PRELIMINARY ASSESSMENT/SITE INSPECTION REPORT
AND SWMU ASSESSMENT REPORT

UNIT NUMBER:	478
UNIT NAME:	C-410/420 Feed Plant
DATE:	6/15/01
REGULATORY STATUS:	SWMU
LOCATION:	C-410/420 is located west of C-411 and east of C-400 in the center of PGDP.
APPROXIMATE DIMENSION:	C-410: 75,853 sq. ft. C-420: 46,756 sq. ft.
FUNCTION:	This complex was used to produce UF_6 from UO_3.
BRIEF HISTORY:	According to the *Engineering Evaluation/Cost Analysis for the C-410 Complex at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1952&D1), the C-410 Feed Plant complex was constructed in 1953. Conversion of UO_3 to UO_2 and the conversion of UO_2 to UF_4 occurred in the C-420 Green Salt Plant. The conversion of UF_4 to UF_6 occurred in the C-410 Feed Plant. Prior to 1956, when the C-420 facility was constructed, the entire process was performed in the C-410 facility. Per the *Site Evaluation Report for the C-410 Complex at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1983&D0), this facility ceased operations in 1964 and was placed in "standby". The complex was reactivated in 1968 and permanently discontinued for its intended use in 1977. Since shutdown, the complex has been used for a number of purposes, including an electrical shop, training space, and health physics offices. Large valve rebuilding was performed in part of the original C-410 structure. Small laboratory facilities were also established in the facility, as was a computer maintenance shop. In addition, four fluorine cells continued operation for a number of years, providing

fluorine to the cascade. In 1993, the D&D Program and environmental compliance personnel performed a thorough environmental inspection of the facility. Actions conducted as a result of these inspections are documented in the *Summary Report of the Paducah Gaseous Diffusion Plant Decontamination and Decommissioning Program Environmental Noncompliance Closure Activities at the C-410 Feed Plant Complex*, November 1995.

OPERATIONAL STATUS: Inactive

DATES OPERATED: According to personnel employed by the previous DOE contractor, operations in C-410 began in 1956 through 1964, then again from 1968-1976 but small quantities of F_2 were made until approximately 1996. D&D activities began in 1992.

SITE/PROCESS DESCRIPTION: The C-410 complex was operated to convert UO_3 to UF_6 by a series of reactions involving gaseous hydrogen, hydrogen fluoride, and fluorine. The conversion of UO_3 to UO_2 by reduction followed by the conversion of UO_2 to UF_4 by hyudrofluorination with hydrogen fluoride gas occurred in the C-420 Green Salt Plant. The conversion of UF_4 to UF_6 by fluorination with fluorine gas occurred in the C-410 Feed Plant.

WASTE DESCRIPTION: According to BJC personnel, an unknown amount of undrummed and uncharacterized material is in the building. Within the facility, there are approximately 50 drums of various waste types and approximately 45 B-25 boxes of waste. Per the *Engineering Evaluation/Cost Analysis for the C-410 Complex at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1952&D1) waste types include scrap metal, equipment, vacuum dusts, PPE, etc.

WASTE QUANTITY: According to BJC personnel, there is an unknown amount of undrummed/uncharacterized waste. There are approximately 50 drums of waste and 45 B-25 boxes of waste. Per the *Engineering Evaluation/Cost Analysis for the C-410 Complex at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1952&D1), the equipment and infrastructure represent a volume of approximately 4080 yd^3. In addition the stored waste is assumed to be 4000 yd^3.

SUMMARY OF ENVIRONMENTAL SAMPLING DATA:	Data from locations sampled near C-410/420 were downloaded from Paducah OREIS. Metals, PCBs, radionuclides, SVOCs and VOAs were analyzed in soils near the C-410/420 complex. Analytical results indicate the presence of metals and radionuclides.
DESCRIPTION OF RELEASE AND MEDIA AFFECTED:	According to personnel employed by the previous DOE contractor, there was one small UF_6 release in 1994 and one breached F_2 cell release in 1997 associated with this SWMU. The breached F_2 cell release discharged into the neutralization pit (SWMU 19).
GROUNDWATER:	NA
SURFACE WATER:	NA
SOIL:	NA
ECOLOGY AFFECTED (i.e., endangered/threatened species):	None affected
DOCUMENTATION OF NO RELEASE:	NA
IMPACT ON OR BY OTHER SWMU/AOC:	The following are some of the SWMUs that are in the locale of this facility: 19, 41, 76, 78, 92, 98, and 198.
PRG COMPARISON:	NA
RFI NECESSARY:	Yes. This unit will be managed under the D&D Operable Unit.

NOTE: Elements included in this outline shall be considered and incorporated, as appropriate, when developing the above referenced document.

SWMU 478 C-410-420 # 2

SWMU 478 C-410-420 # 3

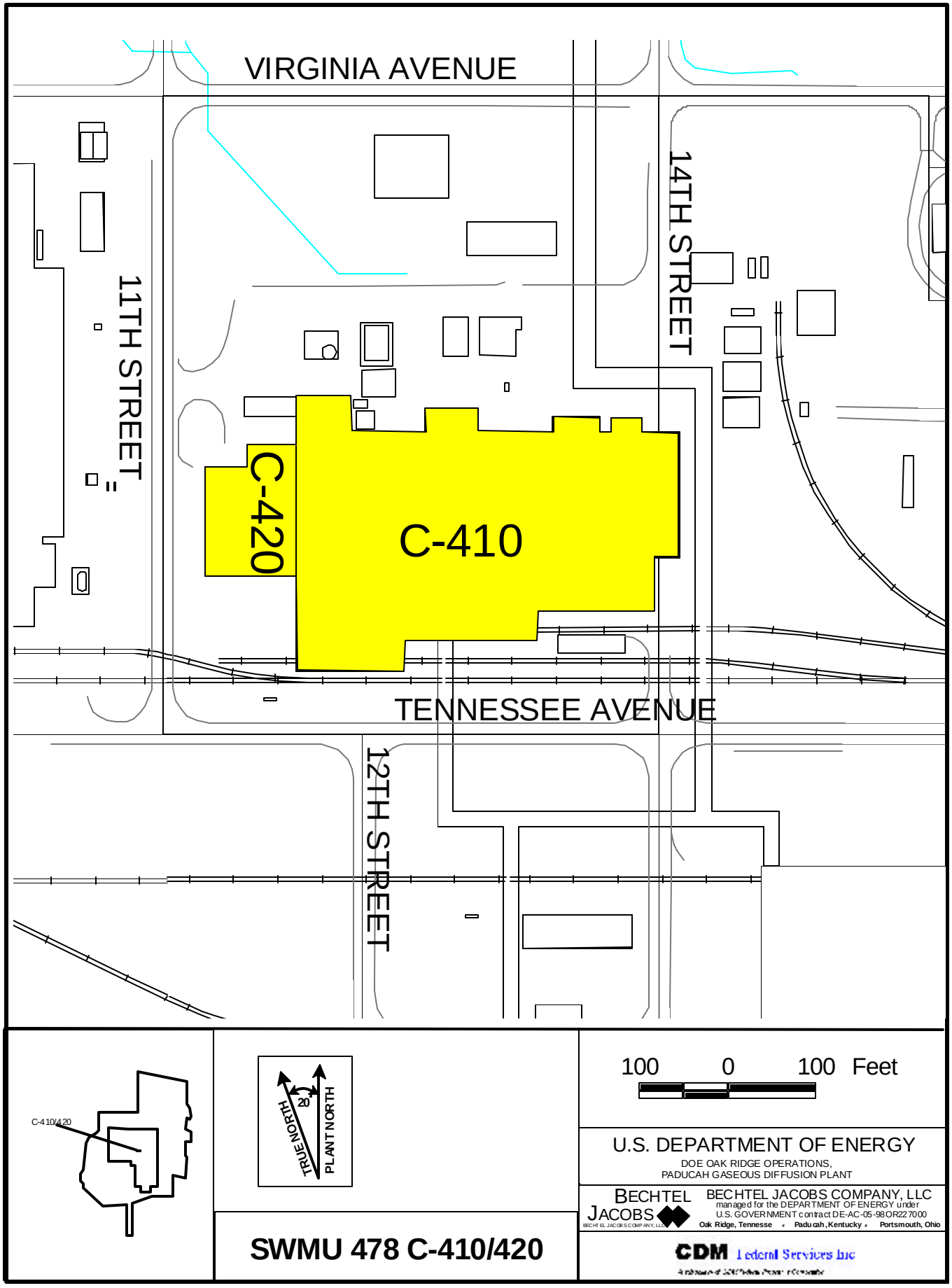

FIGURE No. SWMU 478 C-410/420
DATE 06/22/01