STATEMENT OF BASIS/FINAL DECISION AND RESPONSE TO COMMENTS SUMMARY

REGION VII
ID# 0524

U. S. Department of Energy
Kansas City Plant
Tank Farm Area
Kansas City, MO
(Signed July 15,1992)

Facility/Unit Type:	**Waste storage tank farm**
Contaminants:	***Trichloroethene (TCE), 1,2-Dichloroethene (1,2-DCE), Vinyl chloride***
Media:	**Ground water, soil**
Remedy:	**Ultraviolet-ozone liquid phase treatment of ground water**

FACILITY DESCRIPTION

On June 23, 1989, EPA and the U. S. Department of Energy (DOE) entered into a consent order agreement pursuant to 3008(h) of RCRA. EPA and the Missouri Department of Natural Resources (MDNR) reviewed and approved DOE's Tank Farm Interceptor System Evaluation and Treatment Unit Corrective Action Plan and the Facility Screening of Corrective Measures Technologies for the Tank Farm area.

On October 1, 1990 and February 22, 1991, respectively, EPA approved DOE's Ground Water Treatment Interim Measures Plans which satisified the requirements of a Corrective Measure Implementation Plan (CMIP). The Ground Water Assessment Plan for the Tank Farm area approved on March 1, 1990, also met the requirements of a CMIP.

The DOE facility is part of the Bannister Federal Complex and occupies about 122.5 acres of the 300-acre complex. The Tank Farm, installed in 1943, consists of 28 underground storage tanks that housed various solvents, fuels, and coolants which were pumped from unloading stations to the tanks through hoses. The Tank Farm operated as an interim status waste storage area. In 1987, all of the tanks and most of the contaminated soil around and beneath the tanks were removed. This work was conducted under an approved MDNR closure plan. A small portion of contaminated soil remains on site and will be regulated by MDNR with a post-closure permit. DOE conducted ground-water monitoring in the Tank Farm area and found high levels of volatile organic compounds (VOCs). Because the VOCs were released from the Tank Farm area, DOE is required to clean up the ground water according to regulations in 40 CFR §264 and 10 Code of State Regulations Part 25.

EXPOSURE PATHWAYS

VOC levels in the ground water surpass EPA Maximum Contaminant Levels (MCLs). The ground-water flow may carry the contamination from the Tank Farm area into the Little Blue River located east of the DOE facility. If this river becomes contaminated, it may affect wildlife and people using the river (ie., swimming, fishing, boating, etc.).

PUBLIC PARTICIPATION

The 45-day public comment period on EPA's proposed remedy extended from February 22, 1992 to April 17, 1992. A public meeting was not requested by the public. Two comments from an unidentified citizen were received during the comment period. The citizen agreed with EPA's approach to calculating the drinking

CONTAMINATION DETECTED AND CLEANUP GOALS

Media	Estimated Volume	Contaminant	Maximum Concentration	Action Level	Cleanup Goal	Point of Compliance
groundwater	not given	TCE 1,2-DCE Vinyl Chloride	1670 ppb 2600 ppb 580 ppb	5 ppb 70 ppb 2 ppb	5 ppb* 70 ppb* 2 ppb*	KS87-61** KS87-62** KS87-63**

* Cleanup goal is a Maximum Contaminant Level that is federally enforceable under the Safe Drinking Water Act.
**KS- Kansas City Monitoring Well

water cleanup goals and asked why destruction percentages were not included in the Statement of Basis.

SELECTED REMEDY

Removal and treatment of contaminated ground water using recovery wells was selected as the corrective action. The selected treatment methoisan ultraviolet-ozone liquid-phase treatment system (ultraviolet-ozone system) which has been operational since 1988. EPA approved it as an interim measure in 1990. A liquid-phase carbon absorption filter system has been added to the treatment system to treat excessive levels of VOCs to meet National Pollutant Discharge Elimination System (NPDES) pretreatment requirements.

The ultraviolet-ozone system was selected because it will provide the best overall protection to human health and the environment by removing and destroying VOCs, and minimizing the potential movement of ground-water contamination into the Little Blue River. The system has proven effective and reliable in destroying VOC contamination in ground water and will reduce the level of VOCs at or near the clean-up standards for the Tank Farm.

The total estimated capital costs associated with the selected remedy will be $3,180,000. O&M costs were not presented in the response to comments. The cost-effective ultraviolet system will be easily implemented because it has been in use at the Tank Farm as an interim measure for the past four years.

The selected remedy may not meet the proposed clean-up standards if it is not possible to remove all VOCs from the ground water. However, DOE showed that the system has been successfully controlling the source area. The Kansas City, Missouri waste-water treatment plant will effectively treat any low levels of VOCs remaining in the discharge water.

INNOVATIVE TECHNOLOGIES CONSIDERED

Ultraviolet-ozone liquid-phase treatment system.

NEXT STEPS

At some future date, DOE may wish to combine the CMI for the Tank Farm area into a more comprehensive ground-water CMI involving other areas at the facility so that one comprehensive document addresses all ground-water remediation activities at this facility.

The ultraviolet-ozone system and cleanup levels will be reassessed periodically according to the Ground-Water Assessment Plan under which DOE is operating.

KEY WORDS

ground water, soil; ingestion, dermal contact; VOCs; ultraviolet-ozone liquid phase treatment

CONTACT

Kenneth S. Ritchey
U. S. Environmental Protection Agency
726 Minnesota Avenue
Kansas City, KS 66101
(913) 551-7641