Potential Environmental Health Threats at FSU Airbases

(U) SUMMARY: Aviation fuels and other chemicals commonly used in military activities contaminate the soil and groundwater at many former Soviet airbases because of poor storage management, improper waste disposal, and accidental releases. Exposure to these pollutants may cause immediate illness or long-term harm to the health of personnel deployed to these areas.

Environmental Neglect
(U) Hazardous chemicals at many Soviet airbases often were handled and disposed of without regard for the potential negative impacts on human health or environment. Poorly designed and decaying POL storage facilities associated with these airbases are likely sources of such contamination.

Contaminates of Concern
(U) POL storage facilities associated with these airbases often account for most of the contamination. Typical petroleum-bases groundwater and soil pollutants at former Soviet airfields include kerosene, diesel fuel, gasoline, heating oil, and lubricants. Other potential pollutants include organic solvents (such as benzene, carbon tetrachloride, methyl ethyl ketone, methylene chloride, tetrachloroethylene, toluene, and tricholoethene), polychlorinated biphenyls (PCBs), heavy metals and deicing compounds containing ethylene glycol. Facilities supporting chemical warfare decontamination units may be polluted with various chemicals used in decontamination procedures, including calcium hypochlorite, calcium hydroxide, calcium chloride, chloramine-B, chloramine-T, dichloroethane, ethanolamine, hexachloromelamine, and m-cresol. In addition, toxic chemicals from solid or liquid rocket propellants may be present at airbases that supported Soviet rocket and missile forces.

Potential Routes of Exposure
(U) Unprotected personnel are most likely to be exposed to contaminated soil and groundwater through inhalation (particulate and volatile), ingestion, or dermal contact. Personnel engaged in soil excavation or other activites that involve direct contact with soil or groundwater are at increased risk of exposure. Volatile organic compounds evaporating from soil and groundwater may accumulate in the air inside tents or buildings over contaminated areas. Individuals working in polluted, confined, and poorly ventilated areas, such as excavated trenches, may be exposed to high levels of volatile organic vapors.

Potential Health Threat
(U) Deployed personnel probably face the greatest threat from breathing volatile organic compounds, particularly in confined, unventilated spaces. Short-term exposure to high concentrations of these compounds may cause various acute health effects, including irritation of eyes, nose, and throat, along with headaches, dizziness, weakness, restlessness, lack of coordination, confusion, blurred vision, nausea, and unconsciousness. Extreme cases could be fatal. Many potential contaminants, including PCBs and some organic solvents, such as benzene, carbon tetrachloride, and trichloroethylene, are confirmed or suspected human carcinogens; however, short-term exposure to low level of these compounds is unlikely to result in increased cancer risk.

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- **Post in Medical Record.**
- **Retain a copy for personal files.**