

July 1999



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Arnold Engineering Development Center Installation Restoration Update



A publication for
Coffee and Franklin
county residents

*Environmental
Public Affairs*

*Arnold AFB,
Tennessee*

AFMC VISITORS - Environmental specialists from Headquarters Air Force Materiel Command receive a briefing on the AEDC environmental program June 23 from Clark Brandon, deputy chief of the environmental management division. The visitors are Marty Tagg, conservation; Tom Eikerenkotler, environmental compliance; and Clare Mendelsohn, chief of AFMC compliance and conservation.

Progress being made at Coffee County Landfill

Work at the Coffee County Landfill continues even though a gas collection system has been installed and is fully operational. The flare from the system is now burning off 1500 standard cubic feet of landfill gas per minute.

“This interim corrective measure program is providing boundary protection for the northern and western edges of the landfill,” said Dennis Flatt, restoration program manager. “The system is showing favorable results as the landfill gas that migrated across Highway 55 and toward Coffee

County Central High School is being sucked back and burned off.”

The gas collection system was installed after joint air quality testing conducted in January by AEDC, the U.S. Environmental Protection Agency and the Tennessee Department of Environment and Conservation confirmed that landfill gas migrated from the landfill.

A total of 23 gas recovery wells are in place on the north side of the landfill near the high school and 51 wells have been drilled on the landfill’s west side next to Highway 55.

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CAB to meet Aug. 17

The next Arnold AFB Community Advisory Board (CAB) meeting is set for 4:30 p.m., Tuesday, Aug. 17 in Winchester. The meeting will take place at the Winchester City Hall Annex, 1st Ave.

Members of the public are welcome to attend the CAB meetings and/or apply for membership on the board.

Progress being made at landfill...

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"We still observe landfill gas in the areas north and west of the landfill but we are also seeing a complete disappearance of methane in a line just 300-400 feet from the our line of wells," Flatt said. "This means the system is working as designed but will take time to remove all the methane."

He said the temporary flare will be removed in a few months and a permanent flare will be installed at a more convenient location on the landfill. The flare continues to operate 24 hours a day.

"To date AEDC has spent \$2.1 million on the gas collection system and other measures to resolve the gas problem at the landfill," said Clark Brandon, deputy chief of the environmental management division. "This does not include the \$2.1 million for the clay cap."

The Coffee County Joint Landfill Commission operated the Coffee County Landfill from 1971 to 1989 under a lease agreement from the Air Force. The landfill was used for the disposal of hazardous and solid waste including construction debris and household garbage.

Construction of the clay cap for the landfill, a major AEDC installation restoration program project, was completed in November 1998. An interim groundwater extraction system became operational at the site in 1995.

"The next major step at the landfill is a corrective measures study," said Pam King, installation restoration program manager. "We will start a work plan for this study later this year which will lead to a decision on a long-term solution for the

landfill."

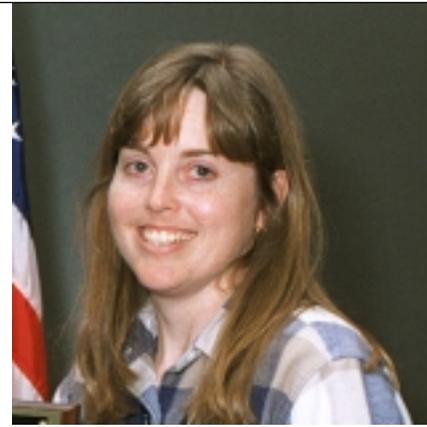
King said in the meantime the center is in the process of completing the Resource Conservation and Recovery Act (RCRA) facility investigation for the Coffee County Landfill. This will probably require additional 16 monitor wells on the north and west side of the landfill.

Several other programs associated with the Coffee County Landfill are ongoing or completed. AEDC environmental personnel just completed the sampling of 40 private water wells on Bowling Alley Road and Old Seminary Road south of the landfill. According to Flatt, results from all the wells showed no detection of contaminants associated with the landfill. He also said that the water line along Old Tullahoma Highway is under construction by the local community and that homes located across from the landfill will be connected to this line by AEDC providing homeowners with Manchester City water. "City water is being provided as a safety precaution as a result of the landfill gas problem," Flatt said.

Where to get more information

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

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



King

King wins award

Pamela King, AEDC installation restoration program manager, won the Civilian Employee of the Quarter award in the Scientist/Engineer category.

She was recognized for her work on the installation restoration program and her contribution in addressing the methane gas issue at the Coffee County Landfill.

King came to AEDC in August 1996 from MacDill AFB, Fla.

Derailment explosives leave no contamination

No contamination was found at the AEDC explosive ordnance disposal range where explosives from the March 24 train wreck near Wartrace were detonated. "Soil samples collected at the detonation site by environmental officials came back clean," said 1st Lt. Matt Cesarz, of the AEDC environmental management division.

He said that 251 pounds of explosive, 361 mortar shells, and 1500 rounds of .50 caliber ammunition were recovered from the train derailment and shipped to Arnold AFB. Explosive Ordnance Disposal (EOD) personnel from Fort Campbell detonated the ordnance on March 28.

AEDC samples water wells near base boundaries

During the past year AEDC has sampled more than 100 private water wells at locations near the base boundary as part of its environmental restoration program. The wells are tested in cooperation with the Environmental Protection Agency and the Tennessee Department of Environment and Conservation.

“The wells are sampled to see if contaminants are migrating from any of our restoration sites on base,” said Clark Brandon, deputy chief of the environmental management division. “These sites include several old landfills and disposal areas.”

Fifteen residential wells across from the Coffee County Landfill were sampled during 1998 and early 1999 (**Area A on map**). “All the wells sampled are within the limits of the Safe Drinking Water Act,” said Brandon. “However, because of the landfill gas problem discovered in this area in January, the City of Manchester installed a water line to these homes in June.”

In late 1998 and early 1999, 42 residential wells along Crumpton Creek were sampled (**Area B**). The wells in this area west of the base were sampled as a precautionary measure because of their proximity to a 14-acre landfill and leaching pit located near the base retention pond.

“All these wells were within the limits of the Safe Drinking Water Act except one,” he said. “The one well has amounts of Trichloroethene just above the standard and we solved this problem by installing a filtering system at that residence.”

Brandon stated that we are not

Map showing five areas of private well sampling near Arnold Air Force Base.

positive the well has been contaminated by AEDC but the filtering system was installed as part of the base’s good neighbor policy. “As long as there is the remotest possibility that we could have caused some contamination in that well, we accept the responsibility for it,” he said.

Fifty private water wells along Bowling Alley Road and Old Seminary Hill Road were sampled earlier this year (**Area C**). Environmental officials found no contamination in any of the wells in this area located just south of the Coffee County Landfill.

AEDC officials tested 19 residential wells in the Spring Creek area south of the base during 1998 and 1999 (**Area D**). Several wells were found to have contaminants that could have come from an old industrial waste disposal area located in the Camp Forrest area.

AEDC will provide a water line to the residents of the Spring Creek area at a cost of approximately \$250,000. The water line is expected to be completed later this year.

“Although the contamination is below the level in which it would endanger public health, we felt responsible for providing public water to these residents,” Brandon said.

Future well sampling could involve residences located along Bradley Creek on the East Side of the base (**Area E**). Brandon stressed that the possible sampling of up to 150 wells in this area is still being studied.

AEDC news on web site

Using your home computer and the world wide web, the AEDC external home page can be reached at: www.arnold.af.mil.

Environmental initiatives save AEDC \$\$\$

By taking an environmental quality approach to waste management, several initiatives implemented by the Hazardous Waste Operations Group saved AEDC over \$35,000 in hazardous waste disposal costs. These programs include improved processing of oil soaked absorbents, aerosol cans and excess materials.

The nine member HWOG is composed of storekeepers, laborers, truck drivers and environmental specialists and is headed by Mike Hunter, AEDC senior environmental engineer. The group actively supports the pollution prevention program on base by practicing source reduction, recycling, and reuse of materials.

"HWOG plays an integral role in the ongoing success of the pollution prevention program," said Letha McEntee, AEDC environmental specialist. The group was originally put together in 1995 to deal with compliance issues associated with hazardous waste management. "HWOG has moved from that original perspective to one that actively pursues hazardous and non-hazardous waste minimization," she said.

The HWOG processes oil absorbents by removing the oil from drums and processing the absorbents through a press or wringer to capture even more of the oil. Excess oil is processed through the oil recycling facility. The absorbents are then returned to the drums and after 120 drums are collected, emptied into a roll-off container and shipped as non-hazardous waste for disposal at a cost of



Marvin Kinslow and Kenneth Gipson of the Hazardous Waste Operations Group process oil absorbents by removing oil from drums, then putting soaked absorbents through a press or wringer to capture more of the oil.

seven cents per pound.

The previous process involved leaving the absorbents in drums and the waste being shipped at 12 cents per pound. The new process results in savings for disposal cost and a cost avoidance to AEDC by recycling drums for reuse on additional absorbents. "Based on the difference in disposal cost and cost avoidance of purchasing drums, AEDC saved about \$13,800 in the past two years by shipping the absorbents in the roll-off containers," McEntee said.

A new aerosol can disposal system saved AEDC \$900 over the past two years. Aerosol cans are now punctured and the contents collected in a drum. The empty cans are segregated for scrap metal. Prior to this program, the cans were shipped intact as hazardous waste at a cost of approximately \$1.00 per pound. Under the new process, the contents of the aerosols are shipped in 30-gallon drums at a cost of 24-27 cents per pound.

The HWOG actively locates us-

ers for excess materials in conjunction with the Hazardous Pharmacy Group. Excess paint is issued to the paint shop, custodial supplies are provided to base agencies and lubricants from automotive repair on base are put back in the pharmacy for repackaging and reuse.

The HWOG also processes excess material that cannot be used on base through the Defense Reutilization and Marketing Office (DRMO) reutilization, transfer, donation and sales program. In 1997, 82,000 pounds of ethylene glycol were processed through this program resulting in saving of \$6551 in disposal costs. The following year, over \$14,000 in disposal costs were avoided for oil, paint, adhesives and other chemicals by processing these materials through the RTDS program.

"Team cooperation between HWOG, the pharmacy as well as facility and support personnel continue to make these reduction efforts a success at AEDC," McEntee said.

Environmental team wins AEDC award

Members of an environmental restoration team are winners of an AEDC Team Excellence Award for their actions taken after a potential life-threatening situation was discovered involving the Coffee County Landfill. The award is for January-March 1999.

Formed immediately after an explosion in a nearby residential area, the team investigated and discovered that methane gas had migrated from the landfill to nearby residential areas. It was also found near the Coffee County Central High School.

"Working an average of 10-14 hours per day, it took the team only one week to determine that methane from the landfill was the probable cause of the explosion," said Clark Brandon, deputy chief of the environmental management division.

The team designed and installed a methane gas collection system to intercept, capture and treat the migrating gas. The northern boundary collection system near the Coffee County Central High School was installed in only six days.

"From the beginning, the team utilized innovative investigative method to find the methane gas and discover how much was escaping from the landfill," Brandon said. "We used real-time field data to plan corrective actions and to contract for emergency services."

At the same time, team members set a new precedence in working relationships not only interagency, but with the community as well. They kept all regulatory agencies, the Coffee County School super-

intendent, and the public fully informed of all actions taken and being considered for implementation.

"We kept the media abreast of what we were doing at AEDC to correct the methane problem at the landfill," he said. "This included live reports from two Nashville television stations and a Manchester radio station."

Team members included individuals from ACS, CH2M Hill, the Environmental Protection Agency (EPA), and Tennessee Department of Environment and Conservation (TDEC) and from the Environmental Management Division.

The ACS team includes Dennis Flatt, Ron Everett, Mike Hathorn, Barry Henderson, Steve Arnold, Keith Dobson, Mike Fredrick, William Seay, Brian Austin and Cindy Bernd. CH2M Hill contractor members were Tom Gorman,

Mike Singer, Linda Blackwelder, Travis McCall and Rene Dehart. Representing the EPA was Doyle Brittain, Earl Bozeman, Tim Slagle and Maria Labrador.

TDEC members of the team included Roger Donovan, Mike Apple, Clayton Bullington and Frank Victory while Air Force members were Clark Brandon, Pam King, Tony Clayborne, Marty Martin and Capt. Tim White.

"All the project milestones were met without delays and media inquiries were answered promptly," said Brandon. "I could not have asked for a more professional and responsive team."

CAB meets Aug. 17

Next meeting of the AEDC Community Advisory Board is Tuesday, Aug. 17 at the Winchester City Hall Annex.



AWARD WINNER - Clark Brandon, deputy chief of the environmental management division, receives the Exemplary Civilian Service Award from Col. Michael L. Heil, AEDC commander. Clark won the award for his response to hazardous levels of methane gas near the Coffee County Landfill. He also was awarded the Special Act or Service Award for arranging for a new regulated annual fuel consumption permit from the State of Tennessee for ASTF air heaters.

Paint Shop logs environmental success story

A major reduction in hazardous waste disposal costs is taking place in the Civil Engineering paint shop with the use of water-based latex paint instead of oil-based enamel paint. The environmentally friendly water-based paint is considerably less toxic than solvent based systems.

During the past few months, the paint shop completed several large scope painting projects at the G-range, high temperature lab (HTL), engineering laboratory annex (ELA) and the aerospace environmental chamber Mark I. The work included painting high bay areas, outside above ground storage tanks, structural steel, the G-range tunnel service area, exposed concrete, ducting and high temperature lines.

“Before increased environmental awareness and new latex technology, these facilities would have been painted with solvent-based paints,” said Letha McEntee, AEDC pollution prevention specialist. “But out of the 790 gallons of paint used to complete these projects, 741 gallons or 93 percent were water-based paint.”

She said that 49 gallons of solvent oil-based paint was used to cover high temperature lines and switch boxes, areas that were not suitable for water-based paints. “Use of water-based coating systems is now the norm for the paint shop rather than the exception,” McEntee said.

Jim Gregory, paint shop supervisor, said that the new technology of latex paint holds up as good or better than the old oil based enamels. “The latex is easier to apply

and better for employees and the environment,” he said. The paint shop continues to experiment with new products, as they become available.

Another plus for the use of latex paints is that the clean up does not require the use of solvents, which contribute to the hazardous waste stream. According to Dave Uselton, environmental point of contact for Civil Engineering, “the use of solvents for paint clean-up is nearly eliminated and reduces our hazardous waste disposal costs.”

The paint shop uses high volume low pressure (HVLP) and airless spray guns to apply paint in facilities. They are more efficient than conventional spray guns, which translates into less material required for the job at a lower cost.

The improved technology of latex painting achieves the desired results. According to Curtis Winstead, a HTL engineer, “we are

extremely happy with the results. Our buildings look nicer and the painting was done with minimal interference to our workload.” Another customer from ELA, Allen Rogers, manager and coach of the space systems branch, was happy with the results. “The paint shop did an excellent job, under costs and on schedule. Our surroundings look much better aesthetically which is an excellent marketing tool for AEDC’s external customers.”

Dough Knowlton, director of Civil Engineering operations, said that civil engineering believes in taking the proactive approach in solving pollution prevention issues and has incorporated this philosophy into his daily operations. He said, “In fact, the paint shop personnel won the team excellence award for their environmental efforts and continues to make pollution prevention a part of their everyday life.”



KEEPING CAB INFORMED - Charles King, chief of the environmental management division, briefs the Community Advisory Board at the May 18 meeting at the Oak Restaurant in Manchester. The CAB was updated on the water well sampling program and other environmental programs underway at AEDC. Next CAB meeting is set for Aug. 17 at the City Hall Annex in Winchester.

Status report on IRP sites

The status of all installation restoration programs as of June 30, 1999. Eighteen 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 2, Retention reservoir and J-4 draining area: No further action on the retention reservoir and recommended no further action for the J-4 drain area.

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. Temporary methane gas ventilation system installed in January. Permanent gas ventilation system should be in place later this year. Private wells in area being sampled.

Site 4, Surface drainage, Bradley Creek: This site is recommended for no further action having completed the RCRA facility assessment and confirmatory sampling.

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 is planned for residents in this area.

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. Previous interim measures include low temperature thermal desorption soil treatments.

Site 9, Surface drainage-Brumalow Creek: Additional effort will include long-term monitoring. This site is recommended for no further action.

Site 10, Fire Protection Training Area 2, Landfill 1, Burn area 2: No further action on all three areas with long term monitoring.

Site 11, Chemical treatment pond: No further action. This former site is not part of the retention reservoir flow through treatment process.

Site 12, Retention leach/burn area: An interim corrective measure to biologically treat soils and RCRA facility investigation is complete. The site is proposed for no further action with long-term monitoring.

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 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 results.

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 work plan for Camp Forrest is being developed.

Site 20, Steam plant ash pits: No further action based upon source removal and sampling results.

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, Entire RCRA corrective action program: Some areas required more study and some areas are no further action. A corrective measurement action focused on groundwater is underway

Site 23, Salvage yard: No further action.