



Envision

a cleaner environment

Arnold Engineering Development Center Installation Restoration Update



Work underway at one of the 11 trenches being dug at the Coffee County landfill.

A publication for
Coffee and Franklin
county residents

*Environmental
Public Affairs*

*Arnold AFB,
Tennessee*

Trenching work continues at landfill

Construction of 11 trenches to capture methane gas started in August at the 97-acre Coffee County Landfill. Plans call for completion of the project by early next year.

AEDC environmental officials addressed local residents concerns over odors, dust and safety issues associated with the trench construction.

“There are risks associated with trenching in old landfills,” said Clark Brandon, deputy chief of the environmental management division. “We know that there may be hazardous materials and unknown debris buried in the landfill.”

“We have safety people and hazardous material certified operators at the landfill dur-

ing the digging of the trenches.” Brandon said. “In addition, the three trenches closest to the Coffee County Central High School will be constructed when school is not in session.”

Limiting the length of open trench excavation minimizes odor and dust generated during construction of the trenches and all trash is covered with soil at the end of each workday.

The trench network construction project being accomplished by Roy F. Weston, Inc., of Georgia, will remove the methane gas from the trenches and transport it to the existing landfill flare where it will be burned.

The two-to three-foot deep trenches will intercept methane where it is generated. Af-

CAB to meet Nov. 21

The next Arnold AFB Community Advisory Board meeting is set for 4:30 p.m., Tuesday, November 21 at the City Hall Council Chambers, 123 North Jackson Street in Tullahoma.

Members of the public are welcome to attend.

AEDC responds to allegations at public meeting

Officials at Arnold AFB want to assure community neighbors that the students and faculty at Coffee County Central High School are not in any danger from methane exposure in their school and that residents surrounding the base are in no danger from any ground water contamination.

A recent lawsuit against the base alleges that the high school sits on an explosive methane pocket. There is not now, nor has there been any methane danger to the high school.

The Air Force also drilled through the slab foundation of the school and took test samples that showed no methane was present under the school. Tennessee Department of Environmental Conservation officials were present during the sampling and agreed there is no methane contamination under the school. Additionally, an elaborate monitoring network consisting of hundreds of sampling probes is located around the perimeter of the landfill. Only one landfill probe is currently detecting traces of methane and the level is well below the safe limit set by the Environmental Protection Agency and is not located near the school.

There is an elevated level of methane at one sampling well north of the school which appears to stem from a debris pit created during the construction of the high school. It also poses no danger to the high school. The Air Force is taking steps to confirm that the methane did not come from the landfill and will support the remediation once the source of the gas is fully characterized.

"In light of the current litigation, I



Colonel Heil

would have no problems with my children attending this school if I lived in this area," said Doyle Brittain, of the Environmental Protection Agency. "There is no reason you should feel otherwise. If I believed there was danger, the school board and the superintendent would be the first to know."

The Air Force has and will continue to keep school officials apprised of the methane situation at the high school. Tests conducted every day that students have been at the school since January of 1999 have shown absolutely no trace of methane in the school.

Air Force, EPA and Tennessee Department of Environmental Conservation met with the superintendent of schools today and presented test sampling data that showed there was no danger to the students in the school.

The lawsuit also contends the base has polluted ground water to hazardous levels. There are three groundwater plumes that extend off base and are being treated for contamination removal. The base and

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SCHOOL SAMPLING - Mike Frederick, AEDC industrial hygiene specialist, checks for methane near the Coffee County Central High School outside cooling tower. The school is monitored every school day for traces of methane.

Trenching...

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ter the trenches are dug, they are fitted with a pipe extraction system. The trenches are then covered with gravel, a geomembrane, and back-filled with soil. A vacuum on the pipe extraction system removes the methane from the trenches.

“Design work on the trench system was completed this summer,” said Brandon. “The entire project should be finished by the end of the month.”



Workers install a pipe extraction system at the Coffee County landfill.

AEDC responds to landfill allegations....

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EPA monitor those plumes to ensure the source is contained and that the treatment systems are working effectively.

Contaminant levels in the plumes are below the acceptable health risk levels established by EPA. In one instance where a contaminant level nears the acceptable EPA standard, the base has installed a filter system for the resident and monitors it regularly.

Public water has been provided to residents near the Coffee County Landfill. This was done to prevent methane migration through the well systems and not due to ground water contamination in that area.

In April, AEDC completed construction of a water line connecting residents near the southwest side of the base to Estill Springs public water as a precautionary measure even though contamination levels are well below EPA acceptable health risk levels.

“I’m surprised and disappointed that this lawsuit has happened and the situation has developed this

way,” said Col. Mike Heil, Arnold Engineering Development Center commander. “We run a solid program and my door is always open to discuss issues such as this.

“The methane remediation program at the now closed Coffee County Landfill, like the rest of our environmental remediation efforts, is an effective program that is conducted jointly with the Environmental Protection Agency and the state of Tennessee,” said Heil.

“We have and will continue to act quickly to address environmental issues or problems as they arise,” said Heil. “Our record of environmental actions is open to scrutiny on a daily basis by regulatory agencies such as EPA and the Tennessee Department of Environmental Conservation and we welcome this interaction from them and our community neighbors through forums such as our Community Advisory Board.” The board includes membership from local communities’ government and residents of the area as well as Arnold Engineering Development Center environmental program manag-

ers.

“For nearly 50 years, AEDC has played a vital role in our nation’s defense advancing the state of the art of both military and commercial aviation and we will continue to do so without compromising our commitment to a clean and healthy environment,” said Heil.

The Coffee County Landfill was operated by the Joint Coffee County Landfill Commission for residents of the county from 1971 to 1989. The landfill was used as the primary dump site for residential and business refuse disposal for several local communities in Coffee County to include Tullahoma and Manchester. The 97-acre landfill site used by the county is on Arnold Air Force Base property.

Since 1984, the Air Force has spent roughly \$96 million in environmental restoration programs at Arnold AFB with nearly \$17 million used to restore the Coffee County Landfill site.

Nineteen types of snakes call AEDC home

Most people probably consider snakes the most fascinating but feared creatures that they encounter during hikes in fields and forests. But of the 2,700 species throughout the world, only 19 species of snakes call AEDC home including just one venomous type.

“It is important to remember that snakes serve an important ecological function,” said John Lamb, AEDC zoologist. “They also benefit us by eating rodents and insects that can cause damage to crops. Aquatic snakes help maintain healthy fish populations by weeding out sick individuals before others can be infected.”

He said that the only venomous snake that has been found on base is the copperhead. The copperhead has brownish cross-bands on a tan to orange looking body and is well camouflaged amongst the leaves. The head is much wider than the neck, a feature of pit vipers. The copper colored head and cat-like pupil are good distinguishing characteristics. Copperheads live in a variety of habitats and will take cover under scattered wooden boards, tin sheets and other debris.

Copperhead venom mainly affects the circulatory system. The bites can be nasty causing tissue damage and severe pain, but fatalities are virtually non-existent. Copperheads feed on rodents and a variety of other small animals. It obtains an average length of 24-36 inches. Copperheads are usually docile unless harassed.

“Sometimes venomous snakes like the copperhead don’t inject venom when they bite. This is called a dry bite. The snake needs its venom to



RAT SNAKE - John Lamb, AEDC zoologist, shows a rat snake found on Arnold AFB.

capture food, so there are costs associated with injecting venom for defensive purposes,” Lamb said. “However, there is no set rule when a venomous snake will dry bite, so always seek medical help if you are bitten.”

Many of the larger bodied snakes

at AEDC will shake their tails in leaf litter when disturbed and are easily mistaken for rattlesnakes. Timber rattlesnakes have never been found on base, most likely because there is not good habitat here for them. They have been found in areas not far from Arnold AFB where there is appropriate habitat.

“Some snakes, like the eastern hognose snake can also be mistaken for rattlesnakes based on coloration. Hognose snakes will also flare out the skin around their head and neck similar to a cobra,” Lamb said.

According to Lamb, of the 19 species at AEDC, the rarest is the northern pine snake. It is listed as a threatened species in Tennessee and is a former candidate for federal listing. The pine snake is a large bodied snake that can grow up to six and a half feet long. It is not poisonous, but if threatened will coil, fill its lungs with air, and make a loud blood curdling hissing sound while shaking its tail like a rattlesnake. This may scare off predators such as skunks or foxes,

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CORN SNAKE - One of the 19 snake species found at AEDC is this corn snake.

Snakes at AEDC...

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but usually gets them killed by people.

He said that little is known about the habits of and habitats used by this secretive snake that spends much of its time underground in burrows. The Conservation section of the AEDC Environmental Management Division, is conducting a study to find out more about the pine snake so we can determine how to best manage the population. Currently, we have one pine snake that has a radio transmitter implanted in it. By tracking its movements we hope to learn what habitats this animal uses for things like hunting and hibernation as well as how big of an area they require.

Other types of snakes on base besides the copperhead and pine snake are the worm snake, black racer, ringneck, black rat snake, corn snake, eastern hognose, common kingsnake, prairie kingsnake, yellowbelly water snake, common water snake, rough green snake, brown snake, redbelly snake, southeastern crowned snake, eastern ribbon, eastern garter and smooth earth snake.

Where to get environmental information

Published data and documents relating to the Arnold Engineering Development Center restoration program are available for public review at the information repository located at the Coffee County Lannom Memorial Library, 312 North Collins Street in Tullahoma.

The information repository is a collection of documents containing studies and other work compiled through the Installation Restoration program.

The Installation Restoration Program is the environmental cleanup

ECAMP underway at AEDC

AEDC environmental staffers are looking at all areas of the base during the internal Environmental Compliance Assessment and Management Program (ECAMP) inspection currently underway.

"Fifteen teams composed of about 60 AEDC environmental and industrial hygiene personnel are inspecting areas on base for compliance with DoD, Air Force and Tennessee environmental regulations," said 2nd Lt. William Waldron, AEDC compliance officer.

Areas being inspected include hazardous materials, air emissions, cultural resources, hazardous waste, natural resources, environmental impacts, noise, pollution prevention, pesticides, POL (petroleum, oils and lubricants), solid

waste, storage tanks, toxic substances, wastewater and water quality.

"During previous internal ECAMP inspections, most of the findings were in the hazardous materials area and were administrative in type," said Debbie Barnes, AEDC environmental office. "The total number of findings in this area has been decreasing with each internal ECAMP, however, we encourage persons who work with hazardous materials to ensure proper management procedures are followed in hopes of reducing the number of findings in this area even further this year."

The inspection should be completed by Nov. 17.

Did you know?

- That every day American families produce an estimated 4 million pounds of household hazardous waste?
- That, according to the EPA, at least 74 pesticides have been found in the groundwater of 38 states?
- That according to the Department of Energy heating water is the second largest residential energy use?
- That a room air conditioner can use up to 20 times the energy of a fan?
- That in a single year Americans generate over 266 billion pounds of garbage?
- That 10 percent of all lumber used to build a new home is wasted?
- That the U.S. loses an acre of forest every five seconds?
- That Americans utilize 2 1/2 million plastic bottles every hour?
- That the average American uses the equivalent of 72 trees every year?

CAB sets meeting

The Community Advisory Board meets Tuesday, Nov. 21 at the Tullahoma City Hall Council Chambers. The public is invited to attend.

process at Arnold AFB.

Additional information about the repository or the restoration program can be obtained by calling the Environmental Public Affairs Office at 454-4353 or the AEDC Public Affairs Office at 454-4204.

Why recycle????

Recycling saves energy, natural resources, and landfill space. In this decade, it is projected that Americans will throw away over one million tons of aluminum and 11 millions tons of glass bottles.

AEDC's economic impact almost \$500 million

The economic impact of Arnold Engineering Development Center continues to increase in Middle Tennessee, especially in Coffee and Franklin counties. The base's financial office released its economic impact statement today showing the total economic impact of AEDC in government fiscal year 2000 which ended Sept. 30 was \$499.2 million. The numbers are up \$17 million dollars from the previous fiscal year.

The data is based on the Tennessee Valley Authority economic impact model methodology. The Air Force model, which uses a different, more conservative methodology, shows economic impact at

\$387.5 million, also up from the previous year.

AEDC employed almost 3,000 people this year; these numbers include, DoD civilian and contractor employees and military personnel, with the military making up about three and a half percent. The data also shows AEDC is still the single largest employer in Coffee and Franklin counties.

Some 2,050-2,100 secondary jobs were created by work done at AEDC in construction, manufacturing and commercial positions. Examples of secondary would be those created to build new houses or jobs created at local supermarkets and restaurants.

Not reflected in AEDC's economic impact are the approximately 3,500 military retirees living in the local area surrounding Arnold Air Force Base. Figures indicate these folks receive about \$50 million in retired pay. Also not included is the retired pay of several hundred government civilian employees and contractor personnel from Arnold Engineering Development Center.

The current replacement cost for the aerospace-testing complex at Arnold Air Force Base is more than \$6 billion. The total employment impact of Arnold Engineering Development Center is more than 5,000 area jobs.



TESTING FOR METHANE - Two contractors, Wade Allen of Miller Drilling, and Fred Saussy of CH2M Hill, test for methane levels near Central High School using a geoprobe drilling machine. (See related article on page 1)

Status report on IRP sites

The status of all 24 installation restoration program sites as of October 31, 2000. Ten sites have been closed and no further action is planned.

Site 1, Landfill 2 and leaching pit 2: Construction of a \$1.56 million modified clay cap with a geosynthetic clay liner was completed in November 1997. Groundwater treatment facility treats approximately 1,700,000 gallons of water per month. Private water wells were sampled west of airfield as a precautionary measure. Site investigation plan being prepared.

Site 2, Retention reservoir and J-4 draining area and Site 11, chemical treatment pond: Preparing site investigation plan.

Site 3, Landfill 4: Construction of a \$2.1 million cap started in March 1997 completed in November 1998. Groundwater treatment facility treats about 17,000 gallons of water per day. Permanent gas ventilation system installed in January 2000. Private wells in area being sampled. Construction of 11 trenches underway. Site investigation plan being prepared.

Site 4, Surface drainage, Bradley Creek: Site investigation plan being reviewed.

Site 5, Surface drainage, Rowland Creek: No further action based upon the RCRA facility assessment.

Site 6, Camp Forrest water treatment plant: Corrective measure study underway included sampling of private water wells in Spring Creek area. Interim corrective measure in the form of a groundwater treatment facility that treats about 400,000 gallons of water per month. A waterline from Estill Springs was completed in April for residents in this area. Corrective measures study being prepared.

Site 7, Main test area: Corrective measure study underway. Interim corrective measure in the form of a groundwater treatment facility in operation.

Site 8, Leaching pit no. 1: Corrective measure study underway. Groundwater treatment facility and solvent/water separator brought on-line in May. Interim corrective measure in the form of a groundwater treatment facility in operation. Supplemental site investigation plan being prepared. Private water wells east and southeast sampled as a precautionary measure.

Site 9, Surface drainage-Brumalow Creek: Additional effort will include long-term monitoring. Site investigation plan being reviewed.

Site 10, Fire Protection Training Area 2, Landfill 1, Burn area 2: Site investigation plan being reviewed.

Site 12, Retention leach/burn area: An interim corrective measure to biologically treat soils and RCRA facility investigation is complete. Site investigation plan being reviewed.

Site 13, Fire Protection Training Area: Proposed for no further action.

Site 14, Surface drainage-Crumpton Creek: Proposed for additional sampling and long-term monitoring. Site investigation plan being reviewed.

Site 15, High energy fuel burn/burial area: No further action based upon completed confirmatory sampling results.

Site 16, Beryllium leaching area: No further action based upon completed confirmatory sampling.

Site 17, Burn area no. 2: No further action based upon completed confirmatory sampling results.

Site 18, Building 1421 area: This site is proposed for no further action based upon confirmatory sampling results.

Site 19, Camp Forrest area: Thirty six monitor wells installed at nine former Camp Forrest gasoline stations/motor pools. A site investigation work plan for Camp Forrest is being developed.

Site 20, Steam plant ash pits: Site investigation plan being reviewed.

Site 21, Three hazardous waste storage buildings and one non-hazardous waste storage building: No further action on all four buildings. These were previously permitted storage units that underwent RCRA closure.

Site 22, Main Test Area: Some areas required more study and some areas are no further action. Corrective measure study work plan being prepared. Final site investigation plan being reviewed.

Site 23, Salvage yard: No further action.

Site 24, Camp Forrest Asbestos Area. No further action.