6.2.3. HAPs Emission Inventory Methods

Again, it is important to acknowledge that there are currently no federal regulatory guidelines specific to HAPs emissions from aircraft engines, specifically, and airports, in general. While the methodology discussed in this *Handbook* is useful for disclosure, reporting, and comparative purposes, it does not provide results that are directly comparable to any regulatory threshold or air quality standards.

It is also important to note that other than an emissions inventory, a HAPs assessment prepared for the FAA must not include any other type of analysis including, but not limited to, atmospheric dispersion modeling, toxicity weighting, or human health risk analyses. These types of assessments require a more complete understanding of the reactions of HAPs in the atmosphere and downstream plume evolution as well as human exposure patterns. Because the science of these relationships with respect to aviation-related HAPs is still evolving, the corresponding level of understanding is also currently limited.

As stated previously, in cases where it is necessary to prepare such an aviation-related HAP inventory, the inventory must be prepared following the *Speciated Organic Gas Emissions from Airports Guidance* and using EDMS/AEDT. In this application, EDMS/AEDT applies speciation factors to quantify individual HAP compounds. These factors estimate the quantities of individual HAPs based on the total emissions of VOCs. Notably, the EPA MOVES emission factor model should be used to develop individual HAP speciation data for motor vehicles.

Presently, EDMS/AEDT calculates emissions for 394 different OGs. Of these, 45 are classified as HAPs by the EPA while the other 349 are considered to be non-toxic compounds. These 45 HAPs are listed in **Table 6-4** (*Potential HAPs to be Included in an Airport Emissions Inventory*).

Table 6-4. Potential HAPs to be Included in an Airport Emissions Inventory

Hazardous Air Pollutants			
1,1,1-Trichloroethane	Cyclohexane	Methyl alcohol	Phenol (carbolic acid)
1,3-Butadiene	Dichloromethane	Methyl chloride	Phthalic anhydride
2,2,4 Trimethylpentane	Thyl acetate	Methyl ethyl ketone	Propionaldehyde
2-Methylnaphthalene	Ethyl ether	Methyl tert butyl ether	Styrene
Acetaldehyde	Ethylbenzene	m-xylene	Toluene
Acetone	Ethylene bromide	Naphthalene	Trichloroethylene
Acrolein (2-propenal)	Ethylene glycol	n-Butyl alcohol	Trichlorotrifluoroethan
Benzaldehyde	Formaldehyde	n-Heptane	Vinyl acetate
Benzene	Isomers of xylene	n-Hexane	
Butyl cellosolve	Isopropylbenzene	o-Xylene	
Chlorobenzene	m & p-Xylene	Perchloroethylene	

Source: FAA, Guidance for Quantifying Speciated Organic Gas Emissions from Airport Sources, September 2, 2009, http://www.faa.gov/regulations_policies/policy_guidance/envir_policy/media/Guidance%20for%20Quantifying%20Speciated%20Organic%20Gas%20Emissions%20from%20Airport%20Sources.pdf.