6 contaminated than this.

7 A brief shot of the Air
8 Station. Here's the runway. Here's the
9 taxiway. And this is Horsham Road and
10 Norristown Road. And in an old aerial
11 photo, here's the runway, there's the
12 taxiway, Horsham Road, and Norristown
13 comes in here. And basically they stored
14 drums of the waste solvents and liquids
15 and oils in this area here. And you can
16 see the burn ring. It's a small circular
17 feature here. This is a photo from 1978,
18 shortly after activity stopped at the
19 site.

20 So there are no longer drums
21 stored here, which at least confirms our
22 theory on the dates. We had
23 comprehensive soil samples collected in
24 1997 and that was enough information to
25 make a decision on. And then somebody



1
2 ran a fence through the site in 2002 and
3 Jim Edmond was concerned that they
4 disrupted the soils. You'd go out there
5 and all the heavy equipment, it looked
6 like it could have done some damage. And
7 we couldn't make a decision on old data
8 so we resampled all of the same locations
9 and it appears it did not actually
10 disturb the soil putting the fence in and
11 the fence actually did not go through the
12 contaminated area. So it was rather good
13 news.

14 MR. EDMOND: For the contractor
15 too.

16 MR. DALE: For the contractor
17 especially.

18 This is a very bad picture of
19 the site looking south.

20 MR. TURNER: At night.

21 MR. DALE: The sun hasn't been
22 out for two weeks. I tried. The burn
23 ring is here. You can see it's lightly
24 vegetated. And this is a better picture
25 looking north out towards this shiny new



1
2 fence here and Jim Edmond trying to hide
3 behind the bush. And, surprisingly, you
4 could see the burn ring is still there
5 after 20 or 30 years. So we're going to
6 remove the burn ring and some of the soil
7 around it is the summary of what we're
8 doing.

9 But as part of our
10 environmental studies, we collect these
11 soil samples and do a risk assessment.
12 We compare various scenarios of
13 construction workers, risk assessments,
14 we do ecological risk assessments, and
15 the most risk is due to burrowing animals
16 because of the type of contaminate.
17 They're called polycyclical aromatic
18 hydrocarbons, which we just call PAHs.
19 If you want to know what they are, when
20 you spread that driveway sealer on your
21 driveway, that's basically PAHs. It's
22 heavy, smelly, sticky, oil-related
23 compounds. And they're present in things
24 like oil and they're also present in ash
25 residue when you burn the oil. They're



1
2 not very mobile in the environment so
3 even 30 years after the exercises,
4 they're still confined to the area where
5 they were released to the ground.
6 Kevin's going to cover some of the
7 solvents that were released that are
8 traveling with the groundwater. These
9 stick to the soil particles and they stay
10 right where you release them, which is
11 rather good for us.

12 What we're proposing to do is
13 what we call a nontime-critical removal
14 action. And it's one of these terms in
15 the FFA and site management plan. It's
16 all involved in how important it is to do
17 it and the timing for it. And we do an
18 engineering evaluation cost analysis,
19 which is going to be about 20 pages long,
20 instead of one of those 2-inch thick
21 feasibility studies. Because it's a very
22 small area of soil, we can dig it up.
23 It's a nonrestricted use and we won't
24 have deed restrictions or anything like
25 that. We're only estimating about



1
2 230 yards of soil and an estimated cost
3 of about 185,000, and this would clean
4 the site up to unrestricted use with no
5 risk to future residents or current
6 burrowing animals, current construction
7 workers. So this is our plan is to clean
8 up to unrestricted use. There are public
9 notice requirements for this and this is
10 not the public notice for it. This is
11 our initial plan for it. Probably
12 sometime in the middle of the year we're
13 going to actually have a 30-day public
14 comment period. If you disagree with
15 anything, I'd love to hear it now. We
16 can always change early in the course.
17 But I did want to make clear that this is
18 not the public comment period for it. I
19 wasn't clear at the last meeting.

20 MR. BOYLE: It's not scheduled
21 for funding this year either. It's
22 something we're proposing as a way to
23 remove the risk and potentially close out
24 the site.

25 MR. EDMOND: Hopefully if money



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becomes available, we'll --

MR. DALE: We'll be ready.

Here's a poorly copied picture from a report, but here's the fence, here's the burn ring, and the contaminated area is roughly delineated by the purple spoon-shaped object here and the burn ring is right within in. This is probably the path they brought oils down for burning in the ring and some got spilled on the way. So it's not a large area. Because the compounds are not mobile in the environment, they're confined to the surface soil, they're not even deep in the soil. So it's a relatively cut and dry situation.

We're going to take postexcavation samples and probably going to follow PADEP guidelines because they're very simple and clear-cut for an excavation of this size. It will tell us how many we need to take. There's various methods we do for this for larger excavations that have all sorts of



1
2 statistics that confuse you, so if we
3 follow PADEP guidelines and EPA agrees
4 with it, we think it won't be a problem.
5 After that we'll do a new toxicity
6 evaluation to make sure all the remaining
7 soil is not harmful and then we'll
8 propose a no further action record of
9 decision. So this will be a lot like
10 what we did with Site 1 soils where we
11 dug up the contaminated soil as an
12 interim action and then proposed no
13 further action when that was complete.
14 And it's a cleaner way to do things for
15 very small actions such as this. I hope
16 I explained everything, but hammer me
17 with questions. I'm usually not as clear
18 as I'd like to be.

19 MR. STEPHENS: Was there, in
20 fact, a remedial investigation done?

21 MR. DALE: Yes, yes. That was
22 the comprehensive data in 1997. And then
23 we recollected some more data in 2000.

24 MR. STEPHENS: It was finalized
25 as of --



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MR. TURNER: 2002.

MR. STEPHENS: Because if there wasn't, we might not have to do that final ROD.

RAB MEMBER: When you do the excavation, where are you sending the soils?

MR. DALE: Haven't got that far yet, but obviously a licensed facility according to PADEP will collect samples to characterize it and make sure the facility can accept it. It's not expected to be a big problem, but we haven't picked a location yet.

MR. BOYLE: This is definitely determined by the hauler.

MR. EDMOND: Is this like landfill soil or can it be --

MS. FLIPSE: Depending on the levels of what's in it, G.R.O.W.S. in Tullytown have permits to take some levels of contaminated soils, but I'm not waste management. I don't know what their permit actually says. They have



1
2 permitted limits and you just send them a
3 Form U and they say, okay, this falls
4 within the parameters. But they actually
5 send it to the department. Our chemists
6 get two weeks to either deny it or let it
7 get deemed appropriate.

8 MR. EDMOND: The PAHs in
9 Pennsylvania aren't normally burned or
10 anything like that? Like PVC soil we
11 have to send out to an incinerator.

12 MS. FLIPSE: It depends on the
13 level. If it's hot enough, we do have
14 soil burners. I don't know where they
15 are anymore. We used to have -- there
16 used to be a facility in Philadelphia --
17 I don't know if it still operates -- that
18 would take and burn that.

19 MR. DALE: We don't anticipate
20 great problems with this. They're
21 relatively low levels. And when I say
22 potential risk to burrowing animals, the
23 ground isn't littered with dead
24 groundhogs. There's a potential risk to
25 burrowing animals. I don't want to make



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anybody think the soil needs incineration. It's not going to be a problem finding a suitable place.

MS. FLIPSE: I would think it will probably be suitable for daily cover at G.R.O.W.S., that they probably have low level contaminated soil because they can cover the blowing trash with it and keep the pigeons off of it overnight.

MR. DALE: That's where soil like this usually ends up, as daily cover at landfills. It doesn't need to be incinerated in upstate New York at 500 bucks a ton. It's a very small remedial action we're proposing.

Any more questions?

MR. EDMOND: Thanks, Jeff.

MR. DALE: Sure.

MR. EDMOND: This is Kevin Kilmartin. Kevin Kilmartin is a hydrogeologist with Tetra Tech. He works with Russ. Kevin, it's all yours.

MR. KILMARTIN: What I'm going to do tonight is just give a very brief



1
2 update on the status of the Site 5
3 groundwater and specifically discuss the
4 results of the most recent sampling
5 event, which was conducted last spring in
6 May of 2004.

7 Now, similar to the Site 1
8 discussion that we held at the last RAB
9 meeting, all I want to do tonight is
10 present the data and then just go
11 straight to the conclusions. More
12 detailed discussions and supporting
13 interpretations will be included in the
14 revised FS that Russ spoke about earlier.
15 So tonight I'll quickly review the
16 history of the Site 5 groundwater. I'll
17 discuss the recent developments, which
18 again will be the May 2004 sampling
19 event, and then briefly discuss how the
20 results of that sampling event have
21 either changed or not changed our
22 interpretation of the existing conceptual
23 site model for the site or our
24 interpretation of what's happening out
25 there.



1
2 You just saw this slide before.
3 Here's Site 5, the fire training area.
4 And here's Horsham Road. And the other
5 thing I wanted to point out here, right
6 here is the nearest public supply well.
7 This is the Horsham Township municipal
8 well No. 26, which is located to the
9 south of Site 5. As Jeff pointed out,
10 there's really two source areas here at
11 Site 5. There's the burn ring and the
12 former drum storage area. And it's the
13 storage area that is actually the source
14 of the groundwater chemicals or the plume
15 that is emanating from the site here.

16 The principal chemicals in the
17 plume are the volatile organics or the
18 VOCs and chiefly the chlorinated
19 compounds that we've seen at the other
20 sites such as TCE and 1,1,1-TCA.

21 Now, the historical or the
22 original interpretations of the plume
23 that were based on a relatively limited
24 number of data points were that the plume
25 emanating from here was flowing



1
2 principally in a southerly direction or
3 towards the supply well. Through several
4 ultimate -- several following phases of
5 field investigation where we've installed
6 additional wells and acquired more data,
7 both chemical and hydraulic head data,
8 the existing interpretation now is we see
9 that the plume chiefly is flowing in a
10 northwesterly direction.

11 This slide is included in your
12 handouts. This is the results of the
13 May 2004 sampling round. You can see not
14 every well was sampled, but what we did
15 is we concentrated on what we know are
16 the key wells that allow us to evaluate
17 the plume and how the plume has changed
18 or not changed since the previously
19 sampling event.

20 MR. TURNER: Kevin, they have
21 the handout for the soil, Site 5 soil,
22 not the groundwater. We didn't prepare
23 that for tonight. Sorry.

24 MR. KILMARTIN: All right.

25 MR. TURNER: Is that there?



1
2 I'm sorry. It's in with the slides.
3 Kevin, I'm dumber than I thought. Sorry.

4 MR. KILMARTIN: Basically when
5 we looked at this data -- and again, as
6 was mentioned, these data were acquired
7 because it had been a while since these
8 wells had been sampled and it was a
9 chance to go in and evaluate the present
10 conditions and see how things have
11 changed or not changed. So when we
12 looked at these numbers, we really looked
13 at the data from three different
14 perspectives. Firstly, we wanted to do
15 it as part of the periodic monitoring of
16 the plume and the groundwater conditions
17 between the site and the public supply
18 well and to reconfirm or assure that the
19 plume has not impacted that supply well
20 or is traveling towards it. We also
21 wanted to look at the source area and
22 evaluate the source area relative to are
23 the chemical concentrations decreasing
24 over time due to just natural conditions?
25 And we also wanted to evaluate just the



1
2 overall condition of the plume, that is,
3 is it expanding or continuing to grow in
4 areal extent, has it maybe started to
5 shrink or actually contract or get
6 smaller in its areal extent, or is it
7 pretty much at what we call steady state
8 or constant conditions. So those were
9 really the three issues we wanted to
10 examine in looking at these data.

11 Now, the results of this work
12 and looking at those three questions,
13 one, the data confirmed that the plume
14 has not impacted the public supply well
15 and is not migrating towards that well.
16 You can see here this is well cluster 11
17 that was installed expressly to monitor
18 the groundwater conditions between the
19 site plume and the public supply well.
20 Again, as you see, there were no
21 detections of chemicals in those wells.
22 And the second thing we saw was that
23 similar to the previous round that the
24 VOC concentrations decreased sharply and
25 fairly quickly in that direction towards



1
2 the well and that the higher
3 concentrations are found going from the
4 source area to the northwest or again in
5 the direction of groundwater flow, which
6 is exactly what you'd expect.

7 The second issue we wanted to
8 look at was to look at the condition of
9 the groundwater at the source area and
10 see has that changed. This is the former
11 drum storage area in this vicinity here.
12 It's the source area of the groundwater
13 plume. You can see for this particular
14 round the highest concentrations by far
15 are found right there at the source in a
16 shallow well that's located near the
17 source area and that, in fact, is similar
18 to what we historically find, that that
19 is where the highest VOC concentrations
20 are detected. But what we wanted to do
21 in order to evaluate how does this fit in
22 with what we've seen historically is we
23 went back to the historical data and just
24 plotted how some concentrations are
25 changing or not changing over time.



1
2 These are the results and this is well
3 1SI, which is the well I was just
4 pointing to. It's the shallow well near
5 the source area. And I think what you
6 can see is that overall in a general
7 sense the concentrations in 2004 are
8 lower than the historical concentrations.
9 We have data going back to 1991 when the
10 groundwater investigations first started.
11 And generally the overall slope is
12 showing a decreasing trend. Now,
13 admittedly, you know, this is based on
14 very limited data. It's just several
15 sampling rounds over a span of 13 years.
16 And it's certainly not a constant linear
17 trend, either. It's not a constantly
18 decreasing concentration. We do have
19 spikes or increases in that, but, again,
20 overall it does look like the
21 concentrations are lower now than when we
22 historically started.

23 MR. EDMOND: Kevin, those
24 spikes and trends that you said, do they
25 coincide with drought periods or heavy



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rain periods?

MR. KILMARTIN: That's an excellent question. I mean, that really is a very important question. Briefly, what happens is the position of the water table relative to where the source is can affect the concentration of the dissolved phase going off into the plume. The issue we have here are the data are so sparse that we really don't have enough information to be able to see any relationship on that. What I did to investigate that very issue, I went back into our field logbooks and the historical records to see at the time of sampling what was the water level in the well and was there any relationship between the concentrations and where the water table was at that time. And I just didn't see any relation at all. I couldn't make any conclusion regarding that.

MR. EDMOND: Because I think in the year 2000, wasn't that the drought



1
2 year? Like our pond almost dried up and
3 I think 2000 is pretty close to that bad
4 year when we had very little rain and
5 that shows a spike up. That's why -- and
6 if you look at some of the other sampling
7 rounds or I should say monitoring wells,
8 the 2000 period is when you get that big
9 jump and others it seems like it sets the
10 trend for when it's going down. It's
11 hard to extrapolate any kind of decision
12 from it, but it seems like 2000 is a
13 principal year there.

14 MR. KILMARTIN: Yeah, yeah, I
15 agree, but, again, at the same time, I
16 think to really confidently try to make
17 that conclusion we really would need more
18 frequent sampling to see that.

19 MR. STEPHENS: Also, it just
20 seems to me -- I'm not a statistician --
21 you don't want to try to overanalyze.
22 First of all, one of those is ranging up
23 to 3,500 parts per billion and the others
24 are only in the 10s or even less. So the
25 scale is really distorted or different.



1
2 So to draw a distinction between in the
3 upper right-hand corner, for example,
4 between 6 parts per billion and 3 parts
5 per billion, it's not really significant
6 or even 18 in the lower right-hand corner
7 and 6. You know, those aren't really
8 dramatically different numbers compared
9 to the upper left up around 3,000 parts
10 per billion versus a thousand. They're a
11 little bit different.

12 MR. EDMOND: Comparing apples
13 and oranges.

14 MR. STEPHENS: Certainly
15 drought and all those things have
16 everything to do with it.

17 MR. EDMOND: I was just
18 thinking I know the hydrology, the
19 fractured bedrock and everything, and I'm
20 thinking when the water gets in there,
21 it's rising up and we get more hits, and
22 then when we're in a drought, it's kind
23 of hiding in the fractures.

24 MR. STEPHENS: If you have it
25 present in the liquid phase -- and I



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don't know that we do, do we?

MR. DALE: It's not suspected.

MR. STEPHENS: It's all dissolved.

MR. EDMOND: Then it's floating throughout. But a spike like that can also indicate that a glob of this stuff or, you know, a high concentration area has moved through that area over time and so you took a sample when it happened to be there and it's moving downstream and then it's not there anymore. It can also reflect that. That's a movement of the plume through the ground.

MR. KILMARTIN: And, again, the driver behind this was more I think the issue of after we got the 2004 data, we kind of said, okay, we've got, you know, five rounds or four or five rounds now of data over the past 13 years. Let's step back and see if we can see any meaningful trends of what might be happening here.

MR. STEPHENS: Oh, another factor -- excuse me -- is one of these



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2 compounds, the PCE, is the compound that
3 has the four chlorines. Correct me if
4 I'm wrong. And so, therefore, when we
5 see compounds with three chlorines, the
6 tri's, or two chlorines, they're actually
7 products of the decomposition most often.
8 So that actually can be a good sign to
9 see those. That shows that the
10 perchloroethylene with the four chlorines
11 is actually breaking down. So that is a
12 factor as well.

13 MR. EDMOND: Could be a
14 positive.

15 MR. STEPHENS: Right.

16 MR. KILMARTIN: One significant
17 thing that does jump out is, as you
18 mentioned, if you look at the 1,1,1-TCA,
19 which is the principal chemical component
20 of this plume, you know, originally it
21 was around I think the number is about
22 2,800 as opposed to this last sampling
23 round where it was about 200, 240. So it
24 was quite a bit lower.

25 Okay. The third thing we



1
2 wanted to look at -- Russ, if we can go
3 back to the previous slide for just a
4 second -- was again we just wanted to try
5 to look at the overall extent of the
6 plume, is it continuing to expand and get
7 bigger, is it starting to shrink and get
8 smaller. And what we concluded in
9 looking at the data is we're fairly
10 confident that the plume is not
11 continuing to expand. By that, there are
12 no wells that now have chemicals in them
13 that historically didn't have chemicals.
14 So the plume's not moving into this
15 previously clean area. Similarly,
16 though, using that same logic, we really
17 can't document that the plume is actually
18 shrinking or contracting either. Proof
19 of that would be finding no chemicals in
20 a well that historically always had
21 chemicals in it. And that really didn't
22 occur either. So since we are unable to
23 really document that, we just lastly
24 wanted to look at, well, how about the
25 magnitude of the plume. And by



1
2 magnitude, I'm using that word by
3 discussing the overall concentrations
4 within the plume.

5 Russ, if you can go to the next
6 slide, that's where we plotted again
7 these wells that we have the most
8 historical data for. And the reason that
9 certain wells were not sampled during
10 years and others were is because at that
11 time this well, for example, didn't
12 exist. Remember I said that there's been
13 several phases of investigation. So not
14 every well has as complete a sampling
15 history as others. Again, similar to the
16 discussion regarding just the source
17 area, it seems that overall in a very
18 broad, general sense the magnitude of the
19 plume seems to be going down in the sense
20 that most concentrations are lower today
21 than they were 13 years ago. Now, again,
22 admittedly, this is based on very limited
23 data. It's certainly not a linear or
24 consistent trend. In fact, it's a trend
25 that doesn't even hold up at every



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2 location. You can see at some locations
3 some chemicals are at greater
4 concentrations now than they were back
5 when the investigation started. As was
6 pointed out, for some of these chemicals,
7 what that's indicating is that it
8 actually is a breakdown product that's
9 being created by the destruction of a
10 different chemical. For example, as TCE
11 loses a chlorine, it becomes DCE. So you
12 might expect as TCE decreases DCE might
13 increase. It's hard to find an example
14 where we can prove that that's actually
15 happening, but, again, I think that's
16 related more to the scarcity or sparsity
17 of data.

18 That really is it, if there's
19 any questions I could answer.

20 MR. EDMOND: Any questions for
21 Kevin?

22 MR. STEPHENS: Are there any
23 issues associated with the vertical
24 extent of the contamination? Is the
25 contamination further down in the aquifer



1
2 or is it in a shallower part of the
3 aquifer? Does your monitoring -- your
4 monitoring wells, are they capturing that
5 characteristic?

6 MR. KILMARTIN: Yes, yes.
7 There's figures in the various
8 investigation reports, hydrogeologic
9 cross-sections that rather than look at
10 the plume from a map view looking down,
11 we're looking at it from the side. And
12 what we see is -- at almost every one of
13 these well locations, they're actually
14 clusters where we have wells monitoring
15 different depths at each of those
16 locations. And through looking at the
17 hydraulic head or the water levels in
18 those wells as they vary with depth, we
19 can interpret which way the groundwater's
20 moving within the aquifer. And what we
21 see here -- it's fairly typical -- is the
22 groundwater is moving down. So what
23 happens is as the plume moves away from
24 the source, it actually is migrating
25 downward within the aquifer. And we can



1
2 clearly see that through the well
3 clusters as you move downgradient. So
4 the short answer is yes.

5 MR. STEPHENS: So all these
6 trends you're talking about are
7 applicable throughout the vertical extent
8 of the plume where it's migrating to the
9 northwest and away from the public water
10 supply No. 26?

11 MR. KILMARTIN: Yes, yes.

12 MR. EDMOND: Any other
13 questions for Kevin?

14 Thanks, Kevin. Russ, you got
15 anything?

16 MR. TURNER: No, I don't.
17 That's the end of ours.

18 MR. EDMOND: Nobody else has
19 any questions. I've asked a couple
20 times, big Navy as I like to call
21 Secretary of the Navy, Department of the
22 Navy would like all Restoration Advisory
23 Boards to have a mission statement. So
24 what I did using a model given to me by
25 Ed from Mechanicsburg, Naval Ship Service



1
2 Center Mechanicsburg I think it is, I put
3 together a mission statement for you guys
4 to review and, you know, add, subtract.
5 We'll discuss it again at the next
6 meeting, but it goes something like this:
7 Naval Air Station Joint Reserve Base
8 Willow Grove Restoration Advisory Board
9 mission statement. The Restoration
10 Advisory Board shall provide an
11 interactive forum in which information
12 regarding the environmental cleanup
13 program and Naval Air Station Joint
14 Reserve Base Willow Grove can be
15 reviewed, researched, and, if necessary,
16 challenged in open discussion between
17 representatives of NAS JRB Willow Grove
18 regulatory agencies and the public.
19 Community members of the RAB shall
20 endeavor to voice the questions and
21 concerns of their neighbors to the other
22 participants and they shall serve as a
23 channel to disseminate credible
24 information back to the community. The
25 RAB shall seek to ensure that at the



1
2 conclusion of the project the necessary
3 environmental remediation has been
4 accomplished for the protection, health,
5 safety, and welfare of the community.

6 That's what I came up with.
7 You guys can work on it as your homework
8 assignment for the next RAB meeting.

9 MR. TURNER: Jim, I would like
10 to say -- I don't have anything to add.
11 I apologize to Kevin for -- I think I
12 made enough damage already.

13 MR. EDMOND: They try to keep
14 these as simple and as brief as possible.
15 I think the mission statement kind of
16 summarized what all you folks are here
17 for and what the Navy wants you to be
18 here for. But, again, this is just
19 something I came up with using a rough
20 draft from Mechanicsburg and you're free
21 to move it in a direction that you wish.

22 Besides that, I really have
23 nothing but thank you for coming again.
24 I proposed if I can find my agenda I
25 think it was the 4th of May. This will



1
2 not coincide with the Water Authority
3 meeting, the Sewer meeting. And Eric
4 Lindholt and Mr. Jack Dunleavy and one
5 other person, I can't remember their name
6 right now, who attend this meeting have a
7 problem making this meeting because of
8 that one, so I kind of coordinated that
9 date with them so we can get most
10 community members as we can here. So if
11 there's no objection, we'll do it on the
12 4th of May. See you in the springtime.
13 The weather will be much nicer than it is
14 this evening. Thank you all for coming.

15 - - -

16 REPORTED BY: Kimberly A. Otherwise, RPR, CRR.
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Lawyer's Notes
