



U.S. Army  
Base Realignment and Closure

CERFA Report  
Newport Chemical Depot –  
Newport, Indiana

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Assistant Chief of Staff  
for Installation Management

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## List of Acronyms

ACM	Asbestos-containing Material
AOP	Ammonia Oxidation Plant
AR	Army Regulation
BRAC	Base Realignment and Closure
BRRM	Base Redevelopment and Realignment Manual
CDD	Construction Debris Dump
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CMA	Chemical Materials Agency
CPAB	Chemical Plant Coal Ash Basin
CPRB	Chemical Plant Retention Basin
CSL	Closed Sanitary Landfill
DA	U.S. Department of the Army
DI/SY	Demilitarization Incinerator/Scrap Yard
DN	Denitration
DOD	U.S. Department of Defense
DWBG	Decontaminated Waste Burial Ground
ECP	Environmental Condition of Property
GOCO	Government-Owned/Contractor-Operated
GSB	Gypsum Sludge Basin
HRR	Historical Records Review
LUC	Land Use Control
MCD	Memorial Chapel RDX Dump
NAC	Nitric Acid Concentration
NECD	Newport Chemical Depot
NSP	Night Soil Pits
OCMCDA	Old Chemical Munitions Component Detonation Area
PAM	Pamphlet
PCC	Pollution Control Center
PCCRP	Pollution Control Center Retention Pond
PER	Programmatic Environmental Review
PHCP	Power House Coal Pile
RDX	Cyclo-1,3,5-trimethylene-2,4,6-trinitramine
RDX-BG	RDX Burning Ground
RDX-MA	RDX Manufacturing Area
RWAB	Red Water Ash Basin
SAR	Sulfuric Acid Regeneration
STP	Sewage Treatment Plant
SWMU	Solid Waste Management Unit
TNT	2,4,6-Trinitrotoluene
TNT-BG	TNT Burning Ground
TNT-CTS	TNT Cooling Tower Sump
TNT-MA	TNT Manufacturing Area
U.S.C.	United States Code
UST	Underground Storage Tank
VSI	Visual Site Inspection
VX	O-ethyl-S-(2-diisopropylaminoethyl) Methyl Phosphonothiolate
WWII	World War II

## 1. EXECUTIVE SUMMARY

An Environmental Condition of Property (ECP) assessment at Newport Chemical Depot (NECD) was conducted between January 29 and February 2, 2007. The ECP process is described in Section 2. The Category 1 designations resulting from the ECP process at NECD are identified fully in Section 3.

NECD is in Vermillion Township, Vermillion County, in west-central Indiana near the Wabash River. The nearest major municipalities are Terre Haute, Indiana, 32 miles to the south and Danville, Illinois, 32 miles to the northwest. NECD is located in a rural area of Vermillion County, where surrounding land use is almost exclusively cropland and forests. Population within a 4-mile radius of the installation is approximately 2,385 people.

NECD was established in 1942 on approximately 22,000 acres as the Wabash River Ordnance Works, a cyclo-1,3,5-trimethylene-2,4,6-trinitramine (RDX) production facility. After World War II (WWII), the installation was reduced in acreage and its present area, which includes the Ranney wells and eastern railroad spur parcels, totals approximately 7,136 acres. The Manhattan Project's nuclear fission research included production of heavy water from 1943 until 1946 and from 1952 until 1957. In addition to producing RDX and heavy water, NECD's missions have included building and operating facilities for the production and storage of the chemical nerve agent O-ethyl-S-(2-diisopropylaminoethyl) methyl phosphonothiolate (VX) and the production of 2,4,6-trinitrotoluene (TNT).

NECD is a Government-owned/contractor-operated (GOCO) facility under the U.S. Army Material Command, Aberdeen Proving Ground, Maryland. The Chemical Materials Agency (CMA) mission is supported at NECD. The installation occupies an area of approximately 7,136 acres with easement rights in effect for an additional 1,400 acres. NECD leases 2,944 acres of agricultural land for crop production and grazing. Forested land, wildlife areas, prairie restoration, and wetlands comprise 2,647 acres. There are 68 miles of roadways. The developed portion consists of buildings primarily built in the early to mid-1940s. Six cemeteries are present on the installation.

Actions taken to identify Category 1 property at NECD included:

- Development of study sections
- Visual site inspection (VSI)
- Aerial photography analysis
- Records review
- Interviews
- Data management.

For the purposes of the ECP assessment, the NECD property was addressed as Study Sections 1 through 13. Study Sections 9, 10, 11, 12, and 13 are classified as Category 1. All other study sections include specific areas that received designation as other categories. These exceptions are summarized in Section 3. Table 1-1 identifies the criteria applicable to each category and the total acreage at NECD classified into each category.

**Table 1-1. ECP Categories and Standard Map Colors**

<b>ECP Category</b>	<b>Total Acreage at NECD</b>	<b>Definition</b>	<b>Map Color</b>
1	6,440.7	Areas in which no release or disposal of hazardous substances or petroleum products above de minimus quantities has occurred, and to which there has been no migration of such substances from adjacent areas.	White
2	0.3	Areas in which only release or disposal of petroleum products above de minimus quantities has occurred.	Blue
3	197	Areas in which release, disposal, or migration of hazardous substances has occurred, but in concentrations that do not require a removal or other remedial response.	Light Green
4	90	Areas in which release, disposal, or migration of hazardous substances has occurred, but all removal or other remedial actions necessary to protect human health and the environment have been taken.	Dark Green
5	300	Areas in which release, disposal, or migration of hazardous substances has occurred, and removal or other remedial actions are underway, but all required actions have not yet been taken.	Yellow
6	0	Areas in which release, disposal, or migration of hazardous substances has occurred, but required remedial actions have not yet been implemented.	Red
7	108	Areas that have not been evaluated or require additional evaluation.	Gray
<b>Total</b>	<b>7,136</b>		

Note: Some areas fall within the boundaries of a higher category property and are included in the total acreage of that higher category (e.g., Category 2 property acreage that is a subset of a Category 7 property is included in the Category 7 acreage).

## 2. METHODOLOGY

The purpose of the ECP and a summary of assessments are described in the following sections. Refer to Section 2 of the ECP Report (SAIC 2007) for details on assumptions and limitations.

### 2.1 ENVIRONMENTAL CONDITION OF PROPERTY

The Army's ECP process characterizes the existing environmental conditions at a given site. It details the nature and magnitude of contamination; identifies potential liabilities associated with remediation and property disposal; provides information to assess health and safety risks and property valuation; and serves as the basis for notification of any hazardous substance that was stored for 1 year or more, or known to have been released or disposed of at the site, as required under Section 120 (h)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (U.S.C.) 9620(h)(1). A factual environmental characterization of the Base Realignment and Closure (BRAC) property is documented within the ECP Report. Consequently, the ECP Report documents the assessments and studies that support the assignment of the Community Environmental Response Facilitation Act (CERFA) categories to installation parcels.

### 2.2 SUMMARY OF ASSESSMENTS

The Army's ECP process is a systematic process that identifies the scope of investigative effort required, and evaluates and documents the potential for environmental contamination and liability in three distinct stages. The first two stages culminate in the preparation of the ECP Report, which is the basis for preparation of this CERFA Report:

- ***Programmatic Environmental Review (PER)***—A data gap analysis used to determine the extent and quality of available environmental information for the site. The PER also identifies what additional data are needed to complete the ECP Phase I and, therefore, is used to help prepare a work statement for conducting the Phase I assessment.
- ***Phase I (Assessment)***—An evaluation of potential contamination of real property, to include potential contamination and/or natural and cultural resource conditions that may impact real property disposal and/or reuse. The Phase I assessment was developed in compliance with Chapter 8, Section 3 of the Base Redevelopment and Realignment Manual (BRRM) U.S. Department of Defense (DOD) 4165.66-M, March 1, 2006; Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*, February 21, 1997; U.S. Department of the Army (DA) Pamphlet (PAM) 200-1, *Environmental Protection and Enhancement*, January 17, 2002; and CERCLA Section 120(h)(1). Phase I consists of site visits, interviews, records reviews, and regulatory reviews of materials that document the environmental condition of real property. Documents reviewed during the ECP process, or recommended to be completed if needed, include:
  - Historical Records Review (HRR)
  - Environmental Investigation Report(s)
  - Asbestos-containing Material (ACM) Surveys
  - Installation infrastructure knowledge
  - Radiological Assessments
  - Natural and Cultural Resource Reviews.

The sum of this information was analyzed and integrated to prepare the ECP Report for NECD.

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### 3. CATEGORY 1 PROPERTY DETERMINATIONS

A description of each ECP Category 1 parcel is provided in Table 3-1. Where applicable, locations within the study sections that are not designated as Category 1 also are identified in Table 3-1. Figure 3-1 identifies geographically the ECP Category 1 parcels at NECD.

**Table 3-1. ECP Category 1 Parcel Descriptions and Acreage**

Study Section	Cat. 1 Acreage	Description
1	1,913.4	Study Section 1 is located in the northwest quadrant of the facility within the installation fence. Study Section 1 contains SWMUs NAAP-1 and NAAP-2 (NSPs). The majority of this study section consists of Agricultural Lease areas. In the central portion of this study section are the 52 Richmond Magazines and a pine tree area. There is a Small Arms Range in the north-central portion of this study section, just south of North Patrol Road. Study Section 1 contains significant hilly wooded areas that follow the Vermillion Creek tributaries. Minor portions of Study Section 1 contain wetlands. There are four cemeteries: Carmack Cemetery, Juliet Cemetery, Walnut Hill Cemetery, and Miller Cemetery. There are two Indiana Bat sites within this study section. Study Section 1 property is designated as Category 1 with the exception of the west pine tree area (Category 7), Small Arms Range (Category 7), and NSPs (Category 4). In addition, the magazines, with the exception of Richmond Magazines 33 and 47 (Category 7), are designated as Category 1.
2	0	Study Section 2 is located in the north-central portion of the installation. Study Section 2 is SWMU NAAP-3, also known as the RDX-MA. Study Section 2 does not include any Category 1 property; the RDX-MA is Category 5 property.
3	1,234.1	Study Section 3 is located in the eastern portion of the installation. This study section is composed primarily of wooded and agricultural areas. SWMU NAAP-55 (Hazardous Waste Storage Building) is located in the northwest portion of Study Section 3. This study section also contains eight igloos and six warehouses. There is one Indiana Bat site and Burson Cemetery in Study Section 3. Little Raccoon Creek is located in the southern portion of this study section and an un-named creek is located in the northeast portion of this study section. The RDX-MA Area F Parking Lot, drums south of North Patrol Road, the Former Skeet Range, and batteries north of railroad bed are Category 7 and the remaining Study Section 3 property is Category 1. In addition, Buildings 729C, 729D, 729E, 1401A, 1401B, 1401C, and A3200 are Category 1.
4	779.7	Study Section 4 is located in the southwestern corner of the facility, inside the fenced portion of the installation. The SWMUs contained within this study section are SWMUs NAAP-29, NAAP-30, and NAAP-31 (RWABs); NAAP-32 (Red Water Runoff Holding Sump); NAAP-33 and NAAP-64 (RDX-BG and OCMCDA); NAAP-34, NAAP-35, and NAAP-36 (GSBs); NAAP-49 (PCCRP); NAAP-50 (TNT-BG); and NAAP-51 (Sanitary Landfill). The property in this study section includes (in decreasing order of acreage) Prairie Restoration Areas, Agricultural Leases, LUCs, and wooded areas. There is one storage warehouse located within Study Section 4. Study Section 4 property is designated as Category 1 with the exception of the RWABs (Category 3), RDX-BG and OCMCDA (Category 3), GSBs and PCCRP (Category 4), TNT-BG (Category 5), and Sanitary Landfill (Category 3). In addition, Building 224B is Category 1.
5	41.5	Study Section 5 is located in the south-central portion of the installation. This area includes the TNT-MA and the TNT-MA Acid Area. The SWMUs contained within this study section related to the TNT-MA include SWMUs NAAP-37, NAAP-38, NAAP-39, NAAP-40, NAAP-41, NAAP-42, NAAP-43, NAAP-44, NAAP-45, NAAP-46, NAAP-47, and NAAP-48 and consist of TNT Production Lines 1, 2, 3, 4 and 5; TNT Wastewater and Handling Areas #1, #2, #3, #4, and #5; the TNT Wastewater Treatment Facility; and the PCC. The TNT-CTS also was located in this study section. SWMUs within this study section related to the TNT Acid Production Area include SWMUs NAAP-56 (Acid Tank Farm Drain), NAAP-57 (Sulfur and Ammonia Unloading Area Drain), NAAP-58 (Utilities and Shop Area Drain), NAAP-59 (TNT Laboratory Drains), NAAP-60 (TNT Acid Laboratory Drains), NAAP-61 (NAC and DN Facility Drains), NAAP-62 (AOP Facility Drains), and NAAP-63 (SAR Facility Drains). There are 28 buildings in this study section that once supported the manufacture of TNT. Study Section 5 also includes Agricultural Lease areas. Study Section 5 is Category 1 with the exception of the sulfuric acid spill area (Category 7), oleum spill near Cull Avenue (Category 7), red water spill at the TNT-MA (Category 7), TNT-MA (Category 3), toluene spill at the TNT-MA (Category 7), TNT-MA Acid Area (Category 3), and Structure 4261 (Water Tower) (Category 7). In addition, all 28 buildings in this study section are designated as Category 1.
6	622.0	Study Section 6 is located in the southeast quadrant of the installation. This study section is largely wooded and contains 10 warehouses and the Administrative Building (Building 7700). The Former Smokeless Powder Plant was located in this study section, but was never completed. There are no SWMUs in Study Section 6. Study Section 6 is designated as Category 1 with the exception of the drum located north of Cull Avenue and west of 12 <sup>th</sup> Street (Category 7). In addition, all 10 warehouses and Building 7700 are designated as Category 1.

**Table 3-1. ECP Category 1 Parcel Descriptions and Acreage (Continued)**

Study Section	Cat. 1 Acreage	Description
7	243.3	Study Section 7 is in the southwest quadrant of the installation within the installation fence. The SWMUs contained within this study section include SWMUs NAAP-23, NAAP-24, NAAP-25, and NAAP-26 (DWBG Burial Areas); NAAP-26A (DWBG Pit A); NAAP-27 (CSL); NAAP-28 (CDD); NAAP-28A (MCD); NAAP-52 (STP); NAAP-54 (300-gallon Tank Burial Area); and NAAP-65 (DI/SY). There is an area of pine trees east of the CSL and DI/SY that is a suspected construction debris/asbestos burial area. There are several structures used to maintain the STP and one building used for sampling. This study section is largely wooded following Little Raccoon Creek and its tributaries. There are also Agricultural Lease areas and two Indiana Bat sites. The majority of the SWMUs in this study section have LUCs. Study Section 7 is Category 1 with the exception of Little Raccoon Creek bank along the DWBG (Category 7), Little Raccoon Creek (Category 5), the drum located on the west bank of Little Raccoon Creek and south of South Boulevard (Category 7), the area where leaking filled munitions were temporarily buried (Category 7), the mine burial area at the Scrap Yard (Category 7), the Burial Area 5 at the DWBG (Category 7), the DWBG (Category 5), the 300-gallon buried tank (Category 7), the DI/SY (Category 4), the CSL (Category 7), the MCD (Category 4), the CDD (Category 4), the STP (Category 7), the east pine tree area (Category 7), and three suspected construction debris and asbestos burial areas (Category 7). In addition, the buildings and structures associated with the STP are designated as Category 1.
8	177.4	Study Section 8 is in the east-central portion of the installation. This study section contains the Chemical Plant. The SWMUs contained within this study section include NAAP-3A (RDX Acid Manufacturing Area); NAAP-4 (Detox Holding Basin); NAAP-5 (Waste Surge Tank); NAAP-6 (Basin 30031); NAAP-7 (Basin 30025); NAAP-8 (Deep Well Surge Tank); NAAP-9 (Deep Injection Well); NAAP-10, NAAP-11, and NAAP-12 (Chemical Plant Retention Basins 30007, 30008, and 30009, respectively); NAAP-13 through NAAP-21 (Bulk Storage Tanks); NAAP-22 (Present VX Storage Site and Toxic Sump); NAAP-53 (Waste Oil Tank); NAAP-66 (Removed USTs); NAAP-67 (CPAB); and NAAP-69 (PHCP). The majority of Study Section 8 is industrial. There are also small wooded areas and Agricultural Lease areas. The property encompassed by SWMUs NAAP-10, NAAP-11, NAAP-12, and NAAP-67 have LUCs in place. There are 32 buildings in Study Section 8; 22 have been in use since the production of heavy water (constructed in the 1940s). These buildings currently are used for storage, equipment maintenance, or administrative purposes. Study Section 8 is Category 1 with the exception of the Chemical Plant Former Production Facility (Category 7), RDX-MA Acid Area (Category 3), CPRBs (Category 4), Removed USTs (Category 2), Waste Oil Tank (Category 4), CPAB (Category 4), PHCP (Category 3), fuel oil spill at the former railroad (Category 2), Former Locomotive House (Category 7), Leaking 1,000-gallon UST (Category 2), and two suspected construction debris and asbestos burial areas (Category 7). In addition, all buildings and structures within Study Section 8 are designated as Category 1 with the exception of Structure 510, Building 401A, Building 716A, Building 716D, Building 722A, Building 723A, and Building 726C, which are Category 7.
9	232.4	Study Section 9 is the portion of the installation that is outside the installation fence in the southwestern quadrant of the installation. This study section is primarily an Agricultural Lease area. A portion of this study section also is wooded, along Buck Creek. There are no SWMUs in Study Section 9. The entire Study Section 9 is Category 1 property.
10	679.3	Study Section 10 is located on the western side of the installation, outside the installation fence. The northern part of this study section was used by the National Guard for training exercises. The southern two-thirds of this study section are leased for agricultural use. There are no SWMUs in Study Section 10. The entire Study Section 10 is Category 1 property.
11	404.1	Study Section 11 is the northernmost part of the installation that is located outside the installation fence. This study section is primarily wooded, along the creek beds of Vermillion Creek and its tributaries. No SWMUs are located in this study section. The entire Study Section 11 is Category 1 property.
12	41.6	Study Section 12 is a tract of land that begins near the northeast boundary of the installation and follows an old railroad bed to the southeast, ending at Highway S 450 E. This area is primarily wooded, with some agricultural land. There is one Indiana Bat site in Study Section 12. No SWMUs are located in Study Section 12. The entire Study Section 12 is Category 1 property.
13	71.2	Study Section 13 is located east of the installation boundary and the railroad along the western side of the Wabash River. This area includes the Ranney wells and three buildings associated with the wells. No SWMUs are located in Study Section 13. The entire Study Section 13 is Category 1 property.

AOP	– Ammonia Oxidation Plant	PCC	– Pollution Control Center
CDD	– Construction Debris Dump	PCCRP	– Pollution Control Center Retention Pond
CPAB	– Chemical Plant Coal Ash Basin	PHCP	– Power House Coal Pile
CPRB	– Chemical Plant Retention Basin	RDX-BG	– RDX Burning Ground
CSL	– Closed Sanitary Landfill	RDX-MA	– RDX Manufacturing Area
DI/SY	– Demilitarization Incinerator/Scrap Yard	RWAB	– Red Water Ash Basin
DN	– Denitration	SAR	– Sulfuric Acid Regeneration
DWBG	– Decontaminated Waste Burial Ground	STP	– Sewage Treatment Plant
GSB	– Gypsum Sludge Basin	SWMU	– Solid Waste Manufacturing Unit
LUC	– Land Use Control	TNT-BG	– TNT Burning Ground
MCD	– Memorial Chapel Dump	TNT-CTS	– TNT Cooling Tower Sump
NAC	– Nitric Acid Concentration	TNT-MA	– TNT Manufacturing Area
NSP	– Night Soil Pit	UST	– Underground Storage Tank
OCMCDA	– Old Chemical Munitions Component Detonation Area	VX	– O-ethyl-S-(2-diisopropylaminoethyl) methyl phosphonothiolate

**Figure 3-1. Property Categorization**

(Oversized Figure: See File Figure 3-1.pdf on Accompanying CD)

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## **APPENDIX A. REFERENCES**

SAIC (Science Applications International Corporation). 2007. Environmental Condition of Property Report. Draft Final. Newport Chemical Depot, Indiana. August.

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