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Oversight News

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Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
Paducah Site Section

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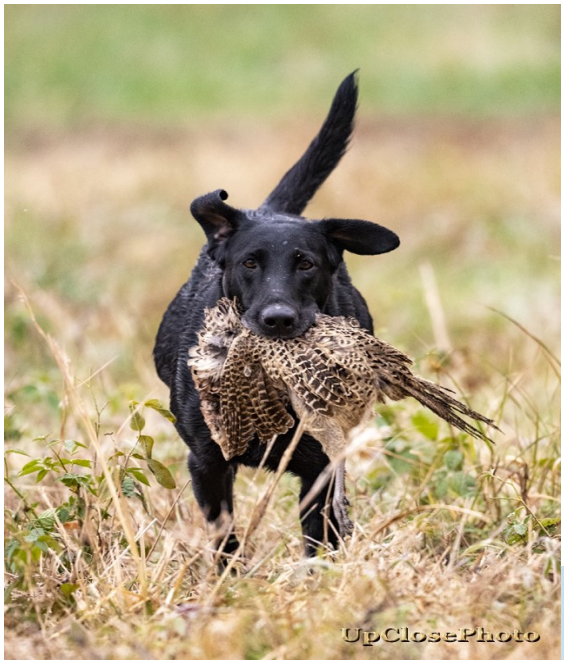
National Retriever Trials Held at WKWMA



78th National Field Champion is a black Labrador retriever (top and left) named I'm Ur Search Engine. Photos courtesy of M.L. Atwater at UpClosePhoto.com

The 78th annual National Retriever Club Championships were held the week of Nov. 12th at the West Kentucky Wildlife Management Area (WKWMA), which surrounds the Paducah Gaseous Diffusion Plant (PGDP). One hundred three dogs from across the nation competed in the multi-day event. All of the competitors this year were Labrador retrievers. The dogs competed in 10 land and water trials. Retrievers were judged on qualities like memory, marking ability, steadiness and perseverance.

Approximately 300 participants and spectators from all over the country attended the event. Participants were very complimentary of the WKWMA and the city of Paducah, saying it is the perfect spot for the Championships. They hope to bring it back in a few years. The Championships are held in a different time zone every year.

The winner was National Field Champion Amateur Field Champion "I'm Ur Search Engine," his call name is Google. The male black Labrador retriever was trained and handled by Alan Pleasant from Angier, North Carolina. Google's owner is Leon Stepanian from Manakin-Sabot, Virginia.

The WKWMA hosts a number of local, regional, and national events that bring recreational users from all over the country to the areas surrounding the PGDP.

C-400 Historical Groundwater Actions

Before starting the C-400 Complex OU investigation, a review of all the previous groundwater remediation work at C-400 was in order. After a sewer line repair in 1986 led to the discovery of a trichloroethylene (TCE) leak in 1986, approximately 310 cubic feet of contaminated soil was excavated, drummed, and disposed of offsite. Excavation was halted to prevent potential structural damage to a nearby TCE storage tank and street. The excavation was backfilled with clean soil and capped with a thin layer of clay. That discovery sparked several rounds of subsurface investigations and multiple interim environmental clean-up actions designed to remove and treat TCE in several locations around the C-400 building.

Subsurface investigations indicated that zones of dense non-aqueous phase liquid (DNAPL) TCE were present in the southeast area of C-400. The identified areas account for the vast majority of TCE DNAPL known to exist at the PGDP. In 2003 a full-scale electrical resistance heating (ERH) treatability study was conducted near the southeast corner of the C-400 building. This was done to determine the effectiveness of the technology at driving volatile contaminants into a vapor phase so extraction and treatment could occur at the surface. Approximately 1,900 gallons of TCE were removed from the treatment area. The study achieved a 98% reduction of TCE contamination in Upper Continental Recharge System soils and a 99.1% reduction of TCE concentration in Regional Gravel Aquifer groundwater.

In 2006 an investigation was conducted to improve the ERH design by determining the subsurface soil conditions and the presence and concentration of VOCs in the UCRS, RGA, and the RGA/McNairy interface. Results from the study were used to delineate the extent of TCE soil contamination and were used to interpret the distribution of TCE DNAPL and the topography of the base of the continental deposits south of the C-400 building.

The first phase of an interim remedial action was initiated in 2008. The Phase I ERH system consisted of a network of in-ground electrodes and vapor extraction wells distributed throughout the east and southwest zones of contamination in a three-phase heating pattern. These areas were selected for Phase I because they were the smallest source areas near C-400 and contamination was located primarily in the UCRS. Phase II was planned to treat the southeast area, which was expected to contain a larger amount of source contamination in both the UCRS and RGA. Phase I ERH removed an estimated 535 gallons of TCE and reduced concentrations in the soil by 95% in the east treatment area and by 99% in the southwest treatment area.

An important objective of Phase I was to evaluate the heating performance of the ERH design through the lowest portions of the RGA down into the McNairy Formation. During Phase I temperature goals were not achieved in the lower RGA, especially below 70 ft. Because of this, Phase II was divided into two parts. Phase IIa would use ERH to remediate the UCRS and upper RGA down to 60 ft. and Phase IIb would use a different technology to treat the lower RGA. Phase IIa operations were completed in 2014 and consisted of ERH in the UCRS and upper RGA in the southeast treatment area. Phase IIa removed an estimated 1,137 gallons of TCE and reduced soil concentrations by 99.8%.

In 2015 a treatability study of steam-enhanced extraction (SEE) was implemented in the area southeast of C-400, upgradient of the main area of contamination, to determine if steam injection would work in the Phase IIb area. The treatability study demonstrated that steam injection technology is technically implementable in the hydrogeologic conditions tested. Phase IIb did not progress to the clean-up phase because it was incorporated into the scope of the C-400 Complex OU action, which is primarily focused beneath the C-400 building, but also includes the area around it.

Photo: Six-phase treatability study construction site, southeast side of C-400 Building (circa 2003).

Retirement Announcement!

Gaye Brewer joined the Paducah Gaseous Diffusion Plant (PGDP) Section in 1999 and has spent 16 of her 19+ years solely working in the PGDP Section. Gaye finally quit threatening to retire and actually did it this time! Gaye retired on Nov. 30th but don't despair, you'll probably be seeing her at Citizen Advisory Board (CAB) meetings in 2019. "The Commonwealth of Kentucky has really been fortunate and blessed to have Gaye as an employee. The qualities I admire most about Gaye is her 'can-do attitude' and willingness to help others in the Section with a wide variety of tasks," said Brian Begley the PGDP Section Supervisor. In 2017 Gaye was recognized as one of the Department of Environmental Protection's Outstanding Employees. Gaye plans on spending her retirement days with her husband Rick, five cats and one dog, becoming a member of the CAB, continuing to teach stained glass classes, and pursuing a wide assortment of hobbies.

Brian Begley (left) presents Gaye Brewer (right) with a plaque from the Kentucky Energy & Environment Cabinet In Recognition of 19+ Years of Dedicated Service to the Commonwealth of Kentucky.

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