



DEPARTMENT OF THE ARMY
US ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MD 21010-5403

MCHB-TS-RDE

30 MAY 2008

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

SUBJECT: Laboratory Results, Total Suspended Particulate Air Samples, Contingency
Operating Base Speicher, Iraq, 4 – 24 March 2008, U_IRQ_SPEICHER_CM_TSP_20080324

1. The enclosed report details the assessment of four valid total suspended particulate (TSP) air samples collected by 926th Medical Detachment (Preventive Medicine) personnel at Contingency Operating Base (COB) Speicher, Iraq, 4 – 24 March 2008. Since there are no health based exposure standards for TSP, a risk estimate was not prepared.
2. No unusual parameters or concentrations of expected parameters were detected in the samples.

FOR THE COMMANDER:

(b) (6)

Encl

Director, Health Risk Management

MCHB-TS-RDE

SUBJECT: Laboratory Results, Total Suspended Particulate Air Samples, Contingency
Operating Base Speicher, Iraq, 4-24 March 2008, U_IRQ_SPEICHER_CM_TSP_20080324

CF: (w/encl)

926th MED DET (Commander/CPT (b) (6))
MNC-I (Command Surgeon/MAJ (b) (6))
ARCENT (Command Surgeon/COL (b) (6))
ARCENT (Command Surgeon/MAJ (b) (6))
CFLCC (Command Surgeon/MAJ (b) (6))
62nd MED BDE (Command Surgeon/LTC (b) (6))
62nd MED BDE (PM NCOIC/MSG (b) (6))
62nd MED BDE (Force Health Protection Officer/CPT (b) (6))
62nd MED BDE (Preventive Medicine Officer/LTC (b) (6))
62nd MED BDE (Preventive Medicine Officer/LCDR (b) (6))
261st MMB (Environmental Science Officer/1LT (b) (6))
261st MMB (PM NCOIC/SFC (b) (6))
155th MED DET (Commander/CPT (b) (6))
155th MED DET (Detachment Sergeant/SFC (b) (6))
155th MED DET (XO/2LT (b) (6))
56th MMB (FHP OIC Clinic Ops/CPT (b) (6))
USACHPPM-EUR (MCHB-AE-EE/Mr. (b) (6))

U.S. Army Center for Health Promotion and Preventive Medicine

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LABORATORY RESULTS
TOTAL SUSPENDED PARTICULATE AIR SAMPLES
CONTINGENCY OPERATING BASE SPEICHER, IRAQ
4-24 MARCH 2008
U_IRQ_SPEICHER_CM_TSP_20080324

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CHPPM FORM 433-E (MCHB-CS-IPD), OCT 03

Readiness Thru Health

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LABORATORY RESULTS
TOTAL SUSPENDED PARTICULATE AIR SAMPLES
CONTINGENCY OPERATING BASE SPEICHER, IRAQ
4-24 MARCH 2008
U_IRQ_SPEICHER_CM_TSP_20080324

1. REFERENCES.

a. Department of the Army, Field Manual (FM) 5-19, Composite Risk Management, 21 August 2006.

b. U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) Technical Guide (TG) 230, Chemical Exposure Guidelines for Deployed Military Personnel, Version 1.3, May 2003 with the January 2004 addendum.

2. PURPOSE. According to U.S. Department of Defense medical surveillance requirements, this occupational and environmental health (OEH) risk characterization documents the identification and assessment of chemical hazards that pose potential health and operational risks to deployed troops. Specifically, analysis of the total suspended particulate (TSP) air samples and information provided on the associated field data sheet was used to determine unusual parameters or concentrations of expected parameters were detected in the samples.

3. SCOPE. This report documents the analytical results for four valid TSP air samples collected from the entrance to the burn pit at Contingency Operating Base (COB) Speicher, Iraq, 4-24 March 2008. There are no Military Exposure Guidelines (MEGs) for TSP samples, so the samples were not compared to any exposure standard. A fifth sample was rejected as invalid.

4. BACKGROUND. The field data sheets provided with the samples indicated that the samples were collected from the entrance to the burn pit at COB Speicher, Iraq. The field data sheets noted that smoke from the burn pit blows over the camp depending on the wind.

5. ANALYTICAL RESULTS. The samples were analyzed for TSP and metals. For comparison, detected metals identified above the laboratory reportable limit were compared to the particulate matter less than 10 microns (PM₁₀) MEGs presented in TG 230. Appendix A shows a summary of the samples assessed in this report. Appendix B shows a sample results summary table. Appendix C shows complete analytical results.

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Laboratory Results, TSP Samples, COB, Speicher, Iraq, 4-24 Mar 08,
U_IRQ_SPEICHER_CM_TSP_20080324

6. CONCLUSION. No unusual parameters or concentrations of expected parameters were detected in the samples.

7. POINTS OF CONTACT. The USACHPPM points of contact for this assessment are CPT (b) (6) and Mr. (b) (6). CPT (b) (6) may be contacted by e-mail at (b) (6); Mr. (b) (6) may be contacted by e-mail at (b) (6), or DSN (b) (6) or commercial (b) (6).

(b) (6)

Environmental Engineer
Deployment Environmental Surveillance
Program

Approved by:

(b) (6)

Acting Program Manager
Deployment Environmental Surveillance

APPENDIX A

SAMPLING SUMMARY

Table A-1. Summary of Four TSP Air Samples Collected from COB Speicher, Iraq, 4-24 March 2008

Field/Local Sample ID	Location	Start Date/Time	Exposure Notes	Sample Time	PM Mini-Vol™ Sampler Serial #	Mini-Flow Calibration Orifice Serial #	Filter ID
IRA_SPEICH_TSPMV_08064_01	SPEICHER	2008/03/04 1225	Smoke from the burn pit flows over COB Speicher, Iraq. Landfill/burn pit/hazard materiel area.	1590.0 min	4092	1351	47-05-0929
IRA_SPEICH_TSPMV_08083_01	SPEICHER	2008/03/23 0745	Smoke from the burn pit flows over COB Speicher, Iraq. Landfill/burn pit entrance.	1440.0 min	4092	1595	47-04-3329
IRA_SPEICH_TSPMV_08064_02	SPEICHER	2008/03/04 1200	Smoke from the burn pit flows over COB Speicher, Iraq. Landfill/burn pit entrance.	1590.0 min	2825	1351	47-04-3330
IRA_SPEICH_TSPMV_08083_02	SPEICHER	2008/03/23 0705	The sample site is between two logistics support areas and approximately a 300 meters from the flight line.	1440.0 min	2839	1595	47-04-0379

Mini-Vol™ is a registered trademark of Airmetrics.

APPENDIX B

DETAILED SAMPLING RESULTS

Table B-1. Results Summary of Four TSP Air Samples Collected from COB Speicher, Iraq, 4-24 March 2008

Parameter detected above laboratory limit	Units	Concentration		Detection Rate
		Maximum	Average	Number detected/ number of samples
Antimony	$\mu\text{g}/\text{m}^3$	0.14	0.061	1/4
Chromium	$\mu\text{g}/\text{m}^3$	0.18	0.11	3/4
Lead	$\mu\text{g}/\text{m}^3$	0.11	0.074	4/4
Manganese	$\mu\text{g}/\text{m}^3$	1.3	0.71	4/4
Nickel	$\mu\text{g}/\text{m}^3$	0.27	0.15	2/4
TSP	$\mu\text{g}/\text{m}^3$	2100	1200	4/4
Vanadium	$\mu\text{g}/\text{m}^3$	0.12	0.078	2/4

Note: MEGs have not been developed for TSP.

APPENDIX C

DETAILED SAMPLE RESULTS

Table C-1. Analytical Results for Four TSP Air Samples Collected at COB Speicher, Iraq 424 March 2008

Sample ID			000005LN	000005LO	000005LQ	000005LV
Field/Local Sample ID			IRA_SPEICH_TSPMV_080 64_01	IRA_SPEICH_TSPMV_080 83_01	IRA_SPEICH_TSPMV_0 8064_02	IRA_SPEICH_TSPMV_08083_ 02
Country			Iraq	Iraq	Iraq	Iraq
Location			SPEICHER	SPEICHER	SPEICHER	SPEICHER
Start Date			2008/03/04 1225	2008/03/23 0745	2008/03/04 1200	2008/03/23 0705
Analyte	CAS	Units	Results			
Antimony	7440-36-0	µg/m ³	0.14472	< 0.069254	< 0.056046	< 0.069741
Arsenic	7440-38-2	µg/m ³	< 0.026312	< 0.027702	< 0.022418	< 0.027896
Beryllium	7440-41-7	µg/m ³	< 0.032890	< 0.034627	< 0.028023	< 0.034870
Cadmium	7440-43-9	µg/m ³	< 0.0065781	< 0.0069254	< 0.0056046	< 0.0069741
Chromium	7440-47-3	µg/m ³	0.18419	0.040167	0.17935	< 0.034870
Lead	7439-92-1	µg/m ³	0.038153	0.11496	0.03699	0.10461
Manganese	7439-96-5	µg/m ³	1.2498	0.16621	1.3451	0.07532
Nickel	7440-02-0	µg/m ³	0.26312	< 0.069254	0.26902	< 0.069741
TSP		µg/m ³	2012.7	362.27	2113.8	132.09
Vanadium	7440-62-2	µg/m ³	0.12104	< 0.069254	0.1233	< 0.069741
Zinc	7440-66-6	µg/m ³	< 0.26312	< 0.27702	< 0.22418	< 0.27896

Note:

<X.XXX - Below laboratory detection limit.