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REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
HEADQUARTERS
FORWARD OPERATING BASE 192
BUILDING 6911
FORT CAMPBELL, KY 42223

AOSO-FOB192-CDR

04 August 2002

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: **Report on Hardened Air Shelter (HAS) 17 Contamination**

1. This product contains the following **Sections**:

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2. FOB 192 Point of Contact for this matter is either CPT Daniel R. Cypher, FOB 192 Chemical Officer, DSN 318-821-1081, Dan.Cypher@K2.cjtf180.army.smil.mil, or the undersigned at DSN 318-821-1001, David.Bowman@K2.cjtf180.army.smil.mil.

// Original Signed //

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1/20 to SFG(A)

CJSOTF-A
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CENTCOM

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Subject: Report on Hardened Air Shelter (HAS) 17 Contamination

Section 1 – Events

Hardened Air Shelter (HAS) 17 is located at Camp Stronghold Freedom, Karshi-Khanabad (K2), Uzbekistan. Shortly after the events of September 11, 2001, the United States (U.S.) entered into a ten-year lease of K2 from the Uzbekistan Government. Since then, the former Soviet Air Base has been a major support center for U.S. Military Operations in Central Asia. The United States Army Center for Health Promotion and Preventative Medicine – Europe (USACHPPM-EUR) conducted an environmental assessment of Stronghold Freedom in November 2001. Their findings indicated that there were no harmful substances to which Stronghold Freedom personnel were being exposed to during the course of their normal duties.

In February 2002, Local Task Force (LTF) 507th completed construction of a two-story wooden structure inside of HAS 17. The intended use was office space for Special Operations Forces. Following construction, the 5th Special Forces Group (Airborne) (5th SFG(A)) occupied HAS 17. On 10 March 2002, Forward Operating Base (FOB) 192 began to occupy HAS 17 as part of the battle hand-off with the 5th Special Forces Group (Airborne). FOB 192, also referred to as Task Force Crossbow, took operational control from the 5th SFG(A) on 15 March 2002. FOB 192 Headquarters (HQ), Operations Center (OPCEN), Signal Center (SIGCEN), and Military Intelligence Detachment (MID) were located at HAS 17 from 15 March 2002 until evacuation on 08 June 2002. The following paragraphs detail the facts and circumstances that lead to the FOB 192 evacuation from HAS 17.

On 03 June 02, the FOB 192 Chemical Officer, CPT Daniel R. Cypher, identified the presence of volatile fumes in Hardened Air Shelter (HAS) 17 and sent the following message to the FOB 192 Medical Section:

“There are fumes rising from beneath the OPCEN floor in the area of MSG Coburn's work area -- nobody noticed the fumes until the outside air temperatures started to rise. From a preventative medicine standpoint, we may want to look at ways to eliminate the fumes -- I would estimate the fumes as POL (Petroleum, Oil and Lubricants).”

On 05 June 02, the FOB 192 Chemical Officer contacted the 227th Medical Detachment and requested an air quality sample of HAS 17. Approximately one hour later, personnel from the 227th Medical Detachment accompanied the FOB 192 Chemical Officer to the FOB 192 OPCEN and used hand-held gas detector pumps and detector tubes to test the air for the presence of the following chemicals: Benzene, Toluene, Methyl Ethyl Ketone (MEK), Trichloroethylene, Gasoline and Petroleum Distillates. They detected the presence of Benzene, MEK, Toluene and Gasoline in the FOB 192 OPCEN.

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That same day, 05 June 02, FOB 192 Chemical Officer performed tests using a Drager Gas Detection Pump 'Accuro' and Drager Tube Set I and Set V. Drager Tube Sets I and V are used to detect chemicals commonly found at chemical warfare related sites. Air drawn from the floor-space beneath FOB 192 OPCEN in HAS 17 tested positive for the presence of Simultaneous Phosphoric Acid Ester. Pesticides and nerve agents contain Phosphoric Acid Ester. The Drager Phosphoric Acid Ester tube was designed to detect 0.025 ppm (parts per million) of the pesticide Dichlorovos, but also detects other Phosphoric acid esters. The only substances known to cause positive indications on the Phosphoric Acid Ester tube are cholinesterase-inhibiting compounds.

On 06 June 02, USACHPPM-EUR visited the OPCEN (at the request of the FOB 192 Medical Section), but conducted neither sampling nor testing. As a result, during the evening change of shift brief, the FOB 192 Medical Section briefed, "USACHPPM-EUR was here today and did not find anything – no problem."

On 7 June 02, FOB 192 Chemical Officer visited the Tech Escort Unit (TEU) at K2 and asked that they confirm the positive test for Simultaneous Phosphoric Acid Ester. SSG Brian K. Lilly, D Company, TEU, accompanied the FOB 192 Chemical Officer to HAS 17. There, he used a Drager Gas Detection Pump 'Accuro' and confirmed the positive test for the presence of Phosphoric Acid Ester at the FOB 192 OPCEN in HAS 17. Immediately afterward, the FOB 192 Chemical Officer reported the HAS 17 test results to the USACHPPM-EUR site survey team at K2 and requested immediate air sampling of HAS 17. Within the hour, Mr. Michael S. Fischer arrived at HAS 17 to conduct air sampling. Mr. Fischer, a member of the USACHPPM-EUR site survey team, used a Multi Vae Plus PGM 50-5P (this instrument detects the presence of Volatile Organic Compounds) and found 2-3.1 ppm in the breathing zone and 16-27 ppm under the floor. At approximately 1015 Z, Mr. Fischer placed a SKC Aircheck 52 (air sampler) into operation and it remained in continuous operation for eight hours. Later that day, Mr. Fisher returned to HAS 17 and retrieved the air sampler.

That evening, 07 June 02, FOB 192 Chemical Officer advised LTC David L. Bowman, FOB 192 Commander, to consider relocating the OPCEN and interviewing personnel for the purpose of determining what symptoms they had experienced over the past weeks. HAS 17 was evacuated on 08 June 02. This included the FOB 192 Operational Center (OPCEN), Military Intelligence Detachment (MID), and the Signal Center (SIGCEN). Within days after evacuation of HAS 17, symptoms of mild chemical exposure discontinued among OPCEN personnel.

On 08-09 June 02, Tech Escort Unit (TEU) took air and soil samples from HAS 17. Samples were analyzed by Soldier and Biological Chemical Command (SBCCOM) and their initial report indicated no chemical warfare agents present, but several Toxic Industrial Chemicals (TIC) present at K2.

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On 04 July 02, FOB 192 sent a Request for Information (RFI) to SBCCOM regarding results specific to HAS 17. SBCCOM denied this RFI and suggested that FOB 192 re-submit the RFI through Central Command (CENTCOM). FOB 192 re-sent this RFI through the Combined Joint Special Operations Task Force – Afghanistan (CJSOTF-A) Chemical Officer, Major Michaels, on 19 August 2002. FOB 192 re-sent the RFI to the CJSOTF-A Executive Officer on 26 August 2002, after discovering that Major Michaels had returned to the United States. On 29 August 02, SBCCOM provided LTC Thomas F. Woloszyn, CENTCOM NBC Defense Officer, their answer to the FOB 192 HAS 17 RFI. The SBCCOM answer was “The compounds that are identified were never quantified nor will they be.” On 05-06 July 2002, USACHPPM-EUR returned to HAS 17 to conduct air and soil sampling. USACHPPM-EUR disclosed the results in Field Final Report Environmental Assessment – Hardened Aircraft Shelters Stronghold Freedom, Karshi-Khanabad Airfield, Uzbekistan, 6 June – 20 July 2002. In this report, USACHPPM-EUR recommended remediation of HAS 17. The following excerpt regarding HAS 17 is from this report.

“Prior to reoccupying this HAS, the fuel stained area should be cleaned thoroughly using soap (Alconox) and hot water and capped with concrete (possibly poured in the headspace between the existing floor supports) to prevent/ minimize future exposures. The plywood flooring can easily be replaced after cleaning and capping.”

On 10 August 02, TF-180 issued FRAGO 158 to CJTF-180 OPORD 02-01 ordering the implementation of USACHPPM-EUR recommendations for remediation.

On 28 August 02, CPT Blake G. Svendsen, Environmental Officer, Camp Stronghold Freedom, inspected HAS 17 to plan remediation work. CPT Svendsen arrived at Camp Stronghold Freedom, K2, on 23 August 02. CPT Svendsen is an Environmental Engineer who works in remediation of contaminated areas in the civilian sector. His initial assessment of HAS 17 was that the concrete floor of HAS 17 needed decontaminated. After decontamination, the entire HAS 17 concrete floor would need sealed with a vapor barrier. The concrete ceiling would need cleaned and then painted.

On 29 August 02, the Post Engineers at Camp Stronghold Freedom placed a work order for remediation of HAS 17. The scheduled start date is November 2002.

On 31 August 02, TF-180 Chemical Officer, COL Jesse Daniels visited FOB 192, gathered facts and visually inspected HAS 17. COL Jesse Daniels indicated that he would continue to work the HAS 17 issue.

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Section 2 – Statistical Summary

FOB 192 Chemical Officer analyzed FOB 192 at K2 Disease Non-Battle Injury (DNBI) reports for Respiratory and Ophthalmologic DNBI from 15 March 02, the day FOB 192 took operational control from the 5th SFG(A), through 31 August 02. During the first twelve-week period (17 March 02 through 08 June 02), the FOB 192 command and control center operated in HAS 17. FOB 192 evacuated HAS 17 on 08 June 02. During the second twelve-week period (09 June 02 through 31 August 02), FOB 192 did not occupy HAS 17.

“The DNBI report summarizes the weekly DNBI data rates and provides baseline rates for comparison. Abnormal rates indicate a problem exists which could negatively impact readiness and indicates preventative medicine countermeasures need to be implemented.” (excerpt from Enclosure C, Updated Procedures for Deployment Health Surveillance and Readiness, 01 February 2002, The Joint Chiefs of Staff)

The following statistics were calculated from the FOB 192 at K2 DNBI reports for weeks 1-12 (17 March 02 through 08 June 02) and weeks 13-24 (09 June 02 through 31 August 02).

- a. The number of respiratory DNBI was 199.7% higher than expected for weeks 1-12, (17 March 02 through 08 June 02). FOB 192 occupied HAS 17 during this period.
- b. The number of respiratory DNBI dropped to 160% higher than expected for weeks 13-24, (09 June 02 through 31 August 02). FOB 192 did not occupy HAS 17 during period.
- c. The number of ophthalmologic DNBI was 141% higher than expected for weeks 1-12, (17 March 02 through 08 June 02). FOB 192 occupied HAS 17 during this period.
- d. The number of ophthalmologic DNBI dropped to 40% lower than expected for weeks 13-24, (09 June 02 through 31 August 02). FOB 192 did not occupy HAS during this period.
- e. For weeks 1-12, half (six of twelve) of the ophthalmologic DNBI rates were above the suggested reference rate. For weeks 13-24, only 8% (one of twelve) of the ophthalmologic DNBI rates were above the suggested reference rate.

Section 3 – Recommendations

- a. The long-term cost of not using HAS 17 will be much greater than the short-term cost of remediation.
- b. The long-term cost of continued problems will be much greater than the short-term cost of fixing the HAS 17 problem right the first time.
- c. The entire floor area of HAS 17 needs decontaminated. Afterward, this area needs sealed according to appropriate environmental remediation procedures.
- d. The entire wall / ceiling space of HAS 17 needs painted.
- e. HAS 17 should remain off-limits until proper remediation is accomplished.
- f. The two-story wooden structure in HAS 17 needs removed from HAS 17 and the wood disposed of, before decontamination.
- g. Future direction for research should include a laboratory experiment that tests the chemicals listed in paragraphs 8 and 9 to determine whether they cause positive indications on Drager Phosphoric Acid Ester tubes.

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Section 4 – Exterior of Hardened Air Shelter (HAS) 17 at K2



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Section 5 – Data Set for Analysis of Respiratory DNBI for FOB 192 at K2

	FOB 192	Actual	Expected
	Troop	Respiratory	Respiratory
Week	Strength	Initial Visits	Initial Visits
1	522	8	2.088
2	325	4	1.3
3	322	5	1.288
4	322	4	1.288
5	322	2	1.288
6	322	0	1.288
7	322	6	1.288
8	360	0	1.44
9	360	0	1.44
10	360	2	1.44
11	360	2	1.44
12	360	1	1.44
13	350	1	1.4
14	350	1	1.4
15	126	3	0.504
16	350	3	1.4
17	338	3	1.352
18	338	1	1.352
19	338	3	1.352
20	338	0	1.352
21	310	1	1.24
22	154	2	0.616
23	153	2	0.612
24	138	1	0.552

Week – data period covers a 24 week period starting 17 March 02 and ending 31 August 02

FOB 192 Troop Strength – this is the number of FOB 192 personnel located at K2 each week

Respiratory – any diagnosis of the: lower respiratory tract, such as bronchitis, pneumonia, emphysema, reactive airway disease, and pleurisy; or the upper respiratory tract, such as “common cold,” laryngitis, tonsillitis, tracheitis, otitis and sinusitis.

Suggested Reference Rates (Expected) – The suggested reference rates are only approximate and should be used as a rough guide only. The combatant command or JTF Surgeon may modify the “Suggested Reference Rates” based upon theater / deployment specific trends. Establishing statistical confidence levels of 2 and 3 standard deviations is desirable when sufficient DNBI data has been collected.

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Subject: Report on Hardened Air Shelter (HAS) 17 Contamination

Section 6 – Data Sets for Analysis of Ophthalmologic DNBI for FOB 192 at K2

	FOB 192	Actual	Expected
	Troop	Ophthalmologic	Ophthalmologic
Week	Strength	Initial Visits	Initial Visits
1	522	1	0.522
2	325	0	0.325
3	322	1	0.322
4	322	1	0.322
5	322	0	0.322
6	322	0	0.322
7	322	0	0.322
8	360	1	0.36
9	360	0	0.36
10	360	1	0.36
11	360	0	0.36
12	360	1	0.36
13	350	0	0.35
14	350	0	0.35
15	126	0	0.126
16	350	0	0.35
17	338	0	0.338
18	338	2	0.338
19	338	0	0.338
20	338	0	0.338
21	310	0	0.31
22	154	0	0.154
23	153	0	0.153
24	138	0	0.138

Week – data period covers a 24 week period starting 17 March 02 and ending 31 August 02

FOB 192 Troop Strength – this is the number of FOB 192 personnel located at K2 each week

Ophthalmologic – any acute diagnosis involving the eye, including pink-eye, conjunctivitis, sty, corneal abrasion, foreign body, vision problems, etc. Does not include routine referral for glasses (non-acute).

Suggested Reference Rates (Expected) – The suggested reference rates are only approximate and should be used as a rough guide only. The combatant command or JTF Surgeon may modify the “Suggested Reference Rates” based upon theater / deployment specific trends. Establishing statistical confidence levels of 2 and 3 standard deviations is desirable when sufficient DNBI data has been collected.

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Section 7 – Chemicals Identified by CHPPM

The U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM) Field Final Report Environmental Assessment – Hardened Aircraft Shelters Stronghold Freedom, Karshi-Khanabad Airfield, Uzbekistan, dated 06 June 02 through 20 July 02 indicated the following chemicals as above the detectable level in HAS 17.

- Trimethylbenzene
- Ethylbenzene
- Isopropylbenzene
- Naphthalene
- Toluene
- Xylene
- n-Propylbenzene
- p-Isopropyltoluene
- Kerosene

Section 8 – Chemicals Identified by SBCCOM

The Soldier Biological Chemical Command (SBCCOM) memorandum to LTC Thomas Wolozyn, USCENTCOM Chemical Officer, dated 22 June 02 indicated the following chemicals as above the detectable level at K2.

- Toluene
- Phthalates or plasticizers
- Benzaldehyde
- Acetophenone
- Benzophenone
- Methyl salicylate
- Styrene
- Pyridine
- Azulene
- Cellosolve
- Benzothiazole
- Butyl cellosolve
- Benzoic acid
- Butylated Hydroxytoluene



REPLY TO
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DEPARTMENT OF THE ARMY
HEADQUARTERS
FORWARD OPERATING BASE 192
CAMP STRONGHOLD FREEDOM
APO AE 09311

AOSO-FOB192-CDR

7 August 2002

MEMORANDUM THRU LTC Jon J. Miller, Commander, Local Task Force 164, Camp
Stronghold Freedom, APO AE 09311

FOR COL Brian Commons, Commander, United States Army Center for Health Promotion and
Preventative Medicine – Europe (USACHPPM-EUR), APO AE 09180

SUBJECT: Request for Information, Results from Air and Soil Sampling Conducted 5-6 July
2002 by USACHPPM-EUR at HAS 17, Camp Stronghold Freedom, Karshi-Khanabad Airfield,
Uzbekistan

1. USACHPPM-EUR conducted air and soil sampling at Hardened Air Shelter (HAS) 17 located
at Camp Stronghold Freedom, Karshi-Khanabad Airfield, Uzbekistan, on 5-6 July 2002. HAS 17
is where Forward Operating Base (FOB) 192 Operations Center (OPCEN) was located 10 March
2002 through 8 June 2002. We request results of this testing.

a. Specifically, we ask that you disclose the parts per million (ppm) for each chemical or
compound present in the air samples taken from HAS 17 during the USACHPPM-EUR sampling
operation conducted 5-6 July 2002.

b. We request an explanation or professional opinion as to why Dräger tubes tested
positive for the presence of Phosphoric Acid Ester in HAS 17.

2. FOB 192 Point of Contact for this matter is either CPT Daniel R. Cypher, FOB 192 Chemical
Officer, DSN 318-821-1081, Dan.Cypher@K2.cjtf180.army.smil.mil, or the undersigned at DSN
318-821-1001, David.Bowman@K2.cjtf180.army.smil.mil.

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LTC, SF
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JAG, FOB 192, Camp Stronghold Freedom, UZ
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CAMP STRONGHOLD FREEDOM
APO AE 09311

AOSO-FOB192-CDR

19 August 2002

MEMORANDUM THRU MAJ Michaels, Chemical Officer, Combined Joint Special Operations Task Force – Afghanistan (CJSOTF-A), Bagram Air Force Base, Afghanistan

FOR COL Edward W. Newing, Chief of Staff, U.S. Army Soldier and Biological Chemical Command, 5183 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5424

SUBJECT: Request for Information (RFI), Results from Air and Soil Sampling Conducted 09 June 2002 by Tech Escort Unit at HAS 17, Camp Stronghold Freedom, Karshi-Khanabad Airfield, Uzbekistan, APO AE 09311

1. Tech Escort Unit (TEU) conducted air and soil sampling at Hardened Air Shelter (HAS) 17 located at Camp Stronghold Freedom, Karshi-Khanabad Airfield, Uzbekistan, on 09 June 2002. HAS 17 is where Forward Operating Base (FOB) 192 Operations Center (OPCEN) was located 10 March 2002 through 08 June 2002. We have reviewed the SBCCOM report dated 22 June 02, Samples Received from K2, and request the following additional information:

a. Specifically, we ask that you disclose the parts per million (ppm) for each chemical or compound present in the air samples taken from HAS 17 during TEU sampling mission conducted 09 June 2002. We request results of soil and swipe samples taken from HAS 17 on 09 June 02.

b. We request an explanation or professional opinion as to why Dräger tubes tested positive for the presence of Phosphoric Acid Ester in HAS 17.

2. FOB 192 Point of Contact for this matter is either CPT Daniel R. Cypher, FOB 192 Chemical Officer, DSN 318-821-1081, Dan.Cypher@K2.cjtf180.army.smil.mil, or the undersigned at DSN 318-821-1001, David.Bowman@K2.cjtf180.army.smil.mil.

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