

Liberty Mutual / ATC Measurement Data

Weekly Summary

Week of:	Agent Class	# of Samples	# of Analyses	Highest Analyte	Highest Result	OSHA PEL	ACGIH TLV	Highest Result % of OEL	Job with Highest Exposure	# of NQs	% NQ	Comments
12/11/01	Total Dust/Metals	4	80	calcium	0.054 mg/m3	10 mg/m3	10 ug/m3	0.054% of PEL	Torch Cutter	47	59%	
12/11/01	Resp. Dust/Silica	2	6	Quartz	NQ	0.1 mg/m3*	0.05 mg/m3	0% of TLV	Grappler Operator	5	83%	
12/11/01	Aromatics	12	48	Toluene	0.075 ppm	200 ppm	50 ppm	<0.01 % of % of TLV	Torch Cutter	42	88%	
12/11/01	Aldehydes	6	48	Formaldehyde	0.017 ppm	0.75 ppm	0.3 ppm (Ceiling)	2.3% of PEL	Flagger	42	88%	
12/11/01	PAHs	4	84	Total PAHs	1.35	200 ug/m3	200 ug/m3	0.88% of PEL	Crane operator	88	81%	
12/11/01	Asbestos	7	7	Fibers	0.038	0.1 f/cc	0.1 f/cc	38% of PEL	Spotter	0	0%	
12/11/01	Acids	2	12	N/A				All "Too Low to Quantify"		12	100%	
12/11/01	Ozone	5	5	N/A				All "Too Low to Quantify"		5	100%	
12/11/01	Diesel Fume	11	11	Inorganic Carbon	0.075 mg/m3	3.5 mg/m3	3.5 mg/m3	2.2 % of PEL	Torch Cutter	1	9%	
Totals:		53	301									
12/17/01	Total Dust/Metals	2	40	calcium	mg/m3	10 mg/m3	10 mg/m3	10% of PEL	Torch Cutter	122	305%	
12/17/01	Resp. Dust/Silica	1	3	Quartz	0.41 mg/m3	0.1mg/m3 *	0.05 mg/m3	820 % of the PEL	Grappler WTC #4	1	33%	
12/17/01	PAHs	3	48	Total PAHs	VOID							
12/17/01	Asbestos	6	6	Fibers	0.064	0.1 f/cc	0.1 f/cc	64% of PEL	Spotter	0	0%	
12/17/01	Acids	8	48	sulfuric	1.2 mg/m3	1 mg/m3	1mg/m3	120% of TLV	Torch Cutter WTC 1 Depr.	12	25%	
12/17/01	Ozone	2	2	ozone	NQ			All "Too Low to Quantify"		2	100%	
12/17/01	hydrogen sulfide	1	1	hydrogen sulfide	NQ			All "Too Low to Quantify"		1	100%	
Totals:		22	147									

Notes:

The PEL for quartz is determined by the formula $PEL = 10 \text{ mg/m}^3 / (\% \text{ quartz} + 2)$. For dusts with high quartz content this works out to be a quartz concentration of approximately 0.1 mg/m3.

"OEL" = "occupational exposure limit". A generic term encompassing PELs, TLVs and other workplace exposure limits.

"NQ" = "not quantifiable". Substance was not present in sufficient quantity in the sample to report a firm value for the concentration. All quantification levels for the sampling methods used are well below occupational exposure limits.

The area samples for hydrogen sulfide were taken near suspected sources and were not representative of worker exposure.