

SWMU ASSESSMENT REPORT

UNIT NUMBER: AOC 205

7

UNIT NAME: Eastern Portion of Yellow Water Line

Site n 08

DATE: AOC 205 notification submitted on June 10, 1996

10/10/96 R 034 +00

REGULATORY STATUS: Area of Concern (AOC)

LOCATION: AOC 205 is located on DOE property outside the security fence and west of the plant. Specifically, AOC 205 is that portion of the yellow water line and associated manholes between the westernmost drainage swale of the C-746-K Landfill at station 31+50 and its termination east and north of the C-746-K Landfill. See Attachment 1.

APPROXIMATE DIMENSION: The eastern portion of the yellow water line is approximately 3204 feet in length. It begins at station 31+50 (westernmost drainage swale of C-746-K Landfill) and ends at station 63+54 (headwall at Big Bayou Creek north of the Waste Water Treatment Plant).

FUNCTION: This water line was used to transport yellow water, a waste of the nitration process utilized at the former Kentucky Ordinance Works (KOW), from the Wash House to a discharge point at Big Bayou Creek.

BRIEF HISTORY: The former Kentucky Ordinance Plant, which manufactured 2,4,6-Trinitrotoluene during World War II, was constructed by Rust Engineering Company from 1942 to 1943. Atlas Powder Company operated the facility from 1943 until its closure in 1946. Prior to construction and operation of the KOW, the land was in private ownership and was used primarily for agricultural purposes.

In August 1945, the former KOW was declared surplus to the needs of the Army Ordinance Department. At this time, shutdown and decontamination procedures were instituted. Large pieces of equipment and sewer lines were steam cleaned and flushed. All drainage lines associated with TNT production were flushed with a solution of soda ash.

OPERATIONAL STATUS: No longer operational.

DATES OPERATED: 1943 to 1946

SITE/PROCESS DESCRIPTION: "Tri-Oil" (crude, molten TNT) was sent to the Wash House for purification, crystallization, and flaking. Tri-oil is a mixture of TNT isomers; however, the desired product

was the isomer 2,4,6-TNT. Once in the wash tank, the tri-oil was initially purified with two water washes. The water was drawn off the melted TNT and directed to catch boxes. This waste is referred to as yellow water.

WASTE DESCRIPTION: The yellow water is waste produced at the Wash House which was highly acidic, clear, yellow to orange-red in color, stable, and resistant to biological oxidation. The effluent most likely contained acidic wastes, sulfates, nitrates, and nitrobenzenes (TNT isomers).

WASTE QUANTITY: Unknown

SUMMARY OF ENVIRONMENTAL SAMPLING DATA: As reported in the Phase I Engineering Report prepared for the U.S. Army Corps of Engineers by TCT-St. Louis dated October 1992, this downgradient portion of the yellow water line was not sampled.

DESCRIPTION OF RELEASE AND MEDIA AFFECTED:

GROUNDWATER--If the integrity of the yellow water line has been compromised, shallow groundwater may be affected. However, no sampling has been performed to confirm this.

SURFACE WATER--The discharge point for the yellow water line is Big Bayou Creek north of the Waste Water Treatment Plant.

SOIL--If the integrity of the yellow water line has been compromised, soil contamination may be present. However, no sampling has been performed to confirm.

ECOLOGY AFFECTED (i.e., endangered/threatened species) Unknown

DOCUMENTATION OF NO RELEASE: Not Applicable. The purpose of the yellow water line was the discharge of effluent.

IMPACT ON OR BY OTHER SWMU/AOC: This portion of the yellow water line is thought to run beneath the C-746-K Landfill, SWMU 8. If the integrity of the yellow water line is compromised, the line may act as a conduit for leachate from the landfill.

RFI NECESSARY: Yes. DOE proposes to include AOC 205 in WAG 18.

