Table 19 -- Special Event

(Also refer to Hazardous Evaluation Flow Chart for Unknowns and Table 16)

Instrument Guidance							Regulatory Guidance							Reference		
Target Compound[1]	Instrument	Detection Level	Intrinsically Safe (Y/N)	IP	PID CF (ISO)	Conversion	Occupational Action Levels		AEGL-1			TEEL-0	ERPG-1	Air Sampling		
							TWA	IDLH	1-hr	4-hr	8-hr	15-min TWA	1-hr	Media	Method	Flow Rate/ Total Volume
2-Chlorobenzalmalononitrile (CS)																
Tear Gas/ Coughing Smoke	APD 2000	4 ppb	N	NA	NA	1 ppm = 7.71 mg/m^3	REL = C 0.05 ppm S PEL = 0.05 ppm	2 mg/m^3	0.05 mg/m^3	0.05 mg/m^3	0.05 mg/m^3	0.05 mg/m^3	0.005 mg/m^3	NA	P&CAM304 (II-5)	NA
Phenacyl chloride or 2-chloro-1-phenylethanone (CN)																
Mace	APD 2000	4 ppb	N	9.44 eV	NA	1 ppm = 6.32 mg/m^3	REL = 0.3 mg/m^3 PEL = 0.3 mg/m^3	15 mg/m^3	NA	NA	NA	NA	NA	NA	P&CAM291 (II-5)	NA
	MultiRAE/AreaRAE PID***	0-2000 ppm	Y		9.7 (10.6 lamp)											
	TVA 1000B***	0.5-2,000 ppm (PID)	Y		NA											
Oleoresin Capsicum (OC)																
Pepper Spray	APD 2000	4 ppb	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Glass Fiber Filter, 225-16	NIOSH 5041	1 L/min; 480 L
	ChemPro 100i	*****	N													
Particulate																
Particulate	Personal DataRAM****	0.001-400 mg/m^3	N	NA	NA	NA	PEL = 15 mg/m^3 (total), 5 mg/m^3 (respirable) TLV = 10 mg/m^3 (total), 3 mg/m^3 (respirable)	NA	NA	NA	NA	10 mg/m^3	NA	Filter (total) Cyclone + Filter (resp)	NIOSH 0500 (total) NIOSH 0600 (resp)	1-2 L/min (total) 1.7-2.5 L/min (resp)
	DataRAM 4****	0.001-400 mg/m^3	N													
	eBAM	0-100 mg/m^3	N													
Radiation[2]																
Radiation	Ludlum Model 192	0-5,000 µR/hr	N	NA	NA	NA	60-100 µR/hr*	NA	NA	NA	NA	NA	NA	RADeCO Filter Paper (2")	RSSOP 209/501	α = 2500 ft^3 β/γ = 1250 ft^3
	Ludlum Model 2241-2 w/Pancake Probe	0-100,000 cpm or 0-200 mR/hr	N				300 cpm*									
	Ludlum Model 2241-3 w/Pancake Probe	0-100,000 cpm or 0-200 mR/hr	N				300 cpm*									
	*These are not TWA(s). Normal gamma radiation background is from 5-20 µR/hr; however, higher backgrounds may exist. If readings are 3 times background or greater than 60-100 µR/hr or greater than 300 cpm, then stop work and consult with a Health Physicist. Refer to Hazardous Evaluation Flow Chart for Unknowns in Attachment A.															

Table 19 -- Special Event

(Also refer to Hazardous Evaluation Flow Chart for Unknowns and Table 16)

Notes:

For guidance only. These tables do not supersede a SSHASP at any time or on any response.

[1] Does not include all pollutants associated with this type of event, only the most common pollutants with the lowest action levels. Depending on the chemical of concern, certain Dräger tubes and chips can be used. In addition, single-gas instruments and sensors and/or a gas chromatography-mass spectrometry instrument may be used.

[2] Standard EPA Emergency Response Protocol is to screen for radiation with a Micro-R at all emergency responses. If readings are three times background, responders consult with a Health Physicist. Additional radiation equipment is available to monitor for Alpha, Beta and Gamma, but is not included in this table.

AEGL-1 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic non-sensory effects; however, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGL-2 is the airborne concentration (expressed as ppm or mg/m^3) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

TEEL-0 is the temporary level of concern derived according to a tiered, formula-like methodology; representing concentrations associated with no effects.

ERPG-1 is the acute exposure concentration of the general population for up to 1 hour associated with effects expected to be mild or transient.

Data on tables are from the following sources:

http://www.epa.gov/oppt/aegl/pubs/chemlist.htm	EPA's website used to research AEGLs using the chemical's name or chemical abstracts service registry numbers.
http://www.cdc.gov/niosh/npg/npgsyn-a.html	CDC NIOSH Pocket Guide to Chemical Hazards website
http://wiser.nlm.nih.gov/	WISER website
http://www.skcinc.com/	SKC, Inc. website (Air Sampling Media Part No. is specific to SKC)

*AEGL-2--There are no AEGL-1 for this compound

**MIRAN SapphIRe has problems with complex mixtures (*e.g.;* distinguishing benzene from gasoline vapor)

***PIDs/FIDs are non-specific detectors and cannot differentiate between VOCs, even with CFs applied. See RAE PID CF Guidance Document TN-106 for information and TVA Response Factor document P/N 50039 THERMO.

****Personal DataRAMs/DataRAMs are non-specific detectors and cannot differentiate between particulates

*****Detectability after attack = 1 hour (2% OC); Designed to identify the presence of OC

Acronyms:

≥ -- greater than or equal to
% -- percent
ACGIH -- American Conference of Governmental Industrial Hygienists
AEGL -- acute exposure guideline levels
CDC -- Centers for Disease Control and Prevention
CF -- conversion factor
CO -- carbon monoxide
cpm -- counts per minute
EPA -- U.S. Environmental Protection Agency
ERPG -- emergency response planning guideline
eV -- electron volt
FID -- flame ionization detector
IDLH -- immediately dangerous to life and health
IP -- ionization potential
ISO -- isobutylene
mg/m^3 -- milligrams per cubic meter
µR/hr -- micro Roentgens per hour
NA -- not available/applicable
NIOSH -- National Institute for Occupational Safety and Health
OSHA -- Occupational Safety and Health Administration
PEL -- permissible exposure limit (OSHA)
PID -- photoionization detector
ppm -- parts per million
R/hr -- Roentgens per hour
rec. -- recommended
REL -- recommended exposure limit (NIOSH)
SPM -- single-point monitor
SSHASP -- site-specific health and safety plan
TEEL -- temporary emergency exposure limit
TLV -- time-limited value (ACGIH)
TWA -- time-weighted average
VOC -- volatile organic compound
Vol. -- volume
WISER -- Wireless Information System for Emergency Responders
Y w/option - yes with option; see manufacturer's instrument manual for information

DRAFT