

MEETING MINUTES
Restoration Advisory Board (RAB)
For the Environmental Restoration and Munitions Response Program
Vieques, Puerto Rico
Meeting Number 12 - August 9, 2007

Note: These minutes are a summary based on notes taken at the meeting. They are not intended to serve as a verbatim transcript. If comments or additional notes from the meeting are provided by others who were present at the meeting within 30 days of distribution of these minutes, those will be added as an attachment to these minutes.

I. CALL TO ORDER AND WELCOMING REMARKS

The meeting began at 5:25 PM with welcoming remarks and introductions by Susana Struve (CH2MHILL). Susana read the meeting agenda and invited members of the public in attendance who would like a chance to speak at the end of the meeting to sign in with the meeting note taker.

Chris Penny (Navy) welcomed the participants and noted that Kevin Cloe (Navy Co-Chair) was unable to attend due to a family emergency.

Chris reviewed the agenda: Tim Garretson (CH2M HILL) would provide an update on the munitions response program, Mitch Lindsay (CH2M HILL) would discuss the air modeling and monitoring, and Brett Doerr (CH2M HILL) would provide an update of the environmental investigations. This will be followed by an agency update (EPA and EQB) and comments from the RAB and the public. He asked that comments be held until the end of each presentation.

II. TECHNICAL PRESENTATIONS

A. Tim Garretson, CH2M HILL - Munitions Response Program Manager

Tim provided slides containing an update on progress and an explanation of a Time Critical Removal Action (TCRA) and when it is applicable. Tim said that a TCRA is a response to an immediate threat; in this case the explosive risk needed to be addressed immediately, therefore the Navy initiated this time critical removal action.

Tim discussed the systematic process involved in detail. He also presented an update as of July 2007 regarding specifics on the number and types of munitions items found; and discussed the metal scrap removal process, specifically noting that 2,200 tons of metal debris has been removed from the LIA and that 2.7 million pounds of materials has been processed. He mentioned the plans for future actions including continuing the TCRA in the LIA and eastern conservation area (ECA); potentially conducting a controlled burn in areas

that contain exceptionally sensitive munitions; conducting phase II site inspections; and conducting a removal action for subsurface munitions.

Tim concluded his presentation by stating that the TCRA is being done to reduce the explosive risk for the public, and that the work is being conducted in the safest manner possible for the workers members of the removal team.

Discussion Points

- Michael Diaz (RAB Member) - This is time critical because of its involvement with the public but if there weren't any, how would the process have been different?

Tim - We probably would have done it the same with or without the potential risk to the public. On Vieques, the time critical nature is because there are munitions on the surface with which community members could come in contact. CERCLA sometimes permits to fence areas off. In this site, though, there are turtles and large areas with explosives that are not easy to control from trespassing, so the Navy determined that this TCRA was necessary to protect the public.

- Lirio Márquez D'Acunti (RAB Member) My question is for the Navy and the regulators and involves the access to the beach. What is the timeframe for that clean up?

Tim - We do not have an exact time frame. We have made progress. We agreed to an approach and when we get into that, the regulators will be involved again to review the approach and provide concurrence. We want to get the most accessible explosive hazards first and that involves clearing the surface first.

Chris Penny (Navy) - Initially, we surface cleared all of the beaches. Now we are doing the geophysics to see what is beneath the surface because we know there are changes in the dynamics of the beaches.

- Lirio - Have the roads been cleared? Chris responded - Yes.
- Jorge Fernández Porto (RAB member) - Have the 6,000 or more bombs and munitions been detonated one by one or in groups?

Tim - They are detonated individually and in consolidated groups, depending on the sensitivity of the item. Very few are safe to move and detonate. Some cannot be moved and some are too heavy to move. We try to consolidate when we can and is safe to do so. Some are not detonated, for instance if the technicians can see all cavity or some are puff rounds and there are no explosives in them so there may not be a need to detonate. We only consolidate them when it is safe to do so.

- Jorge - Then if they can be moved, can't they be moved like 5 km instead of 0.5 Km?

Tim - The CERCLA process favors treating the material on site. We can move the ordnance only small distances by hand (when and only if it is safe to do so). But if we were to move it to some other place, it takes DOD involvement and would not be

following the preferred CERCLA process to treat onsite. Some of this stuff is safe enough to move short distances but not safe enough to pack and move to another site. I doubt if we could get clearance to do that. I doubt we would be able to move ordnance on public highways.

- Nilda Medina (RAB member) -If we feel a quake in the earth, is that this detonation is going on? Does it compare to the previous Navy bombing?

Tim- The largest detonation we can make out there is 1,000 pounds of explosives or less. I wasn't here during the bombing and I don't know the frequency of it so I don't know if it's the same. We usually only detonate on Fridays, unless we find munitions in areas that we believe has the potential to be trespassed over the weekend. In that case we'll do it when we find it for safety. The sound and visual observation of the explosion should be minimal as the whole on site detonation process lasts only few minutes.

- Nilda- The community feels like it is a process similar to the previous activities - the bombings. We are asking that it be done in a detonation chamber.

Tim - Chambers are not applicable to every site. There's no chamber that can handle the large munitions on this site. When you detonate in a chamber you do a lot more handling of explosives. The chamber just won't work in this situation. Chambers work well for chemical munitions, which by design don't explode with the force of conventional munitions. The munitions on Vieques are conventional munitions, designed to blow things up. The chamber is not designed to withstand that kind of force. CH2M HILL owns the chamber, so if we thought it could be used on Vieques we would certainly recommend it.

- Stacie Notine (RAB member) -I would like to know how many items of depleted uranium have been found. Tim responded - None
- Stacie - What percentage can go into a chamber or can't? Tim responded - None of the bombs can go in the chamber.
- Danny Rodríguez (EPA) - I only want to make one clarification, the pictures (of the consolidated munitions) shown in this slide are for display only. It wouldn't be possible to put them in a chamber.
- Stacie asked about the burnings? Susana clarified that there are no controlled burns occurring yet as the plan is currently under regulatory review. Wilmarie Rivera (PREQB) - stated that EQB is evaluating the controlled burn permits submitted by the Navy
- Nilda - So the burns are accidental? Tim answered yes.

- Hector Julian Camacho (RAB Member) – The detonation chambers can't handle the 1,000 pounds which is why they can't be used. Who reviews and approves the health and safety plans for the workers on site?

Tim – They are reviewed by many people. I review them as do corporate health and safety managers, the Navy, and regulators. The master plans are sent for review and concurrence to the EPA and EQB.

- Danny - What type of inspections are done by internal/external safety related to occupational issues for workers and specifically related to removal of munitions? There has to be occupational regulations that address these issues. What are they?

Tim – Safety officers are onsite everyday. Each contractor's corporate health and safety staff visit the site and conduct audits. CH2MHILL ensures that contractors are performing the work according to safety guidelines. The Navy will conduct an audit here next week. We also have frequent internal/external reviews. The plans have been accepted by all reviewing agencies and we ensure that they are implemented.

- Deborah Santana (community member) – Can't munitions be cut down to fit in the chamber?

Tim - No, these bombs are unexploded ordnance (UXO). It is not safe to cut them. There aren't any chambers that will withstand 250 and 500 pounds, including most of the projectiles that we find. When you hear about bombs being destroyed in chambers it isn't these types of bombs, it's for chemical weapons.

- Michael – Where are the chambers used?

Tim – They are used at some defense sites on the east and west coast of the US. Open detonation is still by far the most widely used way to dispose of ordnance in the U.S.

- Lirio – I want to be sure that the chambers are used to reduce fragmentation and noise. What happens to emissions?

Tim – There are filters on the chambers. Some use water to control the detonation.

- Nilda – Can you tell me how you get to the number of 1,000? 1000 seems like a large number. If I am a worker, how do I know that I've reached 1000 lb?

Tim – We know the items and how much explosives are in them. The technicians identify the item and know the net explosive weight, plus what is used in the explosion so that it doesn't exceed 1000 pounds.

- Danny – There is lots of doubt that continues to surface about the quantity that is being detonated. It is my understanding that it is rare that they reach 1000 pounds, but most are small. It is important to give the community info on specifics of each detonation.
Chris – For meeting management and the next RAB, if you have a concern about this, it would be better for us to get your questions in advance so we can be sure to address them during the meeting. Susana - added that a conference call with the RAB will be

scheduled before the next meeting to get more input on the type of questions we need to address.

B. Mitch Lindsay, CH2M HILL Air Quality Engineer

Mitch addressed the air monitoring and then the modeling of the blow in place. His presentation focused on monitoring approach, BIP process and identifying possible BIP emissions, etc. In this case, we were looking at the history of what was on the site. You need to look at nearly continuous monitoring so that we know what the background level is. No matter where you are, some background concentration of particulates is always there. Some areas have naturally high levels. Not just human activity creates particulates; particulates can be created by natural processes as well (volcanoes, desert winds). We use equipment to detect contaminants of concern and situate the monitors as close as possible to the detonations. Compared to other military sites around the world, 1000 pound detonations are pretty small. We regularly perform detonations up to 84,000 pounds each and can detonate up to 6.5 million pounds per year at a site in Utah, for example.

We are using an E-BAM monitor – used in studies for the EPA in NYC after 911 and by the US Forest Service for monitoring particulate concentrations. They are designed to be solar powered. We modified it slightly using Teflon tape to allow us to analyze for metals and configured it to take 8 hour samples. We located them as close to the detonations as possible. We recently added a monitor just west of Camp Garcia as requested by the community and approved by the PREQB and EPA. Honestly I don't think we'll ever get a hit on that monitor but it was done as requested by the community.

Discussed action levels, compounds for BIP monitoring, and provided an air monitoring summary. No explosives have been detected in air samples. There have been some metals detected – iron, copper, nickel – and the highest levels detected were all less than 1 percent of the EPA action levels. On one occasion the national ambient standards for PM 10 were exceeded because of an accidental fire, not a BIP. That high concentration from the fire occurred in the SIA; we believe the concentrations in populated areas were well below the national ambient standards for PM 10. The data indicate the BIPs are not having a negative impact on populated areas in Vieques. He reviewed monitoring data found and discussed modeling.

Discussed the dispersion modeling slides, including estimating BIP emissions, BIP model and weather data, modeling assumptions and modeling results; showed the modeled maximum impacts from the BIP detonations remain on or near the LIA – close to the monitors and at concentrations similar to what the monitors show.

Discussion Points:

- Jorge Fernández Porto (RAB member) – You didn't have any anomalies between the modeling and monitoring?
Mitch – I didn't see any inconsistencies between the model and the monitoring data. They were entirely consistent with each other.

- Jorge - How many groups of data do you have here near the population?

Mitch - The metals and explosives concentrations are analyzed in the lab. The particulate data (groups of data) slide showed the maximum particulate concentrations from all of the monitors. Because you're not seeing much variation, you're seeing a normal variation or 10 to 20 microgram as the background. It is consistent with other monitoring in Puerto Rico. I chose the highest concentration of these to be conservative.

- Jorge - Did you check the data from the monitor nearer the population? Mitch- Yes. That data would be shown in the graphs, if they were the highest.
- Michael Diaz (RAB member) - We know that the maximum detonation is 1,000 pounds of explosives or does it vary. Is there any correlation between the size of explosion and data gathered?

Mitch - I don't exactly know what detonation size went on here. I don't think that they often get close to 1000 pounds. My understanding is that the net explosive weight is less than 1000. We did the modeling of 1000 pounds of detonation to be conservative.

- Michael- Reiterated the question and the issue of correlation. Mitch - This is a valid concern. We are getting different explosion detonation sizes here and the spikes would lead me think that there may be a correlation.
- Hector Julian Camacho (RAB member) - It is about the kind of explosive because you are going to have a different impact. But we have different kinds that pose different impacts on the environment.
- Nilda Medina (RAB member) - The graphics show me but I would like to know how much exploded each day and what does the monitor register? And what were the wind directions on the days of the detonations? Mitch - That's a good idea and something we could do for the RAB in a future meeting.
- Deborah Santana (community member) -The concern of the community is because the effect is cumulative and that is why we want more details. Who independently audits that data?

Mitch - We have independent laboratories that do the analysis of the metals for us. The monitor reports the particulate data directly to us. We provide the data to the EQB and EPA as regulatory agencies. We use accredited laboratories for the laboratory analysis. Cooper Analytical is doing the metals lab work. We are following EPA regulations for lab methods and reporting. Mitch added, I am a PE (professional engineer) and I am required to maintain professional ethics so I would not compromise my own ethics by not doing a comprehensive analysis and follow all the regulations.

In this case, we, instead of looking at an acute exposure, we address a cumulative effect as a "chronic" exposure of 350 days per year times 30 years. It is a large, large number of exposures and that is what we addressed here. So we are being very conservative.

- Stacie Notine (RAB member) – From now on can you give us more detail including the weight of the explosive and kind of materials emitted? Can this be an action item?

Mitch – So what you would like to see is the list of the net explosive weight and the materials that were detonated, is that correct? Stacie – Yes.

- Stacie –Can you describe how the data related to the open burning will be considered?

Mitch – The question is addressing the prescribed burning of vegetation. The presentation only addressed BIPs. I'm going to talk about prescribed burning to answer your question though. We assume that there will be a small amount of explosive material that will be released. A small number of the items are going to pop. We've seen that for unintended fires. We include that in the estimate of emissions from prescribed burning of the vegetation.

- Danny Rodríguez (EPA) – The topic of the prescribed burning and modeling is something that we should talk about in another meeting that deviates from this session. I wanted to clarify that the data you are seeing results from numerous detonations not just one. They do more than just one. Each one must contain less than 1,000 pounds. We have recurring questions coming to the EPA from the community that we need to address. The direction of wind sometimes influences the readings. We haven't been able to address this for the community. Maybe we can look at 39 detonations to date, wind data, explosive weight, and type.

Susana stated that before the next meeting we should have input from the RAB on the kind of topics, questions they would like to have address at the meeting, and work with the agencies so we can prepare presentations that will satisfy community questions.

- Jorge – To clarify, does each bar represent a 24 hour monitoring? Mitch – Each one records the highest 24 hour reading at each monitor.
- Michael – You've cleared up a lot of questions about the air monitoring. That's good. There's one that I have and that's that the community has about depleted uranium found.

Mitch – Depleted uranium is not on a primary list for checking based on the regulatory criteria we are following.

- Hector Julian – We're talking about air monitoring but there's also monitoring on the ground, because given all of these explosions. The ground is also contaminated and we need to talk about that.
- Deborah – I wanted to clarify – in terms of cumulative effect – I'm not talking about 30 years of BIP but 60 years of bombing. Secondly – an independent audit would help greatly for the credibility with the community.

- Michael – An observation, we see the results of the air monitoring and it is a relief on some level. We are finally getting air monitoring data that we can see and if the data are correlating with the BIPs. This is positive.

C. Brett Doerr, Environmental Restoration Program Manager

Brett discussed the East Vieques background soil inorganics (metals) investigation completed and next steps, and what documents are coming out for RAB review. He gave a presentation on the background investigation, provided key term definitions, and showed a graphic of background soil sample locations selected.

He discussed terms in slide about background investigation sample collection and analysis, split sample results, statistical analysis of data, combining soil types and depth, cyanide concentrations, and potassium and sodium concentrations even though they're not contaminants. The latter two were evaluated because they are on the standard analytical list, but their variability in soil is due to their high water solubility and their mobility with infiltrating precipitation. There was a statistically significant difference between the surface and subsurface concentrations for lead; it was higher in the surface than subsurface soil, unlike all other inorganics other than potassium. This could be a man made result since there is a global aerial deposition of lead from leaded gasoline use. However, the highest lead level detected was more than an order of magnitude below EPA's standard.

Discussion Points:

- Michael Diaz (RAB member) – Is the general level of lead around the world equal?

Brett Doerr - I don't know if it is equal but because of leaded gasoline there is a presence of it.

- Cristina Corrada (RAB member) – Can lead be associated with bombing activity?

Brett – it is very unlikely. Other than potentially a very small amount in the fuse, there isn't likely to be lead in bombs. It's not in the explosives and the bomb casings aren't made of lead because it's too soft. They make bomb casings out of stronger material like steel.

- Pablo Connelly (RAB member) – How about all of the chaff that is falling on the ground, like aluminum, etc.? I imagine that there's lead at that point.

Brett – Lead may be in small caliber bullets but that would be it, but the bullets that were being used over the years were not exploding. It's the bombs that were exploding.

- Hector Julian Camacho (RAB member) – PREQB has a different standard for lead right? In PR when you test soil do you use EPA or PREQB standards? Brett – EPA is the lead regulatory agency on these sites. We use EPA levels.

- Pablo – When you take the levels which/from where (which EPA region) do you take them? Brett – EPA Region 2, which uses the EPA Region 9 standard.

- Hector Julian- California's is stricter. Brett - That may be but we use Region 2. The report has more detail about this.
- Nilda Medina (RAB member) - About outliers, could you explain what they are? Also could you tell me if those elements are metals?

Brett - All of the elements are metals, and all are part of the rocks that make up Vieques as well as other sources, which is why the background study was necessary. He explained outliers, how they were evaluated, and what they mean.

- Jorge Fernandez Porto (RAB member) - Cyanide doesn't occur naturally, does it? Brett - Yes, it is a naturally occurring constituent.
- Jorge - About lead, I'm not convinced. About limestone, the levels were higher. It seems difficult to understand that one unit had higher concentrations when the samples were so close together.

Brett - That was part of the reason that we addressed the differences in all four soil types. We knew there was a possibility that we would see different levels of metals in the different soil types due to the type of rock from which they were derived as well as the different physical and chemical processes that occur on them. Further, the data show that the differences are not very big, but we applied well-accepted statistics to determine which groups of data could be combined.

- Michael - You were suspecting lead deposits on the surface but with the Navy occupying it, it has limited vehicular traffic. So how does this lead level vary with that found in a park in New York City? But if it is man made then it should not be in background.

Brett- I don't know what the lead level is in a park in NYC, but it is important to understand that background includes anthropogenic and naturally occurring levels. The lead levels on Vieques are likely the result of the rocks from which the soil was formed, as well as local and regional man-made sources, such as leaded gasoline use.

- Nilda -How can I know whether lead is natural or synthetic? Could you do any of that analysis?

Brett - All lead is naturally occurring. However, mankind can use lead (such as adding it to gasoline) and thereby influence the lead concentrations you will find in soil.

D. Miscellaneous

- Pablo Connelly (RAB member) - We still haven't opened the lighthouse. We asked that the roads be cleaned years ago. Also, what has happened to our site visits?

Chris Penny (Navy) – About the site visits, we are going to work on the BIP invitation. About the roads, the money is designated for the TCRA. The FWS has a plan to resurface the area to the lighthouse. We're working on roads but the priority is based on risk.

E. Agency Updates

- Wilmarie Rivera (Project Manager PREQB) – She had two things to mention 1. She reported speaking to Lic. Eugene Scott and conveyed his message that the RAB select a date for him to speak to the RAB either at the end of August or September. 2. Yarissa left the EQB and she introduced her replacement, Josefina González. They are trying to make it an easy transition for her into this position.
- Josefina González (PREQB) – I am greatly interested in this topic. I have the same cell and office phone numbers as Yarissa. I have already received comments from the community and I am here if you need anything.

Due to time constraints, EPA update was deferred for the next meeting; Danny mentioned that his office is always open to the public in case they want to talk to him.

F. Comments from the Public

- Jose Rosario (community member) – He came to talk about a letter he received telling him that he had been fired from his job. He said there is insufficient equipment and he was threatened daily at work by a supervisor who threatened to harm him, his friends, and his family. He complained on behalf of himself and other employees who felt threatened but were afraid to say anything, and he was fired. He had always received 96% ratings on a scale of 0 to 100. He was the messenger for 20 unhappy people who were going to threaten to stop working at noon. The work conditions were terrible, the water had been out all day and was hot, and the soap used wasn't clean. Advent fired him even though he didn't work for them. He said, they don't have the training that they need either.
- Another Community Member (John Cosme) – I don't know about this situation. We were trained and given equipment. I don't have a problem with safety. We are completely safe.

Chris Penny – The issue of employment is between the employer and the employee. If you believe you were fired inappropriately, you should bring this issue up with the Dept. of Labor.

G. ADJOURNMENT

Chris thanked the participants and closed the meeting at 9:30 PM.