FINAL (Rev 01)

Perfluorinated Compounds Preliminary Assessment

Former Griffiss Air Force Base, NY

Perfluorinated Compounds (PFCs) Release Determination at Multiple BRAC Bases

Contract FA8903-08-D-8766
Task Order 0177

Prepared for:

Air Force Civil Engineer Center
JBSA Lackland, Texas
4PAE08 Contract

July 2015

Submitted by:

amec foster wheeler

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(Rev 01)

PERFLUORINATED COMPOUNDS PRELIMINARY ASSESSMENT

FORMER GRIFFISS AIR FORCE BASE
ROME, NEW YORK

PROJECT NO. JREZ20147242

Prepared for:
Air Force Civil Engineer Center
Joint Base San Antonio – Lackland, Texas

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.

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ACRONYMS

ADCOCC	Air Defence Command Operational Control Center
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFCEE	Air Force Center for Engineering and the Environment
AFFF	Aqueous Film Forming Foam
AFHRA	Air Force Historical Research Agency
AFRL	Air Force Research Laboratory
AFSAS	Air Force Safety Automated System
AFSEC	Air Force Safety Center
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
AR	Administrative Record
AST	Aboveground Storage Tank
ATSDR	Agency for Toxic Substances and Disease Registry
BEC	BRAC Environmental Coordinator
bgs	below ground surface
BRAC	base realignment and closure
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DoD	Department of Defense
DoDI	Department of Defense Instruction
EBS	Environmental Baseline Survey
EIS	Environmental Impact Statement
FDA	Fire Demonstration Area
ft	feet or foot
FTA	Fire Training Area
IRP	Installation Restoration Program
ISWPA	Installation Specific Work Plan Addendum
Law	Law Engineering and Environmental Services
mg/kg	milligrams per kilogram
NYANG	New York Air National Guard
NYSDEC	New York State Department of Environmental Conservation
OMS	Organizational Maintenance Squadron
OWS	Oil Water Separator
PA	Preliminary Assessment
PFC	perfluorinated compounds
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
RADC	Rome Air Development Center
ROD	Record of Decision
SAC	Strategic Air Command
SFTA	Suspected Fire Training Area
TO	Task Order
µg/L	micrograms per liter

USACE	United States Army Corps of Engineers
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank

EXECUTIVE SUMMARY

This Perfluorinated Compounds (PFC) Preliminary Assessment (PA) provides findings from research conducted to determine whether and where aqueous film forming foam (AFFF) containing PFCs was stored, handled, used or released at the non-United States Air Force (USAF)-retained portions of former Griffiss Air Force Base (AFB), located in Rome, New York. Research was conducted using: 1) personnel interviews; 2) online research; and, 3) archival research at the Air Force Historical Research Agency (AFHRA) and the Air Force Safety Center (AFSEC). Since a fire training area (FTA; FT030P) known to have used AFFF is already being investigated for PFCs at the former Griffiss AFB (Amec Foster Wheeler, 2014), this PA focuses on those areas exclusive of the FT030P. The results of the FTA investigation will be reported under separate cover.

AFFF containing PFCs were used at the former Griffiss AFB for extinguishing petroleum fires and firefighting training activities, as well as in fire suppression systems at several of the installation buildings. Based on the research conducted, 17 AFFF areas were identified. For the purposes of this report, areas where AFFF was stored, handled, used or released are referred to as "AFFF areas." AFFF areas can include:

- crash sites/aircraft fires;
- FTAs used after 1970 that are not already being investigated for PFCs by Amec Foster Wheeler[1];
- storage vessels/containers (underground storage tanks (USTs), aboveground storage tanks (ASTs), drums, buckets, etc.) where virgin or spent AFFF was stored with or without secondary containment;
- areas where AFFF use or release was documented via personnel interviews, environmental reports, electronic or print media, etc.; and,
- areas where AFFF was handled or used/released indoors.

Based on the research conducted, 17 AFFF areas were identified at the non-USAF-retained portions of former Griffiss AFB and may potentially require further action:

1) Building 15: This is the former vehicle refueling and maintenance building that has a fire suppression system using AFFF and waste AFFF underground storage tanks (USTs). Although a documented release was not identified, the waste AFFF USTs have no secondary containment.

2) Building 44 (Former Fire Station): This building is a former fire station that used AFFF from storage containers which were transferred to trucks by hand within the facility. No known releases of AFFF were identified.

3) Building 45 (Fire Station): This building is the current fire station which contains a UST for storing virgin AFFF for distribution to fire trucks by overhead lines. Although no documented releases of AFFF at the building were identified, the original virgin AFFF UST that was replaced in 1992 had no secondary containment system.

[1] AMEC Environment & Infrastructure, Inc. changed its name on 1 January 2015 to Amec Foster Wheeler Environment & Infrastructure, Inc., to reflect AMEC's acquisition of Foster Wheeler. Contract FA8903-08-D-8766 was modified on 26 March 2015 to reflect the name change. All resource documents created under AMEC Environment & Infrastructure, Inc. remain in place and are executed under Amec Foster Wheeler Environment & Infrastructure, Inc.

4) North side of Building 45 (Fire Station): In the area north of Building 45, AFFF was released during occasional maintenance and testing of fire trucks.

5) Building 47: This building is a heated parking garage that has a fire suppression system using AFFF and waste AFFF (USTs). Although no documented releases of AFFF were identified, the waste AFFF UST has no secondary containment system.

6) Building 100: This is the former weapons and release building and has a fire suppression system using AFFF. Two 2,500 gallon AFFF ASTs were located at this building. In addition, one of the interviewees indicated that the AFFF system had been activated on occasion and that AFFF had flowed out the doors and onto the apron.

7) Building 101: The fire suppression system in Building 101 was reported to have been activated several times resulting in AFFF runoff flowing approximately 3,000 feet to Six Mile Creek. The building also has two waste AFFF concrete USTs with no secondary containment.

8) Building 150: storage containers of AFFF were reportedly stored in Building 150; however, no use/transfer of AFFF was reportedly conducted in this area and no releases were documented.

9) Building 917 and AFFF Lagoon (Part of SD-32): This building is the former missile assembly shop and had a fire suppression system using AFFF. The system was connected to the AFFF lagoon (listed as part of SD-32) located south of the building which was constructed to hold waste AFFF in the event of a release. There are conflicting reports as to whether or not there were AFFF releases in this area.

10) Suspect FTA (FT-48): This area was reportedly used for fire demonstrations/training until the early 1970s.

11) Fire Demonstration Area (SS-24): This area north of Apron 3 was formerly used for fire demonstrations. Fires were reportedly extinguished with water, although it is possible that AFFF was used on occasion.

12) Apron 1: In 1977, an airplane fire occurred on Apron 1 in which AFFF was reportedly used.

13) Nose Docks 1 and 2 and Apron 1 - trench (part of SD-41): Soil caught on fire near Nose Docks 1 and 2 and Apron 1 due to fuel contaminated soil. It is not known whether AFFF was used for fire suppression (this area is adjacent to the 1977 aircraft fire that occurred on Apron 1).

14) B-52 Crash Site: A B-52 crashed at the end of a runway in 1972 or 1973; however, the runway was not identified and it is not known if AFFF was used.

15) Sanitary Sewer Line from FT030P: Waste water from FT030P was reportedly defoamed at the FTA and then discharged to a sanitary line where it flowed south to the main base. It was then pumped to the installations main sanitary sewer system. Other information indicates that defoamed liquid was discharged to a storm drain that ran to either Six Mile Creek or the Mohawk River. The sanitary line is not being investigated as part of the FTA investigation, and the condition/location of the line is not known.

16) Six Mile Creek (SD-32): Surface water flow from several areas with potential releases reportedly discharge to Six Mile Creek, but the releases and/or flow paths have not been confirmed.

17) Site Wide: Landfarming of fuel-contaminated soil from the FT030P, as well as other petroleum-impacted soils from across the installation, occurred on Aprons 1 and 2. Upon completion of remedial effort, soil was used as backfill across the installation.

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1.0 INTRODUCTION

This Perfluorinated Compounds (PFC) Preliminary Assessment (PA) for the former Griffiss Air Force Base (AFB) has been prepared by Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler)[2], on behalf of the Air Force Civil Engineer Center (AFCEC) under Contract No. FA8903-08-D-8766, Task Order (TO) 0177, PFCs Release Determination at Base Realignment and Closure (BRAC) Installations. The research is being conducted as part of United States Air Force (USAF) enterprise-wide response to possible release of PFCs per Department of Defense Instruction (DoDI) 4715.18, Emerging Contaminants, in general accordance with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This report provides findings from research conducted to determine whether and where aqueous film forming foam (AFFF), containing PFCs, was stored, handled, used or released at the non-USAF-retained portions of Griffiss AFB, located in Rome, New York.

1.1 Background

PFCs are a large group of synthetic fluorinated compounds that are widely used to make everyday products more resistant to heat, stains, grease, and water. They are also components in fire fighting foams. The chemical structures of PFCs make them resistant to natural environmental degradation. Due to their persistence in the environment, bioaccumulation potential, and toxicity, PFCs have a potential impact on human health and the environment. Currently, PFCs are not regulated by the United States Environmental Protection Agency (USEPA); however, the USEPA has recently developed provisional health advisories for two PFCs (perfluorooctane sulfonic acid [PFOS] and perfluorooctanoic acid [PFOA]) to protect against potential exposure risk through drinking water (USEPA, 2009).

In 1970, the USAF began purchasing and using AFFF containing PFCs (PFOS and/or PFOA) for extinguishing petroleum fires and firefighting training activities (USAF, 2012). AFFF was used at USAF installations in and around fire training areas (FTAs). AFFF could have also have been used at other areas within installations, such as in and around hangars that had AFFF fire suppression systems, plane crash and fire emergency response sites, firefighting equipment testing areas, wash racks, areas where fire trucks and/or emergency vehicles were washed, and AFFF storage areas.

1.2 Objective

The objective of the PFC PA is to identify areas where AFFF was potentially stored, handled, used or released within the non-USAF-retained portions of former Griffiss AFB to aid the USAF in exercising due diligence to protect human health and the environment. However, the FTA at former Griffiss AFB (FT030P[3]) is excluded from this report since it is currently being investigated for the potential presence of

[2] AMEC Environment & Infrastructure, Inc. changed its name on 1 January 2015 to Amec Foster Wheeler Environment & Infrastructure, Inc., to reflect AMEC's acquisition of Foster Wheeler. Contract FA8903-08-D-8766 was modified on 26 March 2015 to reflect the name change. All resource documents created under AMEC Environment & Infrastructure, Inc. remain in place and are executed under Amec Foster Wheeler Environment & Infrastructure, Inc.

[3] The FTA was historically addressed in the Installation Restoration Program (IRP) under site designation FT030. To manage and administer PFC-related site investigation, characterization, and mitigation activities, the USAF has defined each site with a new identification that adds a "P" to the IRP site identification. The corresponding site identification (i.e. FT030P) is used throughout this document

PFCs (Amec Foster Wheeler, 2014). The results of the investigation will be reported under separate cover. This PFC PA focuses on other potential AFFF areas, presents results from the research and evaluation of potential use of AFFF at former Griffiss AFB, and concludes whether a reasonable basis exists to suspect PFC presence beyond those already under investigation at the FTA.

For the purposes of this report, areas where AFFF was stored, handled, used or released are referred to as "AFFF areas." The word "release" in this report refers to areas where AFFF was unintentionally discharged.

1.3 Scope

To achieve the aforementioned objectives, research was conducted using: 1) personnel interviews; 2) online research; and, 3) archival research at the Air Force Historical Research Agency (AFHRA) and the Air Force Safety Center (AFSEC). Research was conducted to find information on AFFF areas on the non-USAF-retained portions of the installation property, excluding the known FTA, for the years 1970 through the installation closure date. Limited information was also obtained regarding the use of AFFF after installation closure. This information is provided in **Appendix A**.

2.0 INSTALLATION DESCRIPTION

The former Griffiss AFB is located in Rome, New York and occupied approximately 3,500 acres (**Figure 1**). The installation was in operation from 1942 to 1995. The New York Air National Guard (NYANG) continued its air operations and managed the airfield until October 1998, at which time the military flying mission at Griffiss ended.

2.1 Former Mission and Land Use

Griffiss AFB was established as the Rome Air Depot on February 1, 1942. Construction of the installation began in August 1941 and flying operations on the depot airfield began on February 18, 1942. After ten name changes in six years, the installation was permanently named in January 1948 after Lieutenant Colonel Townsend E. Griffiss (USAF, 1994). Prior to construction of the installation, the land was primarily pasture and cropland with scattered farmsteads, except for a small housing subdivision with more than 100 lots which had been established in the mid-1930s in the area northwest of Building 101.

During World War II, activities at the installation centered on aircraft engine maintenance and repair, and training of air depot groups in engine repair. These activities were curtailed in the latter part of 1945 (USAF, 1994).

More than 40 buildings were previously located in the west central portion of the former installation. These buildings were originally used to house civilian employees who worked at the Rome Air Depot during World War II, and were later used as dormitories for military personnel and administrative buildings. West of these buildings and off the former installation boundary were more than 40 family housing units that were originally used to house civilian employees with families. This area was referred to as "Air City" (USAF, 1994).

Electronic research activities began in 1949 at Griffiss AFB. The Watson Laboratory complex transferred from Red Bank, New Jersey, in piecemeal fashion from 1950 to 1951. Watson Laboratories became the Rome Air Development Center (RADC) in June 1951 (later known as Rome Laboratory, which became part of the Air Force Research Laboratory [AFRL] in 1997). An intelligence and reconnaissance laboratory was constructed in 1954. Construction of an electronics research laboratory was nearing completion at that time. The original northwest-southeast trending runway was upgraded and extended in the early 1950s to handle jet fighter aircraft stationed at Griffiss AFB. Various fighter interceptor aircraft were also at Griffiss AFB from 1950 to 1987 (USAF, 1994).

In 1956, a major expansion of the existing airfield was initiated, including the construction of a new 11,500-foot (ft) long runway (Runway 15/33), associated taxiways, Aprons 1 and 2, and an Alert Apron. In 1970, the 416th Bombardment Wing of the Strategic Air Command (SAC) was activated at Griffiss AFB, requiring construction of support facilities for KC-135 tanker and B-52 bomber aircraft adjacent to Aprons 1 and 2 and the alert apron. These facilities included a series of aircraft maintenance hangars (or nose docks) adjacent to Apron 2 and various industrial shops and administrative buildings on a hill southwest of the three aprons. The bulk fuel storage area (the Barge Canal Bulk Fuel Storage Area) and associated hydrant fueling systems at Aprons 1 and 2 were also completed in the late 1950s (USAF, 1994).

The weapons storage area was constructed in the late 1950s in the northeastern portion of the installation. The weapons storage area was expanded in the late 1970s and early 1980s with the construction of a number of storage igloos and other support facilities for the air launch cruise missile. The North American Air Defence Command Operational Control Center (ADCOCC) facilities were added in the early 1980s (USAF, 1994).

The Woodhaven and Skyline family housing areas were constructed in the late 1950s (now removed). These facilities were replaced by the firing range facility constructed in 1961 in the area north of the weapons storage area. The Composite Medical Facility (Installation Hospital) was constructed in the southeastern section of the installation in 1974 to replace a multi-building facility constructed in 1943 that was located in the area west of the Skyline Gate (USAF, 1994). As a result of these and other changes over the years, numerous facilities were constructed and later modified, or, in some cases, demolished to accomplish follow-on missions.

The Base Fire Control Department operated an FTA (FT030P) just west of the northwestern end of the main runway, located between Six Mile Creek and the Mohawk River. The FTA was in operation from the 1960s through Griffiss AFB closure in 1995 to simulate aircraft fuel fires. Petroleum fires were set for burning and extinguishing practice approximately three times a year (Law, 1995). FT030P is currently being investigated separately, since AFFF use is documented to have occurred in this area. Therefore, a detailed discussion of FT030P is not included in this report. Please refer to the Griffiss AFB Installation Specific Work Plan Addendum (ISWPA) completed by Amec Foster Wheeler (2014), for additional information.

A suspected FTA (FT-48) that was used prior to the early 1970's was located in the east-central portion of the installation (north of Runway 15/33), between Perimeter Road to the west, the installation perimeter fence to the east, and the former Gate 13 access road to the south (Ecology and Environment, 1999).

Griffiss AFB was designated for realignment under BRAC in 1993 and closed in 1995. The NYANG continued its air operations and managed the airfield until October 1998, at which time the military flying mission at Griffiss ended. Since the Griffiss AFB closure and the conversion of the installation to the Griffiss International Airport, additional facilities have been demolished and others constructed. These include the construction of a Family Dollar Store distribution center and parking area on the southeastern corner of the installation on what was previously the alert apron. **Figure 2** presents the installation layout.

2.2 Current Land Use and Property Information

The installation is currently called the "Griffiss Business & Technology Park" and consists of approximately 3,500 acres, including the 1,680-acre Griffiss International Airport. The airport facilities consist of approximately 20 structures, including: administrative and Flight-Base Operator offices; an aircraft rescue and fire fighting building; large conventional hangars for storage and aircraft maintenance; and, a set of five "nose dock" hangars that were once used for maintenance of B-52 aircraft. Other areas of the business park are designated for industrial use, office space, high tech industries, golf course and fitness facilities, and future redevelopment.

In addition, approximately 136 acres of the former Griffiss AFB have been retained by the USAF for use by the Air Force Research Laboratory-Rome, the Northeast Air Defense Sectors, and the Defense Finance and Accounting Service Center. The retained property is shown on **Figures 1** through **3**.

2.3 Environmental Data

The following sections describe the environmental characteristics of the installation.

2.3.1 Geology and Soils

Geologic formations present at the surface include the Utica Shale and glacial deposits of Pleistocene age. The Utica Shale forms the bedrock underlying the installation and the surrounding area. It is a black and gray, carbonaceous, slightly fissile to massive shale. The formation is highly fossiliferous. The surface of the Utica Shale bedrock slopes to the southwest in the northeast portion of the installation, and then toward the Mohawk River in the south and northwest parts of the installation, with a nearly level divide separating the latter two areas. The depth to the Utica Shale in the installation area ranges from zero at the outcrop in the north-northeast part of the installation to 130 feet in the south part of the installation. Under the main flightline area, depth to bedrock is approximately 30 feet.

Deposits lying above the Utica Shale consist of clay, silt, sand, and gravel sediments laid down by glacial, fluvial, and lacustrine processes. A sheet of glacial till extends over most of the installation, and where present, immediately overlies the Utica Shale. Above the till lie deposits that are the result of fluvial deposition in front of, or along the margins of the ice sheet, as well as deposits that were laid down as sediments in glacial lakes of Pleistocene time. Terrace-like features consisting entirely of sand and gravel deposits extend east to the Town of Floyd, and outwash deposits make up the highland area on the east-northeast side of the installation. The thickness of outwash under the installation is generally less than 50 feet. The Utica Shale contains well-defined joints, which are likely to aid the movement of groundwater through the Utica Shale.

Nearly all soils at the installation and vicinity are loams and sands derived from the underlying glaciofluvial and glaciolacustrine deposits. Silts and gravels are abundant and clays are relatively minor in amount. The soils are generally acidic, especially in the surface layer, resulting in high corrosivity. Erosion potential is generally low to moderate. There are generally no severe limitations on land uses except in areas of very shallow groundwater.

2.3.2 Surface Water

Two named creeks cross the installation. Six Mile Creek enters the installation along the northern edge and flows to the southeast, crossing under Runway 15/33 and exiting the eastern side of the installation. Three Mile Creek begins on the south central side of installation and also flows to the southeast. Both creeks eventually flow into the New York State Barge Canal (Erie Canal), located approximately 2,500 ft south of the installation. The New York State Barge Canal flows to the east. The Mohawk River also runs along the west side of the installation and flows south. Several wetlands are also present surrounding Six Mile Creek east and northeast of Runway 15/33, and surrounding Three Mile Creek in the south central portion of the installation. The locations of the water bodies are shown on **Figure 2**.

2.3.3 Groundwater

The groundwater flow direction onto the installation is towards the southwest across the northwestern installation boundary. Down gradient of this installation boundary, groundwater encounters a divide oriented in the east-west direction across the western part of the installation. From this divide, groundwater flow is toward the Mohawk River (west) and the New York State Barge Canal (groundwater flow to the south and southeast), which serve as discharge points for groundwater flowing away from the installation. Groundwater is present at approximately 10 feet below ground surface (bgs) under much of the installation, although groundwater discharges to ground surface in some areas through seeps, or streams (USAF, 1994). Approximate groundwater flow directions are shown on **Figure 2**.

The underlying aquifer is unconfined. Due to the heterogeneity of the overburden, the groundwater flow characteristics vary across the installation, with flow velocities ranging from four feet per year to greater than 100 feet per year depending on location.

Where used, nearly all of the groundwater in the region is obtained from the glacial deposits. Minor amounts of water are obtained from the Utica Shale. Groundwater of good to moderate quality is available from the sand and gravel deposits underlying the Mohawk River Valley. The most important potential source of groundwater is north of the installation in the area where the sand and gravel deposits underlie the plain between the Rome and Delta Reservoirs (USAF, 1994).

2.3.4 Drinking Water Supply

The installation uses the public water supply from the City of Rome. As documented by the City of Rome on their website (accessed July 2014), the City's water supply originates over 20 miles north of Rome.

No drinking water wells were identified in the research as being located downgradient (to the west, south, or east) of the installation. Private residential supply wells located in areas hydraulically downgradient of the installation were monitored during previous installation environmental investigations. In 1991, properties identified as downgradient from the installation that were not already connected to the public water supply were connected. Properties outside this area to the east and northeast were also connected to the public water supply (ATSDR, 2014).

3.0 PREVIOUS PFC INVESTIGATIONS

No previous PFC investigations have been conducted at the installation, although an investigation is planned for FT030P (Amec Foster Wheeler, 2014).

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4.0 RESEARCH ACTIVITIES

To initiate the research process, a general PFC information questionnaire for former Griffiss AFB was completed by Mr. Michael McDermott, the former BRAC Environmental Coordinator (BEC) for the installation. This completed questionnaire provided general information on the installation and is included in **Appendix B**. Mr. McDermott also provided supplemental information to assist in identifying AFFF areas. The information provided includes: a summary of AFFF storage tank locations (both aboveground and underground), oil water separator (OWS) locations and use(s) and information about vehicle wash racks. The supplemental information as provided by Mr. McDermott is included in **Appendix B** and discussed further in Section 4.2.1.

The following sections describe the research conducted through record and document reviews and interviews.

4.1 Summary of Interviews

Amec Foster Wheeler conducted six interviews of past and present installation employees as part of this research project. The employees were interviewed to document their knowledge of former AFFF use at Griffiss AFB. A summary of the interviewees (name, title, date and interview relevance) is provided in **Table 1,** and information obtained from the interviews is documented on Telephone Interview Logs provided in **Appendix C.**

Table 1: Summary of Interviews

Person Interviewed	Title	Date	Relevance of Interview
Michael McDermott	BRAC Environmental Coordinator	1992 to present	Knowledge of environmental issues at installation and recommended additional interviewees to contact about AFFF use.
Ted Endy (Chief)	Former Fire Chief	1976-1997	Knowledge of AFFF use at installation. Used AFFF to put out fire in 1977 at Alert Apron.
Bruce Mero	Environmental Manager	1977-1995	Indicated releases of AFFF to six mile creek from Building 101.
Joe Wojnas	Civil Engineer (USACE)	1980-present	Knowledge of general installation operations and remedial actions.
Mark Rabe	Environmental Engineer	1995-2010	Worked on remediation of FTA.
Rob Cowles	Fireman	1994-1998 and 2011 to present	Knowledge of fire station activities and uses of AFFF at installation.

Interviewees identified locations of hangars and other buildings where AFFF was used in the fire suppression systems. None of the people interviewed were aware of fire or emergency vehicles being cleaned using wash racks. Vehicles were reportedly hand washed from buckets at the fire station. Wash water either ran off via surface drainage into the adjoining grassy areas or into the storm drain lines.

Although two buildings were documented as having burnt down (i.e., Commissary in mid 1970s and the ski chalet in late 1980s), AFFF was reportedly only used on fuel related fires due to its expense and the ability of water to extinguish structural fires (Endy, 2014; Wojnas, 2014). "Foam" was also reported to be

used on the runways prior to landing of planes with landing gear trouble; however, this was reported to be the "protein foam" used prior to AFFF, and not AFFF (Endy, 2014).

Relevant information from the interviews concerning AFFF areas included the following:

1) AFFF was stored in (McDermott, 2014):
    - Building 15 – vehicle refueling and maintenance
    - Building 45 – fire station
    - Building 47 – heated parking garage
    - Building 100 – weapons and release systems
    - Building 101 – maintenance hangar
    - Building 917 – missile assembly shop
2) AFFF was stored in overhead lines and in two USTs (one replaced the second) at the fire station, Building 45 (McDermott, 2014; Endy, 2014; Cowles, 2014).
3) Activation of the fire suppression system in Building 101 resulted in AFFF flowing out the hangar doors on several occasions and overflowed into the sanitary sewer lines. The New York State Department of Environmental Conservation (NYSDEC) notified the installation on a number of occasions that AFFF was identified floating down Six Mile Creek (Mero, 2014).
4) Mechanics worked on the fire trucks on the northeast side of the fire station (Building 45). Although not large releases, AFFF was released to the grass in this area on numerous occasions when testing the systems (Endy, 2014; Cowles, 2014).
5) During open houses and air shows, fire demonstrations sometimes occurred on Apron 3 as well as on the grass north of Apron 3. Although the demonstrations typically used water for fire suppression, it is possible that AFFF was used on occasion (Endy, 2014).
6) When the fire training area (FT030P) was remediated, the fuel contaminated soils were land farmed on Apron 1 and some on Apron 2. When analytical data indicated that the land-farmed soil met the cleanup objectives (PFCs were not part of the analysis), the soil was used as back fill across the installation (e.g., for filling UST excavations). It was not known if documentation was available on where the "clean" soil was used (Wojnas, 2014; Rabe, 2014). If analytical results indicated that the soil did not meet the soil cleanup objectives, it was sent to the landfill (Landfill #1 was specifically mentioned by Joe Wojnas).
7) A defoaming agent was added to the spent AFFF from the fire training area (FT030P), and the effluent then drained to a sanitary drain that ran south to a building between Building 220 and 221, where it is assumed the effluent was transferred to the sanitary sewer (Rabe, 2014; Wojnas, 2014). However, one interviewee thought the defoamed spent AFFF liquid was drained to a storm drain that flowed to either Six Mile Creek or the Mohawk River (Mero, 2012). These lines are not being investigated as part of the ongoing PFC investigation at FT030P.

8) A plane caught fire on the Apron 1 in 1977. AFFF was reportedly used to put out this fire (Endy, 2014).

9) AFFF was transferred within Building 44 (the former fire station) to fire trucks from containers stored in the building (Endy, 2014).

10) Although fires such as the reported soil fire at SD-41 were not specifically identified, all fires that were the result of a fuel spill would have been put out with AFFF (Endy, 2014).

11) Activation of the fire suppression system in Building 100 resulted in AFFF flowing out the hangar doors on several occasions (Mero, 2014).

4.2 Review of Records

The internet was used to obtain records such as historical images and drawings, technical reports, property records, news articles, and other available or appropriate information to aid in documenting the use of AFFF at former Griffiss AFB. The AFCEC Administrative Record (AR) was the primary source of information as it included most environmental documents for the installation. Other general search engines were also used to locate news articles and other information. After the internet research was completed, a review of available documents was conducted at: 1) the AFHRA at Maxwell AFB located in Montgomery, Alabama; and, 2) the AFSEC at Kirtland AFB located in Albuquerque, New Mexico. All research was documented using the Research Logs, located in **Appendix D**, and a summary of the research is included in the following sections.

4.2.1 Administrative Record Document Review

The AFCEC AR was utilized to identify potential documents and reports relevant to AFFF usage at the installation. Keywords searched within the AR include "fire", "AFFF", "foam", and "wash racks". **Table 2** summarizes the eight relevant documents identified during the search and subsequently reviewed. Additional supporting information, including the document Research Logs, is located in **Appendix D**.

Table 2: Summary of Relevant Reports from the Administrative Record

AR Document Number	Document	Date	Relevance
AR00074	Draft Primary Report Identification of Areas of Concern	01 Oct 1990	Discussed rational for creating Areas of Concern, including for firefighting chemical releases
AR00924	Draft Final Primary Report Volume 1. Remedial Investigation	01 Dec 1996	Discussed fire training and demonstration areas
AR00931	Draft Final Primary Report Volume 5. Remedial Investigation	01 Dec 1996	Discussed findings at Suspected FTA (FT-48)
AR01543	Environmental Baseline Survey	30 Sept 1994	Stated AFFF stored in ASTs and USTs for use by the fire station and in several fire suppression systems
AR01544	Final Environmental Impact Statement	01 Nov 1995	Discussed hazardous material storage areas and Areas of Concern

AR Document Number	Document	Date	Relevance
AR01545	Final Supplemental Environmental Impact Statement	01 Sept 1999	Discussed hazardous material storage areas and Installation Restoration Program sites
AR02030	Draft Environmental Records of Decision for Areas of Concern	02 July 1999	Includes remediation decisions for 1) Fire Demonstration Area (SS-24), and 2) Suspected FTA (FT-48)
AR02332	Draft Record of Decision Building 133 Storage Vault Area of Concern ST-53, Nose docks 1 and 2 Area of Concern SD-41	01 Feb 2011	Includes remediation decisions for SD-41

Notes: AR – Administrative Record

AR Document Number AR00074 (Law Engineering and Environmental Services[Law], 1990): The document identified Building 917 as having fire fighting chemicals periodically released to the AFFF Lagoon (AFFF Lagoon is documented as part of SD-32). The document also listed a fuel fire as having occurred in soils during a trench excavation between Nose docks 4 and 5 (later documents indicate that this fuel fire occurred between Nose docks 1 and 2, which would make it part of SD-41). The document indicates that the presence of fuel in the soil may have been the result of a 1987 KC-135 aircraft fire on the southern end of Apron 1 that resulted in the release of 1,000 gallons of jet fuel; however, since there is no other documentation of an aircraft fire in 1987, this is likely a typographical error that should be referencing the documented 1977 KC-135 aircraft fire.

AR Document Number AR00924 (Law Engineering and Environmental Services[Law], 1996a): The document confirmed the location and uses of the FTA (FT030P) and the Fire Demonstration Area (FDA) (SS-24).

AR Document Number AR00931 (Law, 1996b): The document confirmed the location and uses of the Suspected FTA (FT-48).

AR Document Number AR01543 (USAF, 1994): The Environmental Baseline Survey (EBS) for the installation identified ASTs and USTs that were used to store unused AFFF for the fire station and fire suppression systems installed in several of the buildings, including:

- Building 15 – vehicle refueling and maintenance (500 gallon AFFF AST: AST-15-5)
- Building 45 – fire station (one 2,000 gallon AFFF UST: UST-45-4, replaced UST-45-1)
- Building 47 – heated parking garage (two 2,000 gallon AFFF ASTs: AST-47-1 and AST-47-2)
- Building 100 – weapons and release systems (two 2,500 gallon AFFF ASTs: AST-100-1 and AST-100-2)
- Building 101 – maintenance hangar (two 7,000 gallon AFFF ASTs: AST-101-6 and AST-101-7)
- Building 917 – missile assembly shop (one 1,400 gallon AFFF AST: AST-917-1)

The EBS listed USTs for waste AFFF that was collected after fire suppression systems were activated. These include:

- Building 15 – Two steel 30,000 gallon waste AFFF USTs (UST-0015-01 and UST0015-02)
- Building 47 – One concrete 25,000 gallon waste AFFF UST (UST-0047)
- Building 101 – Two concrete 500,000 gallon waste AFFF USTs (UST-0101-02 and UST0101-03)

Several OWSs were associated with the waste AFFF systems, including:

- Building 15 – OWS-15-1 (OWS has diverter if AFFF system in Building 15 activated)
- Building 917 – OWS-917 (OWS has diverter if AFFF system in Building 917 activated)

The EBS listed locations of ten vehicle wash racks and/or wash rack-related OWS or waste water systems. Based on interviews conducted, these wash racks were not used by fire fighting vehicles and are therefore not anticipated to have resulted in releases of AFFF. Additional information is included in **Appendix B**.

The EBS discussed the weapons storage area or "AFFF" lagoon (lagoon is documented as part of SD-32), which was an unlined shallow depression constructed presumably in 1982 to handle AFFF from floor drains in Building 917 which contains an AFFF fire suppression system that was installed in 1982. The EBS indicated that this AFFF system reportedly never had a release to the lagoon. Although it did state that the lagoon received wastewater when the OWS leading to the lagoon overflowed, this wastewater reportedly did not contain AFFF.

The EBS also identified Building 44 as the former fire station on a number of the historic site drawings.

AR Document Number AR01544 (USAF, 1995): Includes listing of hazardous material storage areas and Areas of Concern, and includes lists of FTAs (FT030P), Suspect FTAs (FT-48), and FDAs (SS-24).

AR Document Number AR01545 (USAF, 1999): A Supplemental Environmental Impact Statement (EIS) indicated that AFFF was stored in Building 150 (former Fighter Alert Hangar that is no longer present). Information provided in the EIS also identified several Installation Restoration Program (IRP) sites, including Building 782-Nose dock 1 and 2 (SD-41). SD-41 reportedly had a spontaneous fire of fuel contaminated soil in July 1990 between the nose docks and Apron 1 (i.e., between Apron 1 and Apron 2). The exact location was not reported, and it is not known if AFFF was used to put out this fire.

This report also confirmed the AFFF lagoon (part of SD-32) location and design.

AR Document Number AR02030 (Ecology and Environment, Inc., 1999): The draft Environmental Records of Decision (RODs) described the FDA (SS-24) located between Apron 3, and Taxiways 17, 15, and 13 (approximately 14 acres). The FDA was used for demonstrating how to extinguish aircraft fuel fires between 1974 and 1992. The document did not indicate the type of extinguishing agents that were used to put out the fires. Surface runoff in this area was reported to flow to a storm drain system that discharged to the Mohawk River.

The draft RODs described a Suspected FTA (FT-48) that was located in the east-central portion of the installation (north of Runway 15/33), between Perimeter Road to the west, the installation perimeter fence to the east, and the former Gate 13 access road to the south (approximately 0.4 acres). This area was reportedly used by Griffiss AFB firefighters to simulate aircraft fuel fires and conduct fire training activities. Training activities were reportedly conducted once a week for approximately 1-2 hours per event during the early 1970s. The document did not indicate the type of extinguishing agents that were used to put out the fires. The exact date of initial operation of FT-48 is unknown but the FTA was abandoned in 1973 or 1974. Surface water from this area flows to a stormwater system which runs southwest to Six Mile Creek.

AR Document Number AR02332 (USAF, 2011): The draft Environmental ROD for Nose docks 1 and 2 (SD-41) described the investigations and remedial actions conducted to date for the fuel contaminated soil in the vicinity of the 1990 soil fire between Apron 1 and Apron 2 by Nose docks 1 and 2. SD-41 also includes fuel contamination at a nearby OWS and drainage swale, but these are not considered part of the potential AFFF Area. A figure in the document showed location of trench fire.

Review of relevant information from the AR suggests the following locations are potential AFFF areas:

1) An AFFF Lagoon (part of SD-32) for capturing waste AFFF used in Building 917 is located to the southwest of Building 917. There are conflicting reports as to whether or not there were AFFF releases in this area.).
2) AFFF fire suppression system and virgin AFFF UST and AST storage systems were identified in Buildings 15, 45, 47, 100, 101 and 917. The AFFF UST at Building 45 (Fire Station) was originally identified as being a steel tank with no secondary containment (Law, 1990). This tank was replaced in 1992 with a tank with a cathodic protection system. The remaining buildings have AFFF ASTs which are located inside buildings.
3) AFFF waste USTs were identified at Buildings 15, 47, and 101. The Building 15 UST was identified as steel and the USTs at Buildings 47 and 101 were identified as concrete; no secondary containment system was identified for any of these tanks.
4) A FDA (SS-24) located in the grass north of Apron 3 was used from 1974 to 1992.
5) A Suspected FTA (FT-48) located north of Runway 15/33 was reportedly used until 1973 or 1974.
6) AFFF was reportedly stored within Building 150 (no longer present).
7) A fuel fire located in an excavation trench between the nose docks 1 and 2 and Apron 1 (part of SD-41) was reportedly extinguished in 1990, but it is not known if AFFF was used.

4.2.2 Internet/News Review

A general search of the internet was conducted. Keywords searched included:

- "Fire Griffiss"
- "Crash Griffiss"
- "Plane Crash Griffiss"

- "Plane Mishap Griffiss"
- "Accident Griffiss"
- "Aqueous Foam Griffiss"
- "AFFF Griffiss"

A summary of relevant documents/websites is listed in **Table 3,** and the associated research logs and supplemental information is included in **Appendix E.**

Table 3: Summary of Relevant Websites

Website and URL	Description	Relevance
416th Organizational Maintenance Squadron (OMS) Photos from Griffiss AFB: http://416thsps.com/oms/416thOMS/Griffiss/KC135_burned_on_runway_1978_at_Griffiss_1	Photo of KC 135 which burned during engine trim operations	Photo shows burnt plane on tanker ramp and comments mention the use of fire fighting foam.
Topix blog, Rome Forum: http://www.topix.com/forum/city/rome-ny/TO65M8SRCRSNPST7V	Web Blog-looking for information on crashed B-52 at Griffiss	Respondents indicate that a B-52 crashed at "the end of the runway" in 1972 or 1973.
C&S Companies: http://www.cscos.com/portfolio/services-portfolio/facilities-portfolio/griffiss-international-airport/	Griffiss International Airport Hangar Renovation and Fire Suppression System description - 2006	Updated Building 100 AFFF fire suppression system from the one installed in mid-1980s.

Relevant findings from the internet search include the following:

1) Photographs and comments on the 1977 airplane fire on the tanker ramp (Alert Apron) (416th Website, 2014) and indicates that fire fighting foam was used to extinguish fire.
2) Indication that a B-52 had crashed at the end of the Griffiss AFB Runway in 1972 or 1973. The actual location was not specified, nor was there a description of the emergency response (i.e., not known if AFFF used) (Rome Forum, 2014).
3) C&S Company (an engineering, architectural, and construction firm) discusses upgrading the AFFF fire suppression system in Building 100 in 2006. C&S Company indicated that the initial AFFF fire suppression system was installed in the mid-1980s (C&S Company, 2014).

4.2.3 Air Force Historical Research Agency, Maxwell AFB, AL

The online AFHRA Records Index was searched for the following keywords: "crash," "fire," "mishap," "AFFF," "aqueous film forming foam," "as-built," and "real property." Two documents were requested for review based on their abstract.

Amec Foster Wheeler conducted a file review at AFHRA at Maxwell AFB in Montgomery AL on 7-8 April 2014. One document titled "Runway Skid Resistance **Griffiss Air Force Base NY", was not available for review and the second document titled "Transcript of Oral History Interview of Mr. Theodore Endy

(Discussed Fire Suppression Support during Desert Storm)" did not contain any relevant information on AFFF use at the installation.

4.2.4 Air Force Safety Center at Kirtland AFB, Albuquerque, NM

No research was required at AFSEC at Kirtland AFB. Colonel Jeffrey Slagle, AFSEC Staff Judge Advocate, conducted a search within the Air Force Safety Automated System (AFSAS) and legacy safety records using the following words and word combinations: "foam"; "foam fire"; "foam crash"' "perfluorinated"; and, "PFC". No records were identified for Griffiss AFB.

4.2.5 Additional Documents

Research was conducted to evaluate the potential location of drinking water wells surrounding the installation. Griffiss AFB itself has been supplied with public water from the City of Rome since the construction of the installation.

Data reviewed from the United States Agency for Toxic Substances and Disease Registry (ATSDR) indicated that private wells located in Rome and Floyd were identified and monitored in 1991. Groundwater was determined to flow onto the installation from the north and east, and off the installation to the west and south. Water lines were installed to the east and southeast of the installation and approximately 300 homes connected to the public water supply with assistance from the USAF (ATSDR, 2014). Additional lines were installed to the northeast and property owners paid for connection to the water supply (Town of Floyd, 2014).

According to the City of Rome Water and Sewer Department, all the properties to the west and southwest of the installation (i.e., between the installation and the Mohawk River) are connected to the public water supply. Based on this information, and that in the paragraph above, there are no known potable drinking water wells downgradient of the installation, between the installation boundary and the groundwater discharge points of the New York State (NYS) Barge Canal and the Mohawk River.

The book, Griffiss Air Force Base, Images of America (Leonard, 2008) was also reviewed. The book, which discusses and shows photographs of the Griffiss AFB from 1941 to 1999, discussed that only two structural fires occurred on the base, and both were prior to 1970.

Table 4 provides a summary of the additional document and records evaluated.

Table 4: Summary of Additional Documents

Document	Date	Relevance
Agency for Toxic Substances and Disease Registry- web page for installation: http://www.atsdr.cdc.gov/HAC/pha/pha.asp?docid=205&pg=3#_1_47	Visited 5/7/2014	Discusses connection of private wells to public water supply
Floyd, NY GIS website (attached in **Appendix E**)	Visited 5/7/2014	Map showing water line and connections for properties east of the installation
Book - Griffiss Air Force Base – Images of America	2008	Discussion and photographs of base operations from 1941-1995

4.3 Data Quality

As discussed in Section 1, the goal of the PFC research is to identify potential AFFF areas where PFCs may be present as a result of the use of AFFF during fire fighting activities, emergency responses, fire suppression system testing or releases, or any other activities conducted at the installation. In order to ensure that research activities were conducted sufficiently to fulfill these project objectives, a PFC Research Checklist was used as a data quality tool which summarizes the research activities discussed in Sections 4.1 and 4.2. The completed PFC Research Checklist is included in **Appendix F.**

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5.0 SUMMARY AND CONCLUSIONS

The information obtained during the research was evaluated to determine which areas at the former Griffiss AFB potentially stored, handled, or used AFFF. The AFFF areas were classified as either: storage areas; handling areas; or, usage/release areas, which are defined below.

Storage Area: An area where AFFF was stored in bulk. Storage containers/areas contained:

- Virgin AFFF for use, and
- Spent AFFF /water mixture.

Handling Area: An area where AFFF was transferred from or to storage either manually or by pipeline.

Usage/Release Area: An area where AFFF was discharged intentionally or unintentionally, including instances when:

- AFFF was discharged intentionally (fire training exercises or equipment testing);
- AFFF was released unintentionally (e.g. discharge from fire suppression system); and,
- AFFF was released through transport mechanisms (overland flow to surface water bodies).

The AFFF areas can include:

- crash sites/aircraft fires;
- FTAs used after 1970 that are not already being investigated for PFCs by Amec Foster Wheeler;
- storage vessels/containers (USTs, ASTs, drums, buckets, etc.) where virgin or spent AFFF was stored with or without secondary containment;
- areas where AFFF use or release was documented via personnel interviews, environmental reports, electronic or print media, etc.; and,
- areas where AFFF was handled, used/released indoors and fully contained.

Based on the research conducted on the use of AFFF at the non-USAF-retained portions of former Griffiss AFB, 17 potential AFFF areas were identified, in addition to FT030P that is currently under investigation (Amec Foster Wheeler, 2014). **Table 5** summarizes the potential AFFF areas and potential media/receptors identified during the research, and **Figure 3** illustrates their locations. As shown in **Figure 3**, a portion of the facility (Building 101) associated with AFFF Area #7 is being retained by the USAF; any future actions regarding AFFF Area #7 will address the entire facility.

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Table 5. Summary of Potential AFFF Areas and Justification for Potential Future Action

AFFF Area No.	Potential AFFF Area	Area Type	Date	Drainage System/ Receiving Water Body	Downgradient Drinking Water Wells	Potentially Affected Media	Justification for Potential Future Action
1	Building 15	Storage and Handling	1982-present	Floor drains lead to OWS which diverts AFFF into USTs. Under normal flow, aqueous waste flows to sanitary sewer.	None identified	Soil and Groundwater	Facility maintained an AFFF fire suppression system with two 30,000-gallon, single-walled, steel, waste AFFF USTs (UST-0015-01 and UST-0015-02) USTs designed to contain waste AFFF (no documented releases).
2	Building 44 (Former Fire Station)	Storage and Handling	1960-1995	Not Applicable	None identified	Soil and Groundwater	Facility stored and transferred AFFF into fire trucks; however, there are no documented releases and storage containers were located inside the building.
3	Building 45 (Fire Station)	Storage and Handling	~1975-Present	Not Applicable	None identified	Soil and Groundwater	AFFF storage area and fire truck maintenance area; transferred AFFF into fire trucks from UST (original UST had no secondary containment, but no documented releases) and overhead lines. The UST was replaced in 1992.
4	North Side of Building 45 (Fire Station)	Usage/ Release	~1975-Present	Six Mile Creek	None identified	Soil and Groundwater	AFFF was occasionally released to the grass north of the fire station to test AFFF systems during maintenance.
5	Building 47	Storage	unknown	Unknown	None identified	Soil and Groundwater	Vehicle operations and heated parking facility maintained an AFFF fire suppression system with one 25,000-gallon, waste AFFF UST with no secondary containment (no documented releases).
6	Building 100	Storage and Usage/ Release	1982-present	Unknown	None identified	Soil and Groundwater	Weapons & Release Systems facility maintained an AFFF fire suppression system with two 2,500-gallon AFFF ASTs. The fire suppression system was activated on several occasions, which resulted in AFFF flowing out of the building.

AFFF Area No.	Potential AFFF Area	Area Type	Date	Drainage System/ Receiving Water Body	Downgradient Drinking Water Wells	Potentially Affected Media	Justification for Potential Future Action
7	Building 101	Storage, Handling, and Usage/ Release	1980 to Present	Diverted from sanitary sewer system into USTs. Would be pumped to sanitary after defoaming. Some overflow out of building doors to Six Mile Creek.	None identified	Soil and Groundwater	Maintenance Hangar maintained an AFFF fire suppression system with two 500,000-gallon waste AFFF USTs (UST-0101-02 and UST-0101-03) and two 7,000-gallon AFFF ASTs. The fire suppression system was reported to have been activated several times, resulting in AFFF flowing out the hangar doors and discharging into to Six Mile Creek.
8	Building 150	Storage	unknown to 1995	Not Applicable	None identified	Soil and Groundwater	Former Fighter Alert Hangar stored AFFF; however, there are no documented releases and storage containers were located inside the building. The building was demolished.
9	Building 917 and AFFF Lagoon (part of SD-32)	Storage, Handling, and Usage/ Release	1982-present	Building and storage tank drain to lagoon, which overflows into Six Mile Creek.	None identified	Soil, Sediment and Groundwater	Missile Assembly Shop maintained an AFFF fire suppression system with one 1,400-gallon AFFF AST and an AFFF lagoon designed to contain AFFF if released from the building. Documentation is conflicting on whether or not there were releases of AFFF.
10	Suspect FTA (FT-48)	Usage/ Release	unknown to 1973 or 1974	Runoff flows to storm drains which flow to Six Mile Creek.	None identified	Soil and Groundwater	Reportedly used by Griffiss AFB firefighters to simulate aircraft fuel fires and conduct fire training activities. No documented use of AFFF, but possible because of use as a FTA. ROD recommended no further action.
11	Fire Demonstration Area (SS-24)	Usage/ Release	1974-1992	Runoff flows into storm drains which flow to the Mohawk River.	None identified	Soil and Groundwater	FDA used primarily for demonstrating how to extinguish aircraft fuel fires to the public. Demonstrations reported used water; however, AFFF may have been used. The metal trough for holding fuels was removed in 1992 and the ROD recommended no further action.
12	Apron 1	Usage/ Release	1977	Runoff flows into storm drains which flow into Six Mile Creek.	None identified	Soil and Groundwater	Plane caught on fire on Apron 1 and was reportedly extinguished with AFFF.

AFFF Area No.	Potential AFFF Area	Area Type	Date	Drainage System/ Receiving Water Body	Downgradient Drinking Water Wells	Potentially Affected Media	Justification for Potential Future Action
13	Nose Docks 1 and 2 and Apron 1 – trench (part of SD-41)	Usage/ Release	1990	Storm drain discharges to Six Mile Creek.	None identified	Soil and Groundwater	Spark from excavator ignited fuel-contaminated soil between Nose Dock 1, Nose Dock 2, and Apron 1, with the resulting fire potentially extinguished with AFFF. Soil removal conducted for fuel-contaminated soils and ROD recommended no further action.
14	B-52 Crash Site	Usage/ Release	1972 or 1973	Not applicable	None identified	Soil and Groundwater	B-52 reportedly crashed at the end of the runway; however, AFFF use and the specific location are unknown.
15	Sanitary Sewer Line from FT030P	Handling	1960s - 1998	Drains to sanitary sewer.	None identified	Soil and Groundwater	Waste AFFF at FT030P was defoamed and discharged to the sanitary sewer. The condition of this line is not known and there is conflicting information on its location.
16	Six Mile Creek (SD-32)	Usage/ Release	Unknown	New York State Barge Canal	None identified	Sediment and Surface Water	Six Mile Creek received potential AFFF discharge from storm drains from multiple usage/release areas.
17	Site Wide	Usage/ Release	Late 1990s	Storm drains in the vicinity of Apron 1 and Apron 2 discharges to Six Mile Creek.	None identified	Soil and Groundwater	Excavated fuel-contaminated soil from FT030P, potentially containing PFCs from AFFF use at the FTA, was landfarmed on Aprons 1 and 2, and then used as backfill at unspecified areas across the base.

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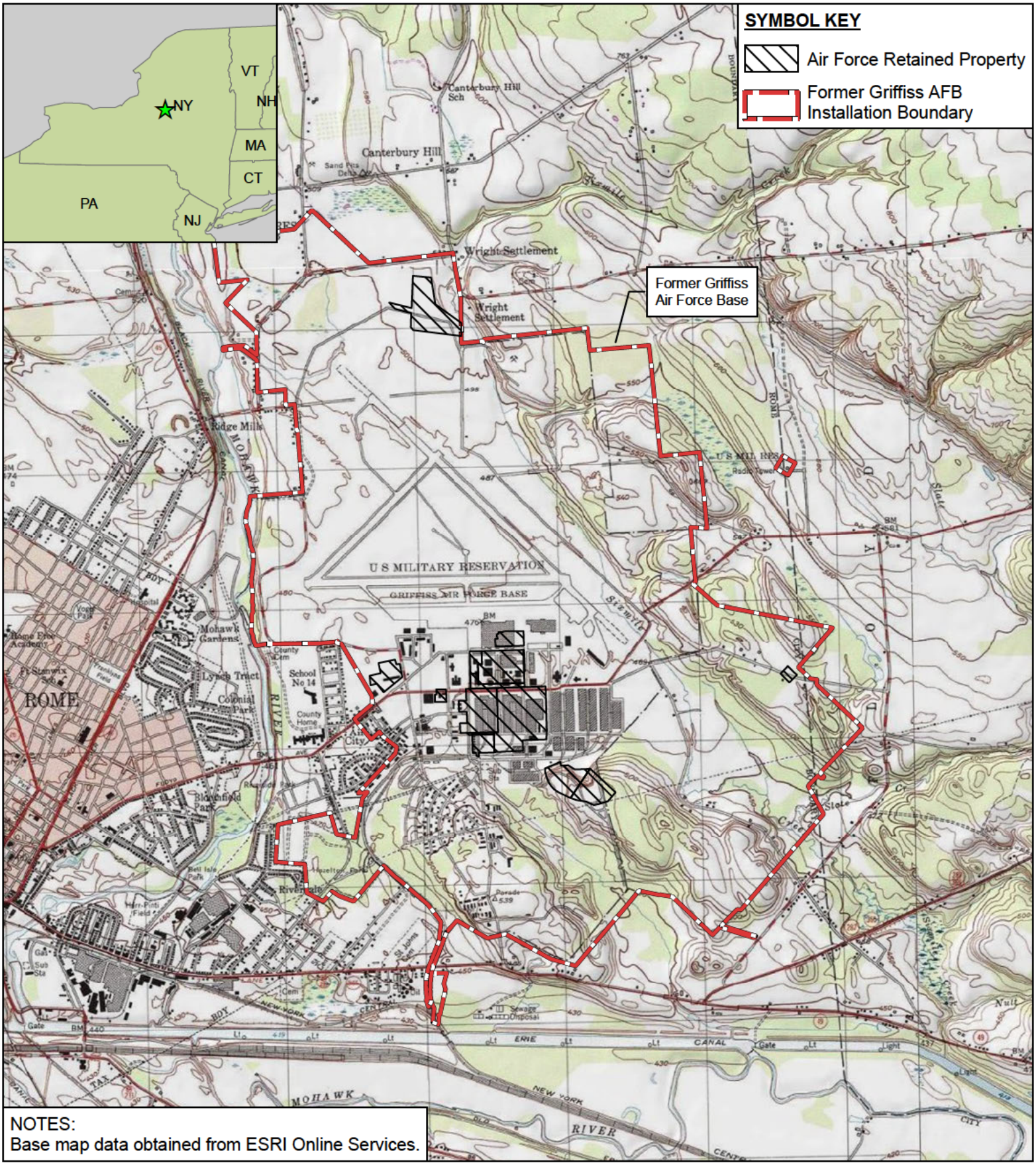
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FIGURES

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Air Force Civil Engineer Center
2261 Hughes Avenue
Building 171, Ste 155
JBSA Lackland, Texas 78236

N

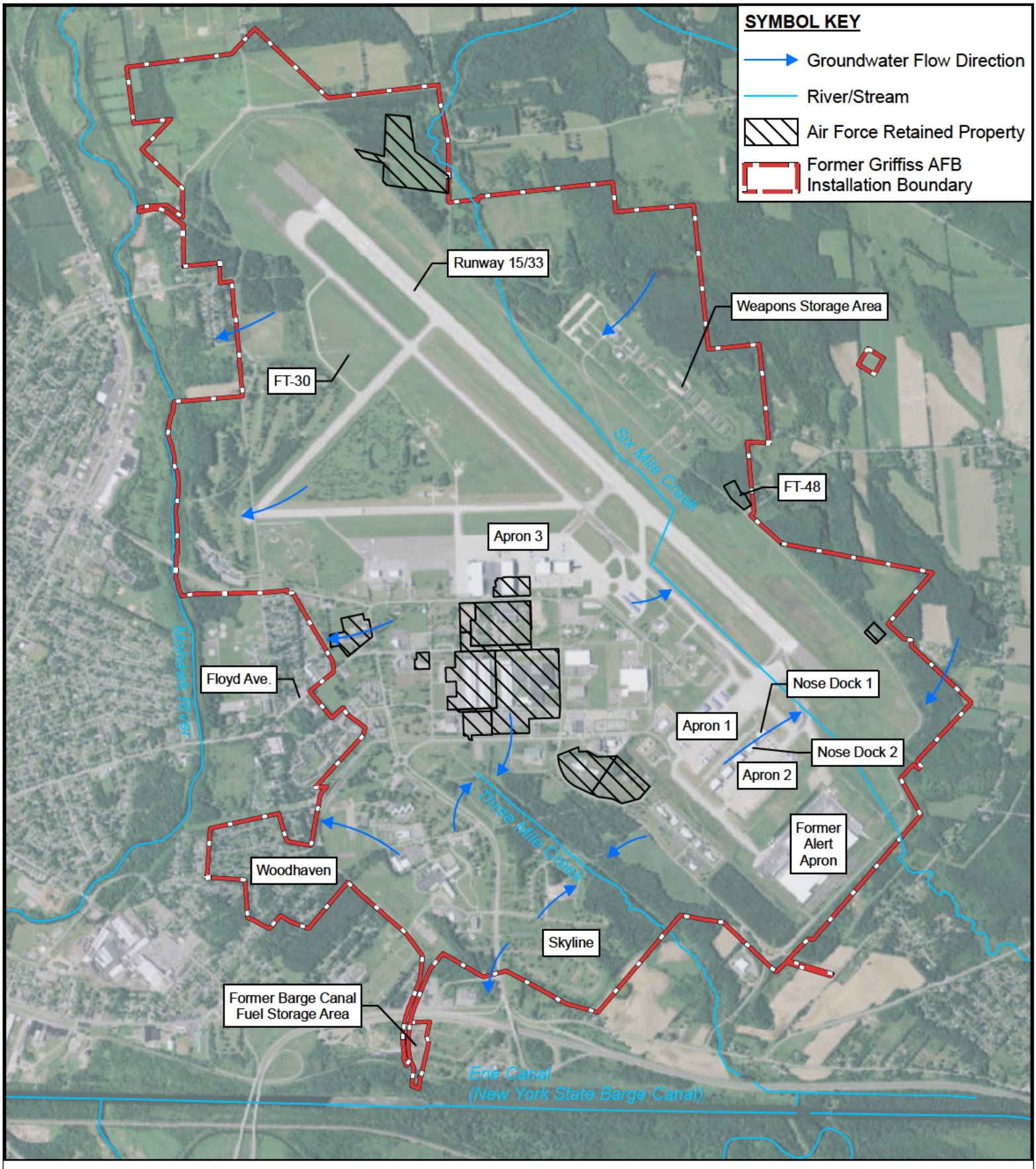
FIGURE 1
Site Location Map
PFC Preliminary Assessment
Former Griffiss Air Force Base
Rome, New York

0 375 750 1,500 2,250 3,000 3,750 Meters

0 3,000 6,000 9,000 12,000 Feet

06/03/2015	Griffis_Site_Loc_PFCs_Res_Rpt - Copy	
PROJ: 775290177	Drawn: MJW & JBO	

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Air Force Civil Engineer Center
2261 Hughes Avenue
Building 171, Ste 155
JBSA Lackland, Texas 78236

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FIGURE 2
Former Griffiss AFB Site Layout Map
PFC Preliminary Assessment
Former Griffiss Air Force Base
Rome, New York

0 275 550 1,100 1,650 2,200 2,750 Meters

0 2,300 4,600 6,900 9,200 Feet

06/03/2015	Griffis_Site_Map_PFCs_Res_Rpt
PROJ: 775290177	Drawn: MJW & JBO

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SYMBOL KEY

- River/Stream
- AFFF Areas with a Potential for PFCs Presence
- Air Force Retained Property
- Former Griffiss AFB Installation Boundary

Other AFFF Areas with a Potential for PFC Presence:

14: B-52 Crash Site. A B-52 crash occurred at the end of the runway in 1972 or 1973, but the crash location is not known

17: Site Wide: Remediated soil from the FTA (FT030P) was used as backfill across the installation (specific locations unknown)

Approximate Drain Line Location

Fire Training Area (FT030P)

9: Building 917 and AFFF Lagoon (part of SD-32)

16: Six Mile Creek (SD-32)

15: Sanitary Sewer Line from FT030P

Six Mile Creek

10: Suspect FTA (FT-48)

11: Fire Demonstration Area (SS-24)

6: Building 100

7: Building 101

8: Building 150

4: North Side of Building 45 (Fire Station)

3: Building 45 (Fire Station)

5: Building 47

2: Building 44 (Former Fire Station)

12: Apron 1

1: Building 15

13: Nose Docks 1 and 2 and Apron 1 - Trench (part of SD-41)

Three Mile Creek

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Building 171, Ste 155
JBSA Lackland, Texas 78236

FIGURE 3
Potential AFFF Areas
PFC Preliminary Assessment
Former Griffiss Air Force Base
Rome, New York

0 100 200 400 600 800 1,000 1,200 Meters

0 550 1,100 2,200 3,300 4,400 Feet

N

NOTES:
2008 Aerial Imagery USGS, The National Map (http //nationalmap.gov/viewer.html)

07/01/2015	Rev:	Griffis_Site_Release_Areas_PFCs_Res_Rpt
Drawn: MJW	PROJ: 775290177	

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APPENDIX A

SUPPLEMENTAL INFORMATION ON AFFF USE AFTER INSTALLATION CLOSURE

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Appendix A: Supplemental Information on AFFF use after Installation Closure

The intent of this appendix is to provide information on the use of AFFF after base closure. This appendix presents information obtained during the research, if any, and includes one interview. No other effort has been made to identify the use of AFFF at the base after closure.

Several buildings and areas were identified during the assessment that may still contain AFFF. These buildings are as follows:

- Fire Station (Building 45);
- Building 15;
- Building 47;
- Building 100;
- Building 101; and,
- Building 917.

Mr. Robert Cowles, part-time fireman, was interviewed regarding the use of AFFF after closure of Griffiss Air Force Base. The telephone interview was conducted by Chuck Staples on 25 September 2014. The questions and associated responses are summarized below.

1. Question: Are there AFFF systems today?

   Response: Yes, but the fire station does not operate or maintain these systems.

2. Question: Are these new or AF vintage?

   Response: Systems were present during AF time, but doesn't know if they have been upgraded.

3. Question: Is AFFF used today?

   Response: Yes, they use AFFF today in the fire trucks. They use Chemguard AFFF. It is used for training at the FTA. Remaining material is "blown off" north of the fire station.

4. Question: Is product left over from Air Force Inventory?

   Response: No, all material is new. They cycle through AFFF that they receive (see note above).

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APPENDIX B

PFC GENERAL QUESTIONNAIRE

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General PFC Information Questionnaire

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases
Contract FA8903-08-8766 Task Order 0177

Griffiss AFB, NY	
BEC (name and phone)	Mike McDermott - 315-956-0810 x202
BEC preferred contact method (phone, e-mail)	Either
Installation support staff (name and phone)	Sean Eldredge
List of potential interviewees and contact information	

	General Installation Information	Comment
1.	In what years was the installation operational?	1944-1993
2.	Please briefly descr be installation mission.	Former SAC Base - Deactivation of the 416 Bombardment Wing
3.	Current property owner/land use	Griffiss Business and Technology Park/ Oneida County (Griffiss International Airport)
4.	List FTAs	FT030 Fire Protection Training Area
5.	List hangars with fire suppression systems	See attached list of locations and component breakdown
6.	Are there known spill/crash sites at the base where AFFF could have been used?	unknown
7.	Was AFFF stored and/or disposed at the installation?	Yes
8.	Was there an on-base fire station?	Yes
9.	Was there a truck washing station/area at the base?	Yes
10.	Is there a Federal Facilities Agreement in place?	Yes
11.	Are there specific relevant documents available (include AR document number if possible)?	Yes
12.	Are relevant as-builts available?	Possible. All documents were transferred to AFCEC San Antonio. May exist in Environmenta Record
13.	Are Historic Maps of the Installation available? Specifically with Building Numbers/Function?	Yes
14.	Are Shape files of the Installations available?	Yes
15.	Are Accident and/or Fire Reports available?	see 12
16.	Is there a nearby drainage system or body of water that may have received AFFF?	Six Mile Creek - possible but unlikely if historical information is accurate.
17.	Additional comments?	See attached general information. Information requires updates based on parcel specific Supplemental Environmental Baseline Surveys Griffiss also has an area identified as an AFFF Lagoon and storage/ use areas (ASTS/USTS) for buildings.

Fire Training Area PFC Information Questionnaire

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases
Contract FA8903-08-8766 Task Order 0177

Griffiss AFB, NY		
FTA Information		**FT030P Fire Protection Training Area**
1.	Was this Fire Training Area (FTA) used from 1970 on?	Yes
2.	Is there an RI/FS or other existing reports for the FTA that contains info on groundwater flow, receptors, etc? (include AR document number if possible)	Yes EBS
3.	Is the FTA still in place as an FTA?	No
4.	Is there an active groundwater pump and treat system at the FTA?	No
5.	Is there an existing operational monitoring well network in place associated with the FTA? Please list POC for coordination.	No
.	s here been a regu o e u st m l r P Cs?	
7.	Have state standards for PFCs been established?	No
8.	Is there an exposure pathway for the PFCs to threaten public health? If yes, please provide a brief description.	No
9.	Using Low, Moderate or High, how would you categorize the complexity of the base with regards to PFCs.	Moderate
10.	Are there access issues associated with the Installation or specific FTA? If so, please provide contact information.	On active airfield controlled by Oneida County. Personnel will need access badges. FPM can escort during scoping visit (note: Has FPM agreed to this? FPM is not under contract to provide escort service).
11.	Will field personnel need specific training in order to conduct field work?	Will require very short briefing when obtaining security badges
12.	Please provide any information on discharges from the FTA and/or any associated treatment systems.	Discharges were to the Rome POTW; Surface releases know to have occurred
13.	What is the approximate depth to groundwater beneath or near the FTA?	20 feet
14.	Additional comments?	

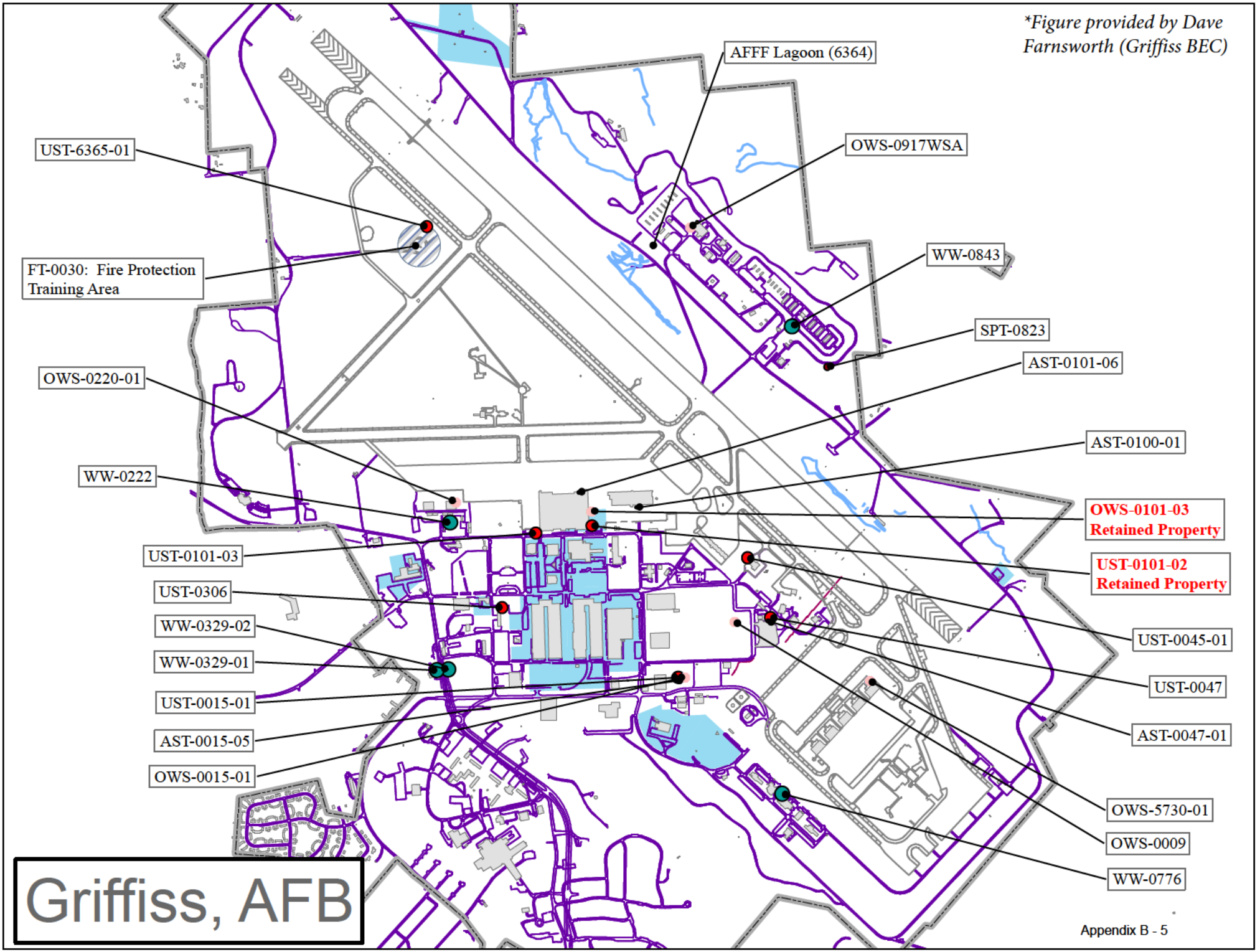

*Figure provided by Dave Farnsworth (Griffiss BEC)
AFFF Lagoon (6364)
UST-6365-01
OWS-0917WSA
FT-0030: Fire Protection Training Area
WW-0843
SPT-0823
AST-0101-06
OWS-0220-01
AST-0100-01
WW-0222
OWS-0101-03 Retained Property
UST-0101-03
UST-0101-02 Retained Property
UST-0306
UST-0045-01
WW-0329-02
UST-0047
WW-0329-01
AST-0047-01
UST-0015-01
AST-0015-05
OWS-5730-01
OWS-0015-01
OWS-0009
WW-0776
Griffiss, AFB
Appendix B - 5

**Table from Appendix A of Basewide Environmental Baseline Survey, Griffiss Air Force Base, New York, Sept 1994.*

Table A-1 Summary of Environmental Factors by Facility

Fac #	Facility Description		Sq Ft	Year	Study Area	Facility Type	Storage Areas	FC	Storage Tanks	FC	Other Factors	FC	PC	Comments
6364	Industrial Waste Fuel Spill Collector (2,000 gallons)	1		1982	7	Util					IRP-SD-32	7	7	Aqueous film forming foam (AFFF) holding pond and oil/water separator for Building 917, east of Perimeter Road and adjacent (outside) to Weapons Storage Area fence.
6365	Fireman Training Facility			1971	6	Ind			UST-6365-1; UST-6365-2;UST-6365-3	7	IRP-FT-30; OWS-6365-1; OWS-6365-2	7	7	Facility consists a mock airplane and associated facilities used for firemen training, including a water treatment system.

GRIFFISS AFB		**Study Area:** 2, 4, 7, 12, 30
Site ID: SD-32	**Old Site ID:** None	**Status:** AOC
Site Name: Sixmile Creek and WSA Lagoon		**Operable Unit:** 1

Description: Sixmile Creek and its floodplain serve as the major surface drainage feature of the base receiving almost all the surface runoff and storm system drainage from the eastern portion of the base. The sometimes meandering course of the creek is directed by an underground culvert for about 6,000 feet from an area just east of the center of the runway past the south end of the runway. The stream enters the base from the northeast and flows the length of the runway, eventually exiting the southeast portion of the base. Areas surrounding the creek are NYSDEC-designated wetlands and areas above the culvert section in many areas are also wetlands. The size of the creek increases as it flows through the base from about 8 feet wide and 3 feet deep in the north to 20 feet wide and 4 feet deep in the south. The creek is marked by alternating pools and riffles, and lined by overhanging trees. Prior to the construction of the base, the creek's primary use was agricultural. Because the creek is a discharge point for a portion of the base's storm drainage system, the creek has received wastes such as oils, solvents, fuel soot, pesticides, and fuels. Leachate from landfills has also been reported to have entered the creek. The WSA lagoon consists of a 2,000-gallon earthen collection/holding pond (i.e., depression in the ground) designed to receive Aqueous Film Forming Foam (AFFF) solution if there were a fire in Building 917 and the fire suppression system was activated. AFFF is a fire-fighting solution of water, ethanol, surfactants, synthetic detergents, and urea. In the event of a fire, wastewater from floor drains in Building 917, which would normally pass through an oil/water separator (OWSEP-917), would be diverted to the lagoon and held for treatment. Although the lagoon has never been used for its intended purpose, it has received wastewater flows when the oil/water separator has overflowed during normal operations. These overflow events have resulted in surface discharges from the lagoon to Sixmile Creek.

Relevant Documentation:

a) *Hazardous Waste Site Investigation Report* (January 1982)

b) *Overall Management Plan IRP* (1988)

c) *Contaminants in Fish and Sediment from Six Mile Creek and Three Mile Creek in the Vicinity of Griffiss AFB* (February 1989)

d) *Site Visit to Griffiss AFB* (May 1992)

e) *Remedial Investigation Planning Document - Work Plan* (Draft Final, July 1993)

Status: In 1981, the Air Force took samples of Three and Sixmile Creek sediments and adjacent soils to determine levels of metals. The limited study found aluminum, barium, beryllium, cadmium, calcium, copper, iron, manganese, magnesium, mercury, and zinc in all samples. Inorganics detected in one or more samples included arsenic, antimony, boron, cobalt, lead, nickel, selenium, silver, sodium, thallium, tin, and vanadium. In 1988, the USFWS conducted an investigation of bottom sediments and fish in Sixmile Creek. Samples were taken at one site above the base and one below the base boundary. Lead and strontium were the only inorganics which showed significant increases at the downstream site. PAH compounds increased in the downstream sediments, but were reported to be consistent with results from control sites from other studies. PCB levels in Sixmile Creek fish samples were below the 2.0 ppm action level. Inorganics increased in the downstream sampling, but were not considered toxic or indicative of heavy pollution. In 1992, the site was designated an Area of Concern under the Federal Facility Agreement. A Remedial Investigation of this site is currently being conducted.

EBS ID No.	Study Area		GAFB No.	MOSF No.	Year Installed	Year Removed	Capacity (gallons)	Contents	Description/Comments	Cat
UST-015-1	27	1	15E	15E	1982		30,000	Waste AFFF	Tank is located on the west side of Building 15, a vehicle refueling shop. This steel tank is a collection tank for waste aqueous film forming foam (AFFF) used as part of the fire deluge system for the building. Tank is underneath an asphalt surface. No evidence of contamination was found during a site inspection in April 1994.	7
UST-015-2	27	1	15F	15F	1982		30,000	Waste AFFF	Tank is located on the west side of Building 15, a vehicle refueling shop. This steel tank is a collection tank for waste AFFF used as part of the fire deluge system for the building. Tank is underneath an asphalt surface. No evidence of contamination was found during a site inspection in April 1994.	7
UST-045-1	18	1	45A	-	1980	1992	2,000	AFFF	Tank was located adjacent to the northwest side of Building 45, the Fire Station. This tank contained AFFF used as part of fire deluge systems. This tank was replaced by UST-045-4 in the same location.	7
UST-045-4	18	1	45E	-	1992		2,000	AFFF	Tank is located on the northwest side of Building 45, the Fire Station. This tank contains AFFF used as part of fire deluge systems. This tank replaced UST-045-2 in the same location. The tank is in a grass covered area with concrete around the fill hole and manhole. A cathodic protection system (sacrificial anode) was installed for this tank. No evidence of contamination was found during a site inspection in April 1994.	7
UST-047	18	1	-	47A(Runoff)	Unk		25,000	Waste AFFF	Tank is located in a grass covered area on the southeast side of Building 47, a vehicle operations heated parking facility. This concrete tank is used to collect waste AFFF from the fire deluge system in the building. The tank is reportedly filled with water collected from floor drains inside Building 42. No evidence of contamination was found during a site inspection in April 1994.	7
UST-101-2	11	1	-	-	1980		500,000	Waste AFFF	This tank is an underground concrete vault located east of the southeast corner of Building 101, a maintenance hangar. The vault is part of the fire protection deluge system for the building. In the event of a fire in the hangar, the deluge system activates and floods the hangar bay with fire fighting foam. This foam will eventually flow down the hangar's area drains. A diversion valve is connected to the drain line so that when the deluge system activates, all drainline flow is directed into the vault. This allows the waste foam and fire residues to be contained until they can be disposed of properly instead of overwhelming the drainline's separator and flowing into the sanitary sewer system. When inspected in April 1994, the vault was filled with drain water due to a malfunction of the diversion valve.	7
UST-101-3	11	1	-	-	1980		500,000	Waste AFFF	This tank is an underground concrete vault located west of the southwest corner of Building 101, a maintenance hangar. The vault is part of the fire protection deluge system for the building. In the event of a fire in the hangar, the deluge system activates and floods the hangar bay with fire fighting foam. This foam will eventually flow down the hangar's area drains. A diversion valve is connected to the drain line so that when the deluge system activates, all drainline flow is directed into the vault. This allows the waste foam and fire residues to be contained until they can be disposed of properly instead of overwhelming the drainline's separator and flowing into the sanitary sewer system. When inspected in April 1994, the vault was filled with drain water due to a malfunction of the diversion valve.	7

EBS ID No.	Study Area		GAFB No.	MOSF No.	Year Installed	Year Removed	Capacity (gallons)	Contents	Description/Comments	Cat
UST-306	20	2	306	306	1986		2,000	Fuel Oil (#1/2/4)	Tank is located adjacent to the northwest corner of Building 306, a privately owned vehicle washrack. This fiberglass-reinforced plastic tank contains fuel oil #2 used to heat the water tank for the car wash. The tank is in a grass covered area with a concrete slab around the fill hole. A cathodic protection system (sacrificial anode) was installed for this tank. No evidence of contamination was found during a site inspection in April 1994.	2
UST-6365-1	6	1	6365A	6365A	1985		10,000	JP-4/JP-8	Tank is located in the northern area of the Facility 6365, the Fireman Training Facility. This f berglass-reinforced plastic tank may contain the following: jet fuel, AFFF, water and waste. The area has had contaminated soil. A cathodic protection system (sacrificial anode) was installed for the fuel lines and vent pipe. No evidence of contamination was found during a site inspection in April 1994.	7

EBS ID No.	Study Area	GAFB No.	MOSF No.	Year Installed	Year Removed	Capacity (gallons)	Contents	Description/Comments	Cat
AST-015-5	27	-	-	Unk		500	AFFF	Tank is located inside the upstairs mechanical room of Building 15, a vehicle refueling shop. This steel tank contains AFFF solution for the fire deluge system. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-047-1	18	-	-	Unk		2,000	AFFF	Tank is located inside of Building 47, a vehicle operations heated parking facility. This steel tank contains AFFF used for the fire deluge system. The tank is secured to the floor. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-047-2	18	-	-	Unk		2,000	AFFF	Tank is located inside of Building 47, a vehicle operations heated parking facility. This steel tank contains AFFF used for the fire deluge system. The tank is secured to the floor. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-100-1	11	100B	-	1986		2,500	AFFF	Tank is located inside on the south side of Building 100, a weapons and release systems shop. This steel tank contains AFFF used for the fire deluge system. The tank is located on a low saddle on the concrete floor. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-100-2	11	100C	-	1986		2,500	AFFF	Tank is located inside on the south side of Building 100, a weapons and release systems shop. This steel tank contains AFFF used for the fire deluge system. The tank is located on a low saddle on a concrete floor. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-101-6	11	6375A	-	1982		7,000	AFFF	Tank is located inside a room in the northeast corner of Building 101, a maintenance hangar. This steel tank contains AFFF used for the fire deluge system. The tank is located on saddles on a concrete floor. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-101-7	11	6375B	-	1982		7,000	AFFF	Tank is located inside a room in the northeast corner of Building 101, a maintenance hangar. This steel tank contains AFFF used for the fire deluge system. The tank is located on a rack on a concrete floor. No evidence of contamination was observed during a site inspection in April 1994.	2
AST-917-1	7	917F	-	1982		1,400	AFFF	Tank is located on a concrete floor inside the mechanical room of Building 917, a missile assembly shop. This tank contains AFFF solution used for fire deluge system. No evidence of contamination was observed during a site inspection in April 1994.	2

EBS ID No.	Study Area		MOSF No.	Year Installed	Description	Comments	Cat
OWS-009	22	2 - Washrack	—	1972	This oil/water separator is in the "C" bay of Building 9, a vehicle operations heated parking facility, in the area against the outside wall on the east side of the building and near a vehicle washrack. This below-ground, closed top 50-gallon per minute (gpm) unit serves only the vehicle washrack. A grit trap is connected in-line before the separator, which receives input from a large slotted floor drain running north to south at the center of the washrack. The aqueous phase flows from the separator to the sanitary sewer. Intercepted oil is collected in a 250-gallon underground waste skim tank north of the separator.	No evidence of contamination was observed during a site inspection conducted in April 1994. The unit appeared to be working properly.	7

EBS ID No.	Study Area		MOSF No.	Year Installed	Description	Comments	Cat
OWS-015-1	27	1- AFFF	15G	1983	This below-ground, closed-top unit is off the north side of Building 15, a refueling vehicle shop. The separator receives input from the floor drains in the building, with a grit trap connected in-line before the separator. The aqueous phase flows through to the sanitary sewer. Intercepted oil is collected in an underground 1,000-gallon oil skim tank west of the separator. This unit has an automatic diversion valve. The building has an automatic Aqueous Film Forming Fluid (AFFF) deluge system, and if the deluge system is activated, the diversion valve opens and all flow is diverted to two 30,000-gallon waste AFFF collection tanks instead of the sanitary sewer. These underground storage tanks are located adjacent to the northwest corner of the building.	No evidence of contamination seen during a site inspection in April 1994. The unit appeared to be functioning properly.	7
OWS-101-3	11	2 - Washrack	6373 B/101	UNK	This below-ground, closed-top unit is located in the pavement on the apron outside the area between docks 4 and 6 (maintenance bays) in Building 101, an aircraft maintenance hangar. The separator serves the aircraft washrack inside Dock 6, which was formerly used as an aircraft corrosion control shop. The aqueous phase flows to the sanitary sewer. Intercepted oil is retained in the separator.	No evidence of contamination was observed during a site inspection in June 1994. The unit appeared to be functioning properly.	7

EBS ID No.	Study Area		MOSF No.	Year Installed	Description	Comments	Cat
OWS-220	10	2 - Washrack	—		This cast iron, open-top, below-ground unit is located in center of the northeastern corner of the hangar floor in Building 220, a former vehicle repair shop. This building, formerly an aircraft maintenance hanger, is used as a wing combat readiness and resources facility. The separator is adjacent to an old washrack, which is connected to it. The aqueous phase flows to the sanitary sewer. A 275-gallon oil skim collection tank was connected to the separator. This tank, removed in 1987, was located in the concrete floor of the building just north of the separator. Without the collection tank, the separator must be pumped out periodically when being used.	No evidence of contamination was observed during a site inspection in April 1994. The unit appeared to be functioning properly. The building is now used primarily for administrative offices and storage, so the separator is rarely used.	7

EBS ID No.	Study Area		MOSF No.	Year Installed	Description	Comments	Cat
OWS-917	7	1- AFFF	—	1982	This below-ground, closed-top unit is located adjacent to the west corner of Building 917, a missile assembly shop. The aqueous phase flows through the separator to a drain field northwest of the separator, composed of 6 parallel lines 75-feet long with a 10-foot separation. This drain field is adjacent to a septic tank drain field (see SPT-917). Intercepted oil is collected in a 1,000-gallon underground tank west of the separator. The separator is connected to the floor drains in the building. This separator has a diversion valve which will bypass the separator and direct the flow to a waste holding pond located southwest of the building outside of the Weapons Storage Area (WSA) perimeter fence. This diversion system is used if the fire protection deluge system is activated to capture the AFFF solution draining from the building. The valve is automatically opened when the deluge system is activated; otherwise, flow is directed into the separator. Under normal operating conditions, when the separator flow rate exceeds its capacity, the overflow also flows to the AFFF holding pond. This system is identified as Facility 6364 on the Griffiss AFB Real Property	No evidence of contamination was observed during a site inspection in April 1994. The unit appeared to be functioning properly. The wasteholding pond has been used on several occasions when the capcity of the separator has been exceeded. This site is being investigated as IRP Site SD-32.	7

EBS ID No.	Study Area		MOSF No.	Year Installed	Description	Comments	Cat
OWS-5730	29	2 - Washrack	5730 (B782)	1959	This oil/water separator is located adjacent to the northeastern corner of Building 782, an aircraft fuel cell repair nose dock. This system consists of a concrete wet-well vault which collects drainage from five nose docks (Buildings 782, 783, 784, 785, and 786), including an Aerospcae Ground Equipment Shop washrack which has been set up in the southeastern corner of Building 786. Wastewater from this washrack flows into the building's main slot drain whcih eventually flows to the separator. Originally, a pretreatment, aeration system was employed in the wet well, but this was removed in 1992, leaving just the wet well as a collection point. From the wet well, drainage is pumped into a concrete dual chamber separator. The captured oil is collected in a 2,000-gallon underground storage tank located just north of the separator.	During a site inspection in April 1994, base personnel stated that the system had overflown several times in the past due because its capacity is too small. In January 1993, the wet well exploded and destroyed the pumps and electrical system for pumping into the separator. Since then, the wet well is allowed to fill up to its high-level point and a portable pump is used to pump the wastewater into the separator. This site is being investigated as IRP Site SD-41.	7

Fac #	Facility Description	Sq. Ft.	Year	Storage Areas	Fac Cat[3]	Storage Tanks	Fac Cat[3]	Other Factors	Fac Cat[3]	Comments	PC[3]
STUDY AREA 20: Land in Study Area 20 is designated as Category 1, 2, and 7 property. The Category 7 property includes two IRP sites (SS-05 and DP-12) and various underground and aboveground storage tank, drywell, and oil/water separator locations requiring further investigation. The Category 7 property also includes several underground storage tank locations, including a former motor gasoline storage tank farm (POL-303), where it is not known if the tanks were removed. The Category 2 property includes areas where facili ies are or were located where hazardous substances were stored. The remaining property is designated as Category 1 property and has been open space since construction of the base.						UST-303-1 UST-303-2 UST-320 UST-322 UST-326 UST-332	7 7 7 7 7 7	IRP-SS-05 POL-303 WW-329-2 OTH-329-2	7 7 7 1		
N300	Credit Union	2,700	1965							Portions of POL-303 were located under this building.	7
301	Base Engineer Administration	43,554	1943			AST-323	2	IRP-DP-12 DRY-301	7 7		7
302	Communications Facility	20,577	1943			AST-302-1 AST-302-2 AST-302-3	2 2 2	DRY-302	7		7
303	Reserve Forces General Training Support	5,936	1943								1
305	Automotive Hobby Shop	10,860	1943	STW-305	2	UST-305-1 UST-305-2	7 7	OTH-305	2		7
306	Privately Owned Vehicle Washrack		1987			UST-306	2				2
308	Non-Air Force Administrative Office	9,000	1943								1
310	Post Office Center	9,000	1942								1
311	Data Processing Installation	9,913	1959			UST-311 AST-311	2 2				2
321	Base Engineer Pavement and Grounds Facility	6,000	1954	STW-321	2			OWS-321 DRY-321	7 1		7
334	Base Engineer Covered Storage Facility	7,768	1943								1
346	Commissary Store	53,654	1976			AST-314 AST-346	2 2	GT-346	1		2
6054	Heating Fuel Oil Storage (2,000 gallons)		1987			see Fac. 306					2

Area	Map[1]	Buildings/Facilities		Preclosure Use	Historic Land Use
19	41675	274, 329, 337, 923, 5020, 5025, 5410, 6099	2 - Washrack	Study Area 19 includes a base exchange branch store (shoppette and garden store), the base exchange vehicle service station with motor gasoline storage tanks, a group headquarters building (condemned), an equipment pad at the base exchange shoppette for the trash dumpster, the traffic check house at the Floyd Gate, a bus shelter, and two tennis courts.	The eastern portion of the study area was acquired in 1942, and the remainder in 1943. When acquired, the area was predominantly grazing land, except for the Rex Inn, which was adjacent to the Floyd Gate. This inn was in operation during the 1940s on a small plot of land that was not government property. Following construction of the base, a number of civilian dormitories and a restaurant were located in the western portion of this area. These buildings were built to complement civilian single- and multi-family housing which was constructed in the area now occupied by an apartment complex adjacent to the base boundary (the property was excessed in 1974). This area was locally referred to as "Air City." These buildings were later converted to airmen dormitories, visiting officers' quarters, administrative buildings, and family housing. Only one of the original buildings (Building 923) is still standing. A post office was located at the southwest corner of Brooks Road and Hill Road. This building was removed in the late 1940s. A vehicle maintenance complex with a garage, greaserack (OTH-329-1), washrack (WW-329-1), and grease and oil storage facility was located in the southeast corner of this study area, in the area where Building 329 is now located, from 1943 until the early 1970s. The garage was later used as a recreation workshop and a pavement and grounds facility. An identical set of facilities was located to the east, on the other side of Hill Road. The base exchange service station was constructed in 1961, north of these facilities.
20	41675	N300, 301, 302, 303, 305, 306, 308, 310, 311, 321, 334, 346, 6054	2 - Washrack	Study Area 20 includes the base Civil Engineering administration building, a communications facility (main switchboard), a reserve civil engineering training support facility, a base engineer pavement and grounds facility, a base engineer covered storage facility, an administrative facility (condemned), the post office, a credit union building, a data processing installation facility, the commissary store, the auto hobby shop, a vehicle washrack with associated heating fuel oil storage (2,000 gallons), and a recreational court (basketball).	Land in this study area was acquired in 1942 and was pastureland. Originally, in the eastern portion of this study area, the area south of Building 303 was a Quartermaster motor pool complex. Former Building 304 was the motor pool office, Building 305 was a garage (now the auto hobby shop), Building 306 was a maintenance shop, Facility 307 was a gasoline storage facility (POL-303), Building 308 was a warehouse, and Building 343 was a gas station (POL-303). Building 303 was originally used the base finance office. Building 310, now the post office, was a Quartermaster warehouse. Building 309, a Quartermaster commissary, and Facility 314, a weighing scale, were located in the area where Building 346 is now located. The parking lot area west of Building 1 was a fenced motor pool parking lot. In the western portion of the study area, Building 301, now the Civil Engineering administration building, was constructed as a civilian training school in 1943. Building 302, now a communications facility, was the original firehouse, security police, and communications facility. The area south of these two buildings was the base (installation) engineering complex with various shop buildings, covered storage facilities, and open storage areas. Building 334 is the only remaining building. Most of these buildings had been removed by the mid-1970s. South of these facilities was an identical garage complex to the one described for Study Area 19 and former Buildings 320 and 322. Former Building 326, the garage, was later converted to a base exchange shoppette. Building 322 was originally used as a medical supply warehouse, but was later converted to a commissary. It was destroyed by fire in 1975.

**Information from Basewide Environmental Baseline Survey, Griffiss Air Force Base, New York, Sept 1994.*

EBS ID No.	Study Area		Description	Comments	Cat
SPT-823	7	2 - Washrack	An 8,000-gallon septic tank and drain field are located near the southwestern corner of the WSA outside the perimeter security fence. The tank serves Buildings 820 and 823, the WSA security police entry control center and a missile assembly shop. The sewer line from Building 843 is also connected to the sewer line from Building 823. Building 843 includes a small washrack (WW-843) which would be connected to this system. Both buildings are connected to a pipe tee in a metal covered manhole with one pipe proceeding to the tank. The tank is a below-ground, concrete tank (22 feet by 7 feet by 7.5 feet deep) with a metal manhole-covered access port slightly above surface level. The distribution box is located south of tank with a concrete cover. A 700-foot single tile drain field runs south out of the distribution box.	During a site inspection in April 1994, effluent was observed leaching out of ground south of the distribution box and running along the surface into Sixmile Creek.	7

Other Wastewater-Related Systems				
WW-222	10	A grit trap for a washrack is located near Building 222, a base engineering maintenance shop. The washrack is located approximately 75 feet east of Building 222. It is a 30-foot-square washrack with a grit trap/catch basin at the center covered by a metal grate. Waste washwater flows from the trap into the sanitary sewer.	Site inspections in June 1994 showed that the drain line had been capped off and the grated cover was replaced by a solid metal cover.	7
WW-329-1	19	Four facilities, numbered 323, 325, 327, and 329, existed in the parking lot for Building 329, the Base Exchange Shoppette. Facility 323 was a grease and inspection rack. Facility 325 was a building used as a service garage. Facility 327 was a washrack. Facility 329 was a small building used for grease and oil storage. The washrack drained out into a drywell. A drywell was located 115 feet east of the northeastern corner of the current Building 329. The drywell location is now under a paved parking area and was removed in 1981 during construction of Building 329.	The drywell has been removed. No evidence of contamination was observed during a site inspection in April 1994.	7
WW-329-2	20	Four facilities, numbered 324, 326, 328, and 330, existed across Hill Road from the parking lot for Building 329 south of Building 334. Facility 324 was a grease and inspection rack. Facility 326 was a building used as a heavy equipment garage. Facility 328 was a washrack. Facility 330 was a small building used for grease and oil storage. The washrack drained out into a drywell. The drywell was located directly across Hill Road from the drywell in WW-329-1 because the set of buildings in WW-329-1 and WW-329-2 were mirror images of each other. Building 326 was used as a Base Exchange facility from 1962 until 1982. The building was demolished in 1982 when Building 329 was built.	The drywell is still present in the now grassy area and serves for storm drainage. It has a grated metal cover and is a cement-lined pit. It is filled within 2 feet of the surface with sediment.	7
WW-776	28	A grease trap is located adjacent to the northern corner of Building 776, a weapons system maintenance and management facility. The trap is a concrete below-ground, closed-top unit 3.5 feet square by 2.5 feet deep. It served the Aerospace Ground Equipment washrack adjacent to the northeastern side of the building. No collection tank is associated with this unit and it would have to be pumped out prior to any intercepted grease and oils reaching maximum level.	No evidence of contamination was observed during a site inspection in April 1994.	1
WW-843	7	Building 843, a vehicle operations parking shed in the Weapons Storage Area, has a washrack in the center room on the northwestern side of the building. The drain at the center of the washrack is a catch basin. This catch basin is a grease trap 2 feet square by 28 inches deep with an offset trap. This trap captures the grease before it flows down the drain. The trap would have to be pumped out prior to reaching maximum level. The drain flows out to a connection with the sewer line from Building 823 which flows into a septic tank system (SPT-823).	No evidence of contamination was observed during a site inspection in April 1994.	7

APPENDIX C

TELEPHONE LOGS

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Telephone Interview Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 6-May-14 Instal... Former Grif... B

Name: Michael McDermott Position/Rank: BRAC Environmental Coordinator

Contact Information (phone, e-mail): michael.mcdermott.1@us.af.mil 315-356-0810

Years at or familiar with Installation (# and dates): Approx. 1992 to the present

Was AFFF used or stored on-base outside of FTAs? If so, where? Yes - Blds 15, 45, 47, 100, 101, 917

Were there hangars on-base with fire suppression systems? Yes - Blds 15, 47, 100, 101, 917

If yes, was AFFF used in these systems? Yes (not all hangars - some vehicle maintenance)

Was there a fire station on-base? Yes - AFFF in storage tank for transfer to fire trucks in overhead lines

If yes, where was it located? Same as current location

If no, what local fire station was on call for emergencies?

Were there any planes crashes or fires on base? Not aware of any

If so, where were they located?

Was there a truck washing area for fire trucks or emergency vehicles on-base? Not aware of any specific area.

Is there an additional contact that could provide information of AFFF (name and contact info)?

Bruce Mero-Former Environmental Flight Chief-315-942-3865; Mark Rabe-frm Env. Man-315-330-4966

Chief Endy (Ted)-Former Fire Chief-315-337-1632; Joe Wojnas- CORP - Env. Manager-315-356-0810

Additional Comments: All properties surrounding the base have been connected to public water. Many locations in Rome were connected prior to 1990's. For Floyd and parts of Rome, houses were connected in the 1990's, either by the Air Force, the Town of Floyd, or by the residents. For the FTA remediation, land farming documents indicate where soil came from and clean documentation so that spills could be closed, but did not document where the material went when considered clean.

Interviewer: Chuck Staples Date: May 6, 2014

Telephone Interview Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 4/17/2014 Instal... former Grif... A. _

Name: Robert Cowles Position/Rank: Fireman

Contact Information (phone, e-mail): [redacted] [redacted]

Years at or familiar with Installation (# and dates): 1998 to 1998 - full time. 2012-1014-part time

Was AFFF used or stored on-base outside of FTAs? If so, where? Stored in UST at fire department
Filled trucks with overhead lines.

Were there hangars on-base with fire suppression systems? Yes- Other than 100-102 doesn't know

If yes, was AFFF used in these systems? Yes, but not aware of release.

Was there a fire station on-base? Yes.

If yes, where was it located? At current location - east end of hangars and main buildings

If no, what local fire station was on call for emergencies?

Were there any planes crashes or fires on base? No - doesn't recall any stories of crashes either.

If so, where were they located?

Was there a truck washing area for fire trucks or emergency vehicles on-base? No

If yes, where was it located? Trucks washed by hand with buckets, either in or just outside fire station.

Is there an additional contact that could provide information of AFFF (name and contact info)?

No (other than Chief Ted Endy)

Additional Comments: Only ever discharged AFFF at Fire Training Area. AFFF would reportedly kill microorganisms at waste water treatment plant, so didn't want any to go into drainage ways at the base, other than that at the FTA. May have been minor discharge of AFFF onto grass at rear of fire station. This would have been minor release, such as to test that system pressurized. Current simulator training on Apron 3 includes propane fires and only uses water, no AFFF

Interviewer: Charles Staples Date: April 17, 2014

Telephone Interview Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 7/18/2014 Installation: Former Griffiss AFB

Name: Chief Ted Endy Position/Rank: Fire Chief

Contact Information (phone, e-mail): [redacted]

Years at or familiar with Installation (# and dates): 1976-1997

Was AFFF used or stored on-base outside of FTAs? If so, where? Fire houses and select buildings with AFFF systems

Were there hangars on-base with fire suppression systems? Yes - Buildings 15, 100, 101

If yes, was AFFF used in these systems? Yes

Was there a fire station on-base? Yes

If yes, where was it located? Location of current fire house (bld 45) - prior to 1980 used building 100 and building 44 (old fire house). AFFF stored inside and outside bld 100.

If no, what local fire station was on call for emergencies?

Were there any planes crashes or fires on base? Yes - 1977 - large plane fire - KC-135

If so, where were they located? Fire on Alert Apron (Apron 1) - maybe spot 3. Used AFFF (lots).

Was there a truck washing area for fire trucks or emergency vehicles on-base? No.

If yes, where was it located? Washed trucks with buckets at fire station - not enough water for drains

Is there an additional contact that could provide information of AFFF (name and contact info)?

Call former Environmental Manager - Bruce Mero.

Additional Comments: Only remembers AFFF fire suppression system releasing at bld 101 - several times. This would overflow USTs and flow to sanitary, as well as flow out of hangar doors. Would occasionally discharge AFFF to grass in front of fire station doors (NE side). This was done mainly by mechanics working on trucks - occurred numerous times. For demonstration fires in grass by Apron 3 may have occasionally used AFFF, but mainly used water. Did not use AFFF for spills - used sorbent pads.

Interviewer: Charles Staples Date: 4/18/14

Telephone Interview Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 4/21/2014 Installation: Former Griffiss AFB

Name: Bruce Mero Position/Rank: Supervising Environ.Engin. (Env. Manager)

Contact Information (phone, e-mail): [redacted] - home

Years at or familiar with Installation (# and dates): 1977 to 1995

Was AFFF used or stored on-base outside of FTAs? If so, where? Fire Station, Hangars where used, Supply Depot (bld 2)- would come to supply depot before going to systems

Were there hangars on-base with fire suppression systems? Yes ; Blds 15, 100, 101(doesn't remember 47 or 917)

If yes, was AFFF used in these systems? Yes - many releases in 100 &101

Was there a fire station on-base? Yes - Building 45 - at current fire station location

Notes: Remembers testing if AFFF trucks worked by discharging AFFF to grass on north side of fire station - not standard practice, but remembers several occurrences.

Were there any planes crashes or fires on base? Yes - 1978 fire on Alert Apron

If so, where were they located? No others remembered.

Was there a truck washing area for fire trucks or emergency vehicles on-base? Fire trucks washed at station.

If yes, where was it located? Does not know of wash rack - would have run off near fire station.

Is there an additional contact that could provide information of AFFF (name and contact info)?

No, other than former fire chief Ted Endy

Additional Comments: 1) Multiple releases of AFFF in Building 100 and 101. Would run outdoors and flow to six mile creek. If didn't call in spill would get calls from NYSDEC stating foam in creek (DEC officer. who issued NEPDES permits). 2) He thinks it may have been put down on the runways several times if planes coming in without landing gear. 3) Thinks fire training area AFFF was defoamed and then released to storm sewer, which discharged to 6-mile creek or Mohawk River. He was told it was biodegradable.

4) Discharged foam that collected in large USTs was bled to the WWTP (75 gallons/day).

5) Commissary (bld 322) burnt in 1975, before he arrived. Ski Chalet on N. side Bld 750 burnt in late 80's.

Interviewer: Chuck Staples Date: 4/21/2014

Telephone Interview Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 4/29/2014 Installation: Former Griffiss AFB

Name: Mark Rabe Position/Rank: Environmental Engineer

Contact Information (phone, e-mail): mark.rabe@us.af.mil 315-330-4966

Years at or familiar with Installation (# and dates): April 1995 to September 2010

Was AFFF used or stored on-base outside of FTAs? If so, where? In ASTs at hangars, but not stored in other areas that he remembers. Not aware of being used outside FTA.

Were there hangars on-base with fire suppression systems? Yes

If yes, was AFFF used in these systems? Yes - blds. 15, 100, 101, 917, maybe 47

Was there a fire station on-base? Yes - contained AFFF

If yes, where was it located? Same as current location

If no, what local fire station was on call for emergencies?

Were there any plane crashes or fires on base? None that he remembers

If so, where were they located? Fire demonstrations - Apron 1 with other fire stations, and maybe on different runways during air shows - but not sure about AFFF use for either one.

Was there a truck washing area for fire trucks or emergency vehicles on-base? Just at Fire Station

If yes, where was it located? No specific wash racks.

Is there an additional contact that could provide information of AFFF (name and contact info)?

Mike McDermott

Additional Comments: Worked primarily with petroleum tank removals and contaminated soil removals. Fire training outside FTA only occurred on concrete, where water was collected in storm drains into holding tanks. At FTA, he recalls that defoaming agent was added to spent foam at FTA, then effluent to storm drains that he recalled flowed south to a building between 220 and 221, and then he assumed to sanitary sewer. FTA-remediation - dug 3-4 feet deep, then land farmed on Apron 1 (some Apron 2). When analytical indicated soil was clean, used soil as backfill across base (such as UST graves) - no documentation of where used.

Interviewer: Chuck Staples Date: 4/29/2014

Telephone Interview Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 4/30/2014 Installation: Former Griffiss AFB

Name: Joe Wojnas Position/Rank: USACE - Civil Engineer

Contact Information (phone, e-mail): 315-956-0810

Years at or familiar with Installation (# and dates): 1980 to present-different positions; remediation for last 16 yrs

Was AFFF used or stored on-base outside of FTAs? If so, where? Buildings with AFFF systems or with jet fuel

Were there hangars on-base with fire suppression systems? Yes

If yes, was AFFF used in these systems? Yes - Buildings 15, 47, 100, 101, 917 (not aware of any other buildings)

Was there a fire station on-base? Yes - used AFFF in trucks.

If yes, where was it located? Same as current location

If no, what local fire station was on call for emergencies?

Were there any planes crashes or fires on base? None since he as been at the base.

If so, where were they located? Not sure about historical crashes

Was there a truck washing area for fire trucks or emergency vehicles on-base? None that he is aware of.

If yes, where was it located? Washed trucks at fire station

Is there an additional contact that could provide information of AFFF (name and contact info)?

Mark Rabe - FTA remediation

Additional Comments Joe did not specifically work with AFFF. He remembered a fire training pit in the grassy area in front of building 100 or 101 for open houses, but doesn't know if AFFF was used. He said AFFF was good for fuel fires, and would not have been used on buildings or other type of fires. Soil with fuel contamination (such as from FTA area) would have been landfarmed on Aprons 1 and 2. When clean, this soil was used as backfill around the base; thought the remedial contactor documented where it went (Cape Env., AMEC?). Some to landfill #1. For FTA, waste water contained at FTA was defoamed, and then pumped to drain that went to vicinity of bld 255, where it joined the sanitary line to around bld 2 and then the to the city POTW.

Interviewer: Charles Staples Date: 4/30/2014

APPENDIX D

RESEARCH LOGS

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Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 5/14/2014 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:				
	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Final Environmental Impact Statement

Document Author: US Air Force

Document Date: 1-Nov-95

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR 1544

Reviewed report for key words "crash", "fire", "foam", "AFFF", "accident".

Reviewed locations of fire training areas, demonstrations areas, and AFFF areas.

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 5/14/2014 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:				
	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Final Supplemental Environmental Impact Statement

Document Author: US Air Force

Document Date: 1-Sep-99

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR 1545

Reviewed report for key words "crash", "fire", "foam", "AFFF", "accident".

Reviewed locations of fire training areas, suspected fire training areas, demonstrations areas, and AFFF areas.

Noted items include:

1) Building 150 was documented as AFFF storage area

2) Fire demonstration area discussed (SS-24)

3) Fire Protection Training Area (FPTA, or FTA) discussed (FT-30)

4) Suspected Fire Training Area (SFTA) discussed (FT-48)

5) Soil caught fire from fuel contamination by Nosedock 1 and 2, and Apron 1 (SD-41)

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 5/14/2014 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:				
	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Draft Final Primary Report - Volume 1. Remedial Investigation Background Information

Document Author: Law Engineering and Environmental Services

Document Date: 1-Dec-96

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR 924

Reviewed report for key words "crash", "fire", "foam", "AFFF", "accident".

Report Mentioned:

1) Fire demonstration area discussed (SS-24)

2) Fire Protection Training Area (FPTA, or FTA) discussed (FT-30)

3) Suspected Fire Training Area (SFTA) discussed (FT-48)

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 5/14/2014 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:				
	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Draft Final Primary Report - Volume 5. Remedial Investigation Suspected Fire Training Area

Document Author: Law Engineering and Environmental Services

Document Date: 1-Dec-96

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR 931

Reviewed report for key words "crash", "fire", "foam", "AFFF", "accident".

Report Discusses RI investigation and findings at Suspected Fire Training Area (SFTA) (FT-48)

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 5/2/2014 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:				
	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Draft Final Records of Decisions for Areas of Concern

Document Author: Ecology and Environment, Inc.

Document Date: 1-Jul-99

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR 2030

AR includes Draft Final Records of Decision for five areas, including:

1) Suspected Fire Training Area (SFTA) (FT-48)

2) Fire Demonstration Area (FDA) (SS-24)

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 4/28/2014 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:				
	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Basewide Environmental Baseline Survey

Document Author: US Air Force

Document Date: 1-Sep-94

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR 1543

Reviewed report for key words "crash", "fire", "foam", "AFFF", "accident".

Used document for Site background, geology, hydrogeology, historical building locations, AFFF storage tanks, wash racks, fire departments, oil water separators, water supply information.

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 8/13/2015 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Draft Primary Report Identification of Areas of Concern

Document Author: Law Environmental

Document Date: Oct-90

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR-074

Document lists potential areas of concern and recommends whether they should be 1) included in Remedial Investigation, 2) recommended for removal action, 3) recommended for No Further Action, or 4) or sites for continued regulation under the NYS Storage Tank Program.

The document contained information about fire fighting chemical releases at building 917 and the AFFF Lagoon. It also discussed the soil fire by the nose docks, as well as the location of a KC135 aircraft fire.

Research Log

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

Date: 8/13/2015 Installation: Griffiss AFB

Researcher: Charles Staples

Type of research:	X	Online - BRAC AR		AF Historical Research Agency
		Online - General Engine Search		AF Safety Center
		BRAC DR/ER		Misc. Document Review

Document Name: Draft Record of Decision Building 133 Storage Vault Area of Concern (AOC) ST-53, Nosedocks 1 and 2 Area of Concern (AOC) SD-41

Document Author: Law Environmental

Document Date: Feb-11

Was copy of title page obtained?: X Yes ____ No (provide reason)

Notes: AR-2332

The draft Environmental ROD for Nosedocks 1 and 2 described the investigations and remedial actions conducted to date for the fuel contaminated soil in the vicinity of the 1990 soil fire between Apron 1 and Apron 2 by Nosedocks 1 and 2 (SD-41). A figure in the Document showed location of trench fire.

APPENDIX E

RELEVANT DOCUMENTS, ARTICLES AND CORRESPONDENCE

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Town of Floyd



May 7, 2014

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Research by Charles Staples, AMEC.

AFHRA Database Searched: 3/26/2014

Term Searched	Documents Returned	# picked	IRISNUM
fire Griffiss	5	1	01129607
crash Griffiss	0		
Mishap Griffiss	0		
Accident Griffiss	3	1	00902815
“as built” Griffiss	0		
“as-built” Griffiss	0		
“real property” Griffiss	1	0	
AFFF Griffiss	0		
“film forming foam” Griffiss	0		
“aqueous film” Griffiss	0		
Suppression Griffiss	1	0	
Spill Griffiss	2	0	
Safety Griffiss	7	0	
Foam Griffiss	0	0	

General internet-3/27/2014 and 3/28/2014

Searched for “Fire Griffiss”

1) C&S Company upgrade of building 100 AFFF fire suppression system in 2006 – updating 1980 system. http://www.cscos.com/portfolio/services-portfolio/facilities-portfolio/griffiss-international-airport/
2) Book - “Images of America Griffiss Air Force Base” (1941-1999) http://books.google.com/books?id=3rjeTXBf2tcC&pg=PA2&lpg=PA2&dq=%E2%80%9CImages+of+America+Griffiss+Air+Force+Base%E2%80%9D&source=bl&ots=K2la-5QYqN&sig=ZqhSVFj5y48TRI4Bd9lus1jSNqg&hl=en&sa=X&ei=5J09U_TzMZPisAT7p4HgCA&ved=0CCgQ6AEwAg#v=onepage&q=%E2%80%9CImages%20of%20America%20Griffiss%20Air%20Force%20Base%E2%80%9D&f=false

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The Griffiss Fire Department was segregated into two specifically trained units, structure protection and aircraft crash-rescue operations. It was not until the 1970s that firefighters were trained in both specialties. Unlike many civilian counterparts of the day, the department did consist of both men and women. It also operated the only hazardous materials response team in Oneida County. (RHS.)



Fire quickly spread through the two-story wood-framed ROAMA headquarters building in the early morning hours of January 28, 1961. Fire crews battled the cold weather and intense flames throughout the night; however, the structure was completely lost by daybreak. The only other major structure fire at Griffiss was on March 12, 1952, when the officers mess hall burned, resulting in the death of the officer in charge. (RHS.)

100

3) Rome Sentinel – April 26, 2012.

"It went great. It's something that we've never even experienced or worked on before," Kalk said. He and five of his volunteers trained on the simulator Tuesday and will now share that training with the rest of their department, he said. The airplane simulator is built similar to a 737, and is capable of producing engine fires, brake fires, wing fires and more, Sutherland explained. It can also simulate fuel spills both on the ground and when fuel might be running down a wing. The trainees learn how to properly put out a fuel fire — using foam, not water — and there are several mannequins inside the plane to practice rescues.

The simulator is owned by the State of Michigan, and is funded by Kellogg Community College in Battle Creek, Sutherland said. The FAA requires both Griffiss and the Rome fire departments to be re-trained once per year.

http://romesentinel.com/news?newsid=20120426-142212

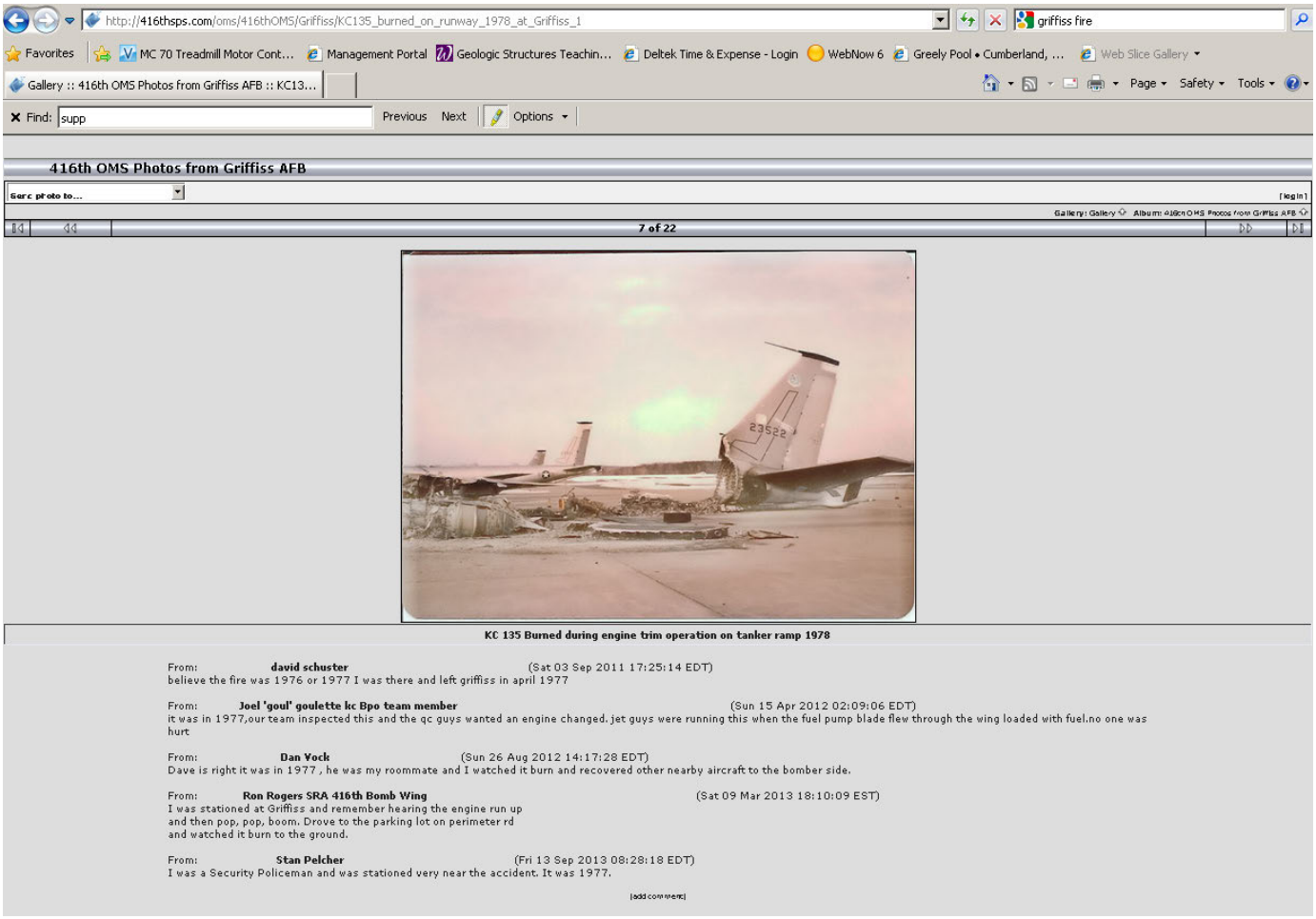


Circa 1985 (416th OMS Photos from Griffiss AFB)
http://416thsps.com/oms/416thOMS/Griffiss/ablerowaerial



KC 135 Burned during engine trim operation on tanker ramp 1978 (noted as 1977 in comments)





Search for “Crash Griffiss”

http://www.topix.com/forum/city/rome-ny/TO65M8SRCRSNPST7V
Dave there was only one B-52 incident at Griffiss. That was in early 1973 or late 1972 when one lost power and crash landed at the end of the runway. Minor injuries but plane was destroyed and sent to RADC test facility at Stockbridge where it was rebuilt and used for antenna testing.

Search for “Plane Crash Griffiss”
Zero Results

Search for “Plane Mishap Griffiss”
Zero Results

Search for “Accident Griffiss”
Zero Results

Search for “Aqueous Foam Griffiss”
Zero Results

Search for “AFFF Griffiss”
Zero Results

APPENDIX F

RESEARCH CHECKLIST

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PFC Site Assessment/Research Checklist

Perfluorinated Compounds (PFCs) Release Determination, Delineation, and Remediation at Multiple BRAC Bases, Contract FA8903-08-8766, Task Order 0177

POC/Personnel Interviews	Yes	No (include reason)
Did installation POC complete PFC General Information Questionnaire?	X	
Was additional contact personnel provided by POC (i.e. Fire chief, longtime base employee). If yes, provide names and contact information (position/rank, phone number, e-mail address) below.	X	
Contact information:	Rob Cowles - Fireman - [redacted]	
Contact information:	Mark Rabe - Former AFRPA empleyee [redacted]	
Contact information:	Joe Wajnas - CORPS - former Env. Man. [redacted]	
Contact information:	Chief (Ted) Endy - Former Fire Chief - [redacted]	
Contact information:	Bruce Mero - Former Env. Flt. Chief. - [redacted]	
Contact information:	Howe (?) - landlord bld 101 - [redacted] (not contacted)	
Was Telephone Interview Log completed for each person contacted?	Yes	5 of 6 - didn't need 6th.

Online Research	Yes	No (include reason)
Searched for the following key words in online AF BRAC Administrative Record and general search engine?		
"crash"	X	
"fire"	X	
"accident"	X	
"mishap"	X	
"AFFF" and "aqueous film forming foam"	X	
List additional words searched in online AR:	"suppression", "spill", "safety", "foam"	
Reviewed Environmental Baseline Survey?	X	
Located and reviewed Environmental Impact Statements and/or Environmental Assessments?		Not located
Were Real Property Records (as-built drawings) located?		No
Were installation maps with building functions located?	X	
Located and reviewed additional reports suggested by POC?		None suggested
Located historic aerial surveys (1970 - present)?		None identified - reviewed old installation drawing

Archival Repository Research	Yes	No (include reason)
Searched for the following key words in online Air Force Historical Research Agency Records Index?		
"crash"	X	
"fire"	X	
"mishap"	X	
"accident"	X	
"as-built" and/or "as built"	X	
"real property"	X	
"AFFF" and "aqueous film forming foam"	X	
List additional words searched in Index:	foam, suppression, spill, safety	
Conducted file review at the Air Force Historical Research Agency Records at Maxwell AFB?	X	Two files identified, one retrieved.
Conducted file review at the Air Force Safety Center at Kirtland AFB?		No - told no files available.

Signature: Charles Staples Date: 5/12/15