



R.I.P. Kings Mills

Only here R.I.P. means
Remedy-In-Place!

From left to right at the award ceremony:
Daniel Walsh (Contractor support to USAEC),
Lisa Gulbranson (Contractor support to the 88th
RRC Environmental, US Army Reserve), Heidi
Novotny (Environmental & Munitions Center of
Expertise, Corps of Engineers), and Rich
Mendoza (USAEC)

In the late 1880s, the Peter's Cartridge Factory produced shotgun, rifle and pistol ammunition on the Miami River in Warren County, Ohio.

100 years later in 1988, Warren County commissioned a groundwater assessment on the 110 acre former Peter's/ WWII Kings Mills Ordnance Plant property. Trichloroethylene (TCE), a solvent used to remove grease from metals, was identified in surface water samples. Subsequent investigations from 1991 through 2005 indicated that historic site activities impacted soil and shallow groundwater.

During the '94 -'95 groundwater investigations, TCE was discovered around a solvent storage building, on the 16 acre Kings Mills US Army Reserve Center (USARC) property, at levels up to 66 times higher than the 5 parts per billion federal drinking water standard. It was determined that this TCE originated from a different source than that found on the neighboring Kings Mills Ordnance Plant property.

From 2004 to 2007, Lisa Gulbranson, contractor support Restoration Program Manager for the 88th Regional Readiness

Command (RRC), worked with representatives of the US Army Environmental Command (USAEC) and the Ohio Environmental Protection Agency to facilitate a State-approved, final remedy for the site to address the TCE contaminated groundwater.

Since startup in September 2007, Kemron Environmental Services has been operating an innovative dual-phase, high-vacuum extraction system that literally sucks the TCE out of the water which is then absorbed into carbon filters. Over 200,000 gallons of water has been pumped, stripped of TCE and re-injected into the ground to go through the extraction system cycle time after time.

In December 2007, Ms. Gulbranson accepted on behalf of the 88th RRC a USAEC Award which was presented at the Command annual workshop. The award recognizes the 88th RRC's achievements that resulted in remedy-in-place (RIP) status for the Site.

Groundwater cleanup to drinking water standard quality is projected by 2012. Then the Kings Mills USARC can truly Rest in Peace!



The PReserver Newsletter is a functional bulletin authorized under the provisions of AR 360-1 for members of the United States Army Reserve Command (USARC). It is published quarterly by the Army Reserve Environmental Division to provide the Total Army Reserve Environmental Community with information on people, policies, operations, technical developments, trends and ideas of and about the Environmental Division of the U.S. Army Reserve. This publication has a circulation of 500 printed copies and an internet access point.

Manuscripts of interest to U.S. Army personnel are invited. Direct communication is authorized to IMCOM, Army Reserve Environmental Branch, 2511 Jefferson Davis Highway, Arlington, VA 22202-3926

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Environmental Officer Appointments Gain Renewed Importance in Army Reserve Transformation



In the new AR 200-1 released on 13 December 2007, the title of the assigned additional duty Environmental Compliance Officer (ECO) was shortened to Environmental Officer (EO). However, this is just a minor modification when compared to the large-scale transformation currently occurring in the Army Reserves. This continually changing state has made Environmental Officers more important than ever before.

An Environmental Officer, as defined in the Glossary of AR 200-1, is

“an individual assigned to [an]... organization or unit to accomplish environmental compliance requirements on behalf of his or her responsible commander, director, or supervisor. Designated person also coordinates with supporting permanent installation environmental staff for requirements, clarification, and assistance... in the Reserves, [coordination is] with Regional Support Command environmental staff. Organizational levels, and required grade or rank, suitable for assignment of compliance officer duties will be determined by the commander. Commanders should consider mandatory Federal training requirements as well as mission workloads in determining assignment of environmental officers at Battalion and unit (Company, Battery, Troop) level.”



The EO duty is a required assignment, both by AR 200-1 part 1-23(h), which states that Senior Mission Commanders must “appoint trained environmental officer(s) to ensure operational compliance and coordination with installation environmental staff” and by part 1-28(f), which states that Unit Commanders are required to “appoint and train environmental officers at appropriate organizational levels to ensure compliance actions take place.”

With the ongoing transformation to Operational and Functional (O&F) Commands and reorganization of Regional

Readiness Commands to Regional Support Commands (RSCs), the EO has taken on a new importance. The EO serves as a vital link between soldiers with new and unfamiliar Chains of Commands and the base-operations oriented RSCs. Many mission and training activities have the potential to harm the environment when planned and performed without proper knowledge of Federal and local laws



and best management practices. Infractions can have expensive consequences for both the Unit Commanders and the RSCs. The RSC’s liability lies in their status as the property owners of the Reserve Centers at which the activities occur. This is what makes the EO so important—a properly trained and knowledgeable EO can make sure that the commander and soldiers in

his or her unit are aware of and are abiding by the regulations, policies, and procedures with which their mission and training activities interact. This, in turn, ensures that Commanders and RSCs do not incur violations, and more importantly, that both the soldiers and the environment are safe and protected while successfully completing their missions.

It is recommended that any unit with mission or training activities that involve the handling, storage, or transportation of potentially polluting materials, hazardous materials, or hazardous wastes have an EO and an alternate, if possible. Their names should be relayed to the environmental staff of the local installation or RSC where the unit is based. The environmental staff makes sure that the EO is properly trained, and, by communicating with the EO, can verify and provide proper environmental training to the unit.

Environmental staff can also confirm that the unit has all of the proper resources and supplies to ensure environmental compliance. Through this relationship, reliable POCs are gained by the Commander, the EO, and the environmental staff, so that they may all successfully do their parts to support mission readiness.

*Article by Christine Alba
77th RRC Environmental Specialist*



New Fort Meade Army Reserve Center goes Green

A Photo Tour of the Green Innovations at the 99th RRC Facility *Article by John Pontier, 99th RRC*



Motion and light sensors turn off the energy-efficient lights when not needed, and programmable thermostats reduce energy consumption



Strategically placed receptacles encourage high grade paper, cardboard and beverage container recycling



HAZMAT is stored indoors with secondary containment preventing storm water pollution



Solvent-free aqueous parts washing eliminates a hazardous waste stream at the source



Pressure washer reduces wastewater flow rate and the need for solvents and detergents



Indoor wash bay prevents storm water pollution and storm water inflow to the sanitary sewer



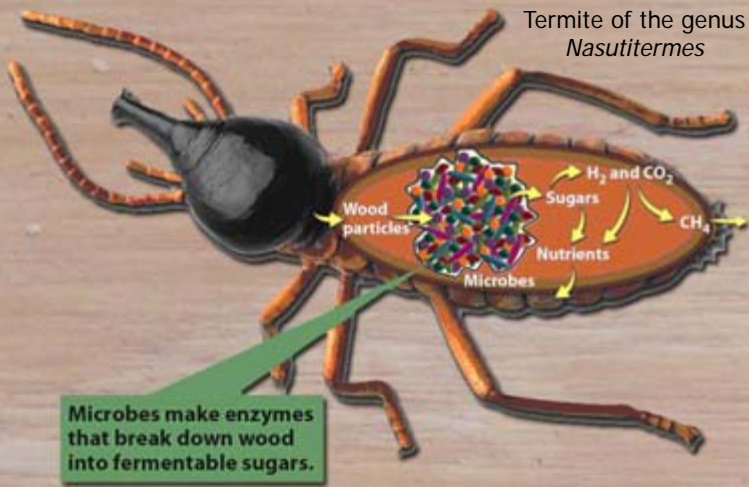
Parking lot runoff receives primary treatment for oil and sediment in a proprietary Stormceptor



Storm water gets further treatment in an extended detention pond prior to discharge to the stream



A forest buffer protects streams from pollutants and erosion



The Termite Gut: Nature's Microbial Bioreactor

In this article we stray a bit away from general pest management issues and instead look at the inner-workings of one of nature's most unique creatures, the termite. Termites are notorious for their voracious appetite for wood. Termites can digest a large amount of wood in a very short time, as anyone who has had termites in their house is painfully aware. Instead of using harsh chemicals or excess heat to do so, termites employ an array of specialized microbes in their hindguts to break down the cell walls of plant material and catalyze the digestion process. Scientists are finding that the microbial community within a termite's gut is one of nature's most efficient bioreactors-typically converting 95% of wood cellulose into simple sugars within 24 hours. Without these wood-eating microbes, termites would not be able to extract nutrients and energy from wood and without the termite to grind wood into tiny pieces and provide an oxygen-free habitat within its gut, the microbes would not be able to survive.

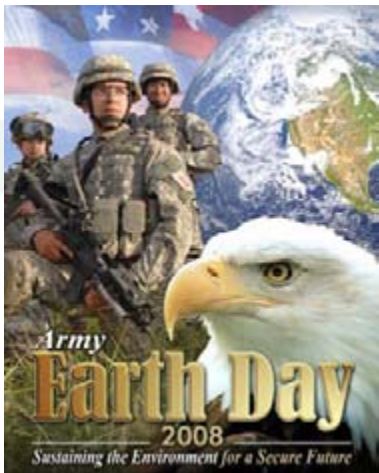
In addition to efficiently degrading cellulose into sugars, some termite-gut microbes are biochemically capable of generating other potential fuels such as hydrogen or methane. Investigating the termite-gut community reveals a vast collection of biological pathways that may one day be put to

use for multiple energy applications. This diverse array of microbial capabilities could jumpstart a newly emerging biofuel industry. The more than 200 species of microbes, which lie within the termite's gut, produce a bounty of wood-busting enzymes that could be put to work in biorefineries making ethanol from several forms of cellulose materials.

A collaboration of researchers from the Department of Energy's Joint Genome Institute (DOE JGI), the California Institute of Technology, Verenum, and INBIO (National Biodiversity Institute of Costa Rica) has sequenced and analyzed microbial DNA extracted from the guts of hundreds of termites harvested from a nest in a Costa Rican rainforest. Preliminary results already have identified several novel enzymes capable of degrading cellulose into sugars, and the San Diego-based biotechnology company Verenum has used insights from this discovery to create a high-performance enzyme cocktail for processing plant biomass into biofuels. DOE JGI researchers continue to investigate other microbial communities in the guts of insects that consume different plant materials. The goal is to understand and reconstruct a diverse range of metabolic processes that could be scaled up for industrial biofuel production.

*Article by Mel Marks
IMCOM-ARO*

This article was condensed from a November 21, 2007 Press Release by the U.S. Department of Energy, Joint Genome Institute



Army Earth Day 2008

The Army's celebration of Earth Day is coming in April! Each year, the U.S. Army celebrates Earth Day at approximately 200 major commands, installations and organizations in the continental United States and around the world. Now as a worldwide event, Earth Day represents the commitment of the United States and other countries to environmental security. Active-duty military, civilian personnel, families and local community members contribute significantly to the impact of this monumental event.