



## Proposed Plan for Site 1 – Golf Course Landfill and Site 4 – Fire Fighting Training Unit Naval Station Great Lakes Installation Restoration Program Great Lakes, Illinois

### About This Document

This Proposed Plan is being presented to satisfy the statutory and regulatory requirements for public participation under the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**. Its primary intent is to help the public understand and provide input on the proposed remedial alternatives to address impacted subsurface soil, groundwater, surface water, and sediment at Sites 1 and 4, Golf Course Landfill and Fire Fighting Training Unit (FFTU), respectively. The Navy, with the concurrence of Illinois Environmental Protection Agency (Illinois EPA), developed this plan to summarize the proposed remedy for these sites. The Navy, as the lead agency, is accepting formal public comments on this Proposed Plan from August 14, 2009 to September 14, 2009. The Navy, with input from Illinois EPA, will make a final remedy selection after reviewing and addressing the public comments received. Therefore, the public is encouraged to review and comment on the information presented in this Proposed Plan.

This Proposed Plan highlights key information from the **Remedial Investigation/Risk Assessment (RI/RA)** and **Focused Feasibility Study (FFS)** reports. More complete information can be found in these reports in the **Administrative Record** which is available at Naval Station Great Lakes, 201 Decatur Avenue, Building 1A, Environmental Department, Great Lakes, IL 60088.

### Facility Description

Naval Station Great Lakes is located in Lake County, Illinois, north of the City of Chicago, and encompasses 1.5 miles of Lake Michigan shoreline (see Figure 1). Naval Station Great Lakes is used to support Naval training and consists of the Recruit Training Command, Training Support Center, and Naval Facilities Engineering Command Midwest. In 1986, an Initial Assessment Study conducted at Naval Station Great Lakes identified Sites 1 and 4 as needing further investigation to assess potential long-term impacts.

### Site Description

Sites 1 and 4 are physically located within the current limits of the Willow Glen Golf Course. The golf course (and sites) currently provide recreational activities for Naval Station Great Lakes and the surrounding area. The 18-hole Willow Glen Golf Course covers approximately 125 acres and is located north of Buckley Road and east of Route 41 in the northwestern corner of the naval station (see Figure 2).

Site 1 includes a landfill that operated between 1942 and 1967 on approximately 50 acres of land that is now covered by the western part (back nine) of the golf course. Types of waste reportedly disposed at the landfill include domestic refuse, sewage sludge, petroleum, oil and lubricants, solvents, coal ash, and materials contaminated by **polychlorinated**

### The Proposed Remedial Action Plan

To address contaminated subsurface soil, groundwater, surface water, and sediment at Sites 1 and 4, the Navy, with the concurrence of Illinois EPA, proposes Alternative 2 (containment, institutional controls, and monitoring) as the recommended remedial action for the sites.

Containment will consist of maintaining the existing cover through the continued operation of the site as a golf course. Surface water controls will be implemented through the relocation of the existing Skokie Ditch infrastructure. In addition, a protective layer of stone will be placed over the sediment in Skokie Ditch.

**Institutional controls** will be incorporated into the Base Master Plan via **Land Use Controls (LUCs)** to ensure that the restrictions on groundwater use established in the **LUC Memorandum of Agreement (MOA)** are applied and enforced at the sites. These **LUCs** would be required until

monitoring verifies that site **Remedial Action Objectives (RAOs)** have been achieved and include a restriction on property/site to ensure that there is no residential development on the property. They would also include restrictions on excavation and disturbance of subsurface soil in the affected parts of the golf course to eliminate exposure to landfill contents. **Institutional controls** will be maintained under normal golf course operations. These controls are not meant to restrict or limit the day-to-day activities of course maintenance.

Monitoring will consist of regularly collecting samples of impacted site groundwater and surface water and analyzing these samples for **chemicals of concern (COCs)**. Samples would be collected in areas of known contamination to assess expected **natural attenuation** recovery over time and also immediately outside of these areas to detect contaminant migration.

*This document summarizes the Proposed Plan for Sites 1 and 4 at Naval Station Great Lakes. For detailed information on the investigation and focused feasibility study of Sites 1 and 4, consult the documents available for review at Naval Station Great Lakes. Call the Naval Station Great Lakes Environmental Department at (847) 688-2600, Extension 243 to review the information.*

*Bold terms throughout this Proposed Plan are explained in the Glossary of Terms presented on page 8.*



*Figure 1: Location Map*



Figure 2: Site Map

**biphenyls (PCBs).** An estimated 1.5 million tons of waste were disposed of at Site 1 via a trench and fill operation. Once in the trench the waste was burned and then covered with soil. It is estimated that 1.0 million cubic yards of impacted material remains covered within the landfill's 50-acre foot print.

The Site 4 FFTU was built in 1942 and operated until it was taken out of service in 1989. The FFTU was located on 10 acres of land that are now at the center of the golf course. As part of a recent golf course redesign conducted in 2003, portions of the golf course were reconstructed by adding fill, and regrading in the area of Holes 15, 16, and 17 of the course.

Soil, groundwater, surface water, and sediment sampling have been conducted during several investigations at the site over the past 20 years. The investigative activities have included collection of soil samples and installation of temporary and permanent monitoring wells for monitoring groundwater conditions. In addition, environmental remediation work has been completed at the FFTU to remove underground and above-ground storage tanks.

Based on the results of the site investigation, the following **COCs** were identified because they were detected in samples at concentrations that exceeded screening level criteria: lead and **dioxins/furans** in subsurface soil; arsenic, iron, lead, manganese, and vanadium in groundwater; **polynuclear aromatic hydrocarbons (PAHs)** and **dioxins/furans** in surface water; and **PAHs** and arsenic in sediment. The primary sources of contamination appear to be the former landfill, and petroleum products from the FFTU.

An underground storm sewer pipe that conveys Skokie Ditch under a portion of the old landfill has, in the past, collapsed creating sinkholes on several occasions. The pipe and associated sinkhole were repaired. This pipe could be a source of both groundwater and surface water degradation.

At this point in time, the plans are to reroute the pipe around the landfill and seal the existing pipe with cement grout. This work would be completed to prevent waste materials from the landfill or groundwater from entering the Skokie Ditch, which downstream eventually becomes the Skokie River.

## What do you think?

You don't have to be a technical expert to comment. If you have a concern, question, suggestion, or preference, the Navy and Illinois EPA want to hear it before making a final decision on how to protect our community. The Navy, as the lead agency, is accepting formal public comments on this Proposed Plan for a 30-day period from August 14, 2009 to September 14, 2009. To comment formally:

- Send written comments postmarked no later than September 14, 2009 to:

Department of the Navy  
Naval Station Great Lakes  
NAVFAC Midwest  
Attn: Howard Hickey  
201 Decatur Avenue  
Building 1A, Code EV  
Great Lakes, IL 60088

- E-mail comments by the end of the comment period to: howard.hickey@navy.mil

The Navy will provide opportunity for a public meeting during the public comment period if significant interest is expressed and a formal written request is made. The public will be notified of the date, time, and location. At the meeting, the proposed action will be discussed and questions about the action will be received. Written responses to the formal comments and questions will be prepared and will be included in the final **Record of Decision (ROD)**.

## Summary of Site Risks

The investigation of the sites included evaluating potential human health risks from chemicals in subsurface soil, groundwater, surface water, and sediment. Under current land use scenarios, the potential exposed population included maintenance workers, trespassers, and recreational users such as golfers. Future use scenarios considered the same population but also considered site residents under the unlikely premise that the site would be developed for residential use.

Under current and future use scenarios, risks to **ecological receptors** were not evaluated because the sites are covered by a portion of the golf course and there are no complete exposure pathways for **ecological receptors**. Additionally, because contaminant concentrations are low and there is a lack of suitable ecological habitat, the overall risk to **ecological receptors** is small from the site contaminants.

Non-carcinogenic risks (represented by **Hazard Indices**) for subsurface soil, surface water, and sediment were less than United States Environmental Protection Agency (U.S. EPA) and Illinois EPA benchmarks for the potential receptors evaluated at the sites. Non-carcinogenic risks for potential residential use of groundwater were unacceptable for children and adults due to assumed exposures to iron, manganese, and vanadium. Carcinogenic risks (represented by **Incremental Lifetime Cancer Risks**) for subsurface soil, groundwater, surface water,

### Site History

Following is a brief environmental history of Sites 1 and 4:

- 1942 to 1967 — Site 1 includes a landfill that operated as a trench/burn facility in an area currently occupied by the western part of the golf course.
- 1942 to 1989 — Site 4 was used as a FFTU.
- 1968 — The landfill was closed and the back-nine-hole portion of the Willow Glen Golf Course was constructed over the area.
- 1998 — A Site Investigation was conducted at Site 4. Subsequently, an environmental remediation of the FFTU site was conducted to remove underground and above-ground storage tanks.
- 2003 — Golf course was reconstructed by relocating features and by adding soil cover to many areas.
- 2006 to 2007 — An **RI/RA** was conducted at Site 1.
- 2008 — The **RI/RA** was published including the results of the Site 4 RI and was representative of conditions at both Sites 1 and 4.
- 2008 — The **FFS** was prepared to evaluate remedial alternatives for the sites.

and sediment were within U.S. EPA's target risk range ( $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ ) but exceeded the Illinois EPA goal of  $1 \times 10^{-6}$  for most receptors in these media. Arsenic was the main contributor to risks for groundwater. **PAHs** and **dioxins/furans** accounted for most of the risk in the other media.

Exposure to lead was evaluated because the maximum detected lead concentration in subsurface soil exceeded U.S. EPA and Illinois EPA screening levels for residential land use, and the maximum concentration in groundwater exceeded the Illinois EPA Remediation Objective for Class I Groundwater which establishes the standard that requires no future action. As such, risks for lead were evaluated for exposure to average concentrations (as recommended by U.S. EPA) and to maximum concentrations (as recommended by Illinois EPA).

The lead analysis for subsurface soil and groundwater at the sites indicated that predicted blood-lead levels for children and excavation/construction workers and their fetuses were acceptable under worst-case hypothetical future use scenarios in which they were exposed to the average lead concentration. Predicted blood-lead levels were not acceptable under similar hypothetical scenarios when exposure to the maximum detected concentrations was assumed.

## Why Is Remedial Action Needed?

The Navy's environmental studies of Sites 1 and 4 resulted in the following conclusions:

- As a result of past activities, several chemicals are present in subsurface soil, groundwater, surface water and sediment at the sites that may result in unacceptable human health risk.
- As defined by Title 35 of the Illinois Administrative Code, several standards must be met to close the landfill in accordance with **applicable or relevant and appropriate requirements (ARARs)**.

It is proposed by the Navy and Illinois EPA that Alternative 2 identified in this Proposed Plan is necessary to protect public health and welfare and the environment from actual or threatened releases of hazardous substances into the environment, and to meet applicable or relevant and appropriate landfill closure requirements.

## What are the Remedial Action Objectives?

Using the information gathered during the site investigations, the Navy and the Illinois EPA have identified the following **RAOs** for subsurface soil, groundwater, surface water, and sediment at the sites in the **FFS**:

- Prevent direct contact with landfill contents, therefore eliminating unacceptable human exposure to subsurface soil and landfill contents.
- Prevent residential exposure to and consumption of shallow groundwater.
- Comply with federal and state **ARARs** and **To Be Considered (TBC)** guidance criteria.
- Comply with Illinois EPA landfill closure requirements.
- Prevent direct exposure routes for human receptors to **COCs** in surface water and sediment.
- Minimize subsurface infiltration and resulting contaminant leaching of **PAHs** and **dioxins/furans** to groundwater and surface water.

## Remedial Action Alternatives for the Site

The **FFS** report presents the options that the Navy and Illinois EPA developed for remedial action at these sites using a

presumptive remedy strategy for landfills. Presumptive remedies are preferred technologies for common categories of sites that are based on U.S. EPA evaluations of performance data on previous technology implementation. By streamlining site investigation and accelerating the remedy selection process, presumptive remedies are expected to ensure the consistent selection of remedial actions and reduce the cost and time required to clean up similar sites. Presumptive remedies are expected to be used at appropriate sites, except under unusual site-specific circumstances.

One of the primary objectives of the **RIRA** was to evaluate the extent of the waste materials disposed at Site 1, and to determine if the resulting site conditions meet the requirements to continue to pursue the presumptive remedy strategy. Based on knowledge of historical landfill operations and the data collected as part of the **RIRA**, it was determined that Site 1 has the characteristics necessary to apply the presumptive remedy.

In September 1993, U.S. EPA established source containment, **institutional controls**, and groundwater monitoring as the presumptive remedy for municipal landfill sites regulated under **CERCLA**, that should also be applied to appropriate military landfills. Accordingly, the presumptive remedy for Site 1 would be containment via maintenance of the existing soil cover, implementation of **institutional controls**, and groundwater and surface water monitoring. Although it is not part of Site 1 or a landfill, the contamination at Site 4 is similar in nature in that it is contained in the subsurface layers and in the groundwater which are now covered with clean soil. As such, the presumptive remedy approach was extended to Site 4 as well. Additional measures such as repair of the Skokie Ditch infrastructure would also be considered as part of the remedy.

Based on the evaluation of various technologies documented in the **FFS** and taking into consideration the presumptive remedy guidance, the following two remedial alternatives were developed for the sites: Alternative 1 - No Action; and Alternative 2 - Containment, Institutional Controls, and Monitoring (Presumptive Remedy).

### Alternative 1: No Action

The No Action alternative maintains the sites as is. No restriction would be imposed to prevent access to the sites. This alternative does not address site contamination and is only retained to provide a baseline for comparison to other alternatives, as required under **CERCLA**. The sites would be available for unrestricted use.

### Alternative 2: Containment, **Institutional Controls**, and Monitoring (Presumptive Remedy)

Under this alternative, the golf course and its existing cover would be maintained as part of day-to-day operations of the facility. Normal course maintenance should prevent exposure to impacted subsurface soil and landfill contents and provisions would be made to prevent subsurface soil, and sediment exposure. Preventing exposure to impacted surface water would occur through the relocation and repair of the Skokie Ditch infrastructure. **Institutional controls** would be implemented to prevent the use of site groundwater, prevent excavation or disturbance of subsurface soil and landfill contents, protect site workers, and restrict residential land use. In addition, the monitoring component of this alternative would provide indication of potential future migration of **COCs**.

## Use of ARARs in the Evaluation Process

**ARARs** are federal and state environmental requirements to evaluate the appropriate extent of site cleanup, to scope and formulate remedial alternatives, to identify cleanup levels, and to control the implementation and operation of a selected cleanup action. Potential chemical-, location-, and action-

specific **ARARs** that apply to the sites are presented in Section 2.0 of the **FFS** Report. Each alternative was evaluated to determine its compliance with **ARARs**.

## Detailed Analysis of Cleanup Alternatives

In accordance with **CERCLA**, a detailed analysis of each alternative must be conducted with respect to the nine **CERCLA** evaluation criteria to select a site remedy. These include two threshold criteria (Overall Protection of Human Health and the Environment and Compliance with **ARARs**), five balancing criteria (Long-Term Effectiveness and Permanence; Reduction of Toxicity, Mobility, and Volume through Treatment; Short-Term Effectiveness; Implementability; and Cost), and two modifying criteria (State Acceptance and Community Acceptance). An analysis of these criteria was performed for each remedial alternative, and summary comparisons of these analyses are presented in Table 1. Consult the Sites 1 and 4 **FFS** Report for more detailed information.

State (Illinois EPA) acceptance of the proposed alternative was secured during the development of this Proposed Plan. During the upcoming comment period, the Navy and Illinois EPA also welcome your comments on the proposed remedial action.

## A Closer Look at the Proposed Remedial Action

Alternative 2, Containment, **Institutional Controls**, and Monitoring, have been recommended to address the subsurface soil, groundwater, surface water, and sediment contamination at the sites. The future land use is anticipated to remain the same as the current land use, a golf course, making Alternative 2 compatible with the land use.

The components of this alternative are described below:

### Component 1: Containment

Containment would consist of maintaining the existing cover (golf course). The existing cover is a soil layer that consists of a minimum of 2 feet of clean fill material, which would be maintained to prevent direct contact with **COCs** and landfill contents and to prevent erosion and transport of impacted soil and wastes. Day-to-day maintenance would be performed under on-going golf course operations.

Containment would also include implementing surface water controls through the relocation of the existing Skokie Ditch infrastructure as recommended in Appendix B of the **FFS**. A riprap liner, consisting of a protective layer of stone would be placed over the sediment in Skokie Ditch to prevent human exposure to the **COCs** in that medium.

### Component 2: Institutional Controls

**Institutional controls** would be incorporated into the **Base Master Plan** via **LUCs** to ensure that the restrictions on groundwater use established in the **LUC MOA** are applied and enforced at the sites, regardless of changes in Navy policy throughout the Naval Station. A Land Use Control Implementation Plan (LUCIP) for Sites 1 and 4 would be appended to the **LUC MOA** to ensure restrictions are applied and enforced until they are no longer needed. These **LUCs** would be required until monitoring (see Component 3) verifies that site **RAOs** have been achieved, and include deed restrictions to ensure that there is no residential development on the property. Additionally, **LUCs** would require review of construction activities and intrusive work conducted at the sites to protect workers from exposure to contaminants in subsurface soil and groundwater; to ensure that if disturbed, the existing cap is repaired appropriately and with consistent materials and material specifications; and to confirm proper handling and disposal of contaminated materials.

### Component 3: Monitoring

Monitoring would consist of regularly collecting samples of impacted site groundwater and surface water and analyzing these samples for **COCs**. Samples would be collected both in the areas of known contamination to assess expected **natural attenuation** recovery over time, and immediately outside of these areas to detect contaminant migration.

It is currently assumed that initially, 12 groundwater samples from existing monitoring wells and five surface water samples from the Skokie Ditch would be collected on a quarterly basis in accordance with Section 811.319 Title 35 of the Illinois Administrative Code. Due to planned changes at this site, recommendations to modify the number of analytical parameters and the sampling frequency may be made once baseline conditions have been established and confirmed via the Sampling and Analysis Program. Monitoring would be performed for a minimum of 30 years or until site conditions no longer require such monitoring.

Based on information currently available, the lead agency believes the Preferred Alternative meets the threshold criteria and provides the better balance of trade-offs compared to the other alternatives with respect to the balancing and modifying criteria. The Navy expects the Preferred Alternative to satisfy the following statutory requirements of **CERCLA** §121(b): 1) be protective of human health and the environment; 2) comply with **ARARs**; 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent possible; and 5) satisfy the preference for treatment as a principal element.

## What impacts would the remedial action have on the local community?

Alternative 1 would not provide for protection of human health and the environment. The potential for exposure of human receptors to contaminated subsurface soil, landfill contents, and groundwater would increase over time because the existing soil cover would not be maintained and no site-specific **institutional controls** would be implemented. Exposure to **COCs** in surface water and sediments are not addressed. Also, under this alternative, no monitoring of groundwater and surface water would occur; therefore, no warning would be provided if contaminants migrate off site.

Alternative 2 would provide a higher level of protection than Alternative 1 because the existing soil cover would be maintained to prevent exposure to impacted subsurface soil and landfill contents, and because it contains a provision to prevent exposure to sediment and surface water. Alternative 2 also uses the implementation of institutional controls to prevent the use of site groundwater, prevent unplanned and uncontrolled excavation/disturbance of subsurface soil and landfill contents, and restrict any future residential land use. In addition, the monitoring component of Alternative 2 would provide indication of potential future migration of **COCs**.

## Why Does the Navy Recommend this Proposed Alternative?

The proposed alternative (Alternative 2) is recommended for the following reasons:

It would meet the **RAOs** as follows:

- This alternative would effectively prevent exposure to subsurface soil, groundwater, surface water, and sediment contamination through containment and **LUCs** until concentrations have naturally decreased to less than the U.S. EPA and Illinois EPA criteria.

**TABLE 1  
SUMMARY OF COMPARATIVE EVALUATION OF REMEDIAL ALTERNATIVES**

<b>Evaluation Criterion</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Containment, Institutional Controls, and Monitoring</b>
Overall Protection of Human Health and Environment	Not protective.	Monitoring and <b>LUCs</b> protect against off-site discharge and on-site exposures.
Compliance with <b>ARARs</b> and <b>TBCs</b> : Chemical-Specific Location-Specific Action-Specific	Would not comply Would not comply Not applicable	Would not comply in short-term but would in long-term due to <b>natural attenuation</b> . Would comply Would comply
Long-Term Effectiveness and Permanence	Not effective or permanent.	Effective and permanent.
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment	Same as Alternative 2 but doesn't address surface water issues or sediment mobility.	Would reduce mobility by reducing surface water infiltration. Might achieve reductions in the toxicity and/or volume of <b>COCs</b> through <b>natural attenuation</b> . Surface water flow through the site would be reduced by pipe relocation.
Short-Term Effectiveness	Surface water and sediment issues not addressed.	Would be effective. No risk to the surrounding community or the environment. Would achieve the <b>RAOs</b> upon implementation of <b>LUCs</b> . Minimizes potential exposure risk to workers.
Implementability	Nothing to implement.	Simple to implement.
Costs: Capital NPW of O&M NPW	\$0 \$0 \$0	\$1,612,000 \$621,000 \$2,233,000
State Acceptance	Illinois EPA has indicated this alternative is unacceptable.	Illinois EPA accepts as a preferred alternative.
Public Acceptance	Public acceptance will be determined following the public comment period.	Public acceptance will be determined following the public comment period.

ARARs Applicable or Relevant and Appropriate Requirements  
COCs Chemicals of concern  
LUCs Land use controls  
RAOs Remedial Action Objectives  
TBC To Be Considered  
NPW Net Present Worth  
O&M Operation and Maintenance

- **LUCs** at the sites are in accordance with the Naval Station Great Lakes Base Master Plan and are not overly burdensome.
- It would protect human health and the environment.
- It is deemed to be cost effective and represents a reasonable value for the money to be spent.
- It meets the requirements of the presumptive remedy.

This recommended alternative can change in response to the public comments or based on receipt of new information.

## Next Steps:

By December 2009, the Navy expects to have reviewed comments and signed the **ROD** describing the chosen remedial action. The **ROD**, which includes a summary of responses to public comments, will then be made available to the public at Naval Station Great Lakes, 201 Decatur Avenue, Building 1A, Environmental Department, Great Lakes, IL 60088. The Navy will also announce its decision through the local news media.

## For More Detailed Information

To help the public understand and comment on the proposal for these sites, this publication summarized a number of reports and studies. The technical and public information prepared to date for the sites are available at Naval Station Great Lakes as noted above.

## Glossary of Terms

This glossary defines the terms used in this Proposed Plan. The definitions in this glossary apply specifically to this Proposed Plan and may have other meanings when used in different circumstances.

**Administrative Record:** The complete body of documents pertaining to the investigation and restoration of an environmental site. This body of documents is kept at a location where it can be accessed by the general public.

**Applicable or relevant and appropriate requirements (ARARs):** The federal, state, and local environmental rules, regulations, and criteria that must be met by the selected remedy under **CERCLA**.

**Chemical of concern (COC):** A substance detected at a concentration and/or in a location where it will have an adverse effect on human health and the environment.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):** A federal law also known as "Superfund." This law was passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). This law created a special tax that goes into a trust fund to investigate and cleanup abandoned or uncontrolled hazardous waste sites.

**Dioxins:** A family of 75 organic compounds known chemically as polychlorinated dibenzo-p-dioxins. The individual compounds are technically referred to as congeners. Concern about them arises from their potential toxicity as contaminants and their hydrophobic nature and resistance towards metabolism. Dioxins are typically created and released into the air during combustion processes such as commercial or municipal waste incineration and from burning fuels (e.g., wood, coal, or oil). They can also be created in small quantities during certain types of chemical manufacturing and processing.

**Ecological receptor:** A plant or animal that could be exposed to a chemical in the environment by direct contact or through the food chain.

**Focused Feasibility Study (FFS):** A report that presents the development, analysis, and comparison of cleanup alternatives.

**Furans:** A family of 135 organic compounds known chemically as polychlorinated dibenzofurans. The individual compounds are technically referred to as congeners. Typically found with dioxins and having similar properties, concern about furans arises from their potential toxicity as contaminants and their hydrophobic nature and resistance towards metabolism.

**Hazard Indices:** The ratio of the daily intake of chemicals from onsite exposure divided by the reference dose for those chemicals. The reference dose represents the daily intake of a chemical that is not expected to cause adverse health effects.

**Incremental Lifetime Cancer Risk:** The incremental risk of an individual in a population developing cancer over a lifetime.

**Institutional Controls:** Engineered or physical controls and/or administrative or legal mechanisms designated to protect public health and the environment from contamination.

**Land Use Controls (LUCs):** Engineered and non-engineered measures formulated and enforced to regulate current and future land use options. Engineered measures include fencing and posting. Non-engineered measures typically consist of administrative deed restrictions that prohibit residential development and/or groundwater use.

**Memorandum of Agreement (MOA):** An agreement between Illinois EPA and Naval Station Great Lakes, on behalf of the Department of the Navy, to implement base-wide, certain periodic site inspections, condition certifications, and agency notification procedures to ensure the maintenance by Naval Station Great Lakes personnel of site-specific LUCs deemed necessary for present or future protection of human health and the environment.

**Natural Attenuation:** The decrease of contaminant concentrations due to naturally-occurring contaminant degrading and dispersing processes.

**Polychlorinated biphenyls (PCBs):** Organic compounds with 1 to 10 chlorine atoms attached to biphenyl and a general chemical formula of C<sub>12</sub>H<sub>10-x</sub>Cl<sub>x</sub>. **PCBs** have low water solubilities, low vapor pressures, and are very stable compounds that do not readily degrade.

**Polynuclear aromatic hydrocarbons (PAHs):** High molecular weight, relatively immobile, and moderately toxic solid organic chemicals that feature multiple benzenic (aromatic) rings in their chemical formula. **PAHs** are typically formed during the incomplete combustion of coal, oil, gas, garbage, or other organic substances.

**Record of Decision (ROD):** An official document that describes the selected Superfund remedy for a specific site. The **ROD** documents the remedy selection process and is issued by the Navy, with concurrence of Illinois EPA following the public comment period.

**Remedial Action Objectives (RAOs):** A cleanup objective agreed upon by the Navy and Illinois EPA. One or more **RAOs** are typically formulated for each environmental site.

**Remedial Investigation/Risk Assessment (RIRA):** A report that describes the site, documents the type and location of environmental contaminants, and presents the results of the risk assessment.

**To Be Considered (TBC):** Nonenforceable guidelines or criteria that may be useful for developing a remedial action or that are necessary for determining what is protective to human health and/or the environment.

## What's a Formal Comment?



Formal comments are used to improve the final decision for site remedy. During the 30-day formal comment period, the Navy will accept formal written comments and hold a meeting, if requested, to accept formal verbal and written comments. To make a formal comment, you need to submit a written comment during the comment period or present your views during the public meeting.

A request for an extension to the public comment period (minimum of 30 days) must be made in writing. A request for a public meeting to present your formal comments must also be made in writing. These requests must be postmarked no later than September 14, 2009. Written comments and requests for a public meeting or an extension of the public comment period should be sent to:

Department of the Navy  
Naval Station Great Lakes  
NAVFAC Midwest  
Attn: Howard Hickey  
201 Decatur Avenue  
Building 1A, Code EV  
Great Lakes, IL 60088  
Email: howard.hickey@navy.mil



Federal regulations require the Navy to distinguish between “formal” and “informal” comments. Although the Navy uses public comments throughout site investigation and cleanup activities, the Navy is only required to respond in writing to formal comments on the Proposed Plan. If a public meeting is held, there will be no Navy verbal responses to your comments during the formal meeting portion of the meeting. After the formal portion of the public meeting is closed, the Navy may respond to informal questions.

The Navy will review the transcript of formal comments received at the meeting and written comments received during the formal comment period before making a final decision. They will then prepare a written response to formal comments. The transcript of formal comments and the Navy’s written responses will then be included in the Responsiveness Summary issued as part of the final **ROD**.

