

## **(S) Ground Contamination at Karshi-Khanabad Airfield**

Uzbekistan

November 6, 2001

### **(U) Summary**

(S//REL TO USA, AUS, CAN and GBR) *Ground contamination at Karshi-Khanabad Airfield poses health risks to US Forces deployed there.* Uzbek contract workers at Karshi Khanabad Airfield (BE 0337-08614) fell ill in October while preparing a tent city site for use by US deployed forces. Workers' flu-like symptoms included headaches, nausea, and vomiting. The tent city site at Karshi-Khanabad Airfield is immediately adjacent to and in some cases directly on top of soil that probably was contaminated during almost 20 years of neglect and improper management by both Soviet and Uzbek militaries. Analysis of electro-optical imagery acquired between 1984 and 2001 reveals four major sources of probable ground contamination at the tent city site. Sources of contamination include a petroleum, oil, and lubricant (POL) storage facility, an aircraft maintenance facility; an air-to-air/air-to-surface missile (AAM/ASM) storage facility; and a chemical weapons (CW) decontamination unit present for eight months in 1987 (graphic 1). Karshi-Khanabad Airfield is in Uzbekistan, approximately 100 nautical miles north of the Uzbekistan-Afghanistan border. CENTCOM requested that NIMA conduct an historical environmental analysis of the northwestern quadrant of the airfield to determine possible sources of ground contamination when Uzbek contractor workers fell ill while preparing the tent city site.

### **(U) Discussion**

(S//REL TO USA, AUS, CAN and GBR) Imagery analysis indicated four sources of ground contamination at the tent city site: Karshi-Khanabad Airfield, including a POL storage facility; an aircraft maintenance facility; an AAM/ASM storage facility; and a CW decontamination site.

#### **(U) POL**

(S//REL TO USA, AUS, CAN and GBR) *POL is almost undoubtedly the most pervasive source of ground contamination at the tent city site.* The airfield's Northwest POL Storage Facility (BE 0337-00782) is to the east of the tent city site (graphic 2). Imagery shows that the POL storage facility does not have concrete-lined containment berms and that since 1988, the horizontal tanks in the western portion of the facility have deteriorated and probably allowed kerosene to leak into the ground at the storage facility and into the surrounding area. Terrain analysis shows that the land slopes gently downwards from the POL facility to the site for the tent city (graphic 3 and 4). According to personnel on site, liquid collected at a test hole (hole A; graphic 5) proved to be very flammable and was most likely kerosene.

#### **(U) Aircraft Maintenance Facility**

(S//REL TO USA, AUS, CAN and GBR) *The aircraft maintenance facility, which is also adjacent to the main base camp, is a second probable source of ground contamination* (graphic 6). Previous imagery analysis of former Soviet airfields shows that proper disposal procedures of oils, hydraulic fluids, glues, paints, solvents, and lubricants--all materials commonly used at aircraft maintenance facilities--generally were

not practiced by the Soviet Union. Forces on the ground at the airfield report seeing a "black goo" in a second test hole (hole B; [graphic 5](#)). *The black goo is most likely a combination of oils, hydraulic fluids, glues, paints, solvents, and lubricants.*

**(U) AAM/ASM Storage Facility**

(S/REL TO USA, AUS, CAN and GBR) *Solid missile propellant expelled during explosions in 1993 is a third probable source of contamination.* An AAM/ASM missile storage facility previously occupied part of the area now the site of the tent city. Two explosions reportedly occurred at the storage facility on 13 June 1993; imagery shows the explosions completely destroyed two buildings and one hardened bunker, as well as severely damaged several other buildings throughout the northwestern portion of the airfield ([graphic 7](#)). The types of missiles present at the time of the explosions are unknown; however, the aircraft present at the airfield during the early 1990s could carry almost any Russian tactical missile, almost all of which use solid propellant. *Ground contamination from the explosion and the subsequent expulsion of missile propellant throughout the area is very likely.* Analysis of electro-optical imagery dated 13 June 1993 reveals that several grassy fields throughout the northwestern portion of the airfield sustained burn damage as a direct result of the explosion, *suggesting that damage was widespread.*

**(U) CW Decontamination Site**

(S/REL TO USA, AUS, CAN and GBR) *The fourth probable source of ground contamination at the tent city site is runoff from a CW decontamination site.* The site, which is located to the northeast of the tent city location, was present on imagery acquired between February and November 1987 ([graphic 8](#)). Imagery signatures suggest that some event occurred that required the presence of a CW decontamination site for almost eight months—an unusually long period of time for such a site. During the decontamination process, chemical agents are neutralized, but decontamination agents such as bleach and ammonia are not and are left to be absorbed into the ground. *Electro-optical imagery shows several areas of pooled liquid were present during the period the site was observed; the liquid probably contributed to the contamination of the ground in the area.*

**(U) References**

**(U) Target References:**

- (S) Karshi-Khanabad Airfield, BE [0337-08614](#)
- (S) Karshi Petroleum Production Storage 1, BE [0337-00782](#)

(U) Attached are eight images.

(C) Comments and queries regarding this NIMA Imagery Intelligence Brief may be directed to Albert Guarnieri, NIMA/Office of Global Operations/GOEB, Secure 936-2078 or STU-III (202) 264-6497, Email E-mail: [guarnaj@nima.ic.gov](mailto:guarnaj@nima.ic.gov). Contributions were provided by Lee Mitchell, NIMA/AP. This NIIB was coordinated with NIMA/ESIG, NIMA/ESIS, NIMA/ESIN, NIMA/GOPW, CIA/WINPAC, DIA/TWP5, DIA/TWP2, DIA/OSI3, DIA/AFMIC, NGIC, and NAIC. \*

*(U) The date on this report represents the publication date, and the date on the image graphic represents the date the image was acquired. **Comment to customer: Bold italic text signifies analytic judgment.***

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INTERNET SITE LOCATION:

<http://intel.nima.ic.gov/products/2001/11/6/NIIB-07062R1-01/Overview.html>

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Access to the Uzbek aircraft maintenance facility was granted to allow the CHPPM-Eur team to perform environmental characterization and sampling to determine potential health threats of this site (included in projected expansion area).

The site consisted of two large aircraft maintenance areas, a parking area for emergency trucks, a large apron/ pad for performing maintenance outside, and a waste disposal/ burn area north of the hangars up to the force protection berm. We were escorted at first by an Uzbek military engineer who had worked at the base since 1992 (and who also had a site plan drawing of the base (in Russian). When trying to question our escorts (through a translator) concerning current and past maintenance activities, they stated that no fluids were ever changed from the aircraft ("nyet" or if they were, some barrels magically would appear and take all the waste products to Tashkent for use in heating). The only visible waste site near the hangars included a "bottomless 200 L drum" that was dug into the earth and received a variety of waste POL products (oils, fuels, fluids). The latter site indicated the credibility of our escorts was less than ideal. Adjacent to this was a drainage ditch that obviously received runoff from this site and several large areas of soil staining were observed (and sampled). Surface and subsurface soil samples were collected to identify potential contaminants at this site. To the north of the hangars, we were allowed to sample in an open area that was an obvious dumping and open burning ground for all sorts of solid wastes. Part of this area has already been fenced off by US forces as an expansion area; again confirming that location is everything in real estate transactions. The surface was littered with non-combustible wastes (eg, metal parts, large quantities of broken glass, tiles, hoses) in numerous places. Even more ironic was the fact that soccer goals were installed here and our hosts told they used the area for soccer games. It was apparent that this was an active disposal ground, as just days before our team took pictures of open disposal pits containing a mix of solid wastes. To call this site a landfill is an insult to landfills, as waste has been burned, scattered and dumped in a random, unorganized fashion throughout the area. No real indication that the site has been used for indiscriminate dumping of liquid waste. However, burn sites may have been ignited using waste solvents/ fuels. Several borings were taken in this area. As expected, JP-5 contaminated soil (similar to other contamination) was encountered in the 3-5 foot below ground surface interval; the soil was heavily discolored.

This site is one targeted for expansion of the existing footprint. In addition to the waste burning and disposal, a large outhouse (used by the maintenance staff) with an open cistern is located immediately adjacent to this area (which pose both an odor and fly problem now - warmer weather will make this problem worse). The disposal of rubbish/ food waste across the concertina wire will also exacerbate rodent problems in this area. Mitigation actions / compatible land use will need to be discussed locally.

Final surveying of Site 1 was conducted and samples were shipped for analysis in order to characterize amount and extent of radiological contamination. Additional air monitoring was conducted in order to determine if a potential inhalation hazard exists. Air monitoring will be conducted on the outer perimeter berm and within tent-city to assess, if any, potential inhalation of radioactive particulates. On site preliminary gamma spectroscopy analysis has determined the greatest concentration of uranium