Table 3-16a. Respirable quartz: Geometric mean exposures and percent exceeding designated occupational exposure limits in coal mining, MSHA inspector and mine operator samples, 1982-1999

Industry Division		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Coal Mining SIC 11, 12	GM (mg/m^3 MRE)	0.045	0.047	0.043	0.043	0.049	0.045	0.055	0.051	0.054	0.054	0.045	0.046	0.046	0.055	0.055	0.052	0.056	0.054
	No. of samples	2,682	4,962	4,613	4,242	4,731	4,556	5,238	4,566	4,524	5,816	8,692	7,668	7,557	8,090	6,332	8,560	10,613	12,790
	% > PEL	38.5	40.1	40.8	36.8	39.7	37.9	38.1	39.0	36.9	35.4	28.4	27.9	29.3	32.3	30.7	29.1	29.7	27.4

- indicates incalculable field
SIC - Standard Industrial Classification PEL - permissible exposure limit REL - recommended exposure limit GM - geometric mean mg/m^3 - milligams per cubic meter
MRE - Mining Research Establishment
NOTE: For coal mining, the MSHA PEL is [(10 mg/m^3 MRE) / (% quartz)] for respirable dust containing greater than 5 percent quartz. The MSHA respirable coal mine quartz exposure data and the NIOSH REL for respirable quartz cannot be compared to each other because they are based on different sampling criteria. See appendices for source description, methods, and agents.
SOURCE: Mine Safety and Health Administration (MSHA) coal mine inspector and mine operator quartz data.