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MCHB-IP-RDE

19 MAY 2012

MEMORANDUM FOR Office of the Command Surgeon (LTC (b) (6)), U.S. Central Command, 7115 South Boundary Boulevard, MacDill Air Force Base, FL 33621-5101

SUBJECT: Deployment Occupational and Environmental Health Surveillance Sample Report, Soil, Chak, Afghanistan, 10 March 2012, U_AFG_CHAK_IP_SQA_20120310

1. The enclosed report details the assessment of three soil samples collected by 125th Brigade Support Battalion, 3d Brigade Combat Team, 1st Armored Division personnel, Chak, Afghanistan, 10 March 2012.
2. None of the chemicals detected in the samples were identified as potential hazards.

FOR THE DIRECTOR:

Encl

(b) (6)

Portfolio Director, Health Risk Management

CF: (w/encl)

C Co 125th BSB (Environmental Science Officer/(b) (6))

ARCENT (Command Surgeon Office/CPT (b) (6))

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U.S. ARMY PUBLIC HEALTH COMMAND

5158 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-5403

**Deployment Occupational and Environmental Health Surveillance
Sample Report,
U_AFG_CHAK_IP_SQA_20120310
Health Risk Management Portfolio**

Soil, Chak, Afghanistan

**Prepared by (b) (6)
Deployment Environmental Surveillance Program**

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Requests for this document must be referred to Office of the Command Surgeon, U.S. Central Command, 7115 South Boundary Boulevard, MacDill Air Force Base, FL 33621-5101.**

Preventive Medicine Surveys: 40-5f1

CHPPM/PHC FORM 433-E (MCHB-CS-IP), SEP 10

ACKNOWLEDGEMENTS

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**Deployment Occupational and Environmental
Health Surveillance Sample Report
Soil
Chak, Afghanistan
10 March 2012
U_AFG_CHAK_IP_SQA_20120310**

1 References

See Appendix A for a list of references.

2 Purpose

This report provides the U.S. Army Public Health Command (USAPHC), Army Institute of Public Health (AIPH) assessment of the laboratory analytical results and exposure information associated with the samples collected by 125th Brigade Support Battalion, 3d Brigade Combat Team, 1st Armored Division on 10 March 2012 at Chak, Afghanistan according to the U.S. Department of Defense deployment occupational and environmental health (DOEH) surveillance requirements. The assessment serves several purposes. It identifies DOEH hazards that may be related to acute health effects that could occur in personnel during their deployment. It provides an official record of observed exposure conditions for use in future site evaluations. It identifies whether or not there is a potential for chronic health concerns which may require additional characterization. Finally, this report includes preventive steps to reduce or eliminate occupational and environmental exposures, and surveillance and/or sampling recommendations, as necessary.

3 Scope

The assessment of sample results and exposure information in this report follows the process published in the USAPHC Provisional (Prov) Technical Guide (TG) 230 "Environmental Health Risk Assessment and Chemical Exposure Guidelines for Deployed Military Personnel, June 2010 Revision." The assessment is based on limited data representing a specific time period and assesses short-term exposure risks only. This report, therefore, cannot be used alone to estimate the risk of chronic health effects from exposures. In addition, this assessment does not address all DOEH hazards to which U.S. personnel may be exposed.

4 Laboratory Analysis

Deployment soil samples received at the USAPHC, AIPH laboratory are analyzed for a standard set of parameters that includes metals, pesticides/polychlorinated biphenyls, herbicides, semivolatile organic compounds, inorganic chemicals, radionuclides, and various physical characteristics. The complete analytical sample results can be viewed in the Defense Occupational and Environmental Health Readiness System (DOEHRS). Log into the DOEHRS and search for the samples using the DOEHRS sample identification numbers (IDs) provided in Table 1 below.

Table 1. Sample Identification Information

DOEHRS Sample ID	Sample ID Reported on Field Data Sheet	Sample Site	Date and Time Sample Collected	Collection Type
00006L0X	AFG_CHAKDC_01S_12070	Outside Burn Barrel	2012/03/10 1120	Discrete
00006L1L	AFG_CHAKDC_02S_12070	Building Entrance	2012/03/10 1120	Discrete
00006L48	AFG_CHAKDC_03S_12070	Compound Entrance	2012/03/10 1120	Discrete

5 Exposure Setting

Table 2 contains information about the sampling location, environmental conditions, and associated potential population exposure. The information was provided on the field data sheets and/or exposure assessment worksheets submitted with the samples unless otherwise noted. Correction and clarification of exposure assumptions by the sampling unit is encouraged.

Table 2. Exposure Information

Questions About Exposure	Information Provided and Assumptions
Why was this sample/sample set collected?	Routine sampling of soil.
What population is exposed and how?	All personnel are exposed to the soil near the sampling locations. Personnel are exposed when walking through commonly used walkway.
What is the timeframe under consideration?	Deployment duration unless subsequent activities change or contamination occurs.
Where was the sample/sample set collected?	Three sites: outside burn barrel, building entrance, and the compound entrance.
What is known about location, activity, setting and potential sources of contamination that may affect exposure?	There are no surrounding industries nearby. Samples were collected in a high altitude location in the mountains. There is a burn barrel located nearby to burn cardboard, paper, and wood. This is also a smoking area for soldiers.

6 Prescreen

Table 3 shows whether parameters are identified as potential hazards because their peak single sample concentrations are greater than their most health-protective screening level USAPHC (Prov) TG 230 military exposure guidelines (MEGs). Potential hazards are further assessed to

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determine if they are acute hazards. Parameters analyzed but not shown in Table 3 are not considered hazards. The prescreening is conducted as described in USAPHC (Prov) TG 230, section 3.4.3. The sample results were compared to MEGs on 23 April 2012.

Table 3. Results of Prescreen

Parameter	Detections /Samples	Peak Single Sample Concentration (mg/kg)	1-year Negligible MEG (mg/kg)	Result
Actinium-228	3/3	2.8	none	Exclude as potential hazard
Barium	3/3	91	14801	Exclude as potential hazard
Bismuth-214	3/3	1.2	none	Exclude as potential hazard
Cesium-137	1/3	0.26	none	Exclude as potential hazard
Chromium	3/3	22	297840	Exclude as potential hazard
cis-Permethrin	1/3	0.52	42424	Exclude as potential hazard
Di(2-ethylhexyl)phthalate	1/3	2.6	35354	Exclude as potential hazard
Lead	3/3	26	2200	Exclude as potential hazard
Mercury	3/3	0.28	978080	Exclude as potential hazard
Nickel	3/3	28	4242.4	Exclude as potential hazard
Permethrin, trans-	1/3	0.92	42424	Exclude as potential hazard
Strontium	3/3	150	424240	Exclude as potential hazard

Legend: mg/kg = milligrams per kilogram

7 Conclusion

None of the chemicals detected in the samples were identified as potential hazards because the concentrations were not greater than USAPHC (Prov) TG 230 MEGs.

8 Limitations

8.1 Field Data Quality

Field data provided with the samples were adequate.

8.2 Sample Receipt at USAPHC Laboratory

The samples were received at the USAPHC at a temperature of 18 degrees Celsius. The samples were packaged correctly.

8.3 Laboratory Data Quality

No laboratory data quality issues associated with this sample set were identified.

Some parameters in this data set are flagged with a J code (J). This code indicates an estimated value that was detected above the Method Detection Limit but below the Method Reporting Limit (also known as Limit of Quantitation or Practical Quantitation Limit).

8.4 Risk Assessment

Military exposure guidelines have not been developed for several chemicals detected in the samples primarily due to a lack of accepted health information data for these chemicals. The U.S. Environmental Protection Agency or other health organizations have not published nor recommended health-impacting exposure thresholds.

9 Recommendations

Maintain communication with USAPHC, AIPH points of contact (POCs) and continue standard surveillance of soil exposures in accordance with defined Occupational and Environmental Health Site Assessment Exposure Pathways and sampling plans for your location.

10 Points of Contact

The USAPHC, AIPH POCs for this assessment are Mr. (b) (6) and Ms. (b) (6).
Mr. (b) (6) may be contacted at e-mail (b) (6) and Ms. (b) (6) may be
contacted at e-mail (b) (6), or DSN (b) (6) or commercial
(b) (6).

(b) (6)

Environmental Scientist
Deployment Environmental Surveillance
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Approved by:

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LTC, MS
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Appendix A

References

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