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

AUG 13 2009

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

SUBJECT: Deployment Occupational and Environmental Health Risk Characterization, Soil and Associated Dust Samples, Hit, Iraq, 15 June 2009, U_IRQ_HIT_CM_SQA_20090615

1. The enclosed report details the occupational and environmental health (OEH) risk characterization for two soil samples collected by Task Force 227th Medical Detachment personnel at Hit, Iraq, 15 June 2009.

2. The OEH risk estimate for exposure to the soil and associated dust at Hit, Iraq is **low**. None of the chemical or physical parameters were detected at concentrations above their respective military exposure guidelines. Exposure to the soil and associated dust is expected to have little or no impact on unit readiness.

FOR THE COMMANDER:

(b) (6)

Director, Health Risk Management

Encl

CF: (w/encl)
227th MED DET PM (Commander/MAJ (b) (6)
227th MED DET PM (XO/1LT (b) (6)
227th MED DET PM (Det SGT/SFC (b) (6)
MNC-I (Command Surgeon Office/LTC (b) (6)
MNF-I CJ148 (Commander/CDR (b) (6)
ARCENT (Command Surgeon/LTC (b) (6)
ARCENT (Force Health Protection Officer/LTC (b) (6)
CFLCC/USA 3RD MDSC (CPT (b) (6)
44th MEDCOM (Environmental Science Officer/SFC (b) (6)
44th MEDCOM (Environmental Science Officer/MSG (b) (6)
44th MEDCOM (Environmental Science Officer/CPT (b) (6)
44th MEDCOM (Preventive Medicine Officer/MAJ (b) (6)
111th MMB (FHP OIC Clinic Ops/1LT (b) (6)
(CONT)

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421st MMB (Preventive Medicine OIC/1LT (b) (6)
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U.S. Army Center for Health Promotion and Preventive Medicine

DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL
HEALTH RISK CHARACTERIZATION
SOIL AND ASSOCIATED DUST SAMPLES
HIT, IRAQ
15 JUNE 2009
U_IRQ_HIT_CM_SQA_20090615

Preventive Medicine Survey: 40-5f1

USCHPPM

Readiness Thru Health

DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL
HEALTH RISK CHARACTERIZATION
SOIL AND ASSOCIATED DUST SAMPLES
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15 JUNE 2009
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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.

c. USACHPPM Reference Document (RD) 230, Chemical Exposure Guidelines for Deployed Military Personnel, Version 1.3, May 2003 with 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, the samples and information provided on the associated field data sheets were used to estimate the operational health risk associated with personnel exposure to identified chemical hazards in the soil at Hit, Iraq.

3. SCOPE. This assessment addresses the analytical results for two soil samples collected from Hit, Iraq, 15 June 2009. These samples are limited in time, area, and media. Therefore, this report should not be considered a complete assessment of the overall OEH hazards to which troops may be exposed at this location. However, this assessment has been performed using operational risk management (ORM) doctrine FM 5-19, and the relatively conservative (protective) assumptions and methods provided in TG 230, to facilitate decision making that can minimize the likelihood of significant risks.

4. BACKGROUND AND EXPOSURE ASSUMPTIONS. The soil samples were collected to assess the potential for adverse health effects to personnel coming into contact with the sampled soil and associated dust at Hit, Iraq. Two surface composite soil samples were collected from various locations on post. The sampling sites included the motor pool, burn pit, fuel farm, industrial generators, and staging area. Personnel are expected to remain on at this location for approximately 1 year. The degree of exposure to the soil is considered medium (that is, walking area, common area, grassy athletic fields, etc.). All of the personnel at this location are exposed to the soil in this area.

5. METHOD. The USACHPPM Deployment Environmental Surveillance Program uses the TG 230 methodology and associated military exposure guidelines (MEGs) to assess identified hazards and estimate risk in a manner consistent with doctrinal risk management procedures and terminology. This method includes identification of the hazard(s), assessment of the hazard severity and probability, and determination of a risk estimate and associated level of confidence. As part of the hazard identification step, the long-term (1-year) MEGs are used as screening criteria to identify those hazards that are potential health threats. These 1-year MEGs represent exposure concentrations at or below which no significant health effects (including delayed or chronic disease or significant increased risk of cancer) are anticipated even after 1 year of continuous daily exposures. Short-term MEGs are used to assess one time or intermittent exposures. The underlying toxicological basis for the MEGs is addressed in the RD 230. Since toxicological information about potential health effects varies among different chemicals, the determination of severity of effects when MEGs are exceeded involves professional judgment. Hazards with exposure concentrations greater than MEGs are identified as potential health threats, carried through the hazard assessment process, and assigned a risk estimate consistent with ORM methodology. Hazards that are either not detected or are present only at levels below the 1-year MEGs are not considered health threats and, therefore, are automatically assigned a low operational risk estimate.

6. HAZARD IDENTIFICATION AND ASSESSMENT.

a. Laboratory Analysis. The two soil samples were analyzed by the USACHPPM-Headquarters laboratory for metals, pesticides/polychlorinated biphenyls (PCBs), herbicides, radionuclides, and semivolatile organic compounds (SVOCs). An information summary for the samples is contained in Appendix A. Appendix B presents a sample results summary table for all detected parameters. Appendix C presents detailed laboratory results.

b. Risk Estimate. None of the parameters detected in the two soil samples collected were present at concentrations greater than their respective MEGs. Therefore, no potential health threats were identified, and the risk estimate is considered **low**.

7. CONCLUSION. The OEH risk estimate for exposure to the soil and associated dust at Hit, Iraq is **low**. Confidence in the risk estimate is considered **medium**. Exposure to the soil and associated dust is expected to have little or no impact on unit readiness.

8. RECOMMENDATIONS AND NOTE.

a. Recommendations. Although there is a low risk of mission impact due to exposure to soil and associated dust at this location, the following general personal protection recommendations should be followed.

(1) Minimize skin exposure to the soil and associated dust; the uniform should be worn properly: roll sleeves down, tuck pants into boots, and tuck undershirt into pants.

(2) Ensure hand washing stations are readily available. Wash hands and face with soap and water prior to eating, drinking, or smoking.

(3) Report any symptoms to a health care provider in order to identify potential causes and implement hazard control measures.

(4) Collect additional soil samples from this site/area if there is a known change in or concern with the soil conditions.

b. Note. This OEH risk assessment is specific to the exposure assumptions identified in Background and Exposure Assumptions, paragraph and the sample results assessed in this report. If the assumed exposure scenario changes, provide updated information so that the risk estimate can be reassessed. If additional samples from these areas are collected, a new OEH risk assessment will be completed.

9. POINTS OF CONTACT. The USACHPPM points of contact for this assessment are (b) (6) and Ms. (b) (6). Ms. (b) (6) may be contacted at e-mail (b) (6); 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 Program

Approved by:

(b) (6)
MAJ, MS
Program Manager
Deployment Environmental Surveillance

APPENDIX A

SAMPLING SUMMARY
SOIL AND ASSOCIATED DUST SAMPLES
HIT, IRAQ
15 JUNE 2009

DOEHRS Sample ID[1]	Field/Local Sample ID	Sites	Start Date/Time	Exposure Notes	Collection Type
00000XQ8	IRA_COPHIT_01S_09166	Motor pool, burn pit, fuel farm, industrial generators, and staging area.	2009/06/15 0930	Hit located in a desert area, high temps, windy conditions. River located +/- 2 to 3 miles from compound. No vegetation on compound. Industrial generator on site, +/- 8, one motor pool, fuel farm, burning pit, and staging area.	Composite
00000XQ9	IRA_COPHIT_02S_09166	Motor pool, burn pit, fuel farm, , industrial generators, and staging area.	2009/06/15 1042	Hit located in a desert area, high temps, windy conditions. River located +/- 2 to 3 miles from compound. No vegetation on compound. Industrial generator on site, +/- 8, one motor pool, fuel farm, burning pit, and staging area.	Composite

[1]DOEHRS Sample ID=Deployment Occupational and Environmental Health Readiness System Sample Identification Number

APPENDIX B

RESULTS SUMMARY
SOIL AND ASSOCIATED DUST SAMPLES
HIT, IRAQ
15 JUNE 2009

Parameter	Units[1]	Concentrations[2]		Average	USA CHPPM TG230 Military Exposure Guidelines (MEG)	
		00000XQ8	00000XQ9		1 year	
		IRA_COPHIT_01S_09166	IRA_COPHIT_02S_09166		# > MEG	MEG
Barium	mg/kg	54.9	41.3	48.1	0	18000
Chromium	mg/kg	46.1	28	37.05	0	5700
Nickel	mg/kg	67.7	38.2	52.95	0	5300
Strontium	mg/kg	2340	1330	1835	0	140000

[1]mg/kg - milligram per kilogram
[2]Laboratory detection limit is parameter and sample specific

APPENDIX C

ANALYTICAL RESULTS
SOIL AND ASSOCIATED DUST SAMPLES
HIT, IRAQ
15 JUNE 2009

DOEHRS Sample ID[1]			00000XQ8	00000XQ9
Field/Local Sample ID			IRA_COPHIT_01S_09166	IRA_COPHIT_02S_09166
Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
1,2,4-Trichlorobenzene	SVOC	mg/kg		< 0.35000
1,2-Dichlorobenzene	VOC	mg/kg		< 0.35000
1,3-Dichlorobenzene	VOC	mg/kg		< 0.35000
1,4-Dichlorobenzene	VOC	mg/kg		< 0.35000
2,4,5-T	Herbicides	mg/kg	< 0.05	< 0.05
2,4,5-TP {Silvex}	Herbicides	mg/kg	< 0.05	< 0.05
2,4,5-Trichlorophenol	SVOC	mg/kg		< 0.35000
2,4,6-Trichlorophenol	SVOC	mg/kg		< 0.35000
2,4-D	Herbicides	mg/kg	< 0.05	< 0.05
2,4-DB	Herbicides	mg/kg	< 0.05	< 0.05
2,4-Dichlorophenol	SVOC	mg/kg		< 0.35000
2,4-Dimethylphenol	SVOC	mg/kg		< 0.35000
2,4-Dinitrophenol	SVOC	mg/kg		< 0.35000
2,4-Dinitrotoluene	SVOC	mg/kg		< 0.35000
2,6-Dinitrotoluene	SVOC	mg/kg		< 0.35000
2-Chloronaphthalene	SVOC	mg/kg		< 0.35000
2-Chlorophenol	SVOC	mg/kg		< 0.35000
2-Methyl-4,6-dinitrophenol	SVOC	mg/kg		< 0.35000
2-Methylnaphthalene	SVOC	mg/kg		< 0.35000
2-Methylphenol {o-Cresol}	SVOC	mg/kg		< 0.35000
2-Nitroaniline	SVOC	mg/kg		< 0.35000

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Hit, Iraq, 15 Jun 09, U_IRQ_HIT_CM_SQA_20090615

DOEHRS Sample ID[1]			00000XQ8	00000XQ9
Field/Local Sample ID			IRA_COPHIT_01S_09166	IRA_COPHIT_02S_09166
Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
2-Nitrophenol	SVOC	mg/kg		< 0.35000
3-Nitroaniline	SVOC	mg/kg		< 0.35000
4-Chloro-3-methylphenol	SVOC	mg/kg		< 0.35000
4-Chloroaniline	SVOC	mg/kg		< 0.35000
4-Methylphenol {p-Cresol}	SVOC	mg/kg		< 0.35000
4-Nitroaniline	SVOC	mg/kg		< 0.35000
4-Nitrophenol	SVOC	mg/kg		< 0.35000
Acenaphthene	PAH	mg/kg		< 0.35000
Acenaphthylene	PAH	mg/kg		< 0.35000
Actinium-228		µCi/g	< 0.000000736	< 0.00000063400
Alachlor	Herbicides	mg/kg	< 0.217	< 0.211
Aldrin	Insecticides	mg/kg	< 0.0542	< 0.0528
alpha-Chlordane	Insecticides	mg/kg	< 0.0542	< 0.0528
alpha-HCH {alpha-BHC}	Insecticides	mg/kg	< 0.0542	< 0.0528
Anthracene	PAH	mg/kg		< 0.35000
Aroclor 1016	PCB	mg/kg	< 0.217	< 0.211
Aroclor 1221	PCB	mg/kg	< 0.217	< 0.211
Aroclor 1232	PCB	mg/kg	< 0.217	< 0.211
Aroclor 1242	PCB	mg/kg	< 0.217	< 0.211
Aroclor 1248	PCB	mg/kg	< 0.217	< 0.211
Aroclor 1254	PCB	mg/kg	< 0.217	< 0.211
Aroclor 1260	PCB	mg/kg	< 0.217	< 0.211
Arsenic	Metals	mg/kg	< 43.4	< 41.6
Aspon	Insecticides	mg/kg	< 0.108	< 0.106
Atrazine	Herbicides	mg/kg	< 2.17	< 2.11
Azinphos-ethyl	Insecticides	mg/kg	< 0.217	< 0.211
Azinphos-methyl	Insecticides	mg/kg	< 0.217	< 0.211
Barium	Metals	mg/kg	54.9	41.3

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DOEHRS Sample ID[1]			00000XQ8	00000XQ9
Field/Local Sample ID			IRA_COPHIT_01S_09166	IRA_COPHIT_02S_09166
Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
Benefin	Herbicides	mg/kg	< 0.108	< 0.106
Benz[a]anthracene	PAH	mg/kg		< 0.35000
Benzo[a]pyrene	PAH	mg/kg		< 0.35000
Benzo[b]fluoranthene	PAH	mg/kg		< 0.35000
Benzo[g,h,i]perylene	PAH	mg/kg		< 0.35000
Benzo[k]fluoranthene	PAH	mg/kg		< 0.35000
Benzyl alcohol	SVOC	mg/kg		< 0.35000
Beryllium	Metals	mg/kg	< 2.17	< 2.08
beta-HCH {beta-BHC}	Insecticides	mg/kg	< 0.0542	< 0.0528
Bis(2-chloroethoxy)methane	SVOC	mg/kg		< 0.35000
Bis(2-chloroethyl)ether	SVOC	mg/kg		< 0.35000
Bis(2-chloroisopropyl) ether	SVOC	mg/kg		< 0.35000
Bismuth-214		µCi/g	0.0000012	0.000000692
Bolstar	Insecticides	mg/kg	< 0.217	< 0.211
Bromacil	Herbicides	mg/kg	< 0.434	< 0.422
Butylbenzylphthalate	SVOC	mg/kg		< 0.35000
Cadmium	Metals	mg/kg	< 4.34	< 4.16
Carbophenothion	Insecticides	mg/kg	< 0.217	< 0.211
Cesium-134		µCi/g	< 0.00000017000	< 0.0000000704
Cesium-137		µCi/g	< 0.000000181	< 0.000000169
Chlordane, technical	Insecticides	mg/kg	< 0.217	< 0.211
Chlorfenvinphos	Insecticides	mg/kg	< 0.108	< 0.106
Chloroneb	Fungicides	mg/kg	< 0.271	< 0.264
Chlorothalonil	Fungicides	mg/kg	< 0.108	< 0.106
Chlorpyrifos	Insecticides	mg/kg	< 0.108	< 0.106
Chlorpyrifos-methyl	Insecticides	mg/kg	< 0.108	< 0.106
Chromium	Metals	mg/kg	46.1	28

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DOEHRS Sample ID[1]			00000XQ8	00000XQ9
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Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
Chrysene	PAH	mg/kg		< 0.35000
cis-Permethrin	Insecticides	mg/kg	< 0.434	< 0.422
Cobalt-60		µCi/g	< 0.000000184	< 0.0000000874
Coumaphos	Insecticides	mg/kg	< 0.217	< 0.211
Crotoxyphos	Insecticides	mg/kg	< 0.217	< 0.211
Dalapon	Herbicides	mg/kg	< 0.05	< 0.05
DCPA {Dacthal}	Herbicides	mg/kg	< 0.108	< 0.106
delta-HCH {delta-BHC}	Insecticides	mg/kg	< 0.0542	< 0.0528
Di(2-ethylhexyl)phthalate	SVOC	mg/kg		< 0.35000
Diazinon	Insecticides	mg/kg	< 0.108	< 0.106
Dibenz[a,h]anthracene	PAH	mg/kg		< 0.35000
Dibenzofuran	SVOC	mg/kg		< 0.35000
Dicamba	Herbicides	mg/kg	< 0.05	< 0.05
Dichlofenthion	Insecticides	mg/kg	< 0.108	< 0.106
Dichloroprop	Herbicides	mg/kg	< 0.05	< 0.05
Dichlorvos	Insecticides	mg/kg	< 0.217	< 0.211
Dicloran	Fungicides	mg/kg	< 0.217	< 0.211
Dieldrin	Insecticides	mg/kg	< 0.0542	< 0.0528
Diethylphthalate	SVOC	mg/kg		< 0.35000
Dimethoate	Insecticides	mg/kg	< 0.434	< 0.422
Dimethylphthalate	SVOC	mg/kg		< 0.35000
Di-n-butylphthalate	SVOC	mg/kg		< 0.35000
Di-n-octylphthalate	SVOC	mg/kg		< 0.35000
Dinoseb	Herbicides	mg/kg	< 0.05	< 0.05
Disulfoton	Insecticides	mg/kg	< 0.217	< 0.211
Endosulfan I	Insecticides	mg/kg	< 0.0542	< 0.0528
Endosulfan II	Insecticides	mg/kg	< 0.108	< 0.106
Endosulfan sulfate	Insecticides	mg/kg	< 0.108	< 0.106

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Hit, Iraq, 15 Jun 09, U_IRQ_HIT_CM_SQA_20090615

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Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
Endrin	Insecticides	mg/kg	< 0.0542	< 0.0528
EPN	Insecticides	mg/kg	< 0.108	< 0.106
Ethion	Insecticides	mg/kg	< 0.108	< 0.106
Ethoprop	Insecticides	mg/kg	< 0.108	< 0.106
Etridiazole	Fungicides	mg/kg	< 0.217	< 0.211
Europium-152		µCi/g	< 0.00000051200	< 0.000000387
Famphur	Insecticides	mg/kg	< 0.217	< 0.211
Fenarimol	Fungicides	mg/kg	< 0.0542	< 0.0528
Fenitrothion	Insecticides	mg/kg	< 0.108	< 0.106
Fensulfothion	Insecticides	mg/kg	< 1.08	< 1.06
Fenthion	Insecticides	mg/kg	< 0.217	< 0.211
Fluchloralin	Herbicides	mg/kg	< 0.217	< 0.211
Fluoranthene	PAH	mg/kg		< 0.35000
Fluorene	PAH	mg/kg		< 0.35000
Fonofos	Insecticides	mg/kg	< 0.108	< 0.106
gamma-Chlordane	Insecticides	mg/kg	< 0.0542	< 0.0528
gamma-HCH {gamma-BHC, Lindane}	Insecticides	mg/kg	< 0.0542	< 0.0528
Heptachlor	Insecticides	mg/kg	< 0.0542	< 0.0528
Heptachlor epoxide	Insecticides	mg/kg	< 0.0542	< 0.0528
Hexachlorobenzene	SVOC	mg/kg	< 0.0542	< 0.35000
Hexachlorobutadiene	VOC	mg/kg		< 0.35000
Hexachlorocyclopentadiene	SVOC	mg/kg		< 0.35000
Hexachloroethane	SVOC	mg/kg		< 0.35000
Indeno[1,2,3-cd]pyrene	PAH	mg/kg		< 0.35000
Isazophos	Insecticides	mg/kg	< 0.108	< 0.106
Isofenphos	Insecticides	mg/kg	< 0.108	< 0.106
Isophorone	SVOC	mg/kg		< 0.35000
Lead	Metals	mg/kg	< 10.8	< 10.4

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Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
Leptophos	Insecticides	mg/kg	< 0.108	< 0.106
Malathion	Insecticides	mg/kg	< 0.108	< 0.106
MCPA	Herbicides	mg/kg	< 5.0	< 5.0
MCPP	Herbicides	mg/kg	< 5.0	< 5.0
Mercury	Metals	mg/kg	< 0.0127	< 0.012
Methoxychlor	Insecticides	mg/kg	< 1.08	< 1.06
Mevinphos	Insecticides	mg/kg	< 0.434	< 0.422
Mirex	Insecticides	mg/kg	< 0.0542	< 0.0528
Naphthalene	PAH	mg/kg		< 0.35000
Nickel	Metals	mg/kg	67.7	38.2
Nitrobenzene	SVOC	mg/kg		< 0.35000
N-Nitrosodimethylamine	SVOC	mg/kg		< 0.35000
N-Nitrosodiphenylamine	SVOC	mg/kg		< 0.35000
N-Nitrosodipropylamine	SVOC	mg/kg		< 0.35000
o,p'-DDD	Insecticides	mg/kg	< 0.0542	< 0.0528
o,p'-DDE	Insecticides	mg/kg	< 0.0542	< 0.0528
o,p'-DDT	Insecticides	mg/kg	< 0.0542	< 0.0528
Oxadiazon	Herbicides	mg/kg	< 0.0542	< 0.0528
Oxychlordane	Insecticides	mg/kg	< 0.0542	< 0.0528
p,p'-DDD	Insecticides	mg/kg	< 0.0542	< 0.0528
p,p'-DDE	Insecticides	mg/kg	< 0.0542	< 0.0528
p,p'-DDT	Insecticides	mg/kg	< 0.0542	< 0.0528
Parathion-ethyl {Parathion}	Insecticides	mg/kg	< 0.108	< 0.106
Parathion-methyl	Insecticides	mg/kg	< 0.108	< 0.106
p-Bromophenyl phenyl ether	SVOC	mg/kg		< 0.35000
p-Chlorophenyl phenyl ether	SVOC	mg/kg		< 0.35000

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Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
Pentachloronitrobenzene	Fungicides	mg/kg	< 0.108	< 0.106
Pentachlorophenol	SVOC	mg/kg		< 0.35000
Permethrin, trans-	Insecticides	mg/kg	< 0.434	< 0.422
Phenanthrene	PAH	mg/kg		< 0.35000
Phenol	SVOC	mg/kg		< 0.35000
Phorate	Insecticides	mg/kg	< 0.434	< 0.422
Phosmet	Insecticides	mg/kg	< 0.217	< 0.211
Procymidone	Fungicides	mg/kg	< 0.217	< 0.211
Pronamide	Herbicides	mg/kg	< 0.434	< 0.422
Propazine	Herbicides	mg/kg	< 2.17	< 2.11
Propetamphos	Insecticides	mg/kg	< 0.108	< 0.106
Protactinium-234M		µCi/g	< 0.000018	< 0.0000157
Protothiophos	Insecticides	mg/kg	< 0.217	< 0.211
Pyrene	SVOC	mg/kg		< 0.35000
Ronnel	Insecticides	mg/kg	< 0.108	< 0.106
Selenium	Metals	mg/kg	< 10.8	< 10.4
Silver	Metals	mg/kg	< 2.17	< 2.08
Simazine	Herbicides	mg/kg	< 2.17	< 2.11
Strontium	Metals	mg/kg	2340	1330
Sulfotep	Insecticides	mg/kg	< 0.108	< 0.106
Terbufos	Insecticides	mg/kg	< 0.108	< 0.106
Tetrachlorvinphos	Insecticides	mg/kg	< 0.217	< 0.211
Thorium-234		µCi/g	< 0.00000221	< 0.00000164
Total solids	%	mg/kg	92.2	94.7
Toxaphene	Insecticides	mg/kg	< 1.08	< 1.06
trans-Nonachlor	Insecticides	mg/kg	< 0.0542	< 0.0528
Trichloronate	Insecticides	mg/kg	< 0.217	< 0.211
Trifluralin	Herbicides	mg/kg	< 0.108	< 0.106

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Hit, Iraq,
15 Jun 09, U_IRQ_HIT_CM_SQA_20090615

DOEHRS Sample ID[1]			00000XQ8	00000XQ9
Field/Local Sample ID			IRA_COPHIT_01S_09166	IRA_COPHIT_02S_09166
Site			motor pool, burn pit, fuel farm, industrial generators, and staging area	motor pool, burn pit, fuel farm, industrial generators, and staging area
Start Date/Time			2009/06/15 0930	2009/06/15 1042
Parameter	Class[2,3,4,5]	Units[6,7]	Concentration[8,9]	
Uranium-235		µCi/g	< 0.0000011300	< 0.000000724
Vinclozolin	Fungicides	mg/kg	< 0.217	< 0.211
Zinophos	Insecticides	mg/kg	< 0.108	< 0.106

[1]DOEHRS Sample ID = Deployment Occupational and Environmental Health Readiness System Sample Identification Number
[2]SVOC = Semivolatile organic compound
[3]VOC = Volatile organic compound
[4]PAH = Polycyclic aromatic hydrocarbon
[5]PCB = Polychlorinated biphenyl
[6] mg/kg = milligrams per kilogram
[7]µCi/g = micro curies per gram
[8] < X.XX = Below laboratory reporting limit (X.XX)
[9]Laboratory reporting limit is parameter and sample specific