

# Final

# **Mercury Management**

## Environmental Impact Statement

**Volume I**

**March 2004**



**Defense Logistics Agency  
Defense National Stockpile Center  
Fort Belvoir, VA**

# **FINAL MERCURY MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT**

**Lead Agency:** Defense Logistics Agency,  
Defense National Stockpile Center

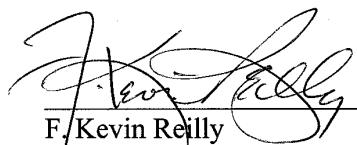
## **Cooperating Organizations**

U.S. Department of Energy  
  
U.S. Environmental Protection Agency  
Office of Pollution Prevention and Toxics  
Office of Federal Activities

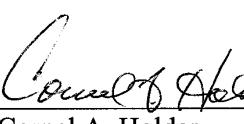
## **Consulting Organizations**

U.S. Department of Commerce  
  
U.S. Department of Health and Human Services  
  
U.S. Geological Survey

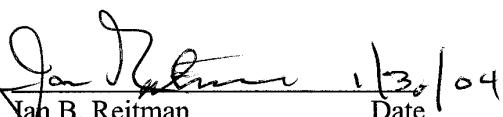
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## COVER SHEET

**LEAD AGENCY:** Defense Logistics Agency, Defense National Stockpile Center |

**COOPERATING AGENCIES:** U.S. Department of Energy, U.S. Environmental Protection Agency |

**TITLE OF THE PROPOSED ACTION:** To select and implement an approach for the long-term (i.e., 40 years) management of the defense stockpile of elemental mercury, which is no longer needed for national defense.

**POINT OF CONTACT:** Information concerning the environmental impact statement can be obtained at the project Web site ([www.mercuryeis.com](http://www.mercuryeis.com)), by calling 1-888-306-6682, or by writing to the Project Manager, ATTN: Project Manager, Mercury Management EIS, DNSC-E, Defense National Stockpile Center, 8725 John F. Kingman Road, Suite 3229, Ft. Belvoir, VA 22060-6223.

**APPROVAL AUTHORITY:** Defense Logistics Agency, Staff Director, Office of Environment and Safety |

**DOCUMENT DESIGNATION:** Final Mercury Management Environmental Impact Statement (EIS) |

**AFFECTED JURISDICTIONS:** Hawthorne, NV; New Haven, IN; Oak Ridge, TN; Romulus, NY; Somerville, NJ; Tooele, UT; and Warren, OH

**ABSTRACT:** The Defense National Stockpile Center is responsible for the disposition of stockpiled items declared excess to national defense needs. The United States Congress has determined that the U.S. Department of Defense no longer needs to maintain a stockpile of mercury due to the increased use of mercury substitutes and due to increases in the nation's secondary production (i.e., recovery/recycling). This excess commodity grade mercury was offered for sale in open competitions until 1994 when concerns over mercury accumulation in the global environment prompted the Defense National Stockpile Center to suspend sales. The Defense National Stockpile Center inventory of mercury (approximately 4,890 tons; 4,436 metric tons) is currently stored in enclosed warehouses at four sites in the United States. As custodian of the mercury, the Defense National Stockpile Center must decide on a strategy for long-term management of this material. In compliance with the National Environmental Policy Act and Defense Logistics Agency Regulation 1000.22, Environmental Considerations in Defense Logistics Agency Actions in the United States, the Defense National Stockpile Center has prepared the Final EIS to evaluate the environmental impacts of a range of reasonable alternatives for long-term management (i.e., 40 years) of the excess mercury. The alternatives are: (1) no action, i.e., maintaining storage at the four existing sites; (2) consolidation and storage at one of the current DNSC mercury storage sites or at one of three other candidate locations; and (3) sale of the mercury inventory. The agency's preferred alternative is consolidated storage. The Final EIS describes the potential environmental, human health, and socioeconomic impacts of these alternatives, together with cost considerations. Several treatment technologies were considered as possible alternatives for mercury management. Based on the immaturity of bulk mercury treatment technologies and the lack of an EPA-approved path forward for treatment and disposal of elemental mercury, this alternative is not considered viable and is not evaluated in detail in the EIS.

**PUBLIC COMMENTS:** In preparing this Final EIS, the Defense National Stockpile Center considered comments received during the scoping period (February 5, 2001, to June 30, 2001) and during the comment period on the Draft EIS (April 11, 2003, to July 18, 2003). Comments received on the Draft EIS after the close of the comment period were also considered.

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## List of Acronyms

ATSDR	Agency for Toxic Substances and Disease Registry
BLM	Bureau of Land Management
BRAC	U.S. Army Base Realignment and Closure
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
D&D	decontamination and decommissioning
DLA	Defense Logistics Agency
DNSC	Defense National Stockpile Center
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EA	environmental assessment
ECDC	East Carbon Development Corporation
EIS	environmental impact statement
EO	Executive order
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
FONSI	Finding of No Significant Impact
FTE	full-time equivalent
HQ	Hazard Quotient
ISC	Installation Spill Contingency
MM EIS	<i>Mercury Management Environmental Impact Statement</i>
MMI	Modified Mercalli Intensity
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
ORR	Oak Ridge Reservation
OSHA	Occupational Safety and Health Administration
PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
PSD	prevention of significant deterioration
RCRA	Resource Conservation and Recovery Act
ROD	Records of Decision
ROI	region of influence

SHPO	State Historic Preservation Officer
SPCC	Spill Prevention Control and Countermeasures
SWPPP	Storm Water Pollution Prevention Plan
USFWS	U.S. Department of the Interior, Fish and Wildlife Service
U.S.C.	United States Code
USGS	U.S. Geological Survey
VRM	Visual Resource Management
Y-12	U.S. Department of Energy's Y-12 National Security Complex.

## Units of Measure

°C	degrees Celsius (Centigrade)
°F	degrees Fahrenheit
µg	microgram
46°26'07"	46 degrees, 26 minutes, 7 seconds
cm	centimeter
dB	decibel
dBA	decibel, A-weighted
ft	foot
ft <sup>2</sup>	square foot
ft <sup>3</sup>	cubic foot
g	gram
g	gravitational acceleration
gal	gallon
ha	hectare
hr	hour (in compound units)
in	inch
kg	kilogram
km	kilometer
km <sup>2</sup>	square kilometers
kV	kilovolt
kVa	kilovolt-ampere
KWh	kilowatt-hour
l	liter
lb	pound
m	meter
m <sup>2</sup>	square meter
m <sup>3</sup>	cubic meter
mg	milligram
mi	mile
min	minute
mph	miles per hour
MW	megawatt
MWe	megawatt electric
MWh	megawatt-hour
pH	hydrogen ion concentration
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 µm in diameter
PM <sub>10</sub>	particulate matter less than or equal to 10 µm in diameter

s	second
ton	short ton
yd	yard
yd <sup>3</sup>	cubic yard
yr	year (in compound units)

## Metric Conversion Chart

To Convert Into Metric			To Convert Out of Metric		
If You Know	Multiply By	To Get	If You Know	Multiply By	To Get
<b>Length</b>					
inches	2.54	centimeters	centimeters	0.3937	inches
feet	30.48	centimeters	centimeters	0.0328	feet
feet	0.3048	meters	meters	3.281	feet
yards	0.9144	meters	meters	1.0936	yards
miles	1.60934	kilometers	kilometers	0.6214	miles
<b>Area</b>					
sq. inches	6.4516	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.092903	sq. meters	sq. meters	10.7639	sq. feet
sq. yards	0.8361	sq. meters	sq. meters	1.196	sq. yards
acres	0.40469	hectares	hectares	2.471	acres
sq. miles	2.58999	sq. kilometers	sq. kilometers	0.3861	sq. miles
<b>Volume</b>					
fluid ounces	29.574	milliliters	milliliters	0.0338	fluid ounces
gallons	3.7854	liters	liters	0.26417	gallons
cubic feet	0.028317	cubic meters	cubic meters	35.315	cubic feet
cubic yards	0.76455	cubic meters	cubic meters	1.308	cubic yards
<b>Weight</b>					
ounces	28.3495	grams	grams	0.03527	ounces
pounds	0.45360	kilograms	kilograms	2.2046	pounds
short tons	0.90718	metric tons	metric tons	1.1023	short tons
<b>Temperature</b>					
Fahrenheit	Subtract 32 then multiply by 5/9ths	Celsius	Celsius	Multiply by 9/5ths, then add 32	Fahrenheit

## Metric Prefixes

Prefix	Symbol	Multiplication Factor
exa-	E	$1\ 000\ 000\ 000\ 000\ 000\ 000 = 10^{18}$
peta-	P	$1\ 000\ 000\ 000\ 000\ 000 = 10^{15}$
tera-	T	$1\ 000\ 000\ 000\ 000 = 10^{12}$
giga-	G	$1\ 000\ 000\ 000 = 10^9$
mega-	M	$1\ 000\ 000 = 10^6$
kilo-	k	$1\ 000 = 10^3$
hecto-	h	$100 = 10^2$
deka-	da	$10 = 10^1$
deci-	d	$0.1 = 10^{-1}$
centi-	c	$0.01 = 10^{-2}$
milli-	m	$0.001 = 10^{-3}$
micro-	μ	$0.000\ 001 = 10^{-6}$
nano-	n	$0.000\ 000\ 001 = 10^{-9}$
pico-	p	$0.000\ 000\ 000\ 001 = 10^{-12}$
femto-	f	$0.000\ 000\ 000\ 000\ 001 = 10^{-15}$
atto-	a	$0.000\ 000\ 000\ 000\ 000\ 001 = 10^{-18}$