

Appendix S: Air Quality

The Department of Defense (DoD) recognizes the value that clean air provides its operations, personnel, and surrounding communities. More specifically, DoD views air as a natural resource that is essential to the health and well-being of the nation, its people, and its ecosystems because air resources help to sustain our missions and livelihoods. Therefore, DoD strives to ensure full and sustained compliance with federal, state, and local regulations and Executive Orders (E.O.'s) designed to protect air quality.

DoD strives to protect air quality through various internal mechanisms. For example, DoD develops internal policies, procedures, program objectives, and best management practices to reduce emitted pollutants and protect air quality. The 2007 Defense Installations Strategic Plan (DISP) includes objectives to reduce pollution in accordance with E.O. 13423, Strengthening Federal Environmental, Energy, and Transportation Management. E.O. 13423 requires the use of an environmental management system as the primary management approach for addressing environmental aspects, and establishes requirements for reducing greenhouse gas emissions through energy intensity reductions in buildings. The DISP objectives are supported by the Clean Air Act Services Steering Committee, currently lead by the Navy. In addition to these administrative procedures, DoD implements pollution prevention activities, where practical and feasible, to reduce pollutants that adversely impact air resources.

DoD's Air Quality Program is subject to regulations set by the U.S. Environmental Protection Agency through the Clean Air Act (CAA) (42 U.S.C. §7401 et seq.), the Resource Conservation and Recovery Act, and E.O. requirements. The two primary requirements are meeting air emission limits for six criteria pollutants with National Ambient Air Quality Standards (i.e. carbon monoxide [CO], nitrogen oxides [NO_x], particulate matter [regulated as PM₁₀ and PM_{2.5}], ozone [O₃], sulfur dioxide [SO₂], and lead [Pb]) and 189 hazardous air pollutants (HAPs). Emissions of criteria pollutants and HAPs can have adverse impacts upon the surrounding communities and environment, and DoD operations. DoD is subject to emissions limitations through operating permits (Title V, synthetic minor, and true minor) issued by state agencies.

This appendix summarizes program performance for DoD during Calendar Year (CY) 2006 and CY2007, in accordance with the CAA and E.O. 13423. Emission totals are from all DoD facilities required to submit annual emissions data to their permitting authorities.

Appendix Z: Ozone-Depleting Substances provides information on DoD's ODS program.

Appendix U: Enforcement Actions provides information on DoD's CAA violations.

DoD

Figure S-1 provides an overview of the Components' air emissions in CY2006 and CY2007. The data presented include emissions of HAPs, criteria pollutants (nitrogen dioxide [NO₂], PM₁₀, PM_{2.5}, SO₂, CO, and lead), and volatile organic compounds (VOCs). Because NO_x represents multiple compounds, DoD reports NO₂ emissions as a quantifiable surrogate. Similarly, DoD reports the regulated precursors of O₃, VOCs and NO₂, which react with sunlight to form ground-level O₃. DoD installations reported that 1,897 tons of HAPs were emitted in CY2007, which is consistent with the previous year. The Department reported decreases of less than 15 percent in VOC, PM_{2.5}, SO₂, and lead emissions. NO₂, PM₁₀, and CO emissions increased less than 10 percent.

Army

Army criteria pollutants emissions for PM_{2.5}, SO₂, and CO each decreased less than 20 percent between CY2006 and CY2007, and VOC emissions decreased 29 percent. Lead emissions increased 4 percent. NO₂ and PM₁₀ emissions remained stable.

Navy

Total Navy criteria pollutants emissions decreased 20 percent between CY2006 and CY2007. The decrease in air pollutant emissions from Navy installations is due to facilities switching to burning cleaner fuels and positive changes in operation (e.g. installations changing from open burning or open detonation to use of an incinerator). A mild winter and changes in reporting requirements also contributed to the overall Navy decreases.

Marine Corps

Between CY2006 and CY2007, Marine Corps PM₁₀ and PM_{2.5} emissions fell 22 percent and 35 percent, respectively. The reductions in particulate matter were attributable to installations switching to cleaner equipment (e.g. installation of a new, fuel efficient turbine), as well as to a decrease in fuel use resulting from reduced equipment operations. However, HAPs increased by 26 percent and VOCs by 16 percent due to increased operational tempo and production operations at the installations, including more painting and corrosion control activities.

Air Force

The Air Force decreased emissions of HAPs, PM_{2.5}, and lead by less than 10 percent between CY2006 and CY2007. CO emissions increased 73 percent due to increased engine testing and boiler activity, and VOC emissions increased by 39 percent due to asphalt paving, surface-coating

operations, and refueling operations. Installations reported increases between 15 and 26 percent in NO₂, PM₁₀, and SO₂ emissions due to increased boiler activity and engine testing. General emissions increases are also due, in part, to four additional installations reporting in CY2007 than did in CY2006.

DLA

Between CY2006 and CY2007, DLA criteria pollutants emissions, with the exception of lead, did not increase or decrease by more than 15 percent. DLA lead emissions decreased by 82 percent. HAP emissions remained consistent with the previous year.

Figure S-1 Criteria Pollutants and HAP Emissions for Stationary Sources (tons/year)

Component	Hazardous Air Pollutants				Criteria Pollutants											
	HAPs		VOCs		NO ₂		PM ₁₀		PM _{2.5}		SO ₂		CO		Lead	
	CY2006	CY2007	CY2006	CY2007	CY2006	CY2007	CY2006	CY2007	CY2006	CY2007	CY2006	CY2007	CY2006	CY2007	CY2006	CY2007
Army	980	1,029	6,619	4,719	4,937	4,998	45,114	45,598	551	440	8,199	7,310	5,474	4,489	9	9
Navy	199	129	1,230	1,117	2,169	1,859	676	417	146	159	2,016	1,539	1,149	831	2	1
Marine Corps	89	112	281	328	836	845	81	63	49	32	1,190	1,128	225	231	<1	<1
Air Force	652	627	2,918	4,060	5,227	6,004	1,080	1,362	215	207	1,469	1,822	2,658	4,588	1	1
DLA	<1	<1	5	5	67	61	7	7	4	5	130	140	11	12	<1	<1
Total	1,921	1,897	11,005	10,228	13,236	13,766	46,958	47,448	967	843	13,004	11,940	9,517	10,151	12	11