

**FINAL**

**First Five-Year Review Report  
for  
Air to Ground Gun Range Pinellas, Florida  
I04FL033701**

Contract No. W912DY-10-D-0022  
Task Order No. 0004

Prepared for:  
U.S. Army Engineering & Support Center  
CEHNC-CT  
4820 University Square  
Huntsville, Alabama 35816-1822  
and  
U.S. Army Corps of Engineers, Jacksonville District  
701 San Marco Boulevard  
Jacksonville, Florida 32207



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May 2012

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

ASR	Archives Search Report
ATOG	Air to Ground
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DEP	Department of Environmental Protection
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
EA	EA Engineering, Science, and Technology, Inc.
EE/CA	Engineering Evaluation/Cost Analysis
EOD	Explosive Ordnance Disposal
EOTI	Explosive Ordnance Technologies, Inc.
ESE	Environmental Science and Engineering, Inc.
FDE	Findings and Determinations of Eligibility
ft	Feet
FUDS	Formerly Used Defense Site
IC	Institutional Controls
INPR	Inventory Project Report
IRGR	Indian Rocks Gunnery Range
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
NCP	National Contingency Plan
NFA	No Further Action
OU	Operable Unit
Pinellas	ATOG Gunnery Range Pinellas
RAC	Risk Assessment Code
SAJ	Jacksonville District
U.S.	United States
USACE	United States Army Corps of Engineers
USAESCH	United States Army Engineering & Support Center – Huntsville
UXO	Unexploded Ordnance

## **EXECUTIVE SUMMARY**

The United States Army Engineering & Support Center – Huntsville (USAESCH) and the Jacksonville District (SAJ) of the United States Army Corps of Engineers (USACE) have conducted the first five-year review of the ATOG Gunnery Range Pinellas, Florida (Pinellas) in Pinellas County, Florida. The goal of this five-year review is to determine if response actions implemented at the site continue to minimize explosives safety risks and remain protective of human safety, health, and the environment. The triggering event for this five-year review was the completion of the Institutional Controls (IC) Implementation that specified a response action was needed at this site.

Five-year reviews are a requirement under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and the National Contingency Plan (NCP). Five-year reviews at sites that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Department of Defense (DoD), but which subsequently have been transferred out of DoD control, i.e., Formerly Used Defense Sites (FUDS), are conducted under the Defense Environmental Restoration Program (DERP). Pinellas (also referred to as Indian Rocks Gunnery Range [IRGR]) is a FUDS (I04FL033701) located in Belleair Beach, Pinellas County, Florida (Figure 1)<sup>1</sup>. The FUDS, consisting of two parcels, was situated on Sand Key, a coastal barrier island. An air to ground gun range was established and used for training pilots stationed at the Pinellas Army Airfield on the northern parcel and an anti-aircraft gunnery range was used to train soldiers stationed at Drew Field on the southern parcel. These ranges were actively used for military operations from 1943 until 1947.

The land and water areas that make up this FUDS are currently used for private residences, hotels, city parks, and recreation. It is assumed that the current land and water area uses will not change in the future.

From site closure until 1972, there is no documentation indicating that munitions and explosives of concern (MEC) were found in the area of the former Air to Ground Gun Range Pinellas site. However, several newspaper articles indicate local residents have reported finding munitions debris to include spent bullets and bomb/rocket fragments along the shore during this period (USACE 1994). Between June 1972 and January 1993, there were six encounters with MEC or munitions debris. After these encounters, the proper United States Air Force, Army, or Navy authorities were contacted, the MEC items were disposed of and additional removals were conducted as needed. In July 1992, an Inventory Project Report (INPR) was completed for the site. The Findings and Determination of Eligibility (FDE) indicated that 180.30 acres of land at Belleair Beach and Belleair Shores, Florida had been formerly leased and used by the DoD as Pinellas (formerly known as IRGR) and, therefore, the FUDS was eligible for consideration under the Defense Environmental Restoration Program. In June 1994, an Archives Search

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<sup>1</sup> The Performance Work Statement refers to the site as the Air to Ground Gun Range Pinellas; however, historical reports and investigations refer to the site as the Indian Rocks Gunnery Range (IRGR). Both names refer to the same FUDS identified as FUDS Site No. I04FL0337.

Report (ASR) was completed by the USACE Rock Island District for Pinellas (formerly known as IRGR) FUDS. This report documented the findings of an historical records search and the results of a site inspection. The ASR initially subdivided Pinellas into five operable units (OUs) (OU A through OU E) based on past range designation (NOTE: OUs are the same as munitions response sites [MRSs]). The ASR evaluated each OU to determine whether the presence of MEC was confirmed or potential or the OU was considered uncontaminated. In 1995, an EE/CA was completed, followed by an EE/CA Action Memorandum being completed in May 1996. Per the EE/CA Action Memorandum, response actions were selected as remedies at Pinellas. Community Awareness was selected as the response action for OU A and OU C. For OU B, OU D, and OU E, No Further Action (NFA) was selected as the response action.

The EE/CA Action Memorandum (ESE 1996), included the directive that USACE maintain its responsibilities for assessing residual risk at the site by periodically evaluating the continued effectiveness and reliability of the implemented remedial actions. The assessment of this five-year review found that the response actions at OU A and OU C (including OU C1 and C2) were partially completed in accordance with the requirements of the EE/CA Action Memorandum, but have not been maintained. Although the remedy, Community Awareness, was not fully implemented as prescribed by the 1996 EE/CA Action Memorandum, there have been no reported incidents involving MEC or munitions debris at this site; therefore the remedy has been protective in the short-term. However, in order for the remedy to remain protective in the long-term, the remedy (Community Awareness) must be fully implemented. The following actions need to be taken to reduce local risks and ensure future protectiveness:

- USACE should update the USACE FUDS Website to include Pinellas as an alternative to the community awareness specified in the 1996 EE/CA Action Memorandum.
- USACE should work with the City of Belleair Beach to install a historic plaque and/or write an article for the local newspapers as an alternative to the community awareness specified in the 1996 EE/CA Action Memorandum.
- This five-year review report should identify the responsible entities, their roles, and the required actions needed to implement the local remedies.
- A copy of the Final Five-Year Review report should be provided to the City of Belleair Beach to be kept on file at the city hall and a copy should be placed at the reference desk at the Largo Public Library, located at 120 Central Park Drive Largo, Florida 33771-2110.

It is recommended the next five-year review for Pinellas be conducted five years from the date of this report. It is presumed that the next five-year review will be the last issued for this site, unless issues are identified.

**FIVE-YEAR REVIEW SUMMARY FORM**

SITE IDENTIFICATION	
<b>Site name:</b> ATOG Gunnery Range Pinellas, Florida	
<b>FUDS ID:</b> IO4FL0337	
<b>City:</b> Belleair Beach	<b>County:</b> Pinellas
<b>State:</b> Florida	
SITE STATUS	
<b>Selected Response Action Description:</b> Community Awareness, No Further Action	
<b>Response Action Status:</b> Incomplete	
<b>Initial Date of On-Site Field Work for Response Action Implementation:</b> December 1996	
<b>Completion Date for Response Action Implementation:</b> Ongoing	
<b>Does the site include multiple Operable Units (OU) / Munitions Response Sites? Yes</b> <b>If yes, list the areas included in this Five-Year Review and specify type:</b> <ul style="list-style-type: none"> <li>• OU A – Former Air to Ground Gunnery Range Impact Area</li> <li>• OU B – Former Anti-Aircraft Gunnery Range Gun Emplacement Area</li> <li>• OU C1 – Former Air to Ground Gunnery Range Underwater Impact Area - Beach and Wading Zone</li> <li>• OU C2 – Former Air to Ground Gunnery Range Underwater Impact Area - Deep Zone</li> <li>• OU D – Former Anti-Aircraft Gunnery Range Underwater Impact Area</li> <li>• OU E – 1944 Aeronautical Chart Danger Area.</li> </ul>	<b>Has site been put into reuse?</b>  Yes
REVIEW STATUS	
<b>Review Type:</b> Discretionary	
<b>Lead agency:</b> USACE	
<b>USACE-SAJ Project Manager name:</b> Frank Araico	<b>CEHNC-OED Project Manager name:</b> John Cook, P.E., P.L.S.
<b>Author:</b> Jim Daffron/Tim Reese	<b>Author affiliation:</b> Explosive Ordnance Technologies, Inc./EA Engineering, Science, and Technology, Inc.
<b>Review period:</b> 28 July 2010 – 30 September 2011	
<b>Review number:</b> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____	
<b>Date(s) of site visit:</b> 9 May 2011	
<b>Triggering date:</b> May 1996 IC Implementation	
<b>Due date (five years after triggering action date):</b> May 2001	

## Five-Year Review Summary Form, Continued

### Issues:

#### For OUs A/C1/C2:

The response action, Community Awareness, at OUs A, C1, and C2 was partially implemented and has not been maintained as required by the 1996 EE/CA Action Memorandum. The responsibilities for implementing the local initiatives for community awareness (i.e. distribution of brochures) were not clearly defined and the entities responsible did not understand their role(s).

#### For OUs B/D/E:

No incidents involving MEC or munitions debris have occurred since the issuing of the 1996 EE/CA Action Memorandum. No issues were identified with the current remedy (NFA) for this area.

### Recommendations and Follow-up Actions:

#### For OUs A/C1/C2:

Recommend USACE update USACE FUDS Website to include Pinellas as an alternative to the community awareness plan recommended in the 1996 EE/CA Action Memorandum. Recommend a copy of the Final Five-Year Review report be provided to the City of Belleair Beach to be kept on file at the city hall and a copy be placed at the reference desk at the Largo Public Library, located at 120 Central Park Drive Largo, Florida 33771-2110. Recommend installing a historic plaque and/or writing an article for the local newspapers to provide site information and warnings to the public.

#### For OUs B/D/E:

No recommendations or follow-up actions are required at OU B, D or E.

### Protectiveness Statement(s):

#### For OUs A/C1/C2:

The response action at OUs A, C1, and C2 has only been partially implemented and has not been maintained as required by the 1996 EE/CA Action Memorandum. Even so, there have been no reported incidents involving MEC or munitions debris at this FUDS; therefore the remedy has been protective in the short-term. However, in order for the remedy to remain protective in the long-term, response action (Community Awareness) must be fully implemented. When implemented and maintained properly, the selected remedy will be protective of human health and the environment.

#### For OUs B/D/E:

The 1996 EE/CA Action Memorandum recommended NFA for this area. The land use has not changed since the 1996 EE/CA Action Memorandum and no additional information was obtained during the five year review process that indicates the risks at OUs B, D, and E have changed; therefore NFA is still applicable. The selected remedy is still protective of human health and the environment.

**Other Comments:** None.

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## **1. INTRODUCTION**

Under contract to United States Army Engineering & Support Center – Huntsville (USAESCH), Explosive Ordnance Technologies, Inc. (EOTI), teamed with EA Engineering, Science, and Technology, Inc. (EA), conducted a five-year review of the Air to Ground (ATOG) Gunnery Range Pinellas, Florida (Pinellas) Formerly Used Defense Site (FUDS) for the Military Munitions Response Program (MMRP). The MMRP FUDS is under the direction of the United States Army Corps of Engineers (USACE) Jacksonville District (SAJ) as the Life Cycle Project Manager in accordance with ER 200-3-1 and the task order is managed and overseen by USAESCH. The contract to perform this five-year review was awarded under Contract No. W912DY-10-D-0022, Task Order No. 0004, dated 28 July 2010. Future five-year reviews will need to be contracted.

As per the *Final Work Plan for Five-Year Reviews for Six MMRP Sites*, a five-year review of the FUDS is being conducted as determined appropriate by FUDS policy for legacy MMRP projects. This five-year review is considered discretionary. The five-year review focuses on munitions response sites (MRSs) located within the FUDS where a Remedy in Place/Response Complete has been declared. CERCLA guidelines for five-year reviews are being followed to conduct the review.

The overall objective of this five-year review is to evaluate the implementation and performance of the response actions by assessing if the response continues to be protective of human health and the environment, assess the applicability of new technology for addressing previous technical impracticability determinations, and evaluate the maintenance and enforcement as well as the effectiveness of the institutional controls.

A Technical Project Planning meeting was conducted on 27 September 2010 at the SAJ office located in Jacksonville, Florida. The meeting participants included representatives from USACE SAJ, USAESCH and the EOTI Team. The purpose of the Technical Project Planning meeting was to provide an understanding of the work plan, the methodology to implement the work, discuss safety considerations, and review the steps necessary for completion of the five-year reviews. Based on consensus reached during the Technical Project Planning, it was determined that a single work plan would be developed for the six sites and it would also include six abbreviated accident prevention plans. Furthermore, it was determined that an individual Five-Year Review Report will be developed, one for each of the FUDS identified in the Performance Work Statement (EOTI 2010). This report is solely for the Pinellas site.

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## **2. SITE CHRONOLOGY AND DESCRIPTION**

This chapter describes the physical characteristics of the site, provides summaries of land and resource use, and the operational history of Pinellas. This section also describes the initial response actions, provides a summary of site risks, and presents the basis for response actions at the site.

### **2.1 Site Location**

Pinellas (also referred to as Indian Rocks Gunnery Range [IRGR]) is a FUDS located in Belleair Beach, Pinellas County, Florida (Figure 1)<sup>2</sup>. The FUDS, consisting of two parcels, is situated on Sand Key, a coastal barrier island.

### **2.2 Site History**

The IRGR was established during World War II on two parcels of land located on Sand Key. An air to ground gunnery range was established and used for training pilots stationed at the Pinellas Army Airfield on the northern parcel, and an anti-aircraft gunnery range was used to train soldiers stationed at Drew Field on the southern parcel. These ranges were actively used for military operations from 1943 until 1947. Historical documents indicate that ordnance was removed, also referred to as “de-dudding” at the time, from ground surface of the land portion of the site prior to returning the area to civilian control (Environmental Science and Engineering, Inc. [ESE] 1996).

From site closure until 1972, there is no documentation indicating munitions and explosives of concern (MEC) have been found in the area of Pinellas. However, several newspaper articles indicate local residents have reported finding munitions debris to include spent bullets and bomb/rocket fragments along the shore during this period (USACE 1994). On 13 June 1972, a small rocket, identified as a World War II naval barrage rocket, was discovered approximately 40 feet (ft) offshore from Belleair Beach. The small rocket was determined to be a “dud” by United States (U.S.) Air Force explosives experts (ESE 1996).

In July 1975, following the discovery of a “barnacle-encrusted bomb” offshore from Belleair Beach, a search for ordnance offshore was triggered. Army and Navy Explosive Ordnance Disposal (EOD) teams conducted an underwater sweep by sight and recovered and detonated 132 ordnance items from the offshore area, west of the former air to ground gunnery range land impact area. The ordnance items found reportedly included 2.25-inch and 4.5-inch aircraft rockets. Many of the rockets that were found reportedly had high explosive warheads (ESE 1996).

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<sup>2</sup> The Performance Work Statement refers to the site as the Air to Ground Gun Range Pinellas; however, historical reports and investigations refer to the site as the Indian Rocks Gunnery Range [IRGR]. Both names refer to the same FUDS identified as FUDS Site No. I04FL0337.

In June 1977, three 4.2 inch rockets were found off the shores of Belleair Beach. These rockets were turned over to the 66<sup>th</sup> EOD stationed at Cape Canaveral, Florida. It was determined that these rockets contained 2.8 pounds of explosives. In response to this discovery, the mayor wrote a letter to the Navy discussing this incident, indicating that swimmers had reported many more rockets in the waters close to the shore, and requesting assistance from the Navy. According to the Archives Search Report (ASR), there was no official documentation indicating that actions, if any, were taken by the Navy following this incident (USACE 1994).

In June 1980, a “bomb” was discovered approximately 10 yards from the shore in about 8 ft of water. When two more “bombs” were found nearby, a Navy EOD team was called onsite and additional eight “war relics” were reportedly found 50 yards from shore in 5 ft of water (ESE 1996).

In May 1986, a snorkeler pulled ashore a World War II practice bomb and alerted police that he had seen from three to five more in the area off of Belleair Beach. This led to a Navy EOD team sweep of the area and an additional “thirteen items and pieces were recovered” although the specific types of MEC or munitions debris is not documented. At the mayor’s request, an additional grid search and sweep of the area was conducted and even more ordnance was recovered, although the details regarding this sweep and the ordnance recovered were not found in historical documentation (USACE 1994).

In January 1993, a practice bomb was unearthed during a road-widening project on Gulf Boulevard on Sand Key, Pinellas, Florida. This was the only incident that was on record at the supporting EOD detachment (ESE 1996).

A summary of historical events is provided in Table 1.

**Table 1: Chronology of Events**

Event	Date
Several newspapers report local residents finding spent bullets and bomb/rocket debris along the shore (USACE 1994).	Site closure (1947) – 1972
A World War II naval barrage rocket (“dud”) was discovered approximately 40 ft offshore from Belleair Beach (ESE 1996).	13 June 1972
After a “barnacle-encrusted bomb” was discovered offshore from Belleair Beach, Army and Navy EOD teams conducted an underwater sweep and removal (132 ordnance items from 2.25-inch and 4.50-inch aircraft rockets. Many had high explosives warheads) (ESE 1996).	July 1975
Three 4.2 inch rockets were found off the shores of Belleair Beach and turned over to the 66 <sup>th</sup> EOD stationed at Cape Canaveral (USACE 1994).	June 1977
A “bomb” was discovered approximately 10 yards from the shore in about 8 ft of water. When two more “bombs” were found nearby, a Navy EOD team was called onsite and an additional eight more “war relics” were reportedly found in 5 ft of water, 50 yards from shore (ESE 1996).	June 1980
A World War II practice bomb was found and police were alerted that from three to five more were seen in the area off of Belleair Beach. This led to a Navy EOD team sweep of the area and an additional	May 1986

“thirteen items and pieces were recovered.” At the mayor’s request, an additional grid search and sweep of the area was conducted and more ordnance was recovered (USACE 1994).	
An Inventory Project Report (INPR) was completed for the site.	July 1992
A practice bomb was excavated during a road-widening project on Gulf Boulevard (ESE 1996).	January 1993
An ASR was completed by the USACE.	June 1994
An EE/CA Report was completed for the site.	December 1994
An EE/CA Action Memorandum was completed for the site.	May 1996

## 2.3 Operable Units

Multiple investigations and removal actions were conducted on the FUDS, which resulted in the identification of multiple areas of interest; termed operable units (OUs) in site documents (Figure 2) (NOTE: OUs are the same as MRSs). The following OUs were identified in the Engineering Evaluation and Cost Analysis (EE/CA) Action Memorandum (ESE 1996):

- OU A – Former Air to Ground Gunnery Range Impact Area
- OU B – Former Anti-Aircraft Gunnery Range Gun Emplacement Area
- OU C1 – Former Air to Ground Gunnery Range Underwater Impact Area - Beach and Wading Zone
- OU C2 – Former Air to Ground Gunnery Range Underwater Impact Area - Deep Zone
- OU D – Former Anti-Aircraft Gunnery Range Underwater Impact Area
- OU E – 1944 Aeronautical Chart Danger Area.

## 2.4 Land and Resource Use

### 2.4.1 Current Use

OU A is comprised of flat, open, sandy beach lots on which hotels, condominiums, and single family homes have been built. Several small city parks are also located within this area. Access to OU A is unrestricted with the exception of normal private home ownership. OU A has over 150 private owners. OU B is comprised of flat, open, sand beach lots with single family homes. OU B has 5 private owners and access to OU B is unrestricted with the exception of normal private home ownership.

OU C1, OU C2, and OU D are former impact areas located out in the Gulf of Mexico. These impact areas have no owners, but are considered to be within U.S. territorial waters. OU C1 is the shallow zone that makes up the swimming and wading area and is used for recreational purposes, creating a greater likelihood of direct public contact with potential ordnance. OU C2 is the deep zone that makes up the remaining impact area. OU D makes up the entire former impact area for the anti-aircraft gunnery range and includes both shallow and deep waters used

for swimming, boating, and diving. These areas are used for boating and possible diving and the ASR noted that direct public contact with potential ordnance is less likely.

OU E is a former impact area out in the Gulf Coast and in Clearwater Harbor. OU E is comprised of both land and water areas. OU E has hotels, condominiums, and single family homes on the land parcels. Access to land areas in OU E is unrestricted with the exception of normal private home ownership. The water area within OU E has no owner, but is considered to be within U.S. territorial waters, and is mostly used for recreational purposes which include swimming/wading, boating, and diving.

#### **2.4.2 Future Use**

Based on historical use of the area, it is not anticipated that land uses will change in the future. Land use within OU A and OU B will continue to be used for residential and commercial purposes (i.e. hotels, condominiums, single family homes, and small city parks). The majority of property is developed with no vacant land observed during the site visit. OU C1, OU C2, and OU D will remain U.S. territorial waters used for recreational purposes. OU E will remain comprised of both land and water areas which have hotels, condominiums, and single family homes on the land parcels. The water area within OU E will remain U.S. territorial waters used for recreational purposes.

### **2.5 Previous Investigations/Initial Response**

#### **2.5.1 Inventory Project Report (INPR) (July 1992)**

In July 1992, an INPR was completed for the site. The Findings and Determination of Eligibility (FDE) indicated that 180.30 acres of land at Belleair Beach and Belleair Shores, Florida had been formerly leased and used by the Department of Defense (DoD) as Pinellas (formerly known as IRGR) and, therefore, the FUDS was eligible for consideration under the Defense Environmental Restoration Program (DERP). A risk assessment code (RAC)<sup>3</sup> of 2 was assigned to this site (USACE 1992).

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<sup>3</sup> The RAC combines the hazard severity and accident probability into a single number on a scale from 1 to 5, with 1 being the greatest and 5 the lowest. The RAC is used to prioritize response actions (USACE 2004).

## **2.5.2 Archives Search Report (June 1994)**

In June 1994, an ASR was completed by the USACE Rock Island District for the Pinellas (formerly known as IRGR) FUDS. This report documented the findings of an historical records search and the results of a site inspection. The ASR initially subdivided the Pinellas (formerly known as IRGR) into five operable units (OU A through OU E) based on past range designation. The ASR evaluated each OU to determine whether the presence of MEC was confirmed or potential or the OU was considered uncontaminated. A more detailed risk assessment documented in the 1994 ASR individually rated each of the five OUs identified at the IRGR. The lowest RAC score that was assigned in the 1994 ASR was a RAC of 3 for both OU A and OU C (later subdivided and referred to in the 1996 EE/CA Action Memorandum as OU C1 and OU C2). OU D was assigned a RAC of 4 and OU B and OU E were assigned a RAC score of 5. Based on the findings, portions of the property within the Pinellas boundary (OU A and OU C) were recommended for EE/CA investigation (USACE 1994).

## **2.5.3 Engineering Evaluation/Cost Analysis Report (December 1995)**

The Draft EE/CA Report was completed in December 1995 and it was likely finalized shortly thereafter. Only the Draft EE/CA Report was located during the five-year review. This report recommended that community awareness be implemented as the remedial action at OU A, C1 and C2 considering the limited risk associated with the areas (i.e. majority of the ordnance found was low risk practice bombs, no injuries from MEC were ever reported from the areas). NFA was recommended for OU B, D, and E based on the fact that there have been no munitions related discoveries in these areas and there was no evidence that explosive munitions were used or disposed of in these areas, with the exception of non-explosive bullets (ESE 1995).

## **2.5.4 Engineering Evaluation/Cost Analysis Action Memorandum (May 1996)**

In May 1996, an EE/CA Action Memorandum was completed by ESE for USACE SAJ. Per the 1996 EE/CA Action Memorandum, the following response actions were selected as remedies at Pinellas (ESE 1996):

- No Further Action – OU B, OU D, and OU E
- Community Awareness – OU A, OU C1, and OU C2. Community awareness warnings would be provided by posting signs and by educating the public through media such as notices, brochures, and newspaper articles.

## **2.6 Basis for Taking Action**

### **2.6.1 Summary of Risk from Munitions and Explosives of Concern**

The air to ground gunnery range (OU A and OU C) was used for training by pilots stationed at the Pinellas Army Airfield. Explosive aerial rockets (from 2.25-inch and 4.5-inch aircraft rockets) were fired at land targets and small practice bombs were dropped on land targets. The anti-aircraft gunnery range (OU B and OU D) was used for anti-aircraft gun training by soldiers

stationed at Drew Field. Historical documents indicate that 0.50- and 0.30-caliber rounds were fired from the gun emplacement and no explosive munitions were used or stored at this range (ESE 1996).

As summarized above, the 1994 ASR assigned a RAC of 3 for both OU A and OU C (also referred to as OU C1 and OU C2). OU D was assigned a RAC of 4 and OU B and OU E were assigned a RAC of 5.

This led to the EE/CA investigation and subsequent response actions.

### **2.6.2 Summary of Preliminary Site Analysis Results for Air to Ground Gun Range Pinellas**

According to the 1996 EE/CA Action Memorandum, No Further Action was the selected response action for OU B, OU D, and OU E. Community awareness was the selected response action for OU A, OU C1, and OU C2.

A Preliminary Site Analysis worksheet was completed for Pinellas (formerly known as IRGR) to facilitate the Preliminary Site Analysis process (Attachment A). This worksheet indicates additional data were needed from the five-year review field team in order to make a final determination regarding the protectiveness of the response action at Pinellas. Specifically during the five-year review, the field team addressed the following questions via interviews and a site visit:

- How is the community being made aware of potential ordnance related dangers (i.e., brochures/fact sheets, newspapers, etc.)?
- Is the community adequately aware of the potential dangers and how to appropriately respond to them?
- Have additional individual ordnance-related items been found or have ordnance-related incidents occurred since the 1996 EE/CA Action Memorandum was written?
- Are fact sheets being distributed with building permits? Are fact sheets being distributed to tourists and divers?
- Are signs in place in public beaches/parks within the site, indicating the potential hazard? Are these signs being adequately maintained?

### **3. REMEDIAL ACTIONS**

The following sections present the remedy selection, remedy implementation, and a summary of systems operations, as specified in the decision document for Pinellas (formerly known as IRGR), Florida.

#### **3.1 Remedy Selection**

##### **3.1.1 No Further Action**

No further action was the selected remedy at OU B, OU D, and OU E. This alternative was selected based on minimal MEC risk identified at each of these areas. Specifically, according to the 1996 EE/CA Action Memorandum, no explosive munitions were used, stored, or disposed of at OU B; therefore, it is unlikely unexploded ordnance (UXO)/MEC are present at this location. The only munitions that were present at OU D were identified as non-explosive spent bullets and the risk associated with spent bullets is negligible. OU E has had no reports of ordnance and, therefore, the risk to the public should be nonexistent (ESE 1996). For these reasons, no further action was the selected remedy at OU B, OU D, and OU E, meaning no action was required in these areas to reduce the risk of public exposure to MEC.

##### **3.1.2 Community Awareness**

Community awareness was selected as the recommended risk reduction alternative for OU A, OU C1, and OU C2. The primary activities associated with community awareness in these areas include the following:

- Installation of signs
- Educational media (including distribution of brochures and educational materials)
- Long-term monitoring (i.e., five-year reviews).

Community awareness was intended to educate and inform the public of the dangers associated with UXO/MEC at Pinellas. Five-year reviews by the USACE were to be implemented as part of the long-term monitoring program.

#### **3.2 Remedy Implementation**

##### **3.2.1 No Further Action Alternative**

No Further Action was recommended for OU B, OU D, and OU E. There were no operations and maintenance activities required for these areas (ESE 1996).

### **3.2.2 Warning Signs**

As per the Action Memorandum, community awareness consists of providing warnings by posting signs. This action was selected for OU A, OU C1, and OU C2. The posting of warning signs was intended to inform the public of the dangers associated with MEC at the former IRGR. Further details regarding the implementation of community awareness were not outlined in the EE/CA Action Memorandum.

### **3.2.3 Educational Media**

As per the Action Memorandum, community awareness consists of educating the public through media such as notices, brochures, and newspaper articles. This action was selected for OU A, OU C1, and OU C2. The education of the public via notices, brochures, and newspaper articles was intended to inform the public of the dangers associated with MEC at the former IRGR. Further details regarding the implementation of community awareness were not outlined in the EE/CA Action Memorandum.

### **3.2.4 Long-Term Monitoring**

The five-year review process to assess the continued effectiveness and reliability of the implemented alternatives includes, but is not limited to:

- Evaluating if changes have occurred in current/future land uses and their effect, if any, on selected removal actions or controls
- Conducting investigation of reported UXO encounters that may have occurred since completion of the removal actions
- Conducting interviews with local agencies regarding effectiveness of educational media
- Conducting visual spot inspections of the site to evaluate:
  - Erosion effects (i.e., storms, fires, vegetation loss)
  - Adequate supplies and effectiveness of educational media.

#### **4. PROGRESS SINCE LAST FIVE-YEAR REVIEW**

This is the initial five-year review for the site.

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## **5. FIVE-YEAR REVIEW PROCESS**

The following section summarizes activities conducted in preparation of this five-year review. Activities initiated during the five-year review include administrative components, community notification, document review, data review, site inspection, interviews, and a sustainability review.

### **5.1 Administrative Components**

The five-year review team included John Cook, USAESCH, Project Manager; Frank Araico, SAJ, Project Manager; John Keiser, SAJ, Program Manager; Brett Frazier, USAESCH, Project Technical Manager; James Daffron, EOTI, Project Manager; and Tim Reese EA (EOTI Team), Technical Lead, as well as the Florida Department of Environmental Protection (DEP). The review team established the review schedule with the following components:

- Document Review
- Data Review
- Site Inspection
- Interviews
- Community Notification.

### **5.2 Community Notification**

As per Technical Project Planning Meeting Minutes and the project work plan, no Public Notice was required prior to the start of the five-year review site visits (EOTI 2010).

This five-year review report will be made available for public review at the Largo Public Library, located at 120 Central Park Drive Largo, Florida 33771-2110.

### **5.3 Stakeholder Involvement**

The stakeholder role in the five-year review process included the following:

- Reviewing the *Final Work Plan for Five-Year Reviews for Six MMRP Sites*
- Providing input concerning any changes in the future land use that have occurred since the response action was completed
- Providing information regarding MEC or munitions debris encounters since the completion of the response action
- Assisting with the site inspection and providing input regarding the effectiveness of the educational materials.

## 5.4 Existing Information/Document Review

This five-year review included a review of relevant documents to become familiar with the site history and the implemented response action. The review was conducted to accomplish the following objectives:

- Determine what response actions were completed at the site
- Determine where MEC or munitions debris are suspected or were located, if applicable, and document the basis for this determination
- Identify and evaluate the basis for selection of the response action (e.g., land use, site accessibility, etc.)
- Determine if there is an immediate threat to human health, safety, or the environment that requires further response.

This five-year review included a review of relevant documents including the documents summarized in Table 2.

**Table 2: List of Documents Reviewed**

<b>Document</b>	<b>Author, Date</b>
INPR for Site No. IO4FL033700, Air to Ground Gunnery Range, Indian Rocks, Florida	USACE, 1992
ASR for Indian Rocks Air to Ground Gunnery Range, Indian Rocks, Florida	USACE, 1994
EE/CA, Former Indian Rocks Air to Ground Gunnery Range Pinellas County, Florida	ESE, 1995
EE/CA Action Memorandum, Former Indian Rocks Gunnery Range City of Belleair Beach, Florida	ESE, 1996

## 5.5 Site Visit

A site visit was conducted on 9 May 2011 by the EOTI field team, including Ivy Harvey (EA) and Wayne Madsen (EOTI). The purpose of the site visit was to confirm the implementation and assess the protectiveness of the Institutional Controls at the site, specifically warning signs and the supplies of educational media and to meet with local stakeholders (Figure 3). Photographs that were taken during the site visit are presented in Attachment B. The field forms that were completed as part of the field effort are provided in Attachment C. Interview records are presented in Attachment D.

### 5.5.1 Warning Sign Condition

The field team was unable to locate warning signs posted on the beaches as prescribed by the 1996 EE/CA Action Memorandum. Furthermore, the local fire chief and the Belleair Beach Community Services Director were not aware of warning signs being posted in the area. During an interview with the former USACE project manager it was noted that there was local

community resistance to the installation of warning signs and this was confirmed during interviews with the local fire chief and the Belleair Beach Community Service Director. This aspect of community awareness has not been implemented as required by the 1996 EE/CA Action Memorandum at OU A, OU C1, and OU C2.

### **5.5.2 Visual Surface Reconnaissance**

A visual surface reconnaissance was conducted over a portion of the 180-acre site. The EOTI field team, including Ivy Harvey (EA) and Wayne Madsen (EOTI), conducted the visual reconnaissance of the site on 9 May 2011. The visual surface reconnaissance consisted of the team walking the accessible OUs (OUA and OU C1) looking for posted warning signs, taking photos, and making general observations of the current areas use. Warning signs were not posted along the beaches. No munitions-related items were identified during the site visit. The collective uses of the OUs have not changed since the 1996 EE/CA Action Memorandum was completed. OU A remains a private beach community, private residence, and businesses intermixed. OU C1 remains the shallow water area along the beach, which is used for recreation. OU C2 remains the deeper offshore water area, which is also used for recreation (i.e., boating and fishing). No residential or commercial developments have encroached onto OUC1 or OUC2.

No MEC or munitions debris was encountered during the visual reconnaissance and none has been reported since the EE/CA.

### **5.5.3 Adequate Supplies and Effectiveness of Educational Media**

As indicated during an interview with the former USACE project manager 1,000 educational brochures were printed and provided to the city hall for distribution to local residence. The execution of distributing these brochures is not documented. Although there was partial implementation of this response action at OU A, OU C1, and OU C2, community awareness via distribution of educational media has not been maintained as required by the 1996 EE/CA Action Memorandum. The lack of maintenance was evident during site interviews as the current fire chief and the Belleair Beach Community Services Director were not aware of brochures being distributed in the area. At the local repository an example brochure was on file that was distributed prior to the 1996 EE/CA Action Memorandum informing the community of the site's history and the upcoming remedial investigation activities. A copy of this brochure is provided in Attachment C. This was the only educational brochure that was on file at the local repository which suggests no additional brochures were distributed for this site.

## **5.6 Identification of New and Current Site Conditions**

One of the tasks of the five-year review is to identify available information regarding the site that has become available since implementation of the response action. New information has been gathered through interviews with persons knowledgeable about the site including stakeholders such as property owners, local agencies, local community members, and regulators. A list of individuals interviewed is included with Attachment D. Information was also collected through a search of news articles/releases from the major local newspaper and other outlets, as well as public records.

As part of the five-year review process, a Technical Project Planning meeting was held on 27 September 2010 in Jacksonville, Florida. Attending the meeting were the following:

- Frank Araico, SAJ, Project Manager
- John Keiser, SAJ, Program Manager
- Amanda Ellison, SAJ, Public Affairs Specialist
- John Cook, CEHNC-OED, Project Manager
- Brett Frazier, CEHNC, Project Technical Manager
- James Daffron, EOTI, Project Manger
- Tim Reese EA (EOTI Team), Technical Lead.

The purpose of the meeting was to kick-off the five-year review for the six FUDS being conducted as required by CERCLA and the USACE FUDS Program. A presentation was given by EA (EOTI Team) to representatives from USACE SAJ, USAESCH, and the EOTI Team and outlined the history of the site, discussed the purpose of the five-year review, identified the long-term monitoring questions outlined in the decision document, and discussed the field effort for the review.

During the Technical Project Planning meeting and site visit, project stakeholders, local citizens, site owners and SAJ representatives were asked various questions to help assess the effectiveness of the alternatives implemented at the site. The responses provided were used to answer the questions below and are summarized in the following subsections.

**5.6.1 Have there been any changes in the current and/or future land use and will those changes, if any, have an effect on the selected removal actions or controls?**

Current and future land use projections have not changed since the 1996 EE/CA Action Memorandum was completed.

**5.6.2 Have there been any reported munitions and explosives of concern or munitions debris encounters that have occurred since completion of the removal actions?**

No reported MEC or munitions debris encounters have occurred since the completion of the EE/CA.

**5.6.3 Do the private landowners feel the educational media has been effective?**

During the site visit, no educational media was identified (i.e. warning signs or fact sheets) at the site. Furthermore, interviews conducted with the local fire chief and Belleair Beach Community Service Directory indicate educational media is not being fully implemented and maintained. Specifically there are no warning signs posted on the beaches and educational brochures are not being distributed; therefore educational media is not currently effective at this site.

**5.6.4 Have there been land ownership changes or transfers that impact the protectiveness of the remedy?**

This site is heavily developed and, although individual parcels may have changed ownership, the land use has remained consistent since the 1996 EE/CA Action Memorandum was issued; therefore land ownership has not impacted the protectiveness of the remedy

**5.6.5 Are the responsibilities for implementing the local initiatives clearly defined and do the entities responsible understand their role(s)?**

Responsibilities for implementing the local initiative are not clearly defined in the 1996 EE/CA Action Memorandum and local entities do not understand their role.

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## **6. TECHNICAL ASSESSMENT**

### **6.1 Question A: Is the remedy functioning as intended by the decision documents? (Is the response functioning as intended?)**

No. Based on the information gathered during the site visit, the response has only been partially implemented as intended by the 1996 EE/CA Action Memorandum. As indicated by the former USACE project manager 1,000 brochures/fact sheets were provided to city hall for distribution but, there has been no follow up to this response action to confirm it was not completed nor is it being maintained. During the field visit the Belleair Beach community center did not have any brochures or fact sheets available for visitors. Furthermore, there is no record that warning signs were ever posted and during the site visit warning signs were not identified on the beaches. While the implementation of the response action has not been fully implemented and maintained as required by the 1996 EE/CA Action Memorandum there have been no reported incidents involving MEC.

Community personnel are aware that there is a MMRP FUDS project site in the area; however, it is not likely private landowners have the same awareness. As per the interviews with the fire chief and the community services director of Belleair Beach (refer to Attachment D) the local community is seasonal and many of the residents are only in the area for limited periods of time throughout the year. Consequently, it is unlikely that the private landowners are aware of the site's history.

### **6.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid? (Are any assumptions used at the time of the response selection still valid?)**

Yes. The assumptions made at the time of the response selection are still valid.

### **6.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy? (Does new information indicate that the previously selected response no longer minimizes explosives safety risks and/or is no longer protective of human health, safety, and the environment considering the best available technology?)**

No. No new information was identified that would indicate that the previously selected response actions are no longer effective for this site.

## **6.4 Technical Assessment Summary**

Three significant issues were identified during the five-year review process. The following provides a summary of these issues and presents recommendations to resolve them.

### **6.4.1 Warning Signs**

Warning signs intended to inform the public of the dangers associated with MEC at Pinellas were not present during the site visit. The absence of these signs represents a breakdown in the institutional control process. Interviews with personnel associated with community indicated that warning signs were never put in place because of the local community fears the signs would devalue their homes.

Due to community resistance, it is recommended as an alternative to warning signs, as suggested in the 1996 EE/CA Action Memorandum, that USACE implement community awareness by updating the USACE FUDS Website to include Pinellas. Furthermore the Final Five-Year Review Report should be placed at the reference desk at the Largo Public Library, located at 120 Central Park Drive Largo, Florida 33771-2110.

### **6.4.2 Educational Materials**

Education materials, brochures, and newspaper articles intended to inform the public of the dangers associated with MEC at Pinellas were not identified at the site during the site visit. Although 1,000 brochures/fact sheets were provided to the city hall for distribution the field team was unable to confirm distribution of these brochures. The Community Services Director for the City of Belleair Beach had no recollection of brochures or fact sheets being provided to residents or being available for distribution. Furthermore, he had no documentation on file regarding the status of the FUDS.

Due to community resistance, it is recommended as an alternative to the distribution of fact sheets (as recommended in the 1996 EE/CA Action Memorandum) that USACE update the USACE FUDS Website to include Pinellas. It is also recommended the Final Five-Year Review report be provided to the City of Belleair Beach to be kept on file at the city hall and a copy be placed at the reference desk at the Largo Public Library, located at 120 Central Park Drive Largo, Florida 33771-2110.

### **6.4.3 Stakeholder Awareness**

As was confirmed during interviews the community awareness response action has only been partially implemented. Although brochures/fact sheets were provided to the city hall, it is unclear as to whether or not they were ever distributed. Furthermore brochures/factsheets are not currently being distributed in the area nor are warning signs posted along the beaches. Community personnel reported that the area was predominantly comprised of seasonal populations with mostly tourists and vacation home owners; therefore it is unlikely that the general public is aware of the site's history and associated hazards. Although, the community personnel interviewed were aware of the history and hazards surrounding the site they were unaware of the FUDS current status.

## 7. ISSUES

The following issues were raised during the initial five-year review at Pinellas (Table 3). Recommendations and follow-up actions are presented in Chapter 8 and Table 4.

**Table 3: Issues Raised during the Five-Year Review**

Issue		Affects Current Protectiveness? (Y /N)	Affects Future Protectiveness? (Y /N)
1.	The community is not being made aware of potential ordnance-related dangers and how to appropriately respond to them (i.e., brochures/fact sheets, newspapers, etc.).	N	Y
2.	Fact sheets are not being distributed to tourists and divers.	N	N
3.	No signs are in place on public beaches/ within the site, indicating the potential hazard.	N	Y
4.	The responsibilities for implementing the local initiatives were not clearly defined and the entities responsible did not understand their role(s).	N	Y

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## 8. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

This section presents the recommendations for Pinellas along with the recommended follow-up actions in response to the issues presented in Chapter 7.

**Table 4: Recommendations and Follow-Up Actions**

	<b>Issue</b>	<b>Recommendations/Follow-up Actions</b>	<b>Responsible Entity/Oversight Agency</b>	<b>Milestone Date</b>
1.	The community is not being made aware of potential ordnance-related dangers and how to appropriately respond to them (i.e., brochures/fact sheets, newspapers, etc.).	USACE update the USACE FUDS Website to include Pinellas. Recommend a copy of the Final Five-Year Review report be provided to the City of Belleair Beach to be kept on file at the city hall and be placed at the reference desk at the local library.	USACE	6/30/2012
	Fact sheets are not being distributed to tourists and divers.	USACE update the USACE FUDS Website to include Pinellas. Recommend a copy of the Final Five-Year Review report be provided to the City of Belleair Beach to be kept on file at the city hall and be placed at the reference desk at the local library.	USACE	6/30/2012
2.	No signs are in place on public beaches/ within the site, indicating the potential hazard.	USACE to install a historic plaque and/or write an article for the local newspapers to provide site information and warnings to the public.	USACE	6/30/2012
5.	The responsibilities for implementing the local initiatives were not clearly defined and the entities responsible did not understand their role(s).	This five-year review report will identify the responsible entities, their roles, and the required actions needed to implement the local remedies.	USACE	6/30/2012

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## **9. PROTECTIVENESS STATEMENT**

### For OUs A, C1, and C2:

Although the remedy, Community Awareness, has not been fully implemented as prescribed by the 1996 EE/CA Action Memorandum at OU A, OU C1 and OU C2, there have been no reported incidents involving MEC or finds of munitions debris at this FUDS; therefore the remedy has been protective in the short-term. However, in order for the remedy to remain protective in the long-term, Community Awareness must be fully implemented. When implemented and maintained properly, the selected remedy will be protective of human health and the environment. The following actions are recommended to ensure future protectiveness:

- USACE should update the USACE FUDS Website to include Pinellas as an alternative to the community awareness specified in the 1996 EE/CA Action Memorandum.
- USACE should work with the City of Belleair Beach to install a historic plaque and/or write an article for the local newspapers to provide site information and warnings to the public.
- This five-year review report should identify the responsible entities, their roles, and the required actions needed to implement the local remedies.
- A copy of the Final Five-Year Review report should be provided to the City of Belleair Beach to be kept on file at the city hall and a copy should be placed at the reference desk at the Largo Public Library, located at 120 Central Park Drive Largo, Florida 33771-2110 and the Jacksonville Public Affairs Office at 6801 Roosevelt Boulevard, Jacksonville, Florida.

### For OUs B, D, and E:

The 1996 EE/CA Action Memorandum recommended NFA for OUs B, D, and E. The land use has not changed since the 1996 EE/CA Action Memorandum and no additional information was obtained during the five year review process that indicates the risks at OUs B, D, and E have changed; therefore NFA is still applicable. The selected remedy is still protective of human health and the environment.

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## **10. NEXT REVIEW**

It is recommended the next five-year review for Pinellas be conducted five years from the date of this report. It is presumed that the next five year review report will be the last one issued for this site unless issues are identified.

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## 11. REFERENCES

Environmental Science and Engineering, Inc. (ESE). 1994. *Final Work Plan for Engineering Evaluation/Cost Analysis Former Indian Rocks Air-to-Ground Gunnery Range Pinellas County, Florida.*

ESE. 1995. *Draft Engineering Evaluation/Cost Analysis for the Former Indian Rocks Gunnery Range Formerly Used Defense Site in Belleair Beach, Florida.*

ESE. 1996. *Engineering Evaluation/Cost Analysis Action Memorandum Former Indian Rocks Gunnery Range City of Belleair Beach, Florida.*

Explosive Ordnance Technologies, Inc. (EOTI). 2010. *Technical Project Planning Memorandum Five-Year Reviews Six Military Munitions Response Program Sites. 27 September.*

United States Army Corps of Engineers (USACE), Jacksonville District. 1992. *Defense Environmental Restoration Program-Formerly Used Defense Site Inventory Project Report for Site No. I04FL033700, Air to Ground Gunnery Range, Indian Rocks, Florida.*

USACE, Island District. 1994. *Defense Environmental Restoration Program for Formerly Used Defense Sites Ordnance and Explosives, Archive Search Report for Indian Rocks Air-to-Ground Gunnery Range, Belleair Beach, Florida Project No. I04FL033701.*

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## **Figures**



0 0.25 0.5 0.75 1 Miles

Projection: NAD27 StatePlane Florida West



Pinellas  
Air-To-Ground  
Gunnery Range

Gulf of Mexico

Clearwater Harbor

Gulf Blvd

Belleair Bluffs

Indian Rocks Rd

**Legend**

**Installation Data**

-  Installation Boundary
-  Major Road

**Hydrology**

-  Waterbody
-  Rivers

**Figure 1 - General Location**

**Air-To-Ground Gun Range  
Pinellas (104FL033701)  
Pinellas County, Florida**

Data Sources:  
ESRI Streetmap 2007  
U.S. Army Installation Data

Date: ..... June 2011  
Prepared By: EA Engineering, Science & Technology  
Prepared For: ..... U.S. Army Corps of Engineers



**EOTI**  
EXPERIMENTAL OPERATIONAL TESTS  
EA Engineering, Science, and Technology, Inc.



0 0.25 0.5 0.75 1 Miles

Projection: NAD27 StatePlane Florida West



Gulf of Mexico

Clearwater Harbor

OU C1

OU C2

OUA

OU E

Gulf Blvd

Belleair Bluffs

OU D

OU B

**Recurring Reviews**

**Areas of Interest**

- OU A: Air-to-Ground Gunnery Range Land Impact Area
- OU B: Anti-Aircraft Gunnery Range Gun Emplacement Area
- OU C1: Air-to-Ground Gunnery Range Underwater Impact Area- Beach and Wading Zone
- OU C2: Air-to-Ground Gunnery Range Underwater Impact Area- Deep Zone
- OU D: Anti-Aircraft Gunnery Range Impact Area
- OU E: 1944 Sectional Aeronautical Chart "Danger Area"

**Legend**

**Installation Data**

- Installation Boundary
- Major Road

**Hydrology**

- Waterbody
- Rivers

**Figure 2 - Operable Units**

**Air-To-Ground Gun Range  
Pinellas (I04FL033701)  
Pinellas County, Florida**

Data Sources:  
ESRI Streetmap 2007  
U.S. Army Installation Data

Date: June 2011  
Prepared By: EA Engineering, Science & Technology  
Prepared For: U.S. Army Corps of Engineers





0 0.25 0.5 0.75 1 Miles

Projection: NAD27 StatePlane Florida West



Air-To-Ground Gun Range  
Pinellas

Gulf of Mexico

Clearwater Harbor

OU C1

OU A

OU E

OU C2

OU B

Belleair Bluffs

Indian Rocks Rd

**Legend**

-  Installation Boundary
-  MRS Boundary
-  Visual Surface Reconnaissance Tracks
-  Major Road

**Figure 3 - Visual Surface Reconnaissance Tracks**  
**Air-To-Ground Gun Range**  
**Pinellas (104FL033701)**  
**Pinellas County, Florida**

Data Sources:  
 ESRI Streetmap 2007  
 U.S. Army Installation Data

Date: June 2011  
 Prepared By: EA Engineering, Science, and Technology, Inc.  
 Prepared For: U.S. Army Corps of Engineers



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**Attachment A**

**Preliminary Site Analysis Worksheet**

<b>PRELIMINARY SITE ANALYSIS WORKSHEET</b> <b>Air to Ground Gun Range Pinellas</b>	
<b>What changes have occurred that may affect prior decisions concerning the site?</b>	Physical Changes: Possible erosion along the beaches.  Accessibility to Public: None.  Land Use: None.  Technology Changes: None.  Other:
<b>How do these changes affect previous decisions for this site?</b>	These changes do not affect previous decisions at the site.
<b>What is the status of any Land Use Controls implemented at the site?</b>	No land use controls have been established for this site. Only community awareness has been recommended for Operable Units (OUs) OU A, OU C1, and OU C2.
<b>What additional information is needed to develop a conclusion regarding the continued protectiveness of the response?</b>	The following questions should be addressed:  Is the community adequately aware of the potential dangers and how to appropriately respond to them? The community is not adequately aware of the potential dangers and how to appropriately respond.  How is the community being made aware (i.e., pamphlets, newspapers, etc.)? The community is not aware of the potential dangers.  Have additional ordnance-related items been found or have ordnance related incidents occurred since the Engineering Evaluation/Cost Analysis Action Memorandum was written? No additional ordnance-related items or incidents have been found or have occurred at the site since the Engineering Evaluation/Cost Analysis Action Memorandum.
<b>Recommendations for follow-up action.</b>	Recommend United States Army Corps of Engineers update United States Army Corps of Engineers Formerly Used Defense Site Website to include the Air to Ground Gun Range Pinellas, Florida as an alternative to the community awareness plan recommended in the 1996 Engineering Evaluation/Cost Analysis Action Memorandum. Recommend the Final Five-Year Review report be placed at the reference desk at the local library.
<b>List documents, resources used.</b>	1992 Inventory Project Report, 1994 Archives Search Report, 1996 Engineering Evaluation/Cost Analysis Action Memorandum.

# **Attachment B**

## **Site Photographs**



**PHOTO 1: ENTERING BELLEAIR BEACH FROM THE NORTH,  
WALKING SOUTH ON GULF BLVD.**



**PHOTO 2: FACING NORTH ON THE SHORELINE OF BELLEAIR  
BEACH, LOOKING AT OU A AND OU C1.**



**PHOTO 3: CONDOMINIUMS LINING THE BEACH AT OU A.**



**PHOTO 4: SIGNS POSTED ALONG BELLEAIR BEACH  
WARNING NO LIFEGUARD ON DUTY.**



**PHOTO 5: LOOKING EAST ACROSS GULF BLVD. AT THE RESIDENTIAL LOTS.**



**PHOTO 6: PARKING AREA LOCATED ALONG THE SOUTHERN BORDER OF OU A.**

# **Attachment C**

## **Field Forms**

**U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE (USAESCH)  
ABBREVIATED ACCIDENT PREVENTION PLAN (AAPP)**

**SITE VISIT TEAM STATEMENT AND SIGN-IN-PAGE  
FOR  
Pinellas ATG Gunnery Range**

**NOTE:** This statement is the record to be maintained in the government/Contractor's on-site files through the entire life of the task order or project. The statement should only be completed just prior to the actual visit taking place. It does not have to accompany this AAPP when submitted for review.

1. Team members will sign this statement:
  - a. Prior to the start of the site visit.
  - b. When a change is made to this AAPP.
  
2. I have read, or have had read to me, and understand the general and specific safety and environmental requirements, and will abide by the contents contained in the AAPP. I have been briefed and trained in, and am familiar with, my requirements to conduct the site visit.

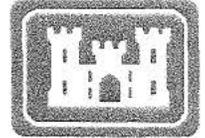
Name (Print)	Affiliation	Signature	Date MM/DD/YR
Ray Harvey	EA	Ray M Harvey	5/9/2011
Wayne Nardson	EOTI	Wayne Nardson	5/9/2011

Team Leader or Site Safety Officer presenting briefing:

Wayne Nardson
Wayne Nardson
05/09/11  
 (Name) (Signature) (Date)  
MM/DD/YR

EOTI DAILY SITE REPORT						
<b>EOTI</b> EXPLOSIVE ORDNANCE TECHNOLOGIES, INC.		5 YEAR REVIEW Project Name: <b>INCEAS IRGR</b>				
Explosive Ordnance Technologies, Inc. (EOTI) 105 W. Tennessee Ave. Oak Ridge, TN 37830			Project Location: <b>BEAIR BEACH, FL</b> Project #: Report #: Date: <b>5/9/11</b>			
Weather Conditions:		<b>SUN 930</b>				
Major Equipment Items on Site						
ITEM	Quantity	Hrs Used	ITEM	Quantity	Hrs Used	
<b>SCHWENST ORID LOC</b>	<b>1</b>	<b>8</b>				
<b>GARMIN GPS</b>	<b>1</b>	<b>8</b>				
<b>DIGITAL CAMERA</b>	<b>1</b>	<b>8</b>				
Personnel on Site			Personnel on Site			
Name	Position	Hrs (today)	Name	Position	Hrs (today)	
<b>IUV HARVEY</b>	<b>EA ENGINEER</b>	<b>8</b>				
<b>WAYNE MADSEN</b>	<b>EOTI</b>	<b>8</b>				
Exposure Data						
Previous Hours	<b>0</b>	Hours Today	<b>0</b>	Hours to Date	<b>0</b>	
Previous Accidents	<b>0</b>	Accidents Today	<b>0</b>	Accidents to Date	<b>0</b>	
Prev. Lost Work Days	<b>0</b>	Lost Workdays Today	<b>0</b>	Lost Work Days to Date	<b>0</b>	
Ordnance Data						
Previous UXO Found	<b>0</b>	# UXO Today	<b>0</b>	# UXO to Date	<b>0</b>	
Note: See UXO Log for description / disposition of ordnance items.						
Anomaly Clearance Data						
Prev. Anomalies Reaquired	<b>0</b>	# Anomalies Reaq Today	<b>0</b>	# Anomalies Reaq to Date	<b>0</b>	
Prev. Digs Completed	<b>0</b>	Digs Completed Today	<b>0</b>	Digs Completed to Date	<b>0</b>	
QC Inspections / Results:			QA Inspections / Results:			
Verbal Instructions Received or Given: (Instructions received from client or given by EOTI and corresponding action taken.) <b>Site Safety Brief Given concerning Potential UXO</b>						
Changed Conditions/Delays/Conflicts Encountered: (List conditions which have hindered ID removal or disposal of UXO.)						
Other comments, additional information, and / or lessons learned:						
Work performed today. Indicate location and include equipment used. <b>*IUV HARVEY (EA ENGINEERING) MEETS / INTERVIEWS MR. ALAN GODFREY, Community Service Director, BEAIR BEACH, FL ; REF: FORMER PINELLAS IRGR. FOLLOW ON INSPECTION OF SITE ON FOOT. DIGITAL PHOTOS AND GPS POSITIONS RECORDED.</b> <b>WAYNE MADSEN (EOTI, INC) ACCOMPANIES IUV HARVEY DURING INTERVIEW / INSPECTION AS SAFETY ESURT AND TECHNICAL EXPERTISE. NEGATIVE FINDINGS</b>						
Contractor's Verification: The above report is complete and correct. All equipment used and work performed during this reporting period are in compliance with the plans and specifications except as noted above.						
Original Signed On site Representative- <b>Wayne Madsen</b>			<b>5/9/11</b> Date: <b>01/00/00</b>			

35514



## Project Purpose

The purpose of the project is to determine the extent and nature of ordnance and explosive waste/unexploded ordnance (OEW/UXO) contamination that may remain at the former Indian Rocks Air-to-Ground Gunnery Range (Indian Rocks Range) from training activities conducted by the military during World War II (WWII).

## Project Location

The former Indian Rocks Range is located in Belleair Beach and Belleair Shores, which are small incorporated beach communities in Pinellas County, FL. Situated on Sand Key, a coastal barrier island, the site is long and narrow, extending approximately 4,900 feet from north to south. The northern extent of the areas identified as likely to contain conventional OEW/UXO borders the southern city limit of Clearwater Beach, FL, and the southern extent of these areas is near Nineteenth Street in the city of Belleair Beach, FL.

## Site History

The former Indian Rocks Range was leased by the War Department in 1943 during WWII for training of fighter pilots stationed at Pinellas Army Airfield. Two parcels of land were involved in the lease agreement. The larger parcel (177.8 acres) was leased for use as an air-to-ground gunnery range impact area, and the smaller parcel (2.5 acres) was leased for use as an anti-aircraft gunnery range gun emplacement and was assigned to Drew Field, Tampa, FL.

Ordnance used on the larger impact area during training activities included machine gun bullets, aircraft rockets, and small practice bombs. Some of this ordnance probably overshot its target and landed in the Gulf of Mexico, immediately offshore of the impact area. The gun emplacement fired machine gun bullets at targets in or above the Gulf of Mexico, which accounts for the type of ordnance thought to be in the area.

# Former Indian Rocks

## Air-to-Ground Gunnery Range

The leases for both of these sites were canceled in January 1947. Since then, these sites and the surrounding properties were subdivided numerous times. Currently, the larger parcel has more than 150 separate parcels of land that contain hotels, condominiums, and single family residences. The smaller parcel now consists of five single family residences. The northern town was given the name Belleair Beach, of which approximately half is the former Air-to-Ground Gunnery Range. The southern town was named Belleair Shores and contains the former Anti-Aircraft Gunnery Range.

## Previous Investigations

An archives search and site inspection were conducted during 1993 and 1994 by the U.S. Army Corps of Engineers. The archives search report determined it likely that conventional explosive ordnance remains at the former Indian Rocks Range in the following areas:

- Air-to-Ground Gunnery Range Impact Area (Land Impact Area); and
- Air-to-Ground Gunnery Range Underwater Impact Area (Underwater Impact Area).

## Principals Involved

Two Corps of Engineers organizations are involved with this activity: Jacksonville District (Jacksonville, FL) and Huntsville Division (Huntsville, AL). The Jacksonville District is responsible for the geographic area where the former military installation is located, and the Huntsville Division is the Corps of Engineers' Center of Expertise for Ordnance and Explosive Waste Engineering. The Huntsville Division contractor for this project is Environmental Science & Engineering, Inc. (ESE) of Gainesville, FL.

## Project Description

The U.S. Army Corps of Engineers is performing OEW cleanup activities at the former Indian Rocks Range. In March 1995, the Corps of Engineers began the Engineering Evaluation/Cost Analysis (EE/CA). The purpose of the EE/CA is to determine the extent and nature of contamination, evaluate remedial alternatives available, and select the best way to remediate the site. The first phase of the EE/CA is a survey to determine the extent of ordnance contamination at the former Indian Rocks Range. During this phase of the project, the contractor, ESE, has subcontracted with Post, Buckley, Schuh & Jernigan of Tampa, FL, and ADI Services of Huntsville, AL, to conduct the actual site investigation. The Corps of Engineers expects the EE/CA report to be complete by October 1995.

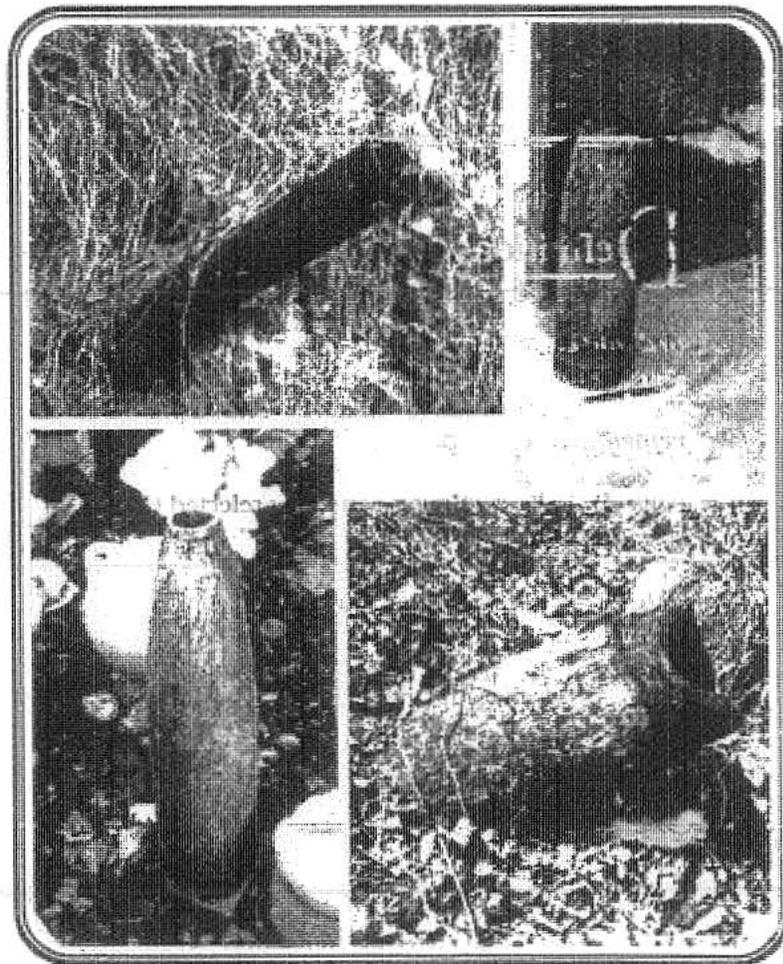
## Magnetometer Survey

Selected sampling areas will be surveyed with magnetometers. The magnetometer is a highly sensitive metal detector that looks for changes in underground magnetic fields, to determine if iron-based metallic objects are present.

The information from the magnetometer survey is then put into a database and a map is generated to show locations of subsurface magnetic anomalies. Using these data, the U.S. Army Corps of Engineers' experts can determine what further action(s) is necessary at the former Indian Rocks Range.

## Ordnance

Ordnance could be found at the former Indian Rocks Range. It may look like one of these photographs. If you see or have seen anything that resembles ordnance, please call 911 immediately. **DO NOT TOUCH OR TRY TO MOVE IT.**



## Public Safety

Safety is the U.S. Army Corps of Engineers' primary concern. All Corps of Engineers operations will be planned with public safety as the primary objective. Contractor personnel will mark off a safety exclusion zone daily and survey this zone for ordnance and explosive waste. Because of the nature of this work, only contractor personnel involved in the removal process will be allowed near the actual survey sites.

## Repository

A repository will be established in the project area. The Jacksonville District Public Affairs office is coordinating this effort with the Largo Library. All documentation compiled and generated for this activity will be located at this repository and available to the public.

## Project Funding and Purpose

This project is funded by the Defensive Environmental Restoration Program (DERP) under Public Laws 99-190 and 99-499, established by Congress in 1986. Under this program are two sub-programs: the Installation Restoration Program (IRP) for active military bases, and the Formerly Used Defense Sites (FUDS) program.

Under DERP, the Defense Department's goal is to clean up environmental problems on present and formerly used sites; therefore, the FUDS program is applicable to this project. There are three main activities in the FUDS program:

- Remove and dispose of hazardous and toxic waste,
- Demolish and remove old buildings and debris on public lands that pose a threat to human health and safety, and
- Remove ordnance and explosive waste.

## Definitions

**ordnance:** military supplies including weapons, ammunition, and combat vehicles.

**remediate:** cleanup.

**remedial alternatives:** an activity selected to cleanup a site.

**safety exclusion zone:** area with no public access.

**anomalies:** abnormal magnetic fields

## Additional Information

For more information about Corps of Engineer activities at the former Indian Rocks Range, call or write:

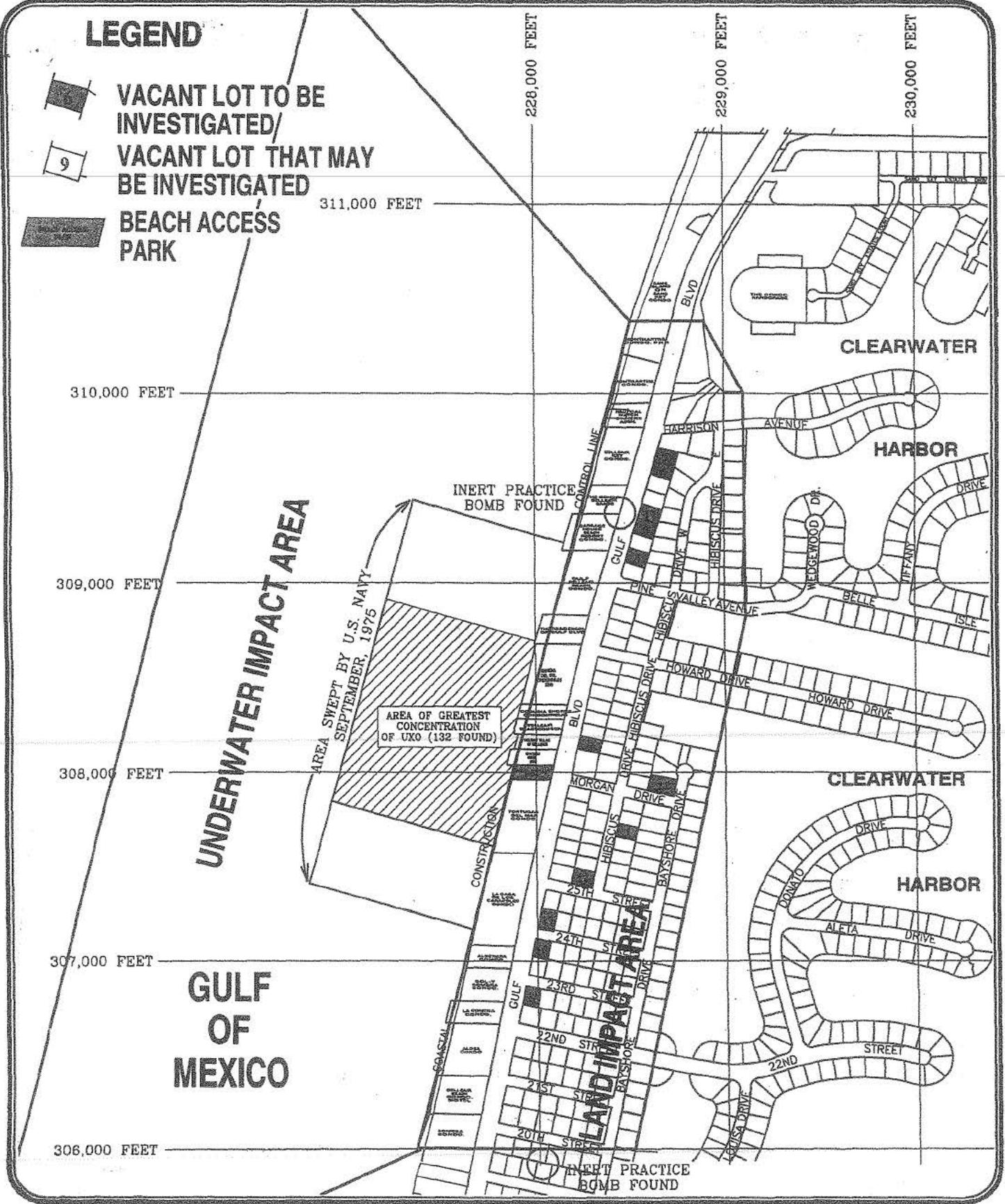
U.S. Army Corps of Engineers  
Jacksonville District

ATTN: Public Affairs  
P.O. Box 4970  
Jacksonville, FL 32232-0019  
904/232-2235

# Site Map

## LEGEND

-  VACANT LOT TO BE INVESTIGATED/
-  VACANT LOT THAT MAY BE INVESTIGATED
-  BEACH ACCESS PARK



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## **Attachment D**

### **Interviews**

- Allen Godfrey, Community Services Director
- Robert O. Polk, Fire Chief
- Tammy Winkler, Librarian
- Robert Bridgers, SAJ Former Project Manager for Air to Ground Gun Range Pinellas

## **Interview Questionnaire for MMRP Five-Year Review**

**Site Name:** Air to Ground Gun Range Pinellas, Florida

**Site Number:** I04FL0337

**Person being interviewed:** Allen Godfrey  
Community Services Director (Belleair Beach)

**Date:** 9 May 2011

**1. How long have you lived/worked in this area?**

I have lived in the area for over 20 years and have been with the City of Belleair for the past 8 years.

**2. Are you aware that there is a MMRP FUDS project site in your vicinity and/or what is your current impression of the MMRP FUDS project site in your area?**

Yes. I am aware of the history surrounding this area (i.e., FUDS), but I am not so sure the general public is. The general population in this area is predominantly comprised of tourists. Many of the homeowners do not live here year round, but vacation here on occasion.

**3. Are you aware of any events, incidents, or activities at the FUDS such as emergency responses regarding munitions findings from local authorities? If so, please give details.**

I am not aware of any incidents in this area. In December 2010, I found a 0.50-caliber shell, but that is the only thing that has been found recently. Additionally, I seem to recall there was an article in the newspaper (St. Petersburg Times) a few years back reporting something was found near Fort DeSoto, but nothing in this area.

**4. Have there been routine communications or activities regarding the FUDS (site visits, inspections, reporting activities, etc.) that you are aware of? If so, please give details.**

No real communications that I am aware of with the USACE. In fact, I was looking through our office records to see if there was any documentation pertaining to the area's history as a FUDS and did not find any. It would be nice to have a copy of the five-year review report for our files, so that in the future there would be some point of reference.

**5. Do you feel well informed about the FUDS and past activities and progress?**

Not really. In fact I would like to know the status of the project and where is it going?

**6. Are signs posted on the beach warning of possible MEC? Are brochures/fact sheets available for the public?**

No, there are no signs posted or fact sheets regarding the FUDS that I am aware of. The local residents would not like this as it would be alarming and would likely devalue their homes.

**7. What is the general land use of this site?**

This area is residential with commercial properties sprinkled throughout (i.e., bars, restaurants, hotels, etc.). There is very little land that has not been built on at least once.

**8. Do you have any questions regarding the FUDS's past history and uses and/or suggestions, or recommendations regarding current and future plans?**

If signs and brochures were posted and distributed, they would have to be carefully worded. It does not seem like there is significant risk, especially considering that the beaches have been re-nourished two times in the past few years, which consists of laying new sand down on top of the old.

Interview Documentation Form

Name	Organization	Location/Address	Date	Phone Number
Allen Godfrey	City of Belleair Beach	444 Causeway Boulevard, Belleair Beach, FL 33786	5/9/2011	727-595-4646

## **Interview Questionnaire for MMRP Five-Year Review**

**Site Name:** Air to Ground Gun Range Pinellas, Florida

**Site Number:** I04FL0337

**Person being interviewed:** Robert Bridgers

**Date:** 28 April 2011

**Interviewers:** Ivy Harvey

**Interview Type:** Phone (904-232-1107)

### **1. How were you involved with this project?**

I was the USACE–Jacksonville District project manager for the Air to Ground Gun Range Pinellas, Florida Site until I retired in 2004.

### **2. Do you know if an Institutional Control Plan was completed for this site?**

I don't think there was ever a formal Institutional Control Plan developed.

### **3. Do you think the community is adequately aware of the munitions related dangers?**

No, I don't think the community is as aware of the dangers as other sites. As this area is heavily developed, very densely populated, and the majority of the population is only seasonally in the area, it is difficult to ensure everyone is aware of the sites (especially when the placement of signs is quite unpopular). That being said, the risks from munitions are much less in this area, especially when considering the munitions associated with the former range.

### **4. Do you know of community awareness being implemented (i.e., signs were installed, pamphlets, etc.)?**

Brochures were provided to the city hall, approximately 1,000 were printed and provided (one time only). Signs were not favored by the community; therefore, they were not installed.

### **5. Did you have a local contact involved with this project that you recommend we contact for additional information?**

Bellair Beach is a closed community. In order to park your vehicle onsite, you must first obtain a visitor's permit from the City Hall. I do not have a specific contact, but I typically worked with the local emergency management department to coordinate onsite activities.

Interview Documentation Form

Name	Organization	Location/Address	Date	Phone Number
Robert Bridgers	USACE SAJ (retired, now contractor)	USACE SAJ	28 April 2011	904-232-1107

## Interview Questionnaire for MMRP Five-Year Review

**Site Name:** Air to Ground Gun Range Pinellas, Florida

**Site Number:** I04FL0337

**Person being interviewed:** Tammy Winkler, Librarian

**Date:** 9 May 2011

**1. How long have you lived in this area?**

About 6 years.

**2. Are you aware that there is a MMRP FUDS project site in your vicinity and/or what is your current impression of the MMRP FUDS project site in your area?**

No, I did not know of the Air to Ground Gun Range Pinellas, Florida (formerly known as Indian Rocks Gunnery Range).

**3. Are you aware of any events, incidents, or activities at the FUDS such as emergency responses regarding munitions findings from local authorities? If so, please give details.**

No, I have not heard of any incidents at the Air to Ground Gun Range Pinellas, Florida. I did read about an incident in the Orlando area where bombs were found during construction activities a couple years ago.

**4. Have there been routine communications or activities regarding the FUDS (site visits, inspections, reporting activities, etc.) that you are aware of? If so, please give details.**

No.

**5. Do you feel well informed about the FUDS and past activities and progress?**

No.

**6. Do you have any questions regarding the FUDS's past history and uses and/or suggestions, or recommendations regarding current and future plans?**

No.

**7. Do you know if anyone has looked at the historical documents (USACE EE/CA Work Plan, and EE/CA) that are available at this library?**

We do not require people to log in when they view these documents so there is no way to tell.

Interview Documentation Form

Name	Organization	Location/Address	Date	Phone Number
Tammy Winkler	Largo Public Library	120 Central Park Drive, Largo, FL, 33771-2110	5/9/2011	727-587-6751

## **Interview Questionnaire for MMRP Five-Year Review**

**Site Name:** Air to Ground Gun Range Pinellas, Florida      **Site Number:** I04FL0337

**Person being interviewed:** Robert Polk, Fire Chief      **Date:** 9 May 2011

**1. How long have you lived/worked in this area?**

I have lived in the area for over 30 years.

**2. Are you aware that there is a MMRP FUDS project site in your vicinity and/or what is your current impression of the MMRP FUDS project site in your area?**

Yes. I am aware of the history surrounding this area (i.e., FUDS), but I am not so sure the general public is. The general population in this area is predominantly comprised of tourists. Many of the homeowners do not live here year round, but vacation here on occasion.

**3. Are you aware of any events, incidents, or activities at the FUDS such as emergency responses regarding munitions findings from local authorities? If so, please give details.**

I am not aware of any recent events, but one of the older gentlemen in the fire department mentioned that he recalled an event where something washed ashore and MacDill Air Force Base was called. That was a long time ago, likely 20 or more years ago. I am not sure of the specific details.

**4. Have there been routine communications or activities regarding the FUDS (site visits, inspections, reporting activities, etc.) that you are aware of? If so, please give details.**

No real communications that I am aware of with the USACE.

**4. Do you feel well informed about the FUDS and past activities and progress?**

No.

**5. Do you have any questions regarding the FUDS's past history and uses and/or suggestions, or recommendations regarding current and future plans?**

No. In my opinion, the risks from unexploded ordnance have not posed much of a problem to the community over the past few years. In the rare instances where something is found we call MacDill Air Force Base.

Interview Documentation Form

Name	Organization	Location/Address	Date	Phone Number
Robert O Polk	Pinellas Suncoast Fire & Rescue District	304 First Street, Indian Rocks Beach, FL 33785	5/9/2011	727-595-1117

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