

## **Senate Democratic Policy Committee Hearing**

**Friday, June 20, 2008  
10:00 a.m. to 11:30 a.m.  
608 Dirksen Senate Office Building**

### **“The Exposure at Qarmat Ali: Contractor Misconduct and the Safety of U.S. Troops in Iraq”**

#### **Hearing Transcript**

SEN. DORGAN: We're going to call the hearing to order. Senator Whitehouse will be here momentarily, and we want to nonetheless begin. This is a hearing of the Democratic Policy Committee. I'm Senator Dorgan, Chairman of that committee. This is the fifteenth in a series of hearings I have held on issues examining waste, fraud and abuse and other related issues with respect to contracting in Iraq.

As a result of the war in Iraq and the commitment of American soldiers in Iraq now for a good many years, there has been the most extensive contracting in Iraq that has ever been conducted in this country. We have hired and paid contractors to do a lot of things in the country of Iraq. The Department of Defense especially, but also USAID and other government agencies have let contracts -- some big contracting companies have gotten the bulk of the contracts. Early on there were large, no bid, sole source, cost plus contracts. We now know that billions and billions of dollars have been spent in pursuit of these contracts.

The hearings I have held demonstrate that we are seeing the largest amount of waste, fraud and abuse in the history of this country in recent years. Some of the stories are almost unbelievable, but when the facts are there, it's hard not to believe them. And so we have held hearings because even though some committees have begun to hold some hearings on oversight here in the Congress, there have not been really any oversight hearings of great significance in the early years of the Iraq war. And I serve on the Appropriations Committee. We just held an oversight hearing.

But there are so many issues that are not subject to hearings, and so we are continuing to hold hearings in our Policy Committee. We have invited Republicans to join us. We have had on occasion Republicans join us at our hearings. We have developed information at these hearings, and then we have submitted the information to the Defense Department, to the Inspector General, to the State Department and other agencies along with relevant questions about what we have learned.

The hearing this morning is a continuation of those sets of hearings, and it's a hearing about something that happened some while ago in Iraq with a contract, but it is a hearing that is timely now for a number of reasons. I want to describe why that's the case.

This hearing deals, as other hearings have -- not exclusively, but some other hearings

have -- with Halliburton Corporation and their subsidiary, Kellogg, Brown and Root. Halliburton has now divested itself of that subsidiary, but in most of the contracting for the Iraq war the Halliburton Corporation has been the largest contractor by far. They received early contracts. We had testimony before this committee that at least the awarding of some of those contracts represented the greatest, most blatant contract abuse that the civilian official who was the highest civilian contracting official in our country at that time had ever witnessed. She testified twice to say it was the most blatant contract abuse she had witnessed in her career.

For speaking out publicly about those abuses she was demoted and is still now some years later the subject of investigations in the Department of Defense about her situation. Her name is Bunnatine Greenhouse. She's a very courageous woman, and she has done her part, in fact, sacrificing her job in many ways to point out what is happening in Iraq contracting.

It is not because we have targeted a particular company that so much of these issues revolve around Halliburton or Kellogg, Brown and Root. We've had other hearings about Custer Battles. We've had hearings about the Parsons Corporation and others. But the bulk of the contracts have been Kellogg, Brown and Root contracts, and it is why naturally there have been hearings, and it is especially the case that there are so many allegations of inappropriate behavior, inappropriate charges, waste, abuse.

And that is the reason that this company is at the root of so many of these hearings. And today's hearing, again, has the same corporation at its roots. And I want to describe why today's hearing is timely despite the fact that some of which we will hear about today happened some while ago.

The Kellogg, Brown and Root subsidiary of Halliburton Corporation we now know has been hiring workers to work in Iraq on their contracts in Iraq, but hiring them through a subsidiary, the company established in the Cayman Islands. In fact, I have the address of that subsidiary. It's Post Office Box 847 in the Grand Cayman Islands if one would want to know where that subsidiary exists.

It was created for one purpose only. That purpose was to hire American workers, but pay them through a post office box in the Cayman Islands so that the company could claim to the United States government that these workers were not really American workers subject to U.S. taxes. So they didn't have to pay any payroll taxes on their American workers that they hired and sent to Iraq if they ran their payroll through Post Office Box 847 in the Cayman Islands.

That I think is pretty disgusting from my perspective, and it's not just KBR and Halliburton that did it. There are other companies that have done it as well. I've spoken about them on the floor of the United States Senate. But the company -- let me emphasize -- claims that these employees, while Americans working in Iraq for an American company, are not Americans for purposes of payroll taxes because they ran their payroll through the Cayman Islands.

Now, it turns out that some years ago, several years ago, the same corporation employed American workers and employed them in an area in Iraq in which there was substantial trouble and problems. The location in Iraq where two of our witnesses who worked will testify today was a location where they were exposed to a chemical called Sodium Dichromate. Most of us don't know much about Sodium Dichromate. I expect most of you would remember the saga of Erin Brockovich. That's the chemical that was at the root of that story. And the exposure to a deadly chemical by so many people in that area, and the resulting court action -- there was a case that was settled for a third of a billion dollars as a result of the exposure, the knowing exposure of certain American people to this chemical, Sodium Dichromate, in their drinking water.

Today's witnesses will describe how Kellogg, Brown and Root exposed unsuspecting people, including contractors, American workers, American soldiers, British soldiers, and Iraqi workers -- how they exposed those folks at the Qarmat Ali Water Injection Plant to this chemical, Sodium Dichromate.

The effects of the chemical are long-lasting and potentially deadly. There are many people dealing with the effects of this chemical today who worked on that site. There are others, including, as I mentioned, hundreds of U.S. troops who may not even know of their exposure to Sodium Dichromate that could one day result in a horrible disease, cancers and death. Rather than accepting responsibility, the Kellogg, Brown and Root Corporation is seeking in an aggressive way to escape accountability for its actions.

Once the aspects of this situation were finally recognized by Halliburton and its subsidiary, they decided to say well, although this may have happened, the fact is these workers are American workers and we are protected because of a provision. And I'll describe that provision in a moment. There's a provision with respect to U.S. contractors who are working overseas. They are covered by taxpayer provided medical insurance in the event they are injured on the job. But in exchange for that coverage, the employees lose the right to sue the contractor if they get hurt.

So Halliburton and KBR are now saying that this exposure to a deadly chemical of U.S. workers -- that exposure should not make them liable because, in fact, these are American workers in Iraq. But as I indicated, they are saying they're not American workers for the purpose of paying taxes because they ran them through the Cayman Islands. Now they're saying they're American workers for the purposes of shading or sheltering the corporation from liability. And it is an unbelievable hypocrisy it seems to me for a corporation to do that.

I must confess, I don't understand why and how these kinds of things happen or why companies do this, but I want to show a chart that describes what the corporation did when it -- I want to show the other chart, if I might. This is minutes of a meeting inside Kellogg, Brown and Root, and that meeting was, I believe, in the U.S.-- in Kuwait City, I'm sorry.

And they're talking about this issue of this site in Iraq where workers and soldiers were exposed to Sodium Dichromate. The internal documents from Kellogg, Brown and Root say the status -- serious health problem at water treatment plant with a chemical called Sodium Dichromate. The problem seems worse than initially considered. Sixty percent of the people now exhibit symptoms. According to an assessment they had done, this chemical has been on the ground at this location since day one. Wind is blowing the product that is lying on the ground. People are potentially exposed to something that may be very dangerous.

So this is an internal report of Kellogg, Brown and Root. And let me say again a couple things. Number one, the company obviously knew there was a very dangerous chemical, Sodium Dichromate, that can cause cancer and death -- very serious. And I believe we'll have testimony today from Mr. Langford and others. They had people exhibiting early symptoms of bleeding from the nose and mouth and other symptoms that are the early symptoms. The longer symptoms sometimes can take ten and 20 years, and leukemia and other deadly cancers.

So the question in my mind is this: If you had a site that was assessed by the United Nations beforehand and the U.N. assessed this site, found Sodium Dichromate, the corporation sends its workers there, U.S. soldiers are there to provide security, British soldiers are there to provide security, Iraqi workers are there, the wind is blowing, you've got this orange chemical, deadly chemical flying around, you've got 60 percent -- according to the company itself, 60 percent of the employees exhibiting these symptoms -- and these are symptoms of a deadly problem. Why would the company not have said wait a second, this has to stop? This is a place of some deadly consequences. We can't do this.

Instead, they continued. We'll hear testimony today from one person who was there as a safety inspector who raised objections, and for that he was escorted from the site and fired or asked to leave. Now we have this double standard. The same company that says these workers were not American workers for purposes of payroll taxes because they hired them through a Post Office Box in the Grand Cayman Islands is saying for purposes of liability with respect to this deadly chemical, potential poisoning -- they're saying these are, in fact, American workers, and because of the Defense Base Act, they have signed away their right to sue a contractor if they were to be hurt. Same workers, same company says they're not Americans and they are Americans. Pretty unbelievable to me.

At any rate, we are joined by my colleague, Senator Whitehouse. Senator Whitehouse, welcome. Do you have a statement you wish to make?

SEN. WHITEHOUSE: Thank you, Senator Dorgan. Only to compliment you on your persistence and initiative in continuing this series of hearings that you have led. It has been astonishing for me as a new senator to hear the new testimony over and over again of the fraud that has taken place, millions and millions and millions of dollars in fraud, of the response of this administration, which has too often been to attack or remove the whistleblower rather than address the problem.

And now today's hearing focuses on yet another consequence of the decision to take the critical governmental mission of conducting military affairs abroad and turn it over to private, for-profit corporations. In this case, the self interest of those corporations has manifested itself it appears in very significant health risks to which Americans were subjected with very little ability to get any redress.

So I'm delighted to move to the testimony of the witnesses, but I do want to applaud you. You have been persistent. You have been thorough. You have gone after this over and over again. I think it has been a service to our country to expose what has gone on, and I think what the witnesses are also doing is a service to our country, and I appreciate very much their willingness to be here. I know it's not easy. I know it's inconvenient to come to Washington. But we're very grateful for what you have done. I thank you.

SEN. DORGAN: Senator Whitehouse, thank you very much. The testimony of the witnesses today relates to actions that occurred some while ago, 2003, but have a relationship to events today because of what the corporation is alleging relative to number one, its taxes, and number two, its liability for exposing workers. And second, it has a relationship I think to important issues with respect to -- have the American troops who have been exposed in this circumstance been properly tested? What's the accountability for that?

So Mr. Danny Langford is someone who worked for Halliburton, Kellogg, Brown and Root on the Restore Iraqi Oil contract. They assigned him to work at the Qarmat Ali water treatment plant near Basra where he repaired water intake, injection and backwash pumps. He has served as a rotating equipment technician at the Union Carbide Plant in Texas City, Texas. He's been working in these areas for 23 years.

Mr. Langford, thank you for traveling to Washington, and thank you for being willing to testify. You may proceed. Pull the microphone very close to you, if you would, and I believe it's maybe turned on. If not, you have to push the button.

DANNY LANGFORD, FORMER KBR EMPLOYEE AND TECHNICIAN: Thank you, Senator.

SEN. DORGAN: Thank you.

MR. LANGFORD: As the Senator said, my name is Danny Langford, and I live in Texas City, Texas. And I work as a rotating technician for Union Carbide, principally Union Carbide in Texas City until I retired in the year 2000.

In 2003, I was called by a recruiter by the name of Rocky Giddings. I have known Rocky for a long time. He was a friend of mine, and he had started working for KBR. And he wanted to introduce me to a project called RIO, which is Restore Iraqi Oil. And this was after the United States invasion of Iraq in spring of 2003.

After several meetings I finally agreed, and then I went through an orientation program in Houston, Texas, which included a full and complete physical, which I passed with flying colors.

Next thing I knew I left Houston, Texas going to Iraq, which is July the 10th of 2003. On that airplane on the way over there -- it was about 130 of us. I met a gentleman by the name of Mr. Ed Blacke, who is sitting right here to the left of me, who is a safety man who was also going on a project called RIO for KBR.

After four of five days of orientation in Kuwait, I was assigned to the Qarmat Ali water treating plant near Basra in the southern part of Iraq. I immediately began to work on intake pumps, followed quickly by pumps in the injection buildings, first stage backwash pumps, and equipment throughout the plant. We were told that the working conditions when we had gotten there was going to be kind of severe in terms of heat and dust storms, and they were definitely severe. I've seen temperatures at one time 142 degrees at the job site. I've seen 106 at 6:00 a.m. in the morning. So the temperature was severe there.

Additionally, I immediately noted, as did all other workers, that much of the water treating plant was covered with a layer of orange dust, but we were not told that this material -- what it was or what the purpose of this orange dust that was laying there were or really where it come from. We could see this orange stuff was all over the plant, and it was coming from large bags that were stored in two locations in this water treating plant. One of them was in the injection building where I did a lot of work on pumps, replacing the motors and stuff, and the other one was in a storage shed just on the outskirts of the plant where the roof was gone and two sides of the building was gone.

In both locations some of these bags had been ripped open spilling contents on the ground and on the floor in the buildings. In the injection building where we had the Iraqis constantly cleaning up, sweeping up the spillages -- but the material was just not on the floor. It was on the pumps, pipes. Everything in the building was coated with this stuff. Just working on this job site -- you was going to get this stuff on your hands, in your eyes, on your clothes. It was just everywhere.

The first two weeks of the job we had several pretty severe dust storms there at which the point of visibility was real bad. As these storms blew in this orange material become airborne. It was swirling all in the air. Believe it or not, on this job site when we left Kuwait we was given helmets and flack jackets to protect ourselves from possible stray bullets of anything that might happen at the job site, but we were not issued any type of personal protective equipment that would be required for working for any kind of airborne chemical contamination. We had no respiratories. We had no breathing mask or any other type of personal protective equipment that would keep this stuff out of our nose, throats, lungs, or off of any part of our bodies.

During the initial two-week period at the end of every working day we were absolutely -- my boots, my pants, my clothing would absolutely be caked with this orange colored

material. I had begin at that time having a little problem as far as a bad sore throat, irritated passageway, the hacking cough, and irritated eyes. I also during this period of time -- I began having regular nosebleeds and begin spitting blood.

I went to the KBR clinic for the EMTs there, or physicians' assistants at the job site. They told me that it was possible that I was allergic to sand at the job site, and they gave me an antihistamine for nasal sinus and throat irritation. I think that you can see that I was not much impressed with this diagnosis and recommendation for a treatment. At this point I told EMT that it was kind of funny because I'd been raised around sand all my life and I'd never been allergic to it.

It was some time near the end of July when Mr. Blacke pulled me aside and told me that - - for me to stay out of this one particular area called the Injection Building, that there was some contamination in there that he didn't like and he was investigating it and he was going to get to the bottom of what was going on, and for me to avoid in any way. And by the way, I did not enter that building another time after he told me that.

Within a couple days of that conversation on July the 29th on and about, two KBR Health, Safety and Environmental -- which is called HSE in the refinery world -- supervisors showed up at Kuwait at the plant and held a safety meeting to address our concerns about the cause of the -- of the types of treatments that we had been describing, which was common throughout the whole workforce at that time.

At the meeting these men told us that the plant was safe, that this plant had been checked out, and that it was okay for us to go back to work. When asked specifically about chromium contamination, they said, and I quote that, "it was at most a mild irritant and the exposure would not pose any serious health risk." At that point in the meeting Mr. Blacke, whose concern had brought these two guys from KBR to the plant, said he disagreed, and this contaminant was a problem at which Mr. Ed asked to leave the meeting and was escorted out by KBR, HSE supervisors. This was pretty much the last time I seen Mr. Blacke. We was ordered again to return to work without any personal protective equipment.

A few days after the meeting two or three other representatives from KBR came to Kuwait into the plant to present the workers with an award -- and I was there -- for working on the RIO project. One of the co-workers, Tommy Bayless, asked them about the chromium exposure, and they avoided answering his question. At that time Mr. Bayless kind of got upset and got in their face and said this is a bunch of BS. And within 24 hours Mr. Bayless was on a plane back to the United States. He had been terminated from the job.

Meanwhile, the rest of us continued working at the plant, but were not happy about the conditions we were exposed to there. I was also concerned about the Army personnel and the other people who were providing security for us. The Army personnel -- these were soldiers from Indiana National Guard and from the Army bases there. They were also suffering the same sort of symptoms that we were suffering from, as were the Iraqi

workers that we had working for us. KBR kept insisting that nothing on this job site was harmful. Keep on working.

In mid-August, we were sent to Kuwait to give blood so we could test for chromium and other heavy metals. However, after giving the blood we were sent to the plant again. Keep on working. We're looking into it. Within a week or two after they drew our blood in Kuwait, KBR called us back to Kuwait and said that they were shutting this plant down to clean it up. At that time give us the results of our blood test, which showed high levels of chromium and other heavy metals. KBR told us after they got the plant cleaned up that we were not going to be forced back to this job site, that we could be placed in other positions in Iraq unless you wanted to work there. You have a choice. I chose not to go back to the plant, and I worked at the man camp in Basra until my R&R, which was about three or four weeks later. This was starting -- this was in October.

It was reported to me by some of the workers that had gone back to the plant that they had paved over the plant, and after they had put pavement down to cover up all of the orange-ish colored sand, that they had delivered truckloads of hooded respirators, breathing equipment, full hooded suits for the workers and everybody that was working at the job site. Now the PPE was on the job site.

I was in good health when I went to work for KBR in Iraq. After working there for three months -- when I came home on R&R in October of 2003, I ended up going to the emergency room at Mainland Center Hospital in Texas City, Texas, where I had extremely high, elevated blood pressure and extremely high levels of chromium in my blood. I also had some sort of serious infections in my blood of unknown origin that the doctor had told me about, and he also had checked my lungs and said they were severely irritated. The infection that was in my blood -- he treated that with antibiotics.

I have been treated with chelation since that time to attempt to remove some of the chromium from my system, and since October of 2003, I have had short-term memory loss, which my doctor said could be related to exposure of Sodium Dichromate. I still also have severe sinus, congestion problem, along with a chronic cough.

I am here today because it was wrong, what KBR -- is wrong that they exposed all of us to a poisonous contaminant such as Sodium Dichromate. Even after the red flag had been lifted showing them that there was a problem, they insisted for us to keep working. They took the attitude at this time that there were nothing anyone was going to be able to do about this because they were immune to lawsuits and any other accountability.

I only hope that this is not the case, and that is why I'm here today. By the way, hundreds of American soldiers at the site was contaminated also. They too need some attention.

Thank you very much for your time.

SEN. DORGAN: Mr. Langford, thank you very much. Thanks for being here and thanks for your testimony. We'll have a number of questions, as will Senator Whitehouse.

Mr. Blacke, you are referenced in Mr. Langford's testimony, and we are pleased you are here as well. Why don't you proceed with your testimony?

**EDWARD BLACKE, FORMER KBR HEALTH AND SAFETY COORDINATOR:**  
Good morning, and thank you, Senator, for taking up the interest of my colleagues. I deeply appreciate that personally.

I am Ed Blacke. I reside in Bella Vista, Arkansas. I hold a university degree. I am a professional member of the American Society of Safety Engineers. I hold varied Fire Service certifications as an officer, an investigator, an instructor, an inspector, and an airport firefighter. Further to that, I am certified as an instructor in construction safety by the United States Department of Labor. I am also certified currently and have been for over 35 years as emergency medical technician, and in my Fire Service years I had additional training in hazardous material identification and spill mitigation.

In my 53 years of my working career, I have had the privilege of serving as a U.S. Navy petty officer, a corporate safety manager, a construction safety manager, an adjunct instructor at the National Fire Academy, an instructor for the Louisiana State Fireman training program, and have held a position of a fire chief, commanding both domestic and international fire departments.

In the past several years, I have served as safety manager for American firms developing oil field projects in Russia, Saudi Arabia, Syria, and the Republic of Chad, to name a few. I was working a contract for KBR in the Republic of Chad. At the time I was recruited as an HSE, Health, Safety and Environmental, coordinator in Iraq supporting KBR's Restore Iraqi Oil project.

I was required to report to Houston for Iraq pre-deployment indoctrination, which included a physical examination, which I passed without any issues being brought up at that time. There was an administrative briefing, a completion of KBR personnel file forms. On completion of this indoctrination, I was deployed to Iraq July, 2003. There was a short in-country briefing, at what time I was assigned as HSE coordinator to the Qarmat Ali water treatment near Basra, Iraq.

One of my ancillary duties was as an emergency medical technician looking after the medical concerns of my colleagues. When I arrived at the plant, as is required of our profession, I made a risk assessment of the facility and the surroundings where I noticed during that assessment a reddish, orange material spread on the ground, spilling from damaged bags in the injection building, a storage building, and then in the drainage ditches. I asked for information on this material from my manager, the Health, Safety, Environmental Manager in Kuwait, was sternly advised that it was a non-issue. I continued to press management for identification of the material, and in response was briefly sent to two other jobs before being returned to the Qarmat Ali water treatment plant.

Within a week of my return, I began to experience medical problems that included sinus, throat, and respiratory irritation. My colleagues at Qarmat Ali water treatment plant were experiencing similar symptoms. As a medic, as an EMT, I was concerned there was a health problem. I began to question people, all English speaking personnel. That included KBR, Halliburton, Iraqi Oil Company, U.S. Army National Guard, and British soldiers because they were suffering identical symptoms. The symptoms for all developed into continuous bloody noses, spitting up of blood, coughing, irritation of the nose, eyes, throat, and lungs, shortness of breath.

In order to determine what might be the cause of these medical problems, I did research and I also spoke with my interpreter, went through the plant with my interpreter, taking down the chemical names of the bags, and the open bags, which I did find out was Sodium Dichromate. I asked my Iraqi interpreter if he was aware of what the material in the bags was used for and was advised that it was injected into the water supply system for the oil fields as an anti-corrosive.

My interpreter was reluctant to say more, but when pressed, he said he knew it was poisonous. He knew that there were many workers from the plant who had been made ill by it. And he said the fact that it was a poisonous material was one of the key reasons members of the Baath Party had opened the bags, the storage bags, and spread their contents all over the plant as part of their sabotage efforts in the facility.

When I returned to my quarters that evening, I did further research on the Internet on Sodium Dichromate. I downloaded material safety data sheets for the chemical and found that Sodium Dichromate was listed as a hazardous material and a carcinogen, exposure to which is to be avoided at all costs.

While doing the research, a colleague I knew from Chad provided me with an internal memo written by a KBR industrial hygienist. It substantiated my personal findings. I was quite taken aback professionally to find that KBR knew as early as May 2003 from a U.N. report, from this report, and from their own industrial hygienist that they were putting not only our workers for KBR at risk, but the security details that had been provided to us by the U.S. and British military without any required training or personal equipment, personal protective equipment.

I reported my findings to my manager in Kuwait, insisting that they take immediate action. A few days later two representatives of the Health, Safety and Environmental section of KBR came to Qarmat Ali to assess the situation and to brief the workers. These individuals that we met with were Tommy Mornay -- Johnny Mornay -- I apologize -- and Medical Supervisor for Kuwait, Ray Garcia. A meeting was held with the workers, and they told the workers at that time that Sodium Dichromate was at worst a mild irritant, that the plant had been thoroughly checked out and was safe, and they were to get back to work.

I was at this meeting. I was kind of shocked that fellow safety and medical professionals were telling outrageous and blatant lies to the workers. I pointed out in the meeting that

the documents I had on Sodium Dichromate, which is a hexavalent chrome product, to which we were exposed directly contradicted their statements they were making to the workers. At this point, Mr. Garcia took me by the arm, said step outside. He escorted me outside and told me not to be involved any further with the issue, that was I insubordinate, disruptive, and that my input was not appreciated.

I understood after this that people took soil and air samples of the plant. The soil samples showed extremely high levels of Sodium Dichromate, a hexavalent chrome in the soil. The air samples showed very low levels. Now, this is misleading because they were taken in no wind conditions, which was not typical at the plant. We often had high winds.

The KBR management focused on the air samples in an attempt to justify the continued operations at the plant without personal protective equipment and without the contamination being cleaned up. I advised the HSE manager and medical supervisor, Mr. Adams and Mr. Garcia, that this was wrong to rely on the air samples. I was determined to pursue the complaint with higher ups, in KBR's HSE department in Kuwait and Houston, and upon attempting to do so, it was made clear to me that my presence in Iraq and Kuwait was no longer appreciated. I would be better off going home.

As a response to my complaints, the Medical Supervisor, Ray Garcia, under direction of the KBR project manager directed me to accompany him to a clinic for blood workup. I was taken to a substandard medical clinic used to treat port workers where I refused to submit to the tests due to the unsanitary conditions and unprofessional nature of the staff.

SEN. DORGAN: Mr. Blacke, I want to interrupt you just at that point.

MR. BLACKE: Yes.

SEN. DORGAN: Senator Whitehouse is presiding on the floor of this Senate in a bit, and I want to have him have a chance to ask questions. We're going to hear from Dr. Costa in a moment. But the remaining several paragraphs deal with when you arrive home. I want to hear that. But what I want to do is make sure that Senator Whitehouse has the opportunity to question the two of you who were at the site in Iraq, at which point he may be able to stay for part of Dr. Costa.

But Senator Whitehouse, why don't you proceed if you have some questions.

You heard both of the witnesses who were on location in Iraq, and you know that Kellogg, Brown and Root is making the point to their government that these are not Americans for tax purposes, but they certainly are Americans for shielding the company against the kinds of things we've just heard.

But let me ask you to have the opportunity to have some questions.

SEN. WHITEHOUSE: I appreciate it, Chairman Dorgan. Thank you, and I appreciate the courtesy of the witnesses. When you have to preside, you have to preside. It's one of

those non-negotiable things. You can't turn up late.

Were you aware that your employer was a Cayman Islands corporation? What was your status with respect to this business of the company having run your --

MR. LANGFORD: I knew that I was getting a check from -- OS -- overseas administration.

SEN. DORGAN: Would you turn that microphone on, please?

MR. LANGFORD: I knew I was receiving my payroll check through overseas administration. Yes, I did know that. But also the confusing thing was that nowhere on KBR -- that's who I was working for. It had nothing about KBR on OS. And I didn't realize what they were doing, you know, as far as maybe --

SEN. WHITEHOUSE: The tax scheme.

MR. LANGFORD: -- the tax money or anything. We was busy working on the job, but I did know that I was getting paid by overseas administration.

SEN. WHITEHOUSE: For those people who are listening who aren't familiar with what we're talking about, it appears that the company was essentially laundering the employment of Mr. Langford and Mr. Blacke through a Cayman Islands shelter corporation in order to avoid paying American taxes on the revenues that it was getting.

MR. LANGFORD: You know, when I come home after three months -- and I did go back -- the money that I had made in Iraq -- I had to pay taxes on my money.

SEN. WHITEHOUSE: Yeah.

MR. LANGFORD: You know what I mean?

(Laughter.)

So how come companies don't? We're paying them. How come they don't, you know, pay their taxes also, you know?

SEN. WHITEHOUSE: Do you have a lobbying arm that works for you individually, Mr. Langford?

(Laughter.)

MR. LANGFORD: Not yet.

(Laughter.)

SEN. WHITEHOUSE: That may have something to do with that difference. Could you tell me what were the conditions -- I don't want to get into your personal situation any further than you're comfortable, but can you tell us what were the conditions that caused you to go to the Mainland Center Hospital Emergency room? What symptoms were you showing?

MR. LANGFORD: I felt real bad, having a kind of a flu-like symptom. I was running a temperature. And I just kept on -- I had it the day before, that night I got real bad, and at that time my brother was visiting with me and the next morning -- which was on a weekend -- I think it was on a Sunday morning. I was real sick. And my brother said I've got to take you. You're doing bad.

I'd just come out of Iraq. I had been there for 100 days, which -- the temperatures were real bad. I was very pale, very white. And when I got to the hospital, the doctors asked me what's the problem, Mr. Langford? You know, your blood pressure's extended, you know. And it was way up, my blood pressure was. And I told him -- I said well, there's probably a little more to -- I have been poisoned by a chemical. I just got back from Iraq.

SEN. WHITEHOUSE: At the end of your testimony you referenced the attitude on the part of KBR that they were immune from any accountability for this, so you should just lump it basically. Could you describe how that attitude was conveyed to you?

MR. LANGFORD: Yes, sir. At the last meeting we had when they issued our blood tests -- and by the way, I had 4.4 chromium in my blood, 4.4. When they give us those test results, the gentleman stood up there and said by the way -- said if you think that you're going to take these tests back to the United States and try to file a suit on us, which -- we just got our blood tests. That hadn't even been considered. But anyhow, he let us know that by the way, if you want to take these blood tests back and think you're going to file a suit on KBR, you're just wasting your time because it's not going to work.

SEN. WHITEHOUSE: Helpful bedside manner, huh?

MR. LANGFORD: Yes, sir.

SEN. WHITEHOUSE: Mr. Blacke, when you were escorted out of the meeting, could you describe more firsthand what took place? You describe it sort of looking back, but if you were to go back and sort of walk through right now, what language did they use to you as you were removed from that meeting where you were trying to stand up for the health protections of your men?

MR. BLACKE: What Mr. Garcia had to say to me quietly into my ear I cannot repeat in mixed company, but he did indicate some very severe references to my genealogy and my mother and asked me to get outside now or he would ask one of the security people from the Army to remove me forcibly. I did advise Mr. Garcia that it would not be beneficial to his personal health if he attempted to do that. We did go outside. He was very derogative to me as to my professional standings. He made it very clear to me that

he was the medical professional, that I knew little or nothing about medical even though I've been doing it for over 35 years, and that all I was trying to do was to be disruptive and cause problems amongst the employees.

SEN. DORGAN: Would you yield on that? You talk about Safety Manager Tommy Mornay who came out from Kuwait and Medical Supervisor Ray Garcia.

MR. BLACKKE: Yes, sir.

SEN. DORGAN: You say they told the workers that it had been checked out. It was safe. And then you say that prior to going into that project KBR had been informed by the United Nations that had done an assessment of the site that it was unsafe. And then further you say that these two people had told the workers outrageous and blatant lies. Do you believe that they knew what they were saying to the workers was wrong and was a lie?

MR. BLACKKE: Having attended the nightly HSE meetings, which I was required to attend when I would return from the site every evening, I know without question that they were keenly aware of the circumstances. They had had access with my manager, to the United Nations post-conflict report, which brought out the conditions in the oil field. They had access to their own in-house industrial hygienist report. They knew, sir.

SEN. WHITEHOUSE: Then what was their motivation in having the conversation they had with you?

MR. BLACKKE: Motivation was that quite frankly if I had not been on the site with my medical background, this would not have come up. This would've been swept under the rug. That piece of the contract would've been done on time and under money. They would've made money on the project.

SEN. WHITEHOUSE: Dr. Costa, I'm not going to be able to be here for your testimony, but I would like while I have a moment with you still to get your reaction to the levels of exposure that we have heard described.

We've heard Mr. Langford say that he had a 4.4 chromium count on his blood test, and we have heard testimony that the soil sample, as I do the math, showed a 1.6 percent --

DR. MAX COSTA, CHAIRMAN OF THE DEPARTMENT OF ENVIRONMENTAL MEDICINE AT THE NEW YORK UNIVERSITY SCHOOL OF MEDICINE: Right.

SEN. WHITEHOUSE: -- concentration. Very often when I deal in the Environment and Public Works Committee with toxic chemical exposures, we talk about parts per million or parts per billion. In this case, it sounds like the soil actually was contaminated in parts per hundred.

DR. COSTA: Yeah, yeah.

SEN. WHITEHOUSE: In terms of, you know, the experience of risks associated with chromium, how elevated was this? How ordinary was this? And what was the effect on Mr. Langford? What is your professional view on those kind of concentrations?

DR. COSTA: Well, those concentrations are very high, and it seems that they wouldn't just occur by chance. Someone had to really dump the stuff on the soil. And 1.6 percent -- I've never seen such high concentrations of Hexavalent Chromium. Judging from their symptoms, the nasal bleeding, the nasal symptoms, the rest -- those are all pretty good signs of Hexavalent Chromium exposure. There aren't many other things that cause those kinds of symptoms. So I would say they had a very severe exposure over the several months that they worked there.

SEN. WHITEHOUSE: Do you happen to know what the safe standard is that would be a comparison to the 1.6 percent?

DR. COSTA: Well, the current OSHA occupational standard is five micrograms per cubic meter. You couldn't even see five micrograms. About 40 micrograms would be a single piece of table salt that would be spread over a cubic meter, which is this big, all through the meter. So people have gotten lung cancer from breathing that little amount of Hexavalent Chromium in occupational exposure. So it's very carcinogenic. Lung cancer is the major kind of cancer. Respiratory exposure is the worst kind.

SEN. WHITEHOUSE: Well, just to do the math, a cubic meter is 1,000 cubic centimeters, right?

DR. COSTA: Right, right.

SEN. WHITEHOUSE: So if you have 1.6 percent exposure, that sounds like in that cubic meter we'd be looking at 16 --

DR. COSTA: Well, it would depend on whether it was in the air. That's on the soil.

SEN. WHITEHOUSE: That's on the soil.

DR. COSTA: So it has to be blown up in the air, and as was indicated in the previous testimony, they did not do the test when the wind was blowing, so they didn't find that much in the air, but I'm sure given the symptoms that they're having that there were times when there was a lot in the air, a lot more than the occupational standard, I'm sure, because --

SEN. WHITEHOUSE: And a microgram is a thousandth of a gram, correct?

DR. COSTA: Right, right.

SEN. WHITEHOUSE: Alright. Well, I --

DR. COSTA: It's a millionth of a gram.

SEN. WHITEHOUSE: A millionth of a gram.

DR. COSTA: Right.

SEN. WHITEHOUSE: Yes, a milligram --

DR. COSTA: Milligram is a thousand grams, yes.

SEN. WHITEHOUSE: Okay. That's helpful to put this into perspective as to the pretty astonishing extent of this contamination.

DR. COSTA: Well, the other problem --

SEN. WHITEHOUSE: You said you'd never seen anything like it.

DR. COSTA: Yeah, no. The other problem is that the tests for really measuring hexavalent -- there are two forms of chromium; the trivalent form, which is not that dangerous, and the hexavalent form. And the problem is we have a lot of trivalent chromium in our blood, but only in our red blood cell do we have the hexavalent form. So the proper test to measure Hexavalent Chromium exposure is to take out the red blood cell and measure it in the red blood cell. There are not many labs that do this kind of thing, and I doubt that this was done in their case.

SEN. WHITEHOUSE: Just briefly, would you be very concerned if a relative of yours was exposed like this? Would you be concerned about -- for example, Mr. Langford mentions a couple hundred -- well, mentions members of the Indiana National Guard, who were on site providing security. Is there a concern sufficient so that those folks should be watched and tested and monitored?

DR. COSTA: Yeah, yeah, I would be very concerned. And I think what Mr. Langford is doing having the chelation test is sort of an alternative medicine practice. It's not commonly done by your doctor. I doubt that many doctors would give you IV EDTA chelation. But I think that's something that he's doing that might help him. And some of these alternative medicines in some cases do work.

SEN. DORGAN: Right. Let me thank you for allowing Senator Whitehouse -- he's presiding on the Senate floor and he had to be there. But Mr. Blacke, you wanted to proceed with your last couple of paragraphs about your return home, and then I'm then I'm going to hear from Dr. Costa.

MR. BLACKE: Yes, sir. When I did return home Kellogg, Brown and Root offered me medical monitoring, including blood tests after a number of emails and letters I sent back and forth to them. They offered this through their medical contractor. I was skeptical

about the objectivity of KBR's lab and any results from them because the screening that they conducted was not appropriate to the type of chemical exposure we had been exposed to in Iraq, nor was the screening done on a timely basis. I was already coming out of the acute phase when that occurred. My acute symptoms did abate slowly.

However, a pulmonary function test I had taken shortly after I arrived home showed a marked deficiency of pulmonary function, of my pulmonary function, compared to the test KBR administered prior to my Iraqi assignment. At this very time I am beginning to show signs of entering the chronic phase of Sodium Dichromate poisoning, particularly in that I have apparent damage to my endocrine system, which includes failure of my thyroid function. In my last medical exam my lab tests did indicate hematuria. Due to this, my physician has ordered tests on my kidneys, which I'll be taking in July, as this could be an early sign of cancer in these organs.

I do feel it was criminally negligent of KBR, the Health Safety Environmental and the project management to make a decision to continue to expose my colleagues to Sodium Dichromate poisoning at Qarmat Ali water treatment plant, particularly when they knew of the exposure. They knew of the absence of any personal protective gear whatsoever. I do understand that KBR and Halliburton do take the position that the air was tested at the plant and showed low levels of chromium. However, those tests were apparently done when the air was still, not during one of the frequent dust storms in which all of the materials on the ground do become airborne.

Furthermore, the levels of chrome in the ground samples show that the plant was a highly dangerous and unsafe and contaminated facility, and these facts were objective facts known by KBR management, in the face of which they made a conscious decision to continue to expose my colleagues, the Iraqi workers, the American military personnel, and the British security force we had at the plant to what were horrific, unsafe conditions. I personally feel that it's outrageous that American tax dollars are the source of the funding of the Iraqi operation of Halliburton and KBR when those companies have demonstrated such complete and total disregard for the safety and the health of the workers that they are responsible for.

Thank you for this forum.

SEN. DORGAN: Mr. Blacke, thank you very much. Dr. Max Costa is the chairman of the Department of Environmental Medicine at NYU Medical School. He has published over 300 articles about the toxicity of heavy metals, including Sodium Dichromate, served as expert witnesses on a range of these cases. He directs the NYU School of Medicine's Nelson Institute of Environmental Medicine and is an associate director of the NYU Cancer Institute, someone who obviously has a very significant background in these areas and an accomplished professional with an illustrious career.

Dr. Costa, thank you very much, and thank you for allowing me to proceed with Sheldon Whitehouse.

DR. COSTA: Sure.

SEN. DORGAN: You may proceed.

DR. COSTA: Thank you, Senator. It's a pleasure to be here and give you my opinion about the situation with chromate. My name is Dr. Max Costa, and I'm a professor and chairman at the Department of Environmental Medicine, NYU School of Medicine. At NYU I'm in charge of a large department that conducts research and instruction on how chemical and physical agents in our environment enter humans. My area of expertise is heavy metals, such as Hexavalent Chromium, which is present is Sodium Dichromate. I study how these agents cause toxicity and cancer in humans.

As an explanatory note, Sodium Dichromate is a salt that contains two molecules of Hexavalent Chromium, and Hexavalent Chromium is a toxic component of Sodium Dichromate. In my testimony I would refer to Sodium Dichromate as Hexavalent Chromium, since it is this element of Sodium Dichromate that injures humans. This is also how the medical literature commonly refers to this compound or this class of compounds.

During my career I've served on the International Agency for Research on Cancer (IARC) and prepared a monograph, which included assessment of Hexavalent Chromium as a carcinogen. These monographs are the gold standard for assessing carcinogenic activity of chemicals. I've published numerous original research articles and reviews on Hexavalent Chromium and how it induces toxicity and cancer in humans. And I've also served as an expert witness in the Erin Brockovich binding arbitration case in both Hinkley and Kettleman, California. As an expert witness, I examined the medical records of the plaintiffs in the case and determined which injuries were caused by Hexavalent Chromium.

Chromium exists in two forms, two major forms, the trivalent and the hexavalent, which differ in toxicity by 500 to 1,000 fold. The reason being that the hexavalent form is like a Trojan horse, given that it looks like a nutrient in our body and is actively taken up into our cells by transporters. In contrast, the trivalent form, which many of you might know is the chromium picolinate or as a dietary supplement and is not toxic at all and is not taken up into cells. This means that symptoms from exposure to Hexavalent Chromium develop over time, sometimes over months, years, depending upon factors, including the level and frequency of exposure.

Unfortunately, of these two substances, the hexavalent form has had the most usage in industry. It has been used as a wood preservative, as an antifungal and corrosion inhibitor in water, as an additive in oil drilling mud, in leather tanning, in plating of engine parts and other instruments to prevent them from rusting and to refurbish them, as a color pigment, and in production of stainless steel. Its use in water for cooling towers, which were made of wood, was banned by the United States in the early '90s, and on January 8th the EPA banned the use of acid copper chromate as a wood preservative and pesticide intended for residential use. Many of your decks have this wood preservative in them to

prevent them from rotting.

Due to extensive use in the past, Hexavalent Chromium is a major component of most U.S. Superfund toxic waste dump sites. There were a number of chromate refineries in the U.S. operating in the 1950s and '60s, but they have been closed due to the number of lung cancer reported in Hexavalent Chromium-exposed workers. In fact, there are probably more epidemiological studies demonstrating that Hexavalent Chromium causes lung and other types of cancer than any other carcinogen that has been studied. And Hexavalent Chromium has been known to be a human carcinogen since the late 1800s.

Hexavalent Chromium is one of the most potent carcinogens known to man. It can produce any type of cancer depending upon genetic susceptibility, quantity and route of exposure. It is important that humans not be exposed to this carcinogen, since it can enter the body by inhalation, ingestion, and also through the skin. In the United States we have increasingly abandoned the use of Hexavalent Chromium because it is such a dangerous chemical for humans to be exposed to.

The EPA has determined that an acceptable cancer risk is one cancer in one million people, and this the levels of an agent that would produce this incidence of cancer are often determined by the EPA. For Hexavalent Chromium, this level is very small, 80 picograms per cubic meter or 8 times 10 to the minus 5th micrograms, which is a millionth of a gram, per cubic meter. This quantity is so small that it could not even begin to be seen by the human eye or even by a low magnification microscope.

The OSHA occupational standard for an eight hour per day work week has recently been reduced to five micrograms per cubic meter. The old standard was 100 micrograms per cubic meter, which was lowered because at this level many workers still developed lung cancer, according to recent epidemiological studies of chromium refinery workers in Baltimore, Maryland. These recent findings show a high excess of lung cancer incidence at 40 micrograms per cubic meter. And again, 40 micrograms would be about the size of a single grain of table salt spread out over a cubic meter, roughly a cubic yard. Because such low levels of chromate cause lung cancer, it is very dangerous for humans to become exposed to this agent.

Workers exposed to Hexavalent Chromium in the air typically have respiratory problems including difficulty in breathing, coughing, sneezing, labored breathing, skin rashes, eye irritation, a 20 to 30 percent decrease in forced respiratory volume, runny nose, the lungs become filled with white blood cells and other inflammatory mediators and nosebleeds. The nosebleed is a really good sign of Hexavalent Chromium exposure. The effect on the nose can lead to nasal septum perforation where the walls separating the nasal passage develop a hole, which is commonly referred to as "chrome holes" from the chromium plates that develop these from working around Hexavalent Chromium.

Chronic tonsillitis, chronic pharyngitis, and atrophy of the larynx or voice box have been reported. Individuals may also become allergic to Hexavalent Chromium and develop asthma symptoms, such as wheezing and difficulty in breathing. Contact with the skin

can produce what has been termed chrome ulcers in the skin. Stomach pains, cramps and stomach ulcers have been reported. In workers exposed to Sodium Dichromate, the Hexavalent Chromium can enter the body by inhalation, by ingestion and through damaged skin. Respiratory symptoms predominate if it enters by inhalation, but if ingested, severe damage to all parts of the GI tract can occur.

In the Erin Brockovich case, the most common route of exposure to Hexavalent Chromium was by ingestion, since it was in their drinking water, and there were a number of young women who lost their colon and small intestine from the corrosive and oxidizing effect of ingested Hexavalent Chromium. In the Brockovich case, there were elevations in cancers of the kidneys, breast, testes, stomach, pancreas, duodenum, bile duct, and lung. Leukemia and Hodgkin's and Non-Hodgkin's lymphomas were elevated.

Hexavalent Chromium can cause severe damage to the liver and kidneys, depress the immune system, and can enter every cell of the body and potentially produce widespread injury to every major organ in the body. This is because it looks the same as the nutrients sulphate and phosphate and is actively sucked up into cells by carriers that would normally transport these essential nutrients. It is very dangerous for humans to become exposed to even small amounts of Hexavalent Chromium. The type of damage and cancer will generally depend upon one's genetic susceptibility, their family history, their genetic background.

The soil levels of Sodium Dichromate at Qarmat Ali water treatment plant were very high, as mentioned earlier, 1.6 percent by weight, or 16,459 milligrams per kilogram. A single air monitoring test at human breathing levels in the absence of winds or other factors that could disperse Sodium Dichromate from the soil found, as expected, very little Sodium Dichromate present.

However, as indicated by Sudhir Desai in KBR internal documents, more air testing monitoring with winds present should have been conducted to get a more accurate diagnosis of potential human exposure.

The proper test to detect the presence of Hexavalent Chromium in people exposed is to measure the levels of chromium in the red blood cell. This will distinguish Hexavalent Chromium exposure from Trivalent Chromium, which can be present at high levels in the plasma and urine, but will not enter any cell. It won't enter the red blood cell. The Trivalent Chromium will mask the detection of Hexavalent Chromium exposure if only serum and urine measurements are conducted. It is my understanding that this is the type of inadequate and improper test that was conducted on approximately 250 members of the Indiana National Guard who were exposed at Qarmat Ali plant, not the proper test that measures the red blood cell level of chromium.

Even if the proper test was performed more than 90 days after exposure, it would have been too late to have detected exposure since the human red blood cell only lives about 90 days. The half life of Hexavalent Chromium in the body is about -- or not in the body, but in the serum is about 39 hours, which means if only plasma or urine levels were

measured, elevated levels of chromium (Hexavalent Chromium included) would be detected days later only if the exposure was huge. The type of test that was used to test the soldiers would have to be conducted within four days of exposure; otherwise most of the chromium in the urine or serum would be gone.

SEN. DORGAN: Doctor Costa, thank you very much for your testimony. Let me start where you finished. I had raised the question of the U.S. security, U.S. soldiers. I'm obviously concerned about the workers and the contractors who were there, but the U.S. soldiers who were providing security and the British soldiers providing security. My understanding is that the Pentagon says that the soldiers were tested when these issues arose and they found nothing alarming with the tests. What you're saying is those tests would not conceivably have found what they should've found?

DR. COSTA: For two reasons. One, they may have been tested too late. I mean, if they're just measuring serum and urine levels, within about four or five days it'll be sucked up into the cells in our body or excreted. So it's not going to be around. So you have to measure the red blood cell level of Hexavalent Chromium. And that one you have to do within four months or so, otherwise too much of it will be gone.

So it's not very common to measure red blood cell level with Hexavalent Chromium. It's not a common test. I don't know of any medical labs that do it routinely. It's something that's more done in the laboratory, because there isn't usually a lot of exposure to this. So the military would've had to have a special lab to do this, and I'm not aware that they did this.

SEN. DORGAN: If the exposure to this is potentially very dangerous, as you said earlier, what would one do at this point if you were among the security forces or the work force and you were exposed and circumstances that have been described -- do you do nothing? Do you just wait and see whether something develops? What is likely to happen? Is this a population group in which something terrible can happen ten, 20, 30 years from now?

DR. COSTA: Yeah, well, presumably ten, 20 years from now they could develop cancer. Right now I would have some medical monitoring being done to see if there are any other symptoms. I mean, the depression of the immune system can lead to infections. Maybe Mr. Langford's problem was due to the depression of the immune system. A good analysis of the respiratory system -- I mean, you want to do general medical monitoring and tests to determine whether these people would have any diseases --

SEN. DORGAN: Is there any additional testing, though, that could be done now? You're saying there's perhaps no testing at the moment that would be useful or valuable.

DR. COSTA: Right. Yeah, there is a possibility of just trying to understand their total body burden by giving them a chelating agent. This is not done that often, but it has been done experimentally in patients, and you can give them a chelating agent. That will mobilize the chromium out of the cells in the body and you measure it in the urine, and this will give you an idea of how much exposure they --

SEN. DORGAN: How much exposure?

DR. COSTA: Yeah.

SEN. DORGAN: Mr. Blacke, you said that the United Nations had gone in prior to this time and made an assessment of this site. How do you know that?

MR. BLACKE: I did see a copy of the report, sir, and it was a United Nations post-conflict report on Iraq. It was social, economic, all the general conditions that companies that would be going in to do reconstruction in a post-war area would be exposed to.

SEN. DORGAN: And the report said that this would be a problem, this site.

MR. BLACKE: They said for the oil field, which this was a part of --

SEN. DORGAN: Yes.

MR. BLACKE: -- that there were a list of chemicals, such as Sodium Dichromate, that were either hazardous or toxic to human health.

SEN. DORGAN: And that report was provided to Halliburton, Kellogg, Brown and Root?

MR. BLACKE: That's what I was advised, yes, sir.

SEN. DORGAN: Prior to them assigning workers to that site?

MR. BLACKE: That was --

SEN. DORGAN: And when they assign workers to that site, they also would have had soldiers assigned for the security, so U.S. soldiers and British soldiers would have followed the workers.

MR. BLACKE: Yes, sir.

SEN. DORGAN: The supervisors that you informed of the Sodium Dichromate -- you indicated to them -- your research suggested this was a very dangerous situation. Were these supervisors also exposed to Sodium Dichromate?

MR. BLACKE: No, sir, they were working in Kuwait.

SEN. DORGAN: They were in Kuwait.

MR. BLACKE: Yes, sir.

SEN. DORGAN: The two people that you referenced, Ray --

MR. BLACKKE: Tommy Mornay and Ray Garcia, yes, sir.

SEN. DORGAN: Yes. Do you feel that their -- Tommy Mornay, Ray Garcia -- safety manager and medical supervisor -- do you feel that their background would've given them an understanding that if Sodium Dichromate was present in substantial quantities, that would be dangerous for people working there?

MR. BLACKKE: I was only familiar really with Ray Garcia's background as one medical person to another. His would not have -- he would not have had the background or the exposure or the training in hazardous materials, sir.

SEN. DORGAN: Mr. Garcia?

MR. BLACKKE: Yes, sir.

SEN. DORGAN: And so he would've simply been ignorant of the question when he was informing workers this was perfectly safe.

MR. BLACKKE: Exactly. He was doing as he was directed by the project HSE manager, Mr. Adams.

SEN. DORGAN: Mr. Langford, you indicate that you and other workers at the site began having nosebleeds, bleeding from the mouth, shortness of breath, other symptoms.

Were you aware of any of those symptoms with respect to the military security?

MR. LANGFORD: Yes, sir. After about a month and a half staying in Kuwait we ended up at the Basra International Airport at a man camp. And from there we had a short commute back and forth to the water treating plant. When we got to the man camp, we had a group of soldiers, about six or eight American soldiers that stayed there at the man camp with us at all times. And these soldiers would commute with us back and forth from the man camp to the water treating plant. These soldiers were bleeding from the nose, spitting blood, and did have nasal problems. They were sick also.

SEN. DORGAN: Did you talk to those soldiers?

MR. LANGFORD: Yes, sir. Every day, every day. I was with them. They stayed at the man camp with us.

SEN. DORGAN: Were those soldiers told or were they aware, do you think, from either you -- I mean, you're not a scientist or a medical professional -- but were those soldiers part of discussions about this may be unsafe?

MR. LANGFORD: Yes, sir, they were, and they were told and they knew about it. As a

matter of fact, one of these soldiers -- he put his name on my list. If I found out anything, to give him a call. He was a sergeant there, and I did give his name, and I did -- we have contact. (Inaudible) -- did. But he knows and he knew that there was a problem, but there was nothing -- it's just like he said. Danny, I'm a United States soldier. I'm not like you all. They just give us tests if they want to.

SEN. DORGAN: Was this a sergeant with the Indiana National Guard?

MR. LANGFORD: Yes, sir.

SEN. DORGAN: Do we have his name?

MR. LANGFORD: Yes, sir.

SEN. DORGAN: Alright, thank you. I'm trying to think through this because it's almost unbelievable. If, in fact, you put the pieces to this puzzle together, you have a circumstance where there's a site in Iraq where American workers are assigned to do work. American soldiers and others, British soldiers, are assigned to provide security. Prior to the assignment, the United Nations -- if Mr. Blacke is correct, the United Nations did an assessment of the site, determined there to be dangerous chemicals at the site. Prior to the assignment, it was determined to have been dangerous. That information was turned over to Halliburton, subsidiary Kellogg, Brown and Root.

They then assigned the soldiers -- excuse me, they assigned the workers. The soldiers, of course, would've followed to provide security. Workers at the site began experiencing symptoms, according to witnesses; nosebleeds, spitting blood, shortness of breath, et cetera, et cetera, and meetings are held. That's reported to higher ups at Halliburton Corporation.

MR. LANGFORD: Correct.

SEN. DORGAN: Meetings are held. At the meeting workers are told there's nothing wrong here. This is perfectly safe.

MR. LANGFORD: Correct.

SEN. DORGAN: You're in good hands. Mr. Blacke is there as a safety -- what was your title, Mr. Blacke?

MR. BLACKE: I was an HSE coordinator, Health, Safety and Environment coordinator.

SEN. DORGAN: Health safety coordinator at the meetings. He spoke up and said well, I've done some research. I believe this is a dangerous chemical and dangerous conditions. He is then escorted from the plant and out of Iraq.

Incidentally, in other hearings that I've held I have on two occasions had employees of

KBR and Halliburton held in detention until they were put on an airplane to be sent out of the country when they raised questions about waste or abuse or fraud. So Mr. Blacke, you weren't held in detention, but I guess you nonetheless were escorted or told you should leave the country.

At that point, everything continued and workers continued to work there. Then something happened, and here is what I think happened; a meeting in Kuwait City at which the corporation itself says there are serious health problems at the plant with a chemical called Sodium Dichromate. All of a sudden it seems to me the company, the corporations says we've got a problem here. This is an internal meeting now. The problem seems worse than initially considered. Almost 60 percent of the people now exhibit symptoms. The chemical has been on the ground since day one. Wind is blowing the product that's lying on the ground. People are potentially exposed to something that may be very dangerous.

So all of a sudden we have a corporation that has an internal meeting that says something's going on here. The person that's on the site was engaged in safety issues, being paid for safety issues who said the same thing on the site with the workers, was, in fact, asked to leave his job. Now the company understands there's something going on. Uh-oh. We're worried.

MR. LANGFORD: Cover-up, starting a cover-up.

SEN. DORGAN: Yeah. Well --

MR. LANGFORD: They're starting to cover what happened.

SEN. DORGAN: So I'm trying to understand all this, because in most cases you think people act rationally, and so too you would think corporations would act rationally. A, they need to be concerned about the safety and the welfare of their workers, right?

MR. LANGFORD: Absolutely.

SEN. DORGAN: Most companies that are responsible would feel that way, would take immediate action, emergency action and urgent action if they felt that someone discovered something that was a problem, and yet I don't see that culture here. I don't see the culture in sending out a couple people from Kuwait to hold a meeting who either are, as you indicate, Mr. Blacke, lying or ignorant, one of the two, to say to people hey, you know what? These symptoms -- there's nothing going on here. This is a perfectly safe place to work. I just do not understand this. This is almost unbelievably ignorant of a corporation with respect to its responsibility to its workers.

But more than that, in this case we not only have workers -- and I think there are only -- I shouldn't say only, but there are about 40 to 60 workers. There's a couple hundred American soldiers who have been on and off that site, British soldiers, Iraqi citizens, who also would be at some risk.

You wanted to say something, Mr. Langford?

MR. LANGFORD: Almost to the point of being criminal.

SEN. DORGAN: Dr. Costa, so what are we to make of this? Again, the reason that I decided to hold a hearing on this was what I consider to be the hypocrisy of a company arguing that these workers, on the one hand, were not Americans so they wouldn't have to pay payroll taxes for them, and on the other hand, arguing they were American workers for the purpose of shielding the company against a liability if, in fact, they knew that these were dangerous workplaces.

But what are we to make of the exposure to and the concern going forward about these workers at the worksite and about the soldiers and the Iraqi citizens? What should we be concerned about? What would you be concerned about as a medical expert?

DR. COSTA: Well, they've been exposed to a very dangerous carcinogen at high levels, and I think that they should be concerned about getting all kinds of diseases, not only cancer, but maybe infections, irritation of the lungs, the nasal septums.

So I think they need good medical exams, good medical monitoring to make sure that they don't develop a more serious disease and to determine what kinds of diseases they have gotten up to now.

SEN. DORGAN: You know, just parenthetically, I've held two hearings on the issue of water quality to military bases in Iraq. The hearings I held because whistleblowers came forward to say Halliburton, KBR, had the contract to provide water, potable and non-potable water to the military bases in Iraq. And the whistleblowers said that the non-potable water which was used for showering and shaving and washing the face and so on -- the non-potable water because of the way it was treated back through was being delivered to a military installation in a manner that was twice contaminated than raw water from the Euphrates River.

And I had the internal documents from the Halliburton Corporation, said this was a near miss, could've caused mass sickness or death. Halliburton Corporation denied it happened and so did the U.S. Army. In the meantime, an Army captain, a woman physician at an Army camp in Iraq said I read in the newspaper about the hearing you held. I'm serving in Iraq as an Army physician, and I want you to know what's happening at my camp as well, because I had my lieutenant go out and track the water line, where it went and what was done to that water. It's happening here and I'm seeing soldiers whose health has been affected by it.

So the short conclusion of that is after two hearings, after unearthing the 21-page internal Halliburton KBR report that described this as a near miss, could've caused mass sickness or death, both Halliburton and the U.S. Army denied it ever happened, even though one of their Army physicians says it was happening, even as she wrote me the email.

I asked then the Inspector General to fully investigate. The Inspector General just completed the investigation within the last few months, and the Inspector General said yes, it did happen. In fact, the Inspector General had previously notified during the course of its investigation the Department of the Defense that they had evidence it happened. Two and a half weeks after the Inspector General notified the Department of Defense, a general from the U.S. Army came to this Senate and testified that it had not happened. I have now asked the secretary of the Defense Department to investigate the circumstances by which a general apparently testified to the Congress in a way that was deceptive to the Congress.

And I say that to you because I do not fathom how the Defense Department continues to contract with contractors that not only don't perform, but seem to have covered up responsibilities in a real time, responsibilities that deal with the safety and the health of workers and soldiers. I don't understand it. And I am not holding hearings to hold a mirror up to one company to say this is a bad company. I'm holding hearings because whatever the company's name is that would do something like this -- there's a responsibility on the part of that company and a responsibility on the part of the Congress and the Pentagon to be accountable for what's going on.

And that has not been the case. It's not been the case with the Pentagon. It's certainly not been the case with some of the largest contractors that have contracts in Iraq. And regrettably, I think it has not been the case with Congress, particularly in the early days of this war.

But I know that all three of you have traveled to come here today, and I am going to follow up in a number of ways with the testimony you have provided. It appears to me based on what we know -- and we know part of what we've heard here, but we've also don't some other research prior to this. We know that there has been exposure of workers and soldiers to a deadly chemical, and there has been in my judgment lack of accountability by those who caused the exposure and lack of accountability at the Department of Defense regrettably.

Mr. Langford, do you wish to speak further?

MR. LANGFORD: Yes, please. I'd like to add to the bad water issue. After being in Kuwait for about a month and a half -- and we moved to the Basra International Airport where they had had a man camp set up. At the time we got there, there also was supposedly potable water. It was in tanks. After we got there we were told that we could use it to shower with, to brush our teeth with, but do not drink it because it was not suitable to drink.

We were looking at about one to two hundred people here that they moved on this base, this man camp, to do jobs throughout the southern part of Iraq and the water wasn't even fit enough for us to drink there. All they told us is to use it for taking a shower and brushing our teeth. Well, actually, if you brush your teeth, you're going to get a little bit

down your throat.

So anyhow, that also happened in the southern part, at the Basra International Airport. The water was not suitable to drink.

SEN. DORGAN: Well, as you know, there are many places in the world where you can't drink the water regrettably.

MR. LANGFORD: Yes.

SEN. DORGAN: It's a problem, but we have paid contractors in Iraq to manage the water to military installations, both potable and non-potable, and that money has gone out and there's plenty of evidence that those contracts have also been mismanaged.

I just received notice that I am to be speaking on the floor of the Senate in a few minutes, so I'm going to adjourn the hearing, but again, Mr. Langford, Mr. Blacke, and others of your co-workers, my hope is for your good health and that -- Dr. Costa, I thank you for your contribution. I appreciate the fact that -- Mr. Langford and Mr. Blacke -- that you've come forward and been willing to speak out because I think it will be helpful to others going forward. And it takes courage to do that. It takes time out of your life to come here and be apart of this, but I think you contribute to the public good in this United States Senate. Thank you. This hearing is adjourned.

MR. LANGFORD: Thank you, senator.