
Brief History of Mercury Use & Cleanup Efforts at the Oak Ridge Y-12 Site

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safety ❖ performance ❖ cleanup ❖ closure

Overview

- Y-12 mercury use & discharges
- Video - Lower East Fork Poplar Creek cleanup
- Past cleanup actions at Y-12
- Path forward / future actions
- Questions?

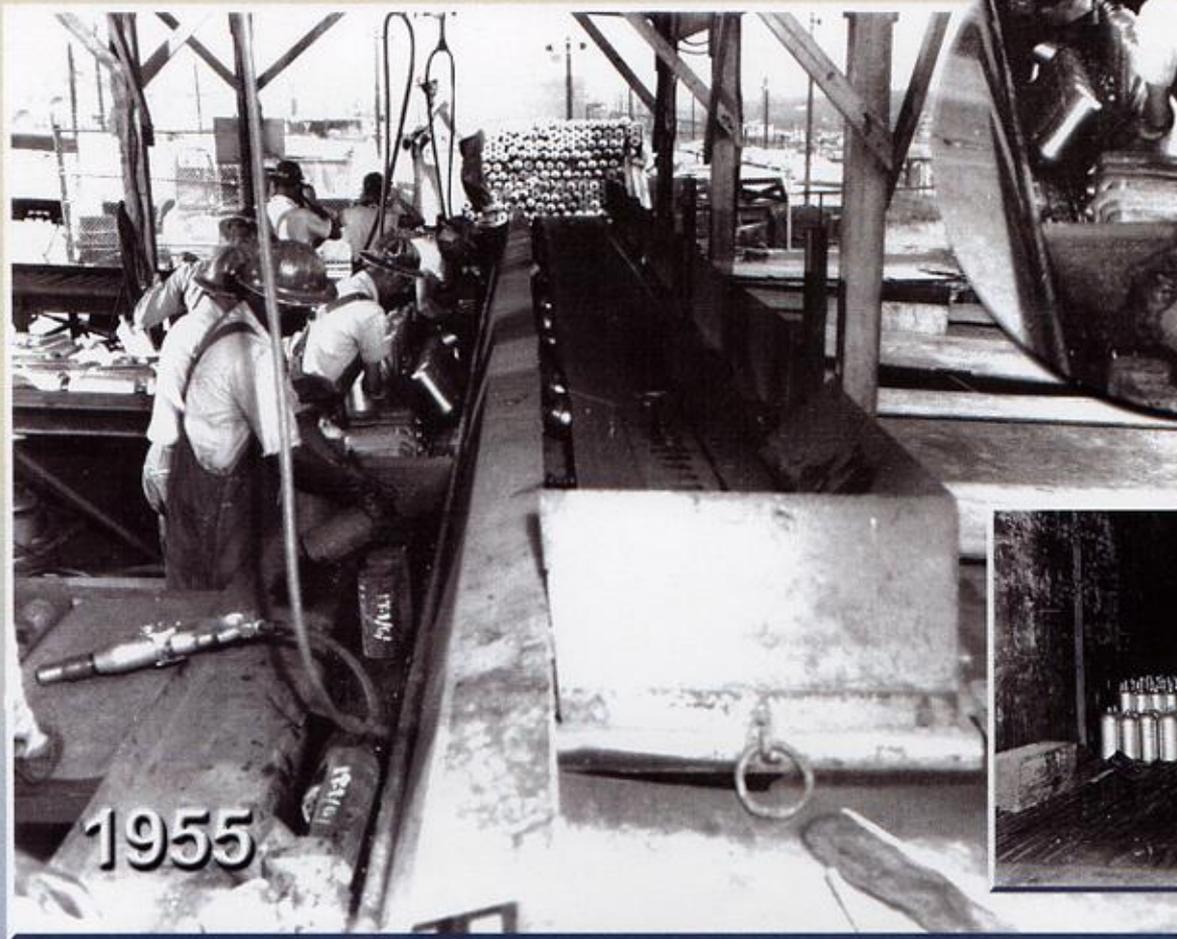


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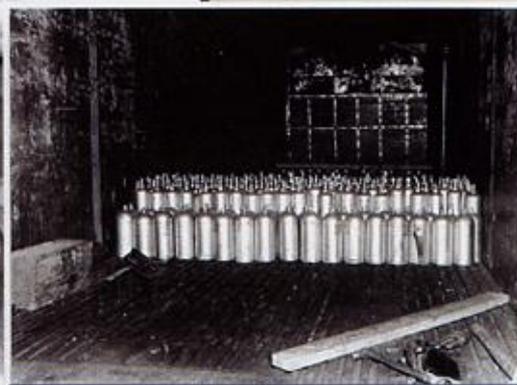
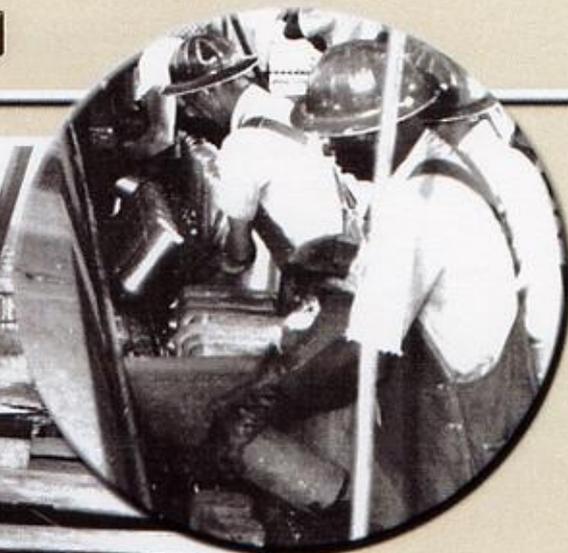
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SHIPMENT OF MERCURY FOR LITHIUM SEPARATION

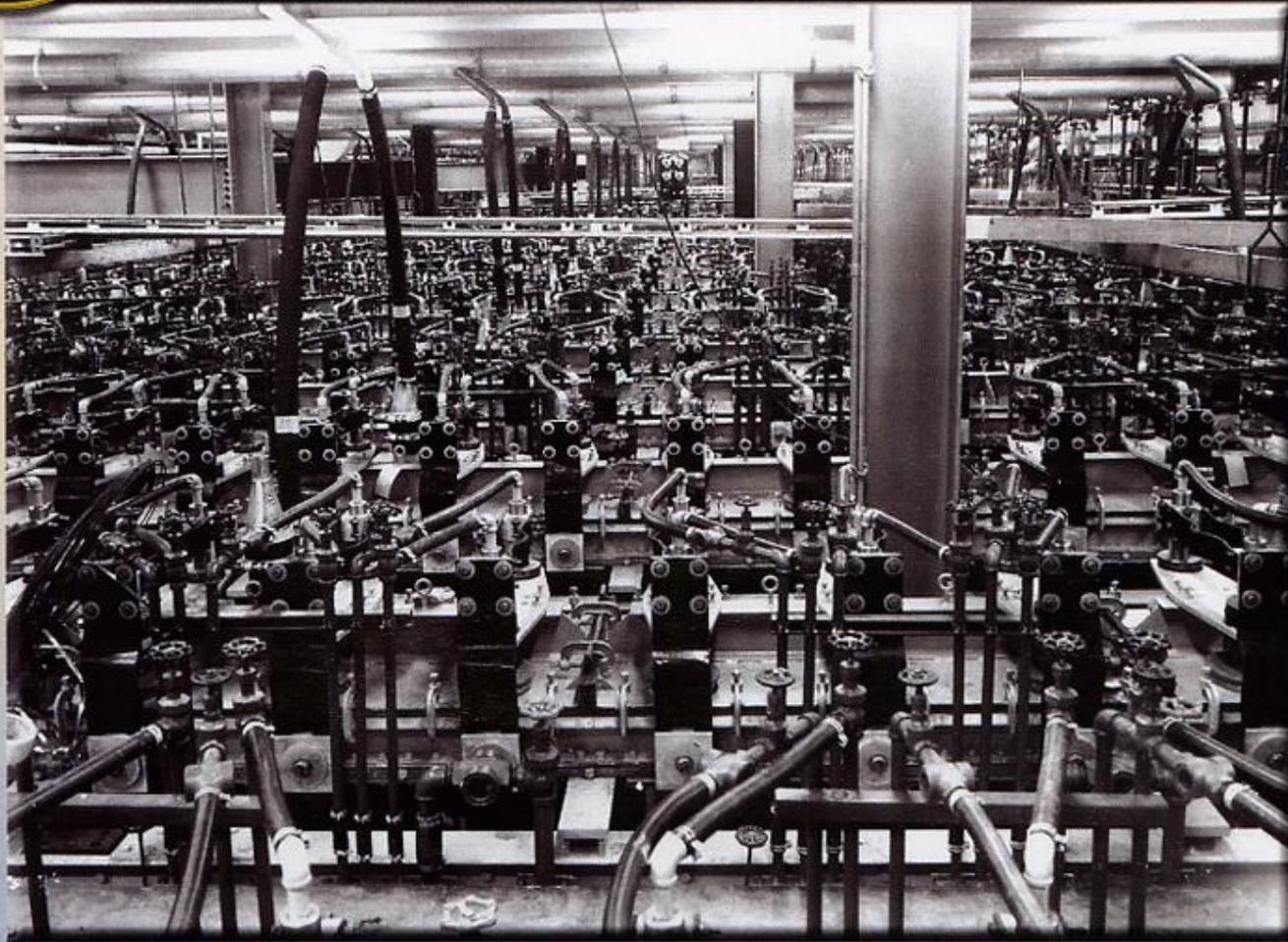


1955





Y-12 LITHIUM SEPARATION PROCESS EQUIPMENT

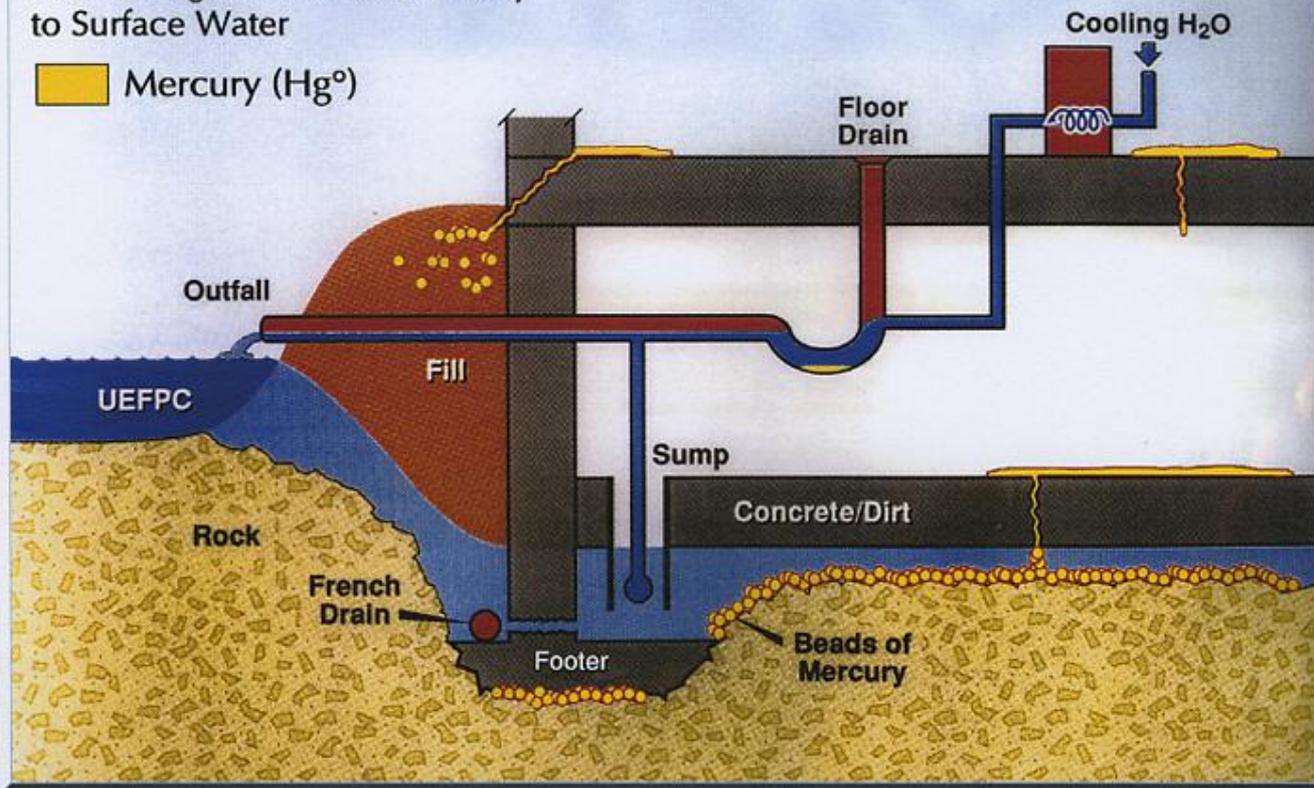




POTENTIAL PATHWAYS FOR MERCURY RELEASES

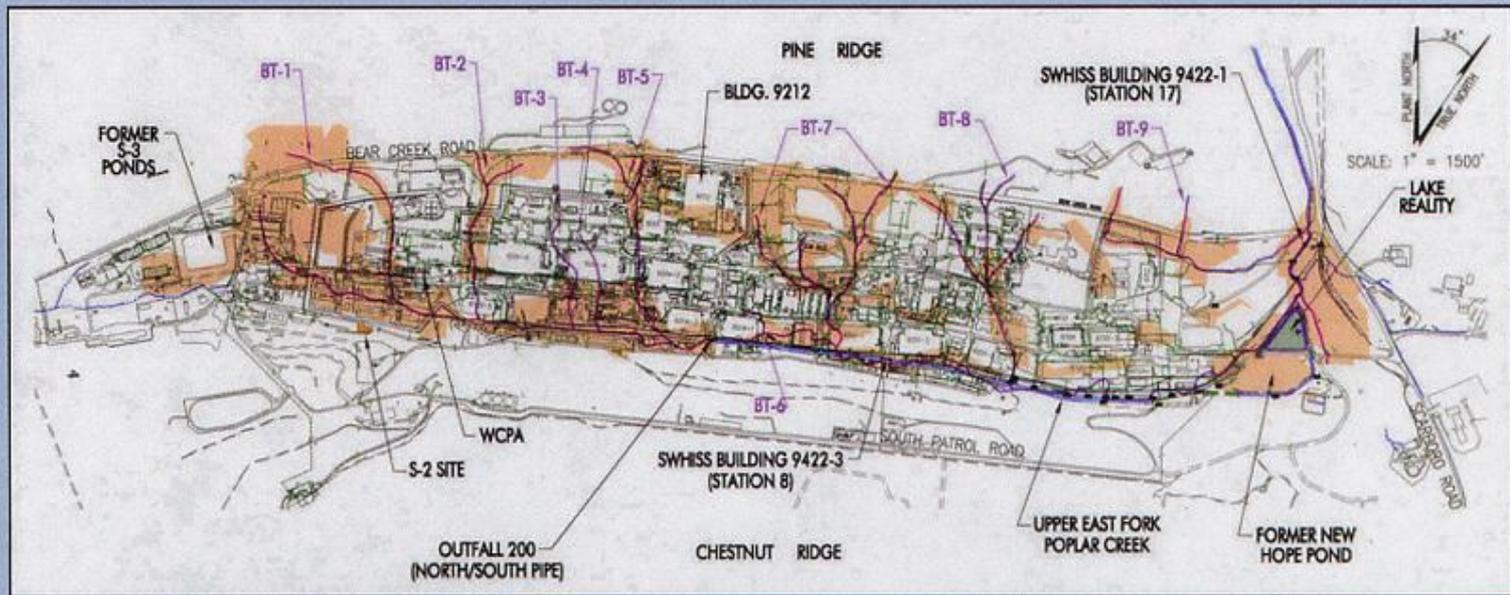
Foundation and Equipment Drains
Provide Hg Source and Pathway
to Surface Water

 Mercury (Hg^0)





FORMER LOCATIONS OF UEFPC AND ITS TRIBUTARIES

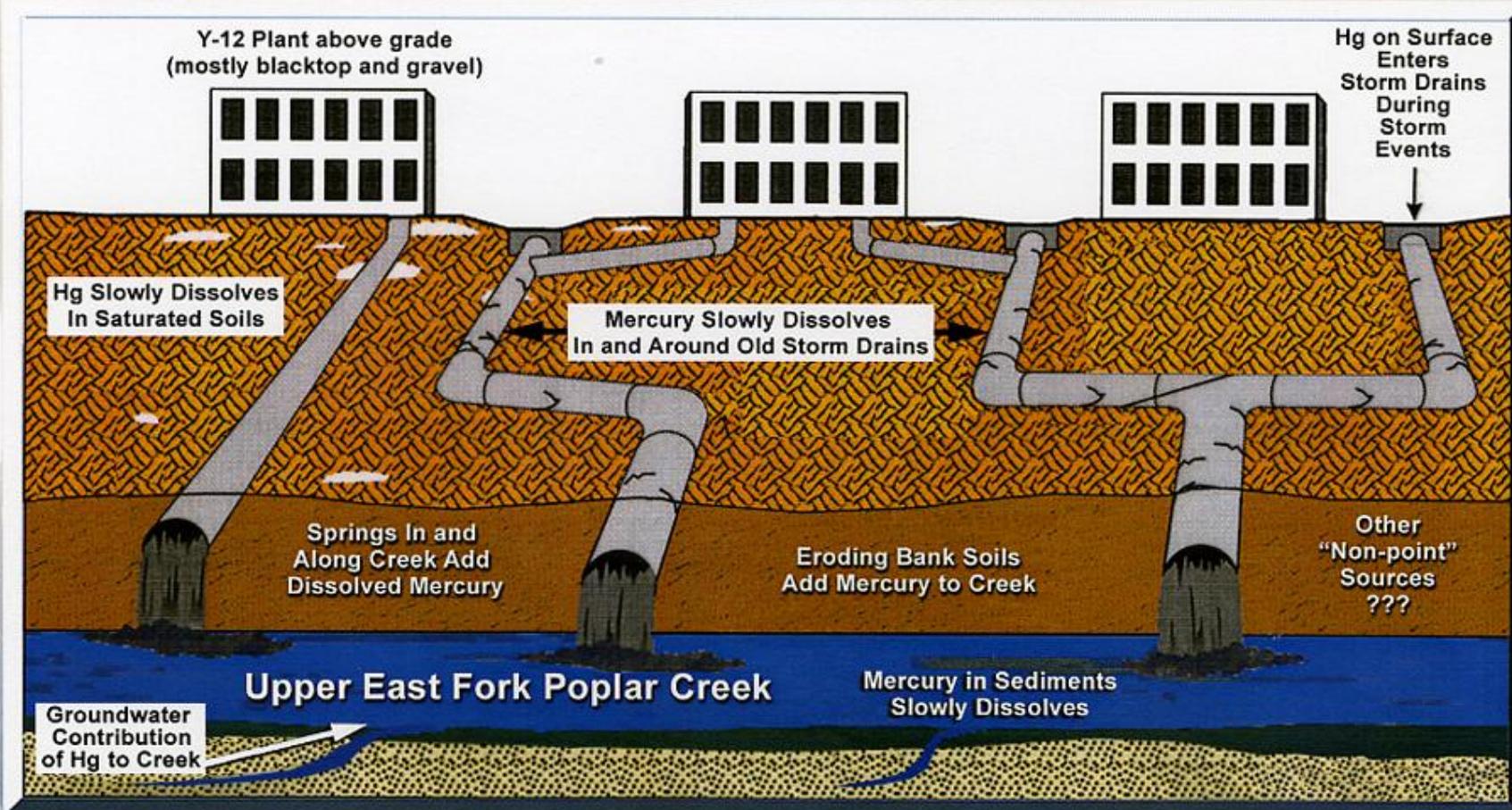


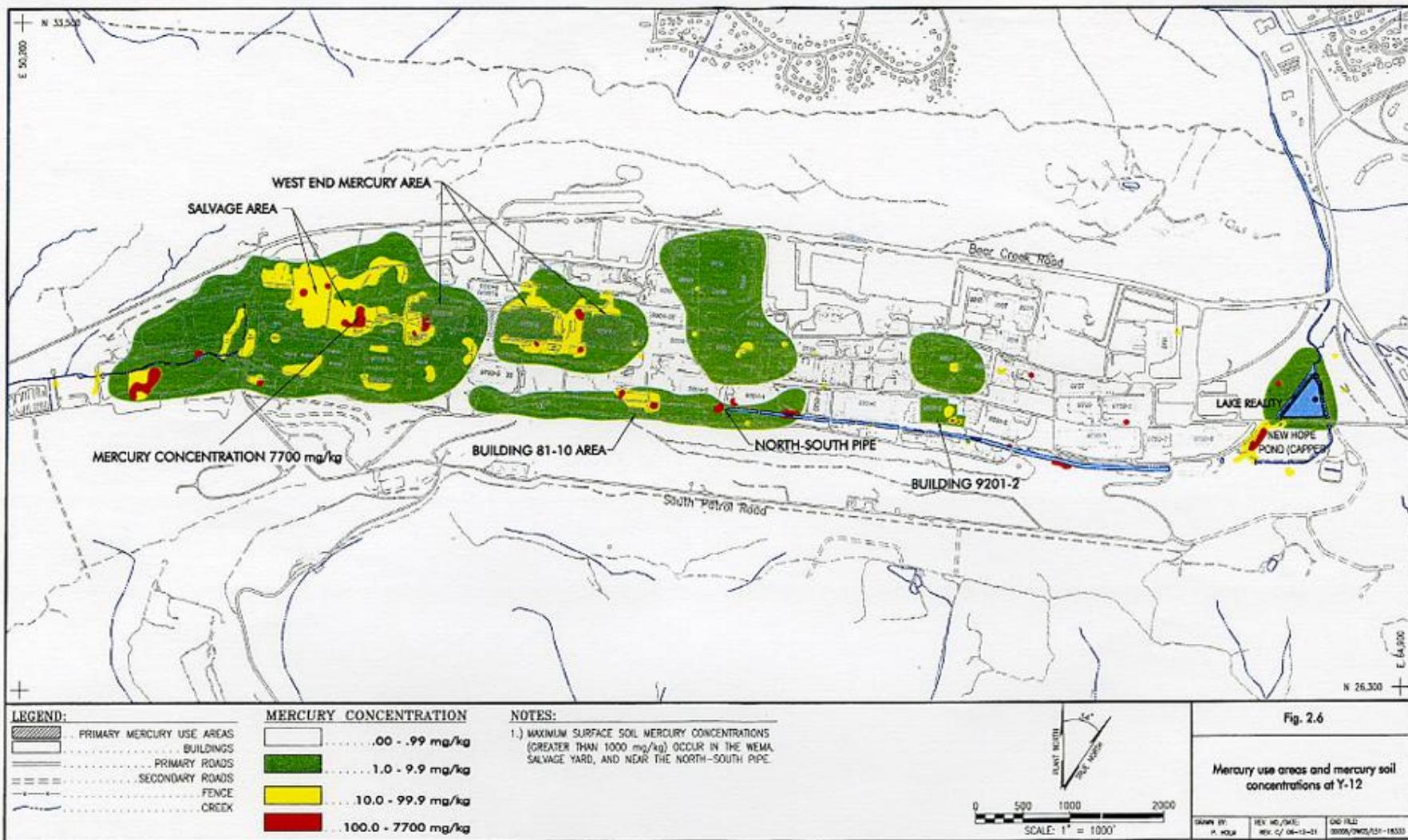
LEGEND:	
	BUILDINGS
	PRIMARY & SECONDARY ROADS
	FENCE
	FORMER LOCATIONS OF UEFPC AND ITS TRIBUTARIES
	STORM DRAIN LOCATIONS
	AREAS FILLED DURING CONSTRUCTION
	BURIED TRIBUTARY ID
	STUDY AREA
	1-12 PLANT GRID

Source: Sutton and Field (1995).



UEFPC MERCURY MIGRATION CONCEPTUAL SITE MODEL



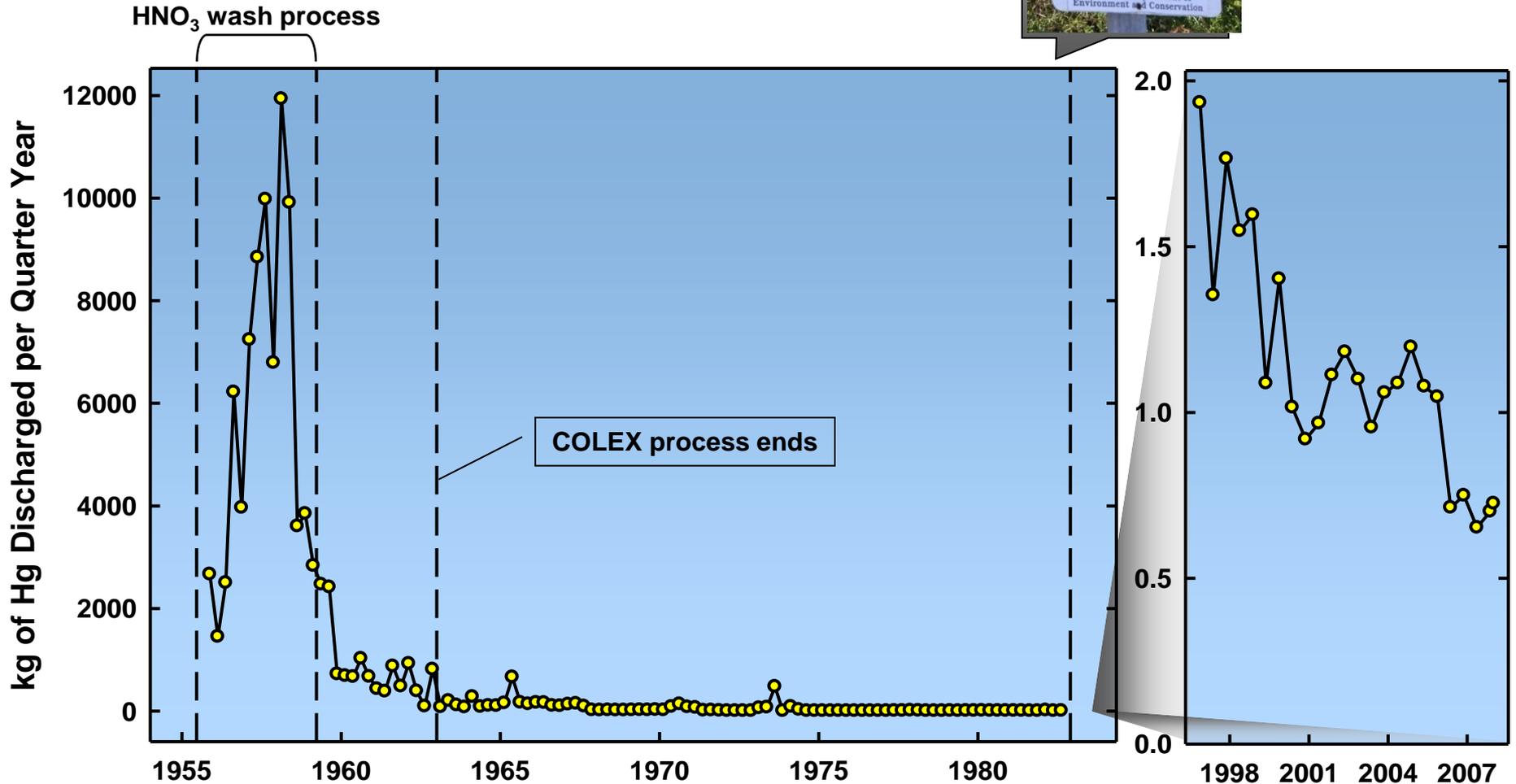


2-17

Areas of Mercury Soil Contamination

Mercury Losses to East Fork Poplar Creek

Sum 1955 – 1983 = 99,300 kg



Mercury Remediation Actions To Date

- Sewer relining (1986-1987)
- Pipe rerouting (1993-1995)
- LEFPC floodplain soil removal (1996-1997)
- Bank stabilization (2001)
- Big Spring Water Treatment System (2005-2006) at Outfall 51
- Outfall 51 action has decreased Hg in water 0% to 300ppt but...

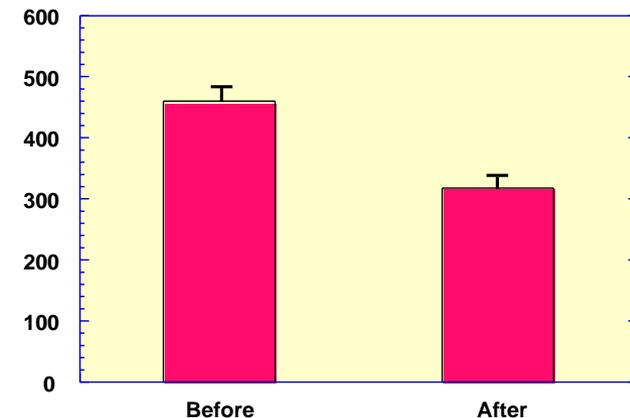
Bank Stabilization



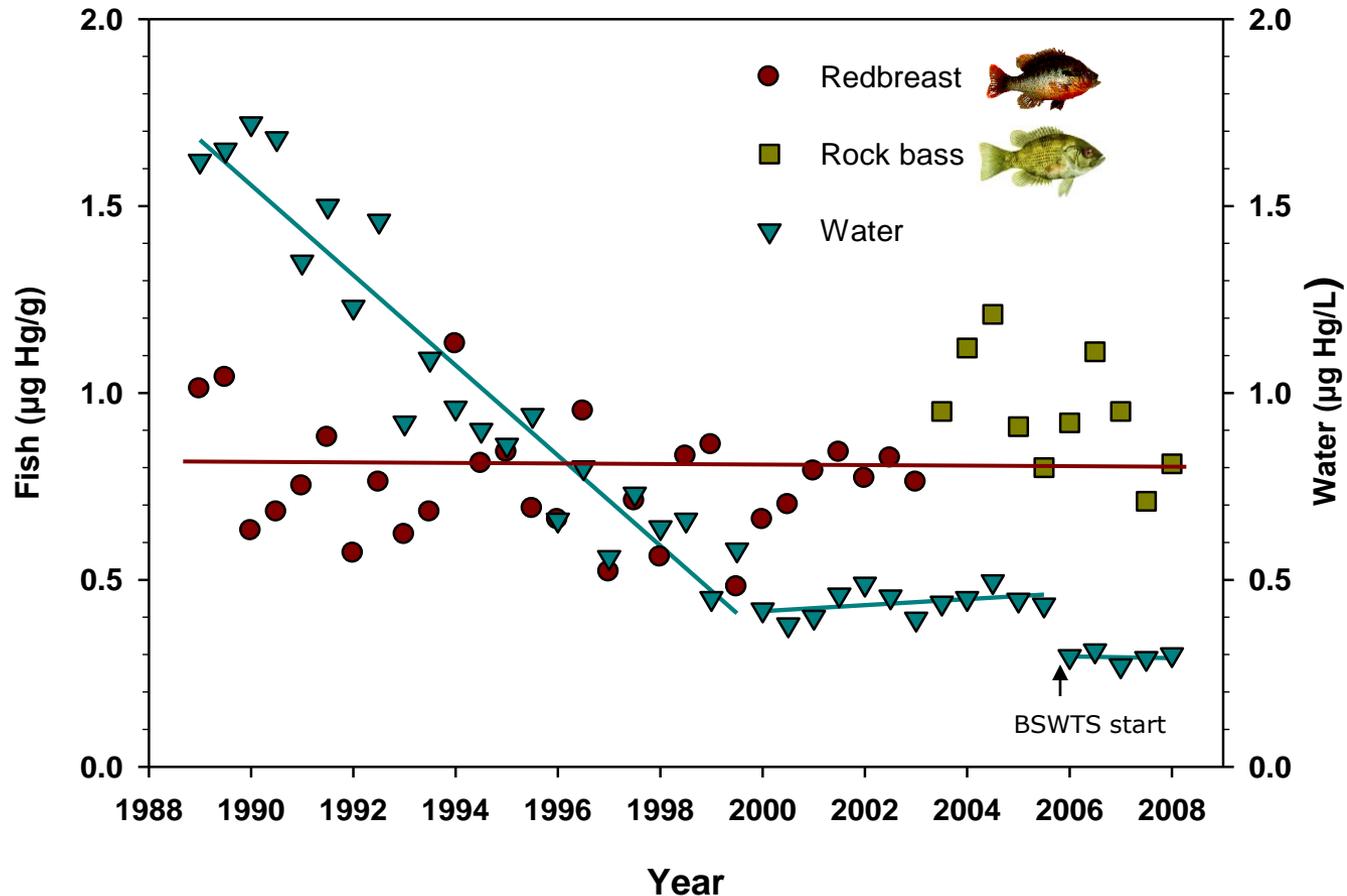
Activated charcoal treatment removes > 99% of Hg



30% reduction in creek



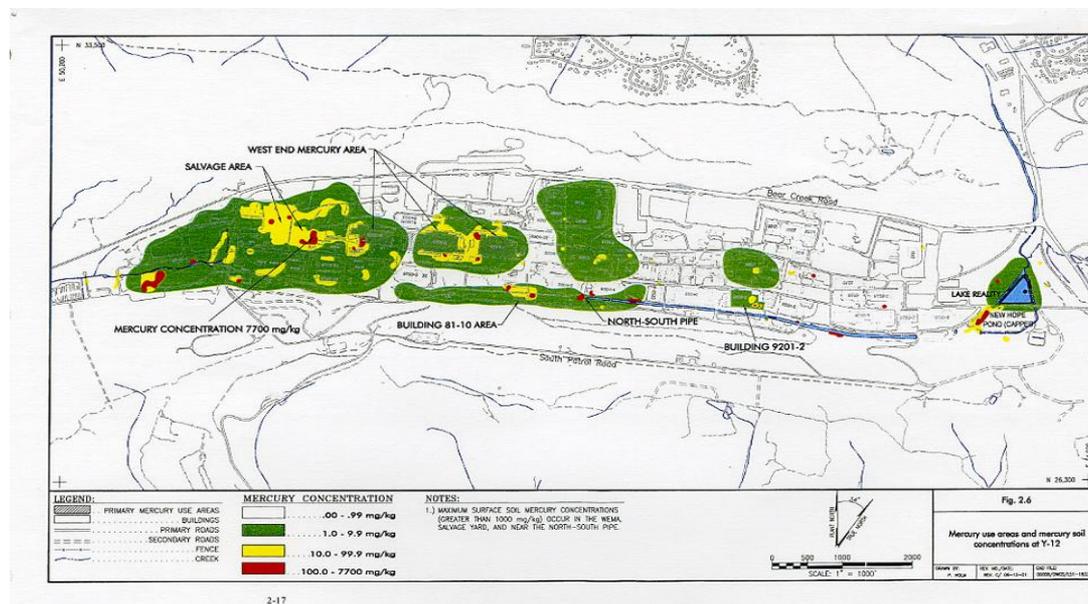
...levels of mercury in fish remain above regulatory limits



Long-term trend in mean concentration of mercury in redbreast sunfish and rock bass at EFK 23.4 versus 6-month average mercury concentration in water (grab samples) at Station 17 (EFK 23.4).

Path Forward / Future Actions

- West End Mercury Area - clean and reline sewers
- Scrapyard removal
- Integrated Facilities Disposition Project (IFDP) -remove process buildings and access soils
- Clean Y-12 creek banks and sediments
- Ongoing scientific studies of mercury in environment



Questions?



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