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DIGGING IN BAGHDAD -

The Importance of Conducting an Occupational & Environmental Health Site Assessment (OEHSA)



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Overview

- **Background**
- **Case Study**
- **Action Plan**



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Location

■ Baghdad International Airport (BIAP)



Baghdad



Airport



Sather AB

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Location

■ Area of Concern

- End of Runway
- 50 Acres
- Iraqi Landfill
- UXOs



BIAP

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Area of Concern



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Area of Concern



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Case Study Background

■ TSgt “Bob”

- Civil Engineering Technician
- Jul – Nov 03

■ Reported to Sick Call

- Itching
- Night Fever/Sweating

■ Attributed Illness to Bulldozing

■ Initial Diagnosis: Malaria Medication



Bulldozing In Iraq





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Case Study Background

- **Apr 04 Developed Respiratory Illness**
 - Hemorrhagic Alveolar Syndrome
- **Underlying Cause**
 - Depleted Uranium
 - Mustard Gas
 - Sarin
 - Spores/Fungus



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Case Study Background

Sep 04

- Preventive Med Team Informed
- Requested Assistance from AF Experts
 - Develop Sampling Plan
 - UXO Sweep
 - Soil Sampling
 - Case History



EMEDS Team



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Case Study Background

Oct 04

■ Initial Sampling

- 22 Locations with HAZMAT ID
- Surface Samples
- Ferrous Sulfate Heptahydrate



■ Occupational Health Working Group

- Recommended PPE
- Follow-Up Sampling



HazMat ID



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Case Study Background

Dec 04

- **Soil Sampling**
 - 2 Locations
 - On-Site Sampling
 - HAPSITE – GC/MS
 - PID/FID
 - ADM-300
 - CAM
 - Lab Analysis

**No Previous
Environmental Health
Site Assessment!**



HAPSITE



PID FID



ADM-300



CAM

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OEHSA

- **Identify Occupational & Environmental Health Hazards at Deployed Location**
- **Reduce/Eliminate Health Risks to the Greatest Practical Extent**
- **Documentation for Longitudinal Exposure Record (LER)**



Iraq Dust Storm

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During Deployment

Mar 05

- **Located Sampling Results**
 - All Results Below MEGs
- **Contacted Previous Team**
- **Briefed Commander**
 - Area Too Large to Cord-Off
 - Closed TSgt Bob Case
 - Only Reported Illness
 - 2 Years in Past
 - No Definitive Conclusions
 - Determined Action Plan



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Action Plan

- **Develop OEHSA**
- **Conduct Health Risk Assessment Prior to Projects**
- **Documentation for LER**



N95 mask
N95 口罩



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Action Plan OEHSA

■ Soil Sampling Plan

- Base Divided 16 Quadrants
- 23 Samples Based on Occupancy
- Sampling Strategy
 - Random
 - Discrete



Tent City



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Action Plan OEHS

■ On-Site Analysis

- HAPSITE

- HAZMAT ID

- ADM-300

- GPS/Photo/GeoBase Database

■ Lab Analysis

■ Results



Soil Sampling



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Action Plan

■ Communication Project

- 10-Member Team
- Digging Trenches for Cable
- 2 Miles On/Off Base

■ Sampling

- 7 Samples, Every 1500 ft
- Results



Discolored Soil



Soil Sampling at Com Manhole



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Lessons Learned

- **Keep Preventive Med Team Informed**
- **Educate Clinicians on Environmental Health Concerns**
- **Stay in Synch with CE**
- **Routinely Update OEHSA**

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Questions?



Many Thanks To

Lt Col Gary Krupa & Capt Scott Steigerwald

Sather AB, Bioenvironmental Engineers

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