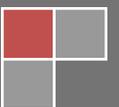


2013

# Ft. Sheridan Ravine & Coastal Restoration

## Appendix E – HTRW Report

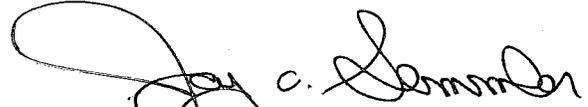
Alternative Formulation Briefing Document



**MEMORANDUM FOR CELRC-PM-PL (Veraldi)****SUBJECT: HTRW and non-HTRW Report for Ft Sheridan Section 506, Great Lakes Fisheries & Ecosystem Restoration Project**

1. Enclosed is the investigation report for the Ft Sheridan Restoration Section 506 project. The investigation was conducted during the planning/feasibility phase of the project and is based on an existing information review, database research, aerial photography review, historical topography maps, and a site visit. Although the entire project site was once part of Ft Sheridan, some areas have been transferred out of DoD ownership.
2. The BRAC process prior to transfer involved extensive testing and cleanup. Results of this investigation suggest that it is unlikely that Recognized Environmental Conditions remain on the project site. However, additional awareness needs to be paid to the northeast corner of the site, the location of a former range.
3. The former range area was generally cleared to a depth of four feet, except for two Parcels (known as Parcels F and G. See map included with enclosed Report).
  - a. Parcel G contains the site of landfill 2, has only been cleared to a depth of one foot, and has restrictions allowing only landscaping to occur. Additionally, any landscaping to occur requires coordination with Louisville District or a USACE MM Design Center.
  - b. Both Parcels require construction support coordination because of the potential for encounters with unexploded ordnance. However, a clearance activity was conducted on these areas and the beach associated with them in 2004. Construction support may no longer be required. Construction support is under review by USACE MM Design Center Omaha. If the final project measures selected will occur in these areas, this will need to be resolved. Both coordination efforts can be concluded by conducting no work of any kind on either parcel. However, although it is highly unlikely that ordnance will be encountered; no clearance activity can wholly eliminate the uncertainty. Additionally, although the beach area was cleared to a depth of four feet, it is the nature of the beach and littoral zone to have shifting sand. The project team as a precaution may decide to engage a limited level of construction support for activities north of Hutchinson Ravine occurring not only on Parcel F and G if needed, but also for the beach and littoral zones in these areas.

4. If there are any questions regarding this investigation, please contact Margaret Rauwerdink at (312) 846-5502.



JAY A. SEMMLER, P.E.  
Chief, Hydraulics & Environmental  
Engineering Section

Enclosure

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Hydraulic and Environmental Engineering Section (TS-DH)  
U.S. Army Corps of Engineers, Chicago District  
February 2012

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION  
Ft Sheridan Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project**

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- Attachment B – EPA My Waters Mapper Results
- Attachment C – Map of Parcel F and G
- Attachment D – Map of Anomalies Clearance
- Attachment E – EDR Database Report
- Attachment F – EDR Topographic Map Report
- Attachment G – EDR Photo Decade Package
- Attachment H – Site Visit Photographs

## **INTRODUCTION**

The purpose of this report is to discuss the hazardous, toxic, and radioactive waste (HTRW) investigation for the Ft Sheridan Section 506, Great Lakes Fisheries and Ecosystem Restoration Project. This report identifies Recognized Environmental Conditions (RECs), and presents appropriate measures to resolve these issues. The methods used in performing the investigation are described in detail. Conclusions and recommendations regarding potential impacts due to RECs associated with the project site are provided.

No investigation can wholly eliminate uncertainty regarding the potential for encountering a REC associated with a project area. Performance of this investigation is intended to reduce, but not eliminate, uncertainty regarding the potential for encountering a REC in connection with a project area.

## **AUTHORITY**

Engineer Regulation (ER) 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works projects, requires that a site investigation be conducted as early as possible to identify and evaluate potential HTRW problems. According to ER 1165-2-132, non-HTRW issues that do not comply with the federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW issues. Therefore HTRW and non-HTRW issues identified are discussed in this report.

The investigation presented in this report was conducted during the feasibility phase of the project. The report was performed at the level of detail required and relies on existing information, observations made through database research, a site visit, and a historical aerial photograph and topographic map review.

## **GUIDANCE**

Supplemental guidance was provided by the Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process (Designation: E 1527-05) prepared by the American Society for Testing of Materials (ASTM). The guidance defines a standard of good commercial and customary practice for conducting an environmental site assessment of a parcel of property; the goal of the process established by this practice is to identify Recognized Environmental Conditions (RECs) through a records review, site visit, interviews, and report preparation. This report followed many of the ASTM E 1527-05 guidelines but not to the same level of detail described by the ASTM E 1527-05 guidance.

## **Hazardous, Toxic, and Radioactive Waste**

The objective of ER 1165-2-132 is to outline procedures to facilitate early identification and appropriate consideration of HTRW problems. This investigation therefore identifies potential

HTRW problems and discusses resolutions and/or provides recommendations regarding the problems identified.

### **Non-Hazardous, Toxic, and Radioactive Waste**

According to ER 165-2-132, non-HTRW environmental issues that do not comply with federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW issues. For example solid waste is a non-HTRW issue considered, in addition to petroleum releases from Leaking Underground Storage Tanks (LUSTs), because of the potential to impose environmental hazards. Non-HTRW problems identified during the investigation are also discussed in this report, along with resolutions and/or recommendations for resolving any open issues.

## **LAWS AND REGULATIONS**

### **Federal**

The definition of HTRW according to ER 1165-2-132, page 1, paragraph 4(a) is as follows: “Except for dredged material and sediments beneath navigable waters proposed for dredging, for purposes of this guidance, HTRW includes any material listed as a ‘hazardous substance’ under the Comprehensive Environmental Response, Compensation and Liability Act 42 U.S.C. 9601 et seq (CERCLA). (See 42 U.S.C. 9601(14).) Hazardous substances regulated under CERCLA include ‘hazardous wastes’ under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C.6921 et seq; ‘hazardous substances’ identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321; ‘toxic pollutants’ designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317; ‘hazardous air pollutants’ designated under Section 112 of the Clean Air Act, 42 U.S.C. 7412; and ‘imminently hazardous chemical substances or mixtures’ on which EPA has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. (See 42 U.S.C. 9601(14).)”

As stated in the definition of hazardous substance in the Environmental Statutes, 1988 Edition, the term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance under the definition. Underground Storage Tanks (USTs) are federally regulated under 40 CFR Part 280, which includes technical standards and corrective action requirements for owners and operators of USTs.

### **State**

The Illinois State regulations were examined to determine which regulations governed the state specific hazardous waste disposal, release, and cleanup requirements. Illinois regulates USTs under Illinois Administrative Code, Title 35, Subtitle G, Chapter I, Subchapter D, Part 731, Underground Storage Tanks. The definition of a regulated substance under this regulation means any “hazardous substance” or “petroleum”. Hazardous substance UST is defined as an UST

system that contains a “hazardous substance”, or any mixture of “hazardous substances” and “petroleum” which is not a petroleum UST system. Petroleum UST means any UST system that contains petroleum or a mixture of petroleum with minimal quantities of other regulated substances. Owners and operators of petroleum or hazardous substance UST systems must comply with the requirements of Part 731 except for USTs excluded under Section 731.110(b) and UST systems subject to RCRA corrective action requirements under 35 Ill. Adm. Code 724.200, 724.296, 725.296, or 725 Subpart G.

Other Illinois hazardous waste regulations included in 35 Illinois Administrative Code Subtitle G, Chapter I, Waste Disposal include Subchapter b, Permits; Subchapter c, Hazardous Waste Operating Requirements; Subchapter d, Part 738, Hazardous Waste Injection Restrictions; Subchapter e, Specific Hazardous Waste Management Standards; and Subchapter h, Illinois “Superfund” Program.

## **SITE DESCRIPTION**

The study area is located along the Lake Michigan coastline in northeastern Illinois near the southeast boundary of Lake County (See Figure 1 below). The restoration project is east of Sheridan Road within the Cities of Lake Forest and Highland Park, and the Town of Ft. Sheridan. The project area consists of eight main ravines, several small unnamed ravines, the watersheds of these ravines, the bluff along the coastline, the beach, and the littoral zone of Lake Michigan.

The unique landforms of ravines, bluffs, and beaches were left behind by glacial movements and the recession of Lake Chicago, a much larger pre-historic lake than present Lake Michigan. First logging, and then the establishment of Ft Sheridan in 1887, removed much of the vegetation and also altered the land. Extensive watershed development has also affected the ravines. The increased volume and velocity of the discharge has resulted in the ravine floors incising and the slopes sloughing into the ravine, endangering adjacent structures and roadways.

From north to south the eight main ravines onsite are McCormick, Janes, Hutchinson, MacArthur, Scott, Bartlett, Van Horne, and Schenck. See Figure 2 below for ravine layout. Although the entire project site was once part of Ft Sheridan, as part of the 1988 Base Closure and Realignment Act (BRAC) approximately the northern half of the base was declared excess federal government property. Ft Sheridan was divided into two Operable Units (OUs). The first OU, designated the Surplus OU, consists of the northern portions of the base from approximately Janes Ravine south to Bartlett Ravine, with the exception of an Army Reserve Center in the far northwest corner, a navy housing area on the west central border, and the Ft Sheridan Cemetery. The remaining southern half of the base, the Department of Defense (DoD) OU, is comprised of property currently owned by the US Army Reserve and US Navy for family housing. See Attachment A for a map of the OUs.

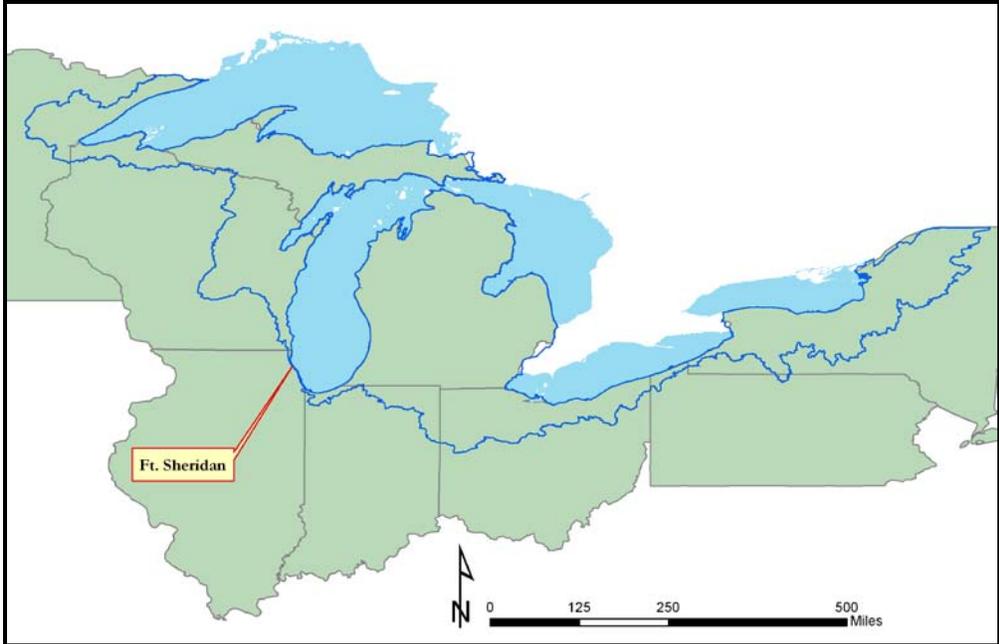


Figure 1: Location of Project Site

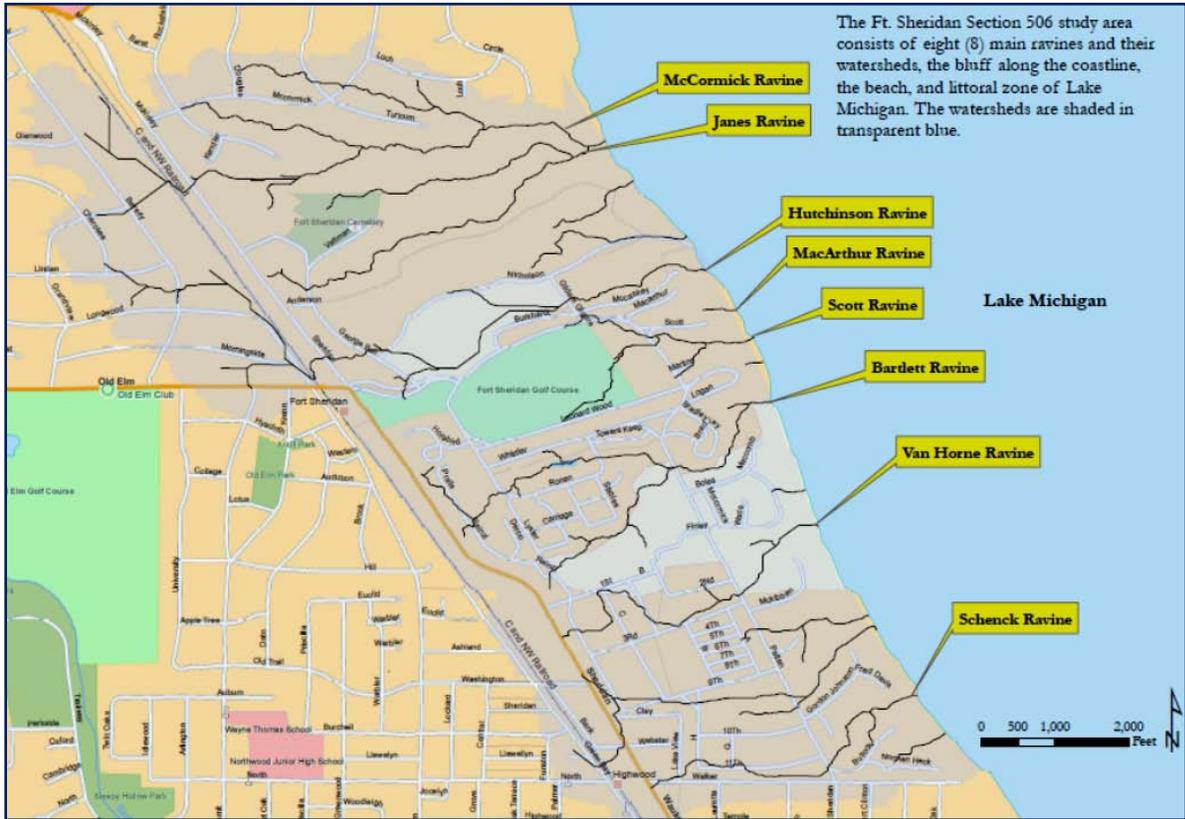


Figure 2: Map of Ravines

## **PROJECT DESCRIPTION**

The goal of the proposed restoration project is to reduce overall volume and peak discharges of storm water in the ravines to prevent further down cutting and to stabilize the banks of the ravines. There are measures presented to address repairing natural stream flows; restoring ravines, bluffs, and littoral areas; native plant community preservation; and increasing fish species richness and abundance within eight ravines that flow into Lake Michigan. Project measures for each area may include:

### **Ravines**

- Storm sewer rerouting to remove urban runoff flows
- Retention basin creation for storm sewer flows
- In ravine pipes to convey flow and prevent down cutting
- Bank grading
- Riffles and plunge pools
- Removal of mouth structures to reconnect to Lake Michigan
- Invasive species removal
- Native plant seeding and plugging

### **Bluff**

- Cutting/redirecting storm sewers that discharge directly to bluff edge
- Grading gullies and rills
- Cobble check dams
- Invasive species removal
- Native plant seeding and plugging

### **Littoral Zone**

- Breakwaters
- Stone revetments along the toe of the bluff
- Invasive species removal
- Native plant seeding and plugging

## **GENERAL METHODS**

The following sections contain information that was requested and gathered in accordance with ER 1165-2-132 for this assessment. The information was obtained from:

- Existing information review
- Database research
- Aerial photograph review
- Site visit
- Historical topography maps

This information was used to determine if the restoration measures for the project will have an impact on any RECs that may exist in the surrounding areas, and if these will have an impact on the implementation of the project. The information gathered from the above list of sources is detailed in the following sections.

## **EXISTING INFORMATION REVIEW**

### **Water Quality**

None of the ravines are on the Illinois EPA 303(d) list of impaired waterways. Any water body that does not meet or is not expected to meet the State's water quality standards is considered impaired and is placed on the 303(d) list in accordance with the Clean Water Act. Impaired waterways include waters that fail to meet any narrative, numeric, chemical, physical, or biological standard/criteria.

Five Water Monitoring Stations appear on the map of the project area. They are Ft Sheridan North Beach, HIGHL PK FT SHERIDAN QJ-01, Ft Sheridan South Beach, HIGHL PK FT SHERIDAN QJ-04, and HIGHL PK FT SHERIDAN QJ-07. However, no information is available for any of the stations. Additionally, two beaches (Ft Sheridan North and South Beaches), are listed as beach program areas. No monitoring or beach closure history is available for either beach.

See Attachment B for results of water quality information available through USEPA My Waters Mapper online information service.

### **BRAC Information**

The Surplus OU was transferred in multiple parts to non-federal ownership in the late 1990's and early 2000's. A Finding of Suitability to Transfer (FOST) was prepared for all areas, commonly designated as between Bartlett and Hutchinson Ravines (containing the historic district and parade grounds), the western half of the area between Hutchinson and Janes Ravines, and the eastern half of the area between these same two Ravines. The Surplus OU is occasionally divided differently, depending on the study being reviewed.

Many extensive historical records reviews, environmental studies, and sampling excursions were conducted throughout the site. Areas historically used for residential and recreational purposes were designated Environmental Condition Category (ECC) 1 (areas where no release or disposal of hazardous substances or petroleum products has occurred). The DoD developed this system for categorizing parcels to describe the environmental condition of the property and to provide relevant information regarding the past storage, release, or disposal of hazardous substances. The seven ECCs are described in the *Addendum to the DoD BRAC Cleanup Plan Guidebook, September 1996*. Other areas were further investigated as needed. USTs and ASTs were removed, and all areas with potential RECs were found to be either below site background or cleanup and removal actions were completed. The FOSTs provide a summary of the various reports and areas studied, and provide the resolutions.

## UXO

An additional concern at the site is the possibility of encountering unexploded ordnance (UXO). The northeast portion of Ft Sheridan was a historically the target area of a rifle and mortar range, a former anti-aircraft artillery firing point, and a reported ammunition burn area (along the beach area). Huntsville District conducted UXO removal operations in 1996, issued a revised Statement of Clearance (SOC) in October 1997, and then a Supplemental SOC in November 1998. As part of the UXO removal action, the area was generally cleared to the depth of four feet, with the exception of under buildings and pavement, areas underneath a fish pond, and areas underneath utility lines. The landfill 2 area near the top of the bluff was cleared to one foot. No ordnance or ordnance related scrap was encountered in Janes Ravine. The Supplemental SOC recommends that all areas cleared to a depth of four feet be released for unrestricted use and that it is highly unlikely ordnance will be found deeper than four feet. In addition, the Supplemental SOC recommends construction support, in lieu of full clearance or depth restriction, prior to any future intrusive activities penetrating zero to four feet below ground surface in ten un-cleared grids; landfill 2; and under the roads, pond, buildings and utilities.

Deed restrictions were included as part of the FOST documents. These restrictions state that Landfill 2 shall remain an undeveloped, open or natural area, to be used only for recreational purposes and that there shall be no digging, excavating, or construction except for landscaping or installing a utility corridor. It further clarifies that the ten un-cleared grids are adjacent to the bluff where large amounts of reinforced concrete was found. It also states that any intrusive activity into Landfill 2 (consistent with the natural area restriction), under roads, buildings, fish pond, running utility lines, and within the ten un-cleared grids requires notification to and permission from Louisville District.

At this time project measures planned for McCormick and Janes Ravines seem to be consistent with these restrictions and recommendations. All work is planned for within the ravines, and also should not require digging deeper than four feet. The Landfill 2 area would only be receiving landscaping. Additionally, all buildings and road materials have already been removed. Moving south on the project, the measures involving storm sewer excavation begin at Hutchinson Ravine. Keeping this work south of Hutchinson Ravine keeps the project outside of potential UXO areas.

As required in the deed restrictions, Christopher Karem (Chief, Environmental Branch of Louisville District) was contacted for more information regarding the location of the un-cleared grids and for notification of potential landscaping in the Landfill 2 area. He provided contacts to both Huntsville and Omaha Districts. Dwayne Ford of the Huntsville Engineering Support Center provided an overview of the levels and requirements of construction support. He also suggested that Office of Counsel be engaged to determine who is responsible for construction support. The level of support is usually determined by the Installation Commander, a title no longer applicable because the property has already been transferred. The level of construction support depends on the probability of encountering munitions, and if that probability is low then 'on-call' support may be all that is needed (such as having UXO qualified people on the

construction crew, or on-call level established with local law enforcement/bomb squad). He also suggested involving a Military Munitions (MM) Design Center.

Laura Percifield of the Omaha MM Design Center (Project Manager, Environmental Remediation Branch) is researching Military Munitions Response Program (MMRP) Site Inspection reports (SIs) to potentially help determine if a probability of encountering munitions assessment has already been conducted. This assessment would determine the level of construction support required for the project. The construction support is only potentially necessary at Landfill 2, and along the bluff near McCormick and Janes Ravines.

The Quit Claim Deed filed in Lake County 04 December 2001 contains a figure showing the un-cleared areas labeled as Parcel G and Parcel F. See Attachment C for figure with parcel outlines. Parcel G also shows the outline of the Landfill 2 area. Parcel G has restricted use as a natural area only and requires notice for any intrusive work including landscaping. Parcel F includes the un-cleared bluff area from the SOC. As part of work to expand the Ft Sheridan Golf Course to Lake Michigan, anomaly identification was completed in these areas in 2004. See Attachment D for results of the anomaly identification. As long as the proposed project measures including bluff toe stone remain above the clearance depth, the site should be reasonably cleared. It remains unclear if any anomaly identification has been conducted within Lake Michigan, where project measures include breakwaters. A minimal level of construction support may still be required.

## DATABASE SEARCH

A search of available environmental records was conducted utilizing Environmental Database Resources, Inc (EDR) online. One search was conducted for all ravine areas. EDR searched federal and state databases using the minimum search distances issued in the ASTM E 1527-05 guidelines. Table 1 notes the recommended ASTM search distances for federal and state databases. The EDR overview map displaying the project area and the search results can be seen in the attached EDR reports. The comprehensive EDR database reports are provided as Attachment E. IL EPA's LUST Incident Tracking database was used as a further source of information on some sites.

Table 1: Minimum Search Distances for Federal and State Database Searches

<b>Database</b>	<b>Minimum Search Distance (mi)</b>
Federal NPL Site List	1.0
Federal CERCLIS List	0.5
Federal CERCLIS NFRAP site list	Property and Adjoining Properties
Federal RCRA CORRACTS Facilities List	1.0
Federal RCRA non-CORRACTS TSD Facilities List	0.5
Federal RCRA Generators List	Property and Adjoining Properties
Federal ERNS List	Property Only

Database	Minimum Search Distance (mi)
State Equivalent NPL	1.0
State Equivalent CERCLIS	0.5
State Landfill/Solid Waste Disposal Site Lists	0.5
State LUST Lists	0.5
State registered UST List	Property and Adjoining Properties

## Ft Sheridan EDR Results

Results of the EDR database search for Ft Sheridan are summarized in Table 2 below.

Table 2: EDR Database Search Summary of Results

Database	EDR Map ID	Site Name	Proximity to Site (Address)	Status
CERCLIS	13	US Army Fort Sheridan	Bldg 119	Not on the NPL. NFRAP for Surplus OU and Artillery Ranges. Landfills 6&7 still in program.
RCRA-LQG	14	Fort Sheridan Naval Property	Naval Property	No violations found
RCRA-SQG UST	1	DePaul University Barat College	~0.5 mile NW (700 E Westleigh Rd.)	1. No violations found 2. Facility closed, tank removed
RCRA-SQG UST	2	Woodland Academy	~0.5 mile NW (760 E Westleigh Rd.)	1. No violations found 2. Facility closed, tank removed
RCRA-SQG LUST UST INST CONTL	6	Mobil Oil Corp (aka Exxon Mobil Corp)	Adjacent to W (1000 Sheridan Ave.)	1. No violations found 2. Non LUST determination letter 12/10/2001 3. active gas station 4. NFR 1/4/2008, groundwater
RCRA-SQG UST	10	Sheridan Phillip H Reserve Ctr (aka Sheridan Army Reserve)	3155 Blackhawk Dr. (Bldg 563)	1. 1 violation achieved compliance 11/22/2000 2. tank removed
RCRA-SQG	15	22 Cleaners	Adjacent to W (848 Sheridan Rd.)	No violations found
RCRA-SQG INST CONTL	19	Sun Cleaners	Adjacent to W (108 Washington)	1. No violations found 2. NFR 2/15/2007, groundwater
RCRA-SQG UST SRP	26	Zeit Cleaners	~0.5 mile SW (306 Waukegan Ave.)	1. No violations found 2. Heating oil exemption 3. NFR 9/17/2002

Database	EDR Map ID	Site Name	Proximity to Site (Address)	Status
RCRA-SQG	26	Wayne Cleaners	~0.5 mile SW (337 Waukegan Ave.)	No violations found
RCRA-SQG UST	26	Clark #1507	~0.5 mile SW (341 Waukegan Ave.)	1. No violations found 2. Facility closed, tanks removed
RCRA-SQG UST	28	Pops Highwood (Mazzocco, Frances)	~0.5 mile SW (214 Green Bay Rd.)	1. No violations found 2. exempt from registration
RCRA-CESQG	4	North Shore Memorial USAR	401 Anderson Rd.	No violations found
UST	8	Fortunado Builders	25 Ronan Rd. Bldg 140	Heating oil exemption
LUST	17	U.S. Army	1. Bldg 65/370 2. Bldg 913 3. Bldg 43	1. Non LUST determination 11/6/2000 2. BRAC office 3. BRAC office
LUST	17	U.S. Army (also listed as simply 86 <sup>th</sup> Army Reserve Command)	Bldg 615	BRAC office
LUST	22	Town of Ft Sheridan	Bldg 88	BRAC office
LUST UST	22/13	U.S. Army	Bldg 180	1. NFR letter 2/3/2011 2. facility closed, tanks removed
LUST UST	23	Amidei, Arthur A.	~0.5 mile SW (433 Sheridan Rd.)	1. NFA letter 5/19/2011 2. facility closed, tanks removed
UST	23	Wintrust Inc	Adjacent to SW (507-509 N Sheridan)	Heating oil exemptions
LUST UST	25	Dons Auto Service Palmeri, Bob	~0.5 mile SW (342 Greenbay Rd.)	1. Corrective Action Plan approved 1995 2. Facility closed, tanks removed
LUST	28	Viz Auto Repair	~0.5 mile SW (20 Prairie Ave.)	PE Certification Received 2004
UST	21	Lew's Mini Mart	Adjacent to W (104 Washington Ave.)	Active gasoline and diesel station
LUST UST	23	Bacio Italian Deli	~0.5 mile SW (424 Sheridan Rd.)	1. 45 day reports received 2004 2. Facility closed, tanks removed
UST	27	Highland Park Medical Office	~0.5 mile SW (396 Temple)	Heating oil exemption

## **CERCLIS**

The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) contains data on any potential hazardous waste site that has been reported by states, municipalities, private companies, or private persons pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLIS database indicates the stages of evaluation and remediation that have been completed for any given site. The CERCLIS database includes the National Priority List (NPL), which identifies over 1,200 sites for priority cleanup under the Superfund program, and the CERCLIS-No Further Remedial Action Planned (NFRAP) List, which includes a listing of sites that have been removed from CERCLIS, for various reasons. The database search located 1 CERCLIS site within the search distance.

The US Army Fort Sheridan is the project site. This site is not on the NPL. NFRAP has been recorded for the Surplus OU and Artillery Ranges. These are areas that were transferred to the LCFPD as part of BRAC. Landfills 6 and 7 are listed as still in the program. Landfills 6 and 7 are also known collectively as Landfill #7 or as Wells Ravine (this was the name of the ravine which was filled). The area is well marked and easily identifiable onsite. No work is being done in this ravine/landfill for the proposed project. Given the status of the CERCLIS listing, it is unlikely that it would affect the proposed project.

## **RCRA Info**

The Resources Conservation and Recovery Information System (RCRIS) lists sites which generate, transport, store, and/or dispose of hazardous waste defined by the Resource Conservation and Recovery Act (RCRA). The RCRIS database includes RCRA Corrective Action Reports (CORRACTS), which identify hazardous waste handlers with RCRA corrective action activity; RCRA treatment, storage, and disposal facilities (TSDFs); and RCRA conditionally exempt small quantity generators (CESQGs), RCRA small quantity generators (SQGs), and large quantity generators (LQGs) facilities.

In the database, 1 RCRA-LQG site was located within the search distance. The Naval Property at Fort Sheridan is onsite, and no violations were found. Ten RCRA-SQGs are in the EDR report. For all except one (Sheridan Philip Army Reserve Ctr) no violations were found. Sheridan Philip Army Reserve Ctr achieved compliance on its violation on 11/22/2000. Eight of the ten RCRA-SQGs are also listed in other databases, and are discussed again in the sections below. One RCRA-CESQG, North Shore Memorial USAR, was located within the search distance. No violations were found for this site. It is unlikely that these sites will impact the proposed project.

## **USTs**

USTs included in the EDR Report listed as facility closed and tank(s) removed and also not listed in any other databases are not included in Table 2 above as they have no potential for impact to the project. The remaining USTs from the EDR Report are listed above. Three other UST sites are listed as facility closed and tank(s) removed however these three sites are also

listed as RCRA-SQGs and so are in the Table (DePaul University Barat College, Woodland Academy, and Clark #1507). Any UST sites that are also listed in the LUST database are discussed below.

The Sheridan Philip Army Reserve Ctr, previously discussed as a RCRA-SQG with one resolved violation, is also listed in the UST database. However, the tank at this site has been removed. It is unlikely that this site will impact the proposed project.

Five UST sites are listed as having heating oil exemptions from registration (Zeit Cleaners, Pops Highwood/ Frances Mazzocco, Fortunado Builders, Wintrust Inc, and Highland Park Medical Office). Tanks used for the storage of heating oil for consumptive use on the premises where stored are excluded from federal UST regulations. These sites are all either not listed in any other databases, or have NFR letters on file. Additionally Lew's Mini Mart is an active gasoline and diesel station with no listings in other databases. Based on the location of the proposed project measures, it is unlikely that activities at the site will be affected.

## **LUSTs**

The EDR report identified 43 LUST sites within the searched area. Of these, 31 have NFA/NFR letters on file and included in the EDR report. Remaining LUST sites are listed in Table 2 above.

All potential remaining onsite incidents appear resolved. All incidents either received NFR letters or were referred to the BRAC office. As shown in the sections above, extensive work including testing and cleanup was conducted onsite prior to the property being transferred. It can be assumed that all needed work was completed and that due to the site's status and the activities planned for the project, it is unlikely that the site will affect the project.

Three of the sites (Amidei, Arthur A., Dons Auto Service, and Bacio Italian Deli) are currently listed as facility closed and tanks removed. One additional site, Viz Auto Repair, is currently listed as having received a PE Certification. All are located approximately 0.5 miles SW of the project site outline. Due to the status of the sites, their location, and the measures planned for the project it is unlikely that these sites will affect project implementation.

The Mobil Oil/Exxon Mobil Corp is an active gasoline station located adjacent to the project site. It is listed in the following databases: RCRA-SGQ (no violations), LUST (non-LUST determination letter 12/10/2001), UST, and Institutional Controls (NFR letter 1/4/2008, groundwater use restrictions). Given the status of the station and the proposed project measures, it is unlikely that the project will be affected.

## **HISTORICAL TOPOGRAPHIC MAP REVIEW**

The EDR Historical Topographic Maps are included as Attachment F. Maps are provided from 1900 through 2000. In the 1900 topographic map, ravines can be seen all along the shore of Lake Michigan. A train line labeled Chicago and Northwestern RR runs parallel to the shore,

west of the ravines. A few of the roads and buildings between Hutchinson and Bartlett Ravines can be seen near the label Ft Sheridan. Other streets have also been delineated just to the south, near the label for the City of Highwood. In the 1948 topographic map, many more structures are shown. Also, both Green Bay and Sheridan Roads are labeled. The Ft Sheridan Cemetery is now shown on the NW of the site. Development is limited on both the northern and southern ends of Ft Sheridan; however the City of Highwood has grown. In the 1951 topographic map the southern end of Ft Sheridan has been highly developed with many structures. The northern portion of the site remains undeveloped; this area is the rifle range. Additionally, the Ft Sheridan Parade Grounds remain relatively undeveloped. Two water intakes are shown extending into Lake Michigan from the southernmost shore of the site. In the 1963 topographic map, an additional line (now labeled aqueduct) extends from the shore east of the Parade Grounds. Some additional buildings have been built west of the rifle range area. Additionally, the Sheridan Army Airfield can now be seen running along the north edge of the site. The only change in the 1972 topographic map is that additional structures have been built on the already highly developed southern end of the site. There are no changes on the 1980 map. On the 1993 map, the Airfield area is now instead labeled as a heliport. On the 2000 topographic map, the military boundary line has been removed, although the heliport and other features remain. The developed area on the south of the site is now labeled Navy Family Housing on the east and Army Reserve Center to the west. These changes are consistent with the BRAC. Past and present land uses as presented in the topographic maps do not raise any new likely RECs.

## **AERIAL PHOTOGRAPH REVIEW**

Historical accounts of the site can help identify potential RECs. Potential RECs can be possibly determined by identifying the past land use and site activities at the project area and surrounding areas. For instance, identifying industrial and residential areas, observing any evidence of dumping activities, and locating extensive areas that lack vegetation can determine indications of potential RECs. Aerial photographs were provided in the EDR Aerial Photo Decade Package (See Attachment G) for review and comparison.

Aerial Photographs were available for the years 1952, 1962, 1972, 1981, 1988, 1994, and 2006. Two aerials per year were provided in order to cover the entire project site. Full coverage was not available for 1952 or 2006, only the northern end of the project site can be seen in these years. In the first aerial photograph, 1952, many of the features of the Ft Sheridan site can be seen such as the cemetery, rifle range, and parade ground. The northern ravines are also visible. It appears that some of the breakwaters have been built, but large amounts of sand have not accumulated. Although there are roads to the west and north of the site, not all of the residential structures are present. The railroad and major roads running along the western edge of the project site are already built. In the 1962 aerial photographs, the site and the surrounding area are much more highly developed. There are many small breakwaters perpendicular to the shoreline along the site, and the distinct sand deposit profile can now be seen forming. The airfield landing strip is now visible on the northern end of the site. The ravines are identifiable stretching into the project site from the eastern boundary with Lake Michigan. There are only small noticeable changes in the 1972 aerials. Additional structures have been built on the southern end of the site, and work is being done at Wells Ravine/Landfill #7. The 1981 aerials

are discolored; however there are all the same features with no noticeable changes except that the length of the airfield landing strip is faded and possibly only a small middle portion is being maintained. There are no noticeable changes in the 1988 or 1994 aerials. The 2006 aerial photograph is in color. The buildings and any landing strip area on the northern end of the site between Janes and Hutchinson Ravines have been removed. Only the roads appear to remain in that area. The rest of the site is the same. No new likely RECs were identified from the aerial photographs.

## **SITE VISIT**

Many visits to the project site have been conducted. The site is very large and it can take more than an entire day to investigate. A one day overview visit was conducted by many project team members in order to get a better understanding of the various site features. All eight ravines were reviewed, by walking their lengths along the upper edge. Additionally, the mouth of each ravine on the beach was visited. Erosion is very evident on the banks of all ravines. In some places failing previous attempts at erosion control can be seen. All vegetation appeared to be in good condition. No trash was observed along the beach. No new RECs were identified during the site visit. Photographs documenting the site visit are found in Attachment H.

## **FINDINGS AND CONCLUSIONS**

This investigation was performed to determine if the selected measures for Ft Sheridan Restoration project will have an impact on any RECs that may exist in the surrounding areas, and if RECs will have an impact on the implementation of the project. According to ER 1165-2-132, non-HTRW issues that do not comply with federal, state, and local regulations should be discussed in the HTRW evaluation along with HTRW issues.

Existing information available for review documenting the BRAC site study and cleanup prior to property transfer was very extensive. All potential RECs onsite appear to have been adequately addressed. No work will occur on the landfill 7 area as a part of this project. All USTs at active gasoline stations are distanced from project work areas and are unlikely to affect the project. No other data presented in the EDR Database Report indicated any surrounding sites that are likely to pose REC concerns to the project resulting from federal or state regulated facilities within the ASTM established search distances.

Any activities including landscaping occurring on Parcel G/landfill 2 will require further coordination with Louisville District or a USACE MM Design Center. Activities in this area are limited to a depth of one foot.

Activities on Parcels F and G require construction support because of the potential for encounters with UXO. A clearance activity on these areas, and the beach associated with them, was completed in 2004. Construction support may no longer be required. Construction support is under review by USACE MM Design Center Omaha. If the final project measures will occur in these areas, this will need to be resolved. If work will be performed in these areas and

construction support is necessary, involvement of Office of Counsel can help to determine who is responsible for cost sharing purposes. The project team as a precaution may decide to engage a limited level of construction support for activities north of Hutchinson Ravine occurring not only on Parcel F and G, but also for the beach and littoral zones in these areas.

No investigation can wholly eliminate uncertainty regarding the potential for encountering a REC associated with a project area. Performance of this investigation is intended to reduce, but not eliminate, uncertainty regarding the potential for encountering a REC in connection with a project area

## REFERENCES

American Society for Testing of Materials. Publication E 1527-05. Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process.

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Addendum to the *Department of Defense BRAC Cleanup Plan Guidebook*, September 1996.

Defense Environmental Restoration Program, Base Realignment and Closure Program. Draft Decision Document for the Ravines and Beach Study Areas of the Surplus Operable Unit, Fort Sheridan, IL. July 22, 1998.

Finding of Suitability to Transfer. Golf Course Transfer Parcel, Fort Sheridan, Illinois. December 1997.

Fort Sheridan Base Realignment and Closure, Surplus Property, Fort Sheridan, Illinois. Fort Sheridan Landfill 2/38-acre Parcel Environmental Baseline Survey, Final. August 1999.

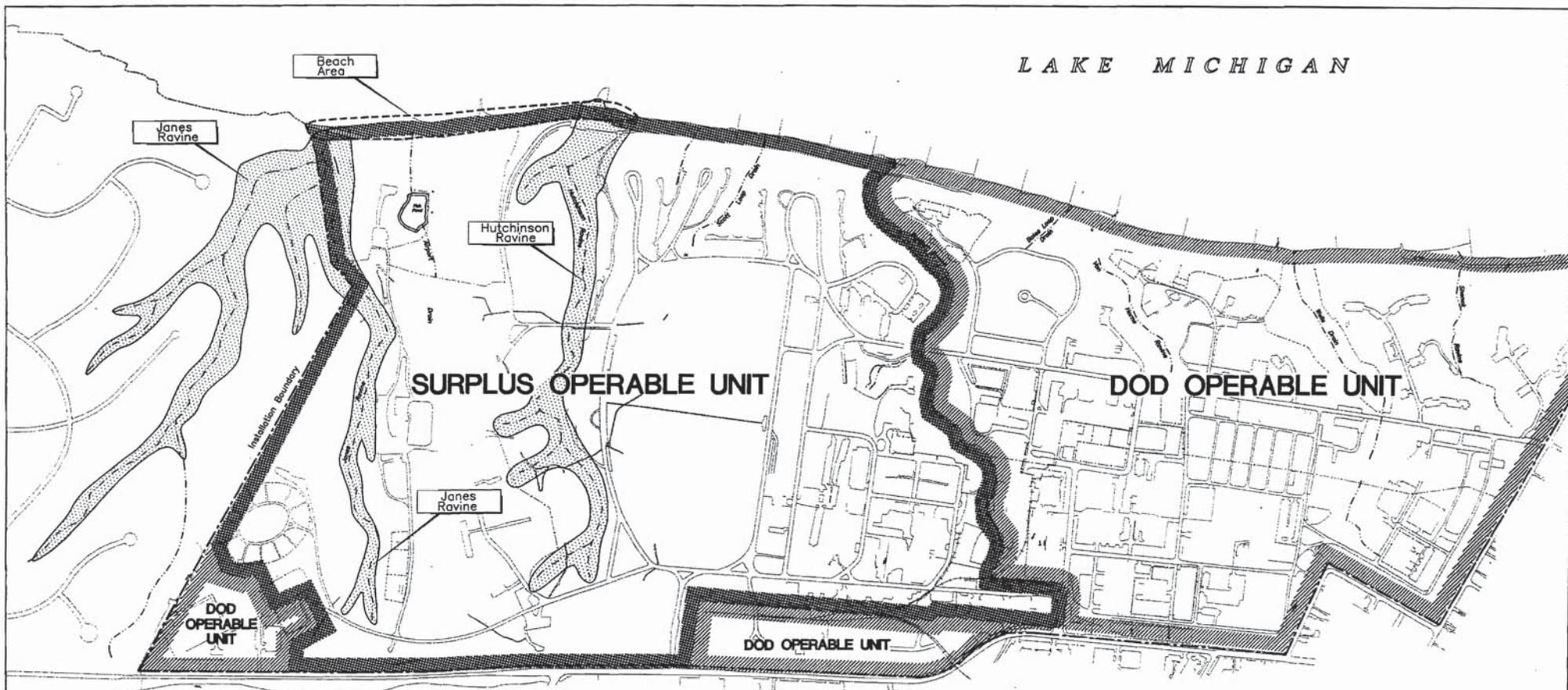
Finding of Suitability to Transfer. Landfill 2/38-acre Parcel, Final. August 1999.

Quit Claim Deed. Filed for Record in Lake County, Illinois on December 4, 2001.

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

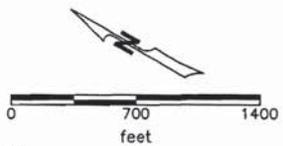
Attachment A  
Map of Ft Sheridan OUs



JCF 06/22/98  
Revised JCF 07/20/98

490-2087  
FSDDRSAL

Installation information adapted from an aerial survey by Air Survey Corporation, Sterling, Virginia. Date of photography, 12/6/95.  
Ravines, shoreline and roads north of Installation adapted from USGS 7.5' topographic quadrangle, Highland Park, Ill., 1963; photo revised 1972 & 1980.

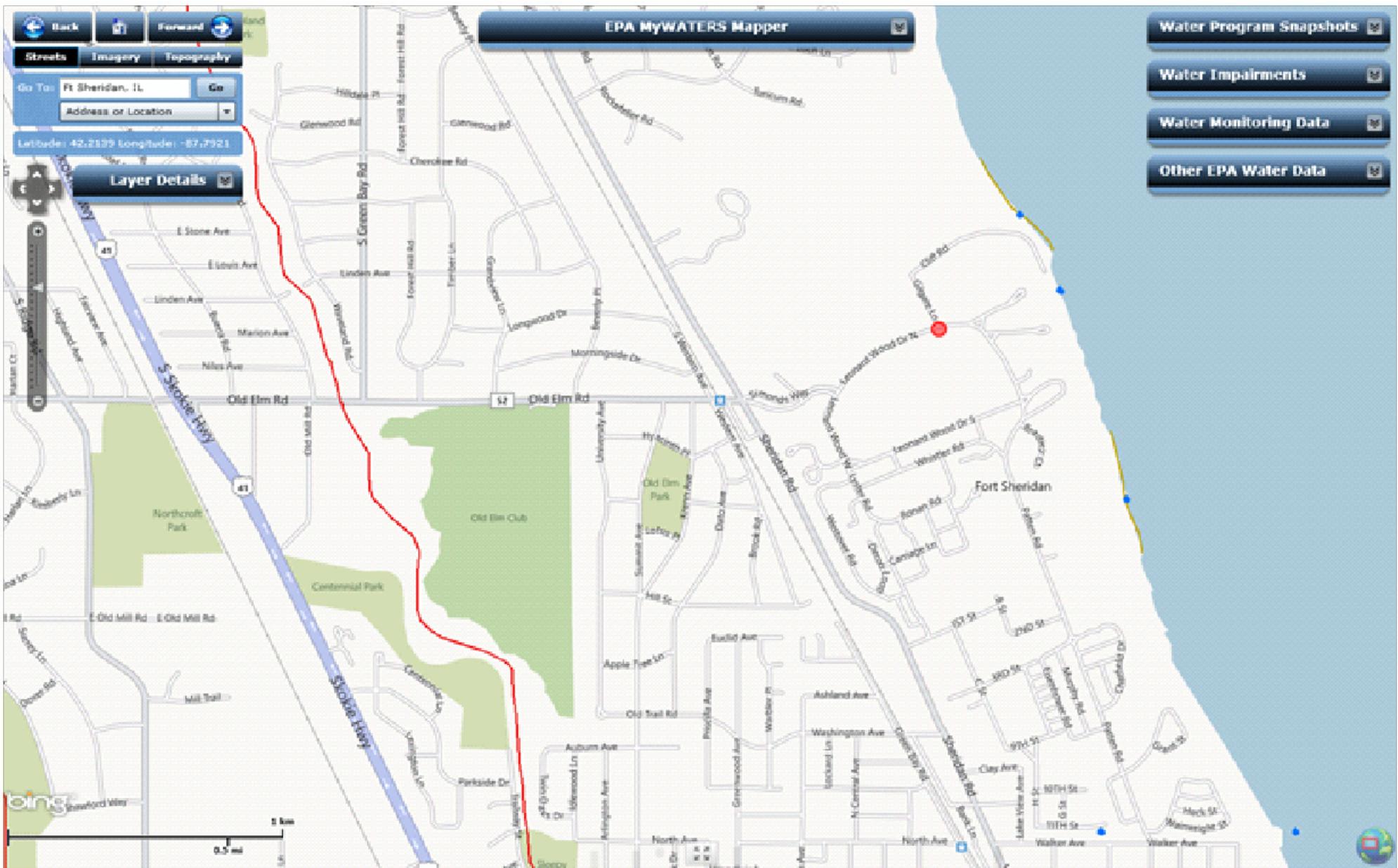


**Figure 1-1**  
**Fort Sheridan Operable Units and the Ravines and Beach Area Study Areas**  
Draft Decision Document for the Ravines and Beach Area Study Areas of the Surplus Operable Unit  
Fort Sheridan, Illinois

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment B  
EPA My Waters Mapper Results

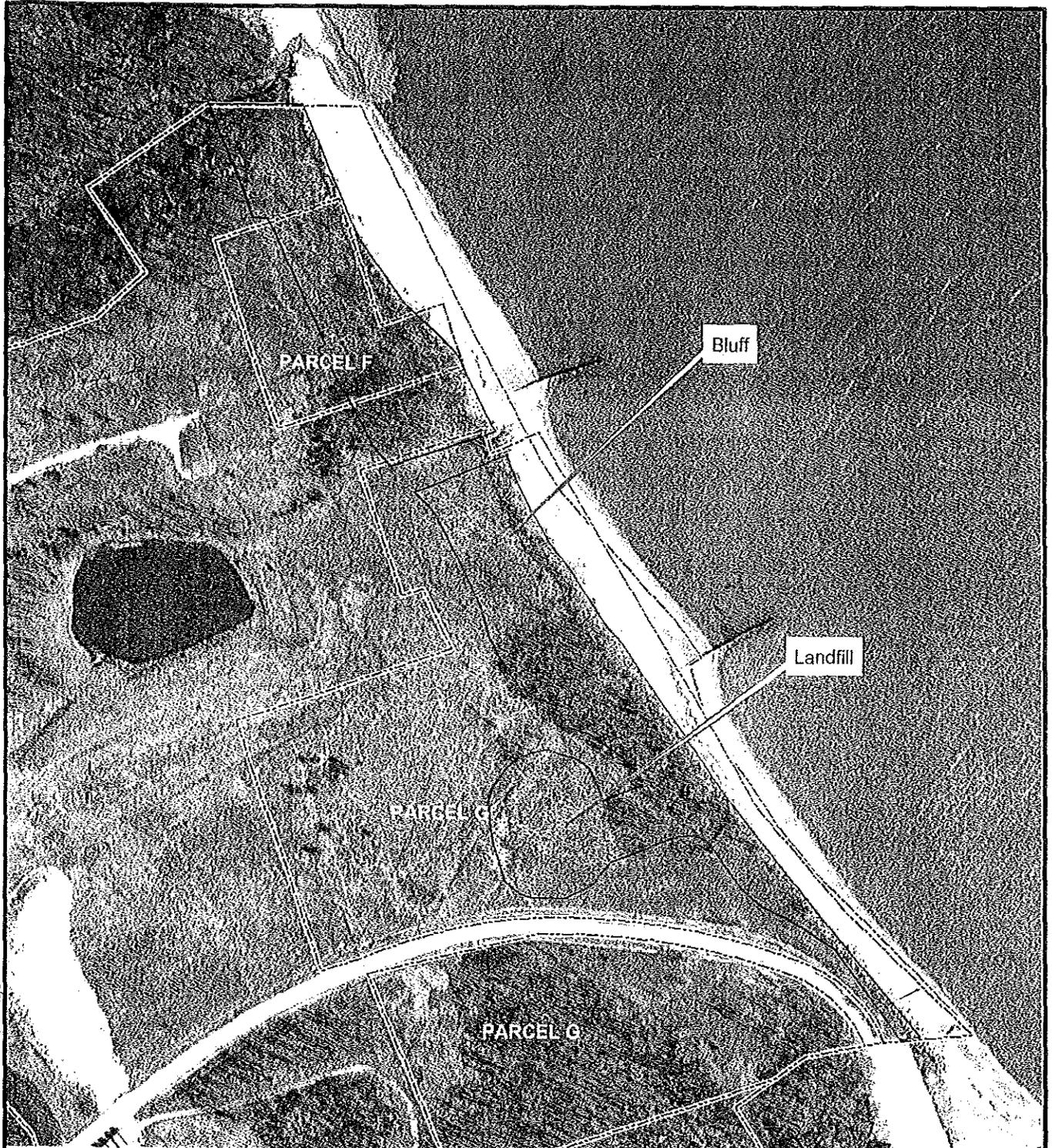


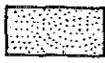
Blue Dots - Water Monitoring Locations  
Yellow Lines - Beach Program areas  
Red Line - Impaired Waters

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment C  
Map of Parcel F and G



 Area Not Cleared



ORDNANCE AND EXPLOSIVES  
SUPPORT  
FORMER FORT SHERIDAN, ILLINOIS

FIGURE 1  
AREAS NOT CLEARED



 Tetra Tech EM Inc.

2004-08-30 standardip2843.mxd\gfh\heridan\_gfms\_not\_cleared.mxd TTEH:NV andrew.djv

SOURCE: MODIFIED FROM USGS, AND HEY AND ASSOCIATES, 2004.

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment D  
Map of Anomalies Clearance

# Attachment D - Map of Anomalies Clearance



2004-12-21 1:16:48 PM \\fs1\shared\em\proj\10401\10401\_001\10401\_001.mxd TETRA TECH

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment E  
EDR Database Report  
(double click paperclip icon to see attachment)



**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment F  
EDR Topographic Map Report  
(double click paperclip icon to see attachment)



**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment G  
EDR Photo Decade Package  
(double click paperclip icon to see attachment)



**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)  
AND NON-HTRW INVESTIGATION**

**Ft Sheridan Restoration Section 506  
Great Lakes Fisheries & Ecosystem Restoration Project  
Lake County, IL**

Attachment H  
Site Visit Photographs

Attachment H - Site Visit Photographs



Figure 1: Typical vegetated bluff toe stone, to be implemented elsewhere on project site (taken along midsection of site)



Figure 2: Parade Grounds seen near head of MacArthur and Scott Ravines



Figure 3: Structures are very near the upper edge of the some eroding ravines (Scott Ravine pictured here)



Figure 4: Typical in ravine erosion (pictured here is McCormick Ravine)



Figure 5: Significant protection in place identifying Landfill 7



Figure 6: Failing erosion control attempt (poured concrete) at top of Van Horne Ravine



Figure 7: Breakwaters running perpendicular to shore along project site



Figure 8: Typical ravine outlet structure on beach (pictured is Van Horne Ravine)



Figure 9: Typical ravine outlet without structure on beach (pictured is Scott Ravine)