



DEPARTMENT OF THE AIR FORCE

20th FIGHTER WING (ACC)
SHAW AIR FORCE BASE, SOUTH CAROLINA

MEMORANDUM FOR 20 MSG/CC

FROM: 20 CES/CEAN

SUBJECT: Restoration Advisory Board (RAB) Meeting Minutes

1. Meeting information:

- a. Date: 30 Jan 2012
- b. Time: 1830
- c. Location: New Beginnings Banquet Facility, 1335 Peach Orchard Road, Sumter, SC 29154
- d. Chairman: Col Walter Fulda, USAF
- e. RAB Members/Alternates and Others in Attendance

City/County Officials

Mr. Bill Rozier, City Representative (Not Present)
Mr. Eddie Newman, County Representative
Ms. Karen Hyatt, County Representative (Alternate)

South Carolina Department of Health and Environmental Control (SCDHEC)

Ms. Rachel Poole, SCDHEC, Columbia Office
Mr. Keith Lane, SCDHEC Region 4, Sumter Office (Not Present)

Civilian RAB Members

Ms. Melanie Bennett (Not Present)
Mr. Daniel Burkett
Mr. Chip Chase
Mr. Charles Firmbach (Not Present)
Mr. Albert Gagnon
Mr. Tony Horton (Not Present)
Rev. Willie Lawson
Dr. Wendell Levi, Jr.
Mr. Ralph Oxendine
Ms. Amanda Skelton
Ms. Elizabeth Williams

Others, Air Force Affiliated

Lt Col Frank Mondo 20 CES/CC (IMA)
Capt Jonathan Carroll 20 FW/JA
Mr. John Ekhoﬀ AFCEE/ERB
Mr. Robert Sexton 20 FW/PA
Mr. Keith Kellner 20 MSG/DI
Mr. Nicholas Muszynski 20 CES/CEAN
Mr. Juvenal Salomon 20 CES/CEAN
Ms. Aliza Tindall 20 CES/CEAN
Ms. Jean Chytil US Army Corps of Engineers
Ms. Molly Maxwell US Army Corps of Engineers
Mr. Keith Hague Shaw E&I, Inc

Global Power For America

Mr. Kenneth Reese	Shaw E&I, Inc
Mr. Denny Jorgenson	URS
Mr. Dave Overbey	URS
Mr. Bob Mallisee	URS
Ms. Cybil Boss	URS
Mr. Kyle Dermatis	URS

Others, State of South Carolina

Ms. Stacey French	SCDHEC
Mr. Joe Bowers	SCDHEC
Mr. Mike Danielsen	SCDHEC

Media Representatives

(Not Present)

Community Members

Mr. Reginald Bulter
 Mr. John Hayes
 Mr. Steven Johnson
 Mr. Melvin Keith
 Ms. Sarah Nathaniel
 Mr. Isadore Nathaniel
 Ms. Loretta Sparrow
 Ms. Jennie Skelton
 Mr. Donald Zeigler

2. Colonel Fulda, 20th Mission Support Group Commander, opened the meeting and welcomed everyone. He expressed his appreciation to the community for their attendance and involvement in the Environmental Restoration Program.

3. Mr. Salomon, Base Restoration Program Manager, served as meeting moderator. He discussed that since the last RAB meeting there have been seven new RAB Community Members. The RAB Members introduced themselves. Mr. Salomon announced that the RAB Community Members voted for Mr. Daniel Burkett as the new RAB Community Co-Chair. Mr. Burkett thanked the RAB Community Members. Mr. Salomon said that there has been a change in tonight's meeting format; a more informal setting, which will consist of eight presentation poster board sessions. Mr. Salomon communicated that the poster board sessions would be briefed one at a time. To start, he introduced Ms. Poole, SCDHEC, who would brief the Resource Conservation and Recovery Act (RCRA) (poster board station #1). The agenda and poster board sessions are attached (Atch 1).

4. Ms. Poole explained the purpose and processes of RCRA; beginning from the investigation of possible release of a contaminant to the permit application. She stated that before the permit becomes final, there is a public period where the community has the opportunity to make comments. Mr. Salomon briefed the RAB (poster board station #2). He talked about the purpose and mission of the RAB. He added that the Shaw AFB RAB Charter was recently updated to accommodate increased RAB community membership. Since the charter has been updated, eleven people have been selected to serve as community members. Last month a RAB Workshop was conducted to train the new members. Mr. Salomon also gave a brief update regarding the Shaw AFB Active Cleanup Sites (poster board station #3). Ms. Chytil, US Army Corps of Engineers, briefed the history of PCE/TCE Plume (poster board session #4). She said it was 1989 when they discovered TCE in the Carolina Mobile Home Park wells and covered the events through 2012 when the Air Force awarded a contract for an independent review of remediation systems.

5. Mr. Salomon introduced Mr. Overby, URS, who briefed the PCE/TCE Plume Conceptual Site Model (poster board session #5). Mr. Jorgenson, URS, discussed the Comparison of PCE/TCE Plume Treatment Systems (poster board session #6). Ms. Boss and Ms. Maxwell, URS and US Army Corps of Engineers respectively, talked about Treatment Technologies (poster board session #7). Ms. Tindall, Portage Environmental Inc., briefed the Community Involvement Plan (CIP, poster board session #8). She mentioned that the most important section of the CIP is the community feedback section. Next month Smith/Associates will be mailing out invitations for an interview or on-line survey and encouraged the community to participate.

6. Community members asked questions throughout the different briefings. Answers to these questions are attached (Atch 2).

7. Colonel Fulda provided closing remarks. He expressed his appreciation to the community and gave special thanks to the RAB members for their continued participation and involvement. He emphasized that Shaw AFB is being transparent in what we are doing to protect human health and the environment. Colonel Fulda thanked everyone for attending and adjourned the meeting.

8. The next meeting is scheduled for 11 Jun 2012 at 1830 at the New Beginning Banquet Facility. Questions regarding the meeting may be directed to Shaw AFB's Public Affairs Office, (803) 895-2019.

//signed-jqs 10 Feb 2012//
JUVENAL Q. SALOMON, GS-12, DAFC
RAB Administrator

Approved as written.

//signed-wjf-7 Mar 2012//
WALTER J. FULDA, Colonel, USAF
Commander, 20th Mission Support Group

Attachments:

1. RAB Agenda and Presentation Posters
2. Questions and Answers

cc:

20 FW/CV/CCS/JA/PA

20 MSG/CC

20 CES/CC/CEA/CEAN

20 AMDS/SGPB

HQ ACC/A7AN (Ms. Margaret Patterson)

AFCEE/ERB (Mr. John Ekhoff)

US Army Corps of Engineers (Mr. Douglas Simpleman)

SCDHEC (Ms. Rachel Poole, Mr. Keith Lane)

Sumter County Public Works Director (Mr. Eddie Newman)

Sumter City Engineer (Mr. Bill Rozier)

RAB Community Members (Mr. Daniel Burkett, Rev. Willie Lawson, Ms. Melanie Bennett, Dr. Wendell

Levi, Jr., Mr. Albert Gagnon, Mr. Ralph Oxendine, Ms. Amanda Skelton, Ms. Elizabeth Williams, Mr.

Chip Chase, Mr. Tony Horton, Mr. Charles Firmbach)



**SHAW AIR FORCE BASE
RESTORATION ADVISORY BOARD
OPEN HOUSE**

New Beginnings Banquet Facility
1335 Hwy 441, Sumter, SC 29154

30 JANUARY 2012

<u>TIME</u>	<u>TOPIC</u>	<u>FACILITATOR</u>
1830	INTRODUCTION/WELCOME/ANNOUNCEMENTS	Col Fulda/Juvenal Salomon
1835	RAB ADMINISTRATIVE ITEMS <ul style="list-style-type: none">▪ RAB Community Co-Chair Position▪ Introduction to Poster Board Sessions	Juvenal Salomon
1845 - 2030	POSTER BOARD SESSIONS <ul style="list-style-type: none">▪ Poster Board Station #1: RCRA Process▪ Poster Board Station #2: RAB▪ Poster Board Station #3: Shaw AFB Active Cleanup Sites▪ Poster Board Station #4: History of PCE/TCE Plume▪ Poster Board Station #5: PCE/TCE Plume Conceptual Site Model▪ Poster Board Station #6: Comparison of PCE/TCE Plume Treatment Systems▪ Poster Board Station #7: Treatment Technologies▪ Poster Board Station #8: Community Involvement Plan	

RESOURCE CONSERVATION & RECOVERY ACT (RCRA) PROCESS

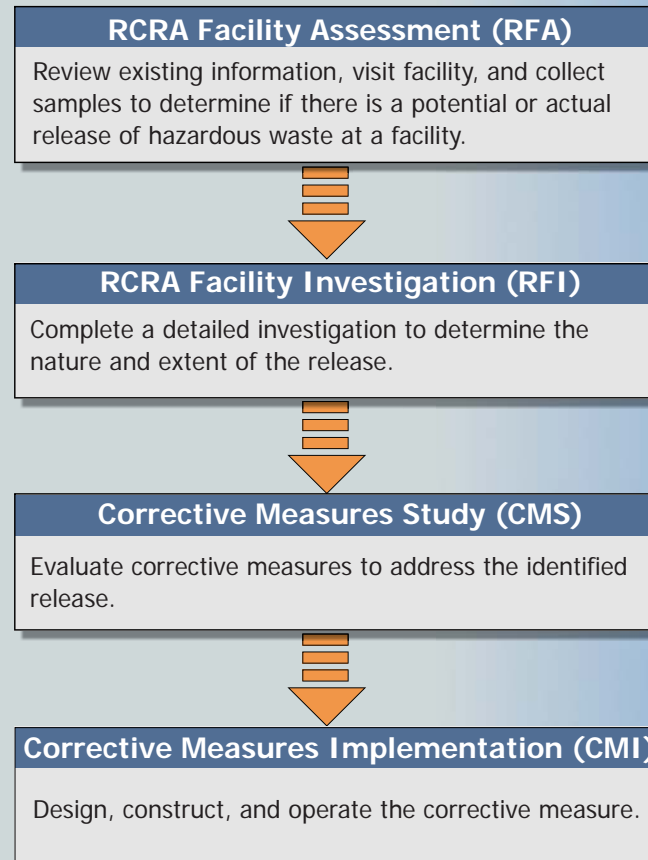
RCRA is a federal statute designed to:

- Protect human health and the environment from the potential hazards of waste disposal
- Conserve energy and natural resources
- Reduce the amount of waste generated
- Ensure that wastes are managed in an environmentally sound manner

The Environmental Protection Agency (EPA) has delegated authority to the South Carolina Department of Health and Environmental Control (SCDHEC) to implement the provisions of RCRA in South Carolina.



PERMIT APPLICATION OR DISCOVERY OF RELEASE



RESTORATION ADVISORY BOARD (RAB)

Restoration Advisory Boards are utilized by the Department of Defense (DoD) to:

- Provide a forum for stakeholders, local governments, etc. to openly discuss cleanup actions
- Provide transparency about cleanup actions and decisions

The RAB was NOT established for:

- 1) Decision making
- 2) Filing or discussing claims
- 3) Personal agendas

SHAW AFB RAB CHARTER

Purpose

Promote community awareness and obtain constructive community review, comment, and input on current and proposed environmental remediation actions in association with Shaw AFB.

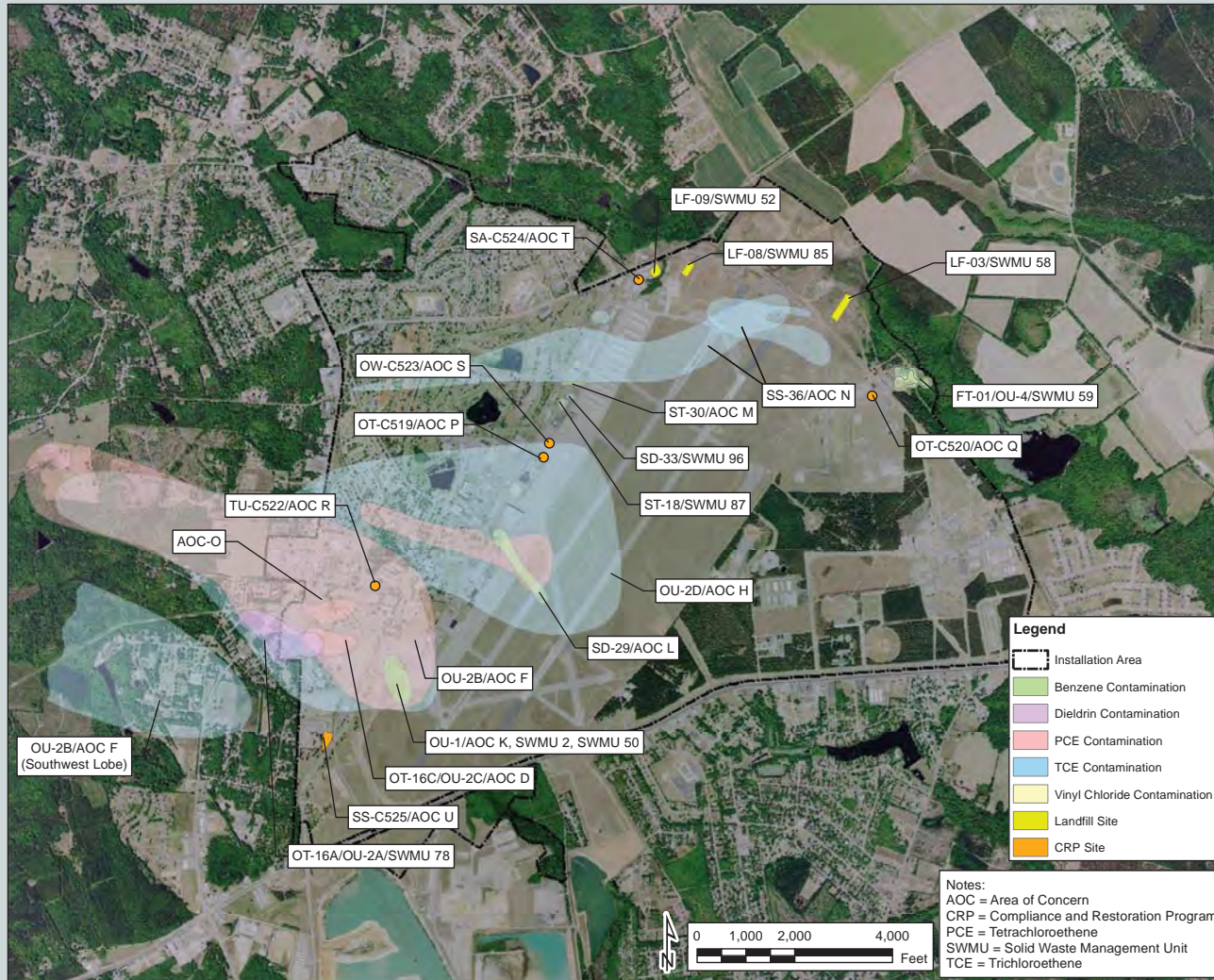
Mission

Establish and maintain open and interactive dialogue between the U.S. Air Force, state regulatory agencies, and the local community concerning the Environmental Restoration Program (ERP) at Shaw AFB.

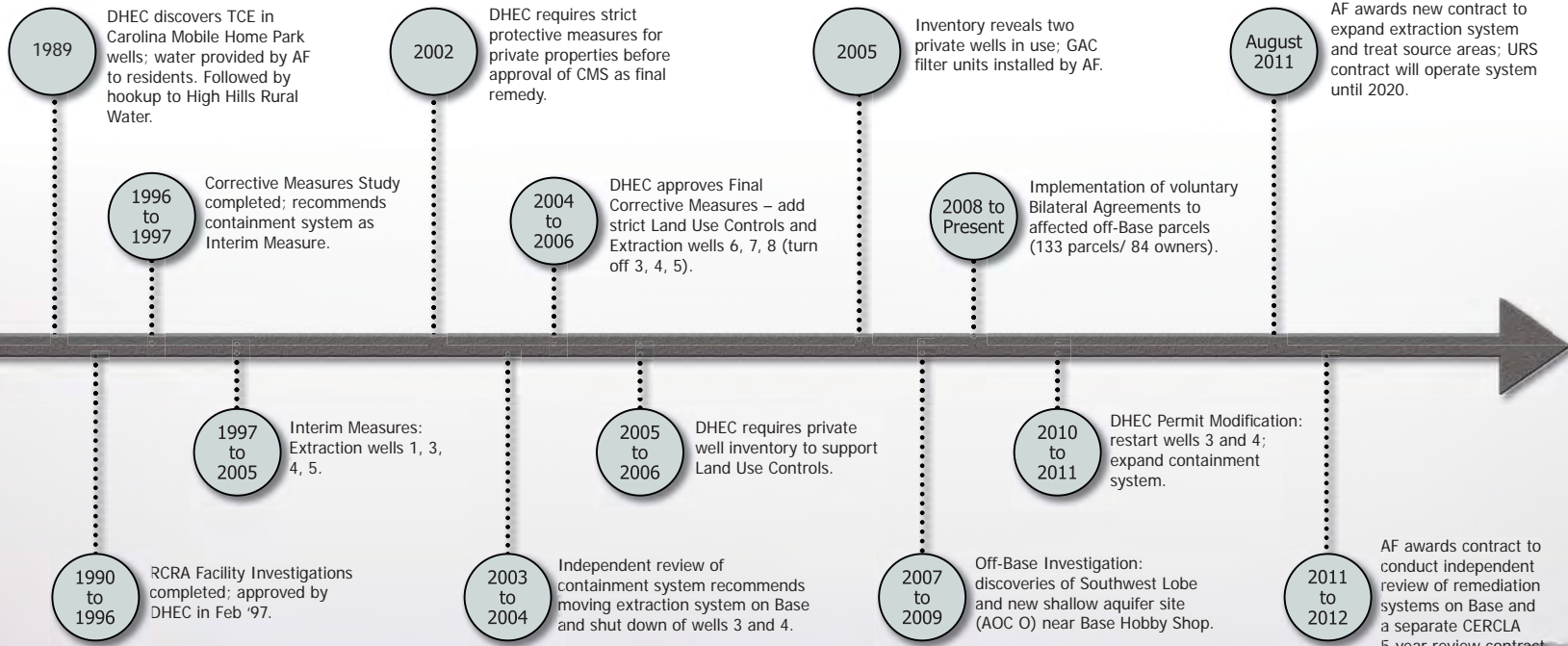
- The RAB is chaired by the Installation Co-Chair and Community Co-Chair (selected by the RAB)
- Members serve voluntarily, without compensation, for a 3-year renewable term

**DIVERSE AND BALANCED MEMBERSHIP
IS THE GOAL!**

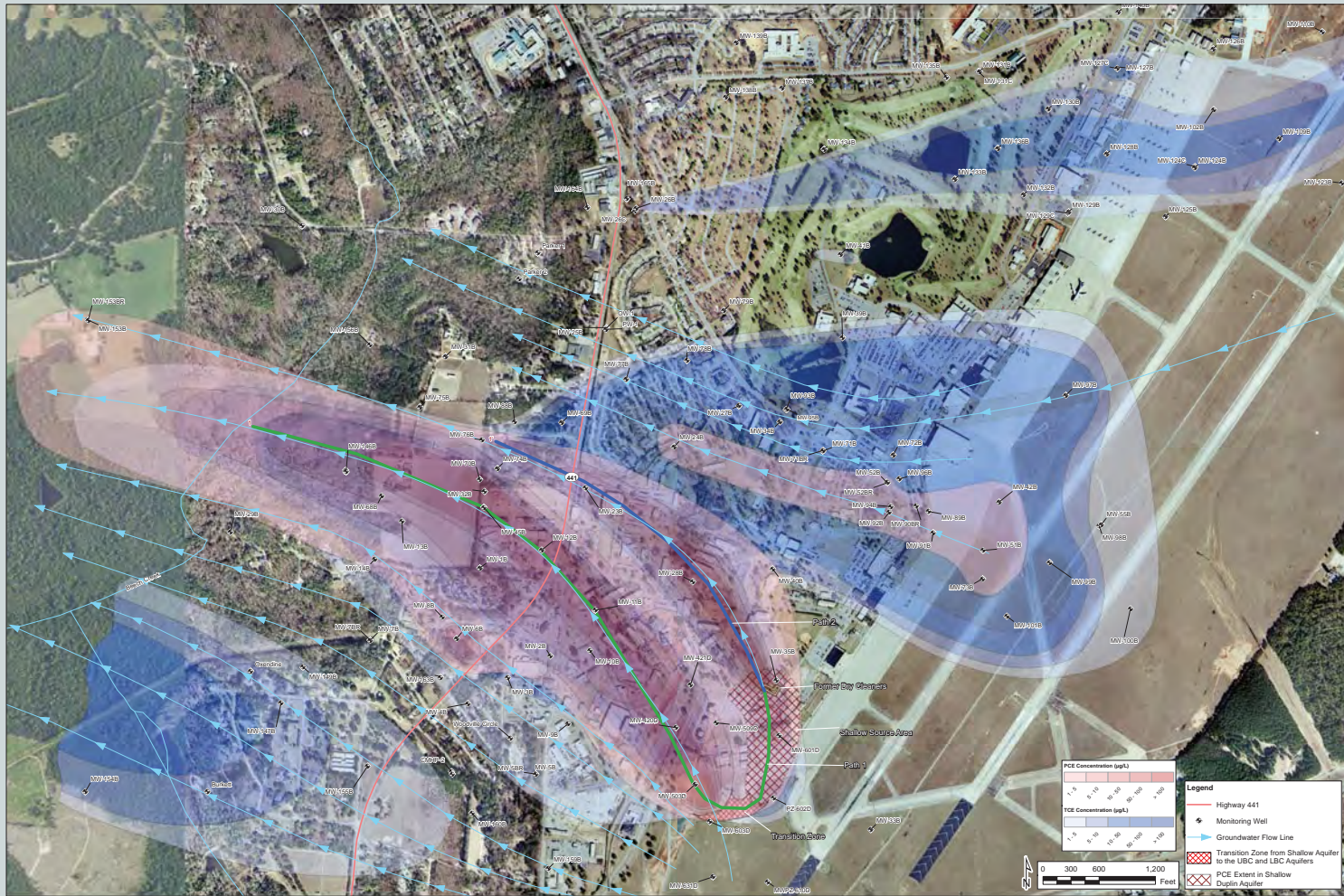
SHAW AFB SITE MAP



AOC F / AOC H HISTORY

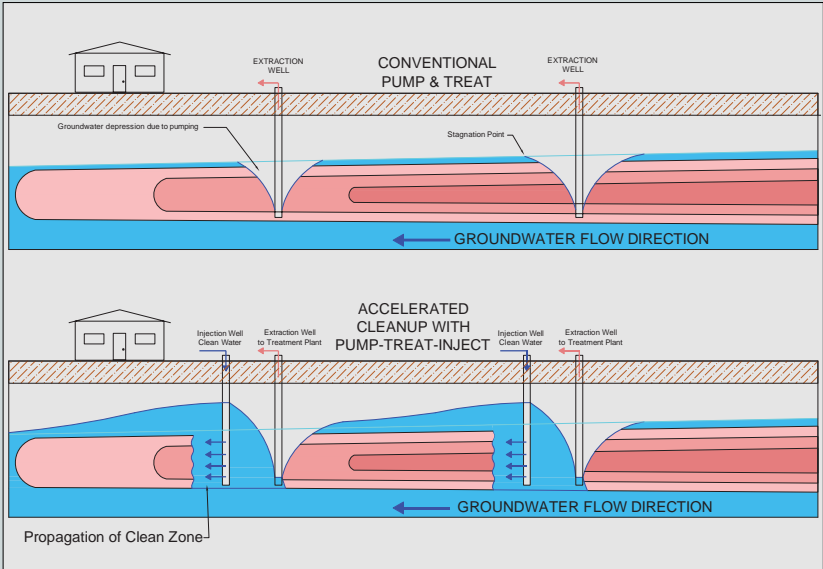
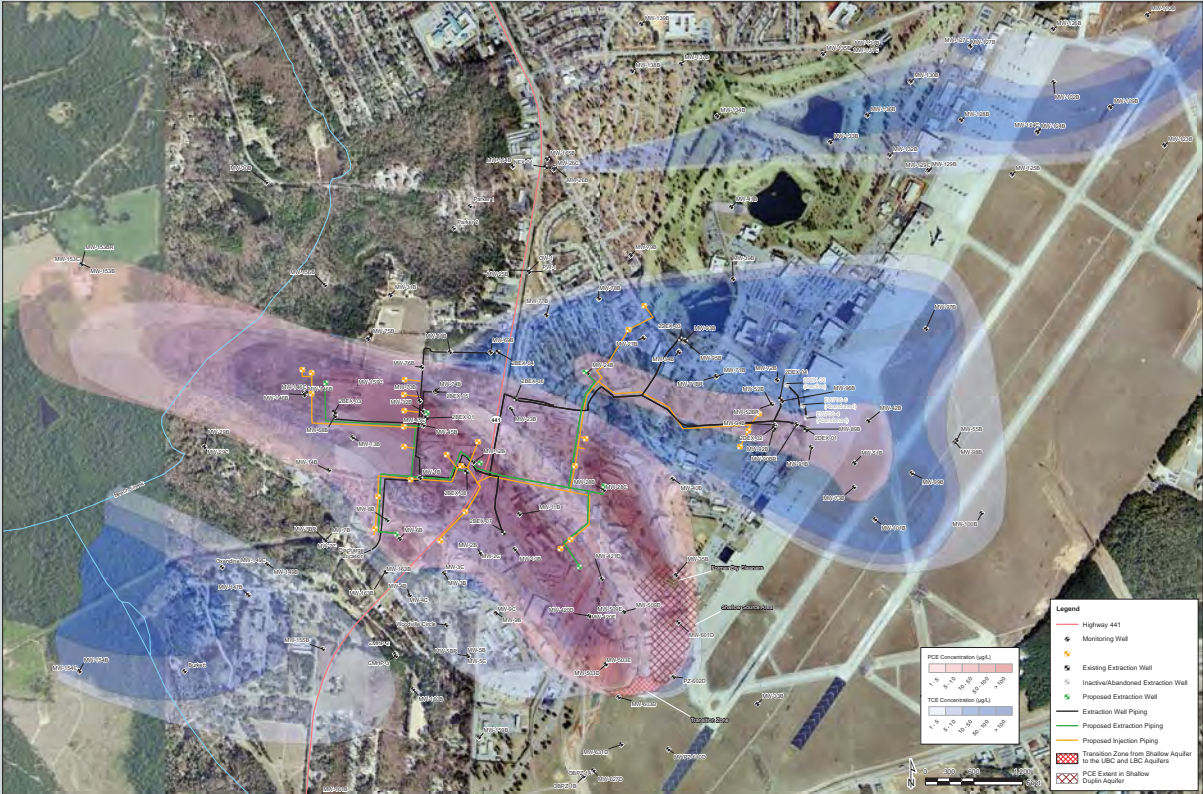


AOC F/AOC H CONCEPTUAL SITE MODEL



Southwest Lobe, AOC F, AOC H, and AOC N Plumes in the Upper Black Creek

COMPARISON OF TREATMENT SYSTEMS AT AOC F/AOC H



TREATMENT TECHNOLOGIES

Granular Activated Carbon (GAC)

- Used to treat liquid (water)
- The contaminant “sticks” to the activated carbon and is removed from the water
- Commonly used in municipal and home drinking-water filter systems to remove odors, taste, and excess chlorine, and also used to treat contaminated groundwater



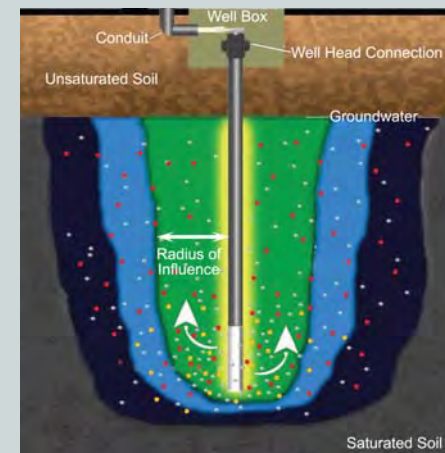
Air Stripping

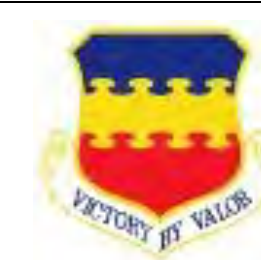


- Used for purification of groundwater
- Transfers contaminants (example: fuel compounds such as benzene) from the groundwater (or liquid stream) into an air stream and is safely released into the environment

Ozone/Hydrogen Peroxide Injection (Perozone)

- Used in-situ (in the ground) to breakdown (oxidize) contaminants in groundwater
- Also used for disinfection of drinking water
- Injection points are installed in the area of groundwater contamination, and hydrogen peroxide and ozone are injected into the subsurface
- The contaminants are broken down into carbon dioxide and water





Shaw AFB Community Involvement Plan (CIP) Update

30 Jan 2012



CIP Overview



- The Comprehensive Environmental Response, Liability & Recovery Act (CERCLA) requires public involvement for sites requiring 6 months or more of cleanup (“removal actions”)
- CERCLA requires the responsible party to develop a CIP that outlines how it plans to involve and inform the public with cleanup



Shaw AFB CIP Background



- Shaw AFB is not technically a Superfund site, but the Air Force and South Carolina Department of Health & the Environment follow the spirit of CERCLA in regulating the cleanup program at Shaw AFB
- The last updated CIP was in 2009 based on community outreach questionnaires that were mailed to local residents
- RAB participation is highly encouraged



Survey and Community Interviews



- Interviews and surveys will seek public opinions about cleanup and help identify key concerns as well as gather feedback regarding public communication preferences
- Community interviews and an on-line survey will be conducted in February 2012



Schedule of Planned Activities



- **Week of 6 Feb 12** – Invitation and information letters will be sent to national, state and local government leaders, local businesses, schools, churches, civic, environmental and economic development groups and community members; online survey opens
- **12 Feb 12** – An ad announcing the CIP will run in the Sunday edition of local newspapers
- **6-17 Feb 12** – Both phone and in-person interviews will be scheduled
- **22-23 Feb 12** – Interviews will be conducted



CIP Path Forward



- Community feedback forms the foundation of the CIP
- Other data such as site status, maps and stakeholder information will be updated/validated
- Targeted delivery is 3rd quarter, FY12. This will ensure a 3-year update of the existing CIP



Attachment 2
Questions from the Restoration Advisory Board (RAB), 30 Jan 2012

*(*To protect an individual's privacy, questions pertaining to an individual's specific issues or processes were omitted in the minutes and will be addressed in a different forum. For example, status of a claim is dealt with individually and on a case-by-case basis. Additionally, questions raised that are out of bounds of the RAB charter were not included in these minutes.)*

1. How do we request copies of cleanup reports?

Reports can be requested from either the South Carolina Department of Health and Environmental Control (SC DHEC) or Shaw AFB, through their respective Freedom of Information Act (FOIA) request procedures.

For SC DHEC, public records may be reviewed in the Freedom of Information Center by filing a written request. If requested reports are available, the Center will arrange for reviewing and copying of records. DHEC's Freedom of Information Center is located at SC DHEC, 2600 Bull Street, Columbia, SC 29201, Tel: 803-898-3882.

For Shaw AFB, send requests for 20th Fighter Wing records to 20 CS/SCOKR, 504 Shaw Dr., Shaw AFB, SC 29152-5028, Tel: (803) 895-1630. Please ensure you mention "FOIA" and indicate a willingness to pay fees associated with the processing of your request or, in the alternative, why a waiver of fees may be appropriate. Written requests may be received by postal service, facsimile or electronically at <https://www.foia.af.mil/palMain.aspx>. Faxed or e-mailed requests must have a mailing address included since it may not be practical to provide a substantive response electronically.

An index of the Shaw AFB Administrative Record is available for viewing at the downtown Sumter Public Library. RAB members can also call the Base Environmental Office to arrange for viewing of specific records.

2. What does "Site Closure" mean and how does it differ from other zoning restrictions?

A contaminated site is closed when SC DHEC determines that regulatory action is no longer necessary because all corrective action goals have been achieved. Site Closure is defined as the end objective such that no additional investments of time or money are required at a site, restrictions are not required (e.g. Land Use Control /Institutional Controls (LUC/ICs) such as Bilateral Agreements).

"Site Closure" only pertains to cleaning up of sites under the Air Force's Environmental Restoration Program, it is separate and different from property zoning restrictions imposed by the city or county, or restrictions imposed due to airfield operations (e.g. Clear Zones).

3. What about Bilateral Agreements, isn't this some type of a restriction?

The Air Force and SC DHEC want to ensure that human health is protected while the US Air Force cleans up the groundwater. In addition to on-going groundwater cleanup, a series of layered administrative controls were required by SC DHEC to protect human health and the environment by preventing people from doing things on the affected land that would interfere with the clean-up and/or expose themselves to the contamination. Among these controls is the voluntary bilateral agreement.

Signing the bilateral agreement is voluntary. The state of South Carolina requires all landowners to disclose certain conditions associated with the property, including environmental conditions, The bilateral agreements make sure that you and anyone who may own your land should you decide to sell it, are aware of the groundwater contamination. Since the agreement is filed with your deed, the subsequent landowner is sure to be aware of the contamination.

4. How much water has been extracted? Put volume in terms easily pictured.

From 1998 to date, roughly 2.01 billion gallons of water have been extracted and processed in our efforts to remove TCE/PCE and cleanup the groundwater. 2.01 billion gallons correspond to approximately 3,045 Olympic-size swimming pools (~660,000 gallons depending on depth).

5. How long will it take for the plume to reduce and what volume do you expect it to be reduced by?

With current conditions (a central air stripper with a network of 10 extraction wells), the new contractor estimated that cleaning up the co-mingled plumes that is impacting off-base residents will take about 180 years.

With new US Air Force direction on accelerated site completion, the new contractor proposed expanding the number of extraction wells, increasing the capacity of the air stripper and re-injecting treated groundwater. With this more aggressive approach, the anticipated cleanup time will be reduced by 75 percent, from ~180 years down to ~45-50 years.

6. What vapor intrusion studies can be done?

A screening-level evaluation of the potential for vapor intrusion at the Travis residence was originally conducted in 2007 in conjunction with the off-base private well inventory effort. The evaluation addressed subsurface vapors of PCE and TCE in soil gas from concentrations in the shallow groundwater aquifer (about 32 ft below ground surface) and the deep Upper Black Creek groundwater aquifer (about 145 ft bgs).

The evaluation applied the EPA's Johnson and Ettinger model to the maximum detected concentrations of PCE and TCE to estimate potential indoor air concentrations. The estimated potential indoor air concentrations of both PCE and TCE fell below EPA's cancer risk trigger levels to warrant further investigation because there is no risk of vapor intrusion.

Because of the concerns expressed at the RAB meeting, Shaw AFB is taking action to continue to monitor shallow wells and soil in the area around the Travis residence for potential vapor intrusion impact.

7. What about the impact of Dieldrin, since this is different from TCE/PCE and has a different treatment requirement?

The status update of the Dieldrin site has been briefed at every RAB public meeting since the final remedy was selected in 2009.

A separate fact sheet was prepared which further details the history of the site, actions taken, path forward to close the site and its health impacts is attached (Atch 1). (After the formal poster presentation, the resident was shown the dieldrin plume configuration on the map in relation to his property.)

8. What were the levels of contamination before active treatment was started?

Shaw AFB started investigating most of the sites as early as 1984. Availability of collected contaminant levels vary depending on site identification, specific area of concern within a site, the depth being looked at, and what contaminant to check as one site may have multiple contaminants of concern.

9. Regarding wells and springs located in private parcels, will samples be taken?

To maintain consistency in sampling methods and results, the preferred way is to take samples at DHEC-approved monitoring wells. Sampling of private wells and springs are dependent on detection results at nearby MWs and the current migration path of the TCE/PCE plume, and are dealt with on a case-by-case basis. Part of the challenge is that, in most cases, the specifications of the private wells and sources/pathways of the springs

are not known, and may not necessarily be related to or possibly even complicate the site contamination that is being investigated.

Since the RAB meeting, we have reviewed and visited springs and private wells located in the vicinity of the off-base plume. These identified springs and private wells will be considered for sampling at the next scheduled spring sampling program.

Attachment:
Dieldrin Fact Sheet



SITE OT-16A

Shaw Air Force Base, S.C.

One of the four, off-base, active cleanup sites here is OT-16A, located on the west side of the base. Approximately 30 feet below ground in the shallow Lang Syne Aquifer, it was discovered in 1995 and contains a dieldrin plume.

BACKGROUND

Dieldrin: From the 1950s until the 1970s, farmers in South Carolina commonly used dieldrin as a pesticide on crops including corn and cotton. The Environmental Protection Agency banned dieldrin use in 1974, except to control termites, because of concerns about damage to the environment and potentially to humans. In 1987, EPA banned all use. There are no federal drinking water standards for dieldrin.

The Air Force never used dieldrin here. It purchased the property in the 1950s and built a vehicle maintenance area on the site in 1954. Before its Air Force use, the land was private cotton fields. The Air Force believes the dieldrin at the site is from the old agricultural use.

CLEANUP

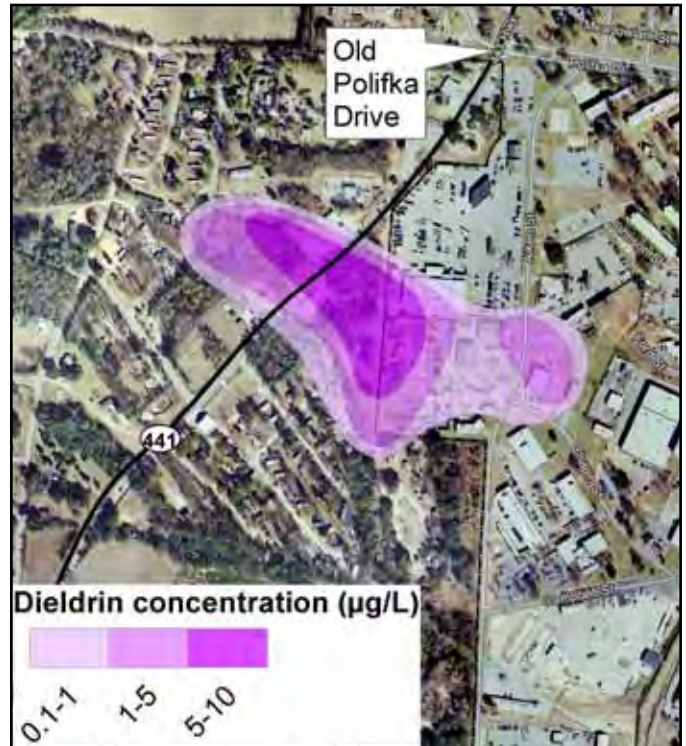
Even though your Air Force did not create the dieldrin problem, it is committed to cleaning up the soil and groundwater. So, in cooperation with the South Carolina Department of Health and Environmental Control, in January 2002, the Air Force removed 161 tons of dieldrin contaminated soil, disposed of the soil at a hazardous waste landfill and refilled the site with 390 tons of clean soil.

Tests have shown that the dieldrin in the groundwater is not moving. There are no exposure pathways to humans through soil or water. Also, the Air Force has monitored the groundwater and has set up some land use controls at the site. Monitoring will continue until at least 2025.

These cleanup efforts require the cooperation and effort of many people and groups. The Air Force, DHEC, environmental contractors and the base's neighbors all work together to successfully protect human health and the environment.

SITE OT-16A AT A GLANCE:

- Discovered: 1995
- Contaminant: Dieldrin
- Possible source: Believed to be pesticide use on cotton before 1954
- Location: Shallow "Lang Syne" Aquifer
- Cleanup remedy: Surface soil removed and replaced in 2002
- Status: Plume monitored; no exposure paths



Map depicting the dieldrin plume at site OT-16A at Shaw A.F.B., S.C.



Site OT-16A was a private cotton field prior to being purchased by the Air Force in the 1950s. The Air Force believes that the dieldrin found in groundwater at the site is due to agricultural pesticide used on cotton crops before 1954.

POINTS OF CONTACT

Mr. Rob Sexton

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20th Fighter Wing Office of Public Affairs
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Shaw AFB, SC 29152
803-895-2019 / robert.sexton@shaw.af.mil

Ms. Rachel Poole

Bureau of Land and Waste Management
South Carolina Department of Health & Environmental Control
2600 Bull Street
Columbia, SC 29201
803-896-4073 / poolerd@dhec.sc.gov

FOR MORE INFORMATION

U.S. Environmental Protection Agency: www.epa.gov
South Carolina Department of Health & Environmental Control: www.scdhec.gov

