



**Vieques Environmental Restoration Program  
Naval Facilities Engineering Command (NAVFAC) Atlantic**

**RESTORATION ADVISORY BOARD (RAB)**

**Meeting Number 60**

**6:00 p.m. – 8:40 p.m. | August 7, 2019 | Vieques Multiple Use Center, Vieques, PR**

**MEETING MINUTES**

**Attendees:**

Dan Waddill – Ex-Officio RAB Member, NAVFAC Atlantic	Daniel G. Concepción – CH2M/Jacobs
Daniel Hood – Ex-Officio RAB Member, NAVFAC Atlantic	Don Shaw – USA Environmental
Kevin Cloe – Ex-Officio RAB Member, NAVFAC Atlantic	Management Employee – USA Environmental
Douglas Pocze -- Ex-Officio RAB Member, USEPA Region 2	Stacie Notine – Community RAB Member
Jessica Mollin -- Ex-Officio RAB Member, USEPA Region 2	Myrna Pagán – Community RAB member
Mike Barandiarán – Ex-Officio RAB Member, USFWS	Michael Sommelier – Community Member
Susan Silander – Ex-Officio RAB Member, USFWS	Alexandra Connelly – Community Member
Maria Danois – CH2M/Jacobs	
Bill Hannah – CH2M/Jacobs	
Madeline Almodovar – CH2M/Jacobs	

*These minutes represent a summary of the meeting presentations, comments, questions, and action items and are not a verbatim transcript of the meeting.*

**Topics Discussed:**

<b>Opening and Introduction</b>	
<b>Madeline Almodovar</b> (CH2M/Jacobs/ Facilitator)	The meeting began at 6:00 p.m. Participants were welcomed to the 60 <sup>th</sup> Vieques RAB meeting and were guided through a series of posters highlighting different aspects of the Vieques Environmental Restoration Program. Representatives from the Navy, USEPA, PRDNER (formerly PREQB) and USFWS were available to answer questions.
<b>Dan Waddill</b> (Navy Program Manager)	Navy and regulatory agency representatives greeted the attendees, provided information, and answered questions posed by members of the RAB and the community. Each poster was also available to the attendees as a handout.

<p><b>Kevin Cloe</b> (Navy Project Manager)</p> <p><b>Daniel Hood</b> (Navy Project Manager)</p> <p><b>Susan Silander</b> (USFWS Wildlife Refuge System Supervisor)</p> <p><b>Mike Barandiarán</b> (USFWS Vieques Wildlife Refuge Manager)</p> <p><b>Douglas Pocze</b> (USEPA Region 2 - Chief)</p> <p><b>Jessica Mollin</b> (USEPA Region 2 - Remedial Project Manager)</p>	
<p><b>Welcome and Introduction</b></p>	
<p><b>Dan Waddill</b> (Navy)</p>	<p>Dan Waddill welcomed the participants to the second part of the meeting and discussed the agenda.</p>
<p><b>RAB Opening Remarks</b></p>	
<p><b>Myrna Pagán</b> (Community RAB Member)</p>	<ul style="list-style-type: none"> <li>• Myrna Pagán asked about the status of the Navy and regulatory agencies’ response to the letter submitted and discussed at the last meeting, with focus on the concern over the use of open burning and open detonation as a method to address unexploded ordnance (UXO) found or potentially found in Vieques. Myrna indicated that congresswoman Alexandria Ocasio-Cortez submitted a petition to amend the Department of Defense annual budget for fiscal year 2020 to include an additional US \$10 million to investigate the feasibility to use and potentially purchase detonation chambers to be used in projects such as Vieques, where open burn/open detonation is currently being used. The measure was accepted in the House of Representatives, and another amendment related to the Vieques cleanup funding was presented by Puerto Rico’s Resident Commissioner related to the munitions response sites in Vieques. Mrs. Pagán would like the Navy to comment on the amendment presented by Congresswoman Ocasio-Cortez.</li> </ul>
<p><b>Community Feedback</b></p>	<ul style="list-style-type: none"> <li>• Dan Waddill confirmed that the Navy is aware of the amendment presented by Congresswoman Ocasio-Cortez, indicating that he has been in correspondence with the Navy’s Office of Legislative Affairs indicating that the amendment, which is part of the National Defense Authorization Act (NDAA), will be addressed by the Senate when they return from their summer recess.</li> <li>• Myrna asked if US \$10 million will be enough to acquire a detonation chamber.             <ul style="list-style-type: none"> <li>– Dan Waddill stated that this is a topic that needs further discussion after a decision is made by Congress.</li> <li>– Douglas Pocze (EPA) stated that the agency has drafted a response to the letter which is currently being reviewed by staff in headquarters.</li> </ul> </li> </ul>

- Myrna Pagán asked about the process to receive the agencies’ feedback to the letter submitted in regarding the public comments submitted for the Proposed Remediation Action Plan (PRAP) for UXO 12 and 14.
  - Dan Waddill replied that the Navy will address the comments and their responses will be included in the PRAP Responsiveness Summary which is part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The Responsiveness Summary is currently being drafted.
  - Kevin Cloe (Navy) presented a poster containing the CERCLA process in a flowchart and commented that the Responsiveness Summary is part of the Record of Decision (ROD) phase. This ROD would be then sent to the regulatory agencies for their review and within approximately 60 days it should go out to the public, around December 2019.
- Stacie Notine (Community RAB member) asked if the decision on the amendment of NDAA would affect the ROD for UXO 12 and 14.
  - Dan Waddill (Navy) answered that it could have an effect on how the remedy is implemented; the Work Plan will have to be revised following the decisions made by Congress, but it would not require any change to the ROD.
- Michael Sommeliier (Community member) discussed the possibility of using phytoremediation (hemp) for wildlife refuge restoration activities and the land use plan.
  - Dan Waddill responded that the Navy is responsible for the environmental restoration and munitions response activities. Dan recommended that Michael presents his proposal to USFWS, PRDNER, and the Municipality of Vieques who manage and own most of the land that has been transferred by the Navy.
  - Kevin Cloe expanded that the Navy performs feasibility studies to evaluate alternatives for remediation for all of the sites, and that the Navy has considered phytoremediation as one of the techniques evaluated and will continue to do so.
- Michael Sommeliier asked about types of plants that have been considered for phytoremediation during the feasibility studies.
  - Dan Waddill stated that a variety of plants are used depending on the site, climate, and the target contaminant. For example, poplar trees and sunflowers are two of the plants that he is aware of that have been widely used for phytoremediation. Dan stated he had not heard about hemp but asked Michael to share his contact information to follow up with him on this topic.

### Open Detonation on Vieques

**Dan Waddill**  
(Navy)

- Dan indicated the munitions found in the range involve high explosives, which are designed to be destructive rather than toxic or poisonous. During a detonation, the complex molecules found in high explosives are broken apart and transformed into gases that are found naturally in the atmosphere (nitrogen, carbon dioxide, water vapor, and hydrogen). The detonations also release trace amounts of metals and explosive chemicals that were not consumed in the explosion.
 

Dan indicated that most of what the public sees as part of the “cloud” is dirt that is blown up in the air; and the Navy performs air quality monitoring to measure the number of particulates in the air to ensure National Ambient Air Quality Standards (NAAQS) are met. The presentation included a series of time-lapsed pictures of an explosion showing how most of the “cloud” dissipates within a timeframe of 4 minutes.

Open detonation is used in Vieques for two reasons. The first reason is worker safety. Open detonation minimizes the handling of unexploded ordnance (UXO), which are munitions that have been fuzed and fired, but somehow failed to explode. The safety of the site worker is compromised whenever UXO items need to be handled. The second reason is public safety. Open detonation allows for the safe removal and elimination of all UXO items found within the range,

	<p>thus reducing the risk that the public would encounter them. This method supports all cleanup requirements, and without it, munitions would need to be left in place.</p>
<p><b>Community Feedback</b></p>	<ul style="list-style-type: none"> <li>• Myrna Pagán asked how the Navy calculates that detonations 8 miles away from the community are a sufficient distance for the explosion to not to carry contaminants and stated that Saharan dust reaches the Caribbean all the way from Africa.             <ul style="list-style-type: none"> <li>– Dan Waddill stated that the difference is that the Saharan desert is millions of acres in size, while the detonations in Vieques are very small -- less than one acre. On Vieques, the small plumes of dust quickly mix with the surrounding air and do not affect the populated areas. In contrast, the plumes of Saharan dust are so large that the interior of the plumes have no chance to mix with clean air, and the plumes are able to travel great distances.</li> </ul> </li> <li>• Myrna Pagán asked about the schedule for the air quality monitoring activities.             <ul style="list-style-type: none"> <li>– Dan Waddill responded that the most recent air quality monitoring was performed during open burning in the Submunitions Area and indicated that the Navy has recorded air quality data during open detonations that spans over 8 years, 2005 through 2013.</li> </ul> </li> <li>• A community member asked what other media is sampled after a detonation. She also asked how many detonations take place in a day.             <ul style="list-style-type: none"> <li>– Dan Waddill responded that data is collected for soil, sediment in the lagoons, surface water, and groundwater.</li> <li>– Daniel Hood (Navy) stated that the Navy usually limits one open detonation for a given day.</li> </ul> </li> <li>• A community member commented that the Vieques general public perceived the open burning and open detonation adds more contamination putting the public at risk.             <ul style="list-style-type: none"> <li>– Dan Waddill responded that the Navy performs environmental sampling and air quality monitoring to ensure that the public is not at risk from contaminants; the real risk is the explosive hazard if members of the public encounter munitions.</li> </ul> </li> <li>• Stacie Notine stated that she is concerned about the background data used to evaluate the potentially impacted media, including air quality monitoring. Stacie mentioned that some of the air quality monitors after the attack on September 2001 in New York are the same models used in Vieques and that their effectivity has been questioned.             <ul style="list-style-type: none"> <li>– Daniel Hood responded that the methods chosen for media analysis are based in scientific approaches and in concurrence with EPA, PRDNER, and USFWS guidance. Regarding the air quality monitoring, Daniel referred Stacie to the factsheet entitled “Munitions Cleanup and Air Quality on Vieques,” which presents the data trends through the years.</li> </ul> </li> <li>• A meeting attendee asked if there is an option to let residents know when the open detonations will be performed so that they can take personal measures to avoid being bothered by them. She also asked how many open detonations are performed on average.             <ul style="list-style-type: none"> <li>– Dan Waddill responded that the Navy sends a notification to the Mayor of Vieques, the Municipality of Vieques, the state police and other regulatory agencies, both federal and local. There is no need for the residents to take any specific action because the process is safe for the population.                     <p>Dan added that last year, 38 detonations were performed, averaging to less than one per week.</p> </li> <li>– The meeting attendee insisted that the public should know, so that they can leave the island during the detonations thus it is important to know when they are taking place.</li> </ul> </li> <li>• A meeting attendee indicated that the community is concerned with the open detonation and have expressed their preference to use detonation chambers and asked if there is a chance that a chamber would be mobilized within the range.             <ul style="list-style-type: none"> <li>– Dan Waddill responded that because the munitions are scattered across many acres without roads, and because they would have to be gathered around a centralized location near the</li> </ul> </li> </ul>

	<p>chamber, safety is a concern. The munitions items would have to be carried long distances across rugged terrain, loaded into trucks, transported across bumpy roads, moved into storage, later removed from storage, and loaded into a chamber. All of this movement and handling would pose an unacceptable accidental explosion risk to site workers.</p> <ul style="list-style-type: none"> <li>• A meeting attendee asked if the Navy has knowledge of where the highest concentration of UXO items is found and suggested that the Navy place the detonation chamber at this area. <ul style="list-style-type: none"> <li>– Dan Waddill responded that thousands of items would still need be moved, and such handling would have a detrimental impact on worker safety; the Navy cannot compromise worker safety by moving items into a detonation chamber.</li> </ul> </li> </ul>
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## General Project Updates

### *Follow-up Munitions Investigation at Playa Caracas and Playuela*

<p><b>Kevin Cloe</b> (Navy)</p>	<ul style="list-style-type: none"> <li>• Kevin mentioned that the Navy initiated a follow-up munitions investigation in May 2019. Kevin showed a map where Playa Caracas (Red Beach) and Playuela (Garcia Beach) are located and indicated the areas that have been open to the public following initial investigations. Kevin showed pictures of the advanced geophysical classification work being performed and explained the method used to detects anomalies.</li> </ul> <p>As part of an investigation, the Navy found munitions items in Playuela (Garcia Beach), which prompted a decision to look at Red Beach again. Red beach was investigated in 2003, at that time no evidence was found that the beach had been used for munitions training.</p> <p>The recent investigation covered 100% of the beach area, anomalies were excavated (mostly beverage cans). However, one item was found 18 or 20 inches below ground which triggered a time-critical removal action. Additional anomalies remain and will be investigated and removed, which will require beach areas to be closed. The Navy and USFWS will notify the public as these closures occur in the future.</p>
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### *Ongoing Removal Actions*

<p><b>Daniel Hood</b> (Navy)</p>	<ul style="list-style-type: none"> <li>• Daniel showed a map with the locations of the sites with ongoing removal actions, including UXO 4 in the Live Impact Area (LIA). Most of the work is taking place in the Submunitions Area, which has been cleared about halfway. The timeline is about two years to complete the project. Daniel also mentioned that for approximately 7 years, the Navy has also been working in the Surface Impact Area (SIA), where most of the detonations are taking place, including at UXO 9 and UXO 10.</li> <li>• Stacie Notine asked about how long the Navy has been working in the LIA and SIA areas. Stacie also asked for clarification on the naming convention and the extent of the areas being investigated within the SIA and LIA and the involvement of Lockheed Martin in identifying area boundaries. <ul style="list-style-type: none"> <li>– Daniel Hood responded that the work in the LIA started in about 2005 and the work in the SIA started in 2009-2010. Dan explained the map with the locations of each site and their extension. Daniel added that UXO 12 and UXO 14 are the closest sites to town and were the subject of the most recent PRAP reviewed by the public, which is now at the ROD stage.</li> </ul> </li> </ul> <p>Daniel added that Lockheed Martin did the investigation for the Photo Identified Sites, using satellite and aerial images and processing so that the Navy and EPA could define potential areas of concern for environmental and munitions investigations.</p>
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### *Cayo La Chiva (UXO 18)*

<p><b>Kevin Cloe</b> (Navy)</p>	<ul style="list-style-type: none"> <li>• Kevin pointed to the CERCLA process flowchart and showed the UXO 18 site is at the ROD phase. Kevin explained that the Navy had recently completed the Remedial Action Completion Report, which is currently under regulatory review. The site is moving to the Long-term Monitoring phase of the process and will be released to the PRDNER in the future. Daniel Hood added that the Navy</li> </ul>
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	and regulatory representatives visited the site that morning. The site will be under PRDNER’s management. Daniel also presented a location map of Cayo La Chiva indicating PRDNER’s proposed land use plan, including hiking trails, anchorage areas, and educational kiosks.
<b>Community Feedback</b>	<ul style="list-style-type: none"> <li>• Stacie Notine asked who is responsible for long-term monitoring of UXOs in Cayo La Chiva. <ul style="list-style-type: none"> <li>– Dan Waddill responded that the Navy is responsible for installing and maintaining warning signs (land use controls) and any additional investigation needed related to UXOs on Cayo La Chiva in the future.</li> </ul> </li> </ul>
<b>Proposed Plan for UXOs 12 and 14</b>	
<b>Daniel Hood (Navy)</b>	Daniel presented the map of the sites and summarized the background for UXOs 12 and 14. Daniel reminded the participants that the Responsiveness Summary will summarize all the comments made during the PRAP public meeting and during the public review period. The Responsiveness Summary will be part of the ROD for UXOs 12 and 14. Once it is signed, the Navy will implement the remedy on these sites.
<b>Community Feedback</b>	<ul style="list-style-type: none"> <li>• Stacie Notine asked about what technologies are used with the Advanced Geophysical Classification, and the difference between TEMTADS and Metal Mapper, and M61. <ul style="list-style-type: none"> <li>– Daniel Hood explained that both types of equipment have been used at the sites. The TEMTADS is a device that was used in the past as part of a pilot study and it was purposely built for the Navy; the Metal Mapper is the commercial name for the new generation device. The Navy currently acquired a Metal Mapper for the investigations. Daniel added that the M61 is a metal detector that is used to detect ferromagnetic materials in the soil subsurface. The TEMTADS, and Metal Mapper are advanced metal detectors which use an algorithm to discern whether the anomaly could be shaped similar to a munitions item or is just a scrap metal item.</li> </ul> </li> </ul>
<b>Regulatory Agency Updates</b>	
<b>USEPA</b>	
<b>Douglas Poczé (USEPA)</b>	Doug appreciated that the community is still engaged and involved in the RAB meetings. After 60 meetings, that is a commendable task. He also mentioned that currently there are three Remediation Project Managers working on the site, Jessica Mollin, Daniel Rodriguez, and Denise Zeno. Doug added that information on these investigations and technologies has been communicated to the agency’s new acting director, Pat Evangelista. EPA remains actively involved in reviewing documents and visiting the sites.
<b>USFWS</b>	
<b>Mike Barandiarán (USFWS)</b>	<ul style="list-style-type: none"> <li>• Mike indicated that USFWS has no current updates.</li> </ul>
<b>Community Feedback</b>	<ul style="list-style-type: none"> <li>• A community member asked what the current extent and statistics of how much the Navy has cleaned up to date. <ul style="list-style-type: none"> <li>– Dan Waddill indicated that the Navy has removed surface munitions from about 4,000 acres. Approximately 105,000 munitions items have been cleared from the range, including from beaches and roads. Planning for the removal work of munitions located underwater has started. Investigations have been completed for 51 out of 54 environmental remediation sites.</li> </ul> </li> <li>• A community member asked if the Navy has found there were any items washed ashore after the hurricanes or uncovered by erosion.</li> </ul>

	<ul style="list-style-type: none"> <li>– Dan Waddill stated that the Navy was concerned with that possibility, and immediately after the hurricanes in 2017 sent out UXO technicians on-island to sweep the beaches. They did not find any items on public beaches or beaches that had been previously cleared; however, they did find several munitions items on the LIA beaches which had not been cleared before.</li> <li>• Stacie Notine asked about information regarding the scrap metal that remains after the detonations, and who manages the Central Processing Center (CPC). Stacie also asked about the amount of contaminated soil.</li> <li>– Daniel Hood explained that the CPC is a centralized scrap metal processing center where the remains of the munitions shells and casings are sorted after high explosive UXOs are detonated. The Navy had used a furnace to melt the scrap metals in the past. Currently, the Navy performs a second-hand investigation to make sure the scrap metal is free from residues of explosive and so far, has recycled about 20 million pounds of scrap metal. Daniel added that any contaminated soil is shipped off island with a manifest to a properly permitted disposal facility.</li> </ul>
<b>Adjournment</b>	
<b>Dan Waddill</b> (Navy)	Dan thanked all the participants and presenters for attending the meeting. The meeting was adjourned at approximately 8:40 p.m. The next RAB meeting will be held on November 5, 2019.