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

12 JUL 2009

MCHB-TS-RDE

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, Sharqat, Iraq, 10 May 2009, U_IRQ_SHARQAT_CM_SQA_20090510

1. The enclosed report details the occupational and environmental health (OEH) risk characterization for two soil samples collected by 1863rd Medical Detachment-Preventive Medicine personnel at Sharqat, Iraq, 10 May 2009.

2. The OEH risk estimate for exposure to the soil and associated dust at the sampled areas of Sharqat, 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)
1863rd MED DET (MAJ (b)
1863rd MED DET (MAJ (b) (6)
MNC-I (Command Surgeon/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)
TF 44 MED (Force Health Protection Officer/LTC (b) (6)
421st MMB (Preventive Medicine OIC/1LT (b) (6)
(CONT)

MCHB-TS-RDE
SUBJECT: Deployment Occupational and Environmental Health Risk Characterization, Soil and Associated Dust Samples, Sharqat, Iraq, 10 May 2009, U_IRQ_SHARQAT_CM_SQA_20090510

CF: (CONT)
421st MMB (Preventive Medicine NCO/SSG (b) (6)
223rd MED DET (Commander/CPT (b) (6)
223rd MED DET (Detachment Sergeant/SFC (b) (6)
223rd MED DET (XO/CPT (b) (6)
111th MMB (FHP OIC Clinic Ops/1LT (b) (6)
USACHPPM-EUR (MCHB-AE-EE/CPT (b) (6)

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

DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL
HEALTH RISK CHARACTERIZATION
SOIL AND ASSOCIATED DUST SAMPLES
SHARQAT, IRAQ
10 MAY 2009
U_IRQ_SHARQAT_CM_SQA_20090510

Preventive Medicine Survey: 40-5f1

USCHPPM

Readiness Thru Health

DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL
HEALTH RISK CHARACTERIZATION
SOIL AND ASSOCIATED DUST SAMPLES
SHARQAT, IRAQ
10 MAY 2009
U_IRQ_SHARQAT_CM_SQA_20090510

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 Sharqat, Iraq.

3. SCOPE. This assessment addresses the analytical results for two soil samples collected from Sharqat, Iraq, 10 May 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.

a. IRQ_SHARQAT_01S_09130. This is a composite, surface sample collected from the physical training (PT) field at Sharqat, Iraq. This field is the only location with soil exposed. The sample site was turned into a football field which consists of hand-packed soil and a lot of loose top soil. Personnel are expected to remain on at this location for approximately 1 year. The degree of exposure to the soil is considered high (fighting position, maintenance area, PT area, excavating, filling sandbags, etc.). It is expected that about 25–50 percent of the personnel at this location is exposed to the soil in this area.

b. IRQ_SHARQAT_02S_09130. This is a discrete, surface sample collected from the burn pit at Sharqat, Iraq. There are only a certain number of junior enlisted that frequent the burn pit, which is located outside of the T-walls. The sample was drawn from the edge of the burn pit. There is quite a large amount of loose top soil around the burn pit. Personnel are expected to remain on at Sharqat, Iraq for approximately 1 year. The degree of exposure to the soil is considered low (non traffic areas, restricted areas, etc.). It is expected that less than 10 percent of the personnel at this location is 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 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 the sampled areas of Sharqat, 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 above 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 Mr. (b) (6) and Mr. (b) (6). Mr. (b) (6) may be contacted at e-mail (b) (6); Mr. (b) 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
SHARQAT, IRAQ
10 MAY 2009

Sample ID	Field/Local Sample ID	Location	Start Date/Time	Exposure Notes	Collection Type
00000V06	IRQ_SHARQAT_01S_09130	Sharqat	2009/05/10 1500	The only locations with soil exposed are near the PT track and the burn pit. Not all Soldiers used the track where the sample was taken. Area was turned into a football field. Soldiers play 7 on 7 Football. Field consists on hand packed soil and a lot of loose top soil.	Composite
00000V07	IRQ_SHARQAT_02S_09130	Sharqat	2009/05/10 1530	There are only a certain number of junior enlisted that frequent the burn pit. It is located outside of the T-walls close to IA camp. Sample was drawn from the edges of the burn pit. There is quite a large amount of loose top soil around the burn pit. This loose soil is kicked into the air when a large gust of wind approaches.	Discrete

APPENDIX B

RESULTS SUMMARY
SOIL AND ASSOCIATED DUST SAMPLES
SHARQAT, IRAQ
10 MAY 2009

Parameter	Class	Units	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130	Laboratory Results	USA CHPPM TG230 Military Exposure Guidelines	
						1 year	
			00000V06	00000V07	Average	# > MEG	MEG
Barium	Metals	mg/kg	77.5	90.1	83.8	0	18000
Cadmium	Metals	mg/kg	4.4	4.61	4.51	0	130
Chromium	Metals	mg/kg	48.3	52.3	50.3	0	5700
Nickel	Metals	mg/kg	76.3	61.1	68.7	0	5300
Strontium	Metals	mg/kg	725	1010	867.5	0	140000

Notes:
mg/kg - milligram per kilogram
Laboratory detection limit is parameter and sample specific

APPENDIX C

ANALYTICAL RESULTS
SOIL AND ASSOCIATED DUST SAMPLES
SHARQAT, IRAQ
10 MAY 2009

			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
1,2,4-Trichlorobenzene	120-82-1	SVOC	mg/kg	< 0.35000	< 0.35000
1,2-Dichlorobenzene	95-50-1	VOC	mg/kg	< 0.35000	< 0.35000
1,3-Dichlorobenzene	541-73-1	VOC	mg/kg	< 0.35000	< 0.35000
1,4-Dichlorobenzene	106-46-7	VOC	mg/kg	< 0.35000	< 0.35000
2,4,5-T	93-76-5	HERBICIDES	mg/kg	< 0.05	< 0.05
2,4,5-TP {Silvex}	93-72-1	HERBICIDES	mg/kg	< 0.05	< 0.05
2,4,5-Trichlorophenol	95-95-4	SVOC	mg/kg	< 0.35000	< 0.35000
2,4,6-Trichlorophenol	88-06-2	SVOC	mg/kg	< 0.35000	< 0.35000
2,4-D	94-75-7	HERBICIDES	mg/kg	< 0.05	< 0.05
2,4-DB	94-82-6	HERBICIDES	mg/kg	< 0.05	< 0.05
2,4-Dichlorophenol	120-83-2	SVOC	mg/kg	< 0.35000	< 0.35000
2,4-Dimethylphenol	105-67-9	SVOC	mg/kg	< 0.35000	< 0.35000
2,4-Dinitrophenol	51-28-5	SVOC	mg/kg	< 0.35000	< 0.35000
2,4-Dinitrotoluene	121-14-2	SVOC	mg/kg	< 0.35000	< 0.35000
2,6-Dinitrotoluene	606-20-2	SVOC	mg/kg	< 0.35000	< 0.35000
2-Chloronaphthalene	91-58-7	SVOC	mg/kg	< 0.35000	< 0.35000
2-Chlorophenol	95-57-8	SVOC	mg/kg	< 0.35000	< 0.35000
2-Methyl-4,6-dinitrophenol	534-52-1	SVOC	mg/kg	< 0.35000	< 0.35000
2-Methylnaphthalene	91-57-6	SVOC	mg/kg	< 0.35000	< 0.35000
2-Methylphenol {o-Cresol}	95-48-7	SVOC	mg/kg	< 0.35000	< 0.35000
2-Nitroaniline	88-74-4	SVOC	mg/kg	< 0.35000	< 0.35000

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Sharqat, Iraq, 10 May 09, U_IRQ_SHARQAT_CM_SQA_20090510

			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
2-Nitrophenol	88-75-5	SVOC	mg/kg	< 0.35000	< 0.35000
3,5-Dichlorobenzoic acid	51-36-5	HERBICIDES	mg/kg	< 0.05	< 0.05
3-Nitroaniline	99-09-2	SVOC	mg/kg	< 0.35000	< 0.35000
4-Chloro-3-methylphenol	59-50-7	SVOC	mg/kg	< 0.35000	< 0.35000
4-Chloroaniline	106-47-8	SVOC	mg/kg	< 0.35000	< 0.35000
4-Methylphenol {p-Cresol}	106-44-5	SVOC	mg/kg	< 0.35000	< 0.35000
4-Nitroaniline	100-01-6	SVOC	mg/kg	< 0.35000	< 0.35000
4-Nitrophenol	100-02-7	SVOC	mg/kg	< 0.35000	< 0.35000
Acenaphthene	83-32-9	PAH	mg/kg	< 0.35000	< 0.35000
Acenaphthylene	208-96-8	PAH	mg/kg	< 0.35000	< 0.35000
Acifluorfen	50594-66-6	HERBICIDES	mg/kg	< 0.05	< 0.05
Actinium-228	14331-83-0		µCi/g	0.000000816	0.000001
Alachlor	15972-60-8	HERBICIDES	mg/kg	< 0.212	< 0.21
Aldrin	309-00-2	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
alpha-Chlordane	5103-71-9	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
alpha-HCH {alpha-BHC}	319-84-6	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Anthracene	120-12-7	PAH	mg/kg	< 0.35000	< 0.35000
Aroclor 1016	12674-11-2	PCB	mg/kg	< 0.212	< 0.21
Aroclor 1221	11104-28-2	PCB	mg/kg	< 0.212	< 0.21
Aroclor 1232	11141-16-5	PCB	mg/kg	< 0.212	< 0.21
Aroclor 1242	53469-21-9	PCB	mg/kg	< 0.212	< 0.21
Aroclor 1248	12672-29-6	PCB	mg/kg	< 0.212	< 0.21
Aroclor 1254	11097-69-1	PCB	mg/kg	< 0.212	< 0.21
Aroclor 1260	11096-82-5	PCB	mg/kg	< 0.212	< 0.21
Arsenic	7440-38-2	Metals	mg/kg	< 41.0	< 41.9
Aspon	3244-90-4	INSECTICIDES	mg/kg	< 0.106	< 0.105
Atrazine	1912-24-9	HERBICIDES	mg/kg	< 2.12	< 2.1
Azinphos-ethyl	2642-71-9	INSECTICIDES	mg/kg	< 0.212	< 0.21

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Sharqat, Iraq, 10 May 09, U_IRQ_SHARQAT_CM_SQA_20090510

			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
Azinphos-methyl	86-50-0	INSECTICIDES	mg/kg	< 0.212	< 0.21
Barium	7440-39-3	Metals	mg/kg	77.5	90.1
Benefin	1861-40-1	HERBICIDES	mg/kg	< 0.106	< 0.105
Bentazon	25057-89-0	HERBICIDES	mg/kg	< 0.05	< 0.05
Benzo[a]pyrene	50-32-8	PAH	mg/kg	< 0.35000	< 0.35000
Benzo[b]fluoranthene	205-99-2	PAH	mg/kg	< 0.35000	< 0.35000
Benzo[g,h,i]perylene	191-24-2	PAH	mg/kg	< 0.35000	< 0.35000
Benzo[k]fluoranthene	207-08-9	PAH	mg/kg	< 0.35000	< 0.35000
Benzyl alcohol	100-51-6	SVOC	mg/kg	< 0.35000	< 0.35000
Benz[a]anthracene	56-55-3	PAH	mg/kg	< 0.35000	< 0.35000
Beryllium	7440-41-7	Metals	mg/kg	< 2.05	< 2.1
beta-HCH {beta-BHC}	319-85-7	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Bis(2-chloroethoxy)methane	111-91-1	SVOC	mg/kg	< 0.35000	< 0.35000
Bis(2-chloroethyl)ether	111-44-4	SVOC	mg/kg	< 0.35000	< 0.35000
Bis(2-chloroisopropyl) ether	108-60-1	SVOC	mg/kg	< 0.35000	< 0.35000
Bismuth-214	14733-03-0		µCi/g	0.000000599	0.000000838
Bolstar	35400-43-2	INSECTICIDES	mg/kg	< 0.212	< 0.21
Bromacil	314-40-9	HERBICIDES	mg/kg	< 0.424	< 0.421
Butylbenzylphthalate	85-68-7	SVOC	mg/kg	< 0.35000	< 0.35000
Cadmium	7440-43-9	Metals	mg/kg	4.4	4.61
Carbophenothion	786-19-6	INSECTICIDES	mg/kg	< 0.212	< 0.21
Cesium-134	13967-70-9		µCi/g	< 0.000000113	< 0.0000001390
Cesium-137	10045-97-3		µCi/g	< 0.000000158	< 0.000000203
Chlordane, technical	12789-03-6	INSECTICIDES	mg/kg	< 0.212	< 0.21
Chlorfenvinphos	470-90-6	INSECTICIDES	mg/kg	< 0.106	< 0.105
Chloroneb	2675-77-6	FUNGICIDES	mg/kg	< 0.265	< 0.263
Chlorothalonil	1897-45-6	FUNGICIDES	mg/kg	< 0.106	< 0.105
Chlorpyrifos-methyl	5598-13-0	INSECTICIDES	mg/kg	< 0.106	< 0.105

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			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
Chlorpyrifos	2921-88-2	INSECTICIDES	mg/kg	< 0.106	< 0.105
Chromium	7440-47-3	Metals	mg/kg	48.3	52.3
Chrysene	218-01-9	PAH	mg/kg	< 0.35000	< 0.35000
cis-Permethrin	54774-45-7	INSECTICIDES	mg/kg	< 0.424	< 0.421
Cobalt-60	10198-40-0		µCi/g	< 0.0000001160	< 0.000000144
Coumaphos	56-72-4	INSECTICIDES	mg/kg	< 0.212	< 0.21
Crotoxyphos	7700-17-6	INSECTICIDES	mg/kg	< 0.212	< 0.21
DCPA {Dacthal}	1861-32-1	HERBICIDES	mg/kg	< 0.106	< 0.105
delta-HCH {delta-BHC}	319-86-8	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Di(2-ethylhexyl)phthalate	117-81-7	SVOC	mg/kg	< 0.35000	< 0.35000
Di-n-butylphthalate	84-74-2	SVOC	mg/kg	< 0.35000	< 0.35000
Di-n-octylphthalate	117-84-0	SVOC	mg/kg	< 0.35000	< 0.35000
Diazinon	333-41-5	INSECTICIDES	mg/kg	< 0.106	< 0.105
Dibenzofuran	132-64-9	SVOC	mg/kg	< 0.35000	< 0.35000
Dibenz[a,h]anthracene	53-70-3	PAH	mg/kg	< 0.35000	< 0.35000
Dicamba	1918-00-9	HERBICIDES	mg/kg	< 0.05	< 0.05
Dichlofenthion	97-17-6	INSECTICIDES	mg/kg	< 0.106	< 0.105
Dichloroprop	120-36-5	HERBICIDES	mg/kg	< 0.05	< 0.05
Dichlorvos	62-73-7	INSECTICIDES	mg/kg	< 0.212	< 0.21
Dicloran	99-30-9	FUNGICIDES	mg/kg	< 0.212	< 0.21
Dieldrin	60-57-1	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Diethylphthalate	84-66-2	SVOC	mg/kg	< 0.35000	< 0.35000
Dimethoate	60-51-5	INSECTICIDES	mg/kg	< 0.424	< 0.421
Dimethylphthalate	131-11-3	SVOC	mg/kg	< 0.35000	< 0.35000
Dinoseb	88-85-7	HERBICIDES	mg/kg	< 0.05	< 0.05
Disulfoton	298-04-4	INSECTICIDES	mg/kg	< 0.212	< 0.21
Endosulfan I	959-98-8	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Endosulfan II	33213-65-9	INSECTICIDES	mg/kg	< 0.106	< 0.105

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			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
Endosulfan sulfate	1031-07-8	INSECTICIDES	mg/kg	< 0.106	< 0.105
Endrin	72-20-8	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
EPN	2104-64-5	INSECTICIDES	mg/kg	< 0.106	< 0.105
Ethion	563-12-2	INSECTICIDES	mg/kg	< 0.106	< 0.105
Ethoprop	13194-48-4	INSECTICIDES	mg/kg	< 0.106	< 0.105
Etridiazole	2593-15-9	FUNGICIDES	mg/kg	< 0.212	< 0.21
Europium-152	14683-23-9		µCi/g	< 0.000000346	< 0.0000003900
Famphur	52-85-7	INSECTICIDES	mg/kg	< 0.212	< 0.21
Fenarimol	60168-88-9	FUNGICIDES	mg/kg	< 0.0529	< 0.0526
Fenitrothion	122-14-5	INSECTICIDES	mg/kg	< 0.106	< 0.105
Fensulfothion	115-90-2	INSECTICIDES	mg/kg	< 1.06	< 1.05
Fenthion	55-38-9	INSECTICIDES	mg/kg	< 0.212	< 0.21
Fluchloralin	33245-39-5	HERBICIDES	mg/kg	< 0.212	< 0.21
Fluoranthene	206-44-0	PAH	mg/kg	< 0.35000	< 0.35000
Fluorene	86-73-7	PAH	mg/kg	< 0.35000	< 0.35000
Fonofos	944-22-9	INSECTICIDES	mg/kg	< 0.106	< 0.105
gamma-Chlordane	5103-74-2	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
gamma-HCH {gamma-BHC, Lindane}	58-89-9	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Heptachlor epoxide	1024-57-3	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Heptachlor	76-44-8	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Hexachlorobenzene	118-74-1	SVOC	mg/kg	< 0.35000	< 0.35000
Hexachlorobutadiene	87-68-3	VOC	mg/kg	< 0.35000	< 0.35000
Hexachlorocyclopentadiene	77-47-4	SVOC	mg/kg	< 0.35000	< 0.35000
Hexachloroethane	67-72-1	SVOC	mg/kg	< 0.35000	< 0.35000
Indeno[1,2,3-cd]pyrene	193-39-5	PAH	mg/kg	< 0.35000	< 0.35000
Isazophos	42509-80-8	INSECTICIDES	mg/kg	< 0.106	< 0.105
Isofenphos	25311-71-1	INSECTICIDES	mg/kg	< 0.106	< 0.105
Isophorone	78-59-1	SVOC	mg/kg	< 0.35000	< 0.35000

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Sharqat, Iraq, 10 May 09, U_IRQ_SHARQAT_CM_SQA_20090510

			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
Lead	7439-92-1	Metals	mg/kg	< 10.2	< 10.5
Leptophos	21609-90-5	INSECTICIDES	mg/kg	< 0.106	< 0.105
Malathion	121-75-5	INSECTICIDES	mg/kg	< 0.106	< 0.105
MCPA	94-74-6	HERBICIDES	mg/kg	< 5.0	< 5.0
MCPP	93-65-2	HERBICIDES	mg/kg	< 5.0	< 5.0
Mercury	7439-97-6	Metals	mg/kg	< 0.0127	< 0.0125
Methoxychlor	72-43-5	INSECTICIDES	mg/kg	< 1.06	< 1.05
Mevinphos	7786-34-7	INSECTICIDES	mg/kg	< 0.424	< 0.421
Mirex	2385-85-5	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
N-Nitrosodimethylamine	62-75-9	SVOC	mg/kg	< 0.35000	< 0.35000
N-Nitrosodiphenylamine	86-30-6	SVOC	mg/kg	< 0.35000	< 0.35000
N-Nitrosodipropylamine	621-64-7	SVOC	mg/kg	< 0.35000	< 0.35000
Naphthalene	91-20-3	PAH	mg/kg	< 0.35000	< 0.35000
Nickel	7440-02-0	Metals	mg/kg	76.3	61.1
Nitrobenzene	98-95-3	SVOC	mg/kg	< 0.35000	< 0.35000
o,p'-DDD	53-19-0	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
o,p'-DDE	3424-82-6	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
o,p'-DDT	789-02-6	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Oxadiazon	19666-30-9	HERBICIDES	mg/kg	< 0.0529	< 0.0526
Oxychlordane	27304-13-8	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
p,p'-DDD	72-54-8	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
p,p'-DDE	72-55-9	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
p,p'-DDT	50-29-3	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
p-Bromophenyl phenyl ether	101-55-3	SVOC	mg/kg	< 0.35000	< 0.35000
p-Chlorophenyl phenyl ether	7005-72-3	SVOC	mg/kg	< 0.35000	< 0.35000
Parathion-ethyl {Parathion}	56-38-2	INSECTICIDES	mg/kg	< 0.106	< 0.105
Parathion-methyl	298-00-0	INSECTICIDES	mg/kg	< 0.106	< 0.105
Pentachloronitrobenzene	82-68-8	FUNGICIDES	mg/kg	< 0.106	< 0.105

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Sharqat, Iraq, 10 May 09, U_IRQ_SHARQAT_CM_SQA_20090510

			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
Pentachlorophenol	87-86-5	SVOC	mg/kg	< 0.35000	< 0.35000
Permethrin, trans-	51877-74-8	INSECTICIDES	mg/kg	< 0.424	< 0.421
Phenanthrene	85-01-8	PAH	mg/kg	< 0.35000	< 0.35000
Phenol	108-95-2	SVOC	mg/kg	< 0.35000	< 0.35000
Phorate	298-02-2	INSECTICIDES	mg/kg	< 0.424	< 0.421
Phosmet	732-11-6	INSECTICIDES	mg/kg	< 0.212	< 0.21
Picloram	2/1/1918	HERBICIDES	mg/kg	< 0.05	< 0.05
Procymidone	32809-16-8	FUNGICIDES	mg/kg	< 0.212	< 0.21
Pronamide	23950-58-5	HERBICIDES	mg/kg	< 0.424	< 0.421
Propazine	139-40-2	HERBICIDES	mg/kg	< 2.12	< 2.1
Propetamphos	31218-83-4	INSECTICIDES	mg/kg	< 0.106	< 0.105
Protactinium-234M			µCi/g	< 0.000012800	< 0.000014600
Protothiophos	34643-46-4	INSECTICIDES	mg/kg	< 0.212	< 0.21
Pyrene	129-00-0	SVOC	mg/kg	< 0.35000	< 0.35000
Ronnel	299-84-3	INSECTICIDES	mg/kg	< 0.106	< 0.105
Selenium	7782-49-2	Metals	mg/kg	< 10.2	< 10.5
Silver	7440-22-4	Metals	mg/kg	< 2.05	< 2.1
Simazine	122-34-9	HERBICIDES	mg/kg	< 2.12	< 2.1
Strontium	7440-24-6	Metals	mg/kg	725	1010
Sulfotep	3689-24-5	INSECTICIDES	mg/kg	< 0.106	< 0.105
Terbufos	13071-79-9	INSECTICIDES	mg/kg	< 0.106	< 0.105
Tetrachlorvinphos	22248-79-9	INSECTICIDES	mg/kg	< 0.212	< 0.21
Thorium-234	15065-10-8		µCi/g	< 0.0000014500	< 0.00000185
Total solids		CHARACTERISTIC	mg/kg	944000	950000
Toxaphene	8001-35-2	INSECTICIDES	mg/kg	< 1.06	< 1.05
trans-Nonachlor	39765-80-5	INSECTICIDES	mg/kg	< 0.0529	< 0.0526
Trichloronate	327-98-0	INSECTICIDES	mg/kg	< 0.212	< 0.21
Trifluralin	1582-09-8	HERBICIDES	mg/kg	< 0.106	< 0.105

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Sharqat, Iraq, 10 May 09, U_IRQ_SHARQAT_CM_SQA_20090510

			Sample ID	00000V06	00000V07
			Field/Local Sample ID	IRQ_SHARQAT_01S_09130	IRQ_SHARQAT_02S_09130
			Country	Iraq	Iraq
			Location	Sharqat	Sharqat
			Start Date	2009/05/10 1500	2009/05/10 1530
Parameter	CAS	Class	Units	Results	
Uranium-235	15117-96-1		µCi/g	< 0.000000751	< 0.0000008710
Vinclozolin	50471-44-8	FUNGICIDES	mg/kg	< 0.212	< 0.21
Zinophos	297-97-2	INSECTICIDES	mg/kg	< 0.106	< 0.105

Notes:
µCi/g - micro curies per gram
MCPA - 2-methyl-4-chlorophenoxyacetic acid
MCPP - Mecoprop
PAH - Polycyclic aromatic hydrocarbon
< X.XX - Below laboratory reporting limit (X.XX)
Laboratory reporting limit is parameter and sample specific