



# DEPARTMENT OF THE AIR FORCE

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

MEMORANDUM FOR 20 FW/CV

FROM: 20 CES/CEAN

SUBJECT: Restoration Advisory Board (RAB) Meeting Minutes

1. Meeting information:

- a. Date: 20 August 2012
- b. Time: 1830
- c. Location: New Beginning Banquet Facility, 1335 Hwy 441, Sumter, SC 29154
- d. Co-Chairman: Col Lance Kildron, USAF Chairperson
- e. RAB Members/Alternates and Others in Attendance

City/County Officials

Mr. Eddie Newman, County Representative

Mr. Bill Rozier, City Representative (Not Present)

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)

RAB Community Members

Mr. Daniel Burkett (RAB Community Co-Chair)

Ms. Melanie Bennett (Not Present)

Mr. Chip Chase

Mr. Charles Firmbach (Not Present)

Mr. Albert Gagnon

Mr. John Hayes (Not Present)

Mr. Tony Horton

(Not Present)

Rev. Willie Lawson

Dr. Wendell Levi, Jr.

Mr. Ralph Oxendine

(Not Present)

Ms. Amanda Skelton

Ms. Elizabeth Williams (Not Present)

Others, Air Force Affiliated

Col Scott Arcuri 20 MSG/CC

Mr. Keith Kellner 20 MSG/DI

Lt Col Terrence Walter 20 CES/CC

Capt Sherwin Ignacio 20 FW/JA

Mr. Robert Sexton 20 FW/PA

Lt. Earon Brown 20 FW/PA

Maj Brian Hughes 20 AMDS/SGPB

Mr. Nicholas Muszynski 20 CES/CEAN

Mr. Juvenal Salomon 20 CES/CEAN

Ms. Aliza Tindall 20 CES/CEAN

Mr. Doug Simpleman US Army Corps of Engineers

Ms. Patti Thomason	US Army Corps of Engineers
Mr. Dave Overbey	URS
Mr. William Hayes	URS
Mr. Kyle Dermatis	URS

Others, State of South Carolina

Mr. Michael Danielsen	SCDHEC
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Media Representatives

(Not Present)

Community Members

Ms. Brenda Fields  
Ms. Karen Westmoreland  
Ms. Jennie Skelton  
Ms. Gaye Eaves  
Mr. James Eaves  
Mr. Steven Johnson  
Mr. Donald Zeigler  
Mr. Melvin Keith

2. Mr. Salomon, Base Restoration Program Manager, served as meeting moderator and opened the meeting. He introduced the new 20th Fighter Wing Vice Commander, Col Lance Kildron.
3. Col Kildron opened the meeting by thanking the community for their attendance. Shaw AFB is committed to cleaning up the legacy sites and being good neighbors to the Sumter Community.
4. Mr. Salomon facilitated the remainder of the meeting. The meeting agenda included the introduction of RAB members and the purpose of the meeting. He introduced the new 20th Mission Group Commander, Col Scott Arcuri. He highlighted the meeting's focus on seven (7) topics: Shaw AFB Environmental Restoration Program clean-up goals, request to access private properties, drilling additional monitoring wells, 2012 sampling event, soil vapor sampling results and the Community Involvement Plan. The slide presentation is attached (Atch 1). The purpose of this meeting was to solicit feedback from the community and provide updates regarding environmental cleanup of legacy sites. He expressed that the ultimate goal is to be transparent to what the base is doing to clean up the contamination.
5. Mr. Salomon briefed the Shaw AFB Environmental Restoration Program clean-up goals. The new direction of the Air Force is site closeout with unrestricted land use. The Air Force's solution is to leverage contractor's expertise to close the sites. Shaw AFB is the first base in Air Combat Command to award a Performance Base Contract (PBC) under the new site closeout direction. URS Corp. was awarded the contract in September 2011. The contractor's proposal included closing of 15 of the 23 sites by the end of their performance period, September 2020. The challenge is not all sites can reach site closeout by this period of performance. The objective of the remaining eight (8) sites is to take specific actions to shorten the life cycle. More than half of the \$19.8M PBC cost is invested in shortening the cleanup duration of the co-mingled PCE/TCE (Perchloroethylene/Trichloroethylene) plume migrating off base. With the current treatment in place, URS Corp. estimated that it will take 180-200 years to clean it up. With a more aggressive approach, by tripling the number of treatment wells, it will cut the life cycle down to 45-50 years.

6. Mr. Salomon briefed of upcoming activities. Currently Shaw AFB is in the process of requesting permission to access private properties. There are about 50 long-term monitoring wells off base and two-thirds of these wells (located in 16 parcels) have right-of-entry (ROE) agreements expiring or have expired. The US Army Corp of Engineers, Savannah District (Department of Defense's real estate experts), is engaging with the property owners to negotiate long-term easements so Shaw AFB can continue to monitor these wells. He clarified the difference between an ROE and an easement. An ROE is temporary and used when initially installing a monitoring well as it is uncertain whether it will be a good sampling well or not. If there is a long-term need for the well, then an easement will be negotiated with the property owner.

7. Col Kildron requested Mr. Salomon to explain what the various plumes represent. Mr. Salomon displayed a simplified cross section of the base, showing the different layers underground. In the shallow aquifers called Lang Syne and Duplin, the underground water source flows west to east. In the lower aquifers, Upper and Lower Black Creek, the water source flows east to west towards the Wateree River. TCE and PCE are heavier than water and will sink to the lowest point in the ground. Spills along the runway went into the Duplin shallow aquifer flowing east and found their way into the deeper aquifer and flowed west towards off base property. Underground water source is soaked in soil like a sponge and flows like a slow-moving 'slug', moving only a few inches a day. Fuel-based or petroleum-based contaminants, like benzene, are lighter than water and tend to stay in the shallow aquifers. Along the base's west boundary, the PCE/TCE contamination tend to stay in the Lang Syne shallow aquifer, as there is an impermeable thick clay layer that keeps the PCE/TCE sinking further down into the deeper aquifers.

8. Mr. Salomon discussed two other upcoming activities: drilling additional monitoring wells and the ozone sparging pilot study. This past July, URS Corp. started an extensive drilling program that will be completed in September. Additional monitoring wells are being installed to characterize and further delineate the plumes. One of the focus areas is the shallow aquifer around the airfield because this is where higher concentrations of TCE and PCE are located. Cleaning up these shallow areas will shut off the contaminant flow that is feeding the plume in the deep aquifer. Prior to designing and installing the groundwater capture system(s), data collected from these new wells will further refine the footprint of the plume(s). Another upcoming activity is the ozone sparging pilot study, which is scheduled for September-November 2012 timeframe. Ozone sparging is a proven technology; the reason for the pilot study is to determine its effectiveness and radius of influence in the area and depth it will be applied. RAB members will be invited on a field visit this fall.

9. Mr. Salomon briefed three topics in response to questions from the January 2012 RAB open house: the 2012 sampling event, soil vapor sampling results and Community Involvement Plan (CIP). Every year Shaw AFB is required to sample roughly 350 monitoring wells on and off base. A RAB member expressed concern that the plume is heading towards his property. During the 2012 spring sampling event, San Souci Farm's stock wells and springs were also sampled, and no TCE or PCE were detected. Responding also to another community member's concern regarding vapor intrusion, selective soil vapor sampling was completed near Shaw AFB's west annex boundary where the highest levels of TCE/PCE were detected. Soil vapor field sampling results confirmed the same results from previous screening calculational studies, concluding very low risk levels, using EPA's risk assessment guidelines. In terms of impact off base, no TCE/PCE vapor detections recorded coming from the deep aquifer (150 feet below surface) and from the shallow aquifer (30 feet below the surface). Another sample was collected on base where the highest concentration of the contamination in the shallow aquifer is located. Low-level vapors were detected in the soil, but the risk calculation was so low that no further action is required. The results of the CIP were briefed. Individuals that participated were well informed. Some preferred e-mail communication, quarterly newsletters and a web site. The base Environmental Office is working with Public Affairs on a website to provide access to the factsheets, newsletters and information concerning Shaw AFB's environmental cleanup program.

10. Community members posted a few questions. Answers to these questions are attached (Atch 2).

11. Prior to closing, Mr. Salomon sought inputs from the RAB panel. Rev. Lawson recommended that invitations be extended to Third Army to attend these meetings. Mr. Gagnon recommended that an information pamphlet be put together for potential homebuyers explaining what is going on regarding Shaw AFB cleanup program off base.

12. Colonel Kildron provided closing remarks. He expressed that he is a homeowner in Sumter as well. How does he know what is under his property? The positive factor is Shaw AFB knows about the contamination, cleaning it up and addressing the concerns of the community. He thanked Rev. Lawson, who also serves as Executive Board member of the High Hills Rural Water Company, for getting out the ultimate note that High Hills is providing clean water. (High Hills is the public water service provider for all the residents along Shaw AFB's west boundary.)

13. The next meeting will be scheduled in six months, around January 2013, starting at 6:30 pm 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-29Aug2012//  
JUVENAL Q. SALOMON, GS-12, DAFC  
RAB Administrator

Approved as written.

//signed-lak-19 Dec 12//  
LANCE A. KILDRON, Colonel, USAF  
Vice Commander, 20th Fighter Wing

Attachments:

1. RAB Presentation Slides
2. Question and Answer Session

cc:

20 FW/CV/JA/PA

20 MSG/CC

20 CES/CC/CEA/CEAN

20 AMDS/SGPB

AFCEE/ERB (Mr. John Ekhooff)

US Army Corps of Engineers (Mr. Doug 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. Chip Chase, Mr. Charles Firmbach,

Mr. Albert Gagnon, Mr. John Hayes, Mr. Tony Horton,

Mr. Ralph Oxendine, Ms. Amanda Skelton, Ms. Elizabeth Williams)



# *20th Fighter Wing*



## ***RESTORATION ADVISORY BOARD***

***“Welcome”***



**Col Lance A. Kildron  
Vice Commander  
Shaw Air Force Base**

**20 August 2012**



# Agenda



- **Purpose / Mission**
- **Shaw AFB ERP Cleanup Goals**
- **Upcoming Activities**
  - **Request Permission to Access Private Properties**
  - **Drill Additional Monitoring Wells**
  - **Ozone Sparging Pilot Study**
- **Response to Questions**
  - **2012 Sampling Event**
  - **Soil Vapor Sampling Results**
  - **Community Involvement Plan (CIP)**
- **Closing Remarks**



# ***RAB Purpose/Mission***

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- **Shaw AFB RAB is guided by our 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**



# Question Cards



- Health       Technical  
 Legal       Other

Question:

What is ...?

John Doe  
123 Question St.  
Sumter, SC 29154  
(803) 895-XXXX

***Please turn in question cards during intermission.  
Questions will be addressed after briefing.***



# Shaw AFB ERP Cleanup Goals



- **New AF direction ... Site Closeout (SC)**
  - SC = Unrestricted Use / Unrestricted Exposure (UU/UE)
- **23 remaining active ERP sites to cleanup**
  - Includes 6 “new” post-1986 compliance cleanup sites
- **Solution: Performance-Based Remediation Contract**
  - Awarded in 2011, \$19.8M (FY11-15 funding)
  - Objective: Close 15 sites by 2020 (end of contract period)
- **For remaining 8 open sites, reduce life cycle costs**
  - 3 TCE/PCE plumes (in deep aquifer, long cleanup period)
  - 3 landfills (to achieve SC, costly removal of buried waste)
  - 1 Dieldrin pesticide plume (persistent, long half-life)
  - 1 fuel spill site (in shallow aquifer but underneath runway)



# *Upcoming Activities*

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- **Request Permission to Access Properties**
- **Drill New Monitoring Wells**
- **Ozone Sparging Pilot Study**



# ***Request Permission to Access Private Properties***

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- **Purpose:**

- Access is necessary to investigate contamination and/or for cleanup effort

- **Two Types:**

- Right of Entry (ROE) – short-term; up to 5 years
- Easement – long-term (30-year); can be cancelled if property cleaned up sooner

- **Scope:**

- Involves existing monitoring wells on 16 private parcels
- Agent (for easements): USACE-Savannah\* Real Property Ofc
- July 2012 thru Jan 2013

\*Note: USACE-Savannah – U.S. Army Corps of Engineers, Savannah District



# *Request Permission to Access*

## *Private Properties* (continued)

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### ■ Approach:

- Face-to-face meetings, maps, explanations
- Request permission from owner/resident to access property; it is necessary for cleanup effort, and is a benefit to community as a whole



# *Drill New Monitoring Wells*



## ■ **Purpose:**

- Primarily to aid in design of groundwater capture system(s), involving eight (8) cleanup sites

## ■ **Scope:**

- ~126 monitoring/injection wells & probes
- Begun mid-July, through September 2012
- Some inside airfield area
  - Requires airfield temporary construction waiver
- Some located off-base
  - Use County right-of-ways to minimize access to private parcels
  - Request permission to access to private parcels will require ROEs\* (identified 5 locations)

\*Note: ROE – Right-of-Entry



# Ozone Sparging Pilot Study



## ■ Purpose:

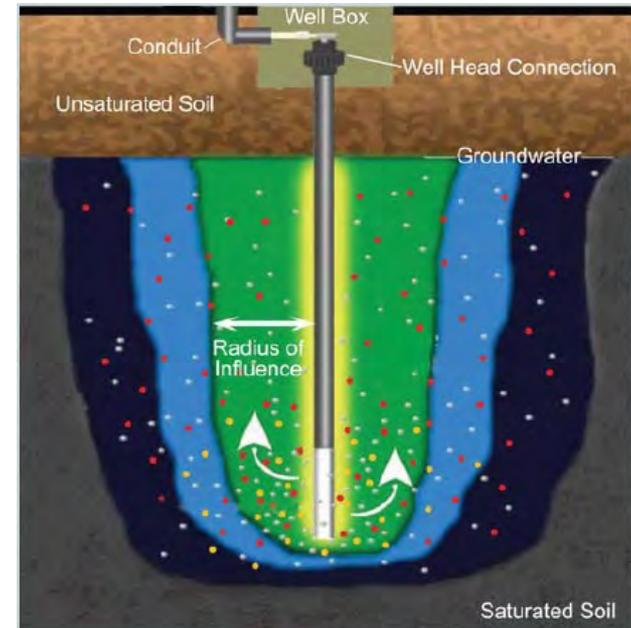
- Study will determine effectiveness and radius of influence of ozone sparging

## ■ Location:

- FT-01 (SWMU 59), old fire training pit

## ■ Approach:

- Used in-situ (in the ground) to breakdown (oxidize) contaminants in groundwater
- Injection points are installed in the area of groundwater contamination, and oxidizing agent (ozone) is injected into the subsurface
- The contaminants are broken down into carbon dioxide and water
- Two-month test window (Sep-Nov 2012)





# *Response to Questions*

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- **2012 Sampling Event**
- **Soil Vapor Sampling Results**
- **Community Involvement Plan (CIP)**



# 2012 Sampling Event



## ■ Purpose:

- Collect data to monitor & report cleanup progress at various sites

## ■ Scope:

- Covered 350 monitoring wells, on- & off-base

## ■ Results:

- Conducted March-April 2012
- San Souci Farms (Dr Levi)
  - On migration pathway of co-mingled TCE/PCE plume
  - No detections of TCE or PCE at “stock wells and springs”



# Soil Vapor Sampling Results

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## ■ Purpose:

- To address community concerns about TCE/PCE vapors that may enter their homes from contaminated soils or groundwater

## ■ Scope:

- Locations selected based on relative highest contaminant levels, nearest base boundary and community
  - Locations represented all three impacted aquifers
- Samples of soil vapor were collected at depth of 5 feet



# Soil Vapor Sampling Results

(continued)



## ■ Results:

- No PCE or TCE vapors detected in soil in area above the deep aquifer groundwater plume (OT-16B / SS-35)
- No PCE or TCE vapors detected in soil near off-base shallow aquifer groundwater plume (CG-38 – northwest)
- Low level vapors detected in soil above on-base shallow groundwater plume (CG-38 - southeast)

## ■ Overall Risk:

- No increased risk of vapor intrusion resulting from groundwater contamination from the 3 aquifers impacted by contamination
- Soil vapor sampling confirms results from groundwater samples used to evaluate vapor intrusion



# Community Involvement Plan (CIP)



- **Purpose: Determine most effective methods of conducting community involvement efforts**
- **Approach: Multi-media survey conducted Feb 2012**
- **Results:**
  - No. of respondents was not large enough for statistical analysis ... but provided valuable comments/insights
  - Most respondents are well informed of base cleanup efforts
  - Preferred method of communication
    - (1) E-mails, (2) Newsletters, and (3) Shaw AFB Website
    - Desired frequency: Quarterly
  - Most respondents are not aware of or have not used the Administrative Records / Information Repository (AR/IR)



# *Intermission*

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- **10 minutes**
  - **Please turn-in question cards**



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# *Questions & Answers*



# Closing Remarks

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- **Inputs from Board Members**
- **Action Items**
- **Address questions to Shaw AFB Public Affairs**
  - (803) 895-2019
- **Administrative Records/Information Repository (AR/IR)**
  - Contact Shaw AFB FOIA Manager, (803) 895-1630
    - <http://www.shaw.af.mil/library/foia.asp>
- **Next Meeting**
  - To be determined (request RAB members feedback)



**Attachment 2**  
**Questions from the Restoration Advisory Board (RAB), 20 August 2012**

(\* Questions and answers were paraphrased for clarity.)

**1. Questions during presentation:**

**a. Are we at risk if we are living on contaminated property?**

*No. All residents ,except for two who have active drinking water wells, receive their water from High Hills Rural Water Company. In 2006 Shaw Air Force Base (AFB) surveyed off-base property for private wells; it was discovered that two residents had active drinking water wells. Shaw AFB installed filter systems and the wells are sampled and monitored monthly. High Hills Rural Water Company's wells are located north of the base, away from the contamination. This water is monitored and safe to drink.*

*Col. Kildron stated one is at risk only if that person drills a drinking water well on his/her property.*

**b. If you are growing produce on contaminated property, is the produce contaminated?**

*Ms. Rachel Poole, South Carolina Department of Health and Environmental Control (SCDHEC) project manager for Shaw AFB, stated: No; the produce is not contaminated. The soil is not contaminated; the groundwater is contaminated. The shallow aquifer is located 30 feet below the ground surface. If a well is used for irrigation, even though the trichloroethylene (TCE) and/or tetrachloroethylene (PCE) is above the drinking water standard, the level of contamination is quite low that when water comes out [thru a spigot or sprinkler head] the remaining TCE and/or PCE will readily 'volatilize' or evaporate into the air.*

*Mr. Doug Simpleman, US Army Corps of Engineers program manager for Shaw AFB, further explained that he was at a location where they did vegetation sampling and it was exposed to the contaminated groundwater. Vegetation grown in contaminated soil does not absorb TCE and PCE, the vegetation releases the contamination into the air.*

**c. How far down from Highway 441 does this plume go?**

*The plume appears bigger as shown in the poster board, because it includes areas where traces of TCE and/or PCE were detected below the regulatory level of five (5) parts per billion (ppb). The off-base plume begins from the base boundary near the radar tower to San Souchi farms property. It is about one mile west from Highway 441.*

**d. Is the contamination closer to the surface for property that is located closer to Highway 441?**

*No, the contamination is 150 feet below the surface.*

*Ms. Poole (SCDHEC) stated that there has been extensive testing of the springs, ponds and surface water located within the contaminated areas off-base and there were no detections of TCE and/or PCE. Only if there was a pathway to the surface water would there be a risk and no indication of contamination has been detected in the surface water off-base.*

**e. What were the results of the soil vapor intrusion testing? What is the measurement used to calculate risk? How can you translate risk in simple terms?**

*Recent soil vapor field sampling results confirmed previous screening-level results, that there is no risk for soil vapor intrusion. Nevertheless, Shaw AFB continues to monitor shallow wells and soil in the area around the Travis residence for potential vapor intrusion impact.*

*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."*

*Ms. Poole, SCDHEC, stated that the unit for vapor intrusion is measured in micrograms per cubic meter. Risk is difficult to explain and she recommended looking up this information to give some basic understanding how risk is measured*

**f. Even though the contamination in the shallow aquifer is not on my property, it could potentially move towards my property ten (10) years from now. The TCE and/or PCE could move from the shallow aquifer towards the base and find its way to the deeper aquifer and move west toward off-base property.**

*The contamination in the shallow aquifer is moving towards the base, not off-base. The new cleanup contractor's plan is to use in-place treatment systems that will aggressively attack the TCE/PCE at its shallow aquifer source, and thus preventing it from seeping down into the deep aquifer.*

**g. Why did they shut down an extraction well located off-base by the radar tower?**

*An off-base extraction well was shut down because it was located too close to another off-base extraction well. When both wells were operating, they were pulling from the same water source and neither was operating efficiently. One extraction well was shut down to maximize the capability and efficiency of the other well.*

**h. The Sumter Library does not know where the Administrative Record is located. Are they required to keep a copy for the community who does not have access to the base?**

*Yes, the Shaw AFB Administrative Record (AR) index is located on the second floor. All Shaw AFB documents prepared for public review are kept in the same location. A few months ago, an inquiry was made to the Sumter County librarian that an individual asked the location of the Shaw AR and the library staff had no knowledge. The librarian stated that the staff should know the location of the Shaw AR and will ensure that they are briefed.*

**i. How many documents are redacted? When you receive a document that is almost completely redacted, it is disheartening.**

*Documents are reviewed before they are released to the public under the Freedom of Information Act (FOIA). Not all documents are redacted.*

*Ms. Poole stated that one has the option to review the documents at SCDHEC in Columbia. There is a charge for copies. If one arranges to view the documents when Ms. Poole is there, she would be happy to answer any questions.*

## **2. Questions during the Question & Answer Session:**

### **a. Has URS moved into their new office?**

*Yes, URS Corp. (the new cleanup contractor) has moved into their new field office, at 1309 Peach Orchard Road (Highway 441), Sumter, SC 29154. The new office is located in building next to/south of the New Beginning Banquet Facility (where previous RAB public meetings were held).*

### **b. Does the carbon filters just clean the water you drink [referring to two AF-installed granulated activated carbon filters used to treat two separate contaminated private drinking wells]?**

*Yes, only water that is pumped out of the well is treated then distributed.*

### **c. Do the two new monitoring wells that were installed off of Highway 441 between the two Young's gas stations [intersection of Oakhill Drive and Highway 441] belong to Shaw AFB?**

*No, the wells do not belong to Shaw AFB. The wells were installed as part of an ongoing investigation of an off-base release from an underground storage tank containing gasoline.*

### **d. Has the source of the "Southwest TCE Lobe" been identified?**

*No, the Air Force Center for Engineering and the Environment (AFCEE) is still conducting a forensics study to determine the TCE's chemical 'signature', which could assist in determining the source. Nonetheless, the Air Force is treating the plume as if it is its own and has implemented the necessary protective actions.*