

AGENDA
ANNISTON ARMY DEPOT
RESTORATION ADVISORY BOARD
November 6, 2000
Coldwater United Methodist Church

Introductions	Dr. Barry Cox
Roll Call and Approval of Minutes	Dr. Barry Cox
Environmental Cleanup Stakeholders Forum	Susan Abston
Funding	Susan Abston
Well and Spring Inventory Update	Susan Abston
Update on Health Consultation for Mr. Cooper's Well	Jeff Kellam
Report on Soils Proposed Plan Public Meeting	Susan Abston
Update of Ongoing Restoration Activities	Susan Abston
TAPP and TAG Program (technical assistance)	Dr. Barry Cox
RAB Administrative Issues (new membership)	All
Agenda for Next Meeting	All

OFF POST WELL AND SPRING SAMPLING

- September 10, 1999 Army sampled Mr. Cooper's supply well for volatile organics. The concentration of trichloroethene (TCE) was 109 parts per billion (ppb) and cis-1,2-dichloroethene (DCE) was 155 ppb.
- October 26, 1999 Army collected samples from Mr. Cooper's well and 3 ponds. Sample results from this event confirmed the elevated TCE and DCE concentrations in the well. In addition, levels of TCE were above the maximum contaminant levels (MCLs) for drinking water in the first pond but below the standard in the fourth pond. This is attributed to dilution as water flows sequentially from the well through the first pond to the last pond located at Highway 202.
- December 16, 1999 EPA conducted confirmatory water sampling of Mr. Cooper's well and ponds. They also collected sediment samples from the ponds. EPA concluded that the well supplying the ponds was contaminated with TCE and DCE above their respective MCLs. They also determined that a Tier 1 screening assessment of fish tissue for evaluating potential human health concerns was not necessary, because contaminant concentrations found in the abiotic media were below levels to justify any further evaluation of fish tissue.
- December 12-20, 1999 Army sampled sole source drinking water supply wells in Phase 1 well and spring inventory area. Thirteen private wells were sampled on Turner Road for volatile organics. No volatile organics were detected in any of the samples.
- March 6-10, 2000 EPA sampled 13 wells on Turner Road for volatile organics, extractable compounds (semi-volatile organics), pesticides/PCBs, metals, and cyanide. No volatile organics, cyanide, or pesticides/PCBs were detected in any of the samples. A variety of metals, and one unknown extractable compound as well as octadecanoic acid were detected in one sample. However, none of the samples exceeded MCLs designated for drinking water.
- April 21- June 20, 2000 Army sampled 53 sole source drinking water supply wells for volatile organics in the Phase 2 well and spring inventory area. No volatile organics were detected in any of the wells.

**ANNISTON ARMY DEPOT
RESTORATION ADVISORY BOARD
November 6, 2000
CALHOUN COUNTY ADMINISTRATION BUILDING
ANNISTON, ALABAMA**

The meeting began shortly after 6:00 PM. with co-chairperson, Dr. Barry Cox calling roll after asking visitors to introduce themselves. RAB members reviewed the minutes of July 10, 2000. There being no quorum, the minutes could not be approved.

Ms. Abston proceeded to discuss the environmental stakeholders' forum in St. Louis being held November 14-16, 2000 put on by the Department of Defense. The Department of the Army is paying for 10 positions to attend from the RABs nationwide. Three members of our ANAD RAB were interested in attending. Because there were more nominees than slots available, there was a random drawing of names. Mr. Roosevelt Parker was among those chosen and will be representing the ANAD RAB in St. Louis.

Ms. Abston reviewed the six year-end funding requests approved by the Army Materiel Command (AMC), amounting to \$1.06M. One of the large funding requests was for a 5-year maintenance and operations contract on the existing geographical information system. The system will be converted into a web-based application that will house all of the Restoration environmental information.

A smaller portion of the monies will be used to putting all of the Administrative Record into an electronic format for the repositories. This will be searchable and will be placed on a web page, where a person can input key words to pull up information online, accessible from home computers.

Another project funded is the development of the land use implementation plans. These plans provide details for land use restriction placed on sites and are a binding agreement between the Army, EPA, and ADEM.

Monies received will also be used to answer recommendations from the Army Environmental Center's Independent Technical Review Committee, a group formed to review all of the Army's ongoing projects for ways to meet cleanup objectives better, cheaper, and faster. Their review of ANAD's program produced a large document with both good recommendations and others with which the Partnering Team disagrees. The Board will continue to be updated regarding this issue.

Also provided was the remainder of the funds needed to construct the new ground water treatment system. (There had been a difference between the negotiated and funded price.)

Finally, funds were provided for the conversion of the current Southeast Industrial Area On-Site Groundwater Operable Unit Record of Decision (ROD) to an interim ROD. A decision was made by the Partnering Team to wait until they had a better understanding of both the deep on-post groundwater and the off-post groundwater to produce a final ROD for the groundwater as one unit. The Interim ROD will still include information on the construction of the ground water treatment system and the cleanup of the shallow on-post groundwater. A fact sheet describing an explanation of significant differences and any wording changes will be published with the Interim ROD. There will also be a 30-day public comment period.

The RAB agreed to draft a letter to AMC, thanking them for the year-end funds.

Fiscal year 2001 funds received total \$4.5M, an increase over last year's funds. Most of that money will be used to fund Phase 2 of the Off-Post Remedial Investigation (RI). This allows for the wells installed along the boundary and along the Jacksonville Fault transects to be sampled and for continuing efforts to determine groundwater migration pathways. Remaining monies will fund operation and maintenance of the new groundwater treatment plant and sampling of private drinking water wells in August 2001.

Ms. Abston provided and explained a map that shows the springs and wells off-post that have been sampled in the past year. The off-post monitoring wells were sampled too, because they have not been sampled for several years. The new wells installed at Mr. Cooper's were also sampled.

The Army identified 57 wells, 53 of which were sampled during Phase 2 of the Well and Spring Inventory. One private owner did not want their private water well sampled, one could not be contacted, and the other two properties were vacant. All wells tested showed non-detects for volatile organics.

A letter will be sent to all individuals in Phases 1 and 2 of the Well and Spring Inventory that had sole source drinking water wells. The letter will include a stamped, self-addressed envelope for recipients to confirm if they want their wells tested again. Those from whom we receive no response will be called to ensure everyone is contacted.

Mr. Jeff Kellam of the Agency for Toxic Substances and Disease Registry (ATSDR) provided an update of the health consultation associated with the Cooper property. ATSDR is a public health service agency that performs public health assessments at all of the National Priority List (NPL) sites nationwide. He indicated that the report will come out officially in the following weeks and will show no risk with the water on Mr. Cooper's property. The Agency looked at risks from human consumption of both the water and the fish from the lakes. He further indicated that potential risk from trichloroethene (TCE) is also eliminated when TCE is volatilized when cooking the fish. ATSDR will remain in the background, but if there are volatile organic detections in the future, the Agency will offer assistance in assessing the problem. Copies of the report will be sent out with the minutes from this meeting. No notification of the public is necessary, since the detected levels of TCE do not pose a public health hazard.

The next topic of discussion involved the proposed plan for cleaning up the soil at seven on-post solid waste management units (SWMUs). The soils at these sites that contained lead concentrations posing a human health risk to industrial workers will be removed, sampled, and properly disposed of. Areas with lead contamination posing an ecological risk will be capped. This reduction in soil volume to be removed from these SWMUs reduces the cost of soil clean up from \$2.6M to \$12,000, while still protecting human health and the environment.

The Off-Post RI Phase 1 is almost completed. The draft report will be issued in January 2001. Data will be assimilated, integrated and evaluated to determine what to do during Phase 2 of the investigation. The Off Post RI Phase 2 contract will be awarded in Summer 2001. Information about the planning of Phase 2 will be shared with the RAB for input.

The ground water treatment system is nearly complete with all equipment on-site. When a backordered transformer is received and installed, the plant will be started up. Clean water will be run through it first to ensure all of the valves, pumps, controls, safety mechanisms, etc. are in good working order. This will take quite a few weeks. At the same time an operation plan will be developed for operators to properly operate and maintain the system. In January, we should be on-line and starting groundwater treatment. Locations are being chosen along the boundary for recovery well locations that will help contain the migration of the groundwater plume. Pilot wells will be drilled along Roosevelt Drive within the SIA that runs along Dry Creek on the southeastern boundary. Once we are satisfied with well locations and functioning, recovery wells will be installed and hooked up to the system.

Design work has also begun on SWMU 44, which is Dry Creek. The sediment will be tested in a few weeks. Regular chemical analysis will be run on the sediments and surface water. If results show an adverse effect on sediment, alternatives to remediate sediment will be explored. The storm water outfalls into Dry Creek will be inspected to determine if any need to be cleaned out, and the creek bank will be inspected to determine the need for bank stabilization.

Options to remediate hot spots in SWMU 12 (former Facility 114 Lagoons) are still under review. EPA is continuing to review some of the assumptions made during the groundwater modeling. Remaining soils do not pose a human health risk or an ecological risk. The primary concern is over rainwater and shallow groundwater leaching through the soils and reaching deeper groundwater and being transported to the boundary at levels exceeding drinking water levels.

The TAG and TAPP program money was next discussed. It has been suggested to use the TAG money from EPA to produce a video describing Depot environmental issues as an informational tool for community enlightenment. This could be a useful tool to help relate the Depot's groundwater cleanup progress to community groups. As there was not a quorum present, this suggestion was tabled for the next meeting. Mr. Garrett Smith will assist in gathering information for this project.

Ms. Joan McKinney discussed the work she has been doing with the Webmaster for the ANAD RAB web site. Efforts are underway to make the site a more interesting format and add color, pictures, and other links. There will also be a downloadable application form for those wishing to apply for RAB membership.

In order to reach the maximum number of ANAD RAB membership of 30, six new members are needed. Each current member will be provided an application by mail to recruit applicants. Once a pool of applicants is established, these can be placed before the Board to vote in the new members. At this time there is one application for membership.

In addition to discussion of the planning of the TAG video at the next meeting, Ms. Abston will have a contractor in attendance that will discuss the Off-Post RI Phase 1 and explain where we are headed in Phase 2.

The next meeting of the ANAD RAB will again be held at the Coldwater Methodist church. The next meeting is scheduled for February 5, 2001 at 6:00 p.m. Prior to the meeting Commissioner Eli Henderson and others will prepare a fillet crappie dinner for all.

The meeting was adjourned.

Health Consultation

ANNISTON ARMY DEPOT (SE INDUSTRIAL AREA)

BYNUM, CALHOUN COUNTY, ALABAMA

EPA FACILITY ID: AL3210020027

DECEMBER 26, 2000

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

HEALTH CONSULTATION

ANNISTON ARMY DEPOT (SE INDUSTRIAL AREA)

BYNUM, CALHOUN COUNTY, ALABAMA

EPA FACILITY ID: AL3210020027

Prepared by:

Federal Facilities Assessment Branch
Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry

Statement of Issues and Findings

Anniston Army Depot (ANAD) has been involved in environmental remediation activities since the early 1980's. Groundwater contamination characterization and monitoring has been an integral part of these activities. Groundwater studies conducted during the Remedial Investigation for Southeastern Industrial Area raised concerns that contamination might be reaching offsite. As a result of off-post monitoring by ANAD and the U.S. Environmental Protection Agency (EPA), volatile organic compounds such as the solvents trichloroethylene (TCE) and 1,2-dichloroethylene 1,2-DCE) were detected in samples collected from local water wells. In February 1999, a community member called ANAD and EPA with concerns about possible health issues that might occur as a result of exposure to TCE in his fishing lakes (ATSDR, 10/27/99) and in the well supplying water to the lakes.

In order to address the potential for off-post contamination of water supplies by TCE, ANAD and EPA have undertaken additional sampling and analysis activities. These activities include: additional sampling and analysis of surface water, well water and sediment in the fishing lakes described above, Cooper Catfish Lakes; and sampling of off-post wells in the vicinity of the Southeastern Industrial Area (SIA) of ANAD, believed to be the source of TCE in groundwater. ANAD, with EPA, is conducting a two-phase private well sampling activity to analyze water collected from approximately 50 wells in the vicinity of ANAD..

In November 1999, EPA requested technical assistance in evaluating the results of the offsite follow-ups (ATSDR AROA 11/99). The following are the two questions posed to ATSDR.

- 1) *Are TCE levels found in Cooper Catfish Lakes sufficiently high to present a public health hazard?*
- 2) *Is TCE from ANAD present in area wells in quantities sufficient to present a public health hazard?*

The following sections provide a more detailed discussion of those questions.

Background

Anniston Army Depot (ANAD) occupies 15,200 acres in Calhoun County, Alabama, about 8 miles west of the city of Anniston. ANAD was built over 50 years ago as an ammunition storage depot, but its mission has expanded to include rebuilding and maintaining equipment such as tanks, missiles, and small arms. The majority of these industrial activities were conducted in the SIA. During site operations, a variety of hazardous wastes were generated and disposed of within the SIA boundaries. Until 1981, ANAD disposed of most of its hazardous waste (including heavy metals, chlorinated organic solvents, and explosive compounds) in unlined lagoons, trenches, landfills, and sumps. As a result of normal operations and a number of spills involving hazardous materials, environmental media may have been contaminated. Since 1981, ANAD has disposed of its hazardous waste in licensed off-site landfills.

ANAD began the process of site characterization and remediation in the 1980s under the Army's Installation Restoration Program (IRP) and has continued these tasks under an agreement with the

groundwater movement from the site, boundary and off-site groundwater quality, and private well water near ANAD to identify and diminish the threat of potential health hazards.

In 1994, ANAD initiated groundwater studies offsite, including dye tracer and geophysical studies. In addition, low levels of TCE detected in several water samples. EPA and ANAD undertook further characterization of the extent of groundwater off-post. In 1995, water samples from wells supplying Cooper Catfish Lakes were analyzed to fill in data gaps to obtain information delineating relationship of onsite groundwater contamination to offsite groundwater. The samples collected from these lakes contained TCE and 1,2-DCE. Additionally, in 1999 the ATSDR public health assessment (PHA) recommended follow-up studies of groundwater off-post, based on the limited analytical information that suggested off-post migration of contaminants.

ATSDR was requested to provide technical assistance in evaluating the potential for harmful exposure. Recent evaluations have included surface water, well water and sediment sampling at Cooper Catfish Lakes (US EPA, 2000a), and two phases of sampling at offsite private wells. The first phase consisted of samples from 13 private wells in the area adjacent to ANAD boundaries. The second phase will sample about 50 wells located further out from ANAD boundaries, in the same general area as those sampled in Phase I (US EPA, 2000b). Sampling and analyses have been completed for the first phase of private well sampling. Sampling and analysis are underway for phase two. The following discusses the results of these sampling and analysis activities.

Discussion

The following sections describe the results of analyses performed on samples collected from Cooper Catfish Lakes and in Phase One of the private water well sampling activity. Primary concern was focused on VOCs such as the solvents TCE and 1,2-DCE.

Cooper Catfish Lakes

As stated above, groundwater monitoring activities located VOC contamination in both the surface water and the water source, groundwater wells, at Cooper Catfish Lakes, adjacent to ANAD (US EPA, 2000a). Until June 2000, water from the supply well was accessible for drinking by way of a spigot located in an accessible area of the property, adjacent to the fishing lakes. Table One, in the Appendix, lists the concentrations of VOCs detected in the sampling activities.

For this health consultation, ATSDR calculated exposure doses to water for two different scenarios: (1) acute exposure resulting from drinking contaminated water only once and (2) intermediate exposure resulting from drinking contaminated water twice a week for six months, for a period of five years. This second intermediate exposure represents a conservative scenario involving someone visiting Cooper Catfish Lakes every weekend during the normal fishing season for the five years that the lake was open to the public before the contamination was discovered.

ATSDR made the following conservative assumptions about exposure to drinking water from the well that supplies Cooper Catfish Lakes:

Conclusions

Based on an evaluation of exposure to the detected maximum levels, ATSDR provides the following conclusions:

Consumption of water from wells in the vicinity of ANAD, including the well at Cooper Catfish Lakes, and consumption of fish from these lakes present No Apparent Public Health Hazard.

Levels of VOCs in water collected from Cooper Catfish Lakes and its water supply well are not sufficient to present possible public health hazards from either short-term or long-term exposure via drinking, incidental inhalation, or incidental dermal exposure.

Consumption of fish from these lakes is not a likely public health hazard, because the levels of VOCs detected in water are not high enough to pose a threat from fish taking up and accumulating them.

VOCs were not found in other off-site water wells in sufficient concentration to present a potential public health hazard.

On the basis of the available data, ATSDR did not identify any chemical contamination that would pose a hazard to children.

Recommendations

VOC levels detected in Cooper Catfish Lakes are not sufficient to pose a public health hazard for either acute or long-term exposure. However, prediction of groundwater movement in the complex karstic groundwater aquifer system is difficult, and in order to be conservatively protective, ATSDR recommends that monitoring be continued at these lakes.

VOCs were not detected in off-site wells (other than at Cooper Catfish Lakes) in sufficient quantities to present a possible public health hazard. Again, however, in view of the complex nature of the groundwater aquifer system, ATSDR agrees with ANAD and EPA that the off-site sampling program will be useful during remediation, to characterize and monitor TCE in the groundwater.

References

ATSDR, 1997, Toxicological Profile for Trichloroethylene (Update), September, 1997.

ATSDR AROA, 1999, Conference Call with EPA and ATSDR Region 4, RE: Anniston, 10/27/99.

ATSDR AROA, 2000, Summary of Off-Post Well Inventory and Sampling at ANAD, January 7, 2000.

ATSDR AROA, 1999, Status of Off-Site Sampling at ANAD, November, 29, 1999.

ECW, 1994, Final Groundwater Tracing Studies, Anniston Army Depot, Anniston, AL, June 30, 1994.

Ewers Water Consultants, Inc. (EWC). 1994. Final groundwater tracing studies. Anniston Army Depot. Anniston, Alabama. June 30, 1994.

SAIC. 1997a. Report findings for the groundwater tracer test at Anniston Army Depot—Southeast Industrial Area, Anniston, Alabama. Draft. November 1997.

SAIC. 1997b. Anniston Army Depot, Southeast Industrial Area. Draft Volume I. March 1997.

US EPA, 2000a, Final Report, Cooper Catfish Lakes at Anniston Army Depot, Alabama, SESD Project No. 00-0157, May 2000.

US EPA, 2000b, Results of Potable Well Sampling Investigation, Anniston Army Depot (ANAD) NPL Site, Anniston, Calhoun County, AL, SESD Project No. 00-0356, 00-0370

Ware, L. 1996. Personal communication with Leslie Ware, Installation Restoration Program Manager, ANAD. Anniston, Alabama.

Ware, L. 1998. Personal communication with Leslie Ware, Installation Restoration Program Manager, Anniston Army Depot. Anniston, Alabama.

APPENDIX: Deriving Exposure Doses for Anniston Army Depot

The following lists the levels of TCE and 1,2-DCE detected in EPA sampling analysis for ground water, surface water and sediment samples collected from Cooper Catfish Lakes. Exposure doses are calculated based on these levels.

TABLE ONE: TCE and 1,2-DCE detected in environmental media at Cooper Catfish Lakes (Data is from US EPA, 2000a)			
	Surface water (maximum detections)	sediment	groundwater
September 1999	DCE - 155 µg/l TCE - 109 µg/l	none detected	
October 1999	DCE - 125 µg/l TCE - 107 µg/l		
December 1999	TCE - 1 µg/l j*		DCE - 130 µg/l 140 µg/l TCE - 100 µg/l 120 µg/l
March 2000	DCE - 13 µg/l A** TCE - 9.3 µg/l A		

* j = estimated

**A = averaged

When estimating exposure doses, health assessors evaluate (1) contaminant concentrations to which people may have been exposed and (2) the length of time and frequency of exposure. Together, these factors influence an individual's physiological response to chemical contaminant exposure and potential outcomes.

For this health consultation, ATSDR calculated exposure doses for two different scenarios: (1) acute exposure resulting from drinking contaminated water only once and (2) an intermediate exposure resulting from drinking contaminated water twice a week for 6 months, for a period of 5 years. This second intermediate exposure represents a conservative scenario involving someone visiting Cooper Catfish Lakes every weekend during the normal fishing season for the 5 years that the lake was open to the public before the contamination was discovered.

The following equation was used to estimate exposure to contaminants in the drinking water from the well that feeds Cooper Catfish Lakes:

$$\text{Estimated exposure dose} = \frac{\text{Conc.} \times \text{IR} \times \text{EF} \times \text{ED}}{\text{BW} \times \text{AT}}$$

where:

Conc.: Maximum concentration in parts per million (ppm):

contaminated with the maximum detected level of TCE once in a lifetime were orders of magnitude lower than ATSDR's acute MRL (0.2 mg/kg/day). Likewise with acute exposure to 1,2-DCE, the calculated doses (0.00001 mg/kg/day for adults and 0.00004 mg/kg/day for children) were orders of magnitude lower than ATSDR's acute MRL (1 mg/kg/day).

- *Intermediate Exposure.* The calculated intermediate exposure doses to TCE (0.0005 mg/kg/day for adults and 0.0017 mg/kg/day for children) were below EPA's chronic RfD (0.006 mg/kg/day). An intermediate MRL is not available, therefore, ATSDR used the chronic RfD as a conservative substitute. The likely intermediate exposure doses to 1,2-DCE (0.0006 mg/kg/day for adults and 0.0022 mg/kg/day for children) were well below ATSDR's intermediate MRL (0.3 mg/kg/day).

To put these exposure doses in perspective, it would take several thousand gallons of water to contain enough TCE to provide a large enough dose to be a potential health hazard at a single exposure. For a possible health hazard to occur as a result of exposure every weekend for 6 months, for a total of 5 years would require an adult to be exposed to almost a hundred gallons a day (i.e. consume that amount). A child would have to ingest 27 gallons. The amounts needed for adverse health effects from the 1,2-DCE are again, much higher.

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

You May Contact ATSDR TOLL FREE at
1-888-42ATSDR

or

Visit our Home Page at: <http://atsdr1.atsdr.cdc.gov:8080/>