



FACT SHEET

CRAB ORCHARD NATIONAL WILDLIFE REFUGE SUPERFUND SITE PROJECT

Fact Sheet Number 1

May 1994

INTRODUCTION TO CRAB ORCHARD CLEANUP PROJECTS

Crab Orchard National Wildlife Refuge presents this fact sheet for public information regarding the Superfund environmental investigations and remedial actions at the **CRAB ORCHARD NATIONAL WILDLIFE REFUGE (REFUGE)** near Marion, Illinois. This fact sheet advises the public of the progress of the five investigation and remediation projects on the Refuge as well as opportunities for public information and comment.

This fact sheet provides background on the Superfund areas on the Refuge, the status of each remedial or cleanup project and an introduction to the staff. Key words are printed in **BOLD** type and are defined in a Glossary Fact Sheet.

BACKGROUND OF THE INVESTIGATIONS AT THE REFUGE

Crab Orchard National Wildlife Refuge is administered by the **U.S. FISH AND WILDLIFE SERVICE (SERVICE)**, a bureau of the U.S. Department of Interior. From 1941 - 1945 several wartime industries used the area for the manufacture of explosives and other supplies, under the jurisdiction of the War Department. After World War II, other industries moved onto the Refuge to occupy buildings formerly used by the wartime companies. They manufactured automobile parts, plated metal parts, tape, flares, jet engine starters, fiberglass boats, and electrical components. In 1947, Congress passed Public Law 80-361 to establish the Refuge for the purposes of agriculture, industry, recreation and wildlife conservation. The Service was

designated as the agency to manage the Refuge.

The contaminated areas on the Refuge reflect the broad range of substances used in various industrial and Refuge activities. In 1987 the Refuge was placed on the **SUPERFUND NATIONAL PRIORITIES LIST (NPL)**, a national list of hazardous waste sites prioritized for cleanup. Superfund is the common name for the **COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION and LIABILITY ACT (CERCLA) OF 1980** and its amendments. The first step was to conduct a Refuge-wide **REMEDIAL INVESTIGATION AND FEASIBILITY STUDY (RI/FS)** to further characterize the contamination on the Refuge. This RI/FS was completed in August, 1989. It recommended that additional study and remediation be divided into four basic projects called **OPERABLE UNITS (OUs)**. A fifth project, a removal, was added later. All projects are in the closed portion of the Refuge. These five projects are titled:

- Metals Areas Operable Unit (**METALS**)
- PCBs Areas Operable Unit (**PCBs**)
- Miscellaneous Areas Operable Unit (**MISC AOU**)
- Explosives/Munitions
- Manufacturing Areas Operable Unit (**EMMA**)
- Water Towers Removal Action (**TOWERS**)

A **FEDERAL FACILITIES AGREEMENT (FFA)** between the **UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA)**, the Service and the **DEPARTMENT OF THE ARMY (ARMY)** and the **ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA)** became effective in 1991 to set forth the



role each agency will play in these five studies.

The studies for each OU have proceeded since 1990. A site specific RI/FS was completed for the METALS OU and PCBs OU in August, 1989 and a **RECORD OF DECISION (ROD)** for METALS OU was signed in March, 1990. The METALS ROD called for excavation of the soil contaminated with metals, treatment of certain soils, and disposing of the soil in a landfill on the Refuge. There will be groundwater monitoring of the landfill and remediated areas.

A ROD was also signed in August, 1990 for the PCB OU. It called for excavation and thermal treatment of certain soils and sediments contaminated with PCBs and other contaminants, with the remaining materials disposed in a landfill on the Refuge. Groundwater monitoring would occur for a minimum of thirty years at the landfill and remediated sites. In 1991, a **CONSENT DECREE (CD)** was signed in which a private company (Sangamo/Schlumberger) potentially responsible along with the Service for the PCB contamination on the Refuge agreed to implement the cleanup remedy outlined in the ROD under the guidance and oversight of the USEPA.

The remedial investigations for the EMMA began in 1991 and for the MISC AOU in 1992. Once each RI/FS is complete, RODs will be signed which designate the cleanup action to be taken for each. The public will have opportunity to review and comment on the Proposed Plan during this process. More information on public involvement opportunities for all OUs appears later in this fact sheet.

While these investigations were ongoing, additional contamination from lead-based paint was found in soils around the three **WATER TOWERS** and the Visitor Center on the Refuge. A **REMOVAL ACTION** was completed in 1993 to remove the contaminated soil from the area surrounding the water towers and dispose of the soils offsite. Clean soils were used as a backfill.

A status report of each OU is provided. In addition, information regarding all five OUs are available in **ADMINISTRATIVE RECORD FILES (ARFs)** and **INFORMATION REPOSITORIES (IRs)** in local libraries. The locations of these ARFs and IRs are listed at the end of this fact sheet.

STATUS REPORTS

Metals (METALS) OU:

The engineering design of the cleanup action was completed in March 1993. The **U.S. ARMY CORPS OF ENGINEERS (CORPS)**, St. Louis District awarded a contract to Heritage Remediation/Engineering, Inc. in May, 1993 for \$1.787 million to implement the cleanup plan. Heritage has developed a series of plans detailing how the cleanup will be conducted. The cleanup consists of excavation of soils and sediments contaminated with metals such as chromium, lead and cadmium as well some cyanide. These materials will be treated by solidification (and stabilization, if necessary) and then disposed in an onsite landfill.

In January, the Service issued a report on the results of sampling of the former wood post treatment facility, which is part of the MISC AOU. Those results showed the presence of pentachlorophenol (PCP) and dioxins. Since this site is adjacent to the Old Refuge Shop site sampling was initiated by the Service to determine whether these two compounds may be present at the Old Refuge Shop site. When these two compounds were found to be present, additional sampling over a larger area of the Old Refuge Shop site was conducted. Results indicate that the contamination of PCP is confined to one spot with maximum levels of 340 parts per billion. The sampling results indicate that various forms of dioxins are also present in sediments over the length of the stream which runs through the Old Refuge Shop site. The primary dioxin of concern, 2,3,7,8-tetrachlorodibenzo-p-dioxin, were found in a short segment of the stream sediments at levels of 20

parts per trillion (ppt) or less. These contaminants are in an area not normally accessible to the public. The Service is working with USEPA and IEPA to determine how to address this contamination.

The on-site landfill is located just off of Ogden Road, east of Route 148, immediately south of Area 7. Approximately 30,000 cubic yards of soils and sediments will be excavated from three sites and placed in the landfill. We estimate that 9,000 cubic yards will require treatment to immobilize higher levels of cadmium. All plans are provided to the USEPA, CORPS and IEPA for review before they are implemented. Field work is scheduled to begin in Spring, 1994 and completion is anticipated by the end of the fall, weather permitting. Documents on the cleanup decision and engineering design plan are available for public review in the IRs and ARFs.

PCBs (PCBs) OU:

Engineering studies have been conducted to further define the volume of contaminated material, the levels of contamination and other factors which may effect the engineering design of the cleanup activities. This includes a **TREATABILITY STUDY** which more fully evaluates performance characteristics for the incineration and treatment technologies. A **CONTAMINATION DELINEATION REPORT** provides additional information to properly design plans for the excavation, treatment and handling of contaminated material. Currently under review is a **GROUNDWATER AND SURFACE WATER MONITORING REPORT** which establishes current conditions against which to measure effectiveness of the remedial action. All reports are reviewed by Federal and State agencies with USEPA serving as lead.

These preliminary engineering design studies have revealed that there is approximately 200,000 cubic yards of soil and sediment contaminated with PCBs to be addressed. Of that number, approximately 80,000 cubic yards will be incinerated. The

remaining 120,000 cubic yards contains less than 25 parts per million of PCBs and, following the ROD and CD, will be evaluated for use as backfill in the excavated areas with a clean fill cap. During 1994, this additional information will be used to develop the actual engineering designs, tailoring the incinerator to the specific needs of this project.

Explosives/Munitions Manufacturing Areas (EMMA) OU:

The fifteen areas which comprise the EMMA OU were used for manufacturing explosives and munitions during World War II and the destruction of surplus explosives and munitions after the War. The Army, serving as lead agency, has completed most of the RI. The RI will include soil and water samples and a Baseline Risk Assessment. The Army completed a 96-hour chronic aquatic toxicity test to determine if ponds in one area contain toxic materials and a study on mice, including visual and microscopic investigations, from two areas to determine if constituents found in the soils are affecting wildlife in the area.

It appears that the RI will demonstrate that there are areas that have explosives contamination along with some metal contamination. One site has evidence of crystalline TNT along a ditch. All sites will be more fully evaluated after the baseline risk assessment is completed. A Feasibility Study will be conducted to identify and screen various remedial alternatives.

Miscellaneous Areas (MISC AOU):

Phase I RI field work was completed last summer for the twenty-four sites which comprise the MISC AOU. These areas were identified in the 1988 study as areas that may require further evaluation. The contaminants in these areas vary somewhat, relative to the types of industrial and maintenance activities which were conducted at each location over the years. This phase of the RI included soil and surface water sampling as well as a preliminary ecological risk

assessment. It also included an initial examination of an additional area, the wood post treatment area. Elevated levels of organic compounds such as PCBs, dioxins and polyaromatic hydrocarbons were detected in soils and sediments at the facility and will be sampled further. This sampling will further define the volume of contamination at sites where elevated levels certain compounds were found. A final Phase I RI report, which explains the results, was released in April, 1994. A public meeting was conducted on April 5, 1994 at the Refuge Visitor's Center to share with the public the results of the Phase I study. The Phase II investigation, including soil, surface water and groundwater sampling and analysis will begin in the summer of 1994 and is expected to be completed a year later.

Water Towers Removal Action (TOWERS):

A removal action was conducted at three Water Towers areas and the Visitor's Center to remediate lead contaminated soils. The contamination was from the lead-based paint which fell into the soil during past sandblasting operations at these facilities. The Corps contracted with OHM, Inc. who excavated over 2,000 tons of soils and disposed of them off-site with Peoria Disposal Company, Peoria Illinois and Chain-of-Rocks Disposal in Granite City, Illinois. This action occurred during June and July, 1993. The wastes are securely landfilled and a closeout report is being reviewed. This report will be available in the IRs and ARFs for public review once it is finalized.

NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION

A Roundtable discussion of researchers from the Department of the Interior and other researchers specializing in natural resources and wildlife met to assess what information is currently available regarding damages to the natural resources of the Refuge. Experts from other government agencies also

attended to assist in scoping the available information. This is one of several steps in developing a natural resources restoration plan for the areas of the Refuge containing the contaminants.

CRAB ORCHARD SUPERFUND SITE STAFF

Until this summer, only one Project Manager was available to work on these projects, working closely with the Refuge Manager supported by an administrative assistant. However, the Service has recently employed three additional staff to assist with the remediation of the five projects and to address the natural resource restoration issues on the Refuge. A Project Manager is assigned to each OU to provide better professional guidance and support for these projects. The Natural Resource Damage Assessment Coordinator provides specialized expertise to all Project Managers and other Refuge staff.

Rick Berry has been the Refuge Manager at Crab Orchard National Wildlife Refuge since July, 1992. His prior professional experience includes serving as Manager of the Upper Mississippi River Refuge Complex, Chief of the Division of Ecological Services in the Service's Twin Cities Regional Office, Supervisor of the Ecological Services Office serving Minnesota, and a number of biological positions with the U.S. Army Corps of Engineers. He has a Bachelor's degree in biology and a Master's degree in Vertebrate Zoology and Ecology.

Mary Monett began serving as administrative assistant for the Superfund projects at the Refuge in January, 1992. She performs a variety of critical support services for these OUs including budgeting, equipment and clerical support. She retired from the Air Force in 1991, last serving at the AF ROTC Detachment at SIU-Carbondale, Carbondale IL. During her career with the U.S. Air Force she developed an excellent sense of organization which has been invaluable to these often complex Superfund projects.

Leanne Moore is the Project Coordinator for the Crab Orchard National Wildlife Refuge Superfund Site. As Project Coordinator, she is charged with the responsibility of ensuring these sites are effectively remediated. She also serves as Project Manager for the METALS OU and the TOWERS OU. She joined the Service in 1990 to manage the Superfund investigation and cleanup projects at the Refuge. Leanne returned home to Southern Illinois after working for the USEPA Region IV office in Atlanta. During her employment there she was involved in three environmental programs governing hazardous waste management facilities, Superfund sites and wastewater treatment facilities. Her experience at USEPA included incineration of PCBs at a Superfund site. She has a Bachelor's degree in Geological Engineering from the University of Missouri-Rolla which has assisted her in the evaluation of these studies.

Vanessa Musgrave became the Project Manager for the PCB OU in August, 1993. Vanessa's professional experience includes eight years in the hazardous waste permitting and Superfund programs with USEPA in Chicago and Washington, D.C. She provided environmental compliance and siting expertise to the Doppler weather radar program for the National Oceanic and Atmospheric Administration, Department of Commerce. Prior to these positions she was employed with IEPA in the Chicago area office where she gained experience in all major environmental programs. She has also served as a consultant to the Department of Defense on environmental investigation and cleanup of bases designated for closure. She has a Bachelor's degree in Biology, Secondary Education and Philosophy from Greenville College, Greenville, IL and has completed many additional professional training courses. She is also responsible for managing the Superfund community relations program for the Refuge.

Mark Sattelberg is the Project Manager for the EMMA and MISC AOU's.

He joined the Service in June, 1993 from the hazardous waste permitting program of the USEPA - Region V in Chicago. He has a Master's Degree in Biology and over six years experience in the hazardous waste field. Two years of Mark's experience was spent performing field investigations of uncontrolled hazardous waste sites. His experience at USEPA included project management of "corrective action" of active contaminated industrial facilities. Mark is also responsible for primary review of all ecological risk assessments relating to each OU on the Refuge.

Denise Steurer joined the Service in October, 1993, to serve as Natural Resource Damage Assessment Coordinator. Prior to that she worked for the USEPA in Chicago, where she served as an environmental scientist in various water programs, including drinking water, wastewater treatment and wetlands. She has a Bachelor's degree in Biology and a Master's degree in Environmental Public Health. Denise will assist the Project Managers and other Refuge staff in determining what adverse impacts have occurred to wildlife and their habitats from the contamination on the Refuge. She will also coordinate plans to mitigate or restore lost or damaged natural resources.

OPPORTUNITIES FOR PUBLIC INFORMATION AND INVOLVEMENT

There have been and will continue to be opportunities for public information and involvement regarding the Superfund activities on the Refuge. These activities are part of the **COMMUNITY RELATIONS PROGRAM** that is required by law but includes additional activities to better keep the public informed. For example, public meetings, fact sheets, display ads in newspapers of general local distribution, public comment periods, responses to public comments, information repositories and administrative record files in local libraries, and presentations to individual groups are included in this program.

Currently, three **PUBLIC MEETINGS** are

planned for 1994. The first was conducted April 5, 1994, to present the results of Phase I of the MISC AOU. Another meeting will be conducted to outline the excavation, treatment and disposal of the METALS sites. A third meeting will be conducted in the fall, to update the public about the results of the EMMA OU. Other meetings may still be planned. Newspaper ads and news releases will be issued to announce these meetings.

The **ADMINISTRATIVE RECORD FILE (ARF)** is slightly different than the IRs in that it is the official legal file for the Superfund activities at this site. The ARF is also available at the USEPA office in Chicago.

Four **INFORMATION REPOSITORIES (IRs)** have been established where the public may review documents on the Superfund studies conducted on the Refuge. The locations of these Information Repositories are listed below. In them you will find copies of the laws which apply to these activities, copies of the RI/FS, workplans, fact sheets, community relations information on each OU, technical research papers, blueprints, RODs and other agreements. If you have any questions after reviewing the documents in these locations please contact Vanessa Musgrave at the Refuge at (618) 997-5491. She will direct your question to the appropriate staff person for response.

ADMINISTRATIVE RECORD FILES

Southern Illinois University
Morris Library
Fifth Floor
Carbondale, IL 62901
Contact: Reference Librarian
(618) 453-2683

USEPA - Region V
7th Floor
77 West Jackson Blvd.
Chicago, IL 60604-3590
Contact: Eileen Deamer
(312) 886-1728

INFORMATION REPOSITORIES

Marion Carnegie Public Library
206 South Market Street
Marion, IL 62959
(618) 993-5935

Carbondale Public Library
405 West Main Street
Carbondale, IL 62901
(618) 457-0354

Crab Orchard National
Wildlife Refuge
RR 3 Box 328
Marion, IL 62959
Contact: Vanessa Musgrave
(618) 997-5491

Department of Justice
Marion Federal Penitentiary
Bureau of Prisons
RR 5, Little Grassy Road
Marion, IL 62959
Contact: Steve Fawl
(618) 964-1441

INQUIRIES regarding the Superfund activities can be addressed to Vanessa Musgrave at the address and phone number listed below. In addition, each Federal and State agency has a primary point of contact who can also assist you:

Eileen Deamer (PS19J)
U.S.EPA - Region V
77 West Jackson Blvd.
Chicago, IL 60604-3590
(312) 886-1728

Michelle Nickey-Tebrugge
IEPA (MS5)
2200 Churchill Road
Springfield, IL 62794
(217) 524-5137

U.S. Army Corps of Engineers
Betty White
215 N. 17th St.
Omaha, NE 68102
(402) 221-3916

Each government agency has assigned technical Project Managers to the Crab Orchard site as well. They are: Nan Gowda, USEPA; Steve Nussbaum, IEPA; Frank Fisher, USACE; Mark Sattelberg, Vanessa Musgrave and Leanne Moore, USFWS.

If you wish to be placed on the **MAILING LIST** for the Superfund activities at the Crab Orchard National Wildlife Refuge, please complete the form below and mail to:

Vanessa Musgrave
Crab Orchard National Wildlife Refuge
R.R. 3 Box 328
Marion, IL 62959
(618) 997-5491

I wish my name to be placed on the mailing list for the Crab Orchard National Wildlife Refuge Superfund Investigations. Please send information to the address listed below.

Name/Title _____

Organization _____

Address _____

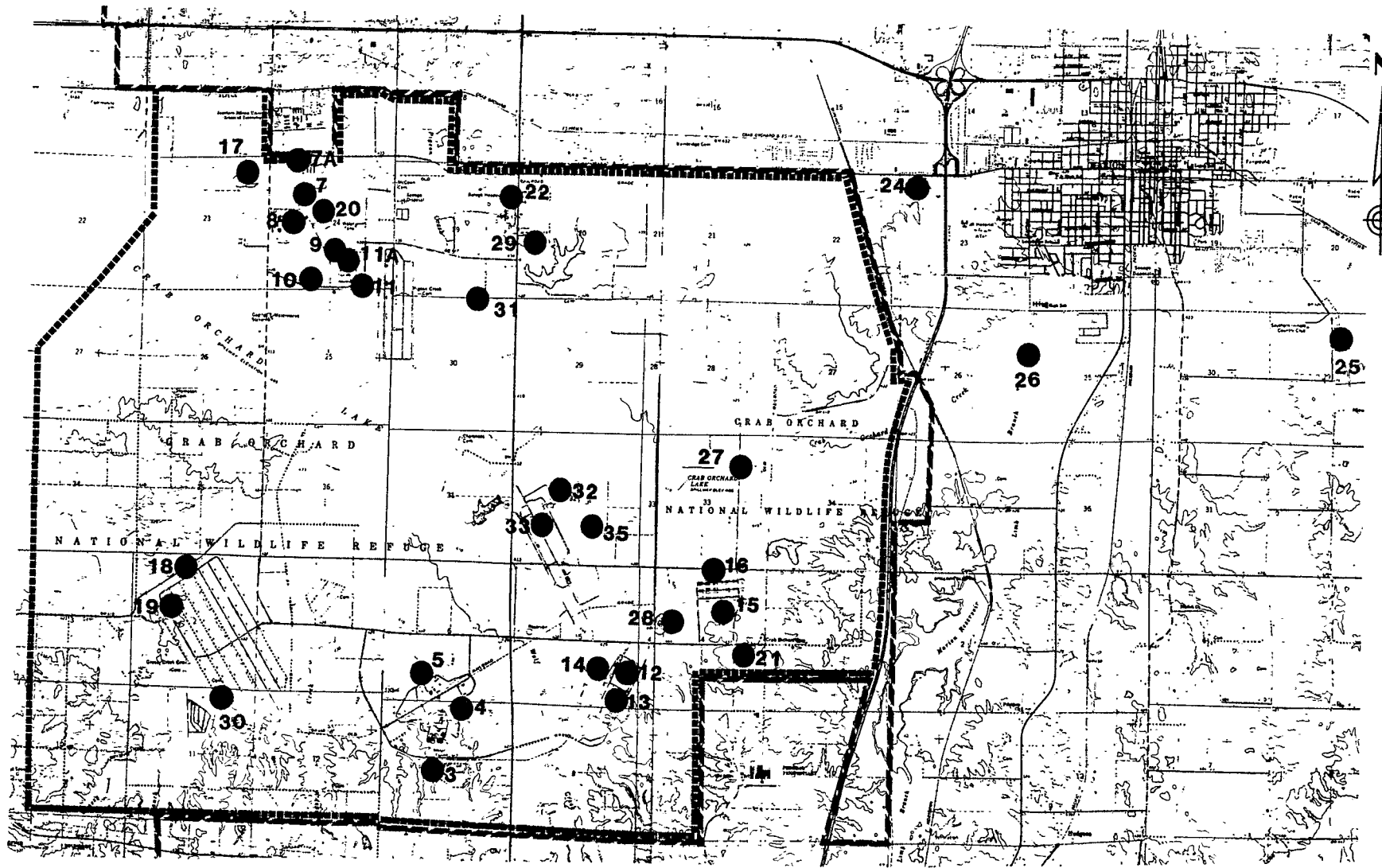
City/State/Zip _____

Phone Number (optional) (w) _____ (H) _____

Date _____

Chronological Time Line

- 1941 - 1945 Refuge Lands administered by the War Department for Munitions Manufacturing
- 1947 CONWR established by an Act of Congress
- 1987 CONWR placed on the NPL
- 1988 Final RI Report
- 1989 Final FS Report
- 1990 METALS and PCB OUs RODs
- 1991 FFA effective
- 1992 PCB preliminary engineering studies begin
Begin WATER TOWERS OU removal
Begin EMMA and MISC AOU RI
PCB Consent Decree effective
- 1993 Complete WATER TOWERS OU removal
Complete design blueprints for METALS cleanup
- 1994 Complete RI for EMMA and MISC AOUs
PCB engineering design workplan
Complete METALS OU cleanup
Design PCB OU Cleanup
Operational & Maintenance for METALS OU



**CRAB ORCHARD NATIONAL WILDLIFE REFUGE
LOCATIONS OF SAMPLING SITES**

- - - REFUGE BOUNDARY
 ——— CLOSED AREA
 SCALE IN FEET
 0 4000 8000