FINAL

COMMUNITY INVOLVEMENT PLAN
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

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TABLE OF CONTENTS

1 INTRODUCTION 1-1
1.1 Purpose 1-2
1.2 Overview of the Community Involvement Plan 1-2
2 INSTALLATION BACKGROUND 2-1
2.1 History of the Installation 2-2
2.2 Installation Restoration Program 2-3
2.2.1 IRP Objectives 2-5
2.2.2 Current Status 2-6
3 INSTALLATION RESTORATION SITES 3-1
3.1 General Site Information 3-1
3.2 NPL Listing 3-1
3.3 Risk Evaluation 3-1
3.4 IRP Site Description and Status 3-1
3.5 Emerging Contaminants 3-8
3.6 Military Munitions Response Program Sites 3-9
4 COMMUNITY BACKGROUND 4-1
4.1 Community Profiles 4-1
4.1.1 Community Drinking Water Resources 4-4
4.2 History of Community Engagement 4-5
4.2.1 Restoration Advisory Board 4-5
4.2.2 Community Engagement Activities 4-6
4.3 Community Interest Assessment 4-7
4.4 Community Concerns 4-8
4.4.1 Previous Assessment Results 4-8
4.4.2 Recommendations from Previous Assessments 4-8
4.4.3 2024 Community Survey Results 4-8
4.4.4 Addressing Community Concerns 4-10
5 COMMUNITY ENGAGEMENT PROGRAM 5-1
5.1 Community Engagement Process 5-1
5.2 Community Involvement Program 5-1

5.3 CIP Review and Update Requirements 5-4
6 REFERENCES 6-1
7 ACRONYMS 7-1

LIST OF TABLES

Table 3-1 Installation Restoration Program Sites
Table 4-1 Demographic Analyses of Surrounding Communities

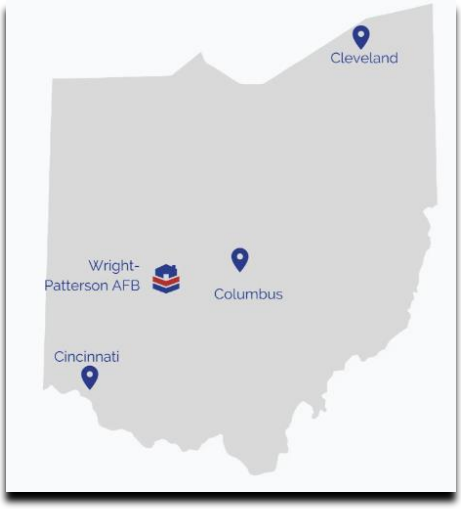
LIST OF FIGURES

Figure 1-1 Installation Location Map
Figure 3-1 IRP Sites and OUs - Area A
Figure 3-2 IRP Sites and OUs - Area B
Figure 3-3 AFFF Areas within Area A
Figure 3-4 AFFF Areas within Area B

LIST OF APPENDICES

Appendix A Key Installation and Regulatory Contacts
Appendix B Federal, State, and Local Officials
Appendix C Media Contacts
Appendix D Meeting and Repository Locations
Appendix E IRP Site Descriptions
Appendix F RAB Charter
Appendix G Community Survey Questionnaire and Results

1 INTRODUCTION



This Community Involvement Plan (CIP) has been prepared for the Wright-Patterson Air Force Base (WPAFB), in Greene County, Ohio (hereafter referred to as the Base). This CIP is designed to facilitate communication between the Base and the surrounding communities regarding its Installation Restoration Program (IRP).

The CIP addresses how the Department of Defense (DoD) will conduct outreach regarding IRP activities and inform the community about opportunities to participate in decision-making throughout the IRP process. This CIP has been prepared in accordance with the Defense Environmental Restoration Program (DERP) Manual (DoDM 4715.20, §16(a)(1)], and AFI 32-7020 (*Environmental Restoration Program*, §11.3), the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations, Part 200), commonly known as the National Contingency Plan. This CIP is in compliance with Executive Order 14151, *Ending Radical and Wasteful Government DEI Programs and Preferencing.*

The 88th Air Base Wing Office of Public Affair prepared a Community Relations Plan in February 1986. The Community Relations Plan was revised and updated over the years in an effort to keep the community informed about activities associated with IRP at the Base. This CIP serves to update the 2010 Community Relations Plan (Air Force Civil Engineer Center [AFCEC], 2010). The 2010 Community Relations Plan was updated in 2019 (AFCEC, 2019), but the document was not finalized.

Under CERCLA, better known as Superfund, the Department of the Air Force (DAF) has the lead responsibility for investigating and remediating past waste disposal sites on Base. This helps facilitate communication with the community and acknowledges and addresses community concerns. The CIP is a "living document," meaning that it can be updated or revised over the course of IRP activities to reflect long-term changes in the community.

A questionnaire survey was made available to the community and community leaders on August 15 through September 30, 2024 to gather interest, awareness, and concerns of the community regarding the Base's IRP. A total of 35 responses were received and were considered in the development of this plan. See Section 4.5.3 for more information about Community Concerns and recent assessment results.

1.1 PURPOSE

The purpose of the CIP is to utilize the community involvement activities outlined in this plan to ensure that the community is continuously informed, provided opportunities to be involved, and feedback from the community is incorporated into the environmental restoration process. The goals are to be achieved through activities discussed in Section 5.0. A glossary with common environmental terms that may be encountered when reviewing this CIP and other related documents can be found at the following link: https://www.epa.gov/superfund/superfund-glossary.

The WPAFB CIP provides guidance for public involvement associated with IRP sites at the base. Timely exchange of information and effective communication are essential for maintaining community understanding of and support for WPAFB cleanup activities and to ensure effective community involvement.

Objectives of the community involvement process are to:

- Establish effective methods for informing the community of installation cleanup program actions.
- Solicit input and identify concerns that the local community may have regarding current and future cleanup program activities.
- Maintain a strategy that supports pro-active, two-way communication between the DAF and the local community.

1.2 OVERVIEW OF THE COMMUNITY INVOLVEMENT PLAN

This CIP identifies community concerns about the IRP sites at the Base and outlines community involvement activities to be conducted during the ongoing and anticipated future IRP activities.

This plan is divided into the following sections:

Section 1, Introduction - includes the purpose of the CIP, the community involvement goals, and responsibility for implementing the plan.

Section 2, Installation Background - includes an overview of the history of the Base, the environmental regulatory process, and an overview of restoration activities that have occurred at the IRP sites at the Base.

Section 3, Installation Restoration Sites – provides information regarding the IRP sites, their locations, and status.

Section 4, Community Background - provides a community profile, history of community engagement, community interest assessment, and priority issues identified during the community interview process.

Section 5, Community Engagement Program - presents the outreach objectives for response to community concerns and communication needs.

Because the IRP is a dynamic program, this plan is a living document and can be updated as sites are investigated, remediated, and closed. The community is invited to review this document at any time. The document is available on the Base website at https://www.wpafb.af.mil/Units/cev/, and at the AFCEC Administrative Record at https://ar.cce.af.mil/.

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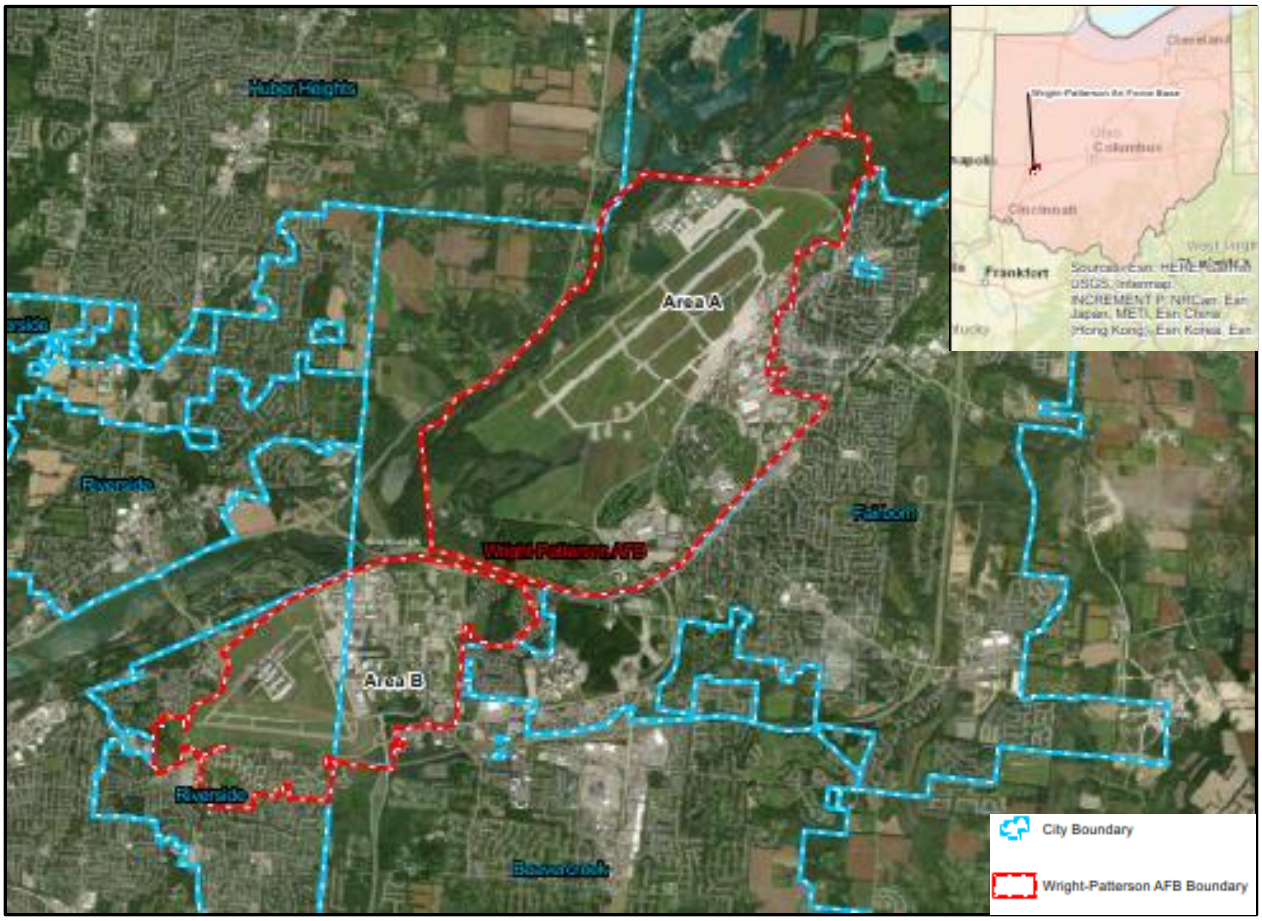
2 INSTALLATION BACKGROUND

The Base is an active DAF base with a workforce of civilian, military and contractor personnel. Missions range from acquisition and logistics management to research and development, education, flight operations, and other defense related activities.

The Base is located in southwestern Ohio, east of the City of Dayton, and adjacent to the City of Fairborn (**Figure 1-1**). The Base is approximately 60 miles north of Cincinnati and 50 miles west of Columbus and occupies approximately 8,100 acres of Greene and Montgomery Counties, immediately adjacent to Clark County. Approximately 32,000 civilian, military, and contractor personnel are employed at any given time.

The Base is divided into two areas: Areas A and B (**Figure 1-1**) separated by State Route 444 and railroad tracks. Area A encompasses approximately 5,700 acres and includes the area previously known as Patterson Field.

Figure 1-1 - Wright-Patterson Air Force Base Location



Area A is comprised of residential, office, medical, and administrative buildings; recreational facilities; active runways; and other flight-related infrastructure. Area B is located southwest of Area A and encompasses approximately 2,400 acres and includes the area previously known as Wright Field. Wright Field is an inactive airfield except for the southern-most runway, which is used for National Museum of the United States Air Force aircraft activities and other special occasions. Area B is comprised of educational, research, office, and administrative buildings.

Current and historical operations that have occurred at the base that are addressed in the IRP include:

- Aircraft and vehicle fueling and maintenance,
- Runway and aircraft deicing,
- Munitions and explosive ordnance disposal,
- Warehousing and storage,
- Small arms training,
- Steam and electrical generation, and
- Miscellaneous disposal such as explosive ordinance disposal and landfills.

2.1 HISTORY OF THE INSTALLATION

The Wright brothers mastered the principles of controlled, powered flight and in 1904 and 1905 developed the world's first practical airplane at Huffman Prairie Flying Field which is now a part of the Base. The Wright Brothers later operated a pilot training school and tested new aircrafts at the flying field from 1910 to 1916.

Once the United States entered World War I in 1917, two military installations were established on the land that encompasses the Base. Wilbur Wright Field, which was located along the current flight line in Area A, was established as a pilot training school. The Fairfield Aviation General Supply Depot, which provided logistical support for the Signal Corps aviation schools in the Midwest, was located adjacent to Wilbur Wright Field. At the conclusion of World War I, these two installations became the Fairfield Air Depot, which was a major center for the testing and maintenance of military aircraft.

In 1927, the citizens of Dayton donated land to construct a new aerodrome and research facilities at the Fairfield Air Depot which was designated Wright Field in honor of the Wright brothers. In 1931, a portion of Wright Field was renamed Patterson Field to honor Lieutenant Frank Stuart Patterson, who died there during a 1918 crash.

Wright Field and Patterson Field remained separate installations through World War II. The installations were used as major testing, production, and logistics centers. During the war, the number of employees working at the installations increased from 3,700 to more than

50,000 people. The number of buildings also increased from 40 to more than 300. On January 13, 1948, the newly created United States Air Force (USAF) merged Wright Field and Patterson Field to form the Base.

More than 60 organizations are present at the Base, with missions ranging from acquisition and logistics management to research and development, advanced education, heavy airlift flight operations, intelligence, and a variety of other activities.

The 88th Air Base Wing is the host unit at the Base and operates the airfield, maintains infrastructure, and provides security, communications, medical, legal, personnel, finance, transportation, air traffic control, weather forecasting, public affairs, recreation, and chaplain services.

The Air Force Materiel Command is headquartered at the Base and performs research, development, testing, and evaluations, as well as worldwide acquisition management services and logistic support necessary for Air Force weapons systems.

The Air Force Life Cycle Management Center designs, develops, and delivers dominant aircraft, engines, munitions, electronics, and cyber weapon systems and sub-systems.

The Air Force Research Laboratory, Air Force Institute of Technology, Air Force Security Assistance Center, National Air and Space Intelligence Center, 445th Airlift Wing, and National Museum of the Air Force are also present on the Base. More information can be found on the WPAFB website at: https://www.wpafb.af.mil/Units/cev/

2.2 INSTALLATION RESTORATION PROGRAM

Environmental investigations at the Base are conducted under the IRP as an element of DERP. The DoD developed the DERP to identify, assess, and control potential environmental contamination that may have resulted from past operations and waste disposal practices.

The mission of the IRP at the Base is to take timely, appropriate action to remediate environmental contamination to reduce or eliminate potential risks to human health and the environment. AFCEC administers the Base IRP in accordance with CERCLA, the Federal Facility Agreement (FFA) with the USEPA Region 5, and Administrative Orders on Consent with the Ohio Environmental Protection Agency (OEPA).

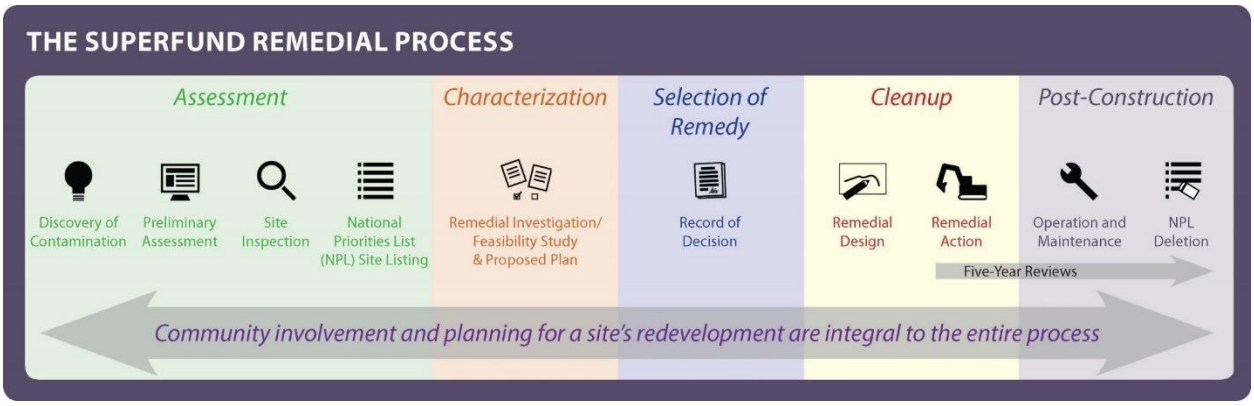
Cleanup sites at the Base typically include former landfills, demolition burial areas, chemical and munitions disposal areas, storage facilities, heating plants, historic storage, and accidental spill areas. Sites are restored through an intensive, and often lengthy, program of identification,

investigation, and cleanup. Remediation often includes a series of interim actions applying a variety of technologies best suited to address specific contaminant concerns.

The Base IRP was initiated in 1981 with a Phase I problem identification and search of base records to identify former waste disposal sites and other areas that may pose environmental or health hazards. In 1982, base officials identified 29 potentially contaminated sites, which included former landfills, training areas, and storage facilities. From 1983 through 1985, investigations of those sites was conducted. Following the passage of SARA in 1986, which required all federal facilities to comply with the guidelines and procedures established by USEPA for investigating and cleaning up former disposal and spill sites, WPAFB entered Administrative Orders on Consent with OEPA in 1988. Those OEPA orders specify requirements for conducting remedial investigations and feasibility studies, and remedial design.

The IRP is based on the CERCLA and SARA processes and guidance. SARA amended the Superfund law by requiring federal facilities, including DoD installations, to adhere to the guidelines and procedures set forth by USEPA for the investigation and cleanup of former disposal and spill sites. SARA further requires federal agencies to negotiate interagency agreements with USEPA for oversight of remedial actions on federal property listed on the USEPA's National Priorities List (NPL). Funding for the IRP primarily comes from the Defense Environmental Restoration Account.

The CERCLA process includes eight primary steps:



1. Preliminary Assessment and/or Site Inspection (SI). Site investigations typically begin with a preliminary assessment and/or site inspection to determine the level of risk posed by the conditions. This stage involves a review of historical documents and a visual site inspection. If the preliminary assessment results in a recommendation for further investigation, a site inspection is performed during which samples of environmental media are collected to confirm or deny the presence of potentially hazardous substances.
2. Remedial Investigation (RI). Based on the results of the preliminary assessment and/or site inspection, an RI may be needed at a site. An RI is designed to learn more about the site contamination and determine if any known contamination extends beyond the site boundaries. The primary purpose of the RI is to determine the nature and extent of contamination and the risk that contamination presents to human health or the environment. Samples are usually collected from the site soil, groundwater, surface water (such as ditches, rivers, or lakes), and

sediment. The resulting data provide information about the extent of possible contamination and rate of migration, if applicable.

3. Feasibility Study (FS). If the RI determines site cleanup is needed to address human health or ecological risk, then an FS is conducted to evaluate various remedial alternatives for the site.
4. Proposed Plan. The proposed plan summarizes the remedial alternatives developed in the FS and recommends a preferred alternative. The community has an opportunity to comment on the proposed plan during a formal public comment period. Site information is compiled in an Administrative Record file and placed in an Information Repository established at a convenient location, such as a local library, for public review. The public comments received during the comment period are reviewed, and the responses are recorded in a responsive summary.
5. Record of Decision (ROD) or Decision Document. At the end of the public comment period, an appropriate remedial alternative to protect human health and the environment is chosen. The ROD or Decision Document explains the selected remedial action and includes the responsiveness summary.
6. Remedial Design and Remedial Action. During the remedial design, technical specifications for treatment remedies and technologies are developed. The remedial action is the actual construction or implementation phase of the restoration process. Sites are typically monitored for an extended period, under a long-term monitoring (LTM) program to verify success of the remediation.
7. Removal Action. Removal of the source of contamination may be necessary to address a release that threatens public health, welfare, or the environment. These actions vary in duration and are categorized by their urgency and duration. Emergency removals require an immediate response to releases or threatened releases to the environment and are started within hours or days of determining whether a removal action is appropriate. Time-critical removal actions are situations where remediation activities must begin within 6 months of discovering hazardous materials to protect public health and safety. Non-time-critical removal actions occur when a removal action is appropriate, but the situational risk allows for a planning period of 6 months or more before beginning removal activities. Because these sites do not present an immediate threat to public health or safety, more time is available to thoroughly assess potential threats and evaluate cleanup alternatives. For a non-time-critical removal action, an engineering evaluation and cost analysis describing the remedial approach is prepared before beginning the removal action.
8. Site Closure. Once the site remediation goals have been achieved, and the OEPA and USEPA concur, the site can be closed. Closing a site means no further remedial action is required.

2.2.1 IRP Objectives

The objective of the IRP is to provide cost effective and timely site assessment, planning, and remediation of identified releases consistent with Defense Environmental Restoration Program requirements.

- Protect human health and the environment.
- Comply with existing applicable statutes and regulations.

- Conduct IRP activities in a manner consistent with CERCLA as amended by SARA.
- Meet all requirements and deadlines of FFA with USEPA Region 5 and the Consent Order with the OEPA.
- Establish priorities for environmental restoration and restoration-related compliance activities so that the Department of the Air Force property disposal and reuse goals are met.
- Initiate selected removal actions to control, eliminate, or reduce risks to manageable levels.
- Identify and map the environmental condition of installation property including areas of suspected contamination, and characterize risks associated with releases of hazardous substances, pollutants, contaminants, or hazardous wastes.
- Complete RIs as soon as practicable.
- Develop, screen, and select Remedial Actions that reduce or eliminate risks in a manner consistent with statutory requirements.
- Conduct Remedial Actions for priority areas as soon as practicable.

2.2.2 Current Status

The IRP at the Base has made significant progress towards addressing environmental contamination at numerous sites at the installation. A 30-year effort has documented 110 sites, with most of them grouped by their proximity into 11 operable units (OUs). Numerous studies and Remedial Investigations leading to site clean-up have been accomplished on all 11 OUs.

Newly discovered sites are presently undergoing investigation. These investigations include extensive groundwater, soils, surface water, and sediment sampling and monitoring. In addition to the known legacy sites described in Section 3.4, 26 aqueous film-forming foam (AFFF) sites are currently being investigated as part of a multi-year effort to address releases of per- and polyfluoroalkyl substances (PFAS) to the environment at the installation based on emerging regulatory requirements. Removal actions are currently underway at 5 AFFF sites to address PFAS impacts to surface water and groundwater and eliminate imminent and substantial danger to human health.

At sites where needed, various remedial actions were taken in order to reduce or eliminate risk to human health and the environment and comply with state and federal environmental requirements. The WPAFB IRP presently operates and maintains four active remediation systems. These include the groundwater treatment systems associated with Landfill 5 (OU5) to prevent migration of contaminated water toward the City of Dayton's Huffman Dam Wellfield and the leachate and methane collection system at Landfills 8 and 10 (OU1). WPAFB has recently completed construction of two passive bed treatment systems to address PFAS-impacted groundwater and surface water. The treatment system at AFFF Area 1 (Buildings 478 and 479) has been designed to remove PFAS from groundwater and surface water and the treatment system at AFFF Area 21 has been designed to remove PFAS from groundwater. This type of treatment at the source areas will prevent further migration of PFAS from the sites.

While much of the program work at the Base has reached the operations and maintenance, and LTM phases of the cleanup process, 31 other sites are undergoing remedial investigation, and one site is undergoing a feasibility study, and one site is at the proposed plan/ROD phase.

To date, 68 sites have had RODs approved by the regulatory agencies. The LTM, also known as the Basewide Monitoring Program, ensures continued oversight of groundwater conditions at the base and compliance with ROD criteria. In addition, the Basewide Monitoring Program provides for various associated remediation activities such as site-related groundwater, leachate, and methane gas monitoring near landfills. Land Use Controls (LUCs) are also in place at 65 sites. A Five-Year Review is conducted on each of the ROD sites to determine whether the remedy implemented at each site is protective of human health and the environment. The Five-Year Review Report identifies any issues found during the review and makes recommendations to address them.

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3 INSTALLATION RESTORATION SITES

3.1 GENERAL SITE INFORMATION

Confirmed or suspected sites requiring investigation and characterization are segregated into 11 geographically based source OUs (designated as OU1 through 11) and 1 groundwater OU (GWOU). Remedies for OUs and the GWOU were established in 6 separate RODs.

3.2 NPL LISTING

In 1989, the Base was ranked on the NPL based on the potential for harm to humans or the migration of hazardous waste via groundwater. Groundwater is a major potential pathway because the Base sits atop a buried valley aquifer system, which is a source of drinking water for the City of Dayton and the Base. In 1991, the Base negotiated an interagency agreement with USEPA Region 5 outlining the responsibilities of each party in the efficient and thorough implementation of the IRP program. The document includes deliverable deadlines which are enforceable with stipulated penalties.

3.3 RISK EVALUATION

Risks to human health and the environment have been largely eliminated as a result of the investigations. cleanup activities, LUCs, and LTM at a majority of the sites. Exposure pathways have been eliminated through remediation or restricted access. An exposure pathway describes a mechanism by which a population or individual may be exposed to chemicals present at a site. Risks associated with the sites undergoing remedial investigation for PFAS will be determined as part of the remedial investigation report.

3.4 IRP SITE DESCRIPTION AND STATUS

Of 110 IRP sites:

- 66 sites are in cleanup phase with 61 sites in LTM with LUCs to prevent exposures to residual contaminants and 5 under remedial action operations (RA-O).
- 30 sites are undergoing a RI. This includes 26 sites undergoing remedial investigation for PFAS and
- One site is undergoing a feasibility study, and one site is at the proposed plan/ROD phase.

Twelve sites have been closed under CERCLA or the Ohio Bureau of Underground Storage Tank Regulations. The sites are detailed in the Fifth Five Year Review Report (AFCEC, 2020) and summarized in **Appendix E**. **Figures 3-1** through **3-4** below show the locations of the sites. Full size figures are included in the Figures section of this report. **Table 3-1,** below, presents the OUs, associated IRP sites, and status.

Figure 3-1 – IRP and Operable Units in Area A

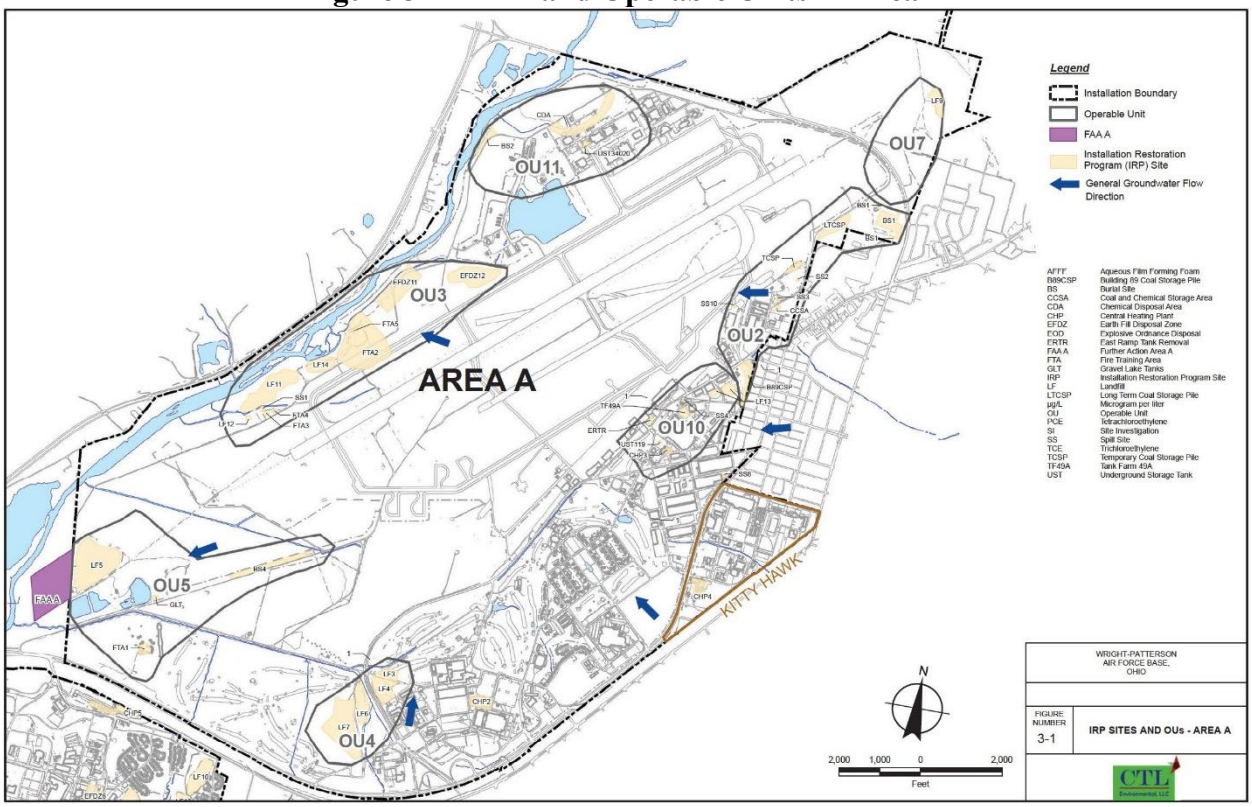


Figure 3-2 – IRP and Operable Units in Area B

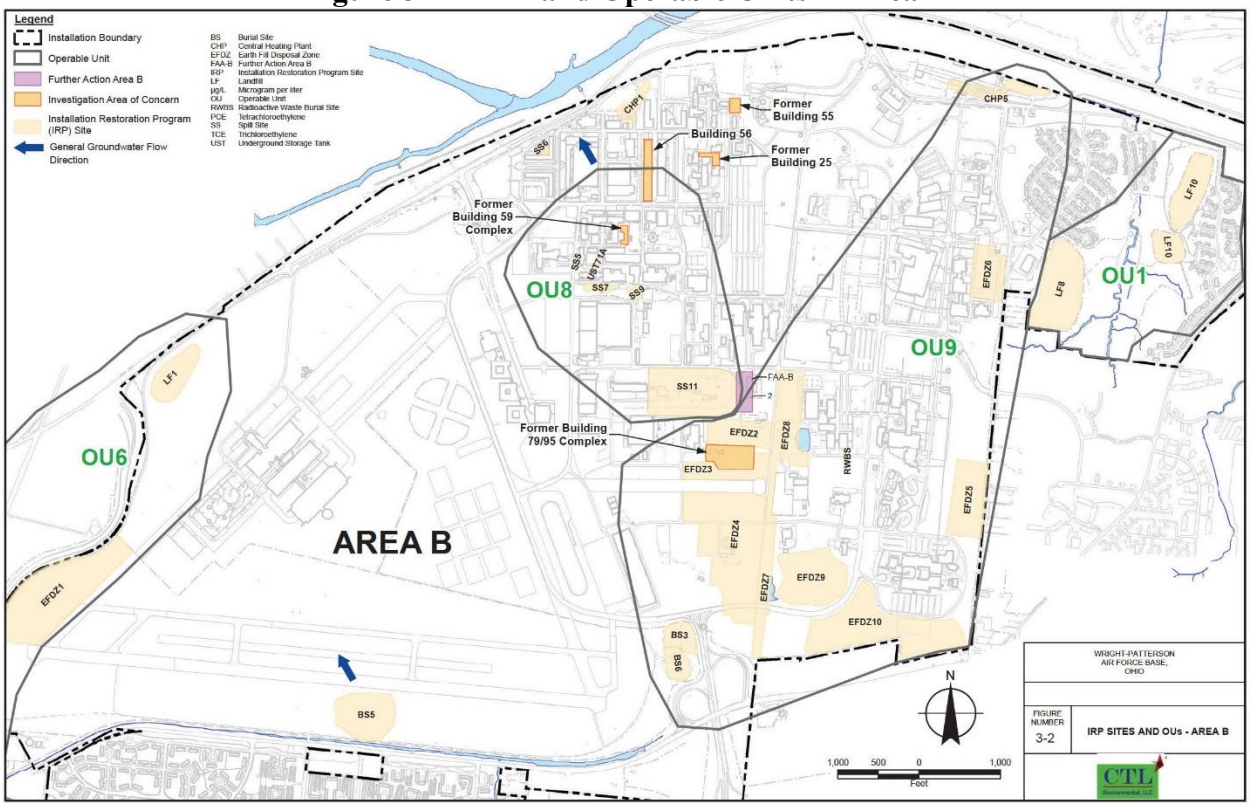


Figure 3-3 – AFFF Areas within Area A

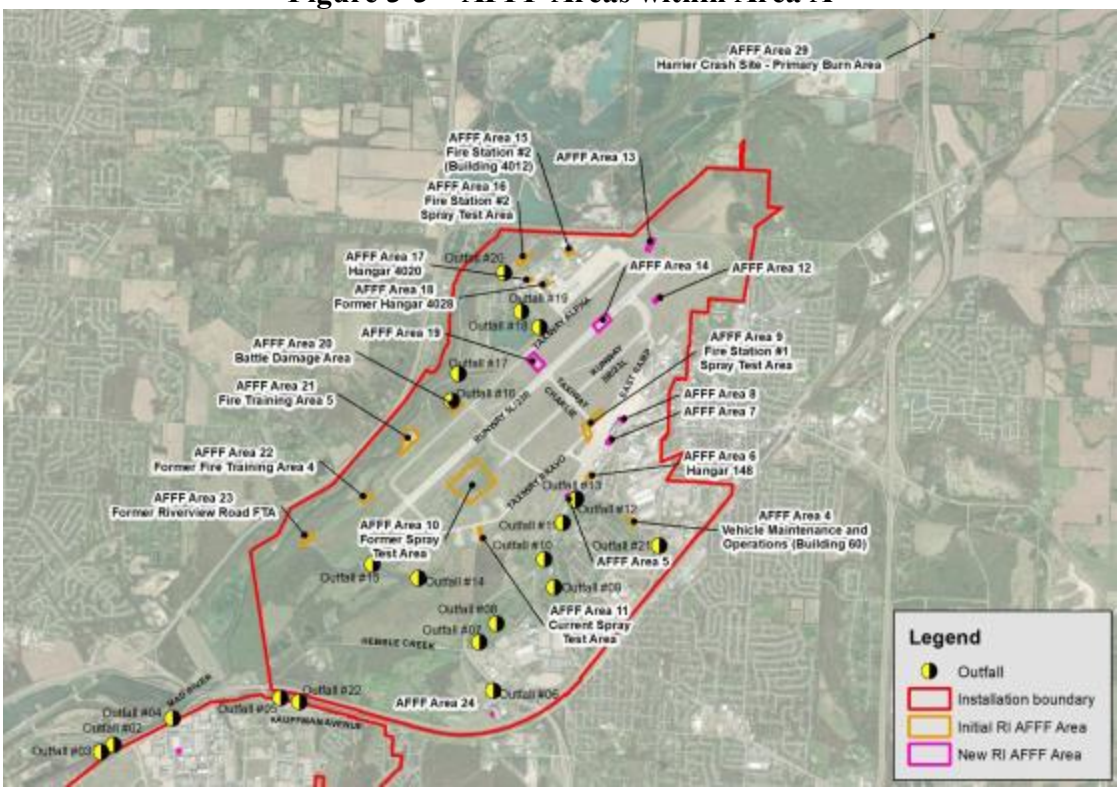


Figure 3-4 – AFFF Areas within Area B

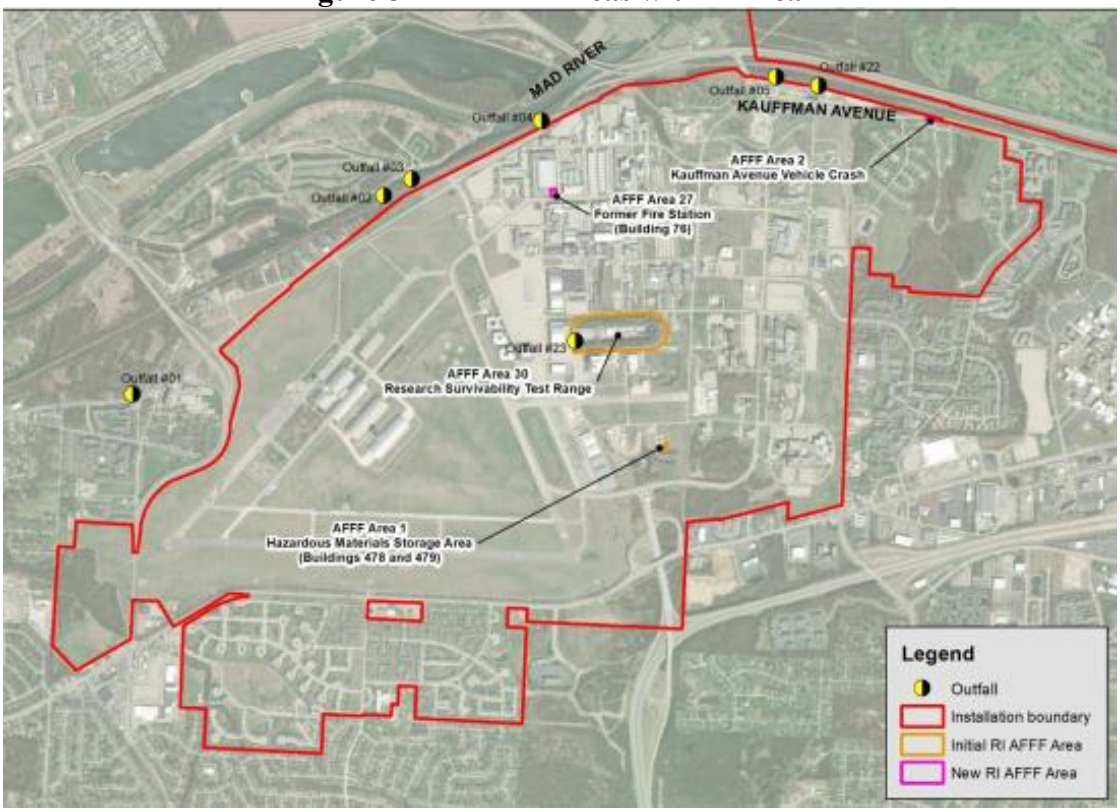


Table 3-1
Installation Restoration Program Sites

OU	Site ID	Site Name	Status	LUCs	ROD
--	AT001P	AFFF Area 20: Battle Damage Area	RI	NO	None
--	AT002P	AFFF Area 23: Former Riverview Road FTA	RI	NO	None
3	AT091P	AFFF Area 24: Former Building FTA	RI	NO	None
--	CD073	Facility 20025B	RI	NO	None
--	CD076	OWS-OS40R, NW of Building 224	Closed	NO	None
2	DP045	Burial Site #1	LTM	YES	21 Site NA ROD
11	DP046	Burial Site #2	LTM	YES	41 Site NA ROD
9	DP047	Burial Site #3	LTM	YES	41 Site NA ROD
5	DP048	Burial Site #4	LTM	YES	21 Site NA ROD
--	DP066	Wright Field Paint Waste Burial Site (Burial Site 5)	LTM	YES	41 Site NFA ROD
9	DP067	Burial Site No. 6	LTM	YES	41 Site NFA ROD
--	DP068	Building 20059	RI	NO	None
--	DP071	Building 20079 Complex	RI	NO	None
5	FT035	FTA No. 1	LTM	YES	21 Site NA ROD
3	FT036	FDTA No. 2	LTM	YES	21 Site NA ROD
3	FT037	FDTA No. 3	LTM	YES	21 Site NA ROD
3	FT038	FDTA No. 4	LTM	YES	21 Site NA ROD
--	FT038P-SUB	PF Sub Site FDTA NO 4	RI	NO	None
3	FT039	FDTA No. 5	LTM	YES	21 Site NA ROD
--	FT039P-SUB	PF Sub Site FDTA NO 5	RI	NO	None
6	LF001	Landfill No. 1	LTM	YES	41 Site NA ROD
6	LF002	Landfill No. 2 (Tillman Pit)	LTM	YES	41 Site NA ROD
4	LF003	Landfill No. 3	LTM	YES	41 Site NA ROD
4	LF004	Landfill No. 4	LTM	YES	41 Site NA ROD
5	LF005	Landfill No. 5	LTM	YES	41 Site NA ROD
4	LF006	Landfill No. 6	LTM	YES	41 Site NA ROD
4	LF007	Landfill No. 7	LTM	YES	41 Site NA ROD
1	LF008	Landfill No. 8	RA-O	YES	SCOU/OSOU ROD
7	LF009	Landfill No. 9	LTM	YES	41 Site NA ROD

OU	Site ID	Site Name	Status	LUCs	ROD
1	LF010	Landfill No. 10	RA-O	YES	SCOU/OSOU ROD
3	LF011	Landfill No. 11	LTM	YES	41 Site NA ROD
3	LF012	Landfill No. 12	LTM	YES	41 Site NA ROD
10	LF013	Landfill No. 13	LTM	YES	41 Site NA ROD
6	LF014	Earth Fill Site 1	LTM	YES	21 Site NA ROD
9	LF015	Earth Fill Site 2	LTM	YES	41 Site NA ROD
9	LF016	Earth Fill Site 3	LTM	YES	41 Site NA ROD
9	LF017	Earth Fill Site 4	LTM	YES	41 Site NA ROD
9	LF018	Earth Fill Site 5	LTM	YES	41 Site NA ROD
9	LF019	Earth Fill Site 6	LTM	YES	41 Site NA ROD
9	LF020	Earth Fill Site 7	LTM	YES	41 Site NA ROD
9	LF021	Earth Fill Site 8	LTM	YES	41 Site NA ROD
9	LF022	Earth Fill Site 9	LTM	YES	41 Site NA ROD
9	LF023	Earth Fill Site 10	LTM	YES	41 Site NA ROD
3	LF024	Earth Fill Zone 11	LTM	YES	21 Site NA ROD
3	LF025	Earth Fill Zone 12	LTM	YES	21 Site NA ROD
3	LF062	Landfill 14	LTM	YES	21 Site NA ROD
10	LF512	Building 30013 Sump Pit Area	PP/ROD	YES	None
--	OT040	Central Heating Plant No 1	LTM	YES	41 Site NA ROD
--	OT041	Central Heating Plant No 2	LTM	YES	41 Site NA ROD
10	OT042	Central Heating Plant No 3	LTM	YES	41 Site NA ROD
--	OT043	Central Heating Plant No 4	LTM	YES	41 Site NA ROD
9	OT044	Central Heating Plant No 5	LTM	YES	41 Site NA ROD
2	OT054	Coal Storage Pile (Sheep Pasture)	LTM	YES	21 Site NA ROD
2	OT055	Temporary Coal Storage	LTM	YES	21 Site NA ROD
2	OT056	Coal Storage (Building 89)	LTM	YES	21 Site NA ROD
2	OT057	Coal & Chemical Storage	LTM	YES	21 Site NA ROD
--	OT059	Area A Groundwater Treatment System OU5	RA-O	NO	None
GW	OT069	Contaminated Groundwater Area A	RA-O	YES	GWOU ROD
GW	OT070	Contaminated Groundwater Area B	RA-O	YES	GWOU ROD
--	OW074	Building 20056	FS	NO	None

OU	Site ID	Site Name	Status	LUCs	ROD
--	PL583	Petroleum Release Site Building 30151 and Area C	Closed	NO	NA
9	RW060	Rad Waste Burial Site	LTM	YES	
9	RW061	Deactivated Nuclear Reactor	LTM	YES	
--	SD001P	AFFF Area 4: Maintenance Building 60	RI	NO	None
11	SD058	Chemical Disposal Area	LTM	YES	41 Site NA ROD
3	SS026	Spill No 1	LTM	YES	21 Site NA ROD
2	SS027	Spill No 2	Closed	NO	Spill Site 2, 3, and 10 ROD
2	SS028	Spill No 3	Closed	NO	Spill Site 2, 3, and 10 ROD
10	SS029	Site 1 Burial Pit (Spill Site 4)	LTM	YES	41 Site NA ROD
8	SS030	Site 2 Burial Pit (Spill Site 5)	LTM	YES	41 Site NA ROD
--	SS031	Spill Site 6	LTM	YES	41 Site NA ROD
8	SS032	Spill Site 7	LTM	YES	41 Site NA ROD
--	SS033	Spill Site 8	LTM	YES	41 Site NA ROD
8	SS034	Spill Site 9	LTM	YES	41 Site NA ROD
2	SS063	Spill Site 10	Closed	NO	Spill Site 2, 3, and 10 ROD
8	SS065	Spill Site 11	LTM	YES	41 Site NA ROD
--	SS071	Building 20055	RI	NO	None
9	SS072P	AFFF Area 1: (Buildings 478 and 479)	RI	NO	None
--	SS073P	AFFF Area 6: Hangar 148	RI	NO	None
--	SS074P	AFFF Area 9: Fire Station #1 Spray Test Area	RI	NO	None
--	SS075P	AFFF Area 10: Former Spray Test Area	RI	NO	None
--	SS076P	AFFF Area 11: Current Spray Test Area	RI	NO	None
11	SS077P	AFFF Area 18: Former Hangar 4028	RI	NO	None
11	SS078P	AFFF Area 17: Hangar 4020	RI	NO	None
--	SS079P	AFFF Area 15: Fire Station #2 (Bldg 4012)	RI	NO	None
11	SS080P	AFFF Area 16: Fire Station #2 Spray Test	RI	NO	None
--	SS081P	AFFF Area 29: Harrier Crash Site	RI	NO	None
8	SS082P	AFFF Area 30: Research Survivability Test Range	RI	NO	None
--	SS083P	AFFF Area 5: Hangar 91	RI	NO	None
10	SS084P	AFFF Area 7: Fire Station #1 (Bldg 146)	RI	NO	None
--	SS085P	AFFF Area 12: Aeroclub (Former Bldg 153)	RI	NO	None

OU	Site ID	Site Name	Status	LUCs	ROD
--	SS086P	AFFF Area 2: Kauffman Ave. Vehicle Crash	RI	NO	None
10	SS087P	AFFF Area 8: Former Fire Station #2	RI	NO	None
--	SS088P	AFFF Area 13: 1st F-16 Crash Site	RI	NO	None
--	SS089P	AFFF Area 14: 2nd F-16 Crash Site	RI	NO	None
--	SS090P	AFFF Area 19: Taxiway Charlie Minor Spill	RI	NO	None
8	SS092P	AFFF Area 27: Former Fire Station (Bldg 76)	RI	NO	None
11	ST049	UST, Building 4020	LTM	YES	41 Site NA ROD
8	ST050	Removed UST, Bldg 71A	LTM	YES	41 Site NA ROD
10	ST051	Tank Farm 49A	LTM	YES	21 Site NA ROD
10	ST052	East Ramp Tank Removal	LTM	YES	41 Site NA ROD
5	ST053	Gravel Lake Tanks	LTM	YES	21 Site NA ROD
10	ST064	UST Building 30119	LTM	YES	21 Site NA ROD
--	TU921	UST at Building 30154 Area C	Closed	NO	None
--	TU930	UST 57 at Building 30119, Area C	Closed	NO	None
--	TU934	Building 34020 UST 333 and 334	Closed	NO	None
--	TU940	Building S-841 UST 100 and 111	Closed	NO	None
--	TU941	Building 26933 UST 78 Page Manor	Closed	NO	None
--	TU942	Building 30159 Area C UST 85	Closed	NO	None
--	TU943	Building 20062 USTs	Closed	NO	None

Notes:
AFFF = Aqueous Film Forming Foam
FS = Feasibility study
FDTA = Fire Department Training Area
FTA = Fire Training Area
GW = Groundwater
LTM = Long-term management
LUC = Land Use Controls
NA = No Action
OU = Operable Unit
OWS = Oil Water Separator
RI = Remedial Investigation
RA-O = Remedial Action Operations
ROD = Record of Decision
SCOU = Source Control Operable Unit
OSOU = Off-Source Operable Unit

ROD (Date):
SCOU (7/15/1993)
OSOU ROD (6/30/1994)
21 Site NA ROD (8/26/1996)
Spill Site 2, 3, and 10 ROD (9/30/1997)
41 SITE NA ROD (8/28/1998)
GWOU ROD (9/9/1999)

The general nature and extent of contamination at the Base includes isolated impacts of volatile organic compounds, petroleum-based contaminants, polycyclic aromatic hydrocarbons, and metals in soil and chlorinated solvent contaminants in groundwater that have been delineated within the specified OUs and are subject to remediation and monitoring in accordance with the associated RODs. Additionally, PFAS in groundwater is monitored at the downgradient perimeter of Area A and 26 PFAS sites are currently undergoing a Phase I RI. Groundwater sampling at the downgradient perimeter has shown several PFAS compounds above DoD screening levels.

3.5 EMERGING CONTAMINANTS

DoD defines emerging contaminants as chemicals relevant to the DoD that are characterized by a perceived or real threat to human health or the environment and that have new or changing toxicity values or new or changing human health or environmental regulatory standards. Per DoDI 4715.18, changes may be due to new science discoveries, detection capabilities, or exposure pathways (DOD, 2019). Emerging contaminants identified for further investigation include 1,4-dioxane and PFAS.

1,4-Dioxane: 1,4-dioxane is a chemical historically utilized as an additive to chlorinated solvent formulations to increase shelf life and prevent corrosion of metal surfaces during various degreasing operations (USEPA, 2017). 1,4-dioxane is a CERCLA hazardous substance that was identified as a high risk to DoD cleanup programs in 2007. 1,4-Dioxane does not have a Maximum Contaminant Level. However, it does have a Tap Water Regional Screening Level (RSL) of 0.46 micrograms per liter (µg/L). The DAF has evaluated the potential impact of 1,4-dioxane at WPAFB's IRP sites.

Under the LTM Program sampling for 1,4-dioxane was conducted between 2014 and 2017, at OU2, OU3, OU4, and OU10 in Area A and at the Former Building 79/95 Complex in Area B. Based on the sampling results it was determined that three of the Area A wells within OU2 and OU10 had single detections of 1,4-dioxane that exceeded the RSL and were located within a WPAFB Drinking Water Source Protection Area (DWSPA). Confirmation sampling of these three wells was conducted in 2019 and 2021. Results from the fall 2019 and spring 2021 confirmation sampling events indicate that 1,4-dioxane was not detected in the three wells and additional sampling or investigation is not required. 1,4-dioxane was detected above the RSL at the Former Building 79/95 Complex in Area B. However, this portion of Area B is not within a DWSPA and per Ohio and USEPA approval, confirmation sampling was not required. Further remedial investigation at the Former Building 79/95 Complex in Area B is ongoing.

PFAS: PFAS are synthetic compounds with properties to repel oil, water, and other liquids, are temperature resistant, and reduce friction. PFAS are present in products such as Teflon (1940's), fabric treatment, some food packaging, and AFFF (AFCEC, 2024).

In 1970, the Air Force began using AFFF for firefighting and training, and in fire suppression systems in hangars and hazardous materials storage facilities. AFFF can contain and degrade into perfluorooctanesulfonic acid and perfluorooctanoic acid along with other PFAS compounds and precursors.

In 2015, a Preliminary Assessment Report (CH2M HILL, 2015) assessed 40 locations where PFAS may have been released into the environment. Of the 40 sites, 26 sites were included in the subsequent site inspection and 4 existing and 3 new sites were included in the expanded site inspection. There are 26 sites that are being investigated in the RI. The locations are shown on **Figures 3-3 and 3-4**. The following PFAS remedial actions at the Base have been conducted or are programmed:

- 2015 - Preliminary Assessment
- 2016 - Present: Quarterly sentinel monitoring well sampling
- 2016 - 2018: Site Inspection (SI) at 26 AFFF Sites
- 2019 - 2020: Expanded SI for 4 existing and 3 new sites AFFF sites
- 2020 - Present: Phase I RI at 26 AFFF sites
- 2021 - Present: Non-Time Critical Removal Actions at 2 AFFF sites
- 2022 - 2024: US Geological Survey Sampling Program
- 2024 - Present: Non-Time Critical Removal Actions at 3 AFFF sites

Removal actions are currently underway for the 2 highest priority sites (AFFF Area 1 and Area 21), and an engineering evaluation/cost analysis has been completed for 3 other AFFF Sites identified for removal actions. The engineering evaluation/cost analysis is conducted to evaluate the various removal alternatives being considered. Two WPAFB drinking water supply wells (8 and #9) were sampled in 2016 under USEPA's Unregulated Contaminant Monitoring Rule 3 which detected concentrations above the health advisory levels. The wells were taken off-line due to the impacts until a granular activated carbon system was brought on-line in 2017 to treat PFAS in Area A drinking water supply wells #8 and #9.

In 2024, Wright-Patterson AFB participated in the fifth round of the Unregulated Contaminant Monitoring Rule (UCMR 5). Results of samples collected from the public water systems in Areas A and B indicate the presence of at least one PFAS above maximum contaminant levels. Funding is currently being secured by the 88th Air Base Wing for the construction of drinking water treatment systems in Areas A and B.

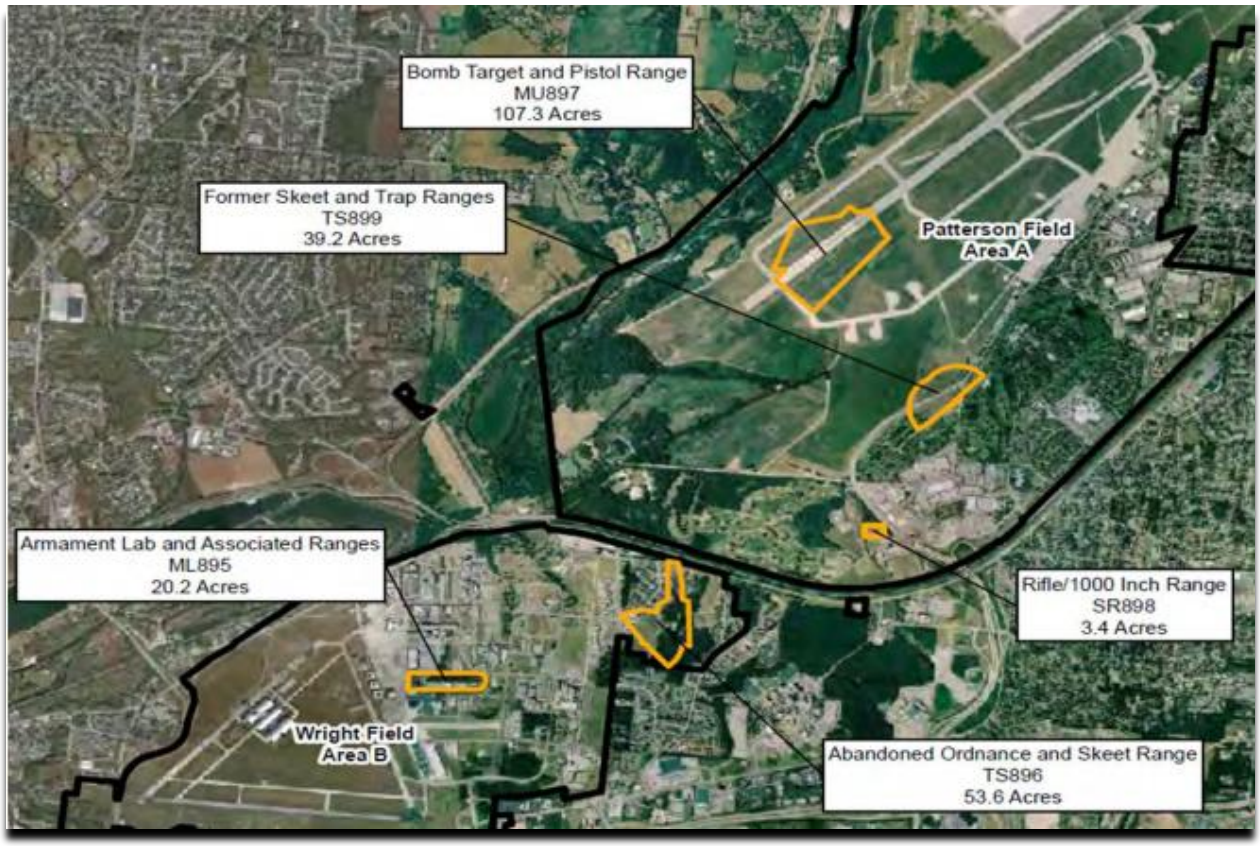
3.6 MILITARY MUNITIONS RESPONSE PROGRAM SITES

Five munition response areas are present at the Base which are part of the Military Munitions Response Program Sites (MMRPs). The site and status are presented below:

- Former Trap and Skeet Range (TS899): A supplemental RI is currently in progress to assess potential impacts to human health and the environment.
- Bomb Target and Pistol Range (MU897): A supplemental RI is currently in progress which includes geophysical surveys, subsurface investigation, and clearance of targets found in the surveys.
- Armament Lab and Associated Ranges (ML895): No further action.
- Rifle/1000 Inch Range (SR898): No further action.
- Abandoned Ordnance and Skeet Range (TS896): No further action.

In support of the MMRP a Comprehensive Site Evaluation Phase I and Phase II were completed in 2009 through 2011 to identify areas where past military munitions activities or potential military response areas associated with the Base may pose a risk to human health or the environment. Phase I consisted of historical records reviews, site visits, and interviews and Phase II consisted of visual surveys and, where warranted, environmental sampling and geophysical surveys. No Further Acton was recommended and approved for sites ML895 and TS896. Further investigation was recommended for the remaining three sites. Further investigation and removal action was completed at SR898 in 2015, and no further action was approved. Sites TS899 and MU897 are undergoing RI activities. Should any munitions need to be destroyed in the field at the MMRP sites, notifications will be made in accordance with explosives safety and WPAFB requirements.

Figure 3-1 - Military Munitions Response Program Sites



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4 COMMUNITY BACKGROUND

4.1 COMMUNITY PROFILES

The Base is located approximately 8 miles northeast of downtown Dayton and is surrounded by 4 cities with populations between 24,000 and 47,000. These cities include Fairborn, Beavercreek, Riverside, and Huber Heights. The Base spans two counties with Area A being in Greene County and Area B predominantly in Montgomery County. The City of Dayton boundary is located approximately 1 mile to the west of the Base. Community information and census data is presented for the Base and the surrounding communities in **Table 4-1** and discussed below. The Mad River borders the Base along the north sides of Areas A and B. The surrounding communities are shown on **Figure 1-1**. A list of Federal, State, and local officials is included in **Appendix B**.

Table 4-1
Demographic Analyses of Surrounding Communities

	Census Year	WPAFB	Dayton, Ohio	Fairborn, Ohio	Beavercreek, Ohio	Riverside, Ohio	Huber Heights, Ohio
Population							
Population	2020	1,554	137,944	34,510	46,549	24,474	43,439
Race/Ethnicity							
White alone, not Hispanic or Latino	2022	66%	50.3%	78.3%	81.3%	80.6%	74.1%
Minority Combined	2022	34.0%	50.5%	22.7%	19.7%	19.6%	26.8%
Black or African American	2022	16.0%	38.0%	9.2%	3.2%	7.1%	15.9%
Asian alone	2022	3.0%	1.3%	1.3%	5.5%	2.8%	2.6%
Hispanic or Latino	2022	9.0%	5.2%	4.0%	3.7%	3.5%	2.9%
2 or More Races	2022	6.0%	6.0%	8.1%	7.1%	6.1%	5.3%
Age							
Persons under 5	2022	No Data	6.2%	7%	4.9%	7.1%	7.1%
Persons under 18	2022	31%	20.9%	19.1%	21.1%	23.1%	25.4%
Population over 65	2022	1%	13.4%	15.3%	19.8%	15.1%	15.9%
Families & Living Arrangements							
Number of households	2018-2022	410	57,362	15,875	18,891	10,820	16,969
Persons per household	2018-2022	3.1	2.17	2.13	2.44	2.26	2.53

	Census Year	WPAFB	Dayton, Ohio	Fairborn, Ohio	Beavercreek, Ohio	Riverside, Ohio	Huber Heights, Ohio
Language other than English spoken at home, persons aged 5 years+	2018-2022	--	7.2%	6.2%	6.9%	6.7%	10.5%
Income & Poverty							
Median Household Income (in 2022 dollars)	2018-2022	69,962	41,433	53,783	108,142	56,232	75,903
Poverty Rate	2018-2022	8.8%	27.5%	18.1%	6.9%	16.5%	8.6%
Education							
High school graduate or higher	2018-2022	100%	86.4%	90%	97.5%	89%	92.9%
Bachelor's degree or higher	2018-2022	42.7%	19.6%	29%	51.8%	21.6%	24.8%

Notes:
Source: 2020 United States (U.S.) Census Bureau Data
U.S. Census Bureau (2022). American Community Survey 5-year estimates. Retrieved from Census Reporter Profile page for Wright-Patterson AFB, OH http://censusreporter.org/profiles/16000US3986660-wright-patterson-afb-oh/.

WPAFB: According to the U.S. Census Bureau, the population on the Base was reported to be 1,554 in 2022 with 410 households and 3.1 persons per household. The median household income was reported to be $69,962. The median age is 24.2 years, and the racial makeup is 66 percent (%) White, 16% Black, 9% Hispanic, 3% Asian, and 6% from 2 or more races. The Base has a total force strength of over 30,000 employees, including military, civilian and contractors (WPAFB, 2024). The Base has a total economic impact of $4.2 billion per year.

City of Fairborn: Fairborn is located in Greene County and includes the Base and areas to the south and east of the Base. Fairborn consisted to two agricultural villages (Fairborn and Osborn) until 1950 when they joined and formed the city which is now a suburb of the City of Dayton and part of the Dayton Metropolitan Statistical Area. From 1950 to 1970, the city grew to six times its former population, due largely to development and expansion of the Base. Fairborn is the home of Wright State University.

The 2020 U.S. Census reported the population of Fairborn to be 34,510 people with a median income of $53,783 and poverty rate of 18.1%. The racial makeup of the City is 78.3% White, 9.2% Black or African American, 4% Hispanic or Latino, 1.3% Asian, and 8.1% from two or more races. The residential population ages are spread out, with 20.9% under the age of 18 and 13.4% 65 years of age or older. 6.3% of homes in Fairborn report speaking a language other than English at home.

Some of the main industries include cement manufacturing, sandpaper and grinding products, machine tools, and printing. Fairborn has 13 public parks and other recreational facilities. Fairborn is dependent upon groundwater as a source of drinking water.

The Fairborn Public Water System maintains a well field upgradient of the Base which obtains groundwater from the Great Miami Buried Valley Aquifer. As a safety measure, Fairborn has installed monitoring wells between the well field and the Base above ground storage tank farm which stores two types of jet fuel in order to facilitate evaluation of potential groundwater contamination if necessary.

City and Township of Beavercreek: Beavercreek is located in Greene County, south of the Base and east of Dayton. Beavercreek was settled in the early 1800's and began with the first corn mill north of Cincinnati. The railroad extended across the area in the 1850s which encouraged more business and neighborhoods. In 1979 a portion of the township was incorporated to become the City of Beavercreek. The City is a suburb of the City of Dayton and part of the Dayton Metropolitan Statistical Area.

The 2020 US Census reports that Beavercreek has a population of 46,549 people with a median income of $108,142 and poverty rate of 6.9%. The racial makeup is 81.3% White, 7.1% Black or African American, 3.7% Hispanic or Latino, 5.5% Asian, and 7.1% from two or more races. The population ages are spread out, with 21.1% under the age of 18 and 19.8% 65 years of age or older. There are 6.9% of homes in Beavercreek that report speaking a language other than English at home.

The City and Township are tightly interwoven as the City provides police services, while the Township provides fire department services. Many people in Beavercreek are employed at the Base. Other businesses include Elano Corporation, SRL, Universal Energy Systems, Modern Technology, and the City of Beavercreek Local School System. All total the City has a solid economic base of 700 businesses and light industry.

Beavercreek obtains drinking water from the City of Dayton Water Department which acquires its drinking water from well fields in the Great Miami Buried Valley Aquifer.

City of Riverside: Riverside encompasses 9.76 square miles in Montgomery County, to the west of the Base. The city was founded in 1995 and is a suburb of Dayton and part of the Dayton Metropolitan Statistical Area.

The 2020 US Census reports that Riverside has a population of 24,474 people with a median income of $56,272 and poverty rate of 16.5%. The racial makeup is 80.6% White, 7.1% Black or African American, 3.5% Hispanic or Latino, 2.8% Asian, and 6.1% from two or more races. The population ages are spread out, with 23.1% under the age of 18 and 15.1% 65 years of age or older. 6.7% of homes report speaking a language other than English at home.

Riverside is home to numerous technologies, industrial, research and development, logistics and service-based businesses. The engineering base is strong, mostly as a result of defense-related work done at the Base by private contractors.

Riverside obtains drinking water from the City of Dayton Water Department which acquires its drinking water from well fields in the Great Miami Buried Valley Aquifer.

City of Huber Heights: Huber Heights encompasses 22.4 square miles in Montgomery County, to the north and northwest of the Base. Huber Heights' origins trace back to the now-defunct Wayne Township, which was settled in the 1800s. Wayne Township was incorporated as the City of Huber Heights in 1981. Suburban development began in the area in 1956, and Huber Heights continued to grow by annexing parcels. The City is a suburb of Dayton and part of the Dayton Metropolitan Statistical Area.

The population was 43,439 at the time of the 2020 census and the median income was $75,903 and poverty rate of 8.6%. The racial makeup is 74.1% White, 15.9% Black or African American, 2.9% Hispanic or Latino, 2.6% Asian, and 5.3% from two or more races. The population ages are spread out, with 25.4% under the age of 18 and 15.9% 65 years of age or older. 10.5% of homes report speaking a language other than English at home.

Numerous trucking and logistics companies operate here along with ABF Freight System, Inc.; Apache Technologies, NDC Technologies, Bowser Morner, Coca-Cola, Enginetics, Fukuvi USA, and Trimble Navigation.

Huber Heights obtains drinking water from the City of Dayton Water Department which acquires its drinking water from well fields in the Great Miami Buried Valley Aquifer.

City of Dayton: The City of Dayton encompasses 57 square miles in Montgomery County, approximately 1 mile to the west of the Base. Dayton was founded in 1796 along the Great Miami River and grew due to the construction of the Dayton-Cincinnati Canal in 1827. The City was home to many patents and inventors, including the Wright brothers and the inventor of the cash register. Dayton became an epicenter for manufacturing. Since the 1980s, however, Dayton's population has declined due to the loss of manufacturing jobs and decentralization of metropolitan areas, as well as the national housing crisis.

The population was 137,944 at the time of the 2020 census and the median income was $41,433 with a poverty rate of 27.5%. The racial makeup is 50.3% White, 50.5% Black or African American, 5.2% Hispanic or Latino, 1.3% Asian, and 6% from two or more races. The population ages are spread out, with 20.9% under the age of 18 and 13.4% 65 years of age or older. There are 7.2% of homes that report speaking a language other than English at home. High growth sectors in Dayton include aerospace research and development, health care, information technology, and manufacturing.

The City of Dayton Water Department, which acquires its drinking water from well fields in the Great Miami Buried Valley Aquifer provides municipal water.

4.1.1 Community Drinking Water Resources

WPAFB: The drinking water source for the Base is the Great Miami Buried Valley Aquifer. This natural aquifer provides approximately 1 billion gallons of water each year to the Base. There are six wells that serve Area A and four wells that serve Area B. Treatment includes air stripping

(removes volatile organic compounds), chlorine disinfection to eliminates bacteria, and fluoridation. Water from two of the wells in Area A is also treated by a granular activated carbon system to remove PFAS. The Area A public water system (PWS) has interconnections with the City of Fairborn's PWS able to supply water to Area A to meet emergency needs. More information regarding the system and treatment is available here: https://www.amwater.com/ccr/wrightpattersonafb.pdf

Fairborn Public Water System: The source of drinking water for the City of Fairborn is the Great Miami Buried Valley Aquifer. A total of eight wells are known as the Mad River Well Field. More information regarding the system and treatment is available here: https://cms2.revize.com/revize/fairborn/FY2024%20CCR%5b37%5d.pdf

City of Dayton Water Department: The City of Dayton Water Department treats and pumps drinking water to over 400,000 people in Montgomery County and part of Greene County including the communities of Beavercreek, Riverside, and Huber Heights in the vicinity of the Base. Water is supplied to water treatment plants by the Miami and the Mad River Well Fields. Wells pump groundwater from the Great Miami River Buried Valley Aquifer. Dayton uses recharge lagoons to help maintain the water table and allow large wells to efficiently pump water to the water plants. Dayton has approximately 110 production wells. Each of these large wells can pump from 1 to 4 million gallons per day. Dayton's water treatment plants use conventional lime (calcium oxide) softening processes. After softening, the pH of the water is adjusted using carbon dioxide. The water is fluoridated and then later disinfected using chlorine. Rapid sand filtration is the final step in the water treatment process. More information regarding the system and treatment is available here: https://www.daytonohio.gov/DocumentCenter/View/ 14745/2023-Water-Quality-Report.

4.2 HISTORY OF COMMUNITY ENGAGEMENT

The Base has a long history of community engagement. The initial Community Relations Plan was prepared in 1986 by the 88th Air Base Wing Office of Public Affairs and has been updated over the years to keep the community informed about current and upcoming activities.

4.2.1 Restoration Advisory Board

The Base Restoration Advisory Board (RAB) was established in 1994. The RAB is a forum to exchange information and discuss the IRP. The purpose of the RAB is to discuss environmental efforts within the environmental restoration program and allow community members to provide input to the cleanup process. The purpose of the RAB is to conduct regular meetings to discuss restoration efforts, key issues, provide transparency and allow community involvement. The RAB serves as a resource to help the community better

understand the IRP as well as review and provide comments on current and future projects. RABs provide a forum for two-way communication between the community and Air Force officials about environmental cleanup work on and around installations. The meetings offer the community access to the IRP and give members opportunities to review progress, participate in dialogue, and provide comments and recommendations to the installation's decision makers concerning environmental restoration matters. The purpose, function, membership, and structure are detailed in the RAB charter included in **Appendix F**.

The RAB is currently made up of community members including Beavercreek Township, Greene County, OEPA, Miami Valley Regional Planning Commission, and League of Women Voters. Their responsibilities include reviewing and evaluating documents; identifying proposed project requirements; recommending priorities among sites and projects; and conducting regular meetings which are open to the public. Meeting dates and times are published in the Dayton Daily News and the Base biweekly newspaper, Skywrighter, and on the Base website

Initially, one meeting was held each quarter but as sites were addressed, community interest and RAB membership declined, and the frequency of RAB meetings has been reduced to semiannual. As a result of the community questionnaire survey, RAB meetings will continue to be held semiannually and be offered both in person and virtually. In addition, advertisement of the RAB meeting notices will not only be distributed via the local news media but also sent to community leaders and listed on social media sites, such as Facebook.

4.2.2 Community Engagement Activities

The Base officials have worked with Cities of Dayton and Fairborn in developing their wellhead protection program. The City of Dayton's well field is located downgradient and south of Area A of the base. A small portion of the Fairborn stand-by well field is located in Area A of the Base. Base officials agreed to monitor all activity that may potentially impact both Dayton's and Fairborn's water supply, including facility construction, and chemical usage in that area.

The Base agreed to keep the city government apprised of activities that may impact the well field and provide documentation of the potential impact. In October 2007, the Base was awarded a Certificate of Recognition for efforts taken to protect the Base's sources of drinking water through implementation of a Drinking Water Source Protection Plan.

The Base engages in the following activities with the community:

- The Base maintains a website which provides news, fact sheets, and job opportunities, as well as key contact information. The website includes links for the Base programs and departments and a link to the WPAFB biweekly newsletter, Skywrighter. https://www.wpafb.af.mil/
- The Base website includes a link to the 88th Air Base Wing Environmental Branch which maintains an environmental management webpage which posts upcoming meetings or actions and provides links to environmental documents: https://www.wpafb.af.mil/Units/cev/

- The Base maintains active accounts on social media outlets including Facebook, Instagram, X, and LinkedIn.
- The Base engages the local media outlet, Dayton Daily News, to post public notices and articles. A list of local media outlets is included in **Appendix C**.
- Public Notices are required for RI/FS report and Proposed Plan availability, Decision Documents availability, completion of ROD implementation, Five-Year Reviews, and RAB meetings and are placed in the Dayton Daily News and on the Base website.
- Public comment periods and meetings required in conjunction with remedial investigations and feasibility studies and Proposed Plan availability are held in support of comment periods and as required under CERCLA. Meetings are published through public notices in the Dayton Daily News and on the WPAFB website.
- The biweekly newspaper, Skywrighter, includes community updates, environmental articles, Base events, and meeting times and locations.
- The WPAFB Remedial Project Managers (RPMs) host meetings with the OEPA, USEPA and City of Dayton to keep them aware of assessment and cleanup progress.

The WPAFB RPMs have attended meetings with the Miami Valley Regional Planning Committee and City of Dayton Environmental Advisory Board to present information on the status of PFAS projects as requested. The RPMs conduct tours of sites, ongoing projects, remediation activities, and assessment activities with community representatives, USEPA, and the OEPA. The Administrative Record is the official record for all IRP activities. Copies of documents (preliminary assessments, site specific work plans, remedial investigation and feasibility reports, proposed plans, decision documents, records of decision, etc.) are available for public review. The Administrative Record is available online at the AFCEC Administrative Record at https://ar.cce.af.mil/.

4.3 COMMUNITY INTEREST ASSESSMENT

A community assessment questionnaire was developed to identify community concerns regarding the Base and the ongoing IRP. The questionnaire package included contact information, an IRP factsheet, and the questionnaire.

On August 21 through September 30, 2024, the questionnaire package was made available on the Base website and distributed to Mayors, city managers, and chamber leaders for distribution in the cities of Xenia, Fairborn, Beavercreek, Riverside, Huber Heights, and Dayton. The questionnaire reached residents, local business owners, military personnel, public/elected officials, and civic/public interest organization representatives. It is estimated that the questionnaire reached at least 300 people. The results of the questionnaire provided valuable data and are presented in Section 4.4.3.

4.4 COMMUNITY CONCERNS

4.4.1 Previous Assessment Results

The common issue and concern noted among the Base residents and surrounding communities cited in the 2010 and 2019 Community Relations Plans was the safety of drinking water. The Cities of Dayton and Fairborn expressed concern about Base contaminants impacting their well fields. In addition, it was noted that the interviewees encouraged the Base to continue the open communication with surrounding communities and government officials.

4.4.2 Recommendations from Previous Assessments

The 2019 Community Relations Plan addressed the concerns by including information regarding the groundwater treatment systems and the Drinking Water Source Protection Plan which has modeled the underground water system to identify the zones of contribution. The plan also highlighted how the Base assisted the cities of Dayton and Fairborn in the development of their wellhead protection programs. The Base maintains a program of groundwater monitoring to reduce or eliminate risk to human health and the environment and comply with state and federal environmental laws. The Base operates and maintains two active groundwater remediation systems to prevent migration of contaminated water toward the City of Dayton's Huffman Dam Wellfield.

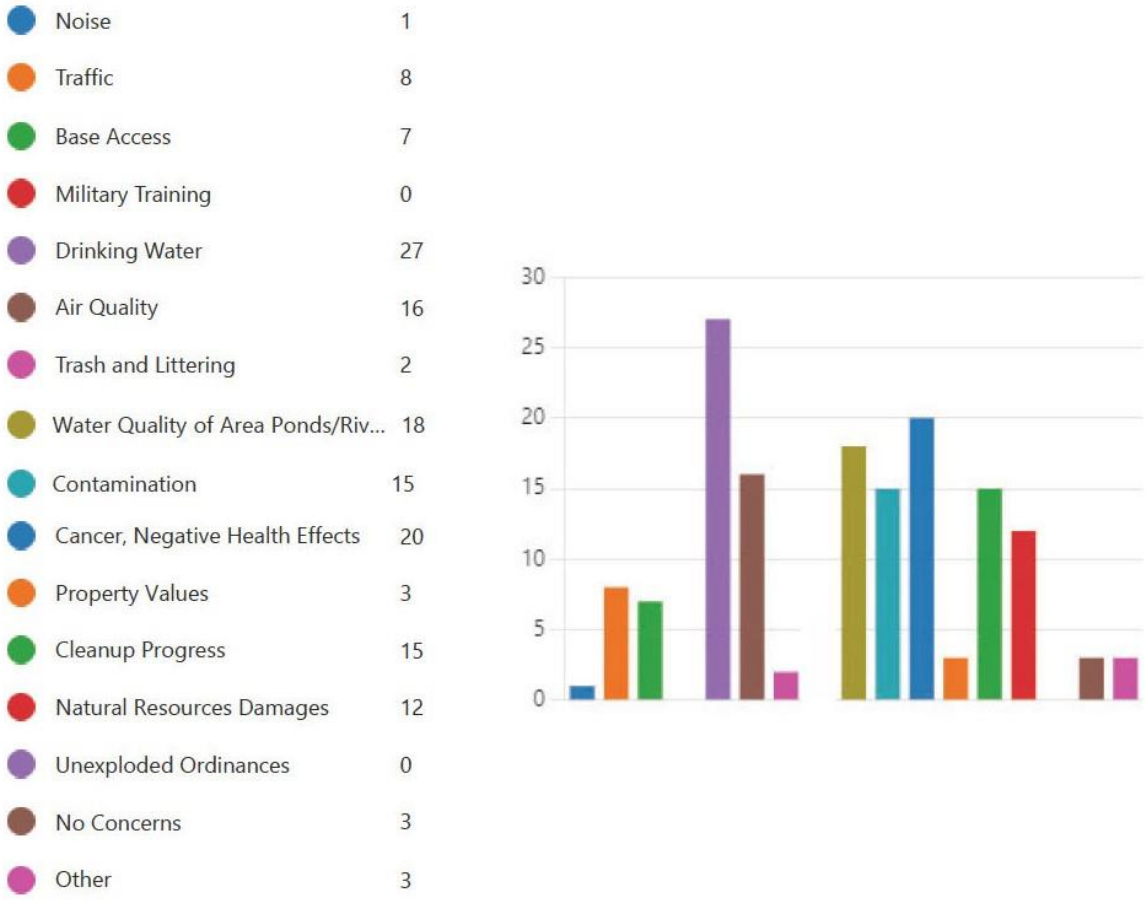
4.4.3 2024 Community Survey Results

The questionnaire had a total of 35 respondents from communities in Greene and Montgomery Counties. Of the 35 respondents, 20 reside greater than 5 miles from the Base, 9 reside between 1 and 5 miles from the Base and 5 respondents reside within 1 mile of the Base. The questionnaire and responses are included in **Appendix G**.

Community Feedback on Community Involvement Efforts

Community involvement to date has been successful with only 3 respondents indicating that they were unaware of the environmental activities at the Base and 24 respondents were familiar with emerging contaminants (PFAS). However, only 8 of the 35 respondents were familiar with the Base environmental webpage and only 5 were aware of the RAB meetings held twice a year.

The top concerns related to the Base were noted as drinking water and surface water quality and potential negative health effects. The IRP continues to conduct investigations, remedial activities,



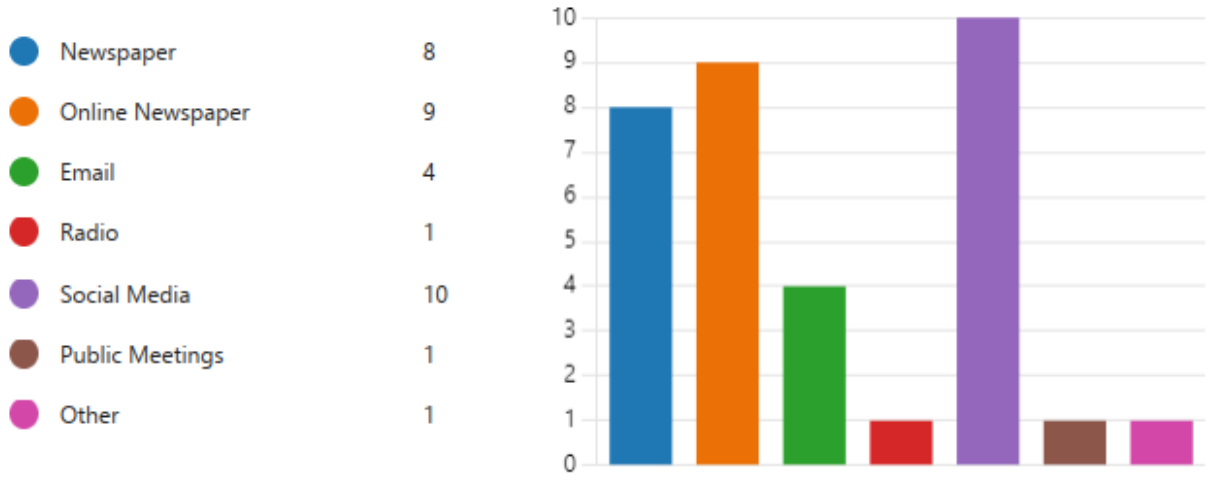
and groundwater and surface water quality assessment to ensure protection of human health and the environment.

Community Feedback on Communication Needs

Respondents indicated that the most useful source for information is social media, specifically Facebook, and online newspapers (Dayton Daily News). Nineteen of the 35 respondents indicated they were not familiar with and had not visited the Base environmental website.

When asked which activities could help community members better understand technical and scientific information regarding the installation restoration program, 19 of the 35 respondents chose a community informational newsletter and 14 chose presentations by experts. Seventeen of the 35 respondents indicated they would be most likely to attend virtual online meetings, and 7 indicated they would prefer community/neighborhood (off-base) meetings.

The Base will continue implementation of the community involvement activities described in Section 5.2 to address interests of community members about IRP activities.



4.4.4 Addressing Community Concerns

WPAFB will continue to address community concerns through various initiatives to foster transparency and engagement as detailed in Section 4.4.2. One key avenue for community involvement is the RAB meeting, where the community can voice their concerns, ask questions, and receive updates on remediation efforts. These meetings provide open dialogue between the Base and the community, allowing for constructive discussions on environmental issues and remediation progress.

The potential health impacts of PFAS and drinking water and surface water quality is a consistent community concern. The DAF will prioritize sharing information and providing access to experts during the RAB meetings.

Community members indicate that they prefer receiving information through various methods, including mail, email, social media, and direct communication. DAF will continue to use multiple communication channels to ensure all community members can easily access important information. This includes email updates, website posts, public notices, and direct communications during events.

In the event of unresolved disagreements, the DAF will document the community's concerns, the DAF's rationale for its position, and any alternative solutions considered. This information will be shared transparently with the community through RAB meetings and other communication channels. While the DAF must adhere to regulatory requirements and technical limitations, it will actively explore opportunities to address community concerns and mitigate potential impacts. The DAF is committed to finding mutually acceptable solutions whenever possible and will ensure documentation of all efforts to address community concerns is used to inform future decision-making and improve community engagement strategies.

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5 COMMUNITY ENGAGEMENT PROGRAM

5.1 COMMUNITY ENGAGEMENT PROCESS

The overall goal of community involvement program is to promote two-way communication between citizens and the Base and to provide opportunities for meaningful and active involvement by the community in the cleanup process. The Base will implement the community involvement activities described below.

5.2 COMMUNITY INVOLVEMENT PROGRAM

The Base will implement the community involvement activities described below in order to address interests of community members about IRP activities underway at the installation.

Activity 1 –Administrative Record

Objective: Continue to make available to the community documents relating to IRP decisions and designs, site history, and other documents. Additional details are presented in **Appendix D**.

Method: The Administrative Record is available on the internet at the following link: https://ar.cce.af.mil/. Hard copies can be requested by contacting the RPMs (**Appendix A**). After accessing the above website, scroll down and click "Continue to site."

- From the "Installation List," under "Active Duty" on the left side of the website, search or scroll down and select "Wright Patterson AFB, OH"
- Click "Search" and scroll down to view the list of documents.
- To open and view a document, click on the magnifying glass icon. Documents may be downloaded and saved once opened.
- Numerous other search blocks can be used to broaden or narrow the list of documents. The Administrative Record is also available for viewing online by visiting any public library that provides internet access.

Timing: Administrative Record is updated on an on-going basis as documents are submitted.

Activity 2 – Information Distribution Websites

Objective: To provide information to the community about current IRP projects, status of groundwater contaminant plume cleanup, and provide notice of public meetings. It is critical for site information to be widely distributed in a timely manner to the community so that community members can be fully aware of site decisions and key developments. An informed community can provide valuable perspectives that help address key concerns.

Method: The Base will continue posting of concise, readily understood, and timely news, fact sheets, press releases, key contact information, and information repository information on its websites. Fact sheets are prepared to identify key information that is most useful to share with the community related to contaminants and risks, such as profiles for selected key contaminants of

concern. Distributed information will include a contact person for responding to questions and concerns and adding community members and organizations to distribution lists. Hard copies can be requested by contacting the WPAFB RPMs as listed in **Appendix A**.

The Base website includes links for the Base programs and departments and a link to the Base newsletter, Skywrighter. https://www.wpafb.af.mil/. The 88th Air Base Wing Environmental Branch will continue to maintain its environmental management webpage which posts upcoming meetings or actions and provides links to environmental documents: https://www.wpafb.af.mil/Units/cev1/.

Timing: The websites will be updated as needed.

Activity 3 – Conduct Public, RAB, and Individual Meetings as Necessary

Objective: Continue to hold semi-annual RAB meetings to inform the community and address community concerns as needed. The WPAFB RPMs will continue to host meetings with the OEPA and USEPA to keep them aware of assessment and cleanup progress. The WPAFB RPMs will continue to meet with the Miami Valley Regional Planning Committee and City of Dayton Environmental Advisory Board as requested. Public meetings represent indispensable opportunities for community members to increase awareness and understanding of site developments by directly engaging with the site cleanup teams on their questions and issues. The Base will provide community members with the opportunity to attend RAB meetings by offering meeting attendance in person or virtually.

Method: The WPAFB RPMs will schedule, prepare for, and attend all announced meetings. Strategic planning and publicizing of public meetings will be conducted to maximize attendance (e.g., holding meetings outside of business hours or on weekends), with participation by key members of the cleanup team and hosting public meetings. Refer to **Appendix D** for suggested meeting locations. All public meetings are open to the community and will be announced in the Dayton Daily News, the Base website, social media outlets and email invitations to the community leaders. Public meeting presentations and transcripts will be made available on the Administrative Record. Individual meetings will be held with affected residents/property owners upon request.

Timing: RAB meetings are held semiannually, meetings with OEPA and USEPA are held every other month or as needed, and meetings with the Miami Valley Regional Planning Committee and City of Dayton Environmental Advisory Board are held as needed. Public notices announcing the RAB meetings are placed in the Dayton Daily News and on the WPAFB website at least 2 weeks prior to the meeting.

Activity 4 – Publish Public Notices/Public Comment Periods

Objective: To give the community an opportunity to review and comment on IRP decisions. All documents subject to public notices and comment will be provided to the community for review and comment prior to being finalized. These documents include records of decision, decision documents, proposed plans, and the CIP The public notices will ask members of the public to provide input and concerns.

Method: Public notices are placed in the Dayton Daily News, and on the WPAFB website, and announce the availability of documents, duration of the public comment period (minimum of 30 days with an extension upon request), contain information about the project or issue, where to find more information, and a point of contact for comments. This information will also be posted on the WPAFB website. WPAFB will review and consider feedback before issuing documents subject to public notice through public comments, community meetings, and public meetings, as necessary. For Decision Documents and Records of Decision, the Department of the Air Force must prepare a Responsiveness Summary describing significant community comments on the proposed approach and alternatives. The Responsiveness Summary will be included in the follow-on decision document (ROD or action memorandum).

Timing: A public comment period is generally 30 days long unless otherwise noted. A public notice will be published notifying the community that a document is available for comment at least 2 weeks prior to its release and will specify the dates for the comment period.

Activity 5 – Five Year Review Public Notice

Objective: To provide the community with the opportunity to comment on past and proposed (future) environmental restoration projects.

Method: An initial public notice will be placed in the Dayton Daily News and on the WPAFB website. The initial public notice will notify members of the community that a five-year review will be conducted. Once the five-year review is complete, a public notice will announce the document has been completed and where to obtain a copy. The document will be posted on the Administrative Record. The next five-year review process started in 2024, and the final report will be published in 2025.

Timing: Every 5 years. The most recent five-year review was completed in 2020 (AFCEC, 2020). The Administrative Record number for the document is 1232). The next five-year review is due in December 2025. A public notice was published on October 11, 2024, to notify the community that the five-year review process has begun. A second public notice will be published once the review has been completed and provide information where the document can be obtained.

Activity 6 – Conduct Site Tours

Objective: Provide an opportunity for community members, RAB members, and regulatory agencies to get an up-close view of the IRP activities. Site visits facilitate transparency on the part of the Base and supports credibility in the community.

Method: The RPMs will continue to conduct tours of ongoing projects, remediation, and assessment for community representatives and the regulatory agencies regarding remedial efforts, water treatment, and other environmental issues, as needed. An agenda of the tour, along with background material, will be given to the attendees in advance.

Timing: The WPAFB RPMs will continue to conduct site tours on an as-requested basis.

5.3 CIP REVIEW AND UPDATE REQUIREMENTS

A Community Relations Plan was initially prepared by the 88th Air Base Wing Office of Public Affairs in February 1986 and has been revised and updated over the years in an effort to keep the community informed about activities associated with the IRP at the Base. This CIP was revised and updated based on information gathered from community feedback and current site conditions in 2024. The CIP is a "living document" and will be updated as new information and issues develop throughout the restoration process. AFCEC will revise the CIP every 3 to 5 years or when significant changes occur at WPAFB.

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6 REFERENCES

AFCEC, 2010. Installation Restoration Program, Community Relations Plan, Wright Patterson Air Force Base, AFCEC, Environmental Restoration Branch.

AFCEC, 2019. Installation Restoration Program, Community Relations Plan, Wright Patterson Air Force Base, AFCEC, Environmental Restoration Branch. October.

AFCEC, 2020. Five Year Review Report.

AFCEC, 2024. Air Force Response to PFAS, Environmental Restoration Branch. https://www.afcec.af.mil/What-We-Do/Environment/Per-and-Polyfluoroalkl-Substances/

CH2M HILL, 2015. Preliminary Assessment Report for Perfluorinated Compounds, WPAFB, Ohio. September 2015. Air Force Civil Engineer Center. AR# 985.

DOD, 2019. DOD Instruction 4715.18 Emerging Chemicals of Environmental Concern, Office of the Under Secretary of Defense for Acquisition and Sustainment. September 4, 2019. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/471518p.pdf

U.S. Census, 2020. Website: https://www.census.gov/en.html

USEPA, 2017. Technical Fact Sheet 1,4-Dioxane. EPA Federal Facilities Restoration and Reuse Office.https://19january2021snapshot.epa.gov/sites/static/files/2014-03/documents/ffrro_factsheet_contaminant_14-dioxane_january2014_final.pdf

WPAFB, 2024. Installation Restoration Program, U.S. Air Force Fact Sheet: 4 March. https://www.wpafb.af.mil/Portals/60/documents/CE/IRP%20Fact%20Sheet%20March%202024.pdf?ver=loSY3I_lGUp3rGn3e0UG8Q%3D%3D

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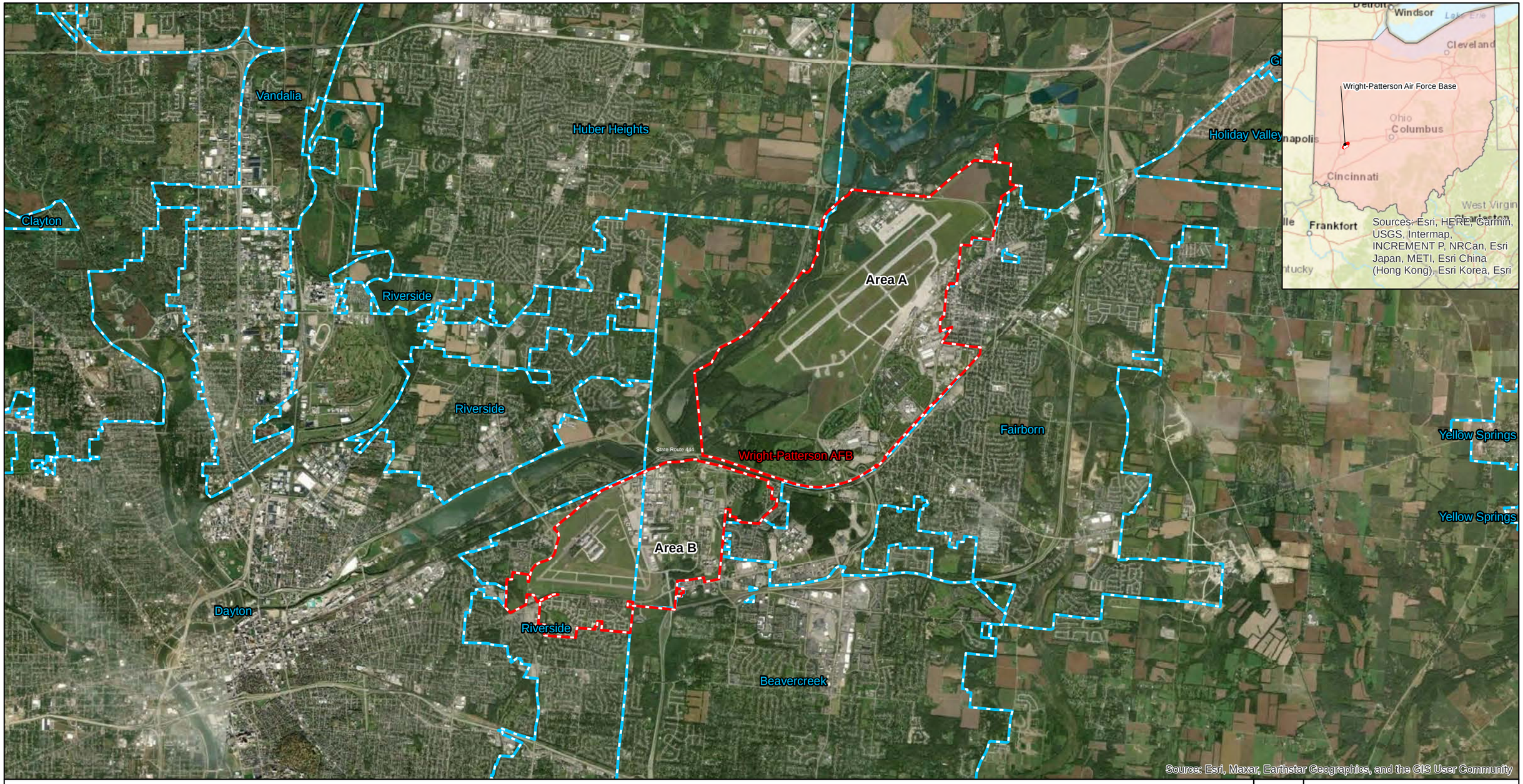
7 ACRONYMS

%	percent
AFCEC	Air Force Civil Engineer Center
AFFF	aqueous film-forming foam
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIP	Community Involvement Plan
DAF	Department of the Air Force
DoD	Department of Defense
DERP	Defense Environmental Restoration Program
DWSPA	Drinking Water Source Protection Area
FFA	Federal Facility Agreement
FS	Feasibility Study
GWOU	groundwater operable unit
IRP	Installation Restoration Program
LTM	long-term monitoring
LUCs	land use controls
MMRP	Military Munitions Response Program
NA	no action
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
OWS	oil water separator
PFAS	Per- and polyfluoroalkyl substances
PWS	public water system
RAB	Restoration Advisory Board
RA-O	Remedial Action Operations
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Managers
RSL	Regional Screening Level
SARA	Superfund Amendments and Reauthorization Act

SI	Site Inspection
UCMR	Unregulated Contaminant Monitoring Rule
µg/L	micrograms per liter
U.S.	United States
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
WPAFB	Wright-Patterson Air Force Base

FIGURES



City Boundary

Wright-Patterson AFB Boundary

Image Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community; Image Date: December 26, 2021

N

0 6,000 12,000 Feet

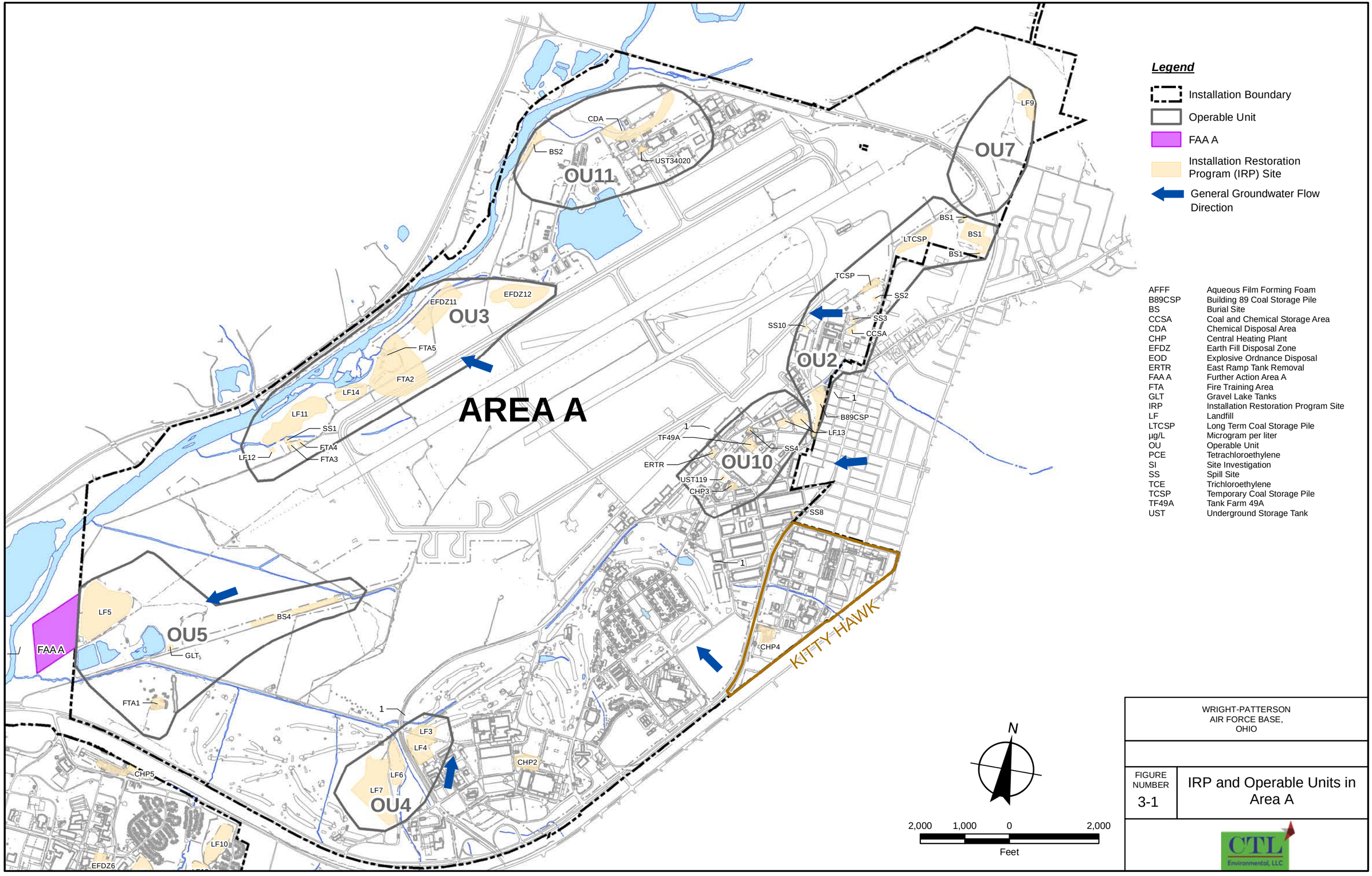
Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet

AIR FORCE CIVIL ENGINEER CENTER

FIGURE NUMBER 1-1

INSTALLATION LOCATION MAP, WRIGHT-PATTERSON AFB

CTL Environmental, LLC



Legend

- Installation Boundary
- Operable Unit
- FAA A
- Installation Restoration Program (IRP) Site
- General Groundwater Flow Direction

AFFF	Aqueous Film Forming Foam
B89CSP	Building 89 Coal Storage Pile
BS	Burial Site
CCSA	Coal and Chemical Storage Area
CDA	Chemical Disposal Area
CHP	Central Heating Plant
EFDZ	Earth Fill Disposal Zone
EOD	Explosive Ordnance Disposal
ERTR	East Ramp Tank Removal
FAA A	Further Action Area A
FTA	Fire Training Area
GLT	Gravel Lake Tanks
IRP	Installation Restoration Program Site
LF	Landfill
LTCSP	Long Term Coal Storage Pile
µg/L	Microgram per liter
OU	Operable Unit
PCE	Tetrachloroethylene
SI	Site Investigation
SS	Spill Site
TCE	Trichloroethylene
TCSP	Temporary Coal Storage Pile
TF49A	Tank Farm 49A
UST	Underground Storage Tank

WRIGHT-PATTERSON
AIR FORCE BASE,
OHIO

FIGURE NUMBER
3-1

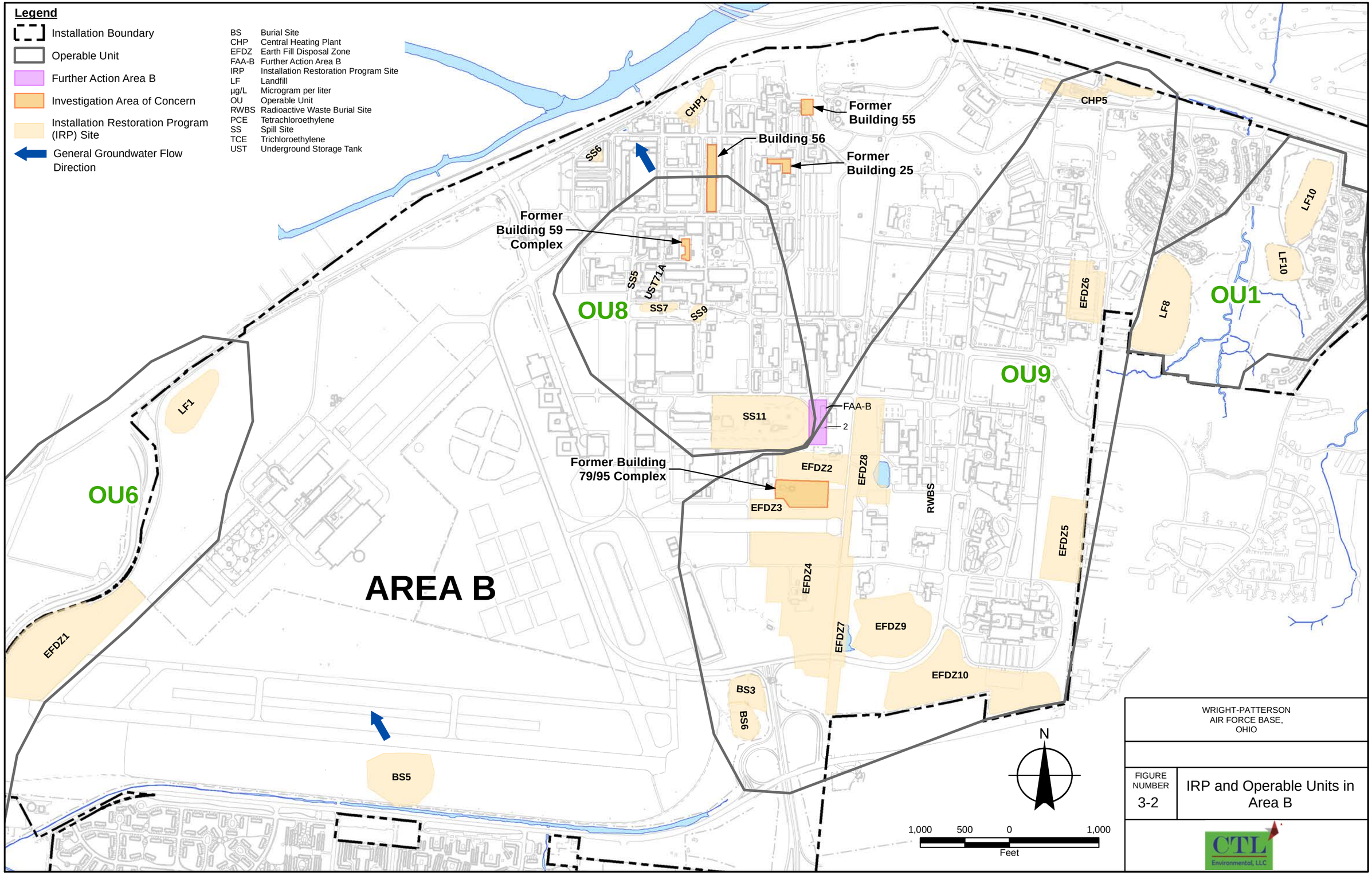
IRP and Operable Units in Area A

CTL Environmental, LLC

Legend

- Installation Boundary
- Operable Unit
- Further Action Area B
- Investigation Area of Concern
- Installation Restoration Program (IRP) Site
- General Groundwater Flow Direction

BS	Burial Site
CHP	Central Heating Plant
EFDZ	Earth Fill Disposal Zone
FAA-B	Further Action Area B
IRP	Installation Restoration Program Site
LF	Landfill
µg/L	Microgram per liter
OU	Operable Unit
RWBS	Radioactive Waste Burial Site
PCE	Tetrachloroethylene
SS	Spill Site
TCE	Trichloroethylene
UST	Underground Storage Tank



WRIGHT-PATTERSON AIR FORCE BASE, OHIO

FIGURE NUMBER 3-2

IRP and Operable Units in Area B

CTL Environmental, LLC

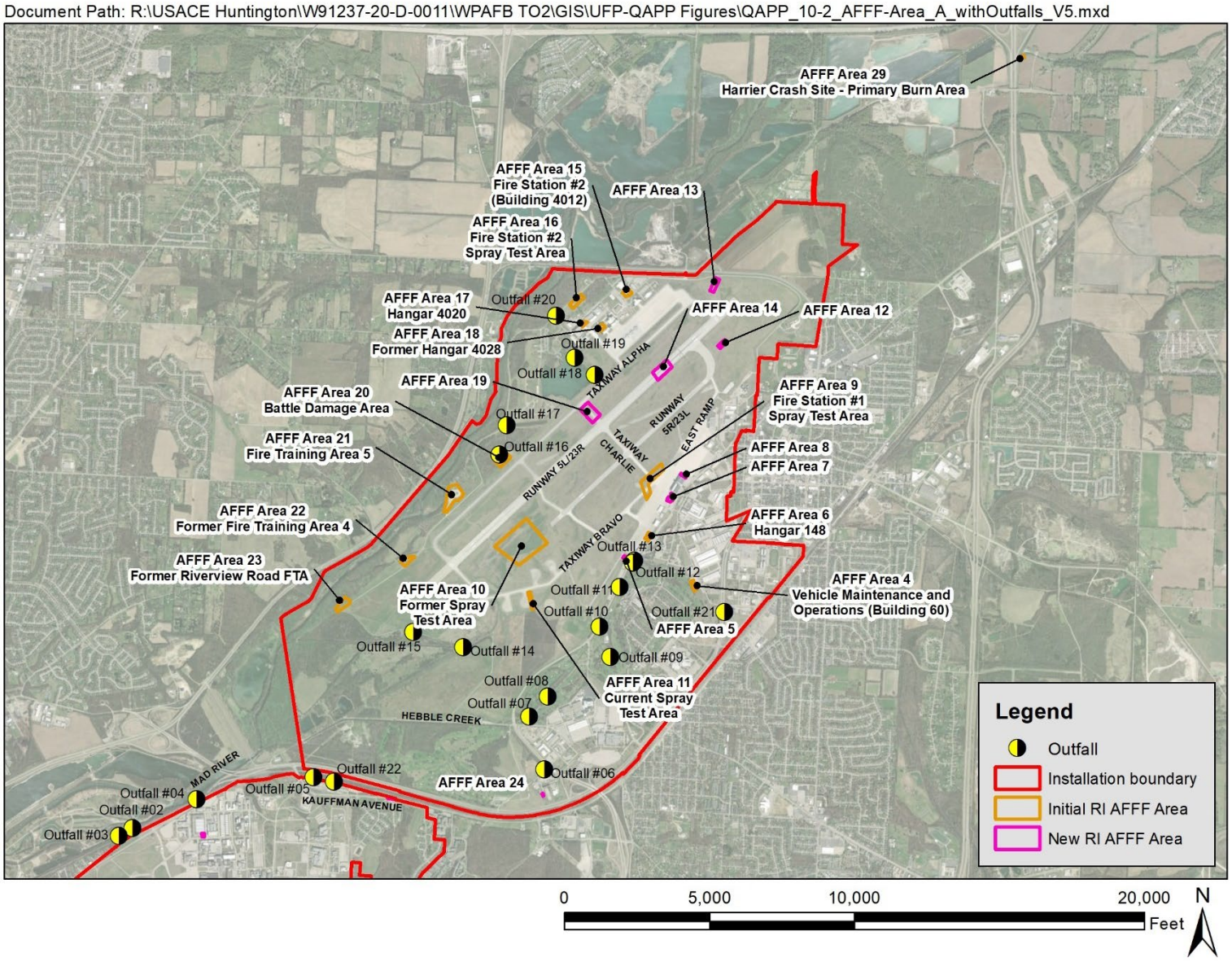


Figure 3-3
AFFF Areas within Area A

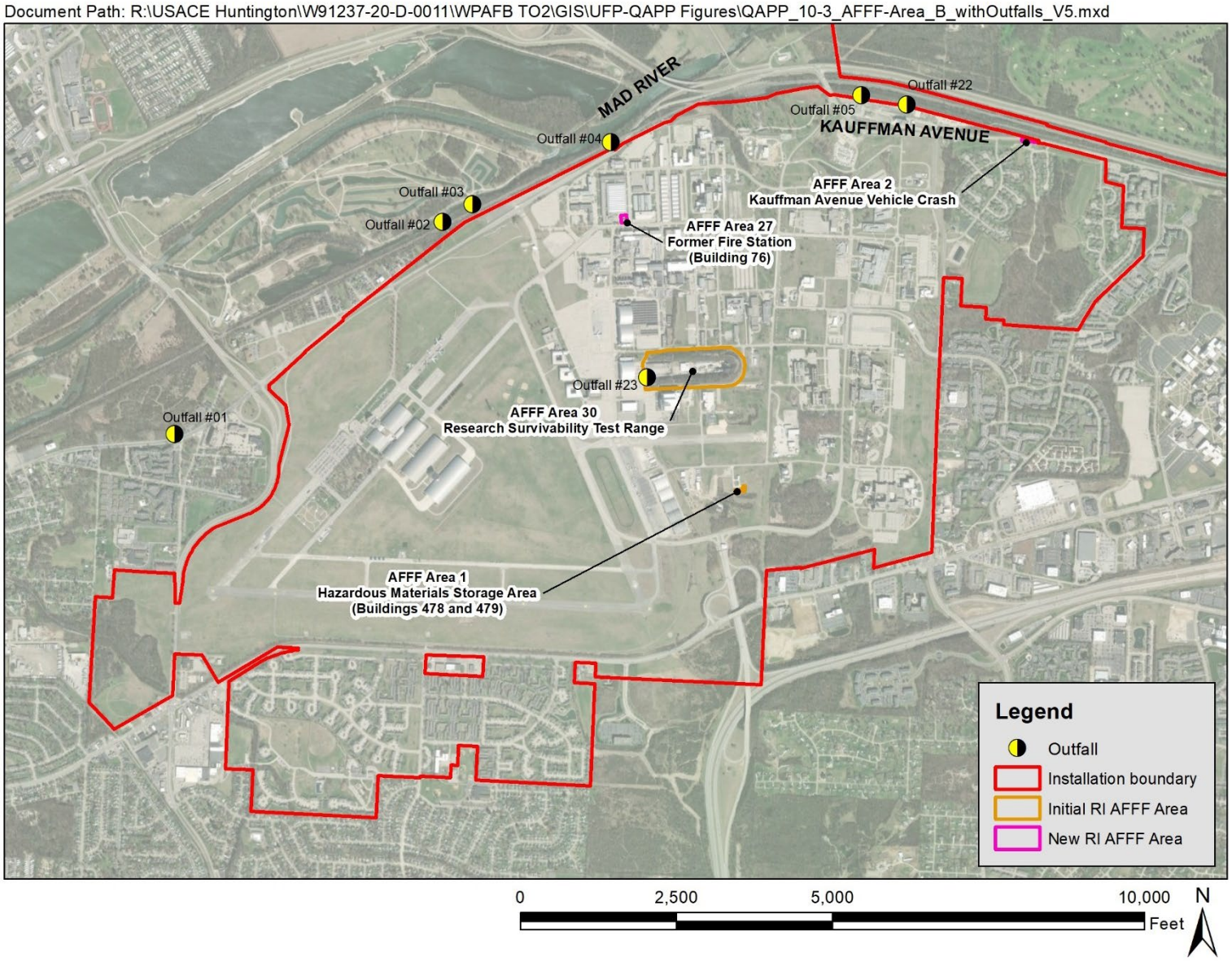


Figure 3-4
AFFF Areas within Area B

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APPENDIX A

KEY INSTALLATION AND REGULATORY CONTACTS

Key Installation and Regulatory Contacts

Remedial Project Manager: Mr. John Crocker
Wright-Patterson Air Force Base
2145 Monahan Way, Building 28
Wright-Patterson AFB, OH 45433
(937) 257-2312
Email: john.crocker.5@us.af.mil

Public Affairs Officer: Christopher Warner
Wright-Patterson Air Force Base
88th Air Base Wing Public Affairs
5135 Pearson Road, Building 10
Wright-Patterson AFB, OH 45433
(937) 257-4033
Email: 88abw.pa@us.af.mil or christopher.warner.12@us.af.mil

Contracting Officer's Representative: Rachel Williams
U.S. Army Corps of Engineers
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202
(503) 315-6341
Email: rachel.e.williams@usace.army.mil

Remedial Project Manager: Nicole Goers
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3507
(312) 886-1486
Email: goers.nicole@epa.gov

Site Coordinator: Dwayne Tolson
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, OH 45402
(937) 285-6453
Email: Dwayne.Tolson@epa.ohio.gov

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APPENDIX B

FEDERAL, STATE, AND LOCAL OFFICIALS

Federal, State, and Local Elected Officials

Federal Government

U.S. Senate - Bernie Moreno
Address: SR-B33 Russell Senate Office Building, Washington DC, 20510
202-224-2315

U.S. Senate - Jon Husted
Address: SR-198 Russell Senate Office Building, Washington DC, 20510
202-224-3353

U.S. House Representative - Mike Turner
Address: 120 West 3rd Street, Suite 305, Dayton, OH 45402
937-225-2843

State Government

Governor - Mike Dewine
Address: 77 High Street, Floor 30, Columbus, OH 43215
614-644-4357

State Senator - District 5 - Stephan A. Huffman
Address: 1 Capitol Square, Ground Floor 040, Columbus, OH 43215
614-466-6247 Ohiosenate.gov/stephan-a-huffman

State Senator - District 6 - Willis Blackshear, Jr.
Address: 1 Capitol Square, Ground Floor 049, Columbus, OH 43215
614-466-4538 Ohiosenate.gov/willis-e-blackshear-jr

State Senator - District 10 - Kyle Koehler
Address: 1 Capitol Square, Ground Floor 035, Columbus, OH 43215
614-466-3780 Ohiosenate.gov/kyle-koehler

Ohio Representative – District 36 - Andrea White
Address: 77 High Street, Floor 11, Columbus, OH 43215
614-644-6008 Ohioshouse.gov/andrea-white

Ohio Representative – District 39 - Phil Plummer
Address: 77 High Street, Floor 14, Columbus, OH 43215
614-644-8051 Ohioshouse.gov/phil-plummer

Ohio Representative – District 70 - Brian Lampton
Address: 77 High Street, Floor 13, Columbus, OH 43215
614-644-6020 Ohioshouse.gov/brian-lampton

Local Government

City of Dayton, Ohio
Address: 101 West 3rd Street, Dayton, OH 45402

Jeffery Mims– Mayor – 937-333-3653 mayor@daytonohio.gov
Shelley Dickstein – City Manager – 937-333-3600 shelley.dickstein@daytonohio.gov

City of Fairborn, Ohio
Address: 44 West Hebble Avenue, Fairborn, OH 45324

Dan Kirkpatrick – Mayor – 937-754-3030 dan.kirkpatrick@fairbornoh.gov
Mike Gebhart – City Manager – 937-754-3056 michael.gebhart@fairbornoh.gov

City and Township of Beavercreek, Ohio
Address: 1368 Research Park Drive, Beavercreek, OH 45434

Don Adams – Mayor – 214-215-1350 adams@beavercreekohio.gov
Pete Landrum – City Manager – 937-427-5510 manager@beavercreekohio.gov

City of Riverside, Ohio
Address: 5200 Springfield, Suite 100, Riverside, OH 45431

Peter J. Williams – Mayor – 977-233-1801 extension 220 pwilliams@riversideoh.gov
Joshua Rauch – City Manager – 977-233-1801 option 3 citymanager@riversideoh.gov

City of Huber Heights, Ohio
Address: 6131 Taylorsville Road, Huber Heights, OH 45424

Jeff Gore – Mayor – 937-672-7272 jgore@hhoh.org
Richard Dzik – City Manager – 937-237-5837 rdzik@hhoh.org

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APPENDIX C

MEDIA CONTACTS

Media Contacts

Dayton Daily News
https://www.daytondailynews.com/
601 East Third Street
Dayton, OH 45402
(937) 610-7502
Editor: Ashley Bethard

Skywrighter, Online News Source for WPAFB
https://www.wpafb.af.mil/Skywrighter/
5135 Pearson Road, Building 10
Wright-Patterson AFB 45433
(937) 257-1110 - Select option for Public Affairs

WDTN-TV
https://www.wdtn.com/
4595 South Dixie Drive
Dayton, OH 45439
(937) 293-2101

WKEF-TV
https://dayton247now.com/
2245 Corporate Place
Miamisburg, OH 45342
(937) 263-4500

WYSO- Radio
https://www.wyso.org/
150 East South College St.
Yellow Springs, OH 45387
(937) 767-6420

WMUB – Radio
https://www.wvxu.org/tags/wmub-fm
1223 Central Parkway
Cincinnati, OH 45214
(513) 352-9185

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APPENDIX D

MEETING AND REPOSITORY LOCATIONS

Meetings and Repository Locations

Documents on environmental compliance and restoration efforts at Wright-Patterson Air Force Base are maintained through the following repositories:

Administrative Record:
http://afcec.publicadmin-record.us.af.mil/Search.aspx

After accessing the above website, scroll down and click "Continue to site".

- From the "Installation List," under "Active Duty" on the left side of the website, search or scroll down and select "Wright Patterson AFB, OH"
- Click "Search" and scroll down to view the list of documents.
- To open and view a document, click on the magnifying glass icon. Documents may be downloaded and saved once opened.
- Numerous other search blocks can be used to broaden or narrow the list of documents. The administrative Record is also available for viewing online by visiting any public library that provides internet access.

Public Meeting Locations:

Twin Base Golf Course
3565 Communications Boulevard
Wright-Patterson AFB, OH 45433

Wright Brothers Memorial
2380 Memorial Rd,
Dayton, OH 45424

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APPENDIX E

IRP SITE DESCRIPTIONS

Installation Restoration Program Site And Operable Unit Descriptions
Wright-Patterson Air Force Base

Operable Unit 1

OU 1 consists of the following IRP sites:

- Landfill 8
- Landfill 10

OU 1is located near the Woodland Hills family housing units in Area B of the base.

The investigation of OU 1 was divided into two parts: the Source Control OU remedial investigation and feasibility study, which addressed the landfills themselves; and the Off-Source OU remedial investigation and feasibility study, which addressed the surrounding environment media, i.e. soil, groundwater and air.

The Source Control remedial investigation and feasibility study began in 1990 and was completed in 1992 and a report outlining the results was released to the public in May 1992. Base officials found the landfills to contain industrial solvents, such as paint thinners, degreasers, and paint strippers as well as household garbage.

Wright-Patterson AFB, with concurrence from USEPA and OEPA, submitted a Proposed Plan for Landfills 8 and 10 in October 1992. The proposed plan was subject to a 30-day public comment period, which was later extended 30 additional days and completed in December 1992. During the public comment period, a public meeting was held on November 10, 1992. Following the public comment period, base officials issued a ROD on August 12, 1993, for the Source Control Remedial Investigation and Feasibility Study at Landfills 8 and 10.

In the ROD, the base outlined the selected remedies for containing and controlling the landfill contents.

The Off-Source Remedial Investigation and Feasibility Study began in 1990 and was completed in 1993, and a report was released to the public in October 1993. The Off-Source Feasibility Report and subsequent proposed plan were approved by the regulators in January 1994.

<u>Landfill 8</u>

Landfill 8 (LF 8) was operated from 1947 until the early 1970s and received wastes from Area B. The landfill encompasses about 11 acres and contains about 187,000 cubic yards of waste. LF 8 is enclosed by fencing and includes LF 10 and the valley between LFs 8 and 10. The area is posted with "Off Limits" signs.

Based on interview information, four distinct operations were performed at this site:

- general refuse disposal;
- toxic and hazardous chemical disposal;
- acid neutralization; and

- fire training activities north of Building 821.

General refuse was disposed of in a trench and cover operation. The trenches are oriented north to south.

Toxic and hazardous chemicals were disposed of in trenches segregated within the general refuse disposal area. The trenches were adjacent to Building 821, and all non-acid chemical wastes generated within Area B were disposed of in them. The typical operating procedure was to throw the individual glass bottles containing chemicals into the trenches to try to break them.

In addition to the toxic and hazardous chemical disposal area, an acid neutralization area operated on the southern portion of the site. That area included a number of small tanks into which acid was poured from small containers and bottles, and lime was added to neutralize the liquid. After neutralization, the liquid was discharged to the ground and allowed to run off to the nearest stream. Evidence of a lead disposal area was also found.

During the document view, the Base found photographic evidence of fire training activities that were conducted as early as 1948 and continued until the early 1960s.

The area around LF 8 displays relief that is the result of underlying glacial deposits, having been dissected by national drainage. A northerly flowing creek and its tributaries that join Hebble Creek about 0.5 mile north of the site drain this area.

The natural topography of the area has been modified extensively through waste disposal at LF 8 and the construction of Base housing in the area and bunkers for ordnance storage at numerous locations in the valley between the landfills. From 1971 to 1973, the areas around LFs 8 and 10 were developed for Base housing, and the surface of LF 8 was developed as a recreational area. The valley between the two landfills, which contained the bunker access road, was closed to vehicular traffic and was developed as a wooded park with footpath access to both landfills. Construction of the bunkers required land grading, road building, and the installation of culverts. The bunkers have since been removed, but their locations were found on topographic maps and aerial photographs.

During operation of LF 8, general Base refuse containing unknown quantities of oily wastes, organic and inorganic chemicals, and hospital wastes were reportedly disposed of at the site. About 36,000 gallons of chemical wastes were disposed of in LF 8 during its period of operation from 1955 to 1962. Drums were reportedly observed on the surface of LF 8.

Results of the OU 1 remedial investigation indicated that LF 8 was a continuing source of contamination that the contaminants are dispersed throughout the landfill. The concentrations of contaminants in any one location are not indicative of any definitive contaminant sources, such as buried containers. Low levels of some contamination were identified in groundwater in the valley between LFs 8 and 10 and in random locations around the perimeter of the landfills. Releases of contaminants in LF 8 are primarily associated with the production of leachate from refuse and soil. Leachate production is primarily the result of precipitation percolating through the landfill, but groundwater moving laterally through LF 8 is an additional contributor.

Remediation at LF 8 began in September 1994 and capping was completed in October 1996. The action was taken in accordance with the Record of Decision (ROD) for the site and is essentially a Resource Conservation and Recovery Act (RCRA) Subtitle D sanitary landfill closure. LF 8 was capped with an impermeable layer. Landfill gases are collected using a system of extraction wells and treated on-site. Leachate is collected by a system of extraction wells and is directed to the City of Fairborn publicly owned treatment works (POTW).

WPAFB received an NOV in April 2019 for landfill gas (LFG) exceedances at monitoring points adjacent to LF 8 based on measurements at monitoring points located in the backyards of 5 and 7 DuPont Way, which are located immediately adjacent to the north boundary of LF 8. In order to address and resolve the NOV, WPAFB performed the following activities:

- Installed methane detectors with alarms in residences along DuPont Way,
- Conducted daily methane monitoring at DuPont Way from 22 April 2019 through 13 September 2019 at monitoring points LF08-MP10, LF08-MP10A and LF08-MP10B,
- Installed three new monitoring point locations and a passive soil vent between 5 and 7 DuPont Way,
- Installed a sub-slab vapor mitigation system at 7 DuPont Way, and
- Prepared a LF008 Methane Extraction System Evaluation Plan (MES Evaluation Plan).

WPAFB also conducted an investigation in the back yards of residences at 5 and 7 DuPont Way to search for potential sources of methane. The investigation conducted in August 2019 included the installation of five exploratory direct-push borings to a depth of 12 ft bgs in the backyard at 7 DuPont Way to look for buried materials that could potentially result in methane generation through decomposition and two exploratory trenches 10 feet long by 5 feet deep and 2 feet wide in the backyards of 7 and 5 DuPont Way. The trenches were constructed to look for buried materials that could potentially result in methane generation. The trenches were converted to passive vents. Two additional monitoring points were also installed between 7 Dupont Way and LF 8.

The results of the above-described activities indicated that the absence of methane approaching the LEL in monitoring points along the perimeter of the LF 8 and outside of the fence line is evidence that the landfill is not the source of the methane measured in the backyards at 5 and 7 DuPont Way. As a result, Ohio EPA provided WPAFB a Resolution of Violation in September 2019.

Landfill 10

Landfill 10 is located in the northeastern portion of Area B adjacent to LF 8 and covers an area of about 8 acres. LF 10 is enclosed by fencing that includes LF 8 and the valley between LFs 8 and 10. The area is posted with "Off Limit" signs. Past disposal activities and the nature of the environmental problems of LFs 8 and 10 are very similar.

LF 10 was operated from 1965 until 1970 and received waste from all areas of the Base. Both general refuse and hazardous materials were disposed of at the landfill. General refuse was

disposed of by a trench and cover operation; trenches in the northern portion of the site are oriented north to south, and trenches on the southern portion ate oriented east to west.

The remedial investigation found no evidence of contaminant disposal in the trenches reportedly located east of the landfill in the residential area.

During the operation of LF 10, general Base refuse containing unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes were reportedly disposed of at the site. Actual quantities, types, physical states, hazardous constituents, and pollutants disposed of are unknown.

The remedial investigation found that LF 10 was a continuing source of contamination, that the contaminants were dispersed throughout the landfill. Concentrations of contaminants in any one location are not indicative of any definitive contaminant sources, such as buried containers. Low concentrations of some contaminants were identified in groundwater in the valley between LFs 8 and 10 and in random locations around the perimeter of the landfills. There were, however, elevated concentrations of Arochlor 1254 in three shallow soil locations and 4,4-DDT in two shallow soil locations on LF 10. Releases of contaminants from the landfill are primarily associated with the production of leachate from refuse and soil. Leachate production is primarily the result of precipitation percolating through the landfill. Migration of contaminants beyond the boundary of the landfill is limited.

The remediation work at LF 10 that began in September 1994 was completed in October 1996. The action was taken in accordance with the ROD for the site and is essentially a RCRA Subtitle D sanitary landfill closure. LF 10 was capped with an impermeable layer. Landfill gases are collected using a system of extraction wells and treated on-site. Leachate is collected by a system of extraction wells and is discharged to the City of Fairborn POTW. National and Zink Road residents were connected to a public water supply system 1994.

Operable Unit 2

OU 2 consists of the following IRP sites:

- Spill Sites 2, 3, and 10
- Burial Site 1
- Building 89 Coal Storage Pile
- Long-Term Coal Storage
- Temporary Coal Storage
- Coal and Chemical Storage Area

OU 2 is located in the northwestern portion of the base in Area A, near the base above ground fuel storage tanks. The remedial investigation and feasibility study for OU 2 began in 1991 and was completed in August 1996.

Spill Sites 2, 3 and 10

The petroleum, oil, and lubricants (POL) facility was in operation at its present location since the mid-1940s. During that time, a number of leaks and spills were reported, resulting in the IRP sites known as Spill Sites (SS) 2, 3, and 10. The free phase total petroleum hydrocarbon (TPH) observed in several area monitoring wells seem to verify the occurrences.

In February 1992, Wright-Patterson AFB initiated the Free Product Recovery Project that consists of a groundwater depressant pump and treatment system in conjunction with a floating hydrocarbon skimmer pump. The Free Product Recovery System began operation in May 1993; however, because of iron buildup, the system automatically shut down. The system resumed operation in October 1993. The system continued operation until November 1995 when the vapor carbon filters caught fire and burnt down the system. It was agreed that due to the lack of free product recovery the system would not be rebuilt.

The spill sites were investigated as part of the OU 2 remedial investigation. Because benzene, toluene, ethyl benzene, and xylene (BTEX) contamination is present in the soils and groundwater, a feasibility study was conducted. The initial findings of the feasibility study are that natural degradation of the BTEX contamination is occurring and that with abandonment of existing underground fuel lines, the contamination should naturally degrade within about 5 years. Long-term groundwater monitoring of the BTEX groundwater plume will occur as part of the BMP. In March of 1997, a Proposed Plan was issued for monitored natural attenuation (MNA) of the plume with continued long-term monitoring. A ROD for SSs 2, 3, and 10 selecting monitored natural attenuation as the remedy was signed in September of 1997.

All underground piping within the tank dike area was abandoned and replaced with aboveground piping in 1996. The dikes were sealed with a high-density polyethylene (HDPE) liner.

A Remedial Process Optimization (RPO) was initiated in early 2010. The regulatory comments were received on the work plan in May 2010. The objective is to reduce the scope and cost of the long-term monitoring requirements while maintaining the protectiveness of the selected remedies for human health and the environment.

The ROD for SS 2, SS 3, and SS 10 Within OU 2 was signed in September 1997. The selected remedy was in-situ biodegradation of contaminants in subsurface soil, natural attenuation of contaminants in groundwater, institutional controls and subsurface soil and groundwater monitoring. LTM of the BTEX plume was addressed as part of the GWOU and LTM program. The results of a data gap investigation that was performed to collect data to determine whether site closure based on unlimited use/unrestricted exposure could be achieved was successful and confirmed the selected remedy had achieved the cleanup goals. As a result, a Remedial Action Completion Report (RACR) for SPs 2 3, and 10 was prepared and finalized in July 2018. The RACR recommended no further remedial actions under the ROD for SPs 2, 3, and 10.

Burial Site 1

The area designated Burial Site (BS) 1 roughly encompasses two areas in the northeast portion of Area A used from 1966 to 1971 to dispose of fuel tank sludges containing tetraethyl lead. Gasoline storage tank cleaning generated about 700 gallons of lead contaminated sludge each year. Review of historical aerial photographs helped to determine the locations of the two burial areas. Faint indications of trenching were found in recent aerial photographs, but they were later identified to be old garden plots. The trenches may contain the sludge burial pits, but the precise locations of the two areas have not yet been determined. The buried sludges contained tetraethyl lead, other lead compounds, and oily waste.

The results of the OU 2 remedial investigation found that contamination was not present to warrant any remedial action. This site is included in the 21 No Action Site ROD signed in September 1996.

Building 89 Coal Storage Pile

The 6.2-acre Coal Storage Area is on the eastern boundary of Area A adjacent to the City of Fairborn near Building 89. The site was identified in April 1989 through a review of Base aerial photographs. Coal was stored at this site from 1941 through the early 1970s. Low levels of tetrachloroethylene (PCE) were detected in the soils and groundwater at the site. The OU2 remedial investigation indicated levels were low enough that no remedial action is warranted at the site. This site is included in the 21 No Action Site ROD signed in September 1996. The groundwater is monitored under the BMP.

Long-Term Coal Storage Area

The Long-Term Coal Storage Pile (LTCSA) covers about 3 acres. The coal pile was active for about 20 years. The use of three other coal storage areas preceded the use of this site. The CSP was used until early 1989, when the coal inventory was depleted.

The site was investigated as part of the OU 2 remedial investigation which indicated that no further action was warranted. This site is included in the 1996 ROD for 21 No Action Sites.

Temporary Coal Storage Area

The 3.7-acre Temporary Coal Storage Area (TCSA) is in Area A immediately south of Building 147 and about 1,000 feet from the eastern boundary of Area A.

The TCSA was identified in April 1989 during a review of Base aerial photographs. Coal was stored at this site from 1949 to the late 1950s.

Groundwater at the site was investigated during the OU 2 remedial investigation and concluded that no further action was warranted for the site. This site is included in the 1996 ROD for 21 No Action Sites.

Coal and Chemical Storage Area

The Coal and Chemical Storage Area is about 400 feet west of the eastern boundary of Area A adjacent to the City of Fairborn. The storage area is a flat, grass-covered field of about 1-acre. Twenty-five 1-gallon containers of muriatic and sulfuric acids and two ½-gallon containers of carbon tetrachloride reportedly were stored at the site. No staining or discolored soil was evident during site visits in July and August 1988.

Because of the nature of potential contaminants at the site, activities were planned to evaluate the soil and water quality within, and adjacent to the site. Groundwater at the site reportedly flows to the southwest toward several water supply wells both on and off the Base.

An investigation of the site was conducted, and the groundwater was further investigated during the OU 2 remedial investigation. No evidence of contamination was found. This site is included in the 21 No Action Site ROD signed in September 1996.

Operable Unit 3

OU 3 consists of the following IRP sites:

- Landfills 11, 12, and 14
- Fire Training Areas 2, 3, 4, and 5
- Spill Site 1
- Earthfill Disposal Zones 11 and 12

OU 3 is located in the northeastern portion of the base in Area A. The remedial investigation of the operable unit began in October 1992. Activities completed include trenching to determine the landfill boundaries, soil borings, and three rounds of groundwater sampling. The remedial investigation and feasibility study was completed in 1995.

Landfill 11

LF 11 was used for general refuse disposal from 1968 to 1977. It is located over an old channel of the Mad River and covers about 16 acres. Sections of LF 11 are reportedly up to 50 feet deep. Uncovered large refuse including concrete pieces, cut metal storage tanks and several empty drums were reported along the base of the landfill's side slopes. The drums were removed during a removal project in 1990. The side slopes are wooded with a mixture of small to medium trees and shrubs.

The site was initially operated as a trench and cover activity and later as a ramp dump and compaction procedure with daily cover. Various chemical wastes were reportedly disposed of in LF 11, and Base personnel reported fires starting during the compaction procedure. A bulldozer operator extinguished the fires. General refuse containing unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes were reportedly disposed of at this site. Actual quantities, types, physical states, hazardous constituents, and pollutants disposed of

are unknown. The remedial investigation conducted in 1993 confirmed that LF 11 contained characteristic landfill debris and trench and cover cells.

The OU 3 remedial investigation was completed in December 1995. The results of the baseline risk assessment indicated a potential risk to human health within EPA target levels (1×10^{-6} to 1×10^{-4}) from soil containing beryllium, benzo[a]pyrene, dibenzo [a, h] anthracene, and 2,3,7,8-TCDD at LF11. The baseline ecological risk assessment identified a potential risk to small predators (e.g. short-tailed shrews and swallows) and to the Indiana bat, a threatened and endangered species, from zinc in surface soils (less than 2 feet) at LF 11. Detected concentrations of selenium, vanadium, mercury, cadmium and chromium in landfill soils also pose a risk to the Indiana bat.

Because LF 11 is a characteristic municipal sanitary landfill, the presumptive remedies as identified in the Basewide Removal Action Plan were evaluated as an appropriate remedial action for LF 11. The presumptive remedy for LF 11 was surface debris removal, native soil and vegetative cover, surface water run-on/run-off controls, and institutional controls. The native soil and vegetative cover will consist of 18 inches of common soil and 6 inches of topsoil. Fieldwork was completed in June 1997.

Landfill 12

LF 12 was operated from 1968 to 1973. It is located in Area A near the Mad River. The landfill is fenced and covers about 0.7 acres.

LF 12 initially was used for chemical disposal, acid neutralization, and hazardous material storage. Trenches about 2 feet wide by 3 feet deep were used for disposal. Acids were neutralized using the same procedures used at LFs 8 and 10, and neutralized wastes were allowed to percolate into the soil.

The landfill received chemicals originating from research laboratories in Area B as well as chemicals from Area A. The chemical waste removed from the chemical disposal trench at LF 10 during the construction of military family housing units was reportedly disposed of in LF 12. During the late 1970s, LF 12 was used as a storage place for waste chemicals, including materials contaminated with the “herbicide orange.” These materials were reportedly not opened within the storage area and were later moved and disposed of offsite. Exact quantities, type, physical state, hazardous constituents, and pollutants disposed of at the landfill are not known. Drums were removed during a removal project in 1990.

The remedial investigation conducted in 1993 confirmed that LF 12 is a shallow-trench burial site containing numerous containers and glass vials that are partially filled with unknown liquid chemicals. The OU3 remedial investigation was completed in December 1995. Because of the site's small size and the potential threat posed by future releases of unknown buried wastes from it, an engineering evaluation/cost analysis (EE/CA) was prepared along with a design for excavation and offsite disposal. Fieldwork began in October 1997. Excavation was completed in Feb-Mar 1998. The chemicals were characterized on site, bulked according to compatibility, and

segregated by hazardous waste category for off-site disposal. This site was included in the 1998 ROD for 41 No Action Sites. Groundwater is monitored under the BMP.

Landfill 14

Landfill 14 is an oval 4-acre site adjacent to Fire Training Areas 2 and 5 along the northwest edge of Area A. The site was identified on a 1976 Comprehensive Development Plan map. The site is relatively flat and is covered with heavy brush. A site visit revealed the presence of two large pieces of rusted, partially buried metal. The period of use was unknown, and as a result there was a potential for disposal of hazardous substances similar to those disposed of at other landfills on base. There was also a potential for the occurrence of hazardous materials, and for that reason the site was included on the IRP list.

During the remedial investigation conducted in 1993, it was determined that LF 14 was not a traditional sanitary landfill; no evidence of household or commercial refuse was identified. Asphalt rubble discarded electrical wire, concrete rubble, and other construction debris were observed at the surface. The remedial investigation was completed in December 1994 which showed no unacceptable risk associated with the site. This site is included in the 21 No Action Site ROD signed in September 1996.

Fire Training Areas 2, 3, 4, and 5

Fire training exercises were conducted at Fire Training Areas (FTAs) 3 and 4 between 1960 and 1980. Contaminated fuel was stored in a tank north of the site. The fuel was applied directly to the ground and ignited.

FTAs 2 and 5 are located in Area A near the west end of the runway, north of Riverview Road and adjacent to the northeast end of LF 11. The sites are bordered on the northwest by the Mad River and cover about 18 acres.

FTA 2 was operated from 1955 to 1969. During active use of FTA 2, fuels were ignited and extinguished as part of the training exercises. The fuels used for training may have been contaminated with water, oily wastes, hydrocarbon solvents, halogenated solvents, and leaded gasoline. Actual fuel quantities and types of contaminants are not known. FTA 5 was put in service in 1981. Operations at FTA 5 were suspended for several months at various times. Only clean fuels were reportedly used for FTA 5.

Aerial photographs indicate that FTA 2 consists of about 13 individual burn pits. Fire training exercises were conducted there in dirt pits constructed with an earthen berm to retain water. Contaminated fuels were ignited, and fire-fighting foam was used to extinguish the fires. The pits were saturated with water before the burn to reduce infiltration and loss of fuel. The fuel was then ignited and extinguished as part of the fire training exercise.

Unlike other Wright-Patterson AFB fire training areas, only uncontaminated JP-4 jet fuel has been used in exercises conducted at FTA 5. The area has a concrete lining designed to contain all petroleum products used in training. During the exercises, the concrete pit is filled with water and

fuel is added to its surface and ignited. Extinguished agents then applied to extinguish the fire. Two training exercises are held quarterly for Base Fire Department personnel.

On December 30, 1986, about 2,700 gallons of jet fuel was released from a tank used at FTA 5 to store jet fuel for training exercises. This fuel spill was addressed under a bioremediation project conducted from 1987 to 1989 and a bio-venting pilot-project conducted in 1994 by AFCEE.

In October 1992, fieldwork commenced for the OU 3 remedial investigation. The risk assessment for OU 3 indicated that the sites pose no unacceptable risk. This site is included in the 21 No Action Site ROD signed in September 1996.

FTA 5 was reconstructed in 1996 and now uses propane for fire training exercises.

Spill Site 1

Spill Site 1 is the location of a 1,000- to 2,000-gallon fuel spill that occurred north of FTA 3 in 1972. The fuel was reportedly intercepted before it reached the Mad River. A soil gas survey was performed at the Spill Site 1 and FTAs 3 and 4 from December 1989 through January 1990. The results indicate TPH contamination consisting of low levels of BTEX and TPH fuel components.

This site is included in the 21 No Action Site ROD signed in September 1996.

Earthfill Disposal Zones 11 and 12

Earthfill Disposal Zone (EFDZ) 11 is a rectangular site in Area A along both sides of Riverview Road. It is near the Boy Scout Camp and about 200 feet from the middle of the northwestern boundary of Area A.

EFDZ 11 was identified during a review of civil engineering maps in December 1988. Construction debris associated with a Patterson Field runway project in the early 1940s was expected to be present. An area adjacent to the site contains what has been described as “organic muck” on old Base maps. A 25,000-gallon above ground tank may have been situated in the area at one time, but its exact location is unknown. The site is generally flat, but the ground is rough, uneven, and covered with grass and small trees. The potential for contamination exists because of the possible uncontrolled disposal of hazardous materials within the fill. Records indicating the actual extent of the site do not exist

During the OU 3 remedial investigation field activities conducted in 1993, groundwater samples were collected as a part of the long-term monitoring program established under the site inspection. Data obtained from the two rounds of sampling identified no compounds at concentrations above OU 3 background levels. Based on existing conditions it was determined that no significant risk or threat to public health and the environment existed, and no further action was required.

EFDZ 12 is an irregularly shaped area in Area A, south of Buildings 4070 and 4066.

During a review of civil engineering maps in December 1988, EFDZ 12 was identified as an old gravel pit. It was suspected that construction debris associated with a Patterson Field runway project in the early 1940s was disposed of at the site. The gravel pit no longer exists, and the site is generally flat, but the ground is rough, uneven, and covered with grass and small trees. No evidence of construction material is visible on the surface. The site is adjacent to an area where large quantities of organic muck were reported during the construction of the runways at Patterson Field.

Records showing the extent of the disposal activities or the type of material placed in the area are unavailable, and there is no information concerning the composition of the organic muck adjacent to the site. Methods of waste disposal used during the 1940s create a potential for hazardous materials to be present within the fill area.

During the OU 3 remedial investigation, field activities conducted in 1993, groundwater samples were collected as a part of the long-term monitoring program established under the site inspection. Data obtained from the two rounds of sampling identified no contaminants at concentrations above OU 3 background levels. Based on existing conditions it was determined that these sites present no significant risk or threat to public health and the environment and that no further action was required. This site is included in the 21 No Action Site ROD signed in September 1996.

Operable Unit 4

OU 4 consists of the following IRP sites:

- Landfills 3, 4, 6, and 7
- Central Heating Plant 2

OU 4 is located near the southern boundary of the base in Area A.

LF 3 was open during from 1940 to 1944 and accepted general refuse from Areas A and B of the base. LF 4 received general refuse from Areas A and B from 1944 to 1949 and took the place of LF 3 once it closed. LFs 6 and 7 also accepted general refuse from Areas A and B. LF 6 was open from 1949 to 1952; LF 7 was open from 1952 to 1962. The drum staging area was an area where a number of drums were stored prior to sampling and eventual disposal. Approximately 125 drums were stored at this site in 1990. The types, quantities, physical states, hazardous constituents, and pollutants disposed of in LFs 3, 4, 6, and 7 are not known. However, during their operation, general Base refuse containing unknown quantities of oily wastes, solvents, organic and inorganic chemicals, hospital wastes, pesticides, and polychlorinated biphenyls (PCB) were reportedly disposed. The remedial investigation concluded that the groundwater immediately downgradient of OU 4 is contaminated primarily with chlorinated volatile organic compounds (VOCs) and metals, largely from the upper sand and gravel zone. Where present, volatile contaminants were detected at concentrations only one to five times greater than maximum contaminant levels (MCLs). Groundwater contamination issues are being addressed in the BMP.

Landfill 3

LF 3 accepted general refuse from Areas A and B from 1940 to 1944. The landfill was used as a surface dump and burn operation and covered about 3 acres. At present, it is covered with sod and supports the lush grass and small trees of a golf course.

Because LF 3 has an appropriate cover, it was not considered for a presumptive remedy. The leachate/gas wells associated with LF 3 were abandoned. A landfill gas monitoring well was installed between LF 3 and Building 294.

Landfill 4

LF 4 was operated from 1944 to 1949. It was constructed in an abandoned, water-filled gravel pit and covers about 8 acres. The Phase I Investigation reported that large objects, such as automobile bodies, were placed in the pit to bring the grade above the 20 to 30 feet of water in the pit. The presence of automobile bodies has not been confirmed in investigations to date, including excavation work done for the construction of a new roadway on the Base. The landfill was operated as a trench and cover operation for general refuse; the trenches are oriented northwest to southeast. Several small tributaries of Hebble Creek drain this area and flow around and over the landfill. Evidence of a coal pile was discovered just south of LF 4 adjacent to Road Z during a review of historical aerial photographs. The photographs indicate that the coal pile was present from 1944 to about 1969.

Wright-Patterson AFB constructed a new roadway in early 1989 to connect Area A with the new State Route 844 connector and Interstate 675. The Base considered a variety of potential routes for the road and concluded that the most favorable alignment was between State Route 844 and Skeel Avenue. The road traverses a portion of LF 4. To construct the road, the portion of LF 4 now underlying the roadway was excavated in 1988. During excavation, soil samples were analyzed and found to contain organic and inorganic contaminants. Several bottles were uncovered, the liquid contents of which were found to contain 8 to 432 parts per million (ppm) of lead. The Base issued a Partial Stop Order to the Contractor after the discovery of hazardous materials.

Action levels for excavation of LF 4 were established by the Contractor and the Base and concurred on by the OEPA. Subsequent soil sampling allowed partitioning of the area into hazardous and non-hazardous waste sections. The hazardous waste was transported to permitted hazardous waste landfills in Ft Wayne, Indiana, and Toledo, Ohio, whereas the nonhazardous waste was disposed of at a sanitary landfill. About 72,000 cubic yards of waste were disposed of in sanitary landfills and about 42,000 tons of waste was disposed of in hazardous waste landfills. The remaining portion of LF 4 is fenced and paved, and Base Civil Engineering uses it as a storage area.

Because LF 4 has an appropriate cover it was not considered for a presumptive remedy. The gas wells associated with LF 4 are recommended for abandonment. Landfill gas monitoring wells were installed between LF 4 and Building 877, 876, and 867.

In 2009, approximately 1 acre of LF 4, adjacent and west of Hebble Creek Road, was re-engineered with six inches of clay soil and 6 inches of aggregate. The former metal recycling center was

moved off the landfill to alleviate any further scrapping of soil while picking up metals for resale. A RPO was conducted in 2010 to evaluate soil vapor concentrations. Regulatory agencies have commented on the Work Plan in May 2010.

Landfill 6

LF 6 was operated from 1949 to 1952 and received general refuse from Areas A and B. It was conducted as a trench and cover operation in an area covered by about 7 acres. An intermittent stream to the south flows into Hebble Creek. An aerial photograph dated February 4, 1947, indicated that the landfill area may be closer to Communications Boulevard than earlier reports indicate. The remedial investigation ascertained, however, that the landfill did not extend to Communication Boulevard. The landfill area is now used as pastureland.

Presumptive remedies as identified in the Basewide Removal Action Plan for Landfill Caps were evaluated as appropriate remedial actions for LF 6. The presumptive remedy for LF 6 was a native soil and vegetative cover over part of LF 6, and surface water run-on/run-off controls. The native soil and vegetative cover consists of 18 inches of common soil and 6 inches of topsoil. The leachate/gas wells associated with LF 6 were abandoned. Landfill gas monitoring wells were installed between LF 6 and Buildings 1416, 1455, 1454, and 1457. This site was included in the 1998 ROD for 41 No Action Sites.

Landfill 7

LF 7 was operated from 1952 to 1962 and received general refuse from Areas A and B. It was a trench and cover operation covering an area of about 18 acres in size. Refuse was occasionally uncovered during disking and planting operations when the area was used for pasture, indicating only a thin soil cover above the landfill itself. The west side of the landfill has steep 10- to 20-foot slopes where uncovered general trash such as metal pieces, old rubber hoses and concrete rubble was pushed over the edges. Several 55-gallon drums have been exposed as a result of settlement and erosion in the area.

Presumptive remedies as identified in the Basewide Removal Action Plan for Landfill Capping were evaluated as appropriate remedial actions for LF 7. The presumptive remedy for LF 7 was surface debris removal, a native soil and vegetative cover over a partial area of LF 7, and surface water run-on/run-off controls. The native soil and vegetative cover consists of 18 inches of common soil and 6 inches of topsoil. The leachate/gas wells associated with LF 7 were abandoned. In 1998, LF 7 was included in the 41 No Action site ROD. Landfill gas monitoring wells were installed between LF 7 and Buildings 896, 894, and 893. These buildings were removed in 2008, and the landfill cover was completed over the entire landfill.

Central Heating Plant 2

CHP 2 is located in the southern comer of Area A of WPAFB, roughly 2,000 feet east of LF 3 and LF 4 and is in the general vicinity of the golf course. Skeel Avenue is adjacent to the site. CHP 2 began operating between 1940 and 1945 and was shut down in 1980 as part of the base heating plant consolidation. The heating plant had a coal pile adjacent to it throughout its operation. Based

on the review of the 1948 aerial photograph, the coal storage area of the heating plant was contained by a concrete berm.

Based upon the Phase II data, no further action was proposed for this site; however, the site was reopened under the OU 4 remedial investigation as an addendum to the final OU 4 remedial investigation Report that was approved in May 1995. Following the completion of the original OU 4 remedial investigation and during the preparation of the OU 4 Technical Memorandum, evidence of a historic release of mercury was found at CHP 2. On January 18, 1996, a 6-inch vitrified clay storm sewer pipe was severed while excavating a boiler blow-out tank adjacent to CHP 2. Globules of elemental mercury were observed in the sewer pipe. The sewer pipe, which was connected to floor drains within CHP 2, apparently discharged water to a 15-inch storm sewer southeast of the plant. The 15-inch sewer eventually feeds to an 84-inch reinforced concrete storm sewer that discharges to the unnamed tributary between LF 4 and LF 6.

The Base spill response contractor cleaned up the elemental mercury and Base Civil Engineering capped the sewer lines and rerouted existing drains. The discovery of the mercury release at CHP 2 resulted in the need for further investigation.

An addendum to the OU 4 remedial investigation/feasibility study Site-Specific Work Plan (SSWP) was prepared in early 1997. The mercury release was investigated in May and June 1997 in accordance with the approved SSWP addendum. Field work consisted of smoke testing of storm/sanitary drains, dye testing, closed circuit television inspection of storm sewer, sanitary sewer sediment and aqueous sampling, CHP 2 sediment and wipe sampling, surface water and sediment sampling, soil and vadose zone sampling of excavated pit, and CHP-2 drain line cleaning and abandoning. Groundwater sampling was not necessary based on the review of the initial CHP 2 field program results. The maximum concentration of mercury inside of the floor drains of CHP 2 was 594 mg/kg. These floor drains were flushed and entombed with concrete. The 6-inch cast iron storm pipe that parallels the south side of CHP 2 was excavated and sent off as hazardous waste. Mercury globules were observed in the 6-inch pipe and the mercury concentration in the sediment inside the pipe was between 0.15 mg/kg and 1,910 mg/kg. The remedial investigation Addendum Report recommended that no further action of the investigation or remediation be accomplished. This site is included in the 1998 ROD for 41 No Action Sites.

Operable Unit 5

OU 5 consists of the following IRP sites:

- Landfill 5
- Fire Training Area 1
- Burial Site 4
- Gravel Lake Tank Site

OU 5 is also located near the northwestern boundary of the base. The remedial investigation and feasibility study, which began in 1993, was preceded by an interim remedial action adjacent to LF 5. Groundwater monitoring wells revealed a plume of trichloroethylene (TCE) migrating off the base boundary. A temporary air stripper was installed at the boundary to remove the TCE, while a

permanent facility was constructed. The permanent facility came on-line in June 1992. To date, this system has treated approximately 5.8 billion gallons of groundwater and reduced the average TCE levels from 700 parts per billion (ppb) to 7.8 ppb.

Landfill 5

LF 5 is located in the Twin Lakes area between Riverview and Prairie Roads and covers about 23 acres. It lies within the Mad River 100-year floodplain. The landfill was partially fenced with the main entrance controlled by a locked gate. Various operations have taken place at the landfill. It was initially operated during the 1940s as a lumber reclamation area, where scrap lumber was accumulated and sold to the public. It was then a surface dump operation, accepting general residential refuse. The landfill was also the site of a waste petroleum handing operation where two halves of a 10,000-gallon tank were used to burn flammable petroleum waste products. In addition, a 15,000-gallon underground storage tank (UST) was used for 15 to 20 years to collect waste oil, and a 10,000-gallon horizontal steel tank modified to act as an oil/water separator was used in the early 1970s. An off-Base waste oil reclaimer serviced the UST; in 1978 the UST was sold, and the waste oil reclamation operation was discontinued. Fly ash from the Base's heating plants, vegetation wastes from landscaping activities, and debris from construction were disposed of before landfill operations ceased in May 1991, when the Base contracted the off-site disposal of fly ash.

A contaminant plume of VOCs in groundwater has been identified in various studies conducted along the base boundary near LF 5. The contaminant plume, primarily comprised of TCE, was shown to be migrating off base. Wright-Patterson AFB is currently operating a groundwater treatment system (GWTS) to prevent the migration of contaminated groundwater across the base boundary. This system was installed in 1991.

Results of previous investigations suggested that a VOC source may be located near the southwest portion of LF 5. A remedial investigation was conducted in 1993 to identify, if possible, the source of groundwater contamination. Results of the remedial investigation indicate that a point source of VOCs is not located in the southwest portion of LF 5. Also, based on the discovery of a Base map from 1945 designating "Landfill 5 Extension" in the area, it was perceived that LF 5 may extend to the northeast. However, during the remedial investigation, it was determined that this area was not authorized as part of the landfill.

LF 5 was capped under the Ohio Solid Waste regulations. The cap consists of four primary layers in descending order from the top of the cap:

- Vegetative Layer: 6-inch topsoil and 18 inches of common soil for a total depth of 2 feet
- Drainage Layer: provides drainage for infiltrating precipitation
- Low Permeability Layer: provides a barrier to infiltrating precipitation
- Gas Collection Layer: facilitates collection and venting of landfill-generated gases to the atmosphere

The cap was completed in November 1995. This site was included in the 1998 ROD for 41 No Action Sites. An operations and maintenance contract is ongoing. The Groundwater is monitored

under the BMP and mandated under the GWOU ROD. A RPO for the GWTS and a capture zone study were conducted in 2009. Objectives are to improve remedy effectiveness and efficiency, reduce life cycle, confirm site closure strategy while still protecting human health and the environment.

To date, contaminant levels continue to decrease as a result of the operation of the GWTS at LF 5. A limited area within the Miami Conservancy District property, in the area of wells MW132S and CW10-055, was also investigated to determine why TCE concentrations remain above the MCL.

Fire Training Area 1

FTA 1 was operated from 1950 to 1955. Contaminated fuels were burned in a dirt pit with a surrounding earthen dike after first saturating the ground with water to reduce infiltration.

Groundwater wells around the site perimeter indicate sources of low-level total hydrocarbons and VOC contamination. Elevated levels of aluminum and iron were detected in one sample. These levels do not pose an unacceptable risk at this site. This site is included in the 21 No Action Site ROD signed in September 1996.

Burial Site 4

BS 4 is located in Area A along a narrow, wooded stretch of Marl Road. BS 4 extends more than 2,000 feet along the north side of Marl Road and is about 30 to 40 feet wide. The site was identified on a Base map dated July 1945. At one time, a temporary chemical warfare structure believed to have been used for tear gas training was located near the site. Indications of past backfilling activities, including 10 to 15 drums scattered throughout the site area, were visible. The drums had no discernible marks or labels indicating their contents. Three were corroded and contained only remains of the original contents. They were removed as part of the drum removal project in 1990. No information exists that would verify a chemical warfare structure was associated with the site.

The site was investigated under the 16 new IRP site investigations. Additional groundwater data was gathered during the OU 5 remedial investigation. Based on existing conditions it has been determined that this site presents no significant risk to public health and the environment. This site is included in the 21 No Action Site ROD signed in September 1996.

Gravel Lake Tank Site

The Gravel Lake Tank Site (GLTS) is about 2,200 feet east of the western boundary of Area A. Twin Lake is west of Gravel Lake. The site is covered with brush.

The Tank Site was identified on a Base map dated July 1945. The site appeared to contain tank sludge and four tanks. The map did not indicate the size of the tanks or whether they were above or below ground. The composition of the sludge was unknown. An April 1989 site visit indicated that past backfilling and earthwork had been performed, but no evidence of the tanks was found. The site was investigated under the 16 new IRP site investigations. Additional groundwater data was gathered during the OU 5 remedial investigation. Based on existing conditions it was

determined that this site presented no significant risk or threat to public health and the environment. This site is included in the 21 No Action Site ROD signed in September 1996.

Operable Unit 6

OU 6 consists of the following IRP sites:

- Landfills 1 and 2
- Earthfill Disposal Zone 1

OU 6 is located near the City of Riverside in the southern portion of the base in Area B. The remedial investigation and feasibility study for OU 6 began in August 1993. Because of the investigation's close proximity and high visibility, a number of public affairs activities were conducted to inform the residents about the investigation.

Specifically, base officials briefed the Mad River Township Board of Trustees on the details and stages of the investigation. In addition, two letters were mailed out to each Village of Riverside and Mad River Township resident.

As the remedial investigation progressed, the first round of groundwater sampling was completed in December 1993, and a private well survey was completed in January 1994. In addition, trenching to determine the landfill boundaries and soil borings were completed.

Landfill 1

LF 1 was operated from the 1920s through 1940. Landfill operations consisted of surface disposal and burning. The facility served only Area B and received small quantities of chemical wastes from research facilities. The site encompasses about 4 acres and is located in an old gravel quarry. During a search of historical records, an aerial photograph from 1948 was obtained that accurately locates the landfill area.

General Base refuse containing unknown quantities of oily waste, and organic and inorganic chemicals reportedly were disposed of at the site. Actual type, quantities, physical state, hazardous constituents, and pollutants disposed of were unknown.

The OU 6 remedial investigation (LF 1, LF 2, and EFDZ 1) was performed in 1993 to 1994. LF 1 was determined to be about 4 acres in size and has a maintained, grassy topsoil cover. A distinct cover layer consisting of clay, silty clay, silt, or silty sand directly overlies the fill in most areas.

The fill includes construction debris and a black ash-like material in some areas, which extends to a depth of about 18 feet below ground. Two buried trenches with large ferrous objects were found in the northern portion of LF 1 using geophysical techniques. A prominent relatively impermeable 40-50 foot-thick till unit was encountered roughly 25 feet below ground, which may limit the vertical migration of contaminants. Low-level volatile and semi-volatile organic compounds, three pesticides, and five metals detected in refuse/fill exceeded background concentrations of those materials. Given the limited zones in which contaminants were found in the soils, it is unlikely that they represent laterally or vertically extensive subsurface contamination. Exceedances of metals

concentrations (nickel and chromium) in groundwater occurred, but without evidence of a migrating metals plume. There are no receptors exposed to contaminants in soil and groundwater at LF 1.

Presumptive remedies as identified in the Basewide Removal Action Plan for Landfill Capping were evaluated as appropriate remedial actions for LF 1. The presumptive remedy for LF 1 was a native soil and vegetative cover, and surface water run-on/run-off controls. The native soil and vegetative cover consists of 18 inches of common soil and 6 inches of topsoil.

Landfill 2

LF 2, also called Tillman Pit, was initially a gravel pit, about 23 acres in size. From the early 1940s to 1951, the landfill was operated as a surface dump for general refuse from Area B. Refuse was placed into gravel pits in direct contact with groundwater. From 1951 to 1975, after the landfill was closed, the site was used as a superficial landfill disposal area. This site is in the far southwest corner of Area B. It is drained by Lilly Creek, a tributary of the Mad River that flows along the southwest border of LF 2. During the review of historical records in November 1988, several aerial photographs show the landfill operation from the date of runway construction in Area B to the completion of filling activities.

General Base refuse containing unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes were reportedly disposed of in LF 2. Actual quantities, types, hazardous constituents, and pollutants disposed of were unknown.

The remedial investigation of OU 6 was carried out from 1993 to 1994. LF 2 was determined to be about 15 acres in size. It has a densely vegetated or forested topsoil cover, and several small piles of surficial construction debris, which are located outside the estimated limits of the buried waste. Other surficial deposited debris containing household items and automobile parts was likely dumped by trespassers before the entire LF 2 area was securely fenced in 1990. Concentrations of low level volatile organic compounds, three pesticides, and seven metals detected in the refuse exceeded background levels. The random low-level detections of potential site-related contaminants probably do not represent laterally or vertically extensive subsurface contamination. Even though low-level PCE concentrations (less than 6 ug/L) were found in the groundwater upgradient and within LF 2, no exceedances in drinking water standards occurred at the down gradient boundary. Drinking water standards for cadmium, chromium, and nickel were exceeded on-site; but most of the metals were present at concentrations not statistically different than background and no migrating metals plumes were identified. There is no evidence that LF 2 has affected the private drinking water wells based upon evaluation of the remedial investigation sampling data.

Lilly Creek does not appear to have been affected by LF 2. Lilly Creek is an intermittent, losing stream located hydraulically upgradient of LF 2. Concentrations of compounds detected in surface water/sediments were not significantly different than background levels.

Presumptive remedies as identified in the Basewide Removal Action Plan for Landfill Capping were evaluated as appropriate remedial actions for LF 2. The presumptive remedy for LF 2 was

surface debris removal, a native soil and vegetative cover over non-forested area, and surface water run-on/run-off controls. The native soil and vegetative cover consists of 18 inches of common soil and 6 inches of topsoil. This site is included in the 1998 ROD for 41 No Action Sites. An operation and maintenance contract was awarded in March 1999 to ensure that the soil cover and drainage system are kept intact is ongoing.

Earthfill Disposal Zone 1

EFDZ 1 is one of eight disposal sites used by the Base in the 1940s for disposal of earthfill. This site is located in the southwest corner of Area B near LF 2 east of the original location of Harshman Road, which now crosses it. The original fill material at EFDZ 1 was probably disturbed and redistributed during location of Harshman Road.

The historical drawing identifying the site indicates that about 80,000 cubic yards of fill material was to be deposited there during the 1940s. The site covers an area of about 23 acres.

There is no indication that hazardous materials were disposed of at the site. However, materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes.

The OU 6 remedial investigation, which addressed LF 1, LF 2 and EFDZ 1, was conducted in 1993 to 1994. A previous investigation of EFDZ 1 was conducted in 1992. EFDZ 1 consists of three areas: two of which are on-base (EFDZ 1A and EFDZ 1B) and one which is off-base (EFDZ 1C). EFDZ 1C is currently a community park maintained by the City of Riverside. It is roughly 4 acres in size with a maintained, grassy topsoil cover. No fill materials were encountered during drilling operations in the Community Park. The presence of polyaromatic hydrocarbons in EFDZ 1C surface soils is likely influenced by the asphalt walking path in the community park and automobile exhaust and road runoff from Harshman Road, a heavily traveled thoroughfare adjacent to the park. There is no evidence of groundwater contamination associated with this site.

Based on existing conditions it has been determined that no significant risk or threat to public health and the environment exist. This site is included in the 21 No Action Site ROD signed in September 1996.

Operable Unit 7

OU 7 consists of the following IRP sites:

- Landfill 9

Landfill 9

LF 9, also known as Sandhill, was operated between 1962 and 1964. Pits A and B were used as a sand and gravel removal for construction material and later may have been filled with construction debris. The pits cover about 14.5 acres. Pits A and B were fenced in June 1994 because of the site locations and the potential for direct contact.

The actual landfill, as determined by geophysical surveys during the preliminary remedial investigation and personal interviews conducted in November 1994, is located 1/4 mile north of Pit A. This is now known as Pit C. The geophysical surveys and trenching surveys suggested that buried debris was not present in Pits A and B.

Field investigations to determine contaminants present at Pit C were conducted in the fall of 1995. Semi-volatile compounds and pesticides were detected in minor concentrations (less than 180 µg/kg and 74 ug/kg, respectively) in the surface soils. Sediment samples contained low levels of volatile organic compounds, with the highest concentration of TCE at 210 ug/kg, and semi-volatile compounds, with the highest concentration of fluoranthene at 160 ug/kg.

The remedial investigation was completed in November 1996.

Presumptive remedies as identified in the Basewide Removal Action Plan for Landfill Capping were evaluated as appropriate remedial actions for LF 9 (Pit C). The presumptive remedy for LF 9 (Pit C) was a native soil and vegetative cover and surface water run-on/runoff controls. The native soil and vegetative cover consists of 18 inches of common soil and 6 inches of topsoil. This site is included in the 1998 ROD for 41 No Action Sites. An operations and maintenance contract is ongoing.

Operable Unit 8

OU 8 consists of the following IRP sites:

- Spill Sites 5, 6, 7, 9 and 11
- Underground Storage Tank 71A

Spill Site 5

Spent fuels and solvents were flushed down a sink in Building 70, Area B, to an oil/water separator and scrap tank. It was discovered in 1988 that the scrap tank was inadvertently removed when several other USTs were removed from the area in March 1985. When the area was excavated to verify this, contaminated soil and fuel odor were detected to 12 feet below ground surface. The pipe leading to the tank was not capped, but surrounding soil was not discolored. Further investigation showed that approximately 20 to 50 gallons of liquid had spilled while the tank was being moved. Much of the fuel was recovered, but contaminated soils were not excavated.

A soil vapor survey identified potential pathways of TPH. Petroleum-related VOCs and BTEX were detected in soil samples as part of the OU 8 remedial investigation. Additional monitoring wells were installed as part of a pre-design investigation for a bioslurper and bioventing removal action. A treatability study was initiated in March 1997 utilizing a trailer-mounted bioslurper unit to address the downgradient area of petroleum contamination. The bioslurper has since been shut down. This site was included in the 1998 ROD for 41 No Action Sites.

Spill Site 6

Spill Site 6 was discovered in 1985 when an electrical transformer containing PCBs was found to be leaking. About 100 to 200 gallons of oil is thought to have spilled at the site.

In 1986, the transformer and supporting concrete pad were moved. Site soils were removed from an area of about 20 by 26 feet to a depth of 4-1/2 feet. The excavated soils were disposed of off-base as PCB waste. Soil samples taken from the bottom of the excavation showed PCB concentrations as high as 5,000 ppm. Plastic sheeting was laid over the excavation.

Additional soil was removed in 1987. Up to 4 feet of soil was removed from an area of about 20 by 31 feet. Soil was removed to a depth of 7 feet over an area 6 by 17 feet within the shallower excavation. The excavated soils were disposed of off-base as PCB waste. Soil samples taken at depths between 7 and 10 feet showed PCB concentrations as high as 20,000 ppm. The excavation was backfilled with sand and gravel.

In 1988, an investigation was conducted to determine the vertical and lateral extent of PCB contamination. Thirteen soil borings were drilled, and 37 soil samples were analyzed for PCBs. PCB contamination ranging from 42 to 12,000 ppm was found at depths of 5 to 21 feet with the greatest concentrations found between 13 and 21 feet. The lateral extent of PCB contamination was confined to an area roughly 10 feet square.

An additional investigation was conducted in 1990 to better refine the area of PCB contamination before cleanup. Seven soil borings were drilled, 24 soil samples were field screened, and five soil samples were analyzed for PCBs. PCB contamination as high as 11,000 ppm was found at depths up to 24 feet. The investigation concluded that PCB contamination probably extended vertically to a depth of about 30 feet, where a confining clay layer exists. The U.S. Army Corps of Engineers (USACE) recommended that an area roughly 8 feet square be excavated down to the clay layer. An area of PCB contamination roughly 5 square feet adjacent to the deep excavation would also be excavated to a depth of 7 feet under the Corps' recommendations.

In September 1991, Wright-Patterson AFB awarded a contract to excavate the PCB contaminated soils per USACE recommendations. Fieldwork was approved through the OEPA and completed between March and May 1992. Roughly 120 cubic yards of PCB-contaminated soils were excavated from and disposed of at Model City Landfill, New York. Verification samples taken from the sidewalls and bottom of the finished excavation indicated that PCB contamination was less than 15 ppm, which is below the remediation goal of 50 ppm. This site is included in the 1998 ROD for 41 No Action Sites.

Spill Site 7

This site was an active fuel storage area consisting of 12 USTs (four 12,000-gallon tanks and eight 20,000-gallon tanks). Twelve 25,000-gallon tanks were removed, and the site was remediated under a FY 91/92 Military Construction (MILCON) project, and twelve new fiberglass tanks were installed. Site investigation and corrective action were performed under the UST program. Five million dollars of MILCON funds was dedicated to the removal and replacement of the tanks, and

an additional $1 million in environmental compliance funds was dedicated to contaminated soil removal. *Tank Removal and Disposition* reports for Tank Farms B and F were accepted for closure by the State Fire Marshal (SFM) in June 1993. This site is included in the 1998 ROD for 41 No Action Sites.

Spill Site 9

In April 1989, fuel odors were detected during the installation of four new USTs. Four abandoned underground fuel lines were discovered. The lines were capped in the 1970s. This resulted in a Notice of Violation (NOV) from the SFM; minera1 spirit odors were detected in a drainage sump in Building 253 during a site visit in 1989 by the SFM and USEPA.

Spill Site 9 was expanded to include the entire Tank Farm B.

A site investigation and corrective action was performed under the UST program. The SFM closed out the NOV in April 1993. This site is included in the 1998 ROD for 41 No Action Sites.

Spill Site 11

This site operated from 1967 as part of the aircraft survivability/vulnerability range to test aircraft fuel tanks and other components. Over the years, small quantities of fuel were released as a result of testing operations. Various containment systems were installed at the facility and upgraded to allow for fuel releases. However, heavy rainfall events flushed petroleum out of the relatively shallow vadose zone and into storm drains and adjacent drainage ditches. Shallow soil borings were installed as part of the OU 8 remedial investigation. Two localized areas of high TPH concentrations in soils were defined. As a result of the facility structure, the primary emphasis for removal action at the site was to prevent the migration of fuel released to the surface. A French Drain was constructed which ties into the existing oil/water separator. This site is included in the 1998 ROD for 41 No Action Sites.

Underground Storage Tank, Building 71A

Six tanks near the Aero Propulsion Laboratory were used to store jet fuel and gasoline. When removed, no signs of leakage were found.

As part of the OU8 remedial investigation, low levels of TPH were detected in the shallow saturated zone soils and vadose zone soil. TPH concentrations in the saturated zone were elevated downgradient of the site. The downgradient-saturated zone was addressed with a bioslurper/bioventing system. This site is included in the 1998 ROD for 41 No Action Sites.

Operable Unit 9

OU 9 consists of the following IRP sites:

- Earthfill Disposal Zone 2, 3, 4, 5, 6, 7, 8, 9 and 10
- Burial Site 3

- Central Heating Plant 5
- Deactivated Nuclear Reactor

EFDZs 2 through 10 are all located in the southeast and southwest corner of Area B. Each of the EFDZ contain construction debris such as concrete, rocks, and tree limbs. The remedial investigation and field work were completed in December 1996.

Earthfill Disposal Zone 2

EFDZ 2 is in the southwest corner of Area B west of M Street. The historical drawing identifying the site indicates that about 19,000 cubic yards of fill material were to be deposited during the 1940s. The site covers an area of about 2 acres.

There is no indication that hazardous materials were disposed of at the site. However, materials similar to those disposed of at other landfills on the Base may have been transported to this site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes.

Sampling was conducted as part of the OU9 remedial investigation. Based on existing conditions it has been determined that the site poses no significant risk, and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 3

The historical drawing identifying the EFDZ 3 site indicates about 35,000 cubic yards of fill material were to be deposited during the 1940s. It is about 4 acres and is located in the southwest corner of Area B, west of M Street and south of the Accelerated Runway.

There is no indication that hazardous materials were disposed of at the site. Materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes. Initial groundwater long-term monitoring requirements were conducted as part of the OU9 remedial investigation. Based on existing conditions, it has been determined that the site poses no significant risk, and no further action was required. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 4

EFDZ 4 is in the southeast corner of Area B, south of the Accelerated Runway and west of EFDZ 7. The historical drawing identifying the site indicates that 355,000 cubic yards of fill material were to be deposited during the 1940s. The estimated size of the site is 35 acres. After placement of the fill, 13th Street was constructed over the fill cover. There is no indication that hazardous materials were disposed of at the site. Materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes. Sampling was conducted as part of the OU9 remedial investigation. Based on existing conditions it was determined that the site

poses no significant risk, and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 5

EFDZ 5 is in the southeast comer of Area B, between Q Street and the installation boundary along National Road. Its estimated size is 9 acres. The historical drawing identifying this site indicates that 10,000 cubic yards of fill material were to be deposited during the 1940s. A historical aerial photograph shows that a vehicle storage area was once located in the northeast comer of the site. Exposed scrap metal and building foundation waste have also been observed. There is no indication that hazardous materials were disposed of at the site. Materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes. Sampling was conducted as part of the OU 9 remedial investigation. Based on existing conditions, it has been determined that the site poses no significant risk, and no further action is proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 6

EFDZ 6 is in the southeast comer of Area B, southeast of the corner of R Street and Fifth Street. Building 453 was constructed since the 1940s when the area was used as a disposal site. Its estimated size is 6 acres. The historical drawing identifying the site indicates that 5,000 cubic yards of fill material were to be deposited during the 1940s. An undated, historical aerial photograph depicting the site shows barracks over the entire area. There is no indication that hazardous materials were disposed of at the site. Materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes.

Initial long-term groundwater monitoring was conducted as part of the OU9 remedial investigation. Based on existing conditions it has been determined that the site poses no significant risk, and no further action is proposed. The need for additional groundwater sampling is being assessed under the BMP. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 7

EFDZ 7 is in the southeast corner of Area B, along M Street, south of the Accelerated Runway and extending south of Loop Road. The site is a long narrow strip about 5 acres in size. After possible placement of fill in this area, 13th Street was constructed and now crosses the site. Portions of the area not occupied by streets are covered with grass. There is no indication that hazardous materials were disposed of at the site. Materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes.

Initial long-term groundwater monitoring was conducted as part of the OU9 remedial investigation. Based on existing conditions it has been determined that no significant risk existed,

and no further action was proposed. The need for any additional groundwater sampling was addressed under the BMP. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 8

EFDZ 8 is located in the southeast comer of Area B on the east side of M Street north of the Recreational Vehicle Storage Area. Its estimated size is 9 acres. This site was not included on the historical drawing which identified the other seven EFDZ sites. The drawing, which identified this site notes that "The purpose of this drawing is to provide new finished contour grades in the event this area is used for the disposal of waste earth excavation," but does not indicate the quantity of material placed in this area. An undated, historical aerial photograph of the site depicts several areas of bare ground with narrow roads. There is no indication that hazardous materials were disposed of at the site. Materials similar to those disposed of at other landfills on the Base may have been transported to the site, including unknown quantities of oily wastes, solvents, organic and inorganic chemicals, and hospital wastes.

Initial long-term groundwater monitoring was conducted as part of the OU 9 remedial investigation. Based on existing conditions it has been determined that the site posed no significant risk, and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 9

EFDZ 9 covers about 13 acres in Area B between Buildings 470 and 620. It is an active hardfill area for Base maintenance activities. EFDZ 9 was identified as a potential waste site during review of aerial photographs dating from the early to mid-1950s. It was suspected that filling activities were conducted before controlled disposal practices were initiated.

A site visit conducted in November 1989 confirmed the presence of construction debris from past backfilling activities. The types of debris disposed of include fill dirt, concrete, asphalt, and brush. Since information concerning the types of materials disposed of at this site before 1977 is unavailable, EFDZ 9 was identified as an area that may contain hazardous materials.

Additional sampling was conducted as part of the OU9 remedial investigation. Based on existing conditions it has been determined that the site poses no significant risk, and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Earthfill Disposal Zone 10

EFDZ 10 is a 15-acre, partially wooded site in Area B and southwest of Building 620. EFDZ 10 was discovered during the November 1988 review of aerial photographs dating from the early to mid-1950s. Surface evidence indicates past backfilling activities and the presence of construction and demolition debris, including broken concrete, asphalt, and lumber products. Base Fire Department personnel indicated that the site may contain radioactive material, because a storage building used in the late 1960s and early 1970s for small quantities of radioactive material stands within the fill area. In December 1988, portions of the site were randomly surveyed for elevated

external gamma radiation using an Eberline ESP2 meter with a Bicron Fiddler probe. Results showed no levels of gamma radiation above 200 to 300 counts per minute, which is the instrument's background level. No records of site activities or dates to confirm the presence of contamination have been found.

Initial long-term groundwater monitoring was conducted as part of the OU9 remedial investigation. Based on existing conditions it has been determined that no significant risk exists, and no further action is proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Burial Site 3

BS 3 is in Area B, adjacent to Gate 22B at the southeast boundary of Area B. BS 3 was identified from a monthly Research and Development report during the IRP Phase I1 Stage 2 investigation. The size and exact location of the site is unknown. However, through communication with Base personnel and in reviewing air photos, the location of BS 3 was determined with reasonable certainty, and it is suspected that BS 3 may have been used to dispose of fuel sludge. Under the OU9 remedial investigation an additional well was installed, and initial long-term groundwater monitoring was conducted. Based on existing conditions it has been determined that the site poses no significant risk, and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Central Heat Plant 5

Central Heating Plant (CHP) 5 (Building 770) contains three coal-fired boilers and two gas-fired boilers. The plant began operation in 1956 and was expanded in 1980.

CHP 5 is located on the northern boundary of Area B on Kauffman Avenue. The adjacent coal pile is contained in an area having a concrete pad and 2-foot retaining walls.

Runoff from the coal storage area and other aqueous waste effluent streams are blended and clarified in a three-stage process before discharge into the storm drainage system. The project to upgrade the heating plant and to construct a neutralization system to treat coal pile runoff before discharge was completed in 1996.

Coal pile leachate and runoff streams were sampled as part of the OU 9 remedial investigation. Subsequent to the OU 9 remedial investigation field activities at the Defense Reutilization and Marketing Office (DRMO), utility line workers encountered unidentified vapors with a fuel oil odor, while repairing a communications line. This event initiated the DRMO Supplemental Investigation. The Supplemental Investigation was conducted in November 1996. The most significant findings were semi-volatile compounds in the soils. Traces of PCBs and chlorinated herbicides and pesticides were detected. VOCs detected in groundwater were below respective MCLs. Based on the risk assessment no further action was proposed for the interior of the DRMO facility. A removal action for the elevated Polycyclic Aromatic Hydrocarbons along the adjacent fence line perimeter road occurred in the spring of 1998. This site is included in the 1998 ROD for 41 No Action Sites.

Deactivated Nuclear Reactor

The Air Force Nuclear Engineering Center at Building 470 was a 10-megawatt reactor that was cooled and moderated with de-mineralized water. The reactor was completed in 1965 with criticality achieved in April. The Nuclear Regulatory Commission (NRC) exempted the facility under Section 91B of the Atomic Energy Act of 1954, as amended. The reactor operated for 5 years supporting various projects for Defense Agencies, civilian institutions, and Air Force engineering students.

The reactor was shut down on June 12, 1970, and decommissioning of the reactor began in July 1970; the reactor was declared decommissioned on July 1, 1971. The decommissioning entailed removing the fuel rods for reprocessing. The primary vessel was drained and dried and the penetrations were sealed. Cavities were partially filled with hot dry sand and capped with an additional biological shield. Radioactive waste was shipped to a commercial low-level radioactive waste disposal facility. Contaminated liquids, primarily cooling water, were released to the sanitary sewer in accordance with 10 Code of Federal Regulations (CFR) 20. The primary and auxiliary cooling systems remained in place.

The primary and auxiliary cooling systems consisted of USTs (three 60,000 gallon, two 5,000 gallon, one 10,000 gallon, and one 500 gallon), pipes, values, sumps, and pits. The systems were removed in 1992. The water was filtered through resin beds and disposed of as wastewater. The resin beds and contaminated material were disposed of as radioactive waste. In addition, the cathodic protection system on the reactor dome was replaced.

Radiological monitoring is conducted semi-annually outside the facility, as part of an NRC requirement. Monitoring inside the facility is conducted quarterly which consists of ambient air surveys, swipe surveys, and air monitoring.

Groundwater monitoring of existing wells in the vicinity of the reactor was conducted in late 1994 and early 1995, as part of the OU 9 remedial investigation. Additional wells were also installed at this time in the vicinity of the reactor as part of the investigation of the adjacent EFDZ 9 site. Based on existing conditions it was determined that no significant risk existed, and no further action was proposed. The groundwater is being assessed by the LTM Program. This site is included in the 1998 ROD for 41 No Action Sites.

Operable Unit 10

OU 10 consists of the following IRP sites:

- Landfill 13
- Tank Farm 49A
- Central Hearing Plant 3
- Underground Storage Tank Building 119
- Spill Site 4
- East Ramp UST

OU 10 encompasses most of the industrialized portion of Area A, near Wright Avenue, including the shops used for aircraft and equipment maintenance, underground storage tanks in the area, former coal storage areas, and LF 13.

The remedial investigation began in November 1993, with preliminary fieldwork and the soil gas survey. The remedial investigation and feasibility was completed in 1996.

Landfill 13

LF 13 covers 4 to 5 acres and was operated as an open dumpsite for about 20 years. The Base's historic aerial photographs show that the landfill was active from 1922 to 1940. The duration of the operation and the nature of the disposal are not clearly known. Refuse and wastes appear to have been placed in direct contact with groundwater.

Airplane parts and engine parts were reportedly disposed of at the site per discussions with former Base personnel. The landfill appeared to be almost completely filled in a 1940 photograph.
The site was investigated as part of the OU 10 remedial investigation. Based on existing conditions it has been determined that this site presents no significant risk or threat to public health and the environment. This site is included in the 21 No Action Site ROD signed in September 1996.

Tank Farm 49A

While installing cathodic protection in June 1988, leaks were discovered in UST 209 (saturated surface soil) and in the pipe to abandoned UST 215. During tracer monitoring of the tank farm in 1989, leaks were also detected in USTs 210 and 213. Vapor monitoring indicated leaks near the tank top, indicating that the tank leaked only when full. VOC contamination was well below MCLs.

A soil vapor survey conducted in September 1988 detected some contamination. Soil and groundwater samples detected jet-fuel compounds with no evidence of free product. A $5.4 million MILCON project in 1993 included the removal of tanks at tank farm 49A The State Fire Marshal issued a letter on September 15, 1994, recommending that no further action be taken. About 10,000 cubic yards of petroleum-contaminated soil was removed from the site, which was being treated by thermal desorption.

The site was investigated as part of the OU 10 remedial investigation. Based on existing conditions it was determined that this site presented no significant risk or threat to public health and the environment. This site is included in the 21 No Action Site ROD signed in September 1996.

Central Heating Plant 3

CHP 3 is located along the northeast boundary of Area A. The plant began operation in either 1939 or 1940 and was shut down in 1980. Steam was generated using coal stored adjacent to CHP 3. The coal pile was reportedly contained in an area having a concrete pad. Runoff also drained to the storm drainage system. The coal pile was removed, and CHP 3 was closed.

The plant currently collects condensate for use in CHP 4. The low-grade steam flashed from the condensate is used for building heat. Spent acid from the ion exchange process used for boiler feed water treatment is neutralized with soda ash and discharged into a storm sewer.

In 1990, a burial site containing dry cell batteries was discovered adjacent to the heating plant. The site was investigated under the OU 10 remedial investigation. No contamination was found associated with the heating plant's former coal pile. Lead was found at low levels in the battery burial area but did not warrant remedial action.

Based on existing conditions at CHP 3, it has been determined that this site presents no significant risk to public health and the environment. This site is included in the 21 No Action Site ROD signed in September 1996.

Underground Storage Tank Building 119

This site is located at the Area A BX Service Station. During tracer leak testing in 1989, USTs 303 and 304 (acting as one unit) were found to be leaking. Soil boring samples detected VOCs below preliminary remediation goals, except at 8 to 12 feet and the top of the saturated zone at 30 to 32 feet. Groundwater samples detected VOCs well below their MCLs except for benzene. No free product was detected.

Five USTs (303-306 and 57) were all removed on August 9 and 10, 1994. Contaminated soil was removed beneath the site, and the excavation was filled with clean till. The Bureau of Underground Storage Tank Regulations approved closure of the site. This site is included in the 21 No Action Site ROD signed in September 1996.

Spill Site 4

SS 4 is in the southcentral section of Area A in OU 10. It is adjacent to the west side of Building 172, about 1,500 feet west of the Base boundary at Gate 35C.

SS 4 was discovered in March 1988 during construction of a water supply line on the west side of Building 172. Gasoline odors were detected, and so two soil samples were taken and analyzed for VOCs and lead. A UST was previously located at the site, and a spill or leak from the UST was presumed to be the source of the petroleum contamination. The UST was reportedly removed in 1983, as confirmed by excavations; however, steel piping associated with the UST is still in place. The UST was used as an emergency gasoline supply tank for water pumping equipment contained in the building. No information exists on the size or construction specifications of the tank or system. The UST contained leaded gasoline, but no inventory or operational records exist.

The soil excavated for the water supply line was removed and uncontaminated material was placed in the excavation. The site was closed, and no further action was proposed for the site. This site is included in the 1998 ROD for 41 No Action Sites.

East Ramp Underground Storage Tank

The East Ramp UST is located adjacent to the tarmac south of Building 100 in Area A and about 1,900 feet west of the Base boundary near Gate 1C.

The East Ramp UST was part of a gasoline refueling system. It was abandoned in place before 1970. Records indicate the tank had a capacity of 12,000 gallons. It contained leaded gasoline, but no inventory or operational records exist because of the length of time the tank has been out of service. In December 1988, the UST was removed as part of a MILCON Program. Excavation of the tank revealed it was partially encased in concrete and filled with a caustic solution to prevent deterioration, and thus in excellent condition.

During excavation, minor contamination was encountered at a depth of about 12 feet in the vicinity of the fill pipe connection to the tank. Samples of the contaminated soil were taken from the excavation. Visibly contaminated soil was segregated and placed on plastic sheeting for proper disposal. Because the tank was partially encased in concrete and the base of the tank was about 20 feet below grade, a considerable volume of soil was excavated to remove the tank. No further evidence of soil contamination was found during the excavation, and the tank was removed and disposed of.

In February 1991, a Site Disposition Report was prepared to meet requirements for closure of the East Ramp UST site under the Ohio Department of Commerce, Division of the SFM, BUSTR and the U.S. EPA regulations for USTs. As part of the site assessment for the report, five soil samples and two groundwater samples were taken and analyzed for contaminants associated with fuel storage. The report concluded that no additional corrective action was warranted for the site. This site is included in the 1998 ROD for 41 No Action Sites.

Operable Unit 11

OU 11 consists of the following IRP sites:

- Burial Site 2
- Chemical Disposal Area
- Building 4020 Underground Storage Tank

The scoping and site-specific work plan for OU 11 was developed and the remedial investigation and fieldwork was completed in the summer of 1996.

Burial Site 2

BS 2 at the northwest corner of the Base was in operation from 1971 to 1975. Sludge containing tetraethyl lead from bulk fuel storage tanks was deposited here. The systematic cleaning of the tanks generated about 700 gallons of sludge per year. It is not known if those waste products were placed in containers before disposal. A field investigation was conducted in early 1996. Based on existing conditions it was determined that this site presented no significant risk or threat to public health and the environment, and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Chemical Disposal Area

The Chemical Disposal Area (CDA), which is part of the Base's surface water drainage system, is about 1200 feet southeast of the northwestern boundary of Area A. Between 1963 and 1974, personnel from the nearby industrial and maintenance shops disposed of various shop wastes in the CDA area drainage system. The wastes were reported to be ammonia cleaning solutions, paint remover, and aircraft washing chemicals. During the period of operation, waste disposal practices allegedly involved discharge into the creek that crossed a nearby ditch. This practice ceased in 1973.

This site was investigated under the OU 11 field investigation. Borings were taken to determine any extent of soil contamination.

Based on existing conditions it was determined that this site presents no significant risk or threat to public health and the environment exist and no further action was proposed. This site is included in the 1998 ROD for 41 No Action Sites.

Building 4020 Underground Storage Tank

This site is located at the Fuel System Maintenance Hangar, Building 4020, Area A.

The 250-gallon UST collected fuel and hydraulic fluid from an oil/ water separator. The tank was pumped out and removed in 1986. Four soil borings detected TPH near the surface and at decreasing amounts with depth. The water table was at 10 feet. The highest TPH concentration was at 15 feet. No records of soil removal were found, but unknown quantities of fuels leaked during operation. This site is included in the 1998 ROD for 41 No Action Sites.

Groundwater Operable Unit

The GWOU includes the following IRP sites

- Groundwater in Area A
- Groundwater in Area B.

Throughout the early program years, groundwater was addressed site by site and within each initial investigation and subsequent remedial investigations. Because of groundwater movement patterns under the Base, contaminants from one source area (i.e., OU) may be transported through others, commingling contaminants and finally moving into remote portions of the Base. In addition, groundwater contamination has been discovered without any obvious associated site. After extensive investigations to locate possible and probable sources, all known or suspected areas of contamination to date have been addressed in some fashion. In 1990, an extensive quarterly monitoring system utilizing numerous existing wells was proposed as part of a “HAZWRAP” contract initiative. After review, it was decided to acquire additional data and further refine the proposals. The U.S. Geological Survey (USGS) performed considerable hydrogeologic background investigations in the 1980s on the Base including installing a series of fully penetrating exploratory wells. These wells investigated both the glacial sediments, as well as the regional

limestone and shale bedrock conditions. In the early 1990s, the USGS was selected to further investigate data gaps in the aquifer, as well as perform four rounds of basewide groundwater and surface water monitoring in order to acquire additional background analytical data. This was known as the BMP. Through the results of this program and further assessment of the site investigation and remedial investigation data to date, the GWOU was established to evaluate this contaminant movement, assess risks posed to human health and the environment by exposure to the contaminants, and design a remedy for groundwater throughout the entire Base. In a majority of the cases, the remedy consists of a flexible LTM strategy. In 1998, the BMP evolved into the LTM Program which continued the monitoring of the GWOU. The LTM program as a matter of management and continuity includes the requirements specified in the September 1999 ROD. The selected remedies in the GWOU ROD which also includes Further Action Area (FAA) A, FAA B, surface water and sediment includes:

- For FAA A, continue current groundwater extraction, treatment, and discharge at the WPAFB property boundary in OU 5 and continue LTM in the area;
- For FAA B, in-situ chemical oxidation in the area near Spill Site 11 and monitoring;
- For the remainder of the GWOU, LTM of areas that
- exceed MCLs for organic chemicals of potential concern, but that do not exceed the target risk range of $1x10^{-4}$ to $1x10^{-6}$;
- exceed a cumulative cancer risk of $1x10^{-4}$ or a Hazard Index of 1 for organic COPCs, but do not exceed MCLs;
- exceed remediation goals (MCLs or background) for inorganic COPCs; and
- with existing remedies in place (OU 1 and OU 2).
- No action is required for surface and sediment under the ROD.

Other IRP Sites

Other IRP Sites not investigated as part of existing OUs include the following sites:

- Spill Site 8
- Central Heating Plant 1
- Central Heating Plant 4
- Radioactive Waste Burial Site
- Burial Site 5
- Burial Site 6
- Building 59
- Building 79/95 Complex
- Former Building 20055
- Building 25
- Building 20056 Acid Neutralization Basin
- Building 30013 Sump Pit Area

<u>Spill Site 8</u>

Spill Site 8, located at Substation G, is immediately south of Building 167 in Area A and north of the Base boundary fence along State Route 444A

The USACE discovered the release of PCB contaminated oil from two leaking transformers at Building 167, Area A on April 15, 1988, during the removal of the transformers as part of a MILCON Project. The transformers were sampled and found to contain PCB oil in concentrations ranging from 67 to 487 ppm.

Between August 29 and September 2, 1988, 26 soil samples were obtained from 6 soil borings at SS 8 and analyzed for PCB contamination. The purpose of the study was to ascertain the vertical and lateral extent of the PCB contamination and make recommendations for further action. The project report concluded that PCB contamination above 10 ppm was confined to an area 6 feet square and 8 feet deep.

On June 4, 1990, the USACE began a PCB removal action at SS 8. The USACE was tasked with removing PCB contaminated soil until a level of less than 10 ppm was reached. A total of 15 cubic yards of soil was excavated, and five verification samples were collected and analyzed. PCB levels were below 3 ppm in all samples. This site is included in the 1998 ROD for 41 No Action Sites.

Central Heating Plant 1

Central Heating Plant (CHP) 1 contained seven coal-fired boilers in Area B. The heating plant began operation in 1930 and was shut down in 1980. While in operation, a coal pile was stored within a concrete barrier adjacent to CHP 1. As part of a heating plant consolidation, the Base closed CHP 1, CHP 2, and CHP 3, while expanding CHP 4 and CHP 5. Total Base heating needs are now met by two central heating plants.

Based upon the Phase II data, no further action was proposed for this site. This site is included in the 1998 ROD for 41 No Action Sites.

Central Heating Plant 4

CHP 4 is located in the southcentral portion of Area A. CHP 4, Building 1240, is one of two central heating plants currently in operation. It contains three coal-fired boilers and one gas-fired boiler. It began in operation in 1957 and was expanded to its present size in 1980.

CHP 4 has an adjacent coal pile contained in an area having a concrete pad and walls. Runoff from the coal storage area and other aqueous waste effluent streams are blended, clarified in a three-stage process and neutralized before discharge into the storm sewage system.

Groundwater issues are being addressed by the LTM Program. This site is included in the 1998 ROD for 41 No Action Sites.

Radioactive Waste Burial Site

The Radioactive Waste Disposal Site is located at P Street and 12th Street. It consisted of a concrete slab over a 24-inch-diameter concrete pipe on its end, encompassed within an 8-foot chain

link fence. Specific disposal records were not available. Routine monitoring did not indicate radiation levels above background.

When the site was excavated in June 1990, it was discovered that the location was never used as a disposal site. The concrete slab was used only as a staging area for radioactive waste. Excavation was performed until bedrock was reached. In addition, a ground penetrating radar survey carried out over the area surrounding the site identified no anomalies. The concrete slab was x-rayed to determine whether radioactive materials may have been present within the slab.

Representatives of the NRC and Ohio Radiological Health Department visited the site. Upon review of all sampling data and the results of the excavation, NRC and the USAF Radioisotope Committee concurred that the site should be declared closed. This site is included in the 1998 ROD for 41 No Action Sites.

Wright Field Paint Waste Burial Site (Burial Site 5)

BS 5 was identified as potentially hazardous waste sites from aerial photos and interviews with retired Base personnel and neighbors. A record search was conducted in an attempt to determine the history of the sites. BS 5 is evident on aerial photographs from 1944 to the present, appearing as an area of stressed vegetation approximately one acre in size adjacent to the east-west runway in Area B.

As a result of the investigation, no evidence of an actual burial site was found at BS 5. The stressed vegetation area at BS 5 was thought to be the result of poorly drained clay soils. However, some soils and groundwater contamination was noted at both sites. A tetrachloroethylene (PCE) plume was discovered near the base's southern boundary at the BS 5 location. The source of the groundwater contamination has yet to be determined but may be off base. The maximum concentration detected in groundwater utilizing the off-site laboratory was 29 µg/l. No other significant contamination was noted at the site.

Geophysics at BS 5 delineated a buried steel pipeline, of unknown extent. A pipeline investigation was conducted in Spring 1999.

Based on existing conditions it was determined that no significant risk or threat to public health and the environment existed and that no further action was required. The site is included in the 1998 ROD for 41 No Action Sites. Groundwater at BS 5 is currently monitored under the LTM Program.

Burial Site 6

BS 6 was identified as potentially hazardous waste sites from aerial photos and interviews with retired Base personnel and neighbors. BS 6 is located near the east end of the east-west runway. The area of investigation is adjacent to the former structure now demolished and believed to have been an engine test facility of which only remnants and foundations remain. Former abandoned underground fuel storage tanks at the facility were removed in 1992.

BS 6 was characterized using geophysics, soil gas, trenching, surface and subsurface soil sampling, and groundwater sampling. A Geoprobe or direct push sampler was utilized to sample soils and groundwater. Two-inch monitoring wells or piezometers were also installed at the sites in order to measure groundwater levels and collect groundwater samples. Samples of soil gas, subsurface soil, and groundwater were analyzed for VOCs by an on-site close support laboratory. A portion of those samples, plus all surface soil samples and piezometer groundwater samples were analyzed in an off-site laboratory for VOCs, SVOCs, and metals. Selected samples were also analyzed for pesticides/PCBs and herbicides.

The primary contaminants noted at BS 6 were fuel related. These were found in both soils and groundwater. Benzene was detected at a concentration of 22 ug/l in groundwater at one location. The fuel contamination was suspected to be a result of the former test activities at the site. Based on existing conditions it was determined that no significant risk or threat to public health and the environment existed and that no further action was required. The site is included in the 1998 ROD for 41 No Action Sites. Groundwater at BS 6 is currently monitored under the LTM Program.

Building 59

Building 59 located in Area B, became an area of concern (AOC) in 1997 and underwent a preliminary assessment and site investigation in 1998 and 1999. The location eventually was reclassified as an official IRP site. After portions of the basement flooded, the water was sampled and found to contain halogenated VOCs, primarily TCE. Potential sources were a grease trap and a sump pump pit that contained TCE. Further investigation identified several other potential sources of the TCE, including old USTs and an oil/water separator in addition to the sump pit and grease trap. The building was demolished in 2001 and all potential sources of TCE were removed, including 300 tons of contaminated soil. A thorough search for any remaining abandoned USTs and/or associated lines was also made. Groundwater monitoring wells, primarily within the shale and limestone bedrock, have contained various levels of TCE. In 2005, a potassium permanganate solution was injected into the subsurface in order to destroy the subsurface TCE. A 2008 Technical Memorandum for Groundwater decision document outlines historical background and data as well as proposed future monitoring objectives. Limited groundwater monitoring is currently being monitored under the long-term monitoring program at the site to address isolated TCE in shallow bedrock groundwater; two monitoring wells will be monitored for VOCs every 5 years. A remedial investigation was completed in 2022; a supplemental RI is planned for 2026.

Building 79/95 Complex

The Building 79/95 complex was used as a Jet Propulsion Laboratory that tested various types of rocket engines during its operation. Buildings 79A-79D were constructed in April 1944 and demolished in September 2001. Buildings 95A-95F were constructed in 1949 and demolished by 1985, with the exception of Building 95A that was demolished in September 2001. Underground piping was utilized at several of the buildings to transfer fuels and nitric acid used in the testing facilities. During the operation of the buildings site activities included; jet engine firing tests, the testing of liquid air cycle engines, a supply and issue shop, a wind tunnel testing facility, and a science medical laboratory. A site investigation was implemented after demolition of several of the on-site buildings in March 2001 to identify the nature and extent of contamination associated

with the former complex testing activities. The site investigation consisted of the installation of 18 soil borings (B79/95-SB01 through SB18) with soil and groundwater samples collected from each soil boring for analysis. Surface water (SW01 through SW06) and surface sediment (SD01 through SD06) samples were also collected from the central portion of the complex during the field activities. The results of the sampling activities identified TCE contamination in the area of the investigation. The source of the contaminant was suspected to originate from the acid sumps, floor drains, and associated piping in the area of Buildings 79C and 79D.

An additional 10 soil borings (B79C/D-SB01 through SB10) were installed in November 2001 to delineate the extent of the TCE contamination in soil. At the time of the November 2001 investigation the additional 10 soil borings were thought to be successful in delineating the vertical and horizontal extents of contamination. In February 2002, four new monitoring wells (B79C/D-MW01 through B79C/D-MW04) were installed in and around several of the acid sumps in the complex. A fifth monitoring well (B79C/D-MW05) was installed down-gradient of B79C/D-MW01 to monitor possible TCE migration. The Building 79/95 complex was recommended for addition to the long-term monitoring program, due to groundwater impacts identified during sampling activities. The monitoring well network is sampled on a semi-annual basis to document degradation of identified contaminants.

The Entomology Laboratory, Building 73, was built in 2010 on the site with a vapor barrier under the foundation footprint to prevent possible vapor intrusion.

A Remediation Pilot Study was conducted on November 12 and 13, 2014. In-situ anaerobic bioremediation was selected to determine if it would effectively address the TCE impact at this location. This was accomplished by the injection of an emulsified oil substrate (EOS®) at three injection well locations at the Site. The goal was for the injected substrate to enhance the natural anaerobic bacterial break-down of TCE in the groundwater. Based on the results of the pilot test, the substrate was effective at reducing TCE concentrations in the area of the pilot test to below regulatory criteria. The available groundwater quality information suggests this site would be favorable for bioaugmentation of the natural bacteria already present in the formation and would aid in the anaerobic bioremediation. A secondary objective of the pilot study was to delineate soil contamination in the vadose zone on the north side of the Site. Six borings were advanced, sampled and analyzed for VOCs. Two soil samples were collected from each soil boring, one with the highest soil gas reading from just above the groundwater interface and one at the groundwater interface. The results of the soil sampling identified TCE concentrations above the regulated criteria in soil borings PB-2 and PB-4.

A remedial investigation was completed in 2022; a supplemental RI is planned for 2026.

Building 25

Building 25 is located in Area B of WPAFB along “K” Street near the intersection of Monahan Way. The Building 25 Wind Tunnel Complex was comprised of the wind tunnel (removed), and Buildings 25A, 25B, 25C, and 26. The 50-Megawatt Wind Tunnel was in use from the 1950s through 1976. During the operations, the wind tunnel used a zinc chromate solution as a rust inhibitor. The wind tunnel was taken out of service after 1976, and the chromate solution was

drained from the pipes. It is suspected that some release may have occurred commensurate with operations, but no spills were documented. In March 2002, the roof covering the Wind Tunnel was removed during demolition activities. Removal of the roof allowed rainwater to infiltrate the soils below the wind tunnel. On April 2, 2002, after a heavy rain event, the Bioenvironmental Engineering Office notified the Office of Environmental Management that there were several pools of bright yellow liquid on the ground at Building 25. During the emergency response to the incident, the yellow solution was sampled and submitted to an offsite laboratory for analysis. Analytical results indicated elevated levels of total and hexavalent chromium. Initially, 28 tons of soil was removed in May 2002. A removal action in October 2002 involved the excavation and disposal of an additional 460 tons of metals contaminated soil. The excavated soils were removed down to bedrock to ensure all site-related contamination was removed. Following excavation activities, the site was backfilled with clean soil to grade. In addition, the storm drains, open trench drains, and sump pits located on the first floor and the basement of the facility were flushed by high-pressure sprayer to remove contaminated materials in the lines. In February 2004, a removal action was performed east of a concrete wall to remove soil impacted by lead-based paint chips. In July 2014, confirmation soil samples confirmed the presence of hexavalent chromium above the USEPA industrial soil regional screening levels (RSLs). A remedial investigation was completed in 2022; a supplemental RI is planned for 2026.

Former Building 20055

The Former Building 20055 in Area B was an Air Force military clothing facility with a small laundering operation that was in operation from approximately the mid-1950's to January 2000. Originally an AOC, the location eventually was reclassified as an official IRP site.

The source of the contamination was suspected to be the PCE-based dry cleaning solvent that was used and the results of years of continual dripping from a vapor exhaust vent, machine leakage from spillage of bulk liquid solvent, or a combination of these factors. The site was discovered during a base Civil Engineering water line investigation adjacent to the building when a solvent odor was noted from an excavation. Initial soil sampling confirmed the presence of a solvent and a site investigation in 2003 confirmed that PCE has been released in the past.

Soils contaminated with VOCs in the area north and east of Building 20055 were removed during a removal action in 2006 to a depth of 8 ft below ground surface or to the top of weathered bedrock. A total of 326 tons of soil were removed and disposed of as hazardous waste. In addition, compromised storm lines adjacent to Building 20055 were removed and replaced, eliminating a significant portion of the leaching pathway and/or reducing a potential source. Post-excavation sampling results indicated that PCE and TCE concentrations in the excavation sidewalls were above the preliminary remediation goals for industrial soil.

Another Removal Action involving injection of a chemical oxidation was implemented in November 2007 in order to address the shallow contaminated soils under the northern slab and isolated portions of remaining contamination along the former excavation. Results of the injection showed that the soils below Building 20055 had a hydraulic conductivity too low to allow for effective injection of the chemical oxidant. The data collected before and after injection did not support a significant difference between pre- and post-injection conditions under the slab. The

building was demolished in October 2009. An Action Memorandum was converted into a Work Plan to remove the remaining soils. In October 2010, an additional 618.4 tons of PCE-contaminated soil was excavated. A total of 16,600 gallons of PCE-contaminated water was also removed and transported to EQ, Inc., Detroit, MI. The funding and the contracting mechanism met the ceiling of the contract and had to end with contamination left in place. The extent of contamination was much larger than expected. Due to contract ceiling limitations and year end funding restraints, the site work was not able to be continued. It was agreed between Wright-Patterson AFB and OEPA to close the excavation area and that a remedial investigation was needed to fully delineate the contamination.

The remedial investigation was conducted in two phases in 2013 to delineate the nature and extent of contamination in the vicinity of the former Building 20055 site. Soil sampling results indicate that VOCs were detected in 22 of the 38 total soil borings at concentrations that exceeded the site-specific residential soil RSLs. It was also determined from the September 2010 excavation confirmation sampling that residual PCE contamination in exceedance of the residential soil RSLs exists in the weathered bedrock under the clean fill material. A time-critical removal action was performed in 2015 resulting in the excavation of 1,638 tons of soil. Due to contractual issues, the work was suspended. A remedial investigation is currently underway.

Building 20056 Acid Neutralization Basin

Historical records indicated that an oil and fuel storage building, constructed in the late 1920s, was located at the south end of Building 20056. Research of engineering records revealed that what was thought to be an oil-water separator (OWS) during proposed removal and abandonment activities in August 2010 was an acid neutralization basin which was installed in 1964 and used through the mid-1980s based on information from historical records. The basin was made of concrete lined with large brick. During the 1960s through the 1980s, Building 20056, which consists of 11 separate bays (each bay is 32 approximately 66-ft-wide and 100-ft-long), housed several research laboratories, involving lubrication testing, physics, chemistry, and metallurgical materials research labs. During proposed removal and abandonment activities in August 2010, contamination was discovered beneath the basin at Building 56 when two holes were punched through the bottom of the basin and a dark sludge seeped in. Samples of the sludge were collected and submitted for chemical analysis of VOCs, RCRA metals, and PCBs. Water in the basin was vacuumed out and sampled for RCRA characteristics (corrosivity, ignitability). The water was disposed of as non-hazardous.

In October and November 2012, field work for a preliminary assessment/site investigation was conducted in the vicinity of the Building 20056 basin to evaluate the extent of soil and groundwater contamination. Soil samples and a groundwater sample were collected and submitted for chemical analysis of VOCs, semi-volatile organic compounds, and metals. Soil gas and sub-slab soil vapor sampling for VOCs was also conducted as part of the preliminary assessment and site investigation.

Impacted soil was determined to be limited to the area immediately surrounding the basin and lies within the excavation originally created for construction of the basin. There is no groundwater in the vicinity of the basin; therefore, no groundwater impacts have been identified. Water in the

basin impacted with BTEX and chlorinated solvents was handled and treated appropriately. A removal action was proposed to empty the remaining fluids in the basin, remove the basin structure and surrounding soils, and to restore the site. The sub-slab soil vapor sampling locations within Building 20056 were proposed to be resampled following basin removal to verify if vapors still exceed SLs.

Interim removal activities conducted in accordance with an Interim Removal Action-Construction (IRA-C) Work Plan in 2014 involved decommissioning and demolition of the basin. When removing the brick floor overlying the poured concrete basin floor, it was observed that the acid-resistant mastic had been breaking down and forming a sludge that was encountered in the bottom of the basin. Once a small portion of the brick from the floor of the basin was removed, strong odors of TCE were detected. Therefore, a potential source (the vault and its contents) was identified, removed, and disposed of offsite, thus reducing risks to people and the environment. The IRA-C appears to have addressed the elevated TCE concentrations in soil vapor as concentrations have steadily decreased overall with each subsequent confirmation sampling event following the removal of the basin. However, elevated sub-slab soil vapor data indicate that risks are not completely eliminated. During the soil vapor sampling conducted in December 2014, analytical results indicated elevated concentrations of petroleum compounds (1,2,4-trimethylbenzene, ethylbenzene, and m-, p-, and o-xylene) at several soil vapor monitoring points. Based on the absence of these compounds in the soil, soil gas, groundwater, and basin water samples, the elevated concentrations of petroleum compounds are believed to be unrelated to the acid neutralization basin.

An RI was begun in December 2019. The purpose of the RI was to evaluate the potential for vapor migration in utility corridors as a result of residual VOCs in soil and water following the IRA-C at the Former Acid Neutralization Basin, and the potential for vapor intrusion into Building 56 as a result of vapor migration within the utility corridors. The nature and extent of contamination, fate and transport, and risk assessment was restricted to air only (soil gas, indoor air, etc.). In addition, limited soil and water data will be collected to evaluate the effectiveness of IRA-C completed in 2014. A remedial investigation was completed in 2024, and a feasibility study is underway.

Building 30013 Sump Pit Area

The Building 30013 Sump Pit Area is assumed to be a former landfill. In 1991, free product was observed in three monitoring wells in the vicinity of the sump pit at Building 30013. A free product recovery system was installed on 21 November 1990 to remove product from the monitoring wells. The system operated continuously until 11 January 1991 and approximately 100 gallons of free product were removed. At this time, it was recommended to continue removal of all free product by hand bailing each well. In 1994, a vapor extraction/groundwater recovery system final report was completed to document the remediation process of four vapor extraction wells and six infiltration wells. Upon removal of the sump pit and contaminated soil around it, a 55-gallon drum, two 5,000-gallon USTs, and a 500-gallon UST, along with other debris (wood, paint cans, tires, conduit, concrete, and wires), were encountered. Product in the 500-gallon UST which was damaged, and leaking was released into the excavation site. TPH was detected in soils as high as 12,900,000 ppb. Known contamination remained in place and the excavation was backfilled with

clean soil. Due to the presence of contamination in groundwater, the site was determined to be subject to CERCLA.

A Final Remedial Investigation Report and a Focused Feasibility Study were completed in 2020. In 2024, the AF revised the Focused Feasibility Study to include a risk assessment to address future residents. As a result, the AF selected No Action as a remedy for the site. A Record of Decision is planned for 2026.

AFFF Release Sites

Hazardous Materials Storage Area (Buildings 478 and 479) (AFFF Area 1)

Spill reports document two AFFF system activations at AFFF Area 1. One incident released 10,000 gallons of AFFF solution and the second incident released 2 to 4 gallons of AFFF concentrate in a water solution. During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Five surface soil samples (three primary, one duplicate, and a composite physiochemical sample), five subsurface soil samples (three primary, one duplicate, and a composite physiochemical sample), four groundwater samples (three primary and a duplicate sample), three sediment samples (two primary samples and a field duplicate sample), and three surface water samples (two primary samples and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 1. The results of the surface soil, subsurface soil, and sediment samples indicate that no concentrations of the target analytes remain in the soils or sediments exceeding the screening criteria. However, the results for the analyses of the groundwater and surface water samples indicate that PFOS and the combined concentration of PFOA and PFOS are at concentrations exceeding the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 1 and the groundwater and surface water have been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing. A Non-Time Critical Removal Action was implemented in 2021 to treat PFAS-impacted surface water and groundwater. A treatment system was constructed and became operational in 2024.

Vehicle Crash (Kauffman Avenue) (AFFF Area 2)

The WPAFB Fire Department responded to a vehicle crash and although there was no fire, approximately 2–4 gallons of AFFF solution was inadvertently released on the roadway and drained to the road shoulder and a nearby tributary of Hebbel Creek. During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Two surface soil samples (a primary sample and a composite physiochemical sample), two subsurface soil samples (a primary sample and a composite physiochemical sample), two groundwater samples, a sediment sample, and a surface water sample were submitted to the project laboratory for analyses from AFFF Area 2. The analytical results of the surface soil, subsurface soil, groundwater, sediment, and surface

water samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 2 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Vehicle Maintenance and Operations (Building 60) (AFFF Area 4)

Spill reports indicate an unknown volume of AFFF was accidentally released from a fire truck parked on the north side of Building 60 and reportedly flowed into the drainage ditch on the west side of the building (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. One surface soil sample, one groundwater sample, two sediment samples (one primary sample and a field duplicate sample), and three surface water samples (two primary samples and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 4. The results of the surface soil, groundwater, and sediment samples indicate that no concentrations of the target analytes remain in the soils, groundwater, or sediments exceeding the screening criteria. However, the results for the analyses of the surface water samples indicate that PFOA, PFOS, and the combined concentration of PFOA and PFOS were at concentrations exceeding the health-based screening criteria in two of the three samples. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 4 and the surface water has been impacted to an extent that could create a potential hazard to human health. The surface water leaving the area is carried through the stormwater system and discharges into Hebble Creek at Outfall #12. Hebble Creek enters the Mad River approximately 3 miles downstream of Outfall #12.

Although the surface water at Outfall #12 did not have PFAS concentrations creating a potential hazard to human health, the surface water in AFFF Area 4 does. Due to the PFAS concentrations exceeding screening levels and the discharge to a potential drinking water source, the surface water in Area 4 presents an immediate threat to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Hangar 91 (AFFF Area 5)

There have been three documented releases of AFFF at Hangar 91 (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Two surface soil samples (a primary sample and a composite physiochemical sample), two subsurface soil samples (a primary sample and a composite physiochemical sample), and two groundwater samples were submitted to the project laboratory for analyses from AFFF Area 5. The analytical results of the surface soil, subsurface soil, and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 5 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Hangar 148 (AFFF Area 6)

Based on interviews and spill records presented in the PA (CH2M Hill, September 2015), there were five documented releases of AFFF at Hangar 148. During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite physiochemical sample), three subsurface soil samples (two primary samples and a composite physiochemical sample), and two groundwater samples were submitted to the project laboratory for analyses from AFFF Area 6.

The results of the surface soil and subsurface soil samples indicate that no concentrations of the target analytes remain in the soils exceeding the screening criteria. However, the results for the analyses of the groundwater samples indicate that PFOS and the combined concentration of PFOA and PFOS were at concentrations exceeding the health-based screening criteria in both samples. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 6 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Fire Station #1 (Building 146) (AFFF Area 7)

Based on interviews and spill records presented in the PA (CH2M Hill, September 2015), there have been nine documented releases of AFFF at Fire Station #1. During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite physiochemical sample), three subsurface soil samples (two primary sample and a composite physiochemical sample), and four groundwater samples (three primary samples and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 7. The analytical results of the surface soil, subsurface soil, and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 7 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Former Fire Station #2 (at Building 206) (AFFF Area 8)

There was one documented discharge of AFFF at this location (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three subsurface soil samples (two primary sample and a composite physiochemical sample), and two groundwater samples were submitted to the project laboratory for analyses from AFFF Area 8. The analytical results of the subsurface soil and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 8 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Fire Station #1 Spray Test Area (AFFF Area 9)

Fire Station #1 spray test area is used to purge fire hoses after training exercises and emergency response events. The area is also reportedly used to conduct twice yearly spray testing of the two AFFF-equipped emergency vehicles house at Fire Station #1 (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite physiochemical sample), five subsurface soil samples (three primary samples, a field duplicate sample, and a composite physiochemical sample), and three groundwater samples were submitted to the project laboratory for analyses from AFFF Area 9. The results of the surface soil and subsurface soil samples indicate that no concentrations of the target analytes remain in the soils exceeding the screening criteria. However, the results for the analyses of the groundwater samples indicate that PFOS and the combined concentration of PFOA and PFOS were at concentrations exceeding the health-based screening criteria in two of the three samples. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 9 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Former Spray Test Area (AFFF Area 10)

The former spray test area was used to from 2006 to 2009 to conduct semi-annual spray nozzle tests for the fire engines with AFFF. Reports indicate approximately 156 gallons of AFFF concentrate were released into the area during the active life of the site (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Five surface soil samples (three primary samples, a field duplicate sample, and a composite physiochemical sample), four subsurface soil samples (three primary samples and a composite physiochemical sample), and three groundwater samples were submitted to the project laboratory

for analyses from AFFF Area 10. The results of the surface soil and subsurface soil samples indicate that no concentrations of the target analytes remain in the soils exceeding the screening criteria. However, the results for the analyses of the groundwater samples indicate that the combined concentration of PFOA and PFOS in one of the three sample was at a concentration exceeding the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 10 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Current Spray Test Area (AFFF Area 11)

The current spray test area has been used since 2009 to test the spray patterns for all of the fire department vehicles. Over the active life of the area, an estimated volume of approximately 468 gallons of AFFF concentrate has been released into the area (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Four surface soil samples (three primary samples and a composite physiochemical sample), four subsurface soil samples (three primary samples and a composite physiochemical sample), and five groundwater samples (four primary and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 11. The results of the surface and subsurface soil samples indicate that concentrations of PFOS remain in the surface and subsurface soils exceeding the screening criteria. In addition, the results for the analyses of the groundwater samples indicate that the individual concentration of PFOA and PFOS and the combined concentration of PFOA and PFOS in four of the five samples exceed the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 11 and the surface soil, subsurface soil, and groundwater have been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Aeroclub (Former Building 153) (AFFF Area 12)

During the active life of the Aeroclub (former Building 153) there was one documented activation of the AFFF system and a separate emergency response requiring the fire department to use AFFF in extinguishing an aircraft fire (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Five subsurface soil samples (three primary sample, a field duplicate sample, and a composite physiochemical sample), and four groundwater samples (three primary samples and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 12. The analytical results of the subsurface soil and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 12 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

1ST F-16 Crash Site (1994) (AFFF Area 13)

The simultaneous crash of two F-16 fighter aircraft in 1994 resulted in fires at two separate locations requiring the use of an unknown volume of AFFF to extinguish (CH2M Hill, September 2015). During the SI, samples were collected in the area where the first aircraft came to rest and where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Four surface soil samples (three primary samples and a composite physiochemical sample), four subsurface soil samples (three primary samples and a composite physiochemical sample), and three groundwater samples were submitted to the project laboratory for analyses from AFFF Area 13. The analytical results of the surface soil, subsurface soil, and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 13 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

2ND F-16 Crash Site (1994) (AFFF Area 14)

The simultaneous crash of two F-16 fighter aircraft resulted in fires at two separate locations requiring the use of an unknown volume of AFFF to extinguish. During the SI, samples were collected on either side of the runway where the second aircraft came to rest and where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Five surface soil samples (three primary samples, a field duplicate sample, and a composite physiochemical sample), four subsurface soil samples (three primary samples and a composite physiochemical sample), and four groundwater samples (three primary samples and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 14. The analytical results of the surface soil, subsurface soil, and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 14 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Fire Station #2 (Building 4012) (AFFF Area 15)

One release of AFFF was recorded at Fire Station #2 (Building 4012), resulting in the release of approximately 10 gallons of diluted AFFF to the pavement in front of the fire station (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite

physiochemical sample), three subsurface soil samples (two primary sample and a composite physiochemical sample), and two groundwater samples were submitted to the project laboratory for analyses from AFFF Area 15. The results of the groundwater samples indicate that no concentrations of the target analytes remain in the groundwater exceeding the screening criteria. However, the results for the analyses of the surface soil and subsurface soil samples indicate that PFOS concentrations exceed the health-based screening criteria in one of the two samples. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 15 and the surface soil and subsurface soil have been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Fire Station #2 Spray Test Area (AFFF Area 16)

During the ASL site visit, discussions with fire station personnel indicated that the Fire Station #2 spray test area was located in a field on the southeast side of Mitchell Drive and not at the fire station as reported in the PA (CH2M Hill, September 2015). Fire station personnel indicated that from at least the early 1980s until the early 2000s, line purging and spray testing was conducted in the field. From the volumes of AFFF released as estimated in the PA and the volumes reported by the fire station personnel, it is possible that over 700 gallons of AFFF concentrate may have been released into the grass field over the active life of the area. During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Four surface soil samples (three primary samples and a composite physiochemical sample), five subsurface soil samples (three primary samples, a field duplicate sample, and a composite physiochemical sample), and three groundwater samples were submitted to the project laboratory for analyses from AFFF Area 16. The analytical results of the subsurface soil and groundwater samples indicate that no concentrations of the target analytes remain in subsurface soil or groundwater at concentrations exceeding the screening criteria. However, one of the surface soil samples had a PFOS concentration exceeding the screening level, indicating that the surface soil has been impacted by the release of AFFF to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Hangar 4020 (AFFF Area 17)

There was one documented AFFF release at Hangar 4020, resulting in the release of approximately 15 gallons of AFFF to the grassy areas and storm drains around the hangar (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite physiochemical sample), and two groundwater samples were submitted to the project laboratory for analyses from AFFF Area 17. The results of the surface soil samples indicate that no concentrations of the target analytes remain in the surface soils exceeding the screening criteria.

However, the results for the analyses of the groundwater samples indicate that the individual concentration of PFOA in one sample, the individual concentration of PFOS in both samples, and the combined concentration of PFOA and PFOS in both samples exceeded the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 17 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Former Hangar 4028 (AFFF Area 18)

Former Hangar 4028 was not evaluated in the PA. However, a spill report indicated that an estimated volume greater than 26,000 gallons of a 6% dilution of AFFF was released during the incident. During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Four subsurface soil samples (three primary samples and a composite physiochemical sample), and four groundwater samples (three primary samples and a field duplicate sample) were submitted to the project laboratory for analyses from AFFF Area 18.

The results of the subsurface soil samples indicate that no concentrations of the target analytes remain in the subsurface soils exceeding the screening criteria. However, the results for the analyses of the groundwater samples indicate that the individual concentration of PFOS and the combined concentration of PFOA and PFOS in all four samples exceeded the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 18 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Taxiway Charlie Minor Spill (West Ramp) (AFFF Area 19)

A mobile AFFF tank was overfilled on Taxiway Charlie between Runway 23R and Taxiway A releasing an estimated volume of 15 gallons of AFFF concentrate to the concrete and grass surrounding the taxiway (CH2M Hill, September 2015). During the SI, samples were collected in the area where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Four surface soil samples (three primary samples and a composite physiochemical sample), four subsurface soil samples (three primary samples and a composite physiochemical sample), and three groundwater samples were submitted to the project laboratory for analyses from AFFF Area 19. The analytical results of the surface soil, subsurface soil, and groundwater samples indicate that no concentrations of the target analytes remain in any media at AFFF Area 19 exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Battle Damage Area (AFFF Area 20)

There was one documented AFFF release at the battle damage area when a damaged aircraft, with fuel still on board, caught fire. The WPAFB fire department responded and extinguished the fire, discharging approximately 20 gallons of AFFF concentrate (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Five surface soil samples (three primary samples, a field duplicate sample, and a composite physiochemical sample), five subsurface soil samples (three primary samples, a field duplicate sample, and a composite physiochemical sample), and three groundwater samples were submitted to the project laboratory for analyses from AFFF Area 20. The results of the surface soil and subsurface samples indicate that no concentrations of the target analytes remain in the surface or subsurface soils exceeding the screening criteria. However, the results for the analyses of the groundwater samples indicate that the individual concentration of PFOS and the combined concentration of PFOA and PFOS in two of the three samples exceeded the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 20 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Fire Training Areas 2, 5, and Current (AFFF Area 21)

Former FTA 2 was not in use during the timeframe when AFFF containing PFAS was used for fire suppression. Former FTA 5 was put in service in 1981 over top of FTA 2 and included a concrete-lined burn pit designed to capture all of the fluids generated during fire training exercises. The current FTA was constructed adjacent to FTA 5 in 1996 and has a concrete-lined burn pit to contain fluids. Fire training activities are conducted at the current FTA (and previously FTA 5) from two to four times per year, using approximately 100 gallons of AFFF concentrate during each training event. Reportedly, all foam and fluids generated during the exercises are captured and pumped to the holding pond on the west side of the area (CH2M Hill, September 2015).

During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Two surface soil samples (one primary sample and a composite physiochemical sample), two subsurface soil samples (one primary sample and a composite physiochemical sample), four groundwater samples (three primary and a field duplicate sample), one sediment sample, and one surface water sample were submitted to the project laboratory for analyses from AFFF Area 21. The results of the surface soil and subsurface soil samples indicate that no concentrations of the target analytes remain in the soils exceeding the screening criteria. However, the results for the analyses of the groundwater, sediment, and surface water samples indicate that PFAS

compounds are present at concentrations exceeding the screening criteria in all three media. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 21 and the groundwater, sediment, and surface water have been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing. A Non-Time Critical Removal Action was implemented in 2021 to treat PFAS-impacted surface water and groundwater. A treatment system was constructed and became operational in 2025.

Former Fire Training Areas 3 and 4 (AFFF Area 22)

Fire fighter training was conducted at Former FTA 3 and FTA 4 between 1960 and 1980. The active life of these FTAs includes the timeframe that AFFF containing PFAS was used by the USAF (beginning in the early 1970s), and was, therefore, likely used during the training exercises. Based on current and historical training practices, it is possible that 2,000 to 4,000 gallons of AFFF concentrate may have been released in this area between 1970 and 1980 (CH2M Hill, September 2015).

During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite physiochemical sample), three subsurface soil samples (two primary samples and a composite physiochemical sample), two groundwater samples, one sediment sample, and one surface water sample were submitted to the project laboratory for analyses from AFFF Area 22. The results of the sediment samples indicate that no concentrations of the target analytes remain in the sediments exceeding the screening criteria. However, the results for the analyses of the surface soil, subsurface soil, groundwater, and surface water samples indicate that PFAS compounds are at concentrations exceeding the screening criteria in all four media. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 22 and the soils, groundwater, and surface water have been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Former Riverview Road FTA and EOD Range (AFFF Area 23)

The Former Riverview Road FTA and EOD Range was used for fire training exercises from approximately 1978 to 1984. Although there were no records or anecdotal information indicating that PFAS-based AFFF was used during fire training exercises in the area, the active life of the site coincided with the timeframe when AFFF containing PFAS was in use in the USAF (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Three surface soil samples (two primary samples and a composite physiochemical sample), three subsurface soil samples (two primary samples and a composite physiochemical sample), and two groundwater samples were submitted to the project laboratory

for analyses from AFFF Area 23. The results of the surface soil and subsurface soil samples indicate that no concentrations of the target analytes remain in the soils exceeding the screening criteria. However, the results for the analyses of one of the two groundwater samples indicate that PFOA and the combined concentration of PFOA and PFOS are at concentrations exceeding the health-based screening criteria. Based on the analytical results, a release of AFFF has been confirmed at AFFF Area 23 and the groundwater has been impacted to an extent that could create a potential hazard to human health.

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

Former Building FTA (AFFF Area 24)

The former Building FTA was used for several years in the late 1980s to conduct fire training exercises two to three times per year, resulting in the release of 50 to 75 gallons of AFFF per year (CH2M Hill, September 2015). During the SI, samples were collected in areas where PFAS contamination was most likely to be detected, based on surface drainage patterns and the groundwater flow direction. Six surface soil samples (three primary samples, two field duplicate samples, and a composite physiochemical sample), four subsurface soil samples (three primary samples and a composite physiochemical sample), three groundwater samples, a surface water sample, and a sediment sample were submitted to the project laboratory for analyses from AFFF Area 24. The results of the surface soil, subsurface soil, groundwater, surface water, and sediment samples indicate that no concentrations of the target analytes remain in any of the media exceeding the screening criteria.

Although PFAS did not exceed the screening criteria at the time of the SI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Former Fire Station (Building 76) (AFFF Area 27)

The former fire station is located at 1933 Fifth Street northwest of the intersection of D Street and 5th Street in Area B. This station was active from the 1940s to 1998 and was primarily geared toward structural response. Based on the recollection of the current fire chief, the station housed two engines with 25 gallons of AFFF on each, and did not have an onsite backstock. The building is now home to Navy offices. Surrounding areas are primarily paved, with small islands of landscaped vegetation and grass to the southeast and southwest. Since there have been no known leaks or spills of AFFF at this location, the former fire station was not inspected during the 2016 SI. However, anecdotal information from WPAFB personnel indicated that AFFF may have been released in the area. During the ESI, three groundwater monitoring wells were installed approximately 500 feet downgradient (west) from the former fire station to evaluate whether the groundwater moving from the former fire station area contains PFAS at concentrations exceeding the screening levels. The three-well cluster targeted the shallow (approximately 20 feet bgs), intermediate (approximately 50 feet bgs), and deep (approximately 75 feet bgs) water-bearing zones. PFBS, PFOA, and PFOS were detected in one or more groundwater samples from the area, but none of the concentrations exceeded the screening

levels. Based on the analytical results, the concentrations of PFBS, PFOA, and PFOS in the three wells sampled in AFFF Area 27 did not exceed the screening levels.

Although PFAS did not exceed the screening criteria at the time of the ESI, screening criteria has changed resulting in the site being eligible to be included in the RI. In 2023, a contract was awarded to include the site in the Phase 1 RI. The RI is currently ongoing.

Harrier Crash Site (AFFF Area 29)

AFFF Area 29: Harrier Crash Site is located southeast of the intersection of Interstate 70 and Interstate 675. On October 16, 1997, a 46-foot long, 30-foot wingspan AV-8B Harrier II aircraft crashed approximately 2.5 miles northeast of WPAFB Area A near a soybean field. The fire department responded to the incident and extinguished the aircraft fire with 275 gallons of AFFF concentrate and 5,000 gallons of water (CH2M Hill 2015). AFFF Area 29 consists of approximately 0.19 acres that constitute the primary burn area. The primary impact area, just west of AFFF Area 29, is approximately 0.12 acres. The topography at the primary impact area is affected by a north-south trending drainage ditch and ranges from approximately 834 to 845 feet amsl. The topography in the primary burn area is generally flat, and the ground surface elevation is approximately 838 feet amsl.

The primary impact area is located directly east of the highway's exit ramp. AFFF Area 29 consists of the primary burn area located approximately 80 feet east of the impact area. Records of the incident indicated that the AFFF was applied near the western side of the creek, south of the microwave tower near (but not in) the soybean field (CH2M Hill 2015).

Previous investigations of the crash site led to a removal action of fuel-contaminated soil to 7 feet bgs, where the water table was encountered. Confirmation soil samples and excavation groundwater samples were collected for fuel-related constituents. Three soil borings were installed within the footprint of the primary burn area. The three soil borings were arranged in a triangle to cover the area and to allow confirmation of the groundwater flow direction in the vicinity (CH2M Hill 2015).

The Harrier Crash Site was not inspected during the 2016 SI because of complications in obtaining permission from the landowner to access the off-base site. However, crash response reports indicate that AFFF was used to extinguish the fire resulting from the crash. During the ESI, subsurface soil and groundwater samples were collected in the primary burn area and from the creek carrying surface water and sediment away from the crash site. Based on the analytical results, PFBS, PFOA, and PFOS did not exceed their respective screening levels in the subsurface soil, surface water, or sediment at AFFF Area 29. However, the combined PFOA and PFOS concentration exceeded the EPA LHA in one groundwater sample (WRGHT29-001-GW-014 from temporary well WRGHT29-001).

In 2020, a contract to conduct a Phase I Remedial Investigation (RI) was awarded. The RI is currently ongoing.

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APPENDIX F

RAB CHARTER

WRIGHT-PATTERSON AIR FORCE BASE
RESTORATION ADVISORY BOARD CHARTER

I. NAME

a. This organization shall be known as the Wright-Patterson Air Force Base Installation Restoration Program (IRP) Restoration Advisory Board (RAB). The Wright-Patterson Air Force Base Advisory Board will fulfill all requirements of 10 USC Section 2705(c) for Technical Review Committees at U.S. Department of Defense installations.

b. The Restoration Advisory Board charter, herein referred to as "the charter," is entered into by Wright-Patterson Air Force Base and the Restoration Advisory Board community co-chair, representing the membership of the Wright-Patterson Restoration Advisory Board.

II. PURPOSE AND FUNCTION OF THE RESTORATION ADVISORY BOARD

a. The purpose of the Restoration Advisory Board is to promote community awareness and obtain constructive community review and comment on environmental restoration actions in the overall cleanup of Wright-Patterson Air Force Base. The Restoration Advisory Board will facilitate communication and disseminate information about the Installation Restoration Program; ensure opinions about environmental restoration reflect diverse interests within the community by providing an opportunity for comment on actions and proposed activities taken by Wright-Patterson Air Force Base under the Installation Restoration Program; and facilitate regulatory and public participation consistent with applicable laws. The Restoration Advisory Board serves in an advisory capacity to Wright-Patterson Air Force Base, the U.S. Environmental Protection Agency (Region 5); and the Ohio Environmental Protection Agency.

b. The Air Force has developed a Community Relations Plan which outlines the community involvement program. The Restoration Advisory Board supplements the community involvement program. A copy of the Plan, and a permanent record of all environmental restoration documents, is available as part of the Administrative Record, located online at https://ar.afcec-cloud.af.mil/.

III. BASIS AND AUTHORITY FOR CHARTER

a. The basis and authority for this charter are contained in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986, particularly Sections 120(a), 120(f), and 121(f), and 10 USC 2705, enacted by Section 211 of SARA.

IV. MEMBERSHIP

a. Individual community members must reside in Greene and Montgomery Counties, or currently work or live on Wright-Patterson Air Force Base.

b. Members shall serve without compensation. All expenses incidental to travel and review inputs shall be borne by the respective members or their organizations.

c. Members are expected to attend all Restoration Advisory Board meetings or send an alternate. If a member fails to attend or send an alternate to two consecutive meetings, the Restoration Advisory Board co-chairs may ask the member to resign.

d. Members should be willing to communicate with local community members and interest groups concerned with specific Wright-Patterson Air Force Base cleanup issues. Members will serve as a direct and reliable conduit for information flow to and from the community. To improve communication between the public and Restoration Advisory Board, members' names, e-mail addresses and telephone numbers may be made available to the public and listed in meeting minutes.

e. Members unable to continue to fully participate shall submit their resignation in writing to any of the Restoration Advisory Board co-chairs. Resigning members may nominate new members from their represented organization or constituency to replace them for a full two-year term.

f. Government agencies, community groups, citizens, and special interest groups may be nominated to the Restoration Advisory Board. Once accepted to the Restoration Advisory Board, a term of two (2) years is required. After two years, members may continue to serve additional two-year terms, if nominated and appointed, until Restoration Advisory Board termination (as long as they continue to meet criteria stated in Section IV of this charter). Additional membership nominations can be made at any time; however, priority will be given to those nominations that clearly enhance the diverse nature of the membership. Nominations are approved by a majority vote of the Restoration Advisory Board members present at the meeting when the nomination is made.

V. RESTORATION ADVISORY BOARD STRUCTURE

a. The Restoration Advisory Board shall be co-chaired by the 88 CEG/CL Director for Wright-Patterson Air Force Base, and a community member. The responsibility for presiding over each meeting will be alternated between the co-chairs.

b. The community co-chair will be selected by a majority vote of the Restoration Advisory Board community members. The Restoration Advisory Board community co-chair will serve a 12-month term. A co-chair may serve more than one term, if approved by the Restoration Advisory Board community members by a majority vote.

c. The Restoration Advisory Board membership is responsible for terminating the community co-chair if that person is found to be ineffective or detrimental to the progress of the Restoration Advisory Board. Co-chair removal is determined by majority vote of

the Restoration Advisory Board community members present at the meeting following the one at which the removal is proposed.

d. The Restoration Advisory Board shall be held biannually, or as otherwise directed by the Restoration Advisory Board co-chairs, preferably at an off-base location. However, more frequent meetings may be held, if deemed necessary by the Restoration Advisory Board.

e. Restoration Advisory Board meeting agenda items will be compiled by the co-chairs. Suggested topics will be given to the co-chairs not later than two (2) weeks prior to the meeting. Wright-Patterson Air Force Base personnel shall be responsible for providing written notification to all Restoration Advisory Board members of the upcoming agenda, date, time, and place of the scheduled Restoration Advisory Board meetings. All Restoration Advisory Board meetings will be open to the general public and to the news media.

f. A written list of attendees at each meeting will be recorded and incorporated into meeting minutes. Action items will be included in the minutes for the Restoration Advisory Board at which they are assigned. Progress on each action item will be briefed at each Restoration advisory Board meeting. Until an action item is closed, the written response/progress will be included in meeting minutes.

g. Preparation and distribution of meeting minutes will be the responsibility of the Wright-Patterson Air Force Base Environmental Restoration co-chair(s). A copy of the Restoration Advisory Board meeting minutes will be sent to all Restoration Advisory Board members and will be available for public review in the information repository established at the Fairborn Community Library and in the Administrative Record.

h. Restoration Advisory Board members will be asked to review and comment on various environmental restoration documents. Restoration Advisory Board members should submit written comments to the community co-chair on the subject documents within the time frame specified (no more than 60 calendar days). The community co-chair will consolidate comments from the members and provide them to the Restoration Advisory Board for consideration

i. All comments received from members will be incorporated into the Restoration Advisory Board meeting minute’s final documents and will become part of the Administrative Record.

j. Restoration Advisory Board members are authorized access to any documents, studies, or information which have been placed in the public repository, Administrative Record, or distributed at Restoration Advisory Board meetings.

VI. EFFECTIVE DATE AND AMENDMENTS

a. The effective date of this charter shall be the date that the last signatory signed this charter.

b. This charter may be amended by a two-thirds majority vote of the members present at the meeting following the one in which the amendment was proposed. Amendments must be consistent with Wright-Patterson Air Force Base agreements, with state and federal regulatory agency agreements, and the statutes stated in Section III of the charter (Basis and Authority for Charter).

VII. TERMINATION

a. This charter will be terminated upon completion of requirements as stated in applicable state and federal agreements. However after implementation of the final environmental remedial design, this charter may be terminated earlier upon a two-thirds majority vote of the Restoration Advisory Board membership.

VIII. SIGNATORIES TO THE RESTORATION ADVISORY BOARD CHARTER

IN WITNESS WHEREOF, we have set our hand this 23rd day of June, 2025.

Amir Mott, 88 CEG/CL,Wright-Patterson AFB Restoration Advisory Board Co-Chair

Alex Zaharieff Restoration Advisory Board Community Co-Chair

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APPENDIX G

COMMUNITY SURVEY QUESTIONNAIRE AND RESULTS

AFCEC, WPAFB invite community input for base Community Involvement Plan

Published Aug. 23, 2024

88th Air Base Wing Public Affairs

WRIGHT-PATTERSON AIR FORCE BASE, Ohio – Wright-Patterson Air Force Base is committed to continual efforts to ensure human health and a safe environment. The Air Force considers the active, meaningful involvement of community members as essential to the success of this project.

Wright-Patterson AFB, in partnership with Air Force Civil Engineer Center, has released a Community Involvement Plan questionnaire to ensure community concerns and interests are heard and addressed. The deadline to submit your responses is September 30, 2024.

Link to the questionnaire: https://forms.osi.apps.mil/r/P5k5R948cg?origin=lprLink

Participate in the questionnaire

The Air Force invites local and base community members to participate in this anonymous questionnaire. The feedback will be treated confidentially and will assist the program team and the Air Force in being more responsive to the community's needs and interests.

Alternative methods to respond

- Speak directly with an agency official. Contact John Crocker, remedial project manager, AFCEC at (937) 257-2312 or john.crocker@us.af.mil.
- E-mail your response. Email your questionnaire form to the 88th Air Base Wing Public Affairs at 88abw.pa.specialevents@us.af.mil.
- Mail your response. Print and mail your questionnaire form to:

  88th Air Base Wing Public Affairs
  ATTN: Installation Restoration Program Questionnaire
  5135 Pearson Road, Building 10, Room 252
  Wright-Patterson AFB OH 45433

WPAFB environmental activities

The 88th Air Base Wing Environmental Branch, aligned under the 88th Civil Engineer Group, manages installation environmental compliance programs for Wright-Patterson Air Force Base. The environmental team establishes systems and procedures to comply with applicable laws and regulations, minimize environmental risks, and ensure a commitment to environmental stewardship while executing base missions.

For more information about environmental activities at the base, view the U.S. Air Force Fact Sheet about the Installation Restoration Program at Wright-Patterson Air Force Base.

For information regarding emerging contaminants, visit the Air Force Civil Engineer Center at https://www.afcec.af.mil/WhatWeDo/Environment/Perfluorinated-Compounds/.

environmental | safety | health | environment | community | AFCEC | Community Involvement Plan | questionnaire

2024 Wright-Patterson AFB Community Involvement Plan Questionnaire

35	08:43	Closed
Responses	Average time to complete	Status

1. What County do you live in?

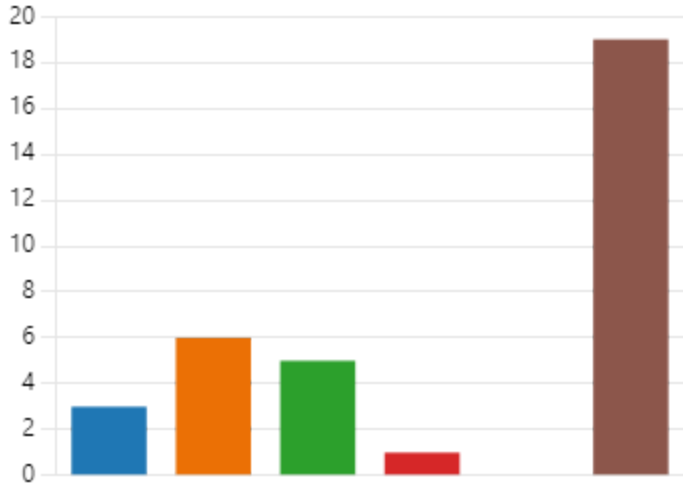
Greene	12
Montgomery	17
Other	6

2. If other, please identify county/location

5	Latest Responses
Responses	

3. Where do you live?

Fairborn	3
Beavercreek	6
Riverside	5
Huber Heights	1
On-base	0
Other	19



4. If other, please identify city

18
Responses

Latest Responses

5. Where do you live in relation to WPAFB?

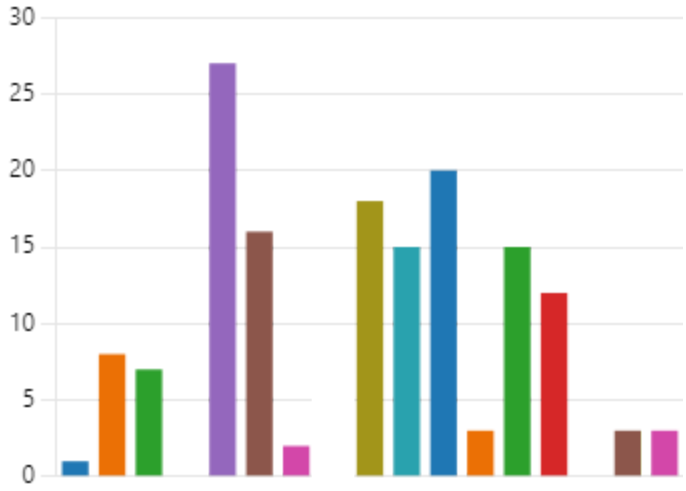
0-1 Mile Away	5
1-5 Miles Away	9
5+ Miles Away	20

6. Before we contacted you with this questionnaire, were you aware of the Air Force's previous environmental restoration activities and cleanup work at WPAFB?

Yes, Aware	13
Somewhat Aware	17
No, Not Aware	3
Not Sure	0

7. What are your concerns related to WPAFB?

Noise	1
Traffic	8
Base Access	7
Military Training	0
Drinking Water	27
Air Quality	16
Trash and Littering	2
	6
Water Quality of Area Ponds/Riv...	18
Contamination	15
Cancer, Negative Health Effects	20
Property Values	3
Cleanup Progress	15
Natural Resources Damages	12
Unexploded Ordinances	0
No Concerns	3
Other	3



8. If other, please explain

3
Responses

Latest Responses

9. Are you familiar with the emerging contaminants such as 1,4-dioxane and per - and polyfluoroalkyl substances (PFAS)?

Yes	24
No	5
Somewhat	5

10. How interested or concerned are you about 1,4-dioxane and PFAS?

Very	20
Moderately	8
Slightly	3
Not at All	0
Undecided	3

11. Are you familiar with the WPAFB Environmental Webpage? (https://wpafb.af.mil/)

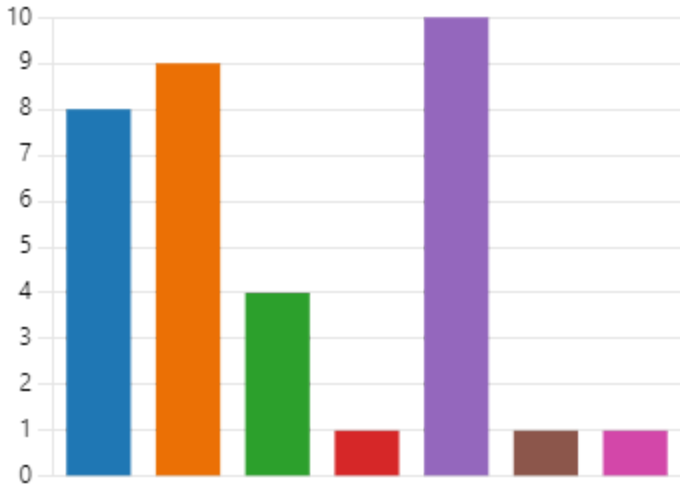
Yes	8
No	19
Somewhat	6

12. If you visited the webpage and reviewed documents, were they understandable?

Yes	5
Somewhat Aware	5
No	2
Too Technical/Too Much Inform...	2
Have Not Visited the Webpage	19

13. What source do you find most useful for getting information from WPAFB?

Newspaper	8
Online Newspaper	9
Email	4
Radio	1
Social Media	10
Public Meetings	1
Other	1



14. Please identify source (i.e., Dayton Daily News, WHIO Radio, WPAFB Facebook, etc)

28
Responses

Latest Responses

"*I live close by and don't get information about WPAFB.*"

"*WYSO*"

"*Dayton Daily News*"

15. Before receiving this questionnaire, did you know who to contact at the WPAFB for the Installation Restoration Program?

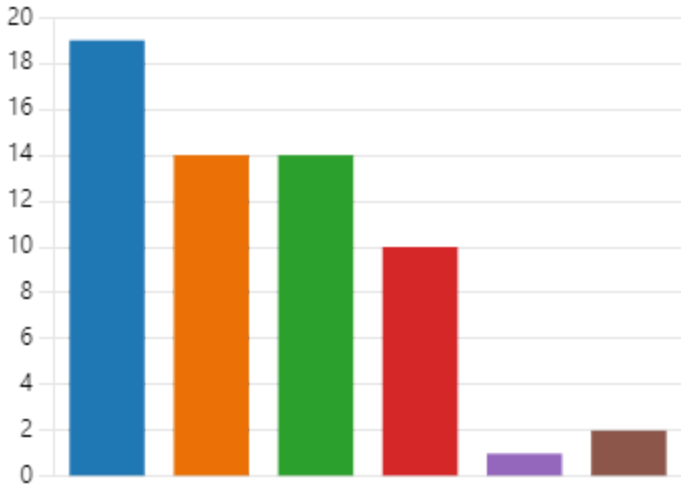
Yes	4
No	28
Undecided	2

16. Do you know of any assistance the installation has provided to help you and the other community members/groups better understand technical and scientific information regarding work being done at the installation?

Yes	5
No	29

17. If technical assistance has not been provided to your community, which of the following activities could help you and other community members/groups better understand technical and scientific information regarding the installation restoration program? (check all that apply)

Community Informational Newsl...	19
Presentations by experts to expl...	14
Community informational works...	14
Installation-provided facilitator ...	10
I don't feel that any technical as...	1
Other	2



18. If other, please explain

2
Responses

Latest Responses

19. What type of meeting would you most likely attend?

In person	4
Online/virtual	17
Community/Neighborhood (off-...	7
I would not likely attend meetin...	6
Other	0

20. If other, please explain

0
Responses

Latest Responses

21. Are you aware that there is a Restoration Advisory Board Meeting two times a year?

Yes	5
No	29

22. Do you feel that the Air Force offers the public sufficient opportunities to become involved with the Installation Restoration Program?

Yes	2
No	4
Sometimes	6
Undecided	9
Not familiar with participation o...	13

23. How confident are you that the Air Force will continue to take all the necessary response actions to protect human health and the environment in the future at WPAFB?

Very Confident	3
Confident	6
Not Confident	16
Undecided	7
Not familiar with the Installation...	2

24. On a scale of 1-5, how would you rate the success of the Air Force Civil Engineer Center Installation Restoration Program?

1 - Not at all successful	3
2	9
3 - Successful	13
4	3
5 - Very Successful	1

25. What social media platforms do you think would be best for getting information to the community?

Facebook	24
Instagram	1
X	2
Other	5

26. If other, please explain

5
Responses

Latest Responses
"*Web site* "

27. Would you like to be added to our e-mail list for notifications? This includes notices of meetings, comment periods, fact sheets when issued and more.

Yes	18
No	15

28. If Yes, please provide e-mail address and/or mailing address

18
Responses

29. If you would like to become a Restoration Advisory Board member, please provide your name and e-mail address and you be provided additional information on becoming a member.

4

Responses

30. Is there anything else you would like to tell us about the installation community involvement efforts or about environmental restoration at this installation?

11

Responses

Latest Responses

"*I live with my family in a home that is just a mile or two away ...*

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