East and West Vieques
Environmental and Munitions Response
Program Update

Presented By:
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Atlantic Division. NAVFAC
Presentation Outline

- Project Background
- Update of East Vieques IR and MEC Sites/Program
- Results of Preliminary Range Assessment
- Community Relations Programs
- Project Challenges
- Preliminary Strategies For Cleanup Program (East)
- Update of West Vieques IR and MEC Sites/Program
Site Location Map

PUERTO RICO

- Mayaguez
- Ponce
- San Juan
- Roosevelt Roads U.S. Naval Station
Division of Former Navy Property (East and West Vieques)
East Vieques Background

- **Former Naval Training Facilities** (VNTR) (also known as the Atlantic Fleet Weapons Training Facility)
- **Facility used for combat readiness training for 60 yrs**
- **VNTR Mission:**
  - Ground warfare and amphibious training for marines
  - Artillery Gunfire Training
  - Small Arms Training
  - Naval Gunfire Support Training,
  - Air to Ground training.
- **1999 Bombing accident** at Operations Tower killed civilian security guard led to negative press, local unrest/disobedience, political interest, adverse environmental and health claims and ultimately the closure of the facility
IR Program Status – Eastern Vieques

- Vieques Naval Training Range (East Vieques) transferred to DoI May 2003 (Public Law 107-107)
  - Designated as U.S. National Wildlife Refuge System
  - Live Impact Area designated as Wilderness Area

- Regulatory Framework: EPA Region II RCRA Consent Order for 12 IR Sites and OB/OD pits (Jan 00&03)
  - Final RFI PHASE I Work Plans FY 03
  - Final Baseline Groundwater Plan FY 03
  - Community Relations Plan FY 03
  - Current Conditions Report FY 03
IR Program Status – Eastern Vieques

- Memorandum of Agreement entered between Navy and DOI in Spring 2003, addresses:
  - Security Provisions
  - Engineering Controls
  - Navy IR and MEC responsibilities
  - Temporary Land use restrictions
  - Establishment of Project Team
- EBS completed in Spring 03 prior to Transfer
- Governor of P.R. proposed NPL Listing of East and West Vieques and Underwater Areas in FY 03 (Includes Culebra FUDS Site)
- Federal Facility Agreement drafted in early FY 04
Current IR Investigations and Work Underway:

- Phase I RFI field investigations for 12 IR sites (Jan 04)
- Western Boundary Perimeter Groundwater Baseline Investigation (Jan 04)
- Soil and Groundwater Background Investigation Work Plan submitted to EPA Dec 03
- Work Plan for RCRA Phase II Investigations under development
IR RCRA Sites, PI’s, and PAOC’s

Eastern Vieques Sites

LEGEND

Environmental Sites

Purple Beach

Red Beach

Blue Beach

Yellow Beach

Work In Progress
For Official Navy Use Only
Draft 14 Oct. 02

Figure 4
Environmental Sites
Eastern Vieques, Puerto Rico
East Vieques MEC Program

(Starting Point) –FY 03
Eastern Vieques
MEC Program Status

- Preliminary Range Assessment completed (Spring 03)
- Red and Blue Beach MEC Assessment of Amphibious Landings and Training (Spring 03)
- Engineering and Safety controls established (Spring 03)
- Established MOA Navy and DOI Project Team established and conducting business (June 03 to Current)
- OB/OD Investigation and Closure Plan submitted to EPA in Dec 03
- MEC Strategic Management and Prioritization Plan for EMA, SIA, and LIA under development (FY04)
- Expanded Range Assessment and Site Investigation Work Plan under development (FY04)
East Vieques MEC Chronology

60 Years of Naval and Marine Training

- 1943 US Acquired land in Vieques
- 1947 Eastern Maneuver Area Established
  - heaviest activity from mid 1950s- early 1960s
  - maneuvers reduced in 1974
- 1964 Gunnery Range established in LIA
- 1973 U.S. Navy terminates use of Culebra which significantly increases use of Vieques
- 1987 Peak use of Naval gunfire in LIA
- 1999 Live Fire Ceases: Inert bombing is initiated
- 2003 Navy Training terminates, facility closes and property transferred
17. Geophysical survey along Red Beach with EM-61 magnetometer and DGPS.
Recovery of Metallic Items
(No Evidence of Live Fire Training)

15. Anomaly reacquisition with metal detector.
LIA Open Burn/Open Detonation

RCRA Order and Interim Subpart X Closure Requirement
Identification of OB/OD Pit Locations (LIA)
Journey to OB/OD and LIA
Detonation Of Munitions at the OB/OD Site (LIA)
East Vieques OB/OD Pits
OB/OD Pits and Surrounding Ordnance
FY 03 Preliminary Range Assessment of East Vieques

Eastern Maneuvering Area (EMA)
Surface Impact Area (SIA)
Live Impact Area (LIA)
Eastern Conservation Area (ECA)
Conducted PRA Historical Archive Record Search and Limited Field Reconnaissance

Provided information on training activities, types, quantities and locations (land-based) of munitions and explosives of concern (MEC) at VNTR

Provided for consolidated knowledge & information base of MEC Activities

Identified additional Gun Positions & Target Areas In EMA, SIA and LIA for further investigation

Provided data for preliminary assessment, initial explosives safety risk assessment & preliminary prioritization for future actions

Provided data and basis for preliminary budgetary funding estimate
East Vieques
Munitions Sites/Areas

- Live Impact Area (LIA) & Surface Impact Area (SIA)
  - LIA = 900 acres
  - SIA = 2500 acres (Artillery Ranges, Air to Ground Targets)
  - ECA=200 Acres
  - Naval Gunfire (8 targets) and Air-to-Ground Impact Areas (13 targets)

- OB/OD Site (13 Pits) in LIA

- Eastern Maneuver Area (EMA)
  - EMA = 11,000 acres
  - Artillery Gun Positions (43)
  - Artillery Targets (9)
  - Small Arms Ranges (6)
  - Beach Amphibious Landing Areas
Additional MEC Sites Identified From Historical Photos
East Vieques MEC Areas (EMA)

- Eastern Maneuver Area (EMA)

  - Estimated that 5,700 of 11,070 acres likely contaminated with MEC
  - Up to 43 gun positions established for large-scale artillery firing into the LIA and SIA.
  - Six ranges established since 1966 for practice with small arms fire, grenades, tank artillery, mortar fire, and rocket fire
East Vieques MEC Areas (LIA & SIA)

◦ Live Impact Area (LIA) and Eastern Conservation Area (ECA)
  ❖ Entire 1100 acres likely MEC contaminated
  ❖ Target Area for air-ground bombing and naval gunfire 1964-1999
  ❖ MEC fired includes over 27,000 tons of: bombs (up to 2000 lbs), cluster bombs, rockets, large projectiles (3”-5”)

◦ Surface Impact Area (SIA)
  ❖ Adjacent to LIA
  ❖ Entire 2500 acres likely contaminated with MEC from Marine Artillery and Air to Ground Bombing
  ❖ Used as target area 1954-1999 for large-scale marine artillery fired from the EMA and air-to-ground bombing
  ❖ MEC present include projectiles (76-175mm, mortars, inert bombs)
Aerial Photo of Target Locations in Live Impact Area (LIA)
Impact Density Of Naval Gunfire Ordnance
Impact Density Of Live Air-To-Ground Ordnance
Types of Ordnance Fired and Found in EMA, SIA, and LIA
MK 118 Submunition in LIA
MK 82 (Practice)
Projectiles Fired in EMA and SIA (HE 81 mm)

- Mortar fired:
  - 60mm
  - HE 81mm
Projectiles Fired in SIA & LIA

- Gun fired:
  - 76mm
  - 105 mm
  - 4.5 inch
  - 120 mm
  - 5 inch/38
  - 5 inch/53
  - 155 mm
  - 16 inch
Projectiles Fired In LIA
Launched 2.75 inch Rocket
Mk 76 - 25 LB Practice Bomb
MK 84 Bomb
Surface MEC in Live Impact Area
Trespasser showing missile in Live Impact Area
BLU-77/B Body (Frag/HEAT) Submunitions
BLU-77B FRAG/HEAT (Submunitions)
Baseball Type Submunitions in LIA
PRA Conclusions

Conclusions
- Over 40 areas potentially containing MEC were identified
- High explosive risk areas include the LIA, OB/OD areas
- Moderate explosive safety risk at artillery gun positions in SIA and EMA; rifle grenade range (Range 3), grenade-launcher range (Range 4) and hand grenade range (Range 5)
- Low explosive risk at small arms ranges, Red Beach, Blue Beach

Recommendations
- Restrict access to moderate-high risk sites by installing fencing, gates and road barriers
- Conduct further investigations to characterize and delineate extent of MEC contamination
- Prioritize MEC sites based on explosive safety hazards
Locations of Engineering Controls
Road Barriers and Gates at VNTR

Figure 3-1
Locations Map of MEC Areas
Vieques Naval Training Range,
Vieques, Puerto Rico
Warning Sign at VNTR

No traspase
Personal autorizado solamente
Peligro explosivos

No trespassing
Authorized personnel only
Danger explosives
East Vieques MEC Program Strategy (FY 04 & FY 05)

- Develop Strategic Management Plan and Prioritization Plan
  - Perform Internal and External Assessment & Program/Project SWOT
  - Define Goals and Objectives (Short and Long Term)
  - Define and Develop Strategies in alignment with goals and objectives
    - Acquisition Strategies (Small Business, Multiple Contracts)
    - Technology and Logistical Strategies
    - MEC & IR Prioritization Strategies
    - Investigative and Remedial Action Strategies
    - Project Management and Risk Management Strategies
    - Stakeholder and Regulatory Program strategies
    - Integrate strategies in Project Clean Up Plan Development
    - Exit Strategies (LUC’s, ROD’s, Investigation and RA endpoints)

- Define Performance Metrics
- Develop Implementation, Monitoring, and Evaluation Plan
- Develop corrective action plan
East Vieques MEC Program Strategy (FY 04 & FY 05)

- Conduct Expanded Range Assessment and Site Investigations (PA/SI)
  - Close gaps in Archive Record Search
  - Characterize and redefine MEC areas
  - Expand Site Knowledge
  - Further define MEC Areas (Gun positions, Ranges, Targets) in order to reduce footprint of Cleanup area
  - Refine and develop final cleanup cost estimate
  - Define Risks and explosive safety hazards per area

- Initiate IRA’s in high risk areas (align with DOI Land Use Plans)
  - Beaches, roads, trails, natural resource areas (turtle nesting)

- Conduct OB/OD Investigation and Closure in LIA (per Order)
Community Relations Program

Acts of Vandalism by Community (May 03)
UXO Awareness Poster & Video
Quarterly News Letter
TRC Community Meetings
Community Poster Sessions
Community Relations Program

- East Vieques IR Community Relations Program regulated by EPA
  - CRP submitted to EPA in 2002 for East Vieques Plan; but not yet approved

- West Vieques and East Vieques MEC Community Relations Program Administered by Navy
  - Navy Community Relations Plan For West Vieques Implemented in Fy 2001
  - Navy conducted IR/MEC Public Poster Session FY 02
  - TRC meetings are held 3 to 4 times per year
  - Navy prepared UXO safety Awareness video, Fact Sheets, and UXO Safety Awareness Signs for DOI and Public
  - Navy Conducted UXO Awareness Training to DOI, MOV, EPA, and EQB in FY 03
  - Public notices, fact sheets, and Qtrly News Letters distributed to public for MEC Awareness/ Safety and IR/MEC Project Updates
UXO Safety Awareness Sign

FOR YOUR SAFETY...
POR SU SEGURIDAD...

WHAT IS UNEXPLODED ORDNANCE (UXO)?
- Ammunition that was fired but didn't explode
- Ammunition that could explode
- It can be found in many shapes, sizes, types and colors

ALL OF IT IS DANGEROUS!

WHAT CAN YOU DO?
1. If you see an object you don’t recognize, don’t touch it.
2. Don’t go near anything that might be UXO
3. Report your findings immediately to:

Vieques National Wildlife Refuge Manager
U.S. Fish & Wildlife Service
Road 266, Km. 0.4, Vieques, PR 00765-1527
Telephone: 787-741-2138

¿QUE ES UN EXPLOSIVO SIN DETONAR?
- Munición que fueron disparadas pero no detonaron
- Munición que pueden detonar
- Las municiones pueden ser de varias formas, tamaños, tipos y colores

¡TODO ESTO ES PELIGROSO!

¿QUE PUEDE HACER?
1. Si usted ve un objeto que no reconoce, no lo toque
2. No se acerque a ningún objeto que pueda ser una munición sin detonar
3. Informe lo que encontró inmediatamente a:

Refugio Nacional de Vida Silvestre de Vieques
Servicio Federal de Pesca y Vida Silvestre de EEUU
Carretera 200, Km. 0.4, Vieques, PR 00765-1527
Teléfono: 787-741-2138
Public Safety Notice For UXO

IMPORTANT PUBLIC SAFETY NOTICE
About Munitions and Explosives of Concern on Eastern Vieques Island, Puerto Rico

In accordance with Presidential directives and Congressional legislation (Public Law 107-117, Title X, Sec. 1049), on May 1, 2003, the Vieques Naval Training Range will be turned over to the U.S. Department of the Interior to establish a Wildlife Refuge and a Wilderness Area. The U.S. Navy is still responsible for investigating and responding to environmental contamination and munitions left behind on the former training range.

The former training range contains many munitions and explosives of concern (MEC), including unexploded ordnance (UXO), above or buried in the ground. Munitions and explosives are extremely dangerous. MEC investigations are just getting started, so there is a chance that MEC could be found almost anywhere on Eastern Vieques.

Don’t touch or go near anything that might be UXO! Remember, military munitions were designed to be destructive weapons. Sailors and soldiers are only allowed to use munitions after intense and thorough training. People—often children—have been seriously hurt or killed by UXO or other munitions.

What is UXO?
- Ammunition that was fired but didn’t explode
- Ammunition that could explode
- New or old—shiny or rusty—clean or dirty...

All of it is dangerous!
UXO can be hard to identify...
- It can be found in many shapes, sizes, and types.
- Size doesn’t matter. Small items can kill or injure.
- Age doesn’t matter. Old rusty items can kill or injure.

Can the Public Visit Any Part of Eastern Vieques?
At first, for safety’s sake, the public will be prohibited from entering any part of the former Vieques Naval Training Range. However, in the future the public may be allowed to visit some areas. Ongoing MEC investigations by the Navy, and the proposed land use plan of the Department of Interior, will determine which areas are safe and will be permitted for public use.

For example, up until 1999, the Navy had at times allowed the public to visit Blue Beach and Red Beach. Recent investigations of these beaches by the Navy have shown there are no UXO items at the beaches. However, the results of the investigation are still being reviewed by the regulators.

Based on the results of this review, the Department of the Interior may decide to re-open these two recreational beaches to the public.

For information about areas open to the public, please contact the Vieques National Refuge Manager:
Oscar Diaz, US Fish & Wildlife Service
PO Box 1527, Vieques, PR 00765-1527
Telephone: 787-741-2158 or 0699  Fax: 787-741-2158
E-mail: oscar_diaz@fws.gov

To keep Vieques residents and visitors out of the most dangerous areas, 14 roads have been barricaded and warning signs have been posted.
For your own safety, please stay out of these areas!

Background
The former Vieques Naval Training Range is located on the eastern one-third of Vieques Island. Since the early 1950’s, the Navy has used parts of the range to train military personnel. The range was divided into four operational areas, from east to west: the Eastern Conservation Area, the Live Impact Area (LIA), the Surface Impact Area (SIA) and the Eastern Maneuver Area (EMA).

The Navy began naval gunfire and aerial bombing in the LIA in 1965. However, ordnance was not used on a regular basis in this area until 1974. The LIA is established as a Wilderness Area where public access will be prohibited.

The map on the next page shows areas of the LIA, SIA and EMA that are the most likely to contain explosives (based on available information), so it is very important to stay away from these areas. Other places near the areas shown on the map also might contain munitions and explosives of concern. However, right now there are no areas on eastern Vieques that have been approved as being free of munitions and explosives.
Community Celebration
Beginning to Get Out of Control
Community US Flag Burning
Community Celebration Out of Control
Destruction of Gov. Property (Main Guard House)
Main Gate to Camp Garcia
Community Burning of Gov Marine Vessel
Aftermath of Community Party
Community Vandalism
Aftermath of Community Party
Aftermath of Community Party
Thank you......any East Vieques Questions???
Western Vieques IR Program
Status

◆ 17 potentially contaminated sites

- 14 sites on Municipality of Vieques property
- 3 sites on DOI property
- 490 of 8100 acres identified as potentially contaminated (450 ac DOI; 40 Acres MOV)
- Land use restrictions in place on MOV QuitClaim Deed and DOI Memorandum of Agreement
- “No further action” proposed for 9 sites
  - PR EQB Public Hearing held in January 04
- Pre-Risk Assessment Data suggest 3 sites require remedial action
West Vieques Background (Continued)

- Former Naval Ammunition Supply Depot stored and supplied ordnance for Naval training at Vieques Naval Training Range.

- 8100 ac of West Vieques property transferred to multiple parties Vieques in April 2001 (Public Law 106–398).
  - 4100 acres transferred to DOI;
  - 3100 acres transferred to MOV;
  - 800 acres transferred to PR Conservation Trust;
  - 100 acres Retained by Navy.
Western Vieques: NFA SWMUs & AOCs in Former Public Works Area

Sites proposed for NFA- AOCs B,C,F,K; SWMUs 10,14,15
Western Vieques: IR Program Status

- Work Plans and/or Remedial Investigations Studies underway for remaining 8 sites
  - Envr RI/FS of 5 MOV sites targeted for FY 04 Completion
  - Envr RI/FS for 3 DOI Sites targeted for FY 05 Completion
  - MRP Removal Actions on DOI property scheduled for completion by FY 07
Overview of OE Assessment Activities at West Vieques (NASD)
MEC Response Actions at Former NASD Vieques:

- PA/SI completed in FY 2000 at SWMU 4 (61 MEC Items Retrieved)

- Engineering and Institutional Land Use Controls Implemented in 2000-2001
  - Site Security and Safety fence
  - Site Land use controls incorporated into MOA.

- Green Beach MEC Site Assessment completed Prior to Transfer (April 2001)
MEC Response Actions at Former NASD Vieques:

- **OB/OD SWMU 4 MEC Investigations:**
  - Phase I (35 Acres) completed
    - (Jan – April 02)
  - Phase II (20 Acres) completed
    - (April-July 02)
  - Phase III (40 Acres) completed
    - Feb –June 03)

- **Draft MEC RI completed Feb 04**

- **Planned Future Work:**
  - Conduct MEC Interim Removal Action FY 05
  - Complete Envr RI/FS and MEC FS & ROD’s FY05-06
Green Beach Site Assessment

- Site is a 50 acre public beach area located in the northwest corner of DOI property.
- Area was identified as a potential area of concern by NOSSA due to possible location within “Western Training area.”
- Site is located 3000 feet north of OB/OD Site.
MEC RI Investigation Objectives for OB/OD Site

- Identify and Verify location of OB/OD Pits
- Evaluate the extent of kick-outs from OB/OD Pits
- Characterize the type and condition of ordnance items present
- Assess the relative explosive safety hazards across the site
- Provide technical knowledge and Risk Reduction for Environmental RI/FS Sampling and Assessment of the site
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Three Phases of MEC RI Investigation Conducted

- A Total of 90 Acres Investigated
- Phase I
  - 20 Acres completed
- Phase II
  - 15 Acres Completed
  - 4/2002 - 6/2002
- Phase III
  - 55 Acres Completed
Most Common OE Items
Removed From SWMU 4

- 20 mm projectiles and casings (1319)
- 7.62 cartridge blanks (184)
- M123 Photoflash cartridge (35)
- 3 inch photoflash signal cartridge (29)
- MK 230 (19)
- MK2 CAD, primer unfired (5)
- For all other OE Items types found, less than 5 of each item were identified
Ordnance Items Removed From SWMU 4
A total of 7179 MEC items were investigated from a depth of 0-6”.

95% of items removed from first 0-6” depth bgs were MEC items.
Distribution Of Non-Ordnance Items Removed

- Metallic items investigated at east and west ends of site were primarily non-ordnance related.
- Only 7 of the 75 items (9%) investigated at the east end were MEC items (20 MM’s).
- Non ordnance metallic items at the east end included railroad spikes and track.