APPENDIX A

INSTRUMENT CHART

The information shown in the table below is for reference only. Not every field office will have every type of instrument. Refer to the CTC ALEP for specific information, or to the SLTC.

INSTRUMENT USE		
PHYSICAL MEASUREMENTS		
Type of Instrument	**Measured Substance**	**Application**
Stop time meter	Time	Calibration
Tachometers	Mechanical speed	Flywheels, belts, cylinders, lathes, etc.
Ergonomic testing equipment	Force	Force measurements for ergonomic assessment
Electrical testers and multimeters	Electricity	Electrical circuits
Vibration meters	Vibration	Handheld power tools, bearings, gear trains, housings, walls
Thermoanemometer (air velocity meter)	Airspeed	Ventilation assessments
Detector tubes with hand pumps (bellows or piston style)	Chemical air contaminants	Screening, spot measurements for air contaminants
Pressure gauges	Air Pressure	Compressor air lines
Fibrous aerosol monitors	Fibers in air	Asbestos
Dust monitors (particle or respirable aerosol monitors)	Total dust, respirable dust	Mines, sandblasting, road construction, dusty operations, indoor air quality
GAS & VAPOR METERS		
Type of Instrument	**Measured Substance**	**Application**
Multi-gas meters	Combustible gas (LEL), oxygen (O_2), with specific toxic gas sensors	Confined spaces, underground construction, sewers
Toxic gas sensor, hydrogen sulfide	H_2S	Farms, sewers, underground construction
Toxic gas sensor, hydrogen cyanide	HCN	Industrial facilities, electroplating operations
Toxic gas sensor, sulfur dioxide	SO_2	Paper mills, bleaching operations
Toxic gas sensor, nitric oxide and nitrogen dioxide	NO and NO_2	Combustion sources, particularly from propane fuel
Toxic gas sensor, chlorine and chlorine dioxide	Cl_2 and ClO_2	Bleaching and disinfecting operations, plastics manufacture, chemical synthesis, other industrial operations
Toxic gas sensor, ammonia	NH_3	Industrial refrigeration, fertilizer, animal feed lots
Toxic gas sensor, phosphine	PH_3	Semiconductor manufacture, agricultural pesticides
Carbon monoxide monitor	CO	Garages, warehouses, other combustion sources, indoor air quality

Carbon dioxide monitor	CO_2	Indoor air quality, as a surrogate for other indoor source pollutants
Infrared analyzers	CO, CO_2, organic substances	Area surveys to determine locations with highest concentrations, waste anesthetic gases, fumigants, indoor air, leaks, spills
Photoionization Detectors (PIDs)	Hydrocarbons, other ionizable substances	Area surveys to determine locations with highest concentrations, indoor air, leaks, spills
Mercury vapor meters	Hg	Mercury plants, spills
Ozone Analyzers	O_3	Water or air purification, indoor air
RADIATION METERS		
Type of Instrument	**Measured Substance**	**Application**
Heat stress meters	Ambient (environmental) heat	Foundries, furnaces, ovens and outdoor work locations
Light meters	Light (illumination)	Indoor lighting, UV exposure
Microwave meters	Microwave radiation	Communications, microwaves, heaters
Radiofrequency instruments	Electromagnetic fields	RF heat sealers, VDTs, induction motors
Magnetic field testers	Magnetic Flux Density	Magnetic fields
Electrostatic field tester	Static electric fields	Hazardous locations
Ionizing radiation meters	Ionizing radiation	Nuclear plants, nuclear waste, laboratory and medical settings
BIOLOGICAL MONITORS		
Type of Instrument	**Measured Substance**	**Application**
Microbial sampler	Micro-organisms (microbes)	Indoor air quality