



SECRETARY OF THE ARMY
WASHINGTON

MAR 02 2009

The Honorable Byron Dorgan
United States Senate
Washington, DC 20510

Dear Senator Dorgan:

Secretary of Defense Robert M. Gates asked me to respond on his behalf to your February 10, 2008 letter requesting further information concerning the Army's response to the exposure of U.S. Soldiers to hexavalent chromium at the Qarmat Ali water injection facility in Iraq in 2003. I appreciate the opportunity to provide you an update on the current status of our efforts.

I share your concern that Soldiers may have been exposed to levels of contamination greater than those measured by the Center for Health Promotion and Preventive Medicine (CHPPM). Fortunately, the medical evaluations of the Soldiers on site, including those on site prior to remediation, indicate little or no expectation of future health concern. Regardless, the Army will continue to vigorously pursue this issue and ensure that we are doing everything we can for our Soldiers.

To ensure that any Soldiers exposed in this incident are notified and provided proper care, the Director of the Army National Guard and I have sent members of our staffs to Indiana and Oregon to coordinate the efforts of the Guard in those states. These same members of our staffs are scheduled to travel to West Virginia in early March and will travel to South Carolina shortly thereafter to ensure that we fully address any issues with Soldiers of the National Guard from those states.

As the enclosed documents demonstrate, the Army is aggressively and thoroughly responding to this issue. These documents address each of your questions in detail and provide the current status of the implementation of the Defense Health Board's recommendations.

Thank you for your inquiry into this matter and for your continued concern for the health of our Soldiers, civilian employees, and contractors.

Sincerely,

A handwritten signature in black ink, appearing to read "Pete Geren", is written over a horizontal line.

Pete Geren

Enclosures

**ENCLOSURE 1
ADDITIONAL QUESTIONS**

“First, we believe that the exposure at Qarmat Ali may have been more severe and widespread than reported. As we understand, OSHA has set a legal limit for hexavalent chromium of 0.0005 mg/m³ chromium in air averaged over an eight hour work day. Though we recognize that the Army believes that the group of soldiers at greatest risk of exposure was exposed for an average of 147 hours, some were most certainly exposed to quantities much greater than 0.0005 mg/m³ before KBR remediated the site. As such, we are concerned that their exposure will make them more susceptible to negative health effects in the future.”

The data that we have indicates that Soldiers were most likely not exposed to levels of hexavalent chromium much greater than the Military Exposure Guideline or the Occupational Safety and Health Administration’s Permissible Exposure Limit and are not at a greater risk for future negative health effects. These findings and conclusions were supported by the Defense Health Board’s review of the Qarmat Ali Occupational and Environmental Health Risk Assessment which concurred with the conclusion that while environmental contamination may have been present, it does not appear to have caused any “medical effects (aside from respiratory irritation which is common in the desert environment); as well as no expectation of any future adverse health outcomes.” The Defense Health Board is an independent body.

We have environmental testing data from the United Kingdom (UK) done before the site was encapsulated. Only one of the four pre-encapsulation air samples collected by the UK had a detectable level of total chromium of 3 µg/m³, the remaining three samples were below the detection levels of 2 to 3 µg/m³, less than the current OSHA PEL of 5 µg/m³ or 0.005 mg/m³ (NOTE: The Congressional RFI cites an incorrect OSHA PEL of 0.0005 mg/m³. The OSHA PEL is 0.005 mg/m³ which is 10 times higher than the level cited in the Congressional RFI).

Even though we have no expectation of long term health problems for these Soldiers, we are taking the issue seriously, and are ensuring, through the state National Guards, that each Soldier is contacted, informed, and provided with information on the possible health consequences of exposure. We are also ensuring that these Soldiers will be able to obtain medical care should any of them develop medical problems in the future.

“Second, we are troubled that the Army Corps of Engineers (ACOE) declared it was “satisfied” with the way KBR performed the contract at Qarmat Ali. If we understand correctly, KBR was to have performed an environmental assessment prior to the arrival of U.S. service members. This assessment apparently failed to detect what we all now know to be significant quantities of hexavalent chromium. We have also been told that KBR was given a United Nations report in the spring of 2003, which identified the presence of hexavalent chromate at the site.”

The Army's contract with KBR did not require KBR to perform an environmental assessment prior to the arrival of U.S. service members. The contract required KBR to assess the operational functionality of the water injection facility and make recommendations for its repair and resumption of operations. It also required an assessment to document pre-existing environmental conditions that potentially would require environmental remediation. This requirement was intended to preclude demands for the United States to remediate pre-existing contamination not caused by U.S. forces during hostilities. The contract did not specify a date by which the contractor was expected to produce this deliverable.

Ordinarily, the Army would perform an environmental assessment of a site prior to deployment of service members or contractors to that site. In this case, however, the number of sites (approximately 4,000) over the geographic area of Iraq potentially needing occupational health assessments in the immediate aftermath of hostilities, combined with the need to restore critical infrastructure as soon as possible, made this impracticable. This was exacerbated by the fact that a large number of the approximately 4,000 sites had been designated as suspect for the presence of weapons of mass destruction, and warranted special attention. Finally, in order to prioritize its actions, the Army focused its assessments on major bed down locations and the surrounding areas during the pre-deployment phase. The Qarmat Ali site was not identified within the radial proximity of any bed down location assessed.

The site assessment report provided by KBR on July 8, 2003, identified many issues regarding the state of the facility: The mechanical equipment was in poor condition; the chemical injection instrument had been severely looted; there was also evidence of leaking chemical dilution tanks, mixers and connectors; extensive pump damage; and an almost completely destroyed electrical system. While the assessment did mention that sodium dichromate was used as a corrosion inhibitor by the Iraqis, it did not identify any sodium dichromate contamination.

We have reviewed the UN report provided by the Senate staff. The report does not raise the possibility of chromium contamination. The only contamination concerns mentioned in the report for facilities like Qarmat Ali is soil salination from injecting water into the ground.

“Why is it acceptable, in the ACOE’s opinion, for a contractor to knowingly allow American service members, as well as its own employees, to be exposed to a deadly carcinogen for more than two months without warning, testing or ordering that the PPE be used? Further, why didn’t ACOE inform the Coalition Forces land Component Command (CFLCC) about the exposure?”

Whether or not KBR knowingly exposed U.S troops or its own employees to a deadly carcinogen without taking protective or preventive measures is a matter currently in litigation. The Army has a longstanding policy that, while it will provide records to either party involved in private litigation in accordance with law and regulation, it will remain neutral regarding the matters in question. Therefore, ACOE has not taken a position regarding this matter.

As the Army understands the timeline, KBR commenced work at the Qarmat Ali facility in May 2003, following survey visits in April, 2003. While we do know that in early June 2003,

the Iraqi South Oil Company staff informed KBR that sodium dichromate was used and stored at the facility, we do not have any information regarding whether KBR was aware of contamination at that time. KBR has informed the Army that it identified the potential sodium dichromate contamination on July 25, 2003, and began site testing on August 2, 2003. KBR posted signs restricting the hazard area to personnel with personal protective equipment on August 7, 2003, after their testing determined the extent of the contamination. KBR began remediation activities on August 12, 2003, sealing the contaminated areas by covering with gravel and laying asphalt.

The USACE Environmental Health and Safety Officer for Task Force RIO informed his counterpart at Coalition Joint Task Force 7 (which had assumed CFLCC responsibilities in Iraq) of the contamination in early September 2003. We understand that there also was similar communication before this time, but we have no record on file to confirm the date when it occurred.

“Third, the DHB presented our offices with an extensive list of recommendations based on this exposure. How is the Army following up on these recommendations? Will the Army be amending any relevant regulations? Will the Army be requesting statutory changes based on the DHB recommendations?”

The status of the Army’s implementation of the DHB recommendations is detailed in enclosure 2. Many of these recommendations are being implemented. A few will be directed to the Department of Defense with a request for implementation. To date, we have not identified the need to change regulation or law to implement any of the recommendations.

“Lastly, we understand that some Soldiers exposed at Qarmat Ali still have not been contacted about the exposure. How is the Army working with the INARNG to track, locate, and inform these individuals? How is the Army working to track, locate, and inform Soldiers affiliated with other National Guard units, specifically, units from Oregon, South Carolina and West Virginia?”

We are working diligently to ensure that any and all Soldiers who may have been exposed at Qarmat Ali are located, informed of the incident and treated properly. All of the Indiana National Guard Soldiers (INARNG) have been identified and contacted. The INARNG has ensured that their Soldiers are registered with the Department of Veterans Affairs (DVA) and have service connectivity for care. They are also working with the Veteran’s Administration (VA) in the state to conduct medical evaluations to establish baseline medical data for reference in case any Soldier has a future health issue.

Members of the Army and National Guard Bureau staff travelled to Oregon during the first week of February to work with the ORARNG and ensure that the same process is in place in that state. The same staff members will travel to West Virginia during the first week of March to work with their National Guard and ensure the program is followed in West Virginia. They will travel to South Carolina as soon as the trip can be arranged.

To ensure that we locate and inform every Soldier, even those who may have left service, the Guard of each state is making individual contact with each Soldier, confirming their presence

at the site, querying them about other Soldiers who may have been present and seeking contact information for former Guardsmen. The process is long and difficult, but we will continue until we are sure that we have contacted and informed every Soldier. Once we know the Soldier was at the site, the state works with the local VA to ensure that the Soldier is included in the Gulf War registry and that service connectivity is established. Finally, the state works with the VA to establish base line data for the future.

ENCLOSURE 2
DEFENSE HEALTH BOARD RECOMMENDATIONS

SPECIFIC RECOMMENDATIONS:

1. "Service members who participated in the field investigation or who had potential for exposure should receive assessment results as soon as they are available. Risk communication efforts should reinforce the following findings: while environmental contamination may be present, all available evidence indicates low levels of personal exposure; a lack of evidence of hazardous levels of absorption and of medical effects (aside from respiratory irritation which is common in the desert environment); as well as no expectation of any future adverse health outcomes. Soldiers who were similarly exposed but were not studied should be reassured that these results apply to them as well. While unlikely, it cannot be negated that there is a possibility that some determinant (for example and unusual job duty, personal habit, or exposure before site remediation) might entail a higher exposure that was not detected in the evaluations conducted. For that reason, information about this episode should be conveyed to appropriate medical care providers and added to the permanent record."

These recommendations are being addressed as part of the National Guard effort. A review of the medical records was done for the Indiana Guard Soldiers, and the medical information is present. For those Soldiers not given a medical evaluation in 2003, the information is being provided as part of the Guard's information campaign. The information is being added to Soldier's permanent records both in the Guard and at the VA, through line of duty determinations and the VA's Gulf War Registry. As part of the response to this incident, the Veteran's Administration requested all archived 2003 medical test results for these personnel along with a copy of the redacted risk assessment report. This information was provided to the VA in December of 2008.

2. "CHPPM should conduct an assessment as to whether individuals with potential for exposure received and understood the results and implications of information provided to them regarding this assessment."

CHPPM is not doing this assessment. This assessment is being done by the National Guard's state surgeons as part of their ongoing information campaign for Soldiers and Families involved in this incident. The states have been working closely with CHPPM to ensure that the information going out is accurate.

- 3. "The final report should be redacted and declassified and disseminated to all those with a need to know its content."**

The report has been declassified and a redacted report has been disseminated to the US Central Command, National Guard Bureau, and the VA. A copy has also been posted on the Deployment Occupational and Environmental Health Readiness System (DOEHRS) Data Portal.

- 4. "The Qarmat Ali assessment provides an excellent case study for future training purposes."**

This assessment and a discussion of the issues and decisions were prepared for inclusion in the Army Medical Department Journal during the summer 2009. The issue containing this article will be distributed to attendees at the Army Force Health Protection Conference. This assessment will also be featured as a presentation at the Force Health Protection Conference in August 2009.

- 5. "A debriefing should be arranged to include representatives of all "silos" involved. This includes several state National Guard units, the contractor, and those responsible for local public health to insure that information about this episode is fully shared."**

This is being performed as part of the Army's information campaign for this incident. The National Guard Bureau (NGB) is preparing an information guide for states to use in their response, and coordination and information exchange is ongoing between the Army staff, the NGB, CHPPM and the VA.

- 6. "For each individual potentially involved, an entry should be made in the service and medical record to indicate the individual's participation, personal health information generated in the course of the investigation, and synopsis of the investigation."**

For those Soldiers who received medical evaluations in 2003, this was done at the time. The presence of these documents in health records has been verified during site visits by the Army staff. For those Soldiers who did not receive medical evaluations in 2003, these issues are being addressed by the states. The line of duty determinations will become a part of the Soldier's permanent Army record. The line of duty determination and Gulf War Registry will ensure that the Soldier's exposure is part of their permanent record with the VA.

- 7. "A simple registry should be established that includes the names and personal identifiers of the each individual involved in this episode, including information on potential exposure and personal health information generated in the course of the investigation. This small registry may be useful in the future for confirming service at Qarmat Ali as well as providing the basis for follow-up studies should there be a need."**

This is being accomplished in two venues. In accordance with current deployment occupational and environmental health surveillance policies, the names, social security numbers,

and testing information were archived along with the assessment report in the DOEHRS data repository. Upon request in December 2008, this was provided to the VA. The second venue is the VA's Gulf War registry. The future care for any of these Soldiers who may develop medical concerns will be through the VA, so we are ensuring that these Soldiers are properly registered with the VA, using their Gulf War Registry

GENERAL RECOMMENDATIONS:

- 1. "The method for anticipating industrial hazards in-theater, including hazard recognition training for soldiers and commanders; in-theater capacity for initial investigation; and reserve capabilities to do more comprehensive and thorough investigations must be maintained."**

These requirements are documented in existing Department of Defense (DOD) policies (Department of Defense Instructions (DODI) 6055.1 and 6490.03). A joint workgroup, known as the Joint Environmental Surveillance Workgroup, comprised of experts from the Department of Defense, Joint Staff, Combatant Commands and Military Services regularly meets to review these policies and identify gaps in Doctrine, Training, Leadership, Organization, Materiel or Personnel. We will pass this recommendation to DOD with the request that they review their policies and update them as required.

- 2. "An assessment should be conducted in order to determine if there are adequate numbers of available experts in areas such as industrial toxicology and epidemiology. Impediments should be identified and expertise should be ensured."**

Force structure for combat service support personnel such as occupational physicians, toxicologists, industrial hygienist, risk assessors, epidemiologists is addressed continually as part of the overall Army Transformation efforts.

- 3. "Facilitated and timely access to and availability of civilians with substantial professional experience and expertise should be ensured."**

- 4. "An external advisory committee should be established to facilitate access to consultation on risk assessment if needed. Activities would include providing advice as requested while certain assessments are being conducted as well as post hoc reviews of completed assessments as requested."**

These recommendations are best addressed together. The Military Services have utilized ad-hoc external peer review panels, the Defense Health Board (DHB) and the National Academy of Sciences on an as-needed basis to ensure the quality of military public health practices. The Joint Environmental Surveillance Working Group (JESWG) is currently exploring a process for coordinating the routine review of Deployment Occupational and Environmental Health incidents which have potential long term health impacts with the DHB to ensure that unresolved questions can be addressed in a timely fashion. The Army has a long standing practice of turning

to the civilian community for expertise in these areas, and intends to continue this practice. We see the efforts of the DHB in this incident as an example of how well the practice works for the Army.

5. “Exposure avoidance training for soldiers at all ranks should be reviewed and evaluated to ensure effectiveness and maintenance of an appropriate balance between these hazards and the relatively more traditional military hazards.”

We have not implemented this recommendation at this time. We will conduct this review in coordination with DOD. DOD and theater policies, current training standards, the role of medical intelligence and the preliminary site assessments to identify likely hazards to be encountered during deployment, the pre-deployment health threat brief, and the requirements during deployment through the use of routine OEH surveillance to identify hazards/threats and to ensure personnel are educated on the hazards/threats and the need to avoid them or otherwise mitigate their effects all need to be reviewed and updated as needed.

6. “Efforts must be made to address the impact of organizational silos on the identification and mitigation of environmental risks in operational settings. Given that joint and combined nature of modern warfare operations, organizational silos consisting of various entities such as the nations’s armed forces, those from multiple nations, civilian contractors and residential civilians are a given. However, some or all of these entities may all be involved in the same exposure event and could benefit from an all-inclusive approach to risk assessment. Approaches employing appropriate bridging techniques across silos risk cohorts should be assessed.”

There are major efforts underway to ensure the transfer of such information between the militaries for some of our allied partners (UK, Canada, and Australia). This coupled with the completion of the Defense Occupational and Environmental Health Readiness System-Environmental Health (DOEHRS-EH) will provide the policies and information management technology to share knowledge within the various command areas of responsibility and the InterAgency. Sharing information real time among all elements of a combined task force will continue to be a challenge.

7. “The system for classification of documents related to health related matters should be modified in order to better balance the need for security with the need to facilitate more timely dissemination of results to that that have a need to know.”

This recommendation has been identified in the past and is not easily addressed. Operational security is paramount during war, and any data that identifies specific locations of units, Soldiers, operational capability or other vulnerabilities that could be exploited by an enemy or which would place our forces at increased risk will not be declassified. We will continue to work with the Joint Staff and other responsible parties to address the concern raised by the DHB. Where possible, and in the interest of the health of our Soldiers, we need to declassify some of this information, but we cannot do so at the risk of Soldiers’ lives.