US Army Corps of Engineers

Defense Environmental Restoration Program
Formerly Used Defense Sites

CULEBRA, PUERTO RICO
PROPERTY NO. I02PR0068

Inventory Project Report (INPR)
Original May 1991
Revised July 2005 (Final)

Prepared by
US Army Corps of Engineers, Jacksonville District

Defense Environmental Restoration Program (DERP)
Formerly Used Defense Sites (FUDS)

US Army Corps of Engineers, Jacksonville District

Culebra, Puerto Rico
Property Site No. I02PR0068

Inventory Project Report (INPR)
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USACE, Jacksonville District Points of Contact

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Findings and Determination of Eligibility
(Revised 2005)

Defense Environmental Restoration Program
For Formerly Used Defense Sites
Findings and Determination of Eligibility
(Original 24 Dec 1991)
(Revised June 2005)

Culebra, Puerto Rico

Site No. I02PR0068

FINDINGS OF FACT

1. Between 1903 and 1964, the United States acquired 2747.12 acres of land on Culebra Island (2067.8 acres fee), Culebrita Island (266.0 acres fee), Luis Pena Cay (342.5 acres fee), Water Cay (7 acres fee) and the adjacent cayos (63.82 acres leased), for a bombing and gunnery range and auxiliary airfield for the Navy. The United States acquired fee title to 2135 acres of land from Spain (1785.5 acres on Culebra Island, the 342.5 acres on Luis Pena Cay, and the 7 acres on Water Cay). These lands were transferred to the Navy by Presidential Proclamation of 26 June 1903. The Navy acquired 13.83 acres by purchase in 1903 and 268.47 by donation in 1939, all on Culebra Island. In the early 1940s, 265.59 acres of fee land Culebrita Island and Ladrones Cay were transferred to the Navy from the Coast Guard; 63.82 acres were acquired by leases for the Navy on adjacent cayos; and 0.41 of an acre on Culebrita Island was acquired by permit from the Coast Guard.

2. The lands were part of the U.S. Naval Station, Culebra Island, Puerto Rico and were utilized by the Navy as a coaling station, training area, auxiliary airport, weapons range, and bombing and gunnery range. The Navy constructed various improvements including a range operation center, maintenance sheds, helicopter landing pad, security fencing, warehouses, storage tanks, septic tanks, water distribution building, pumping stations, housing, and an auxiliary landing field including runways, taxiways, etc. Parts of the property (approximately 990 acres on Culebra Island) were utilized by others by virtue of outgrants from the Navy, prior to the Navy declaring the property as excess. The remainder of the property was under Department of Defense (DoD) control during the period of DoD ownership.

3. The Navy terminated the leases on the 63.82 acres on the adjacent cayos in 1972 and returned the property to the then current owners. The terms and conditions of the leases and termination notices or any restoration requirements are unknown as copies of those instruments could be located. On 5 July 1972, the Navy reported 1089.80 acres of the site excess to the General Services Administration (GSA). On 19 May 1976, the Navy reported an additional 1501.5 acres excess to GSA. On 28 March 1976, the Navy transferred 4.09 acres on Culebrita Island to the Coast Guard and terminated the permit from the Coast Guard comprising 0.41 of an acre located on Culebrita, which is still utilized by the Coast Guard. The Navy retained and still utilized 87.5 acres on Culebra Island that was only recently declared excess and is currently being transferred to the Department of the Interior.

4. The Lands reported excess to GSA were disposed of as follows:

a. The Navy (at the direction of GSA) transferred 611 acres (342.5 acres on Luis Pena Cay, 261.5 acres on Culebrita Island, and 7 acres on Water Cay) and 776.35 acres on Culebra Island, together with all improvements, to the Department of Interior, Fish and Wildlife Service (FWS) on 23 March 1978 and 15 September 1980, respectively. All 1387.5 acres transferred to the FWS comprise the Culebra Island National Wildlife Refuge.

b. By quitclaim deed dated 7 February 1980, GSA conveyed fee title to 79.73 acres to the Puerto Rico Ports Authority on Culebra Island for public airport purposes. The deed contained a recapture and reverter clause and was subject to existing easements for public highways, roads, utilities, etc. This property is utilized as a public airport.

c. By quitclaim deed dated 11 August 1982, the United States of America, through the Secretary of the Interior, conveyed 935.98 acres to the Commonwealth of Puerto Rico on Culebra Island. The deed contained a reverter clause and other restrictions that the bombardment area composed of 644.99 acres would be utilized only for a public park or public recreational purposes. The deed contained language that the Commonwealth agreed to accept the bombardment area in its present condition, that the United States would not be held responsible for decontamination, and that the United States would be held harmless from any and all claims, demands, actions, etc., arising from any person's use of or presence on the property. This property is utilized for park purposes.

d. By quitclaim deed dated 24 February 1984, GSA conveyed 32.34 acres to the Department of Housing, Commonwealth of Puerto Rico on Culebra Island which is now public housing. The deed contained no restrictions, reverter, recapture clauses.

e. By quitclaim deed dated 29 April 1988, GSA conveyed 155.9 acres on Culebra Island to the Municipality of Culebra, Puerto Rico. This deed contained no warranties, recapture or reverter clauses, but was subject to existing easements for public highways, roads, utilities, etc., and contained a hold harmless clause in favor of the United States. The site is being utilized for city facilities and is under development as a port.

5. Besides the areas mentioned above that were purchased or leased by the Navy, additional lands were used by the US Marine Crops starting as early as 1914. The Marine Corps used the land for large scale maneuvers and ordnance training exercises. Beginning in 1924 the Marine Corps leased most of the private property on Culebra, other than the town of Dewey, for these exercises. In June 1937 the 1st Marine Brigade, Fleet Marine Force began preparations for the acquisition of property for the 1938 Fleet Landing Exercise #4. These preparations culminated in December 1937 when the Commanding Officer of the Naval Aviation and Facilities, St. Thomas, Virgin Islands that the government leases for all privately owned leases on the island of Culebra had been secured.

DETERMINATION

Based on the foregoing Findings of Fact, the site, except for 87.5 acres recently transferred from the control of the Navy, has been determined to be formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program-Formerly Used Defense Sites established under 10 U.S.C. 2701, et seq.

_____ _____

Date

Michael J. Walsh
Brigadier General, USA
Commanding

Property Survey Summary Sheet
(Revised 2005)

PROPERTY SURVEY SUMMARY SHEET (Revised)
FOR
DERP-FUDS PROPERTY NO. I02PR0068
Culebra, Puerto Rico
9 May 1991 (Original)
June 2005 (Revised)

SITE NAME: Culebra, Puerto Rico

LOCATION: The island of Culebra is located some 17 miles east of the island of Puerto Rico in the vicinity of latitude/longitude coordinates 18° 19' north and 65° 17.5' west.

SITE HISTORY: The US Government acquired property on Culebra beginning in 1903. The Navy initially used portions of the island as a coaling and communications station. The Marines also conducted some training there. Beginning in 1914 the Marine Corps started using the island and the surrounding cayos (small islands) for landing exercises, maneuvers, and ordnance training. These Marine operations were repeated in 1922 and 1924. Large scale fleet landing exercises in these same areas, involving both the Navy and Marine Corps, were initiated in 1934 and continued until shortly after World War II. The Navy primarily used the Northwest Peninsula for ship gunnery training, while the Marines trained on the remainder of the property.

During the Vietnam era the Navy continued to use the island and surrounding cayos for both ship and aerial ordnance training. Navy operations were terminated in 1975 and the property was eventually transferred to the Department of the Interior, US Fish and Wildlife Service (USFWS), the Puerto Rico Department of Natural Resources, the Puerto Rico Port Authority, the municipality of Culebra, and the Department of Housing, Commonwealth of Puerto Rico.

SITE VISIT: The initial site visit was conducted in 1991 by Mr. Ivan Acosta, CESAJ-PD-EE, and Mr. Henry Morales, USFWS National Wildlife Refuge representative. Mr. Morales is a native of the island and is familiar with the affected areas. A letter from Mr. Kelly Wolcott, Refuge Manager, describing the areas of concern was also provided.

CATEGORIES OF HAZARDS: Categories of potential hazards are MMRP and HTW.

PROJECT DESCRIPTION: There are fourteen potential projects in the area (one HTW project and thirteen MMRP sites).

a. HTW. (Project 00) There is a wetland area in the vicinity of the USFWS facility that may contain toxic materials. The site was down gradient of a reported motor pool and had anecdotal evidence of toxic material being dumped or drained into the area. It requires investigation beyond the scope of the preliminary assessment.

b. MMRP. There are thirteen MMRP project areas on Culebra or its surrounding cayos that could still contain unexploded ordnance. The areas are summarized below and shown on the inclosed drawings (Plates No. 1 and No. 2).

Project 02- Culebra and Cayos
Project 03- Flamingo Bay Water Area
Project 04- Flamingo Lagoon Maneuver Area
Project 05- Mortar and Combat Range Area
Project 06- Artillery Firing Area
Project 07- Culebrita Artillery Impact Area
Project 08- Cayo Norte Impact Area
Project 09- Soldado Point Mortar and Bombing Areas
Project 10- Defensive Firing Area #1
Project 11- Defensive Firing Area #2
Project 12- Luis Pena Channel Water Areas
Project 13- Cayo Luis Pena Impact Areas
Project 14- Airfield and Camp Area

AVAILABLE STUDIES AND REPORTS: Available maps and historical records are on file in the I02PR0068- Culebra, Puerto Rico Backup File at Jacksonville Office (CESAJ-DP-S).

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 or Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

Project Summary Sheet-HTW
(Revised 2005)

PROJECT SUMMARY SHEET
FOR
DERP-FUDS HTW PROJECT NO. I02PR006800
CULEBRA, PUERTO RICO
SITE NO. I02PR0068
9 May 1991
Revised June 2005

PROJECT DESCRIPTION: The US Fish and Wildlife Service stated that the wetland area near their building facility was used as a debris and oil dumping site by the Navy. The general vicinity of this site is shown as **Area 00** on Plates No. 1 and No. 2. No documentation remains as to when the aforementioned activity occurred. Also there is an unidentified underground concrete tank uphill from the wetland area that has been tentatively identified as a septic tank. No testing has been done on this site.

PROJECT ELIGIBILITY: Records indicate that building uphill from the area in question was used by the Navy as a wash rack for their vehicles and as a fuel and oil storage facility. These places were subsequently closed when the Navy disposed of the sites. Since this site was disposed of in 1975, there is a strong possibility that contamination may still be present.

POLICY CONSIDERATIONS: There is no policy which prohibits the proposal of this project. Currently Department of Defense (DoD) policy permits remedial investigation and action at sites affected by former DoD use.

EPA Form 2070-12: Included with original submittal.

PROPOSED ACTIVITIES: This potential project should be referred to CESAS for negotiation with regulatory agencies and a determination of further action.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

Project Summary Sheets-MMRP
(Revised 2005)

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006802
Culebra Island, Puerto Rico
Property No. I02PR0068
9 May 1991
Revised June 2005

PROJECT DESCRIPTION: Ordnance detection and removal actions are needed for various sites on the island and adjacent cayos. The sites in questions are former Navy bombing and gunnery training ranges. These sites include the Northwest (Flamenco) Peninsula area on the island of Culebra and several adjacent cayos. The Northwest Peninsula is about 572 acres and the cayos in aggregate are around 60 acres. Locations are shown as **Area 02** on Plates No. 1 and No. 2. The impact areas are accessible to the public and sporadic markings and munitions components have been found. The USFWS personnel stated that shell fragments had been collected from the sites and that unexploded rounds had been found. The range areas are generally used for camping, hunting, scuba diving, fishing, and walking.

PROJECT ELIGIBILITY: Records and maps indicate that the bombing and gunnery training areas were used by the Navy and Marine Corps from the early 1900s until 1975.

Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: Current Department of Defense (DoD) policy permits remediation of DoD generated ordnance. The sites have not been beneficially used for ordnance-related purposes by the subsequent owners. The cayos, which had been leased, were returned to the US Fish and Wildlife Service.

Although the Northwest Peninsula bombardment and gunnery area is an eligible DERP-FUDS property, the provisions of Public Law 93-166 dictated that this tract could only be used for public park or public recreational purposes. Additionally, the law stipulated that the Northwest Peninsula should not be utilized for any purpose that would require decontamination at the expense of the United States.

PROPOSED ACTIVITIES: Continuation of the site investigation and remediation activities that were initiated in 1997.

RAC: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006802	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☒
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☒
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Navy and Marine Corps for ordnance firing activities during various training exercises. Unexploded ordnance items have been found in these locations.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	_0_

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **_10_**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on the land and in the surrounding waters of these locations.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>A heavily used public park and beach and a private resort are in the immediate vicinity of this site.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the structures on the beach, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) _5_

Describe the site accessibility. *There are no restrictions on for accessing the various cayos around Culebra. The former Northwest Peninsula bombardment and impact area has a fence separating it from the nearby public use areas, however, there is an open gate at one that allows access..*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) _5

Describe the site dynamics: *Seasonal surf action regularly causes changes in the sea floor abound the cayos. The US Fish and Wildlife Service maintains a bird refuge on the Northwest Peninsula that does require periodic maintenance.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_30__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that these sites were heavily used by the Navy and Marine Corps for gunnery and bombardment areas primarily from 1934to 1975. Unexploded ordnance items have been found on these locations.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006803
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Flamingo Bay Water Area** consists of about 195 acres on the north side of the island of Culebra, identified as **Area 03** on Plates No. 1 and No. 2. It is located immediately adjacent to the former Northwest Peninsula gunnery and bombardment area. Errant munitions have been observed in the bay. The Marine Corps also carried out amphibious training and ordnance firing in the bay. Therefore, there is a potential for MMRP contamination in this area.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. Unexploded ordnance has been found at this site. Portions of this site fall beyond the 100-yard limitation cited in ER 200-3-1 (10 May 04).

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006803	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☒
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☒
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Marine Corps for amphibious and other training exercises. Additionally, the site is located immediately adjacent to a Navy gunfire and bombardment area. Errant munitions could be present in the water. Unexploded ordnance items have been found in the area.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	_0_

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **_10_**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE	
On the surface	5	☐
Within tanks, pipes, vessels, or other confined areas	4	☐
Inside walls, ceilings, or other building/structure	3	☐
Subsurface	2	☒

Location (enter the single largest value checked) _2_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist in the sand and coral deposits of this bay.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE	
Less than 1,250 feet	5	☒
1,250 feet to 0.5 mile	4	☐
0.5 mile to 1.0 mile	3	☐
1.0 mile to 2.0 Miles	2	☐
Over 2 miles	1	☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>A heavily used public park and beach and a private resort are in the immediate vicinity of this site.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the structures on the beach, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *There are no restrictions on entering the waters of the bay for recreation activities.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) 5

Describe the site dynamics: *Seasonal surf action regularly causes changes in the bay bottom.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_27__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this site is immediately adjacent to a heavily used Navy gunnery and bombardment area that was used mainly from 1934to 1975. Unexploded ordnance items have been found in the area.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006804
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Flamingo Lagoon Maneuver Area** is located between Flamingo Bay and the town of Dewey. The site, identified as **Area 04** on Plates No. 1 and No. 2, consists of about 550 acres located on the north side of the island of Culebra. The Marine Corps had set up camps and ordnance firing points in this area. Impact areas for these firing points were in Flamingo Bay and on the Northwest Peninsula. Small arms firing may have also occurred on this site. There were no targets or impact areas located in this area. There is potential for MMRP contamination in this area.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. Unexploded ordnance has been found nearby this site.

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006804	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☒
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☒
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Marine Corps ordnance training exercises. Additionally, the site is located immediately adjacent to a Navy gunfire and bombardment area. Errant munitions could be present in the area. No unexploded ordnance items have been reported in the area.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	_0_

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **_10_**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _2_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist in the lagoon or land areas.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>A heavily used public park and beach and a private resort are in the immediate vicinity of this site.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the structures on the beach, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *There are no restrictions on entering this area. The main road to the Flamingo Beach recreational area runs alongside this site.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) 5

Describe the site dynamics: *Portions of this tract are currently listed for sale for potential development. Some resorts have already been built here.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_27__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this site is immediately adjacent to a heavily used Navy gunnery and bombardment area that was used mainly from 1934to 1975. Unexploded ordnance items have been found nearby but not necessarily on this tract.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006805
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Combat and Mortar Range Area** is located in the north central portion of the island of Culebra. The site, identified as **Area 05** on Plates No. 1 and No. 2 consisting of about 2,842 acres, was the main on-island area used by the Marine Corps for mortar, small arms, and some artillery training from 1922 through the late 1940s. Impact areas were set up throughout the site, however Cerro Balcon was the primary one. Unexploded ordnance and ordnance fragments have been reportedly found in this area. There is potential for additional MMRP contamination.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. Unexploded ordnance has been found in this area.

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006805	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Marine Corps for mortar and combat range training areas. Additionally, the site falls within the safety fan of the artillery firing range. Unexploded ordnance items have been reported in the area.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	_0_

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **_10_**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist either on the surface or subsurface.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>This tract contains several residential areas and the municipal waste management areas.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides residential areas, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) _5_

Describe the site accessibility. *There are no restrictions other than private fences.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) _5

Describe the site dynamics: *Portions of this tract are currently being developed with others listed for sale for potential development.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_30__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this tract was the primary area used the Marine Corps for ordnance training on the island of Culebra. Unexploded ordnance items have been reportedly found here.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006806
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Artillery Firing Area** is located on the eastern end of the island of Culebra. The site consisting of some 826 acres is identified as **Area 06** on Plates No. 1 and No. 2. The Marine Corps established artillery firing points in this vicinity for the various training exercises from 1922 through the late 1940s. Some small arms training may have also taken place is this area. This area is immediately to the east of the Mortar and Combat Range Area. There is a slight potential for MMRP contamination.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been no reports of unexploded ordnance being found in this area.

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 3 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006806	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	3	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☐
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	_1_	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified this portion of Culebra as having been used by the Marine Corps for artillery firing points. Additionally, the site could have been used for small arms firing. Unexploded ordnance items have not been reported in the area.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **1**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☐	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☒	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist either on the surface or subsurface.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>This tract contains several residential areas.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides residential areas, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) _5_

Describe the site accessibility. *There are no restrictions other than private fences.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) _5

Describe the site dynamics: *Portions of this tract are currently being developed with others listed for sale for potential development.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_30__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☒	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this tract was used the Marine Corps for location of their artillery firing positions on the island of Culebra. There is some indication that some incidental small arms firing may have also occurred on this tract. The tract is immediately adjacent to the main mortar and combat range area on Culebra. Unexploded ordnance items have not been reported here.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006807
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Culebrita Artillery Impact Area** is located on the northern portion of the island of Culebrita. The site consisting of some 375 acres is identified as **Area 07** on Plates No. 1 and No. 2. This area was the primary Marine Corps artillery impact area for operational artillery firing during the various training exercises from the mid 1930s through the late 1940s. Portions of the area have also been identified as Navy aerial strafing targets. The Navy also carried out torpedo exercises at Marks Point. There is potential for MMRP contamination remaining at this site.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been reports of unexploded ordnance being observed in this area. Portions of this site fall beyond the 100-yard limitation cited in ER 200-3-1 (10 May 04).

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006807	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified this portion of Culebrita as having been the main artillery impact area used by the Marine Corps during all their training exercises . They also used it as a boat firing target. Additionally, the site was used as a Navy aerial strafing target. Some of the bluffs on Culebrita were used to test torpedoes. Immediately adjacent to Culebrita is Ladrone Cay that was used by the Navy as a bombing target. Unexploded ordnance items have not been reported on the land, however ordnance debris has been reported there. Numerous ordnance items have been observed in the waters immediately offshore from Ladrone.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist either on the surface or subsurface. Items could also be present in the bottom of the protected harbor area.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☒
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>The nearest inhabited locations are on the main island of Culebra about one mile away. The main bay on Culebrita is a heavily used, protected anchorage for various boats using the area.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☐
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☒
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) _2_

Narrative: *Residential areas are located on the main island of Culebra. An historic lighthouse is the only structure on Culebrita. The protected anchorage is heavily used by boats sailing in this part of the Caribbean. At any given time there could be 6 to 10 boats anchored there.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) _5_

Describe the types of buildings: *Residential and commercial areas are within two miles of the site across the channel separating Culebrita from Culebra. Boaters anchored in the bay use their craft as residences.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) _5_

Describe the site accessibility. *There are no restrictions.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) _5

Describe the site dynamics: *The US Fish and Wildlife Service presently have plans to develop a trail system on the island. Additionally, a local preservation group is encouraging sightseeing to the lighthouse site.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_27__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this tract was used by the Marine Corps as an artillery impact area and a boat gun firing site for their training exercises on Culebra. Additionally the Navy carried out aerial strafing operations on a portion of the site. The immediately adjacent Cayo Ladrone was used by the Navy as an aerial bombing target. Unexploded ordnance items have not been reported Culebrita, but they have been observed in the waters around Cayo Ladrone. Ordnance debris has been found on Culebrita.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006808
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Cayo Norte Impact Area** is located on Cayo Norte immediately off the northern coast of Culebra. The site consisting of some 306 acres is identified as **Area 08** on Plates No. 1 and No. 2. This area was established in the earliest Marine Corps training exercises as an impact area for operational artillery firing. Cayo Norte is also immediately adjacent to other cayos that were used for Navy aerial ordnance training. There is potential for MMRP contamination remaining at this site.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been reports of unexploded ordnance being observed in this area.

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 3 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006808	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	3	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☐
Practice ordnance (w/o spotting charges)	0	☐
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified that Cayo Norte had been leased by the Marine Corps during their training exercises for use as an artillery impact area . Additionally, the site falls within the safety area of an adjacent cayo that was used by the Navy as a bombing target. Unexploded ordnance items have not been reported on the cayo, however, munitions have been reported in the water near its eastern end.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _2_

What evidence do you have regarding the location of MMRP? *<u>There have not been any reports of munitions being found on Cayo Norte.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☐
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☒
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _2_

What are the nearest inhabited structures/buildings? *<u>The nearest inhabited locations are on the main island of Culebra. There are no convenient anchorage areas around Cayo Norte.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *There are no permanent buildings on Cayo Norte. It has been used primarily for livestock grazing. Residential areas are located on the main island of Culebra.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site across the channel separating Cayo Norte from Culebra.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) _5_

Describe the site accessibility. *This is a privately owned island, however, there are no barriers.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☐
Not anticipated	0 ☒

Site Dynamics (enter the single largest value checked) _0

Describe the site dynamics: *Reportedly the island is for sale, however, any change in future use is not known.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	19

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☒	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

==========

PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this tract was used by the Marine Corps as an artillery impact area for their training exercises on Culebra. Additionally the Navy carried out aerial bombing on a nearby cayo. Unexploded ordnance items have not been reported here. Ordnance debris has been reported in the waters to the east of the site.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006809
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Soldado Point Mortar and Bombing Areas** are located on southeast tip of the Southeast Peninsula on the island of Culebra. The site consisting of some 328 acres is identified as **Area 09** on Plates No. 1 and No. 2. The site was utilized by the Marine Corps for boat-to-shore mortar firing and aerial bombing and strafing during the various training exercises from the mid 1930s through the late 1940s. There is a potential of MMRP contamination remaining at this site.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been no reports of unexploded ordnance being observed in this area. Portions of this site fall beyond the 100-yard limitation cited in ER 200-3-1 (10 May 04).

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 2 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006809	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	2	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☒
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Marine Corps for aerial bombardment and mortars fired from boats during their various training exercises on Culebra. Unexploded ordnance items have not been reported in the area.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	_0_

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **_10_**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _2_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on the land or in the sand and coral deposits of bays around this point.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>A public park, a snorkeling area, beaches, and two boat anchorage areas are located on this site. There nearest inhabited residences and businesses are about one-half mile distant.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the nearby structures, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *There are no restrictions for using the beach areas or entering the surrounding waters for recreation activities.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☐
Not anticipated	0 ☒

Site Dynamics (enter the single largest value checked) 0

Describe the site dynamics: *Seasonal surf action could cause changes in the bottoms of the surrounding waters. The site is controlled by the Puerto Rico Department of Natural Resources and residential development is not supposed to be allowed on the site. Public area structures could be developed at some point in the future.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_22__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☒	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this site is immediately adjacent to a heavily used Navy gunnery and bombardment area that was used mainly from 1934to 1975. Unexploded ordnance items have been found in the area.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006810
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Defensive Firing Area #1** is located southeast of the town of Dewey on the island of Culebra. The site consisting of some 547 acres is identified as **Area 10** on Plates No. 1 and No. 2. This tract was one of the areas that the Marine Corps used during the various training exercises from the 1920s through the late 1940s for practicing defensive firing. Marine units stationed on the high ridge would practice firing mortars onto the southern shore area. It also contains one of the original Navy gun mount sites. There is potential for MMRP contamination remaining at this site.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been no reports of unexploded ordnance being observed in this area. Portions of this site fall beyond the 100-yard limitation cited in ER 200-3-1 (10 May 04).

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 2 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006810	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	2	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Marine Corps for firing mortars from the higher ground onto the beach area during their various training exercises on Culebra. Unexploded ordnance items have not been reported in the area. This tract also includes the site of one the former Navy gun mounts.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE	
On the surface	5	☐
Within tanks, pipes, vessels, or other confined areas	4	☐
Inside walls, ceilings, or other building/structure	3	☐
Subsurface	2	☒

Location (enter the single largest value checked) _2_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on the land or in the sand and coral deposits of waters along the southern shore of this tract.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE	
Less than 1,250 feet	5	☒
1,250 feet to 0.5 mile	4	☐
0.5 mile to 1.0 mile	3	☐
1.0 mile to 2.0 Miles	2	☐
Over 2 miles	1	☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>Residential areas have been developed on the hills overlooking the mortar impact areas.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the nearby structures, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *There are no restrictions for using the beach areas or entering the surrounding waters for recreation activities.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☐
Not anticipated	0 ☒

Site Dynamics (enter the single largest value checked) 0

Describe the site dynamics: *Seasonal surf action could cause changes in the bottoms of the surrounding waters. The water area adjacent to this shore is generally not used for recreational activities. Additional homes could be developed in the area of the firing points, but development is not expected in the impact zone.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_22__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☒	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

==========

PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation indicates that this site is immediately adjacent to a heavily used Navy gunnery and bombardment area that was used mainly from 1934to 1975. Unexploded ordnance items have been found in the area.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006811
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Defensive Firing Area #2** is located northwest of the town of Dewey on the island of Culebra. The site consisting of some 719 acres is identified as **Area 11** on Plates No. 1 and No. 2. This tract was one of the areas that the Marine Corps used during the various training exercises from the 1920s through the late 1940s for practicing defensive firing. Marine units stationed on the high ridge would practice firing mortars onto the southern shore area. They also fired artillery from this area onto Cayo Luis Pena and the cayos west of Culebra. This area also served as the backdrop for beach mortar barrage firing from offshore boats. It also contains one of the original Navy gun mount sites. Additionally, it is located immediately adjacent to the former Northwest Peninsula gunnery and bombardment area. There is potential for MMRP contamination remaining at this site. The water areas immediately offshore from this land tract are covered under DERP-FUDS MMRP PROJECT NO. I02PR006812.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been reports of unexploded ordnance being observed in this area.

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006811	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Historical documents identified the site as having been used by the Marine Corps for firing mortars from the higher ground onto the beach area during their various training exercises on Culebra. Portions of the site were also used as an impact area for barrage mortar firing from boats. Additionally, the site is located immediately adjacent to the former Northwest Peninsula bombardment area. Unexploded ordnance items have been reported in the area. This tract also includes the site of one the former Navy gun mounts.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on the land of this tract.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>Residential areas have been developed on the hills overlooking the mortar impact areas.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the nearby structures, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *There are no restrictions for using the beach areas or entering the surrounding waters for recreation activities.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) 5

Describe the site dynamics: *Portions of this tract are currently offered for sale. Development could occur throughout the site. The immediate offshore waters are part of the Luis Pena Water Refuge that are covered under a separate project.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_30__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☒	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documents identified the site as having been used by the Marine Corps for firing mortars from the higher ground onto the beach area during their various training exercises on Culebra. The Marines also fired artillery from the area onto the surrounding cayos. Portions of the site were also used as an impact area for barrage mortar firing from boats. Additionally, the site is located immediately adjacent to the former Northwest Peninsula bombardment area. Unexploded ordnance items have not been reported in the area. This tract also includes the site of one the former Navy gun mounts.

The waters of the Luis Pena Water Refuge, where unexploded munitions have been reported, is immediately offshore from this site. However, it is covered under a separate project of this inventory project report.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006812
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Luis Pena Channel Water Areas** are located along the southern shore of Culebra, northwest of the town of Dewey. The site consisting of some 835 acres is identified as **Area 12** on Plates No. 1 and No. 2. It consists of water areas that are immediately adjacent to locations that were used for ordnance activities on the island of Culebra. These ordnance use of these areas are detailed in DERP-FUDS MMRP Project Nos. I02PR006802, I02PR006811, and I02PR006813 that are all part of this Inventory Project Report. The Luis Pena Channel Water Areas basically consist of the waters that make up the Luis Pena Water Refuge, which is managed by the Puerto Rico Department of Natural Resources. Munitions intended for the onshore areas listed above have been reported in this channel area. The site is heavily used for recreational activities including swimming, fishing, snorkeling, scuba diving, and boat. Additionally, the site serves as an anchorage area.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been reports of unexploded ordnance being observed in this area. Portions of this site fall beyond the 100-yard limitation cited in ER 200-3-1 (10 May 04).

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006812	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☒
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *This site, located in the southern waters along the northwester portion of Culebra, was immediately adjacent to the Northwest Peninsula bombardment and impact area. Errant munitions from that area have been reported here. Sizes vary from large high explosive bombs to 3 and 5-inch rounds. Historical documents identified the site as having been used by the Marine Corps for firing mortars from the higher ground onto the beach area during their various training exercises on Culebra. Portions of the site were also used as an impact area for barrage mortar firing from boats.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on or in the bottom of this channel area.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>Residential areas have been developed on the hills overlooking this area. Several beaches are also located along this reach of shore.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the nearby structures, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *There are no restrictions for using the beach areas or entering the surrounding waters for recreation activities.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) 5

Describe the site dynamics: *These waters are heavily used for recreational activities. The Puerto Department of Natural Resources has begun a program for marker buoy installation, both to protect the corral reef and identify safe anchoring spots. Seasonal surf action could cause movement of the sand bottom or, in extreme weather conditions, ordnance items.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_30__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation and maps indicate this site is located immediately adjacent to the former Northwest Peninsula bombardment area that was heavily used mainly from 1934to 1975.

Historical documents identified the site as having been used by the Marine Corps for firing mortars from the higher ground onto the beach area during their various training exercises on Culebra. Portions of the site were also used as an impact area for barrage mortar firing from boats. Unexploded ordnance items have been reported in the area.

Wave and surf action have been known to cause movement of munitions in this area, however, others are firmly affixed to the coral reef.

This area is heavily used for water recreation activities that include swimming, fishing, snorkeling, scuba diving, and boating.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006813
Culebra, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Cayo Luis Pena Impact Areas** are located on the Cayo Luis Pena , which is situated west of the main island of Culebra. The site consisting of some 864 acres is identified as **Area 13** on Plates No. 1 and No. 2. This acreage includes both the island and the surrounding waters that could have been affected by the military operations. Cayo Luis Pena was one of the areas that the Marine Corps used during the various training exercises from the 1920s through the late 1940s for munitions firing. Marine units stationed on Culebra fired artillery onto the northern areas. They also used the entire area for aerial bombing and gunnery practice. One historical document indicated that the Marines had also dropped napalm onto Cayo Luis Pena. Additionally, it is located in the vicinity of the former Northwest Peninsula gunnery and bombardment area. There is potential for MMRP contamination remaining at this site.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been reports of unexploded ordnance being observed in this area. Portions of this site fall beyond the 100-yard limitation cited in ER 200-3-1 (10 May 04).

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 1 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006813	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	1	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☒
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	10	

What evidence do you have regarding conventional unexploded ordnance? *Cayo Luis Pena was used a bombing and gunnery range and an artillery impact area by the Marine Corps during its various training exercises on Culebra. Additionally the cayo is located in the immediate vicinity of the Northwest Peninsula that served as the main military bombardment and impact area.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on or in the land of this area. Additionally items could be located in the shallow waters that surround the cayo.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>Residential areas have been developed immediately across the channel from this cayo.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the nearby structures, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are on and within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☒
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☐
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 5

Describe the site accessibility. *The site, which is under the control of the US Fish and Wildlife agency, does not have barriers for access.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) 5

Describe the site dynamics: *US Fish and Wildlife allows recreational activities and anchorage in the waters around the cayo and may need to install additional safety and mooring buoys. Surf action could change the bottom conditions of the waters.*

Additionally, hiking trails could be develop on the island.

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_30__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☒	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

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PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation and maps indicate this area was used the Marine Corps as a bombing and gunnery range and as an artillery impact area. Additionally, it is located in the immediate vicinity of the Northwest Peninsula that was the main bombardment and impact area during the Navy and Marine training exercises. MMRP items have been reported in the waters around the cayo.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT NO. I02PR006814
Culebra Island, Puerto Rico
Property No. I02PR0068
June 2005

PROJECT DESCRIPTION: The **Airport and Camp Area** is located along the northern shore of the Great Harbor (Ensenada Honda) of the main island of Culebra. The site consisting of some 416 acres is identified as **Area 14** on Plates No. 1 and No. 2. The Navy and Marine Corps air field and most of their encampments were located in this area. Additionally, small arms ranges were also associated with this area. There is potential for MMRP contamination remaining at this site.

PROJECT ELIGIBILITY: Documents and maps of the area indicate the site was used by the Marine Corps and Navy in conjunction with operational training activities. Any ordnance at the site is assumed to be the result of Department of Defense activities (in the absence of any evidence to the contrary) and is eligible for removal under DERP-FUDS.

POLICY CONSIDERATIONS: The site has not been used for ordnance related purposes subsequent to DoD usage. There have been no reports of unexploded ordnance being observed in this area.

PROPOSED PROJECT: This INPR should be referred to CEHNC for a determination of further action.

RISK ASSESSMENT: A Risk Assessment Code (RAC) of 3 has been assigned to this site indicating further action by CEHNC. The RAC evaluation form is attached.

POINTS OF CONTACT: Jacksonville District, Mr. Robert Bridgers, CESAJ-DP-S, 904-232-3085 and Mr. Ivan Acosta, CESAJ-PD-EP, 904-232-1693.

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 10 May 2004)

Property Name:	Culebra	Rater's Name:	Tom Freeman
Property Location:	Puerto Rico	Phone Number:	314-331-8785
FUDS Property/Project #:	I02PR006814	District:	CEMVS
Property Type:	FUDS	Office Symbol:	ED-P
Score:	3	Date Completed:	April 2005

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMRP hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

PART I. Hazard Severity - Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	**VALUE**	
Projectiles, explosive (20 millimeter and larger)	10	☐
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuzes, boosters, bursters	6	☐
Practice ordnance (w/spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)	_1_	

What evidence do you have regarding conventional unexploded ordnance? *This area was the site of the Marine and Navy encampments and airport. There have been no reports of any unexploded ordnance in this area, except those that have been brought in from other areas of the island. The military did have small arms firing ranges in this area and small arms ammunition could still be present.*

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10 ☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10 ☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6 ☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4 ☐

Pyrotechnics (enter the single largest value checked) _0_

What evidence do you have regarding pyrotechnics? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; uncontainerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10 ☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8 ☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3 ☐

High explosives (enter the single largest value checked) _0_

What evidence do you have regarding bulk explosives? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

D. Bulk Propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized):

	VALUE
Solid or liquid propellants	6 ☐

Bulk Propellants (select 6 or 0) _0_

What evidence do you have regarding bulk propellants? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

E. Recovered Chemical Warfare Material (RCWM), Weaponized Industrial Chemicals and Radiological Material:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25 ☐
Chemical Agent Identification Sets	20 ☐
Radiological Materiel (If rad waste is identified, please call the HTRW-CX at (402) 697-2555)	15 ☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10 ☐
Riot Control Agents (vomiting, tear)	5 ☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? ***None***. *The investigation team did not uncover evidence that these materials were used on this site.*

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, Maximum of 61 **10**
Apply this value to Table 1 to determine Hazard Severity Category

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☐	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☒	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.

**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. <u>Hazard Probability</u> - The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DoD) site.

AREA, EXTENT, ACCESSIBILITY OF MMRP HAZARD (Check all that apply)

A. Locations of MMRP hazards:

	VALUE
On the surface	5 ☒
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒

Location (enter the single largest value checked) _5_

What evidence do you have regarding the location of MMRP? *<u>MMRP hazards could exist on or in the land of this area.</u>*

B. Distance to nearest inhabited location/structure likely to be at risk from MMRP hazard (road, park, playground, building etc.):

	VALUE
Less than 1,250 feet	5 ☒
1,250 feet to 0.5 mile	4 ☐
0.5 mile to 1.0 mile	3 ☐
1.0 mile to 2.0 Miles	2 ☐
Over 2 miles	1 ☐

Distance (enter the single largest value checked) _5_

What are the nearest inhabited structures/buildings? *<u>Residential areas have been developed on this site.</u>*

C. Number(s) of building(s) within a 2-mile radius measured from the MMRP hazard area, not the installation boundary.

	VALUE
26 and over	5 ☒
16 to 25	4 ☐
11 to 15	3 ☐
6 to 10	2 ☐
1 to 5	1 ☐
0	0 ☐

Number of buildings (enter the single largest value checked) 5

Narrative: *Besides the nearby structures, the main island town of Dewey is located within two miles.*

D. Types of Buildings (within 2 mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5 ☒
Industrial, warehouse, etc.	4 ☐
Agricultural, forestry, etc.	3 ☐
Detention, correctional	2 ☐
No buildings	0 ☐

Types of buildings (enter the single largest value checked) 5

Describe the types of buildings: *Residential and commercial areas are on and within two miles of the site.*

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5 ☐
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4 ☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3 ☒
Security Guard, but no barrier	2 ☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0 ☐

Accessibility (enter the single largest value checked) 3

Describe the site accessibility. *There are no restrictions in this area other than fences around the airport and private properties.*

F. Site Dynamics. This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5 ☒
Not anticipated	0 ☐

Site Dynamics (enter the single largest value checked) 5

Describe the site dynamics: *This area consists of some of the most heavily used portions of Culebra, other the town of Dewey. Continued development is expected.*

TOTAL HAZARD PROBABILITY VALUE (sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.	_28__

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY VALUE
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

***** Apply **Hazard Probability Level** to Table 3.

PART III. <u>Risk Assessment</u>. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☒	4 ☐	4 ☐	4 ☐	4 ☐

NONE (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMRP projects and the process to be followed for execution of project response actions.

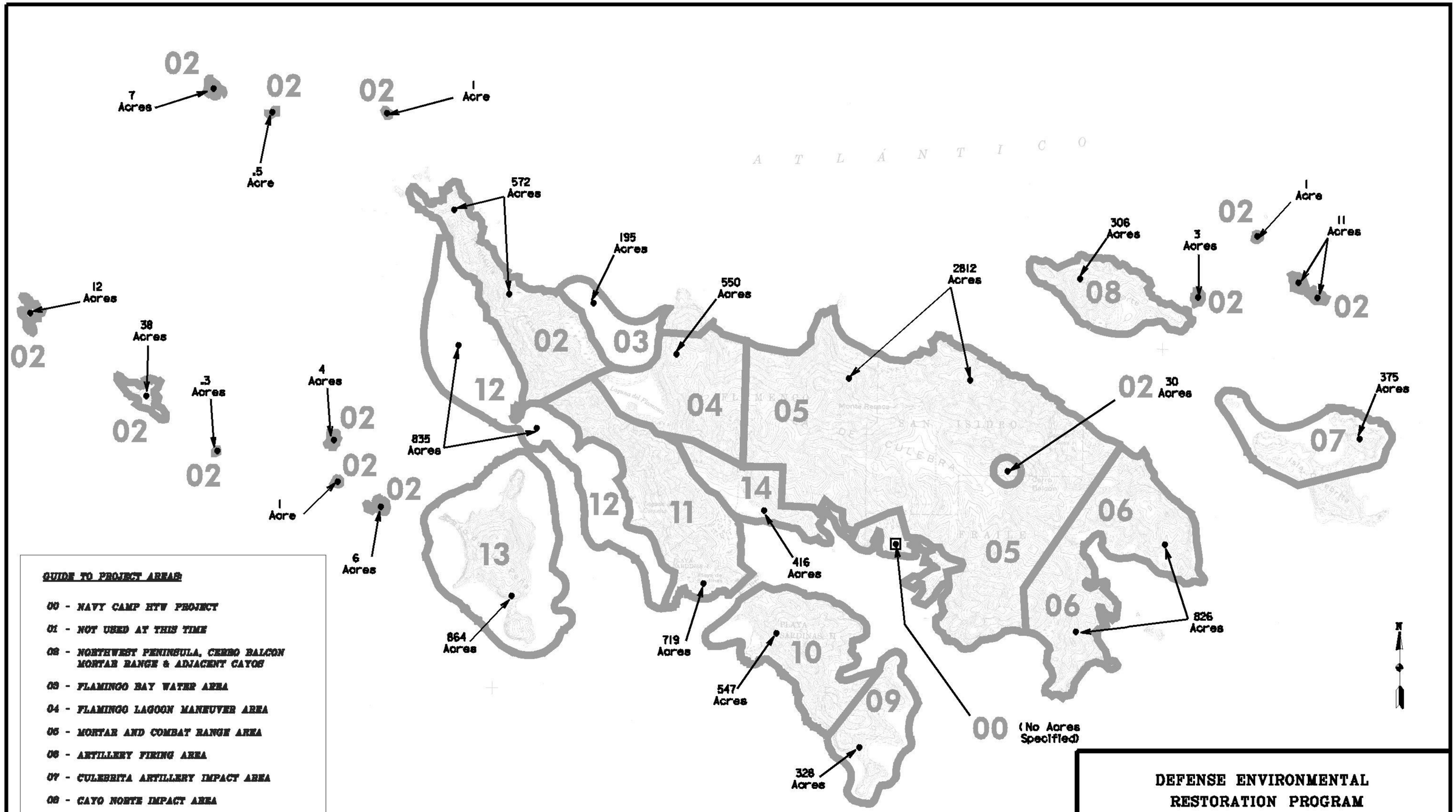
RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

==========

PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical documentation and maps indicate this area was the primary location for the Marine and Navy encampments and the air field. Some small arms ranges were also set up in this area. No MMRP items have bee reported found in this area, other than the ones brought in from other areas of Culebra. The possibility remains that intact small arms rounds could be found there.

Revised INPR
Report Plates



GUIDE TO PROJECT AREAS:

- 00 - NAVY CAMP HTW PROJECT
- 01 - NOT USED AT THIS TIME
- 02 - NORTHWEST PENINSULA, CERRO BALCON MORTAR RANGE & ADJACENT CAYOS
- 03 - FLAMINGO BAY WATER AREA
- 04 - FLAMINGO LAGOON MANEUVER AREA
- 05 - MORTAR AND COMBAT RANGE AREA
- 06 - ARTILLERY FIRING AREA
- 07 - CULEBRITA ARTILLERY IMPACT AREA
- 08 - CAYO NORTE IMPACT AREA
- 09 - SOLDADO PT. MORTAR AND BOMBING AREAS
- 10 - DEFENSIVE FIRING AREA #1
- 11 - DEFENSIVE FIRING AREA #2
- 12 - LUIS PENA CHANNEL WATER AREAS
- 13 - CAYO LUIS PENA IMPACT AREAS
- 14 - AIRPORT AND CAMP AREA

0 4000 8000

APPROXIMATE SCALE IN FEET

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM

FORMERLY USED DEFENSE SITE

SITE NO. I02PR0068

CULEBRA, PUERTO RICO

INVENTORY PROJECT REPORT

PROJECT AREAS

PROJ. DATE: APRIL 2005	DATE OF MAP: 2005	PLATE NO. 1
23-JUN-2005 14:03		

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GUIDE TO PROJECT AREAS

00 - NAVY CAMP HTW PROJECT

01 - NOT USED AT THIS TIME

02 - NORTHWEST PENINSULA, CERRO BALCON MORTAR RANGE & ADJACENT CAYOS

03 - FLAMINGO BAY WATER AREA

04 - FLAMINGO LAGOON MANEUVER AREA

05 - MORTAR AND COMBAT RANGE AREA

06 - ARTILLERY FIRING AREA

07 - CULEBRITA ARTILLERY IMPACT AREA

08 - CAYO NORTE IMPACT AREA

09 - SOLDADO PT. MORTAR AND BOMBING AREAS

10 - DEFENSIVE FIRING AREA #1

11 - DEFENSIVE FIRING AREA #2

12 - LUIS PENA CHANNEL WATER AREAS

13 - CAYO LUIS PENA IMPACT AREAS

14 - AIRPORT AND CAMP AREA

0 4000 8000

APPROXIMATE SCALE IN FEET

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM

FORMERLY USED DEFENSE SITE

SITE NO. I02PR0068

CULEBRA ISLAND, PUERTO RICO

INVENTORY PROJECT REPORT

PROJECT AREAS

PROJ. DATE: APRIL 2005	DATE OF MAP: 2005	PLATE NO. 2
23-JUN-2005 15:36		

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Revised INPR Checklist

Worksheet B-3. Inventory Project Report (INPR) Checklist
(Use space at bottom of this worksheet for continuation)

Checklist Preparer:	Date: 9 May 2005
Name: Tom Freeman	Title: Team Leader
District: St. Louis	Phone Number: (314) 331- 8785
Email address: tom.freeman@us.army.mil	
Property Information:	
Property Name: **Culebra Island**	Property #: **I02PR0068**
Previous Names, if any:	
Former Service: Army	
Property Location (Section, Township, Range): Approximately 17 miles east of the island of Puerto Rico	
Street: NA	
City: Dewey	County: Culebra State: PR
Latitude (D/M/S): N 18° 19’	Longitude (D/M/S): W 65° 17’ 30”
Current Use (residential, commercial, etc.): Island community, park, and recreational areas.	
Property Owner Information:	
Name: Various, including Commonwealth of Puerto Rico, US Fish and Wildlife Service, and private individuals.	
Address (if other than above):	
Street:	
City:	
Phone Number:	County: State:

Indicate the status of the following checklist items in determining the completeness of the INPR. Provide a narrative in the comments section below to explain, and keyed to, the shaded boxes checked:

		Yes	No	NA
Property Document Search:				
	Were the following records available and used in the preparation of the INPR?			
1.	Archive records	X		
2.	Site Maps, including facility as-built drawings	X		
3.	Aerial or ground photographs	X		
4.	Prior studies, documents, reports, property contamination records, or public/private sampling data	X		
5.	Compliance orders issued to current or past owners/operators		X	
6.	Real estate records, deeds, or property transfer records	X		
7.	Local historical societies and public libraries	X		
8.	EPA/State environmental records or reports	X		
9.	EOD incident reports	X		
10.	Previous landowner(s)	X		

Indicate the status of the following checklist items in determining the completeness of the INPR. Provide a narrative in the comments section below to explain, and keyed to, the shaded boxes checked:

		Yes	No	NA
Property Visit:				
	Indicate whether the following have been contacted and interviewed to obtain information.			
11.	Current landowner(s)	X		
12.	Neighbors		X	
13.	Previous landowner(s)		X	
14.	Prior employee(s)		X	
15.	Federal agencies, including regulatory agencies	X		
16.	State agencies, including regulatory agencies	X		
17.	Local agencies, including regulatory and law enforcement agencies	X		
18.	Other available sources	X		
19.	Was access to the property possible (right of entry provided by landowner)?	X		
20.	Was the property physically visited?	X		
21.	Was access sufficient to allow for a thorough property inspection?	X		
22.	Was access sufficient to identify potential hazards?	X		
23.	Did regulatory agencies accompany USACE on the property visit?	X		
24.	Did the landowner accompany USACE on the property visit?	X		
25.	Was there evidence of a release of hazardous material or use/disposal of military munitions during DoD control?	X		
26.	Was there evidence of a release of potential DoD hazardous material into a public or private drinking water supply? [1]		X	
27.	Is there evidence of a release into a public or private drinking water supply due to deterioration of the system through ordinary use?		X	
28.	Is there evidence of a release from products that are part of the structure of, and result in exposure within, residential buildings or businesses or community structures? [2]		X	
29.	Is some other program actively involved with the property (i.e., another Federal, state, or tribal program)?		X	
30.	Is there evidence that activities by non-DoD parties at the property may be the source of potential contamination?		X	
31.	Was information on hazards found at similar types of FUDS properties considered in identifying potential hazards at this property?	X		

[1] This can be determined by reviewing public water supply sampling data. Provide discussion of how it was determined to be release due to DoD activities rather than by current or past owners/operators.
[2] This question is from the EPA Pre-CERCLIS Screening Assessment Checklist/Decision Form, EPA-540-F-98-039 *"Improving Site Assessment: Pre-CERCLIS Screening Assessments."*

Indicate the status of the following checklist items in determining the completeness of the INPR. Provide a narrative in the comments section below to explain, and keyed to, the shaded boxes checked:

		Yes	No	NA
32.	Were site maps compared to actual conditions during the site visit?	X		
33.	Were photographs taken?	X		
34.	Were property owners advised to contact USACE if evidence of potential hazards is found later?	X		
35.	Was a trip report of the property visit prepared?	X		
Property Eligibility Determination (refer to Chapter 3)				
36.	Is the property Categorically Excluded?		X	
37.	Are there release, hold harmless, "as-is", or indemnification clauses in deeds or property transfer documents that limit DoD liability?	X		
38.	Is there evidence of this property being a Third Party Site?		X	
39.	Is the property eligible under FUDS?	X		
40.	If necessary, has a "***Categorical Exclusion or Ineligible Property***" worksheet been prepared (Worksheet B-1)			X
FUDS Property Screening:				
41.	Was a CERCLA Preliminary Assessment completed?			
42.	Was a RAC Worksheet prepared for the property?	X		
Project Eligibility Determination (refer to Chapter 3):				
43.	Have all typical hazards been investigated for possible occurrence at this type of property?	X		
44.	Were hazards identified?	X		
45.	Are identified hazards of DoD Origin?	X		
46.	If identified hazards were of non-DoD origin, has the lead regulatory agency been informed? (Provide name, phone number, date)			X
47.	Is the current owner under a RCRA or CERCLA clean-up order?		X	
48.	Has the "right of first refusal" been exercised by an adjacent DoD installation?			X
49.	Is there evidence of beneficial use?		X	
50.	Are there other policy considerations against recommending a project?		X	
51.	Are eligible FUDS projects recommended? (If yes, identify projects below)		X	
INPR Preparation and Review:				
52.	Is the INPR prepared consistent with INPR content Matrix (Table B-2)	X		
53.	Is the INPR Property Survey Summary Sheet consistent with Table B-3?	X		
54.	Is the Project Summary Sheet(s) consistent with Table B-4			X
55.	If appropriate, has a ***"BD/DR Project Summary Sheet Checklist"*** been prepared? (see Worksheet B-2)			X
56.	If the INPR recommends a PRP/HTRW project, has the PRP District reviewed the INPR? (See Figure B-1)			X
57.	If the INPR recommends a PRP/HTRW project, has the HTRW Center of			X

Indicate the status of the following checklist items in determining the completeness of the INPR. Provide a narrative in the comments section below to explain, and keyed to, the shaded boxes checked:

		Yes	No	NA
	Expertise reviewed the INPR? (See Figure B-1)			
58.	If the INPR recommends a MMRP or PRP/MMRP project, has the MM Center of Expertise reviewed the INPR? (See Figure B-1)	X		
59.	Was the draft INPR coordinated with Office of Counsel and Real Estate?	X		
60.	Was the draft INPR shared with the Lead Regulatory Agency after internal USACE review?	X		

Narrative comments to explain above notations: (Key your comments to the checklist item number)

12-14. A real estate review is currently underway to determine pertinent ownerships.

25. Historical documents included reports of ordnance clearance operations on Culebra.

37. Public Law 93-166 stipulated that:
Notwithstanding any other provision of law, the present bombardment area on the island of Culebra shall not be utilized for any purpose that would require decontamination at the expense of the United States. Any lands sold, transferred, or otherwise disposed of by the United States as a result of the relocation of the operations referred to in subsection (a) may be sold, transferred, or otherwise disposed of only for public park or public recreational purposes.

44-45. Unexploded ordnance resulting from DoD military operations on Culebra have been discovered.

51. Fourteen projects are recommended for this site, 13-MMRP and 1-HTW.
58-59. This is a revised version of the approved original INPR prepared in May 1991. This revised version in currently in the process of be reviewed by appropriate offices.

Original INPR (1991)

DEPARTMENT OF THE ARMY

SOUTH ATLANTIC DIVISION, CORPS OF ENGINEERS
ROOM 313, 77 FORSYTH ST., S.W.
ATLANTA, GEORGIA 30335-6801

REPLY TO
ATTENTION OF:

CESAD-PD-R (200)

24 DEC 1991

MEMORANDUM FOR COMMANDER, USACE, ATTN: CEMP-ZA, WASH DC 20314-1000
COMMANDER, MISSOURI RIVER DIVISION, P.O. BOX 103 DOWNTOWN STATION, OMAHA, NE 68101-0103
COMMANDER, HUNTSVILLE DIVISION, P.O. BOX 1600, HUNTSVILLE, AL 35807-4301

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Report (INPR) for Site No. I02PR006800, Culebra Island National Wildlife Refuge (NWR), PR

1. I am forwarding the INPR for Culebra Island NWR for appropriate action. The site and projects are eligible for DERP-FUDS.

2. I recommend that:

a. CEMRD determine if further study is needed to identify the type and quantity of Hazardous and Toxic Waste (HTW). If a Remedial Investigation/ Feasibility Study (RI/FS) is required, recommend that Savannah District be assigned the RI/FS and any subsequent design.

b. CEHND determine the extent and quantity of Ordnance and Explosive Waste (OEW) on the site and subsequent action.

3. Division focal point for this effort is Mr. Tom Billings, CESAD-PD-R, at COMM 404-331-6701 or FTS 841-6701. The Division focal point for actions beyond the preliminary assessment phase is Richard Connell, CESAD-PM-H, at COMM 404-331-7045 or FTS 841-7045.

Encl

for K. H. R. Arlet
JOHN F. SOBKE
Major General, USA
Commanding

CF:
CEMP-R
CESAS-PD-E

SAT-05/005-300

200.1e
I02PR006802_01.08_0001

Mr. Billings/np/16701

CESAD-PD-R (200) 24 DEC 1991

MEMORANDUM FOR COMMANDER, USACE, ATTN: CEMP-ZA, WASH DC 20314-1000
COMMANDER, MISSOURI RIVER DIVISION, P.O. BOX 103 DOWNTOWN STATION, OMAHA, NE 68101-0103
COMMANDER, HUNTSVILLE DIVISION, P.O. BOX 1600, HUNTSVILLE, AL 35807-4301

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Report (INPR) for Site No. I02PR006800, Culebra Island National Wildlife Refuge (NWR), PR

1. I am forwarding the INPR for Culebra Island NWR for appropriate action. The site and projects are eligible for DERP-FUDS.

2. I recommend that:

a. CEMRD determine if further study is needed to identify the type and quantity of Hazardous and Toxic Waste (HTW). If a Remedial Investigation/ Feasibility Study (RI/FS) is required, recommend that Savannah District be assigned the RI/FS and any subsequent design.

b. CEHND determine the extent and quantity of Ordnance and Explosive Waste (OEW) on the site and subsequent action.

3. Division focal point for this effort is Mr. Tom Billings, CESAD-PD-R, at COMM 404-331-6701 or FTS 841-6701. The Division focal point for actions beyond the preliminary assessment phase is Richard Connell, CESAD-PM-H, at COMM 404-331-7045 or FTS 841-7045.

/s/ by DM

Encl

JOHN F. SOBKE
Major General, USA
Commanding

CF:
CEMP-R
CESAS-PD-E
~~EPA, Region IV~~

MFR: Self Explanatory.
MAULDIN

PP, RE, OC, CO reviewed with no comments.

DWB 12/16
Barnett/PD-R
Foreman/PD-P 12/17
12/17
Rushing/PD
Griggs/PD-A
King/SAD
Jones/PD
Ashhurst/DM
~~Miller/DD~~
~~Sobke/DE~~
PD

Rec'd 10/15

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF
CESAJ-PD-EE

30 September 1991

MEMORANDUM FOR Commander, South Atlantic Division
Atlanta, Georgia 30335-6801

SUBJECT: DERP-FUDS Inventory Project Report (INPR) for Site No. I02PR006800 (Culebra Island National Wildlife Refuge)

1. This INPR reports on the DERP-FUDS preliminary assessment of the subject site. A site survey summary sheet is provided as enclosure 1. A site visit was conducted on 30 April 1991.

2. We have determined that the site was formerly used by the Navy. A recommended Findings and Determination of Eligibility is provided as enclosure 2.

3. We also have determined there is a high probability of unexploded ordnance and hazardous waste at the site eligible for clean-up under DERP-FUDS. Project description sheets are provided as enclosures 3 and 4. A copy of the INPR needs to be forwarded to HND for the PA file and for a determination of the need for further study on the target ranges. Also, a copy of the INPR needs to be forwarded to MRD for further study at a suspected oil and debris dumping site.

4. I recommend that you approve and sign the Findings and Determination of Eligibility for the enclosed INPR.

5. Also enclosed is a computer disk with the subject INPR in ASCII and Wordperfect format.

5 Encls

Girlamo Dichiara
TERRENCE C. SALT
Colonel, Corps of Engineers
Commanding
GIRLAMO DICHIARA
Acting Deputy District Engineer

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR FORMERLY USED DEFENSE SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

Culebra Island National Wildlife Refuge, PR

Site No. I02PR006800

FINDINGS OF FACT

1. Between 1903 and 1964, the United States acquired 2747.12 acres of land on Culebra Island (2067.8 acres fee), Culebrita Island (266.0 acres fee), Luis Pena Cay (342.5 acres fee), Water Cay (7 acres fee) and the adjacent cayos (63.82 acres leased), for a bombing and gunnery range and auxiliary airfield for the Navy. The United States acquired fee title to 2135 acres of land from Spain (1785.5 acres on Culebra Island, the 342.5 acres on Luis Pena Cay, and the 7 acres on Water Cay). These lands were transferred to the Navy by Presidential Proclamation of 26 June 1903. The Navy acquired 13.83 acres by purchase in 1903 and 268.47 acres by donation in 1939, all on Culebra Island. In the early 1940's, 265.59 acres of fee land on Culebrita Island and Ladrones Cay were transferred to the Navy from the Coast Guard; 63.82 acres were acquired by leases for the Navy on adjacent cayos; and 0.41 of an acre on Culebrita Island was acquired by permit from the Coast Guard.

2. The lands were part of the U.S. Naval Station, Roosevelt Roads, Culebra Island and were utilized by the Navy as a coaling station, training area, auxiliary airport, weapons range, and bombing and gunnery range. The Navy constructed various improvements including a range operation center, maintenance sheds, helicopter landing pad, security fencing, warehouses, storage tanks, septic tanks, water distribution building, pumping stations, housing, and an auxiliary landing field including runways, taxiways, etc. Parts of the property (approximately 990 acres on Culebra Island) were utilized by others by virtue of outgrants from the Navy, prior to the Navy declaring the property as excess. The remainder of the property was under Department of Defense (DOD) control during the period of DOD ownership.

3. The Navy terminated the leases on the 63.82 acres on the adjacent cayos in 1972 and returned the property to the then current owners. The terms and conditions of the leases and termination notices or any restoration requirements are unknown as copies of these instruments could not be located. On 5 July 1972, the Navy reported 1089.80 acres of the site excess to the General Services Administration (GSA). On 19 May 1976, the Navy reported an additional 1501.5 acres excess to GSA. On 28 March 1978, the Navy transferred 4.09 acres on Culebrita Island to the Coast Guard and terminated the permit from the Coast Guard comprising 0.41 of an acre located on Culebrita Island, which is still utilized by the Coast Guard. The Navy retained and still utilizes 87.5 acres on Culebra Island.

4. The lands reported excess to GSA were disposed of as follows:

a. The Navy (at the direction of GSA) transferred 611 acres (342.5 acres on Luis Pena Cay, 261.5 acres on Culebrita Island, and 7 acres on

Water Cay) and 776.35 acres on Culebra Island, together with all improvements, to the Department of Interior, Fish and Wildlife Service (FWS) on 23 March 1978 and 15 September 1978, respectively. All 1387.35 acres transferred to the FWS comprise the Culebra Island National Wildlife Refuge.

b. By quitclaim deed dated 7 February 1980, GSA conveyed fee title to 79.73 acres to the Puerto Rico Ports Authority on Culebra Island for public airport purposes. The deed contained a recapture and reverter clause and was subject to existing easements for public highways, roads, utilities, etc. This property is utilized as a public airport.

c. By quitclaim deed dated 11 August 1982, the United States of America, through the Secretary of the Interior, conveyed 935.98 acres to the Commonwealth of Puerto Rico on Culebra Island. The deed contained a reverter clause and other restrictions pertaining to the development of the property, including a restriction that the bombardment area, composed of 644.99 acres, would be utilized only for public park or public recreational purposes. The deed contained language that the Commonwealth agreed to accept the bombardment area in its present condition, that the United States would not be held responsible for decontamination, and that the United States would be held harmless from any and all claims, demands, actions, etc., arising from any person's use of or presence on the property. This property is utilized for park purposes.

d. By quitclaim deed dated 24 February 1984, GSA conveyed 32.34 acres to the Department of Housing, Commonwealth of Puerto Rico on Culebra Island, which is now public housing. The deed contained no restrictions, reverter, or recapture clauses.

e. By quitclaim deed dated 29 April 1988, GSA conveyed 155.9 acres on Culebra Island to the Municipality of Culebra, Puerto Rico. This deed contained no warranties, recapture, or reverter clauses, but was subject to existing easements for public highways, roads utilities, etc., and contained a hold harmless clause in favor of the United States. This site is being utilized for city facilities and is under development as a port.

DETERMINATION

Based on the foregoing Findings of Fact, the site, except for the 87.5 acres still under control of the Navy, has been determined to be formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 U.S.C. 2701, et seq.

24 DEC 1991
DATE

for [illegible] LTC EN
JOHN F. SOBKE
Major General, USA
Commanding

E-1

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. I02PR006800
CULEBRA ISLAND NWR, P.R.
9 MAY 1991

SITE NAME: Culebra Island National Wildlife Refuge and adjacent cayos, P.R., see site and location map.

SITE HISTORY: War Department use began in 1940 with the transfer of portions of Culebra Island from the Department of Interior to the Navy for use as a bombing and gunnery training range. The areas in question were deactivated in 1975 and transferred back to the Department of the Interior, U.S. Fish and Wildlife Service (USFWS), the Department of Natural Resources, the Puerto Rico Port Authority, the municipality of Culebra, and the Department of Housing, Commonwealth of P.R.

SITE VISIT: A site visit was conducted on 30 April 1991 by Mr. Ivan Acosta, CESAJ-PD-EE, and Mr. Henry Morales, USFWS National Wildlife Refuge representative. Mr. Morales is a native of the island and is familiar with the affected areas. Additionally, a letter from Mr. Kelly Wolcott, Refuge Manager, describing the areas of concern is provided.

CATEGORY OF HAZARD: HTW, OEW.

PROJECT DESCRIPTION: There are two potential projects in the area (one OEW project consisting of eleven sites and one HTW project).

a. HTW. There is a wetland area in the vicinity of the USFWS facility that may contain toxic materials. This site was down gradient of the motor pool and had anecdotal evidence of toxic material being dumped or drained into the area. It requires investigation beyond the scope of this preliminary assessment.

b. OEW. There are at least eleven identified bomb impact sites on the island and adjacent cayos that are dangerous and still contain visible unexploded bombs. It requires investigation beyond the scope of this preliminary assessment.

AVAILABLE STUDIES AND REPORTS: None identified.

PA POC: Ivan Acosta, CESAJ-PD-EE, 904-791-2117 is the District POC.

TRANSFER TO NWR SYSTEM THROUGH DEPT. OF INTERIOR, U.S.A.

TRANSFER TO COMMONWEALTH OF PUERTO RICO THROUGH DEPT. OF INTERIOR, U.S.A.

TRANSFER TO COMMONWEALTH OF PUERTO RICO THROUGH OTHER FEDERAL AGENCIES, U.S.A.

RETAINED BY NAVY (87 ACRES)

LUIS PEÑA, CULEBRITA AND OTHER OUTLYING ISLANDS PRESENTLY HAVE NWR STATUS

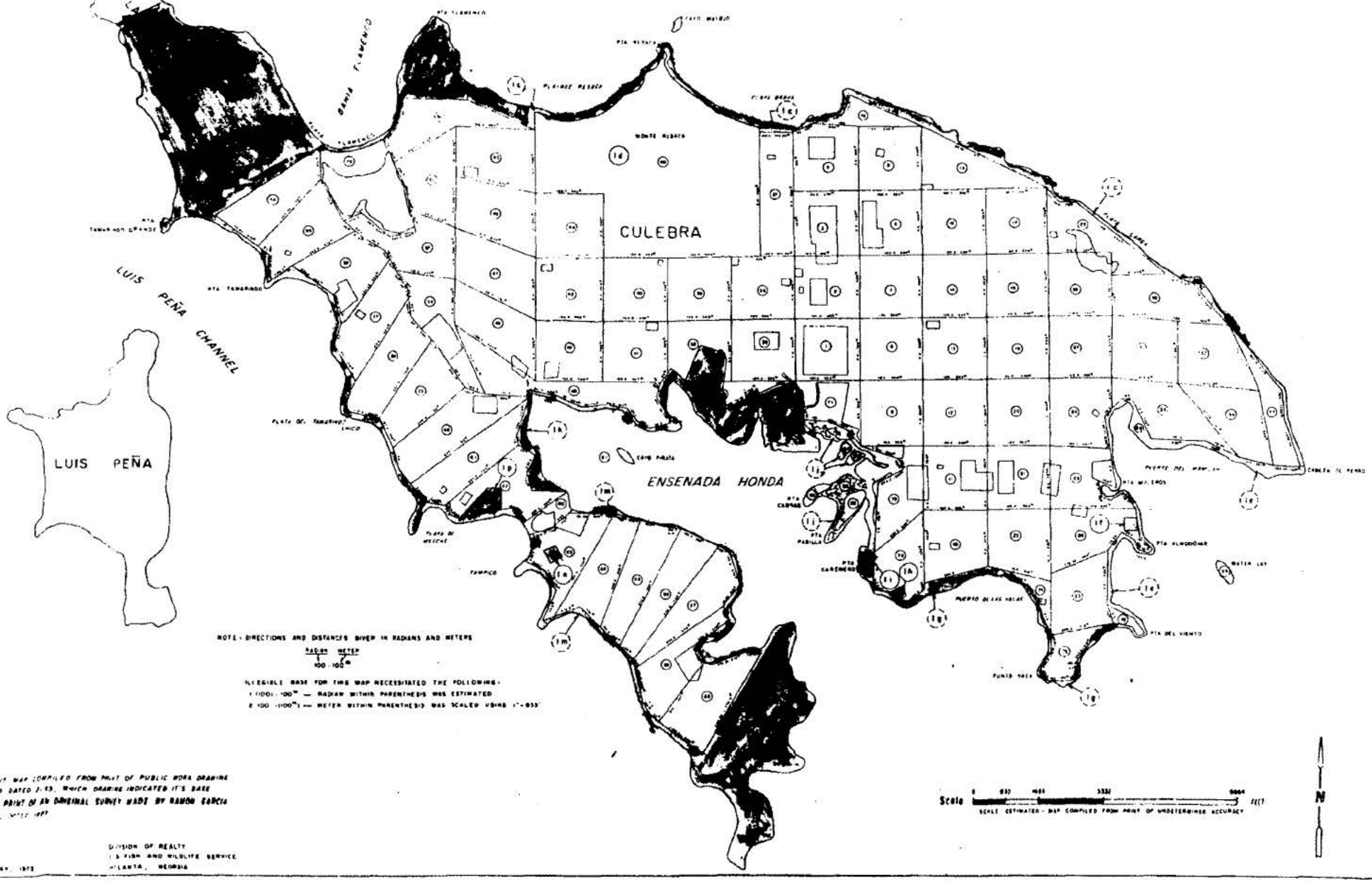


FIGURE 1

PROPOSED DISPOSITION OF U.S. NAVY LANDS ON CULEBRA
AND
THE TRANSFER OF CULEBRITA FROM THE NATIONAL WILDLIFE REFUGE SYSTEM

December, 196

UNITED STATES GOVERNMENT
memorandum

DATE: April 22, 1991
REPLY TO: Kelly Wolcott, Refuge Manager, Culebra NWR, Culebra, PR 00645
SUBJECT: Contamination of Culebra by Navy Bombing
TO: Ivan Acosta, US Army Corps of Engineers, PO Box 4970, Jacksonville, FL 32232

Ivan,

Sorry to have to delay this memo so much. We've been very busy with our own program, the approaching seabird season and the oil spill.

I've enclosed copies of a topographical map of Culebra including indications of the areas contaminated by unexploded ordinances. We don't have much information on the specifics of Navy bombing, we do have a little documentation. I've enclosed copies of one Navy document and will add to those comments below.

Northwest Peninsula: The 600-acre Northwest Peninsula was used primarily for shore bombardment centered on white-washed rocks along the shoreline, simulated gun emplacements, white-washed Sherman Tanks, and white-painted fuel drums. Target 14 was placed mid-peninsula for napalm and aircraft delivery of inert bombs and rockets. A wire "cyclone" fence and fire break delineated the southeast boundary of the bombardment area. From the present entrance to the tip of the peninsula the navy bombed from 1941 to 1975. There are areas of greater concentration of ordinances and other areas that although were used, were also cleaned regularly for public use. The greatest areas of concentration are indicated in one of the enclosed maps. The tip of the peninsula (Punto Molinos) has the greatest concentration of Sooty Terns found in the area.

Cayo de Aqua or Aqua Cay: Cayo de Aqua was used for offshore and aerial bombardment and has one of the greatest densities of observable ordinances. Most are heavily exposed and it is not known what percentage is live. Cayo de Aqua was used extensively for night fire. Cayo de Aqua hosts nesting Bridled Terns, Sooty Terns, Zenaida Doves, Red-billed Tropicbirds and Audobon's Shearwaters.

Cayo Lobo or Cross Cay: Cayo Lobo has two bunker observation posts and a series of tire targets presumably used for air to ground small arms fire or strafing. No large munitions are commonly found on the island. Cayo Lobo has no known concentration of nesting birds.

Cayo Alcarraza or Fungy Bowl: Cayo Alcarraza also has a high density of ordinances. It is a very steep island and is difficult and dangerous to work on. The island was used for all types of conventional ordinances. High and low-level radar bombing and searchlight target bombing. Cayo Alcarraza has the area's only colony of masked boobies and extensive colonies of Sooty Terns, Bridled Terns, Noddy Terns and Zenaida Doves.

Los Camelos or Twin Rocks: Used for dive-bombing and air to ground

missles. Loft and over-the-shoulder weapons delivery. The only target that received air to surface missles with practice ordinances. Twin Rocks provides some roosting areas for seabirds.

Culebrita Island: Culebrita provided strafing targets on and offshore on the western end of the island at Botella Beach and live and dummy-warhead torpedos were fired at a sheer cliff face on the northwest side of the island (Marc Point). Culebrita island provides nesting beaches for Hawksbill Turtles and some nesting areas for red-billed Tropicbirds.

CayoTiburon or Shark Key: Small, unvegetated rock with little or no public use. Extensively used as a roost by nesting seabirds. Target was used for all heavy conventional ordinance, live and inert.

Cayos Geniqui or Palada Cays: Two vegetated islands, both used all year by nesting Brown and Red-footed Boobies. Geniqui was also used for all types of heavy conventional ordinance.

Cayo Botella or Cayo Ladron: A flat, vegetated Key near Culebrita with no known seabird nesting. Before Navy bombardment, the key was extensively used by Sooty Terns.

Kelly Wolcott
Refuge Manager
Culebra NWR, Box 190
Culebra, PR 00645

PROJECT SUMMARY SHEET
FOR
DERP-FUDS HTW PROJECT NO. I02PR006801
CULEBRA ISLAND NWR, P.R.
SITE NO. I02PR006800
May 9, 1991

PROJECT DESCRIPTION: The U.S. Fish and Wildlife Service stated that the wetland area near their building facility was used as a debris and oil dumping site by the Navy. No documentation remains as to when the aforementioned activity occurred. Also there is an unidentified underground concrete tank uphill from the wetland area that has been tentatively identified as a septic tank. No testing has been done on this site.

PROJECT ELIGIBILITY: Records indicate that a building uphill from the area in question was used by the Navy as a wash rack for their vehicles and as a fuel and oil storage facility. These places were subsequently closed when the Navy disposed of the sites. Since this site was disposed of in 1975, there is a strong probability that contamination may still be present.

POLICY CONSIDERATIONS: There is no policy which prohibits the proposal of this project. Currently Department of Defense (DOD) policy permits remedial investigation and action at sites affected by former DOD use.

EPA Form 2070-12: Enclosed

PROPOSED ACTIVITIES: This potential project should be referred to CESAS for negotiation with regulatory agencies and a determination of further action.

POINT OF CONTACT: Ivan Acosta, (904) 791-2117.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PR	I02PR006800

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Culebra Island National Wildlife Refuge	USFWS Facility				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Culebra	PR	00645	Culebra Island		
09 COORDINATES LATITUDE	LONGITUDE				
65 20	18 20				

10 DIRECTIONS TO SITE (Starting from nearest public road)

The site is in the vicinity of the USFWS and the Department of Natural Resources Compund in the Ensenada del Cementerio

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Department of the Navy (formerly)			
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
N/A			( )
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
N/A			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
N/A			( )

13 TYPE OF OWNERSHIP (Check one)

☐ A. PRIVATE ☒ B. FEDERAL: _____ (Agency name) ☒ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES DATE 4/30/91 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: Corps of Engineers (Agency)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)

☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1940 (BEGINNING YEAR) | 1975 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Records indicate that a facility uphill from the area in question was used by the Navy as a wash rack for their vehicles and as fuel and oil storage.(Solvents and oil.)

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Wetland vegetation is deteriorating and dying (Mangroves)

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Ivan Acosta	Corps of Engineers			(904) 791-1693
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Ivan Acosta	COE	CESAJ-PD-EE	(904 791-1693	9/30/91 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PR	I02PR006800

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- _ A SOLID
- _ B POWDER, FINES
- _ C SLUDGE
- _ D OTHER _____ (Specify)
- _ E SLURRY
- _ F LIQUID
- G GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- _ A TOXIC
- _ B CORROSIVE
- _ C RADIOACTIVE
- _ D PERSISTENT
- _ E SOLUBLE
- _ F INFECTIOUS
- _ G FLAMMABLE
- _ H IGNITABLE
- _ I HIGHLY VOLATILE
- _ J EXPLOSIVE
- K REACTIVE
- _ L INCOMPATIBLE
- _ M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE	UNKNOWN		
SOL	SOLVENTS	UNKNOWN		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PR	I02PR006800

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Possible residual contamination from the wash rack
No chemical data available.

01 [X] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

See A, above

01 [ ] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

None Noted

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

None Noted

01 [ ] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

None Noted

01 [X] F. CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

See A above

01 [ ] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None Noted

01 [ ] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None Noted

01 [ ] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

None Noted

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PR	T02PR006800

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☒ OBSERVED (DATE 4-30-91) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Mangrove area is deteriorating and dying

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

None Noted

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None Noted

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/flowing liquids) — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

None Noted

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None Noted

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None Noted

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None Noted

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None Noted

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

None Noted

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-12 (7-81)

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. I02PR006802
CULEBRA ISLAND NWR, P.R.
SITE NO. I02PR006800
May 9, 1991

PROJECT DESCRIPTION: Ordnance detection and removal actions are needed for about 11 sites on the island and adjacent cayos. The sites in question are former Navy bombing and gunnery training ranges. The range areas are depicted on a USGS map No. 4R-P.R.-52-403 of the U.S. Fish and Wildlife Service Culebra National Wildlife Refuge (USFWS) attached. The impact areas are not fenced, and sporadic markings and bomb casings were found. The USFWS personnel stated that shell fragments had been collected from the sites and that unexploded rounds had been found. The range areas are generally used for camping, hunting, scuba diving, fishing, and walking. There was no evidence of ordnance outside the impact areas.

PROJECT ELIGIBILITY: Records and maps indicate that the bombing and gunnery training range was built and used by the Navy from 1940 to 1975.

POLICY CONSIDERATIONS; Current Department of Defense (DOD) policy permits Remediation of DOD generated ordnance. The title transfer documents do not absolve the government from site restoration responsibility: the USFWS did not receive compensation in lieu of restoration; the property has not been altered or beneficially used for ordnance related purposes by subsequent owners; and there were no deed restrictions violated.

PROPOSED ACTIVITIES: The Inventory Project Report should be referred to HND for action. This action should consist of at least a metal sweep of the area to determine the likelihood of further ordnance problems and removal of ordnance detected.

RAC: See attachment.

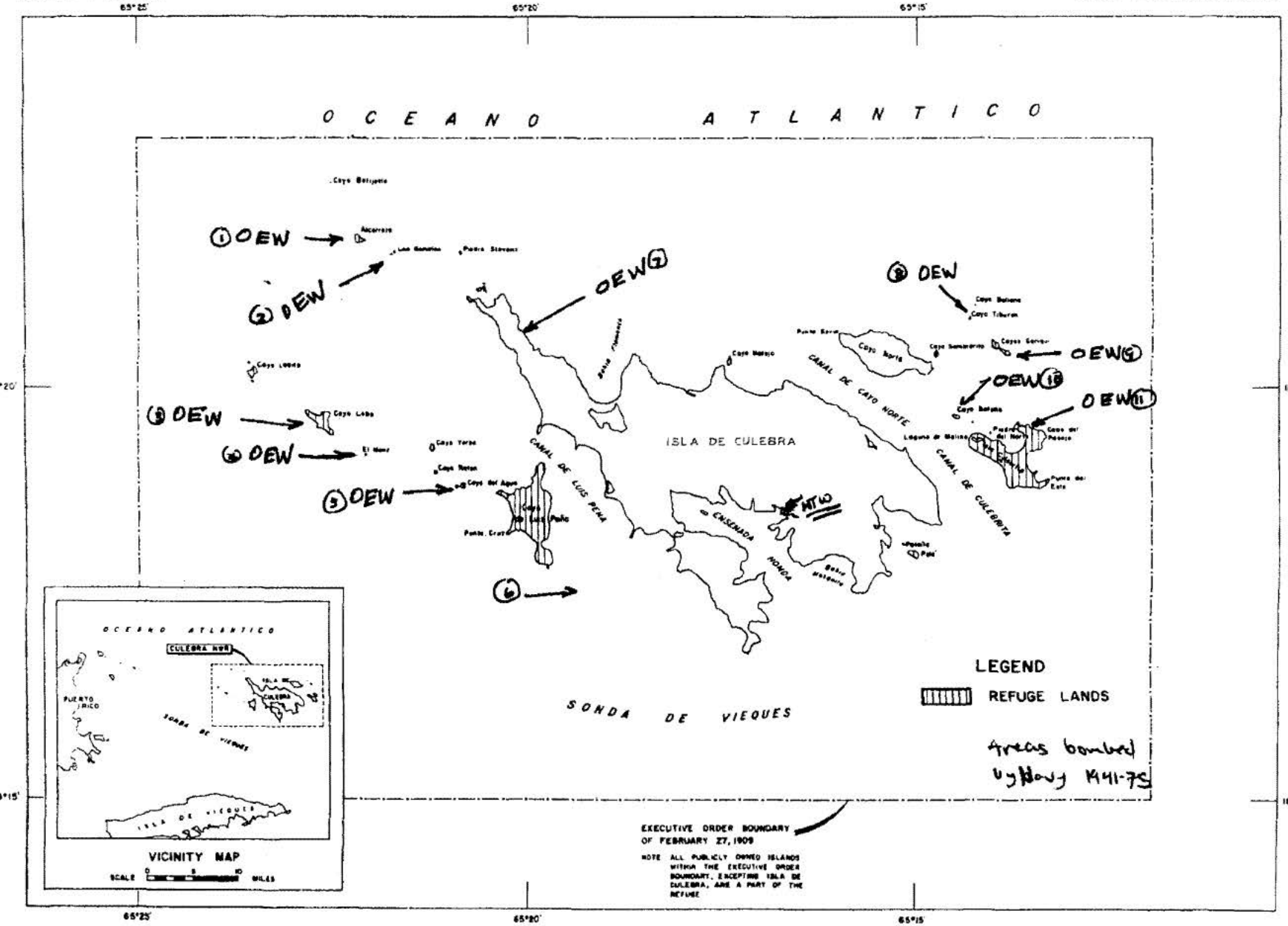
POINT OF CONTACT: Ivan Acosta, CESAJ-PD-EE, 904-791-2117.

CULEBRA NATIONAL WILDLIFE REFUGE

CULEBRA ISLAND GROUP — PUERTO RICO

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS BY USGS

ATLANTA, GEORGIA APRIL, 1969

Scale 0 2500 5000 10000 15000 20000 FEET
0 1/2 1 2 3 4 MILES

MEAN DECLINATION 1969

4R-P.R.-52-403

APPENDIX A
RISK ASSESSMENT PROCEDURES FOR
EXPLOSIVE ORDANCE (EXO)

Site Name Culebra Island National Wildlife Refuge
Site Location Culebra Island, P.R.
DERP Project # I02PR006802

Rater's Name Ivan Acosta
Organization CESAJ-PD-EE
RAC 2

EXO RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10.

The EXO risk assessment is based upon documented evidence consisting of records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observation, interviews, and measurements. These data are used to assess the risk involved based upon the hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability.

Any field activities should be made with the assistance of qualified EOD personnel.

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worse credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE

A. Conventional Ordnance and Ammunition

	Yes Value	No Value	Value
Small Arms (.22 cal - .50 cal)	2	0	___
Medium/Large Caliber (20mm and larger)	10	0	___
Bombs, Explosive	10	0	10
Bombs, Practice (w/spotting charges)	6	0	___
Grenades, Hand and Rifle, Explosive	10	0	___
Grenades, Practice (w/spotting charges)	6	0	___
Landmines, Explosive	10	0	___
Landmines, Practice (w/spotting charges)	6	0	___
Rockets, Guided Missiles, Explosive	10	0	10
Detonators, Blasting Caps	10	0	___

	Yes Value	No Value	Value
Demolition Charges	10	0	___
Conventional Ordnance and Ammunition Value (Maximum of 10).			10

B. Pyrotechnics

	Yes Value	No Value	Value
Any Munition Containing White Phosphorous or other Pyrophoric Material (i.e., Spontaneously Flammable)	10	0	___
Any Munition Containing a Flame or Incendiary Material (i.e., Napalm, Triethaliuminum Metal Incendiaries)	6	0	___
Military Flares	4	0	___
Pyrotechnics Values (Maximum of 10).			0

C. Bulk High Explosives (Bulk explosives not an integral part of convention ordnance).

	Yes Value	No Value	Value
Primary of Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mecury Azide, Mercury Fulminate, etc.	10	0	___
Booster, Bursting or Fuse Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	10	0	10
Military Dynamite	10	0	___
Less Sensitive Explosives (Ammonium Nitrate, Favier Explosives, etc.)	3	0	___
High Explosives Value (Maximum value of 10).			10

D. Propellants

	Yes Value	No Value	Value
Solid or Liquid Propellants	3	0	___ ___

E. Chemical Agents/Radiological Materials/Munitions

	Yes Value	No Value	Value
Radiological	25	0	___
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25	0	___
Incapacitating Agent (BZ)	10	0	___
Riot Control and Miscellaneous (Vomiting, Tear, Chlorine, Mustard Simulant)	5	0	___
Any Munition Containing Smoke, Illumination, Signal Charge	4	0	4

Chemical Agents/Radiological Materials/Munitions Value (Maximum 25). 4

Total Ordnance and Explosive Waste Characteristics Value (Total = A + B + C + D + E with a Maximum value of 61). 24

TABLE 1

HAZARD SEVERITY

Description	Category	Value
CATASTROPHIC	I	≥ 21
CRITICAL	II	≥ 13 <21
MARGINAL	III	≥ 5 <13
NEGLIGIBLE	IV	< 5

* Apply Hazard Severity to Table 3.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of explosive ordnance (EXO) on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION

A. Locations of Contamination

	Yes Value	No Value	Value
Within Tanks, Pipes, Vessels or Other confined locations.	5	0	___
On the surface or within 3 feet.	5	0	5
Inside walls, ceilings, or other parts of Buildings or Structures.	4	0	___
Subsurface, greater than 3 feet in depth.	3	0	___
Value for location of EXO (Maximum Value of 5).			5

B. Distance to nearest inhabited locations or structures likely to be at risk from EXO site (roads, parks, playground, and buildings.)

Distance to Nearest Target	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
2.0 miles to 5.0 miles	1
Over 5.0 miles	0
Distance to Persons Value (Maximum Value of 5).	2

C. Numbers and types of Buildings within a 2 mile radius measured from the hazardous area, not the installation boundary.

Number of Buildings	VALUE
0	0
1 to 10	1
11 to 50	2
51 to 100	3
101 to 250	4
251 or Over	5

Number of Buildings Value (Maximum Value of 5). 0

D. Types of Buildings

	VALUE
Educational, Child Care, etc.	5
Residential, Hospitals, Hotels, etc.	5
Commercial, Shopping Centers, etc.	5
Industrial Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
Military	1
No Buildings	0

Types of Buildings Value (Maximum Value of 5). 0

E. Accessibility to site refers to the measures taken to limit access by humans or animals to ordnance and explosive wastes. Use the following guidance:

Barrier	Assigned Value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility;	0

or Barrier	Assigned Value	
An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surround the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0	
Security guard, but no barrier	1	
A barrier, (any kind of fence) but no separate means to control entry	2	
Barriers do not completely surround the facility	3	
No barrier or security system	5	
Accessibility Value (Maximum Value of 5).		5

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabitated areas or otherwise increase accessibility.

	VALUE	
None Anticipated	0	
Expected	5	
(Maximum Value of 5)		5
Total value for hazard probability. Sum of Values A through F. (Not to exceed 30). Apply this value to Hazard Probability Table 2 to determine Hazard Level.		17

TABLE 2

HAZARD PROBABILITY

Description	Level	Value
FREQUENT	A	≥27
PROBABLE	B	≥21 <27
OCCASIONAL	C	≥15 <21
REMOTE	D	≥ 8 <15
IMPROBABLE	E	< 8

*Apply Hazard Probability to Table 3.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLES 1 AND 2

HAZARD SEVERITY - I
(from Table 1)

HAZARD PROBABILITY - C
(from Table 2)

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROHPIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

Note: The risk assessment code for EXO is not equivalent to the risk assessment code prescribed in AR 385-10.

RISK ASSESSMENT CODE (RAC)

RAC 1 Imminent Hazard - Emergency action required to mitigate the hazard or protect personnel (i.e., Fencing, physical barrier, guards, etc.)

RAC 2 Action required to mitigate hazard or protect personnel. Feasibility study is appropriate.

RAC 3 Action required to evaluate potential threat to personnel. High priority Site Inspection is appropriate.

RAC 4 Action required to evaluate potential threat to personnel. Site Inspection is appropriate.

RAC 5 No action required.

Justification. In narrative form, summarize the documented evidence that supports this risk assessment.

ROUTING SLIP SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS

om: CESAD-PD-R date: 10 Oct 91

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- Commander DB
- Deputy Commander (Civil) DD
- Deputy Commander (Military) DM
- Executive Assistant DX

SPECIAL ASSISTANTS
- Small & Disadvantaged Business Utilization DB
- Value Engineering Officer VE

DIRECTORATE OF PROGRAMS & PROJECT MANAGEMENT PM
- Assistant Director PM-A
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- Hazardous/Toxic Waste Restoration & Support for Others Division PM-H PM/10-11-91

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- Equal Employment Opportunity AA

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- Wilmington Operating Division HR-W

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R. Corrette
5:25 Oct 91
Tom Billings

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ROUTING SLIP SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS

+

m: CESAD-PD-R date: 10 Oct 91

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- Deputy Commander (Military) — DM
- Executive Assistant — DX

SPECIAL ASSISTANTS
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- Value Engineering Officer — VE

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- Civil Project Management Division — PM-C
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AFFIRMATIVE ACTION OFFICE — AA
- Equal Employment Opportunity — AA

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- Resident Audit Office, Wilmington — AO-KW

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#I02PR006800

S: 25 Oct 91

Tom Billings

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m: CESAD-PD-R date: 10 Oct 91

EXECUTIVE OFFICE
- Commander DE
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- Executive Assistant DX

SPECIAL ASSISTANTS
- Small & Disadvantaged Business Utilization DB
- Value Engineering Officer VE

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REMARKS: DERP-FUDS (POSITIVE) Culebra Island N.W.R.
#I02PR006800
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5:25 Oct 91

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ROUTING SLIP SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS

om: CESAD-PD-R date: 10 Oct 91

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- Commander — DE
- Deputy Commander (Civil) — DD
- Deputy Commander (Military) — DM
- Executive Assistant — DX

SPECIAL ASSISTANTS
- Small & Disadvantaged Business Utilization — DB
- Value Engineering Officer — VE

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Where is cost estimate on 1/02?

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REMARKS: DERP-FUDS (POSITIVE) Culebra Island N.W.R.

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S: 25 Oct 91

Tom Billings

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ROUTING SLIP SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS

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m: CESAD-PD-R date: 10 Oct 91

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Value Engineering Officer VE

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Management & Disposal Division RE-M
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DIRECTORATE OF LOGISTICS MANAGEMENT LM
Assistant Director LM-A
Protocol and Conferences LM-P
Transportation/Travel LM-T
Supply Room LM-S

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Assistant Director HR-A
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Position Mgt & Classification HR-AP
Recruitment & Placement HR-AS
Military Personnel HR-M
Jacksonville Operating Division HR-J
Savannah Operating Division HR-S
Wilmington Operating Division HR-W

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OFFICE OF SECURITY AND LAW ENFORCEMENT SL

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AIR FORCE REGIONAL CIVIL ENGINEERS EASTERN REGION AFRCE-ER

HEALTH FACILITIES OFFICE HFO-ER

MANAGEMENT ENGINEERING BRANCH CERM-OE

FOR: ○ ACTION ○ SIGNATURE ● REVIEW & COMMENT ○ INFORMATION
○ APPROVAL ○ RECOMMENDATION ○ DRAFT REPLY ○ FILE

REMARKS: DERP-FUDS (POSITIVE) Culebra Island N.W.R.

#I02PR006800

5:25 Oct 91

Tom Billings

SAD Form 1470 Previous editions of this form are obsolete.

CESAD-RE-M (405-70c) 29 October 1991

MEMORANDUM FOR CESAD-PD-R

SUBJECT: DERP-FUDS, INPR, Culebra Island National Wildlife Refuge (Site No. I02PR006800)

We concur in the Findings and Determination of Eligibility, excluding 87.5 acres currently used by the Navy.

Encl

A. C. POSNER
Director of Real Estate

ROUTING SLIP SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS

)m: CESAD-PD-R date: 10 Oct 91

EXECUTIVE OFFICE
- Commander — DE
- Deputy Commander (Civil) — DD
- Deputy Commander (Military) — DM
- Executive Assistant — DX

SPECIAL ASSISTANTS
- Small & Disadvantaged Business Utilization — DB
- Value Engineering Officer — VE

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- Civil Programs Management Division — PM-P
- Civil Project Management Division — PM-C
- Military Project Management Division — PM-M
- Hazardous/Toxic Waste Restoration & Support for Others Division — PM-H

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● **OFFICE OF COUNSEL** — OC

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  - ☐ Soils Mechanics Branch — EN-FS
- ☐ Hydrology & Hydraulics Division — EN-H
  - ☐ Hydraulics & Coastal Engineering Branch — EN-HH
  - ☐ Water Management Branch — EN-HW
- ☐ Technical Engineering Division — EN-T
  - ☐ Architectural & Site Development Branch — EN-TA
  - ☐ Electrical Branch — EN-TE
  - ☐ Mechanical Branch — EN-TM
  - ☐ Structural Branch — EN-TS

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  - ☐ Quality Assurance Branch — CO-CQ
  - ☐ Construction Files — CO-CX
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  - ☐ Natural Resources Management Branch — CO-RN
- ☐ Emergency Management Division — CO-E
  - ☐ Natural Disaster Branch — CO-ED
  - ☐ National Emergency Branch — CO-EE
  - ☐ Emergency Operations Branch — CO-EO

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● **SAFETY & OCCUPATIONAL HEALTH OFFICE** — SO

○ **AIR FORCE REGIONAL CIVIL ENGINEERS EASTERN REGION** — AFRCE-ER

○ **HEALTH FACILITIES OFFICE** — HFO-ER

○ **MANAGEMENT ENGINEERING BRANCH** — CERM-OE

cf
CESAJ-SO
CESAD-PD

)R:
- ○ ACTION
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- ○ DRAFT REPLY
- ○ FILE

EMARKS: DERP-FUDS (POSITIVE) Culebra Island N.W.R.

#T02PR006800

Provide copy of SSIP to CESAD-SO for site visit.

5:25 Oct 91

Tom Billings

)D Form 1470 Previous editions of this form are obsolete.

ROUTING SLIP SOUTH ATLANTIC DIVISION, U.S. ARMY CORPS OF ENGINEERS

+

om: CESAD-PD-R date: 10 Oct 91

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- Deputy Commander (Military) — DM
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- Value Engineering Officer — VE

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DIRECTORATE OF CONTRACTING — CT

OFFICE OF SECURITY AND LAW ENFORCEMENT — SL

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AIR FORCE REGIONAL CIVIL ENGINEERS EASTERN REGION — AFRCE-ER

HEALTH FACILITIES OFFICE — HFO-ER

MANAGEMENT ENGINEERING BRANCH — CERM-OE

FOR: ○ ACTION ○ SIGNATURE ● REVIEW & COMMENT ○ INFORMATION
○ APPROVAL ○ RECOMMENDATION ○ DRAFT REPLY ○ FILE

REMARKS: DERP-FUDS (POSITIVE) Culebra Island N.W.R.
#I02PR006800

5:25 Oct 91
Tom Billings

SAD Form 1470 JAN 91 Previous editions of this form are obsolete.

OEW Project Approval Memo

200.1e
I02PR006802_01.08_0003

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

15 APR 1992
25 Apr 92

CEMP-RF (200-1a)

MEMORANDUM FOR

COMMANDER, HUNTSVILLE DIVISION, ATTN: CEHND-PM-OT
COMMANDER, SOUTH ATLANTIC DIVISION, ATTN: CESAD-PD-R

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Reports (INPR) for Sites Requiring Ordnance and Explosive Waste (OEW) Site Inspections

1. Reference memorandum, CEHND-PM-OT, 21 February 1992, SAB (enclosed).

2. I concur with Huntsville Division's recommendation detailed at the reference, for initiation of ordnance and explosive waste (OEW) projects as listed below. Accordingly, the following projects (as detailed at the respective INPR) are approved:

	Project Name	Project No.	Project Category	Project Phase
a.	Culebra Island NWR	I02PR006802	OEW	SI*
b.	Camp Greene	I04NC002101	OEW	SI
c.	Camp Croft	I04SC001603	OEW	SI
d.	Fort Lauderdale Hsg	I04FL024901	OEW	SI
e.	Spencer Bb Tgt Site	I04FL082801	OEW	SI
f.	Keystone Bb Tgt Site	I04FL089101	OEW	SI
g.	Chaffee Bb Tgt Site	I04FL085601	OEW	SI
h.	Switzerland Bb Tgt St	I04FL083201	OEW	SI
i.	Desecheo Island	I02PR006901	OEW	SI
j.	Camp Battle	I04NC070901	OEW	SI
k.	Laurinburg-Maxton AAB	I04NC001903	OEW	SI

*Site Inspection

3. The projects are assigned to Huntsville Division for execution.

4. In the future, at sites where existence and location of ordnance is reasonably certain, CEHND should consider recommending a engineering evaluation/cost analysis (EE/CA) or even remedial investigation (RI) to avoid duplication of effort, and time lapses between phases. The archives search/site visit activities associated with the SI can be accomplished as the first phase of an EE/CA or RI. See paragraph 7b below.

SAJ-051005-305

CEMP-RF (200-1a)
SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Reports (INPR) for Sites Requiring Ordnance and Explosive Waste (OEW) Site Inspections

5. Note the approved project numbers listed above are consistent with the numbers assigned by CESAD. In the future CEHND must use the project number rather than the site number when recommending an OEW project. CEHND and CESAD must insure the project numbers listed at the cost estimate sheets (within the respective INPRs) are corrected to reflect the numbers above.

6. At a majority of the above sites, CEHND must pay particular attention to the deed restrictions recorded with the transfer of the site to private ownership since current policy states "deed restrictions may absolve or limit DoD responsibility for OEW projects".

7. Within sixty days of the date of this memorandum, the following actions must be completed:

a. CESAD must ensure the landowner(s) are notified of the decision and provide copies of the notification letter to CEMP-RF and CEHND-PM-EP. Additionally, CESAD must ensure appropriate project information is included in FUDS project inventory database.

b. CEHND must ensure the projects are included in the appropriate fiscal year workplan. Additionally, CEHND must provide CEMP-RF pros and cons of recommending SI at these sites rather than more comprehensive phases such as EE\CA or RI, and propose future policy for CEMP-RF adoption.

8. POC: Mr. Jim Coppola, (202) 504-4992.

FOR THE DIRECTOR OF MILITARY PROGRAMS:

Encl

MICHAEL H. FELLOWS
Colonel, Corps of Engineers
Chief, Environmental Restoration Division
Directorate of Military Programs

CF:
CEHND-PM-EP

HTW Project Approval (1998)

200.1e
I02PR006802_01.08_0006

REVISED SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. I02PR006800
CULEBRA ISLAND NWR, P.R.
JULY 16, 1998

SITE NAME(S): Culebra Island National Wildlife Refuge, adjacent cayos, and surrounding U.S. Territorial Waters, P.R., see site and location map at attachment 1.

SITE HISTORY: DOD use began in 1940 with the transfer of portions of Culebra Island from the Department of Interior to the Navy for use as a bombing and gunnery training range. The areas in question were deactivated in 1975 and transferred back to the Department of the Interior (U.S. Fish and Wildlife Service (USFWS)), the Department of Natural Resources P.R., the Puerto Rico Ports Authority, the Municipality of Culebra and the P.R. Department of Housing.

SITE VISIT: a site visit was conducted on 30 April 1991 by Mr. Ivan Acosta CESAJ-PD-EE and Mr. Henry Morales, USFWS National Wildlife Refuge representative. Mr. Morales is a native of the island and is familiar with the affected areas. Additionally, a letter from Mr. Kelly Wolcott, Refuge Manager describing the areas of concern was provided as background information.

CATERGORY OF HAZARD: HTRW, OEW

PROJECT DESCRIPTION: There are 2 potential projects in the area (one EOD project consisting of 12 sites and one HTRW project).

a. HTRW. There is a wetland area in the vicinity of the FWS facility that contains toxic materials. This site was down gradient of the motor pool and had evidence of toxic material being dumped or drained into there. It requires investigation beyond the scope of this preliminary assessment.

b. OEW. There are at least 12 bomb impact sites on the island, adjacent cayos and surrounding waters that are dangerous and still contain visible unexploded bombs. It requires investigation beyond the scope of this preliminary assessment.

AVAILABLE STUDIES AND REPORTS: DERP-FUDS OEW Archives Search Report, Culebra Island, Dated February 1995. USACOE HTRW Report, Dated October 1996.

PA POC: Ivan Acosta 904-232-1693 is the district POC.

SAJ-051005-301

REVISED PROJECT SUMMARY SHEET
FOR
DERP-FUDS HTRW PROJECT NO. I02P4006801
CULEBRA ISLAND NWR, P.R.
SITE NO. I02PR006800
JULY 16, 1998

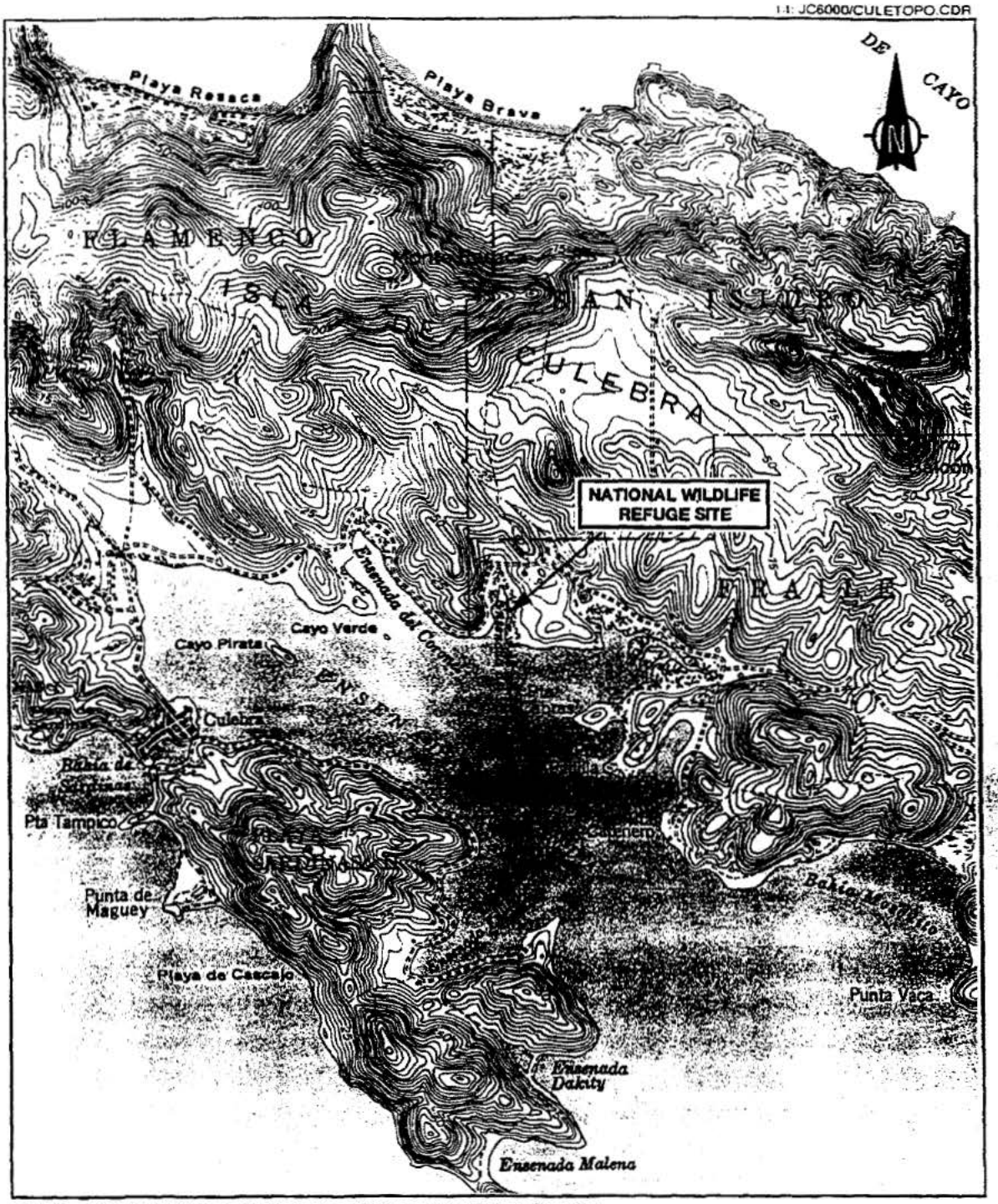
PROJECT DESCRIPTION: The USFWS stated that the wetland area near their building facility was used as a debris and oil dumping site by the Navy. No documentation remains as to when the aforementioned activity occurred. Also, there is an unidentified underground concrete tank uphill from the wetland area that has been tentatively identified as a septic tank. Testing results in the area revealed that the soil/sediments have been impacted by metals and benzo(k) fluoranthene.

PROJECT ELIGIBILITY: Records indicate the a building uphill from the area in question was used by the Navy as a wash rack for their vehicles and as a fuel and oil storage facility. These places were subsequently closed when the Navy disposed of the sites in 1975.

POLICY CONSIDERATIONS: There is no policy which prohibits the proposal of this project. Current DOD policy permits remedial investigation and action at sites affected by former DOD use.

EPA Form 2070-12: See attachment 4.

PROPOSED ACTIVITIES: This project should be referred to CESAS. The chemical data available warrants approval of the HTRW project at Culebra Island NWR.



SOURCE: U.S.G.S. 1:30,000 Topographic Contour Map of Culebra and Adjacent Islands, Puerto Rico.

SCALE

0 .5 1 MILE

0 1000 2000 3000 4000 5000 FEET

Figure 1 LOCATION MAP – CULEBRA ISLAND NATIONAL WILDLIFE REFUGE SITE, CULEBRA ISLAND, PUERTO RICO

DEPARTMENT OF THE ARMY
SOUTH ATLANTIC DIVISION, CORPS OF ENGINEERS
ROOM 313, 77 FORSYTH ST., S.W.
ATLANTA, GEORGIA 30335-6801

REPLY TO
ATTENTION OF:

CESAD-PD-R (200) 6 NOV 1992

MEMORANDUM FOR COMMANDER, MISSOURI RIVER DIVISION, ATTN:
CEMRD-ED-CP, OMAHA, NE 68101-0103

SUBJECT: DERP-FUDS Inventory Project Report (INPR), Culebra Island National Wildlife Refuge, Site No. I02PR006800, PR

1. As requested by CEMRD-ED-CP memorandum dated 2 February 1992, same subject, I am forwarding a scope of work and cost estimate of $126,000 to conduct a site investigation. This study will be scheduled for FY 94.

2. Please complete the processing to this report and forward to CEMP-R with your recommendation. Questions concerning this information should be directed to Gary Mauldin, CESAD-PD-R, at 404-331-6043.

FOR THE COMMANDER:

Merlin E. Foreman
MERLIN E. FOREMAN
Director of Planning

Encl

CF (w/encl):
CESAJ-PD-E
CESAS-PM-H

DEPARTMENT OF THE ARMY
MISSOURI RIVER DIVISION, CORPS OF ENGINEERS
P.O. BOX 103, DOWNTOWN STATION
OMAHA, NEBRASKA 68101-0103

REPLY TO
ATTENTION OF

CEMRD-ED-CP (200-1c)

2 FEB 1992

MEMORANDUM FOR COMMANDER, U.S. ARMY ENGINEER DIVISION, SOUTH ATLANTIC, ATTN: CESAD-PD-R, ROOM 313, 77 FORSYTH STREET, S.W., ATLANTA, GA 30335-6801

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Report (INPR) for Site No. I02PR006800, Culebra Island National Wildlife Refuge (NWR), PR

1. Reference memorandum, CESAD-PD-R, 24 December 1991, subject as above (copy enclosed).

2. We have reviewed the INPR and will recommend further study at this site to include the installation of monitoring wells and performance of soil sampling to determine the presence or absence of contamination. To support our recommendation to partner a Site Investigation (SI) to CESAD/CESAS, please provide the following information:

a. A scope of work and a cost estimate (DD Form 1391 or equivalent) for the SI to characterize the contaminants at the site.

b. An estimated schedule (by FY and quarter) for project scoping, and contract award and completion.

3. Our recommendation will be forwarded to CEMP-R upon receipt of the above information.

4. If there are any questions, please contact Thomas Pfeffer, (402) 221-7439.

Encl
as

GAYLERD E. DAVIS
Colonel, EN
Acting Commander

CF (wo/encl):
CEHND
CEMP-R

Reply to GA

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-PD-EE

9 September 1992

MEMORANDUM FOR Commander, South Atlantic Division,
ATTN: CESAD-PD-R

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Report (INPR) for Site No. I02PR006800, Culebra Island National Wildlife Refuge (NWR), PR

1. This is in reference to your memo dated 18 May 1992. In response to your request to CESAJ-PD-EE, a scope of work and cost estimate are enclosed. An estimated schedule of time needed can not be provided at this time as we are not currently programming this work in house.

2. If you have any questions, please contact Mr. Ivan Acosta, at 904-232-1693.

FOR THE COMMANDER:

2 Encls

A. J. SALEM
Chief, Planning Division

CF:

CESAS-EN-G

PROJECT PLANNING SHEET

1. INSTALLATION NAME: Culebra Island National Wildlife Refuge

LOCATION: Culebra Island, Puerto Rico (PR)

SITE IDENTIFICATION: DERP-FUDS Project No. I02PR006801

PROJECT PHASE: SI/RI - Identify presence/absence of contamination at a wetland area within the U.S. Fish and Wildlife Service (USFWS) and the Department of Natural Resources (DNR) main building facilities.

2. DISTRICT PROJECT MANAGER: Ivan Acosta, Jacksonville District (CESAJ-PD-EE), (904) 232-1693

3. SITE DESCRIPTION: This site is located on the USFWS and the DNR compound in the Ensenada Del Cementerio area, Culebra Island, PR.

4. SITE HISTORY: War Department use began in 1940 with the transfer of portions of Culebra Island from the Department of Interior (DOI) to the Navy for use as a bombing and gunnery range. The areas in question were deactivated in 1975 and transferred back to the DOI, USFWS, the DNR, the Puerto Rico Port Authority, the Municipality of Culebra and the Department of Public Housing, Commonwealth of PR. The area proposed for the SI was used as a support facility by the Navy. The specific wetland is downgradient from a motor pool area.

5. MAJOR CONTAMINANTS: No records have been found to indicate what may have been disposed of in the wetland area. It is assumed, therefore, that petroleum base products from a nearby motor pool area was disposed of there. Also, it appears that the site was used by the Navy to dispose of debris material. No sampling of the wetland contents, soil, or ground water, or surface waters and in the area have been done. There are no other known contaminated areas.

6. CURRENT STATUS: The proposed project was submitted to CESAD-PD-R on 30 September 1991 with the appropriate recommendations for initiation of a Remedial Investigation (RI) for the wetland area.

7. ISSUES AND CONCERNS: The area is a wetland and will tolerate minimal disturbance during testing. Coordination with USFWS and DNR will be necessary.

8. SCOPE: The following general scope of work will be necessary to complete a SI for this project:

a. Ground Water Monitoring Wells. Five ground water monitoring wells will be installed around the perimeter of the wetland area to establish subsurface conditions and obtain samples for chemical testing. PR registration and drilling permits are required for drilling monitoring wells. Each well shall have permanently affixed an ID plate constructed of a durable material containing the following information:

1) Drilling Contractor name and PR registration number
2) Date well was completed
3) Total depth of well
4) A warning that the well is not for water supply and that the ground water may contain hazardous materials
5) Depth(s) to well screen(s)

At each monitoring well location, soil samples will be obtained at ten foot intervals or at each change in strata. Soil samples will be selected, at each of these locations, from the zone(s) to be screened for grain size analyses for use in designing well screen slot size(s) and gravel pack gradation(s). The monitoring wells shall be constructed in accordance with guidance provided by the Corps of Engineers and requirements stated under the P.R. Code, Well Construction Standards. Upon completion of construction, each monitoring well shall be developed by an approved method until the well produces a clear water sample at the anticipated maximum pumping rates to be achieved during sampling for chemical testing. Both a geological log and a monitoring well construction log shall be drawn for each well installed. Before work begins, an approved Site Specific Health and Safety Plan will be required.

b. Chemical Testing. The number of soil (non aqueous) samples to be selected for chemical testing on this project is based on an assumption that each soil boring and therefore each monitoring well will be drilled to a depth of twenty-five feet. Soil samples shall be obtained from each boring and grouped for chemical testing in the following manner: every other three samples or portion thereof beginning at the surface shall be composited for testing with one intervening sample tested separately. Also, upon completion of the development of all monitoring wells, one water sample shall be obtained from each well for chemical testing. Additionally, eight surface water samples shall be taken,and two bottom sediment samples shall be obtained for each well for chemical testing. Each soil and water sample shall be tested for the following chemical parameters:

1) Purgeable Organics - EPA Methods (624/8240)
2) Organochlorine Pesticides/PCB - EPA Method (8080)
3) BNA Extraction, Pesticides - EPA Methods
4) Priority Pollutant Metals - EPA Methods (6010/7470/7740/7421/7060)

Before any sampling is begun at this site, a chemical data acquisition plan (CDAP) will be submitted to CESAJ-PD-EE for review and approval.

c. Engineering Report. An engineering report will be prepared to document and report all findings of this investigation. The report shall include but not be limited to reporting the following: Site location and description, physiography, hydrology, geology and hydrogeology, ownership and prior use, facilities and potentially contaminated areas, documentation of site investigation, hazardous ranking system evaluation, analytical results, conclusions, references and necessary appendices. Also, a records search will be conducted to better determine what was disposed of in the wetland area.

9. SCHEDULE: Not available.

Second Quarter ($000)		Third Quarter ($000)		Fourth Quarter ($000)	
Labor	Contract	Labor	Contract	Labor	Contract
____	____	____	____	____	____

10. FUNDS DATA:

Wetland Investigation Cost-----$115,000.00

Contingencies 10%----------$ 11,000.00

Total Site Investigation-------$126,000.00

1 COMPONENT	FY 19__ MILITARY CONSTRUCTION PROJECT DATA	2 DATE
ARMY		26 Aug 92

3 INSTALLATION AND LOCATION	4 PROJECT TITLE
Culebra Island National Wildlife Refuge	DERP-FUDS

5 PROGRAM ELEMENT	6 CATEGORY CODE	7 PROJECT NUMBER	8 PROJECT COST ($000)
	HTW	I02PR006801	1,130

9 COST ESTIMATES

ITEM	U M	QUANTITY	UNIT COST	COST ($000)
Wetland Investigation Cost				115
Contingencies 10%				11
Total Site Investigation				126
Wetland Closure Construction				720
Contingencies 30%				216
Total Construction Cost				936
MISC				10
Engineering & Design 6%				57
TOTAL IMPLEMENTATION COST				1,130

10 DESCRIPTION OF PROPOSED CONSTRUCTION

I. a. Soil gas survey
   b. Confirmation Soil Borings
   c. Monitor well Installation
   d. Groundwater sampling & Analysis
   e. Site Investigation Report
   f. Environmental Coordination & Report

II. Wetland Closure Construction Mob & Demob

   a. Contaminated material to be removed & disposed
   b. Fill placement
   c. Vegetation

III. Miscellaneous

   a. Remove doors from bldg
   b. Fill in well
   c. Install Fencing

U.S. ARMY ENGINEER DISTRICT, JACKSONVILLE
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

PRELIMINARY COST ESTIMATE	DATE PREPARED 25 Aug 92	SHEET 1 OF 3

PROJECT: DERP Project

LOCATION: CULEBRA ISLAND P.R.

ARCHITECT ENGINEER	CWE	PROGRAMMED
VW812 22105 8DR21		

LINE ITEM NO OR CAT. CODE NO.	ESTIMATOR EPC	CHECKED BY	APPVD BY

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
	Mob & Grub site	2.2	Acres	3000	6600
	Soil/gas tests	20	ea	75	1500
	SINK TEST WELLS	4	ea	5000	20,000
	LAB TESTS soil	25	ea	627	15,675
	WTR	10	ea	655	6,550
	Environmental Contamination Report	1	Ls	25,000	25,000
	INVESTIGATIVE Report	1	Ls	5000	5000
				#	80,325
		Sheet	2		494 885
		Sheet	3		7025
					582,235
		mob & Demob			8194
					591 029
		OH	30%		177309
					768338
		Profit	10%		76833
					845,171

SAJ FORM 430
19 OCT 60

U.S. ARMY ENGINEER DISTRICT, JACKSONVILLE
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

PRELIMINARY COST ESTIMATE	DATE PREPARED	SHEET 2 OF 3

PROJECT

LOCATION

ARCHITECT ENGINEER	CWE	PROGRAMMED

LINE ITEM NO OR CAT. CODE NO.	ESTIMATOR EPC	CHECKED BY	APPVD BY

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
	assume Barge holds 2000 cy 5 trips				
	load trucks @ Culebra Is	10,140 cy	cy	12	121,680
	& haul to barge & unload assume 3 miles				
	Barge & TUG from Culebra	5	days	8000	40,000
	to Fajardo 20 miles 1 day = 5				
	Truck debris from Fajardo	10140	cy	12	121680
	to Landfill assume 20 miles				
	ROAD TARRIFF	1	LS		20,000
	rental Equip Barge	1	mo	4000	2000
	TUG	1	mo	4000	2000
	3000/mo 4 DUMP TRUCKS	4 ea	mo	3000	12,000
	2400 DRAG LINE	1	ea mo	2400	2400
	2400 Clam shell	3 ea	mo	2400	7200
	Dozier	1 ea	mo	2925	2925
	Truck new fill from	5000	cy	12	60,000
	land fill to Fajardo & load				
	on Barge				
	P.R Road tarif	1	LS	10,000	10,000
	Unload barge @ Culebra &	5000	cy	12	60,000
	haul to site & spread				
	New trees Red Mangrove	1.5	acre	10,000	15,000
					494885

SAJ FORM 430
19 OCT 60

U.S. ARMY ENGINEER DISTRICT, JACKSONVILLE
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

PRELIMINARY COST ESTIMATE	DATE PREPARED	SHEET 3 OF 3

PROJECT

LOCATION

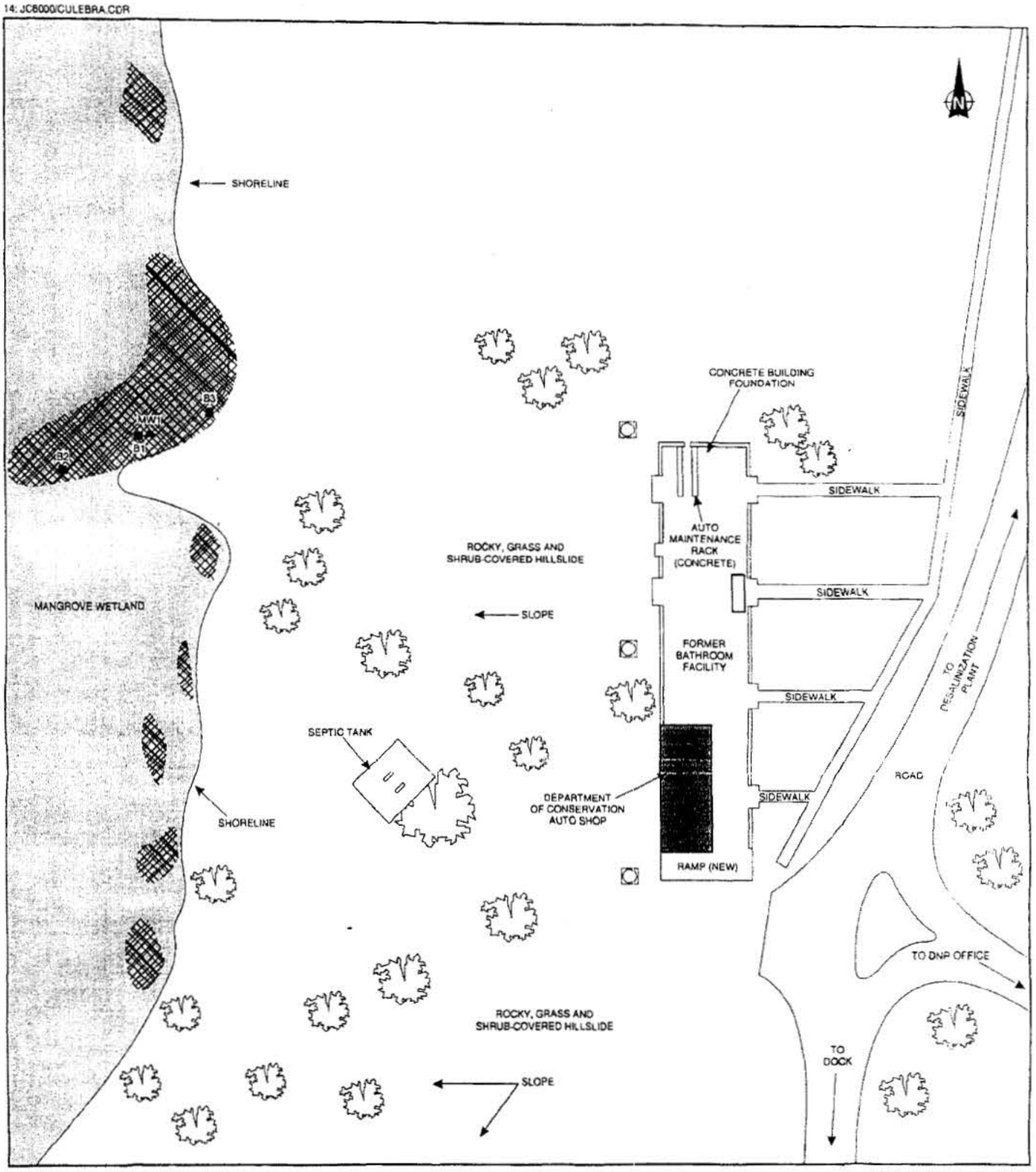
ARCHITECT ENGINEER	CWE	PROGRAMMED

LINE ITEM NO OR CAT. CODE NO.	ESTIMATOR EPC	CHECKED BY	APPVD BY

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
	Miscellaneous items				
	remove doors from Refrigerator	2	ea	25	50
	remove doors from Bldgs	2	ea	100	200
	fill old well - assume 24" Ø × 100' = 3.8 sf × 100' 2×2×100 400÷27 = 14.8 cy	15	cy	5	75
					325
	Install security fencing	670	LF	10	6700
				$	7025
	Mob & Demob barge	1	ea	465×2	930
	TUG	1	ea	905×2	1810
	use barge Dragline	1	ea	48×2	96 (8794
	ferry across Trucks	4	ea	295×2	590
	use barge Cranes	3	ea	83×2×3	498
	ferry across Low boy	5	ea	295×2	2950
	Dozer	1	ea	960×2	1920

SAJ FORM 430
19 OCT 60

14: JC8000/CULEBRA.CDR



SOURCE: Ecology and Environment, Inc., 1996

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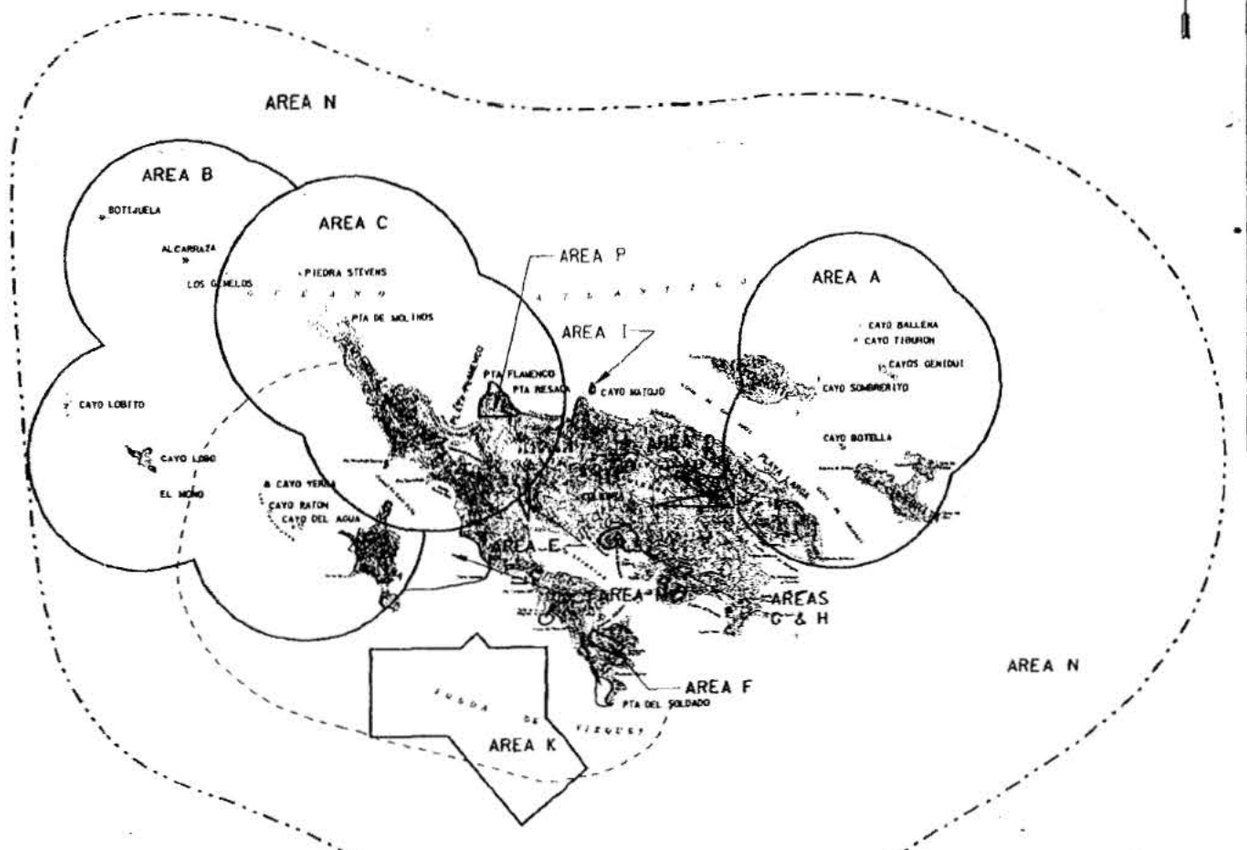
SCALE
0 40 80 (FEET

KEY:

- Tree
- Building
- Septic System Manway
- Sediment Sampling Location
- Visible Areas of Metal Debris
- Monitoring Well

Figure 2 SITE MAP – CULEBRA ISLAND NATIONAL WILDLIFE REFUGE, CULEBRA ISLAND, PUERTO RICO



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SUMMARY OF AREAS

AREA	FORMER USAGE	DEW PRESENCE	APPROXIMATE ACREAGE
A	AERIAL BOMBING AND ROCKETS (EAST)	CONFIRMED	7.400
B	AERIAL BOMBING AND ROCKETS (WEST)	CONFIRMED	10.683
C	NAVAL GUNNERY AND AERIAL BOMBING	CONFIRMED	9.051
D	MORTAR RANGE	CONFIRMED	80
E	AIRFIELD RIFLE RANGE	POTENTIAL	22
F	SOUTHERN RIFLE RANGE	POTENTIAL	43
G	LOWER CAMP	POTENTIAL	60
H	LOWER CAMP DUMPS	POTENTIAL	1
I	CAYO MATOJO	POTENTIAL	1
J	NAVY GUN SITES	POTENTIAL	14
K	MINING NEST	POTENTIAL	2.438
L	MARINE WATER MINEFIELD	POTENTIAL	142
M	CONFIRMED WATER	CONFIRMED	419
N	ALL OTHER WATER	POTENTIAL	57.284
O	ALL OTHER LAND	POTENTIAL	4.764
P	FLAMENCO POINT OP	NOT EVALUATED	87
		TOTAL ACREAGE	92.500

* FOR AREA J, SEE PLATE 7

LEGEND:

SITE BOUNDARY (NAVAL DEFENSIVE SEA AREA)

4000 2000 0 4000 8000

Symbol	Revisions Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

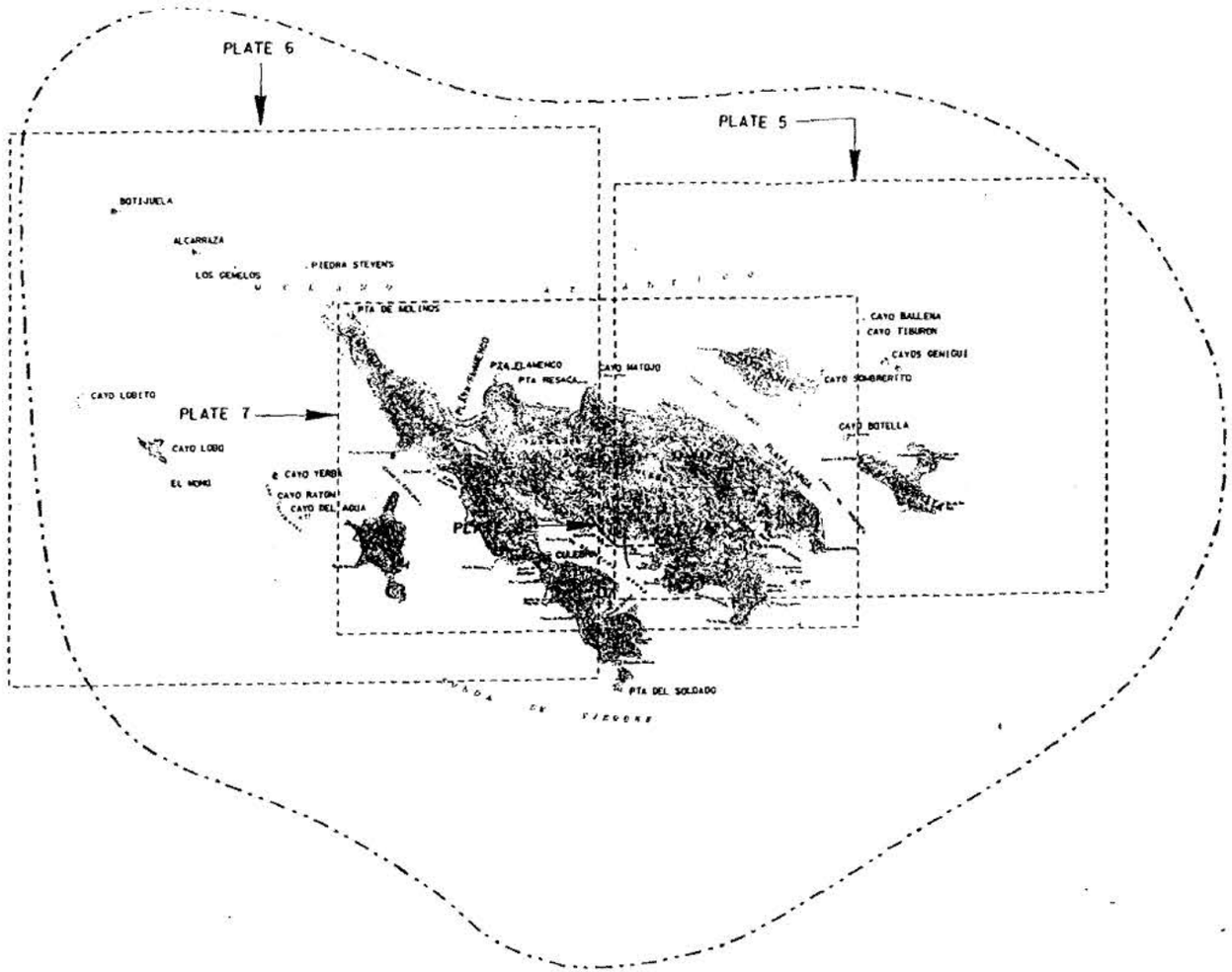
Designed by: R.G.P.
Drawn by: C.A.K.
Checked by: M.J.C.
Reviewed by: D.J.H.
Approved by:

CULEBRA ISLAND
PUERTO RICO

PROJECT AREAS

Scale:
Date:
Drawing Code:
Sheet reference number:
Solicitation Number:
Sheet of

ATTACHMENT PLATE 1



COMMONWEALTH MAP

VICINITY MAP

LEGEND:

- - - - SITE BOUNDARY (NAVAL DEFENSIVE SEA AREA)

NOTE:

MAP ABSTRATCED FROM 1948 USGS TOPOGRAPHY. SITE BOUNDARY ABSTRACTED FROM DOCUMENT L-12.

4000 2000 0 4000 8000

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: R.G.P.
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CULEBRA ISLAND
PUERTO RICO

SITE MAP

Scale:
Date:
Drawing Codes:
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Sheet of

ATTACHMENT PLATE 1