

Supporting Information for Hering, J. G. et al. Remediating Subsurface Arsenic Contamination with Monitored Natural Attenuation. *Environ. Sci. Technol.* **2005**, *39*, 458A–464A.

Table S1. Arsenic Supply–Demand Relationships^a
(Metric tons, arsenic content)

	1991	1992	1993	1994	1995
U.S. supply					
Imports, metal	1010	740	767	1330	557
Imports, compounds	20,700	23,300	20,900	20,300	22,100
Industry stocks, Jan 1	100	—	—	—	—
Total	21,800	24,000	21,600	21,600	22,700
Distribution of U.S. supply					
Industry stocks, Dec 31	—	—	—	—	—
Exports ^b	233	94	364	79	430
Apparent demand	21,600	23,900	21,300	21,500	22,300
Estimated U.S. demand pattern					
Agricultural chemicals	5000	3900	3000	1200	1000
Glass	900	900	900	700	700
Wood preservatives	14,300	17,900	16,200	18,000	19,600
Nonferrous alloys and electronics	1000	800	800	1300	600
Other	400	400	400	300	400
Total	21,600	23,900	21,300	21,500	22,300

^a Data are rounded to three significant digits and may not add to total shown.

^b Exports for 1991 include compounds; exports for 1992–1995 include metal only.

Source: Edelstein, D. L., Arsenic, <http://minerals.usgs.gov/minerals/pubs/commodity/arsenic/160495.pdf>.

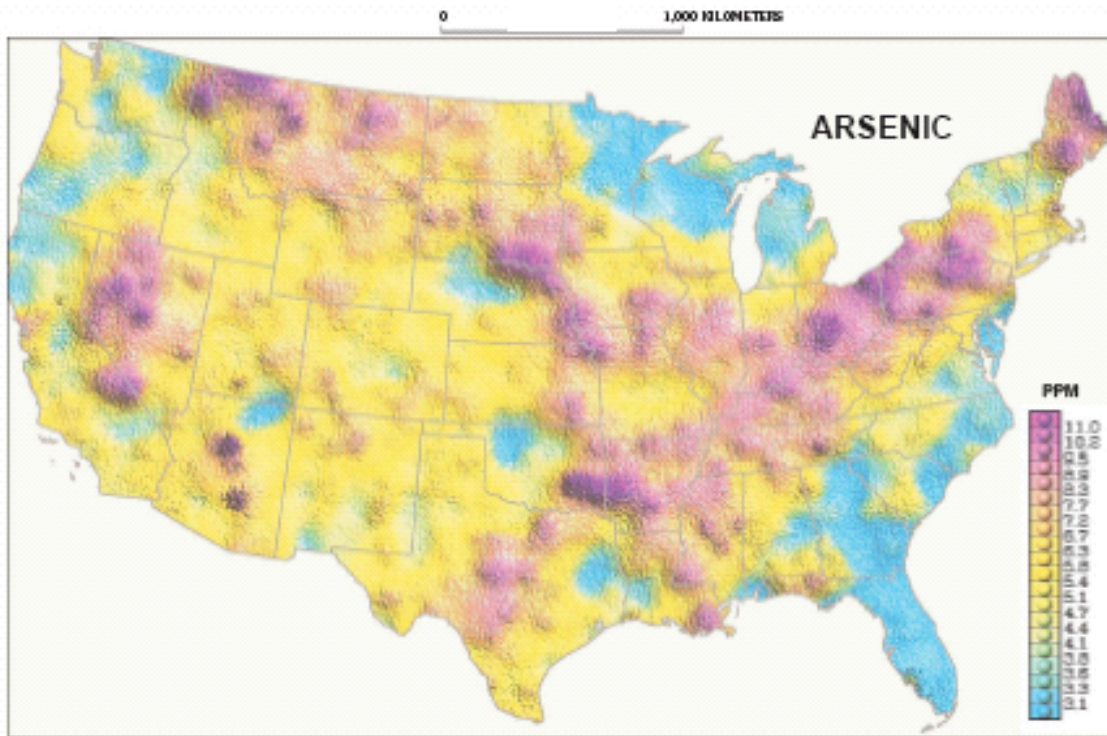


Figure S1. Colored surface map of arsenic distribution in soils and other surficial materials of the conterminous U.S.

Source: Gustavsson, N.; et al. *Geochemical Landscapes of the Conterminous United States—New Map Presentations for 22 Elements*; U.S. Geological Survey Professional Paper 1648; 2001; <http://pubs.usgs.gov/pp/2001/p1648>.

Table S2. Natural attenuation processes^a and their potential applicability to arsenic

Process	Relevant for arsenic?	Potential effect on arsenic in subsurface
Biodegradation	no	
Biotransformation	yes	Redox cycling of arsenic affects mobility Methylation of arsenic affects mobility and toxicity ^b Reduction to arsine ^{b,c} (or methylated arsines) increases volatility
Dilution ^d	yes	Reduces contaminant concentration
Dispersion ^d	yes	Reduces contaminant concentration
Precipitation	yes	Immobilization/stabilization
Radioactive decay	no	
Sorption	yes	Immobilization/stabilization
Volatilization	yes ^b	Transfer of arsine ^c and methylated arsines from subsurface

^a Source: *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*; EPA 9200.4-17P; U.S. EPA, Office of Solid Waste and Emergency Response, 1999; www.epa.gov/swrust1/directiv/d9200417.pdf.

^b Unlikely to be significant at contaminated sites.

^c Note that arsine is extremely toxic.

^d Note that EPA discourages reliance on processes of dilution and dispersion, which decrease the concentration but not the mass of contaminants.