

**Occupational/Environmental Health & Medical Surveillance
Subcommittee:
Review of
US Army Center for Health Promotion and Preventive Medicine
Assessment of
Sodium Dichromate Exposure at Qarmat Ali Water Treatment**

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Defense Health Board

December 15, 2008

Washington, D,C,

**Service is provided in real time; evaluation is
retrospective.**

Goals: 30 minutes

- Brief orientation for DHB
- Discussion- all
- Modifications- if any
- Approval- Core DHB

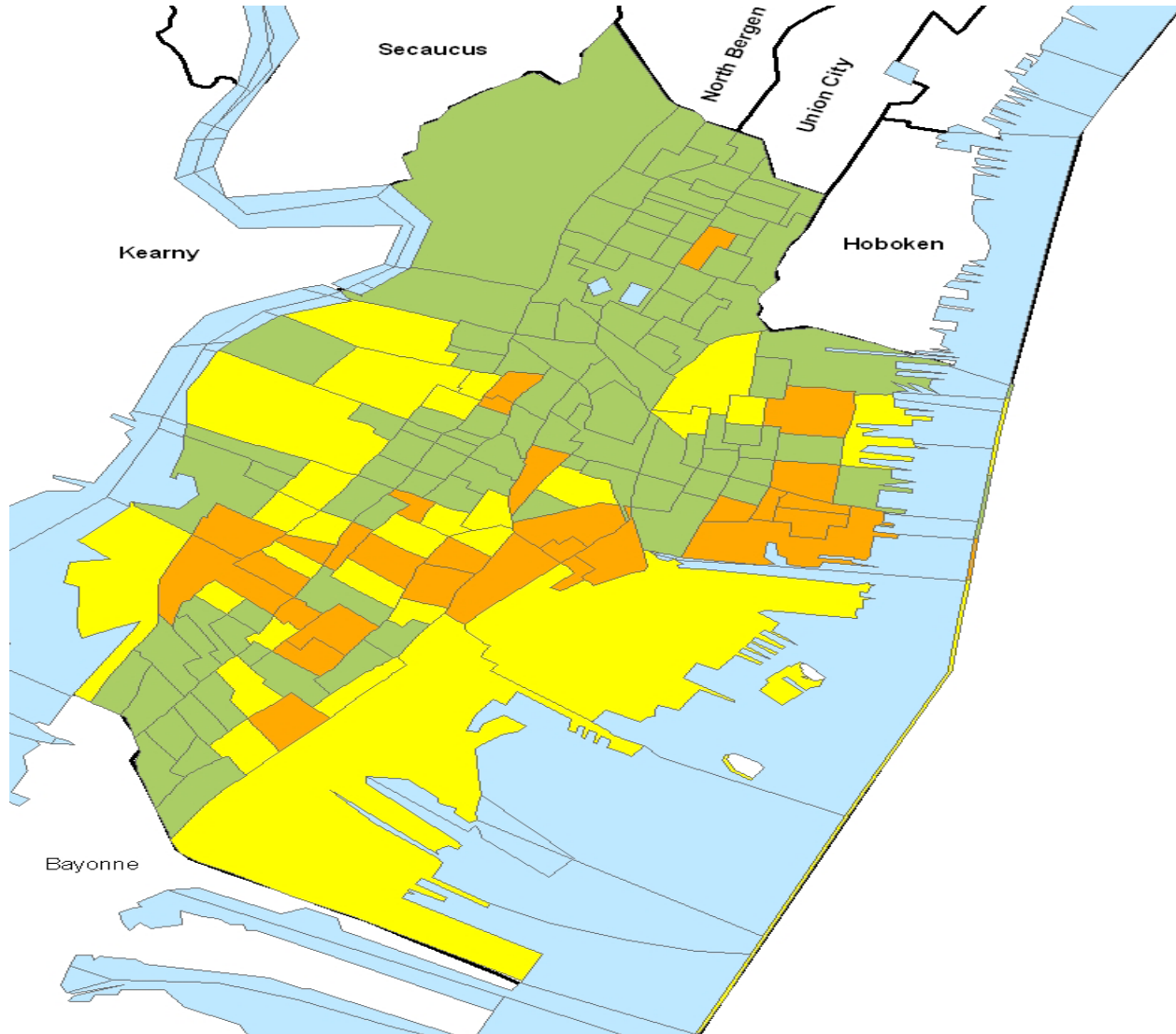
Charge:

- 10/6/08 Surg General Schoomaker “review Occupational and Environmental Health Assessment of Qarmat Ali Water Treatment Plant, Iraq in 2003.
- Was the standard of practice adequate?
- Are the report’s conclusions valid?

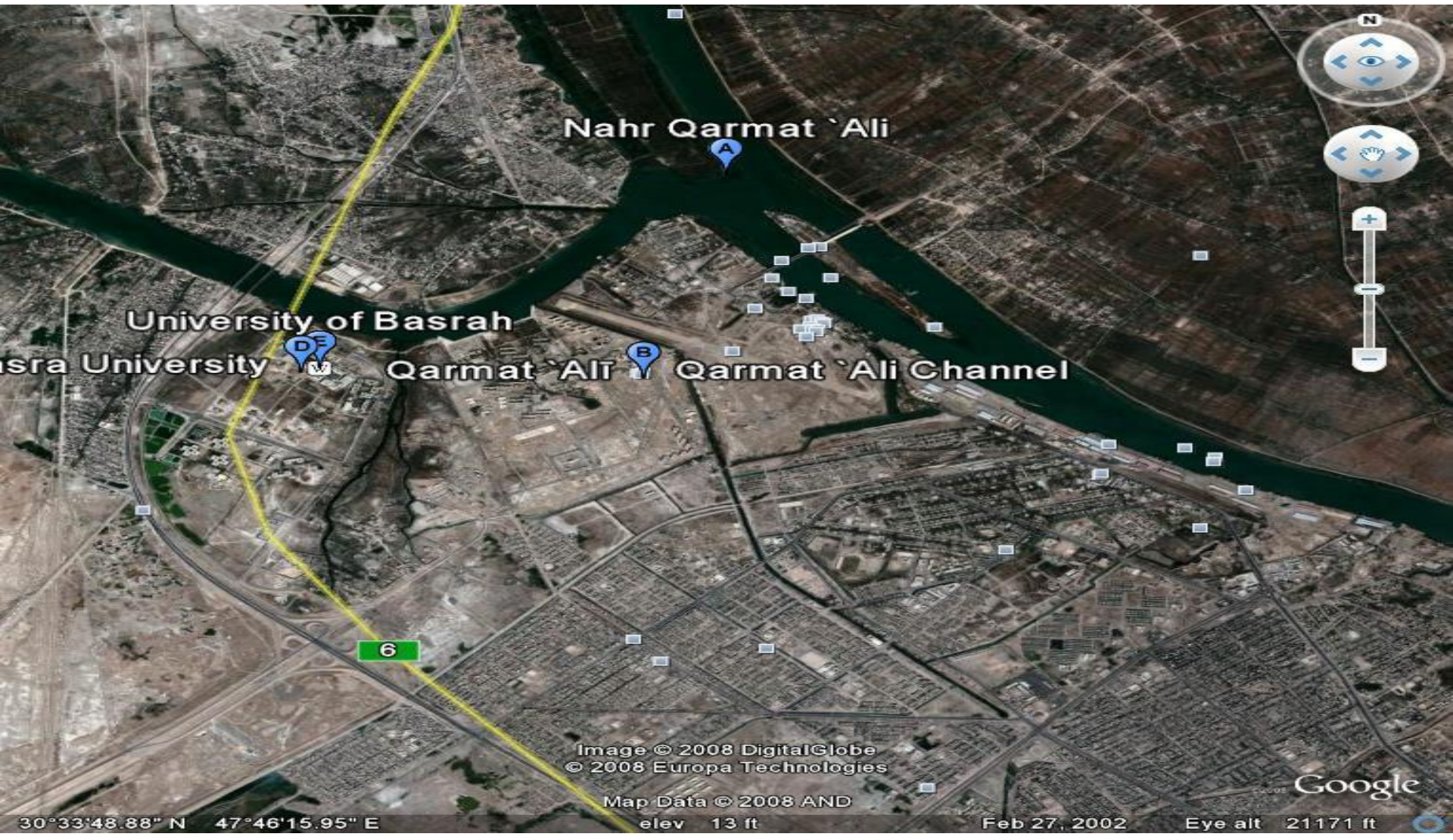
Background-1-Yorkshire

- Sorahan, T, Harrington, JM. Lung cancer in Yorkshire chrome platers, 1972-97. *Occupat Environ Med* 2000; 57:385-389
2-fold mortality lung cancer

Jersey City, NJ CrVI levels (GR: NONE; YEL LOW-MED; ORANGE: HIGH) 1979- 2003



Qarmat Ali



Site:

- Industrial water for oil production
- Ransacked
- Visible yellow contamination (sodium dichromate) used as corrosion inhibitor
- Continuous contractor presence
- Successive military cohorts: British, Oregon, S Carolina, Indiana Nat Guards

Chronology

- Spring 2003: Military provides security for KBR at QA
- Summer 2003: Contractor identifies hazard, remediates site: asphalt and gravel
- Sept, 2003: Soldiers observe contractors in PPE
- Sept 19: Access to site restricted by DOD
- Sept 21: DOD “town meeting;” .
- Sept 29 Start CHPPM Field Investigation
- Oct 17: PPE required
- Oct 30: CHPPM Field Investigation completed
- Charge to DHB 10/6/2008
- Conference call 10/17/2008
- Review report 11/12-13 (security clearance required)
- Brief Sec Army 12/11/2008 on draft
- *Final report 12/15*
- *Expect Senate Briefs*

Exposure Assessment and Remediation

- KBR identifies hazard and elevated concentrations.
- KBR encapsulates with asphalt and gravel
- KBR samples: minimal exposure to Chrome VI
- Britfor: minimal exposure to Chrome VI
- CHPPM finds elevated Chrome VI in soil particularly offsite. Area and breathing zone samples: no CrVI

Medical Assessment

- History and physical for disease
- No chrome ulcers or nasal perforations
- Respiratory irritation high and consistent with non exposed in theatre
- Biological monitoring for Cr VI : non excessive

Epidemiologic assessment

- Mean of blood CrVI consistent with background, not with occupationally exposed.
- No association with length of exposure, etc

Health Risk Communication

- 7 in toto
- Current and former units
- Results of laboratory and medical evaluations “incorporated” in medical charts: confirmed

Major limitations:

- **Assessment of only one state's guard contingent:** *Reasonable assumption that other contingents similarly exposed would similarly have unremarkable results.*
- **Assessment post remediation:** *Timely remediation was prudent; may underestimate exposure*
- **Silos:** *Impedes timely notification and intervention for all sub-cohorts (military, civilian)*

Conclusions:

- Standards of Practice for Field Investigations: met; very timely; silos
- Conclusions by CHPPM: reasonable

Recommendations (specific):

- **1. Insure communication of results to soldiers, their health care providers, and medical record.. Assess reception.**
- **2. *Final report: Declassify and disseminate.***
- **3. Develop case study for training.**
- **4. *Debrief all “silos” including National Guard units, the contractor, and local public health.***
- **5. Establish a registry including info on exposure, medical, etc.**

Recommendations Gen'l.

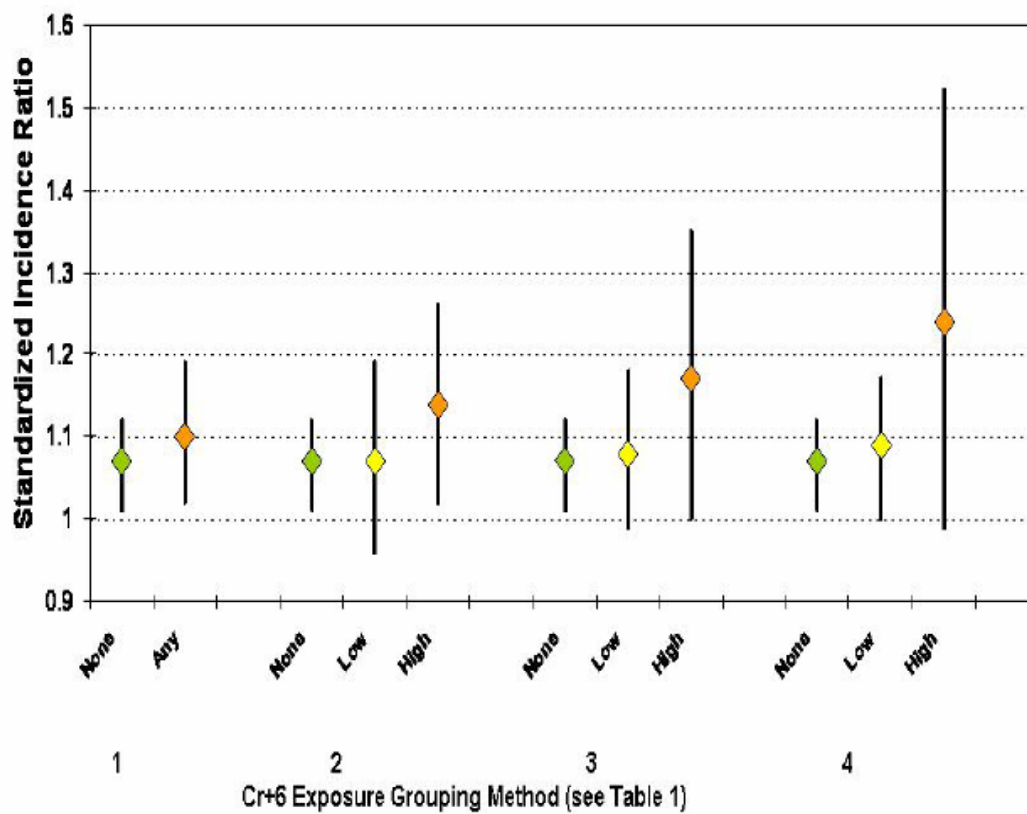
- **1. Train soldiers to recognize and avoid industrial hazards.**
- **2. Train to weigh industrial vs traditional combat hazards.**
- **3. Insure in-theater capacity for initial investigations.**
- **3. Insure backup industrial hygiene, toxicology and epidemiology. Identify Impediments ..**
- **4. Provide timely access to civilian expertise.**
- **5. Establish an external advisory board for real time and post facto evaluation.**
- **6. Learn to bridge silos**
- **7. Review system for classification of documents.**

- Comments by other Subcommittee members.
- Questions for subcommittee?
- Modifications?
- Approval by Core DHB?

The End



Figure 5. Standardized incidence Ratios for Lung Cancer in Jersey City Males by Cr⁺⁶ Exposure Category



SE Iraq

