

## **Paducah Site**

# **Annual Site Environmental Report for Calendar Year 2004**

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Prepared for the  
U.S. DEPARTMENT OF ENERGY  
Office of Environmental Management

by  
Bechtel Jacobs Company LLC  
managing the

Environmental Management Activities at the  
Paducah Gaseous Diffusion Plant  
Paducah, Kentucky 42001  
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## Acronyms and Abbreviations

ACO	Administrative Order by Consent
AIP	KDEP Agreement in Principle
AO	Agreed Order
AOC	Area of Concern
ASER	Annual Site Environmental Report
ASTM	American Society of Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
BCHT	Blended Chemical Heat Treatment™
BJC	Bechtel Jacobs Company LLC
CAA	Clean Air Act
CAB	Paducah Citizens Advisory Board
CEDE	committed effective dose equivalent
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
Ci	Curie
COE	U.S. Army Corps of Engineers
<sup>137</sup> Cs	cesium-137
CSOU	comprehensive site-wide operable unit
CWA	Clean Water Act
CX	categorical exclusion
CY	calendar year
D&D	decontamination and decommissioning
DCG	derived concentration guide
DMSA	DOE Material Storage Area
DNAPL	dense, nonaqueous-phase liquid
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DQO	data quality objective
DUF <sub>6</sub>	depleted uranium hexafluoride

EA	environmental assessment
EDD	electronic data deliverable
EIC	DOE Environmental Information Center
EIS	environmental impact statement
EM	Environmental Management
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EQADMP	Environmental Services Quality Assurance and Data Management Plan
FDA	Food and Drug Administration
FFA	Federal Facility Agreement
FFC Act	Federal Facility Compliance Act
FFCA	Federal Facility Compliance Agreement
ft	foot (feet)
HAP	hazardous air pollutant
HSWA	Hazardous and Solid Waste Amendments
ICRP	International Commission on Radiological Protection
IRA	interim remedial action
K.A.R.	Kentucky Administrative Regulation
KCHS	Kentucky Cabinet for Health Services
KDAQ	Kentucky Division for Air Quality
KDEP	Kentucky Department for Environmental Protection
KDOW	Kentucky Division of Water
KDWM	Kentucky Division of Waste Management
kg	kilogram(s)
km	kilometer(s)
KOW	Kentucky Ordnance Works
KPDES	Kentucky Pollutant Discharge Elimination System
L	liter(s)
LLW	low-level waste

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LRGA	Lower Regional Gravel Aquifer
m	meter(s)
MCL	maximum contaminant level
mHBI	modified Hilsenhoff Biotic Index
µg	microgram(s)
mg	milligrams(s)
mR	milliRoentgen(s)
mrem	millirem(s)
MLLW	mixed low-level waste
mt	metric ton(s)
MW	monitoring well
ND	not detected
NEPA	National Environmental Policy Act
NEPCS	Northeast Plume Containment System
NHPA	National Historic Preservation Act
NOV	notice of violation
<sup>237</sup> Np	neptunium-237
NPL	National Priorities List
NSDD	North-South Diversion Ditch
NTS	Nevada Test Site
NWPGS	Northwest Plume Groundwater System
OREIS	Oak Ridge Environmental Information System
OU	operable unit
PCB	polychlorinated biphenyl
pCi	picoCurie(s)
PEMS	Project Environmental Measurement Systems
PGDP	Paducah Gaseous Diffusion Plant
pH	hydrogen-ion concentration
PHA	public health assessment
ppb	parts per billion

ppm	part per million
PP/WM	Pollution Prevention/Waste Minimization
<sup>239</sup> Pu	plutonium-239
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RD/RAWP	Remedial Design/Remedial Action Work Plan
RGa	Regional Gravel Aquifer
RI	remedial investigation
ROD	Record of Decision
SDWA	Safe Drinking Water Act
SI	site investigation
SMO	Sample Management Office
SMP	Site Management Plan
SOW	statement of work
<sup>90</sup> Sr	strontium-90
STP	Site Treatment Plan
SWMU	solid waste management unit
<sup>99</sup> Tc	technetium-99
TCE	trichloroethene
<sup>230</sup> Th	thorium-230
TLD	thermoluminescent dosimeter
TRE	Toxicity Reduction Evaluation
TSCA	Toxic Substances Control Act
<sup>234</sup> U	uranium-234
<sup>235</sup> U	uranium-235
<sup>238</sup> U	uranium-238
UCRS	Upper Continental Recharge System
UE	uranium enrichment

UF <sub>4</sub>	uranium tetrafluoride
UF <sub>6</sub>	uranium hexafluoride
URGA	Upper Regional Gravel Aquifer
USEC	United States Enrichment Corporation
UST	underground storage tank
VOC	volatile organic compound
WAG	waste area group
WKWMA	West Kentucky Wildlife Management Area
WMP	Watershed Monitoring Program

## Request for Comments

The U.S. Department of Energy (DOE) requires an annual site environmental report from each of the sites operating under its authority. This report presents the results from the various environmental monitoring programs and activities carried out during the year. This *Paducah Site Annual Site Environmental Report for Calendar Year 2004* was prepared to fulfill DOE requirements. This report is a public document, distributed to government regulators, businesses, special interest groups, and members of the public.

This report is based on thousands of environmental samples collected at or near the Paducah Site. Significant efforts were made to provide the data collected and details of the site environmental management programs in a clear and concise manner. The editors of this report encourage comments in order to better address the needs of our readers in future site environmental reports. Please send your comments to the following address:

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