NON-CERCLA PETROLEUM SPILL SITES
FIVE-YEAR REVIEW REPORT
FORMER GRIFFISS AIR FORCE BASE
ROME, NEW YORK

MARCH 2022

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ACRONYMS AND ABBREVIATIONS

%	Percent
AECOM	AECOM Technical Services, Inc.
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFFF	Aqueous Film Forming Foam
AFBCA	Air Force Base Conversion Agency
AFRPA	Air Force Real Property Agency
AMEC	AMEC Foster Wheeler Environment & Infrastructure, Inc.
AOC	Area of Concern
AOI	Area of Interest
AST(s)	Aboveground storage tank(s)
AWQ	Ambient Water Quality
bgs	Below ground surface
Bhate	Bhate Environmental Associates, Inc.
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CAO(s)	Corrective action objective(s)
CAPE	CAPE Environmental
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC(s)	Chemical(s) of concern
cfm	Cubic feet per minute
CP-51	Commissioner's Policy-51
CY	Cubic yards
DPT	Direct push technology
FOSET	Finding(s) of Suitability for Early Transfer
FOST	Finding(s) of Suitability to Transfer
FPM	FPM Remediations, Inc.
ft	Feet
FYR	Five-Year Review
GLDC	Griffiss Local Development Corporation
GEEIA	Ground Electronics Engineering Installation Agency
HWSA	Hazardous Waste Storage Area

IRP	Installation Restoration Program
ISCO	In-situ chemical oxidation
JP-4	Jet Propulsion Fuel No. 4
LCP(s)	Lateral Control Pit(s)
LNAPL	Light non-aqueous phase liquid
LTM	Long Term Monitoring
µg/L	Microgram(s) per liter
NFA-ATT	No Further Action – At This Time
No.	Number
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OBC™	Oxygen Biochem™
OCIDA	Oneida County Industrial Development Authority
OHM	OHM Remediation Services Corporation
O&M	Operations and maintenance
ORC(s)	Oxygen Release Compound(s)
OSE	Oil Spill Eater
OSHA	Occupational Safety and Health Administration
OST	Other storage tank
PCB(s)	Polychlorinated biphenyl(s)
PEER	PEER Consultants Professional Corporation
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PID	Photoionization detector
POL	Petroleum, oil, and lubricants
ppm	Parts per million
psi	Pounds per square inch
PVC	Polyvinyl chloride
RAO(s	Remedial Action Objective(s)
RCRA	Resource Conservation and Recovery Act
RRS	Rome Research Site

STARS	Spills Technology and Remediation Series
S/GV(s)	Standard and Guidance Value(s)
SCO(s)	Soil Cleanup Objective(s)
SER®	Surfactant Enhanced Remediation
sq-ft	Square-feet
SVOC(s)	Semi-Volatile Organic Compound(s)
TMB	Trimethylbenzene
U.S.	United States
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
UST(s)	Underground storage tank(s)
UU/UE	Unlimited use/unrestricted exposure
VOC(s)	Volatile Organic Compound(s)
Wood	Wood Environmental & Infrastructure Solutions, Inc.

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1 INTRODUCTION/FIVE-YEAR REVIEW PROCESS

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The Air Force Civil Engineer Center (AFCEC) contracted with Bhate Environmental Associates, Inc. (Bhate) to perform remediation activities at the former Griffiss Air Force Base (AFB) in Rome, New York on four petroleum sites. These sites are governed by New York State Department of Environmental Conservation (NYSDEC) regulations rather than the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Air Force is conducting this FYR as a matter of policy pursuant to Department of the Air Force Instruction 32-7020, *Environmental Restoration Program*. This is the first FYR for the non-CERCLA sites located within the former Griffiss AFB. This FYR covers the period of 2015 through 2019 for the following four non-CERCLA sites:

- SS054 Building 781 Pumphouse (NYSDEC Spill Number [No.] 9202658)
- SS067 Building 789 Type II Fuel System (NYSDEC Spill No. 9810713)
- CSS681 Apron 1 Area Lateral Control Pit (LCP) E9 (NYSDEC Spill No. 1501553)
- SS060 Building 35 Resource Conservation and Recovery Act (RCRA) Hazardous Waste Storage.

1.1 Methodology

This review will include a brief description of each site including the former uses and releases that have occurred, the response actions that have been taken including land use restrictions, and the status in terms of response actions and site conditions. In addition, a remedy evaluation will be provided for each site that considers the following three questions in order to evaluate the protectiveness of the remedy:

1. Is the remedy functioning as intended by the decision document?

2. Are the exposure assumptions, toxicity data, cleanup levels, and corrective action objectives (CAOs) used at the time of the remedy still valid?

3. Has other information come to light that could call into the question the protectiveness of the remedy?

Lastly, any issues regarding the protectiveness of the remedy will be provided, as well as corresponding recommendations.

1.2 Report Organization

This report consists of the following sections:

- Section 1 describes the operational history and background of the facility, the non-CERCLA sites being reviewed, the regulatory authority, and the components of the review.
- Sections 2 through 5 provide the site evaluations.
- Section 6 provides the date of the next FYR.
- Section 7 provides references cited in this report.

1.3 Regulatory Authority

Sites SS054, SS067 and CSS681 in this FYR are governed by NYSDEC's Spills Program, which flows from two laws: Navigation Law, Article 12, and Environmental Conservation Law, Article 17, Titles 5 (17-0501) and 17 (17-1743). Regulation 6 New York Codes, Rules, and Regulations (NYCRR) Part 611 (Environmental Priorities and Procedures in Petroleum Cleanup and Removal) was adopted pursuant to Navigation Law and is the primary regulation from which Commissioner's Policy-51 (CP-51) and the Spill Guidance Manual are derived. The Spills Program is implemented through CP-51 and the Spill Guidance Manual.

Deed restrictions refer to the Spills Technology and Remediation Series (STARS) Memo as a guidance document for the Spills Program. Although the STARS Memo is not invalid, the primary guidance for the Spills Program is currently CP-51 and the Spills Guidance Manual.

Site SS060 is governed by Resource Conservation and Recovery Act (RCRA). SS060 was part of Building 35 AOC that stored an unknown quantity of drums and transformers during the late 1960s and 1970s. Site closure was a requirement under the Building 35 RCRA Hazardous Waste Storage permit and the closure activities were performed in the late 1990s (OHM Remediation Services Corporation [OHM], July 1997).

1.4 Operational History/Background

The mission of the former Griffiss AFB varied over the years. The base was activated on February 1, 1942, as Rome Air Depot, with the mission of storage, maintenance, and shipment of material for the United States (U.S.) Army Air Corps. Upon creation of the United States Air Force (USAF) in 1947, the depot was renamed Griffiss AFB. The base became an electronics center in 1950, with the transfer of Watson Laboratory Complex (later Rome Air Development Center [1951], Air Force Research Laboratory/Rome Research Site [RRS]), and then the Information Directorate at

RRS was established with the mission of applied research, development, and testing of electronic air-ground systems). The headquarters of the Ground Electronics Engineering Installation Agency (GEEIA) was established in June 1958 to engineer and install ground communication equipment throughout the world. The 49th Fighter Interceptor Squadron served at Griffiss AFB from 1959 until its inactivation in 1987.

In August 1958, shortly after GEEIA took over as host unit at Griffiss AFB, the 4039th Strategic Wing was assigned as a tenant. The 4039th was equipped with aircraft including the B-52G "Stratofortress" and KC-135A "Stratotanker." Base facilities had to be modified or constructed to accommodate the Strategic Wing mission. This included the construction of new runways, taxiways, runway aprons, dormitories, storage facilities, hangars, and various other support buildings.

In 1963, the 4039th was inactivated and replaced with the 416th Bombardment Wing. The 416th Bombardment Wing assumed host responsibilities at Griffiss AFB in 1970, after the Headquarters of GEEIA was inactivated (Woodward-Clyde, February 1998). Griffiss AFB was designated for realignment under the Base Realignment and Closure Act in 1993 and 1995, resulting in deactivation of the 416th Bombardment Wing in September 1995.

As a result of the various national defense missions carried out at the former Griffiss AFB since 1942, hazardous substances were used, and hazardous wastes were generated, stored, or disposed of at various sites on the installation. The defense missions involved, among others, were the procurement, storage, maintenance, and shipping of war materiel; research and development; and aircraft operations and maintenance (O&M) (FPM Remediations Inc., [FPM] June 2005).

The former Griffiss AFB covered approximately 3,552 contiguous acres in the lowlands of the Mohawk River Valley in Rome, Oneida County, New York. Topography within the valley is relatively flat, with elevations on the former Griffiss AFB ranging from 435 to 595 feet above mean sea level. Three Mile Creek, Six Mile Creek (both of which drain into the New York State Barge Canal, located south of the base), and several State-designated wetlands are located on the former Griffiss AFB, which is bordered by the Mohawk River on the west (**Figure 1-1**). Due to its high average precipitation and predominantly silty sands, the former Griffiss AFB is considered a groundwater recharge zone.

1.5 Perfluorooctane Sulfonate and Perfluorooctanoic Acid

The USAF evaluated perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) base wide. The results of the preliminary assessment were reported in the *Final Perfluorinated Compounds Preliminary Assessment, Former Griffiss Air Force Base, Rome, New York* (Amec Foster Wheeler Environment & Infrastructure, Inc. [AMEC], July 2015). The results of the site inspection were reported in the *Final Site Inspection for Aqueous Film Forming Foam (AFFF) Areas, Former Griffiss Air Force Base, New York* (Wood Environmental & Infrastructure Solutions,

Inc. [Wood], November 2018). The preliminary assessment did not identify any of the sites discussed in this First Non-CERCLA FYR as potential locations where AFFF was used or stored; therefore, no further sampling was completed at the sites during the site inspection.

2 SS054 (BUILDING 781 PUMPHOUSE) NYSDEC SPILL SITE 9202658

2.1 Site Description and History

The SS054 (Building 781) site includes the former Pumphouse 1 and is located in the southern portion of the former Griffiss AFB (see **Figure 2-1**). Pumphouse 1 was constructed between 1956 and 1958 to provide Jet Propulsion Fuel No. 4 (JP-4) to the fuel distribution system located on the base's aircraft parking aprons. Four 50,000-gallon underground storage tanks (USTs) and one 2,000-gallon UST were formerly beneath Pumphouse 1. The four 50,000-gallon USTs were used to store jet fuel, and the 2,000-gallon UST was used to store waste jet fuel, separator water, and liquids collected from the pumphouse floor drain. Jet fuel was supplied to Pumphouse 1 via a pipeline from the Bulk Fuel Storage Area located near the Barge Canal on the southern boundary of the base. Jet fuel was transferred from the pumphouse to the fuel hydrants at the aircraft parking aprons via underground piping and aboveground pumps. Use of Pumphouse 1 was discontinued in 1988, and the USTs were emptied and cleaned out between July 1988 and August 1989 (AECOM Technical Services, Inc. [AECOM], July 2012a).

2.2 Deed Restrictions

The SS054 site is located on land Parcels F2D, F4A, and F4B. Deed restrictions were based on environmental factors identified in the Findings of Suitability to Transfer (FOSTs) or Findings of Suitability for Early Transfer (FOSETs) for the individual land parcels (i.e., Air Force Base Conversion Agency [AFBCA], March 2001; AFBCA, June 2001). The deed restrictions are conveyed through environmental covenants in the deeds for Parcels F2D (which is part of Parcel F2), F4A, and F4B. All three parcels were transferred to the Griffiss Local Development Corporation (GLDC), via the Oneida County Industrial Development Authority (OCIDA), on July 31, 2000 (Deed number GRI-EDC-2000-001-D-3); May 29, 2001 (Deed number GRI-EDC-2000-001-D-7); and August 21, 2001 (Deed number GRI-EDC-2000-001-D-8), respectively. Environmental covenants conveyed in the deed for Parcel F2, include:

- *"The GRANTEE covenants to restrict the use of the Property to industrial, educational and commercial non-residential activities unless it obtains written permission to do so from United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and New York State Department of Health (NYSDOH)."*
- *"The GRANTEE covenants that it will not engage in any activities that will disrupt required remedial investigation, response actions or oversight activities, should any be required on the Property."*
- *"The GRANTEE covenants not to extract, utilize, consume or permit to be extracted, anywater from the aquifer below the surfaces of the land on the Property unless such*

groundwater has been tested and found to meet all applicable standards, and unless the Grantee or occupant obtains the prior written approval from NYSDOH. The GRANTEE will ensure that the aquifer will be managed to preclude the spread or exacerbation of environmental contamination or open exposure pathways to humans or the environment. The costs associated with obtaining use of such water, including the costs of studies, analysis or remediation, shall be the sole responsibility of the GRANTEE. Until all conditions of this section 6 are satisfied, no groundwater from the Property may be used." Note: In the last sentence, 'this section 6' refers to the text in this bullet.

- *"The GRANTEE covenants and agrees that it will not spread or exacerbate environmental contamination or open exposure pathways to humans or the environment, and that it will not disrupt environmental investigations and remedial activities, or jeopardize the protectiveness of those remedies, such as:*
    - *surface application of water in the area of an* ([Installation Restoration Program)] *IRP site that could impact the migration of contaminated ground water;*
    - *subsurface drilling or use of ground water in the area of an IRP site unless the GRANTOR determines that there will be no adverse impacts on the IRP remediation process;*
    - *construction that would interfere with, negatively impact, or restrict GRANTOR'S rights of access for purposes of the IRP remediation process."*

Environmental covenants conveyed in the deed for Parcel F4A/F12A, include:

- *"The Grantee, its successors and assigns shall be prohibited from accessing or otherwise disturbing or causing exposure to the subsurface soils, or consuming or otherwise using or causing exposure to the underlying groundwater at any of the environmental sites listed in the map at Exhibit B-2, without prior written permission of the Grantor and the New York State Department of Environmental Conservation (NYSDEC)."*
- *"The Grantee is prohibited from the extraction, utilization or consumption of any water from the aquifer below the surface of the ground within the Property boundary unless the groundwater has been tested and found to meet all applicable standards and such owner or occupant obtains the prior written approval from the New York State Department of Health."*
- *"The Grantee is prohibited from managing the aquifer in any way that could spread or exacerbate environmental contamination or open exposure pathways to humans or the environment."*
- *"Activities by the Grantee and its successors and assigns shall not disrupt the integrity or effectiveness of the Grantor's actions to complete closure of the environmental sites identified on Exhibit B-2 (to include monitoring wells or other necessary remedial systems). Nor shall the Grantee and its successors and assigns undertake any action resulting in the spread or exacerbation of environmental contamination or the opening of exposure pathways to humans or the environment. Further, the Grantee and its successors and assigns will refrain from undertaking any alterations, construction or*

construction-related work, demolition, excavation, or other ground disturbing activities in the areas containing these environmental sites, including the surface application of water in the area of an IRP site that could impact the migration of contaminated ground water, or the subsurface drilling or use of ground water in the area of an IRP site, without prior written permission of the Grantor and the NYSDEC." Note: Exhibit B-2 is on file at Oneida County with the original Deeds.

- *"The Grantee convenants* [sic] *to limit the use of the Property to commercial/industrial and non-residential purposes."*

Environmental covenants conveyed in the deed for Parcel F4B, include:

- *"The Grantee covenants and agrees that it will not spread or exacerbate environmental contamination or open exposure pathways to humans or the environment, and that it will not disrupt environmental investigations and remedial activities, or jeopardize the protectiveness of those remedies, such as:*
    - *surface application of water in the area of an IRP site that could impact the migration of contaminated ground water;*
    - *subsurface drilling or use of ground water in the area of an IRP site unless the Grantor determines that there will be no adverse impacts on the IRP remediation process;*
    - *construction that would interfere with, negatively impact, or restrict Grantor's rights of access for purposes of the IRP remediation process."*
- *"The transaction documents will restrict property use to industrial and commercial non-residential use unless permission is obtained from the United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and New York State Department of Health (NYSDOH)."*
- *"The owner or occupant of the Property shall not extract, utilize, consume or permit to be extracted, any water from the aquifer below the surfaces of the ground within the boundary of the property unless such groundwater has been tested and found to meet all applicable standards and/or such owner or occupant obtains the prior written approval from the NYSDOH. The owner or occupant will ensure that the aquifer will not be managed in any way that could spread or exacerbate environmental contamination or open exposure pathways to humans or the environment. The costs associated with obtaining use of such water, including the costs of studies , analysis or remediation, shall be the sole responsibility of the owner, its successors and assigns, without any cost whatsoever to the United States Government."*
- *"Four (4) aboveground storage tanks (ASTs), two (2) former ASTs, twenty-three (23) former underground storage tanks (USTs) and one (1) former other storage tank (OST) are or were located on the property to be transferred. These are listed in Table 5.1 of the FOSET. The Grantee will be restricted from construction activities in the subsurface soils of UST-769, USTs-773-1 thru 5, USTs-775-1 thru 5, USTs-779-l thru 5 and USTs-781-1 thru 5, until the NYSDEC STARS Memo cleanup requirements are met and cleanup actions are*

executed by the Air Force to the satisfaction of the NYSDEC Spills Program personnel. Scheduling shall be properly coordinated with the Air Force and the NYSDEC to ensure protection of human health and the environment. The Grantee will allow the Air Force, NYSDEC, USEPA and their representative's access to this site to fully investigate the site.

- *"There is one (1) IRP site located on the property to be transferred.*

  SS-54 is the Building 781 (Pumphouse 1) site. The Grantee will be restricted from access to subsurface soils and groundwater in this area until the NYSDEC Spill Technology and Remediation Series (STARS) Memo cleanup requirements are met, and cleanup actions are executed by the Air Force to the satisfaction of the NYSDEC Spills Program personnel. Scheduling shall be properly coordinated with the Air Force and NYSDEC Spills Program personnel to ensure protection of human health and the environment."

- *"There are nine (9) IRP/*[Area of Concern] *AOC sites located on adjacent property that may impact the property to be transferred.*
  - *LF-07 is former Landfill No. 5 located west of the property.*
  - *LF-09 is former Landfill No. 6 located west of the property.*
  - *LF-28 is former Landfill No. 4 located west of the property.*
  - *SD-31 is Three Mile Creek located west of the property.*
  - *SS-34 is Building 786 (Nose Dock # 5), located northwest of the property.*
  - *ST-37 is former Building 771 (Pumphouse 5), located northwest of the property.*
  - *SD-41 is Building 782 (Nose Docks 1 and 2), located northwest of the property.*
  - *SS-46 is the Glycol Storage and Use Area located northwest of the property.*
  - *LF-49C is a 0.5 acre hardfill located west of the property."*

  "The Grantee will allow the Air Force, NYSDEC and USEPA and their representatives access to the AOC and IRP sites noted above. The Grantee will be prohibited from any extraction, utilization, or consumption, or permit to be extracted, any water from the aquifer below the surface of the ground within the property boundary unless the groundwater has been tested and found to meet all applicable standards and/or such owner or occupant obtains the prior written approval from the New York State Department of Health. The aquifer will not be managed in any way that could spread or exacerbate environmental contamination or open exposure pathways to humans or the environment. The Grantee and its successors and assignees will be required to comply with all applicable Federal and State laws and regulations with regard to activities effecting the groundwater in the aquifer."

2.3 Previous Investigations/Remedial Actions

2.3.1 Investigations and Actions Prior to Current FYR Period

Several previous investigations have been conducted at SS054. Information from these investigation reports was presented in the Final Building 781 (Pumphouse 1) Supplemental Investigation Report (AOC SS054) (AECOM, July 2012a), and is summarized below.

Free product was reported in monitoring well 781MW-1 in June 1992 at a thickness of 0.28 feet (ft). This was reported to the NYSDEC and the Site was assigned Spill No. 9202658. Pumphouse 1 and its associated USTs were removed in May 1995. The exposed transfer pipeline from the Barge Canal, and the refueling and defueling lines located at the limits of the UST basin excavation were cut and crimped at the edges. A low point drain associated with the fuel distribution system was located approximately 50 ft southeast of the former Pumphouse 1 building. Soils within and below the low point drain were removed, but an unspecified amount of contaminated soil was left in-place to help ensure the structural stability of Ready Road (PEER Consultants Professional Corporation [PEER], February 1998).

PEER began a site characterization in June 1997 (PEER, February 1998) to characterize and delineate the soil contamination and performed a groundwater investigation in 1999 (PEER, January 2000). In support of these investigations, 16 monitoring wells (781MW-4 through -19) were installed. Primary soil contaminants detected were benzene, toluene, ethylbenzene, and xylenes (BTEX). Based on sampling results, the majority of the contaminated soil was found at depths ranging from 50 to 58 ft below ground surface (bgs) in the smear zone and at the top of the water table (PEER, January 2000). Observed soil impacts were attributed to groundwater contamination at the site. Free product was detected in several monitoring wells at that time (PEER, January 2000).

Groundwater monitoring commenced in June 2002 to evaluate the presence of residual groundwater contamination. A free product recovery system (including recovery wells 781PPRW-1 through 781PPRW-8) and a bioventing system (including injection well 781PAIW-1 and vapor monitoring wells 781PVMP-1, -2, and -3) were installed in 2002/2003. Free product removal began at the Site in 2002. In October 2005, passive skimmers were installed in monitoring wells or recovery wells that showed free product (781MW-8 and -13 and 781PPRW-4 and -6). In addition to free product removal efforts, bioventing was conducted from 2004 to 2007, at which time the system was retrofitted to a vertical biosparging system. Two additional monitoring wells (781MW-20 and -21) were installed downgradient of the contaminant plume in 2006 (AECOM, July 2012). Monitoring well 781MW-20 is the furthest downgradient well. In the spring of 2010, for the first time, one Volatile Organic Compound (VOC) (benzene) was detected in this well at 24.4 micrograms per liter (µg/L), above the 1 µg/L Standard and Guidance Value (S/GV) (Table 1, New York State Ambient Water Quality [AWQ] Standards and Guidance Values, NYSDEC, June 1998). Guidance values are listed in the Table when standards have not been set for a chemical. These values are referred to as S/GVs. Benzene continued to be present above the S/GV in this

well from April 2010 to April 2011. It again exceeded the S/GV in January 2013 but had not been detected above 1 µg/L through 2019.

In September and October 2011, the remedial system was modified to accommodate the installation of 12 new biosparge wells and four vertical biosparge wells (781VBS-1 through 781VBS-4) in the area of 781MW-13 and the installation of five vertical biosparge wells (781VBS-8 through 781VBS-12) and one new free product recovery well (781PPRW-9) in the area of MW-8. Three new vertical biosparge wells (781VBS-5, -6, and -7) were installed in line with wells 781MW-17 and 781MW-18 to specifically address groundwater impacts reported in downgradient monitoring well 781MW-20. The locations of these new wells were selected in an effort to cut-off further migration of contaminants that may have been passing between these two vertical biosparge wells as seen in groundwater samples from 781MW-20.

In September 2011, five soil borings (781SS01 through 781SS05) were completed in the vicinity of well 781MW-13 as documented in the Supplemental Investigation Report (AECOM, July 2012a). During the Supplemental Investigation, no light non-aqueous phase liquid (LNAPL) was observed in the soil borings including 781SS01, which was installed approximately 2 ft from 781MW-13, although LNAPL was detected and measured in 781MW-13 in September 2011 at an approximate thickness of 1.5 ft. At the time of the investigation, LNAPL was measured in wells 781PPRW-1 (0.5 ft) and 781PPRW-4 (0.13 ft). No VOCs or Semi-Volatile Organic Compounds (SVOCs) were detected in the soil samples above the Industrial Use Soil Cleanup Objectives (SCOs). SCOs can be found in Tables 375-6.8 (a) and (b) of 6 NYCRR PART 375 – Environmental Remediation Programs (NYSDEC, December 2006). SCOs are concentration values used for comparative purposes when considering closure for industrial or unlimited use purposes. However eight VOCs (1,2,4-trimethylbenzene [TMB]; 1,3,5-TMB; ethylbenzene; m/p-xylenes; n-propylbenzene; o-xylene; toluene; and total xylenes) and one SVOC (naphthalene) were detected above the Unrestricted Use SCOs.

2.3.2 Investigations and Actions During the Current FYR Period

Free product measurement and recovery via a portable skimming device (The Spill Buddy™) was performed on a weekly basis from February 2013 through May 2015. Free product had historically been present in five wells including 781MW-13 and 781MW-8 and free product recovery wells 781PPRW-1, -2, and -4 since monitoring began in 2002. Measured free product thickness at monitoring well 781MW-13 had been reduced to a sheen and was not present in any other wells in June 2016 (AECOM/CAPE Environmental [CAPE], July 2016).

In 2017, sampling events were conducted in March, June, August, and November. Results continued to show evidence of a dissolved phase plume at the site. Numerous compounds continued to exceed the NYSDEC AWQ S/GVs at 781MW-8 but the detections appeared to be stable (Bhate, August 2018). In 2017, monitoring well 781MW-13 continued to show the presence of free product and was the area of highest groundwater contamination at SS054. Results from downgradient monitoring well 781MW-20 suggested that the southern edge of the

dissolved phase plume was contained by the biosparge system, but the biosparge system was not adequate to remove free product from the site.

In November 2017, a pilot study was completed to evaluate the use of Ivey-sol® 103 Surfactant Enhanced Remediation (SER®) Push-Pull™ technology to facilitate the removal of free product in and near monitoring well 781MW-13. The pilot study was completed in accordance with the approved Final Pilot Study Technical Memorandum for SS054 (Bhate, September 2017) and no free product was observed in the recovery tank during the study and no free product was detected in the vicinity of 781MW-13 during 2018. The implementation details and results of the pilot study were presented in the Final 2018 Supplemental Investigation and Groundwater Monitoring Report at Sites SS054 and SS067 (Bhate, October 2019).

In June 2018, groundwater samples were collected from monitoring wells 781MW-08, 781MW-13R, and 781MW-20 to evaluate the presence of microbes. Groundwater from wells 781MW-08 and 781MW-13R both had over 106 cells/milliliter biomass (considered moderate biomass) and the majority of the biomass was associated with Proteobacteria. The majority of hydrocarbon utilizing bacteria fall within the Proteobacteria. Firmicutes, which included anaerobic fermenting bacteria, was present in the groundwater at greater than 10 percent (%) and was indicative of the potential for natural attenuation including anaerobic degradation. Monitoring well 781MW-20 had significantly less biomass, which was expected given its downgradient location and the lack of hydrocarbons present in the groundwater.

Results from the 2018 quarterly sampling events continued to show evidence of a dissolved phase plume at the site. Numerous compounds continued to exceed the NYSDEC AWQ S/GVs at 781MW-8 but the detections appeared to be stable to decreasing. Following the pilot study, free product in the vicinity of monitoring well 781MW-13 was no longer present and the detected results for VOCs in 781MW-1/781MW-13 were generally stable. Results from downgradient monitoring wells 781MW-17, 781MW-19, 781MW-20, and 781MW-21 suggested that the southern edge of the dissolved phase plume was defined and the plume was not migrating.

During the October 4, 2018, O&M site visit, the biosparge system was found to be offline (Bhate, October 2019). The vertical biosparge system remained offline for the remainder of 2018 and into the first quarter of 2019 to allow for groundwater equilibration and evaluation of the plume. Seven of the 12 biosparge drop tubes had been removed in late 2018 (Bhate, October 2019) and in March 2019, three of the remaining five sparge tubes were removed (Bhate, September 2020). Removal of the sparge tubes from two wells (781MW-5 and 781MW-18) was attempted multiple times, but they could not be removed due to the polyvinyl chloride (PVC) drop tubes catching on the inside of the PVC well casing. The 10 wells (781MW-1, -4, -6, -9, -10, -12, -14, -16, -17, and -19) from which the sparge tubes had been removed were then surged and redeveloped in March 2019. Following the redevelopment, a site-wide sampling event was conducted on April 7, 2019, and subsequently the decision was made to not restart the biosparge system.

Results from the 2019 quarterly sampling events at SS054 show that the dissolved phase groundwater plume has numerous compounds which continue to exceed the NYSDEC AWQ S/GVs at 781MW-8 and 781MW-13R but the total VOC detections are decreasing. Free product or new groundwater impacts were not observed at the site following the reversion of the converted sparge wells back to monitoring wells in 2018 and 2019. Monitoring well 781MW-13R remains the area of highest groundwater contamination at SS054. An obstruction was removed from downgradient monitoring well 781MW-20 and the well was redeveloped allowing for the collection of groundwater samples during 2019. Results from 781MW-17, 781MW-19, 781MW-20, and 781MW-21 suggest that the southern edge of the dissolved phase plume is defined and the plume is not migrating. Following the removal of the biosparge drop tubes, a total of 18 wells were sampled as part of a site-wide sampling event in April 2019 and free product was not observed at the site at that time. The dissolved phase groundwater plume is decreasing and the lack of petroleum compounds detected in downgradient monitoring wells 781MW-17, 781MW-19, 781MW-20, and 781MW-21 indicates that the downgradient edge of the plume is defined. Natural attenuation is ongoing.

2.4 Current Status

Gauging results from 2019 sampling events indicate that the free product previously observed at SS054 has been remediated to the extent possible and is no longer observed in wells at the site. Based on the 2019 analytical data, the contamination remaining in the dissolved phase groundwater plume is decreasing and is present in concentrations above NYSDEC AWQ S/GVs in 5 of the 18 wells sampled (**Figure 2-1**). In addition, the lack of petroleum compounds detected in downgradient monitoring wells 781MW-17, 781MW-19, 781MW-20, and 781MW-21 indicates that the downgradient edge of the plume is defined. Natural attenuation is ongoing. As such, no further remedial actions are necessary and the 2019 recommendation was to request closure of NYSDEC Spill No. 9202658 based upon the 2020 quarterly sampling (Bhate, September 2020). In order to confirm that free product does not remain on site, four recovery wells (781PPRW-1, -2, -3, and -4) were planned to be redeveloped, allowed to equilibrate, then gauged with an oil/water interface probe and sampled for dissolved phase petroleum constituents as part of the 2020 sampling plan.

Under the STARS program, which governs spills from petroleum sites, NYSDEC can make a determination of No Further Action – At This Time (NFA-ATT) regarding SS054. This is based upon site conditions, using their discretion, even though remedial efforts have not attained pre-spill conditions. Pertinent current factors include a lack of free product and a stable groundwater plume with decreasing concentrations. NYSDEC does not require, enforce, or participate in placing or lifting restrictions. Deed restrictions will remain in place. Some monitoring wells could be abandoned and select monitoring wells would remain in place and be sampled on either an annual or 5-year schedule (at the USAF discretion) for use in future FYRs.

2.5 Remedy Evaluation

The NYSDEC Division of Water Technical and Operation Guidance Series AWQ S/GVs are used to evaluate the VOC results for monitoring wells at SS054. These requirements are still in effect and valid.

QUESTION A: Is the remedy functioning as intended by the decision documents? The results described in the previous paragraphs indicate that the SS054 remedies of product skimming, biosparging, and surfactant flushing have eliminated free product and natural attenuation of groundwater contamination is ongoing. No additional remedial actions are planned.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid? Yes, significant changes to the assumptions have not occurred.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy? No new information has come to light that calls into question the protectiveness of the remedy at SS054.

2.6 Protectiveness Statement

The remedy at SS054 is protective. It is functioning as intended with the elimination of free product and stable dissolved plume. In addition, land use restrictions have been implemented and have been effective in preventing exposure to groundwater and soil. The property is inspected annually and the inspections are described in a separate report (Bhate, March 2020). Inspection forms for SS054 are included in Appendix A-1. No information has come to light that could call into question the protectiveness of the remedy.

2.7 Issues/Recommendations

No issues were identified at SS054. Groundwater monitoring, water level measurements, and verification that free product is not present should continue until unlimited use/unrestricted exposure (UU/UE) is achieved. Should NYSDEC make a determination of NFA-ATT, the deed restrictions would remain in place and annual property inspections would continue. The majority of the site monitoring wells would be abandoned with three or four left in place for continued monitoring on a once every 5-year schedule to allow future FYRs to be updated. This will reduce the annual cost. If the site remains in its current Spills Program status, quarterly sampling will be required.

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3 SS067 (BUILDING 789) NYSDEC SPILL SITE 9810713

3.1 Site Description and History

The SS067 (former Building 789) site is located in the southeastern portion of the former Griffiss AFB (**Figure 3-1**). In August 1958, the 4039th Strategic Wing was assigned as a tenant. Base facilities had to be modified or constructed to accommodate the Strategic Wing mission. This included the construction of new runways, taxiways, runway aprons, dormitories, storage facilities, hangars, and various other support buildings. At Griffiss AFB the construction in support of the Strategic Wing mission was completed by August 1959 (Woodward-Clyde, February 1998).

Prior to construction of the Strategic Wing facilities at the southeastern end of the flightline, Six Mile Creek had flowed through the site in an open channel in the area of the Apron 2/Building 789 area, but during construction it was diverted into an underground culvert and the old channel was filled in (Air Force Real Property Agency [AFRPA], April 2009). Based on the historic building inventory, Building 789 was one of the support buildings constructed to support the Strategic Wing mission. In January 1961, the base received the first air-to-surface nuclear attack "Hound Dog Missiles" which were carried by B-52H and B-52G bombers. The Hound Dog Missile Complex at Griffiss AFB was situated at the southeastern end of the flightline and included Building 789, Missile Assembly Shop; Buildings 790 and 791, Missile Run-Up Shops; and Building 5910, the Power Check Pad. These missiles were removed from service at the Base in 1973 (Woodward-Clyde, February 1998).

From 1961 to 1983, Building 789 was used as a base supply and equipment warehouse. In 1983, it was converted to the 416th Maintenance Squadron Equipment Maintenance Shop and remained so until the building was decommissioned in 1989. An 8,000-gallon UST (789-1) was located on the northeast side of Building 789 from 1961 until its removal in 1991, and was used to store fuel oil for boiler heating. Coinciding with the removal of UST 789-1 was the installation of UST 789-2, approximately 25 ft to the east of UST 789-1. UST 789-2 had a capacity of 5,000 gallons and was also used to store No. 1 fuel oil for boiler heating until its removal by PEER in November 1998. Continuous soil screening was conducted during the excavation of UST 789-2. Observed contamination at depth was determined to be associated with the fuel pipeline system, and NYSDEC Spill No. 9810713 was assigned to the site in November 1998 (AECOM, November 2011). Located along the northwestern side of Building 789 is a section of the former Type II Jet Fuel pipeline that once distributed JP-4 fuel to the southern section of Apron 2. Fuel was distributed from Pumphouse No. 1 to pipeline system petroleum, oil, and lubricants (POL) 781-2, located between Building 789 and Apron 2. POL 781-2 consisted of four LCPs adjacent to the northeast side of Apron 2 and a refueling hydrant outlet connected to each pit, formerly located in the Apron 2 pavement. The LCPs were connected by 10-inch diameter fueling and 8-inch diameter defueling pipelines. The individual refueling hydrant outlets were connected to the hydrant LCPs by 6-inch diameter lateral fueling pipelines. POL 781-2 pipelines were reportedly

flushed, capped with hydraulic cement, and abandoned in place in 1996 (AECOM, November 2011).

3.2 Deed Restrictions

SS067 is located within Parcel F4A/F12A and was transferred to the GLDC, via the OCIDA, on May 29, 2001 (Deed number GRI-EDC-2000-001-D-7). Deed restrictions were based on environmental factors identified in the FOST for the individual land parcels (AFBCA, June 2001). The deed restrictions are conveyed through environmental covenants in the deeds for Parcel F4A/F12A:

- *"The Grantee, its successors and assigns shall be prohibited from accessing or otherwise disturbing or causing exposure to the subsurface soils, or consuming or otherwise using or causing exposure to the underlying groundwater at any of the environmental sites listed in the map at Exhibit B-2, without prior written permission of the Grantor and the New York State Department of Environmental Conservation (NYSDEC)."*
- *"The grantee is prohibited from the extraction, utilization or consumption of any water from the aquifer below the surface of the ground within the Property boundary unless the groundwater has been tested and found to meet all applicable standards and such owner or occupant obtains the prior written approval from the New York State Department of Health."*
- *"The Grantee is prohibited from managing the aquifer in any way that could spread or exacerbate environmental contamination or open exposure pathways to humans or the environment."*
- *"Activities by the Grantee and its successors and assigns shall not disrupt the integrity or effectiveness of the Grantor's actions to complete closure of the environmental sites identified on Exhibit B-2 (to include monitoring wells or other necessary remedial systems). Nor shall the Grantee and its successors and assigns undertake any action resulting in the spread or exacerbation of environmental contamination or the opening of exposure pathways to humans or the environment. Further, the Grantee and its successors and assigns will refrain from undertaking any alterations, construction or construction-related work, demolition, excavation, or other ground disturbing activities in the areas containing these environmental sites, including the surface application of water in the area of an IRP site that could impact the migration of contaminated ground water, or the subsurface drilling or use of ground water in the area of an IRP site, without prior written permission of the Grantor and the NYSDEC."*
- *"The Grantee convenants* [sic] *to limit the use of the Property to commercial/industrial and non-residential purposes."*

3.3 Previous Investigations/Remedial Actions

3.3.1 Investigations and Actions Prior to Current FYR Period

During the summer/fall of 2001, 52,000 cubic yards (CY) of contaminated soils (with approximately 13,000 gallons of entrained jet fuel), 25,462 gallons of free product, and 525,000 gallons of contaminated water were removed from the site. Fuel seeps were observed at multiple locations entering the excavation pit. Oil Spill Eater (OSE) enzymes and Oxygen Release Compounds (ORCs) were applied to the excavation prior to it being backfilled. Building 789 was also demolished during this time (CAPE, May 2002).

A pilot study was completed in 2003 that delineated a free product plume of approximately 90,000 square-feet (sq-ft) and evaluated a vacuum enhanced recovery system (FPM, February 2004). Following the pilot study, a vacuum enhanced recovery system was installed and operated from 2003 to 2009, which is detailed in annual Long-Term Monitoring Reports for Petroleum Spill Sites (FPM, December 2008, November 2009, and June 2010). Vacuum enhanced skimming was added to the system in November 2006. Skimming was performed at eight recovery wells (789RW-200, -201, -202, -204, -205, -209, -210, and -211) and one monitoring well (789MW-96). The system consisted of an air compressor, vacuum pump with moisture separator, air treatment unit, and skimmers. From November 2006 to May 2010, the system recovered approximately 6,023 gallons of free product. The recovered free product was stored in an on-site storage tank, prior to being disposed of off-site at a licensed recycling facility.

A horizontal biosparging system was installed at SS067 in September 2006. This system was installed to act as a barrier to prevent the downgradient migration of the free product and dissolved phase petroleum plumes. The SS067 biosparging system was operated continuously at approximately 4.5 pounds per square inch (psi) and 200 cubic feet per minute (cfm) until it was shut down on July 31, 2019. Groundwater monitoring results indicate that the biosparging system was an effective barrier to downgradient migration of dissolved phase petroleum.

To support a more aggressive remedial approach, five new free product recovery wells (789RW-217 through -221) were installed on-site in October 2011. Five additional monitoring wells (789MW-214, -215, -216, -222, and -223) were also installed at that time. The free product recovery system began operation in 2011. While free product recovery rates were limited, with 0.5 to 1 gallon per day reported, significant free product thicknesses continued to be observed in several site wells throughout 2015 (AECOM/CAPE, July 2016).

3.3.2 Investigations and Actions During the Current FYR Period

In January 2017, the skimmers were refurbished and reinstalled at four recovery wells (789MW-96, 789RW-200, -202, and -205) (Bhate, August 2018). Following the refurbishment and subsequent optimization of the free product recovery system, recovery rates did not improve, indicating that the system was not performing as intended. The free product recovery system

became inactive in 2018 and was not operated during the 2019 calendar year (Bhate, October 2019).

All four quarterly monitoring events conducted in March, June, August, and November 2017 resulted in numerous VOCs exceeding the NYSDEC standards. These VOCs were detected in the groundwater samples collected from 789MW-97 and -99, located within the former excavation. In addition, one or two VOCs exceeding NYSDEC criteria were consistently detected in monitoring wells 789MW-216 and -222, downgradient of the former excavation. Numerous VOCs that exceeded the NYSDEC standards were detected in the groundwater samples collected from 789MW-102 near Six Mile Creek during 2017. However, VOC concentrations detected during the fourth quarter at 789MW-102 remain stable/slightly decreasing compared to the previous 2017 sampling events. Furthermore, VOCs were not detected in the adjacent downgradient well (789MW-103) which was sampled in the first quarter of 2017.

Per the Corrective Action Plan for Investigation of Petroleum Spill Sites (Bhate, August 2017), three test pits were excavated on December 6, 2017. The purpose of these test pits was to determine if free product was potentially being released from the former abandoned cut/capped POL 781-2 pipelines into the surrounding site soils. However, the pipe was not encountered. No impacted soil or backfill material used around a pipe was encountered during the test pit activities. The test pits were excavated to between 9 and 10 ft bgs.

In 2018, investigation activities were completed in accordance with the Final Optimization Plan for SS067 Building 789 (NYSDEC Spill Site 9810713) (Bhate, August 2018a). The purpose of these activities was to address free product, residual soil contamination, and the dissolved phase plume area. The 2018 activities involved advancing 28 soil borings; photoionization detector (PID) screening of the 28 soil borings; free product mobility analysis of four soil samples; and setting and sampling of 1-inch temporary grab groundwater wells and three, 2-inch diameter fully-screened permanent monitoring wells (Bhate, October 2019).

The soil borings were advanced within (and to the depth of) the former excavation and free product recovery areas. The free product mobility analysis of the most impacted soil core segments recovered from the site reported that the low amount of free product present in the site soils had very low mobility or potential for recoverability, indicating the free product recovery system had removed the majority of the free product in the smear zone that was recoverable. A field sheen test for free product (that involved mixing soils with water and looking for a sheen to form) was performed using segments of the recovered soil cores with elevated PID readings or coloration consistent with petroleum staining. Results of the field sheen tests and PID screenings of the soil borings did not indicate the presence of observable free product within the site soils at the depths reached. Based on field observations, “fingerprint” analysis was also performed on two free product samples collected from wells installed during the 2018 field activities (Bhate, October 2019). Based upon this analysis, the samples contained either kerosene or jet fuel A.

The temporary wells included four upgradient of the free product area and eight downgradient. The grab groundwater samples were analyzed for VOCs. Elevated PID readings without any concurrent strong odors were noted in the soil borings. Given that the PID may give false positive readings for water vapor, which can be significant when moisture levels are high such as in saturated soil conditions, tentatively identified compounds were also analyzed for in the grab groundwater samples. The grab groundwater samples downgradient of the free product area did not have detected VOCs above the NYSDEC standards with the exception of 789WG-12, which is south of the flow path directly downgradient of the product area.

The purpose of the three new 2-inch diameter permanent wells was to confirm and then measure observed product near recovery wells that contained high free product levels. Of the three new monitoring wells, only MW-252 had free product of 0.25 ft following well development.

Numerous VOCs that exceeded the NYSDEC standards were detected in the groundwater samples collected from 789MW-97, -98, and -99 in the area of the fuel pipeline during 2018. While free product was present and associated with the fuel system pipeline, the free product was limited and not recoverable without excavation or surfactant flushing of the area to make the product mobile. Regardless of optimization of the existing systems, the skimmer system was determined to not be the proper remedy for advancing the site to closure. However, the residual impacts associated with this source were stable and not diffusing. Therefore, continued use of the systems that included the sparge system and free product recovery system were unnecessary.

Detected VOCs exceeding the NYSDEC standards were present in the groundwater samples collected from 789MW-102 near Six Mile Creek during 2018. Based upon the additional investigation completed in 2018, these impacts were determined to be isolated and not associated with the fuel pipeline release. Since no continuous groundwater plume was observed to connect monitoring well 789MW-102 back to the free product area, the contamination found near Six Mile Creek was determined to not be associated with the main Site SS067 area.

In order to evaluate the distribution of the remaining free product present in the subsurface at SS067, seven wells (789MW-96, 789RW-200, -201, -202, -204, -205, and -219) were rehabilitated using a surfactant (Ivey-sol® 103) along with surging, followed by purging of the well during late March 2019. Each well was first gauged with an oil water interface probe to determine the depth to water, the depth to free product, and the free product thicknesses. The wells selected for treatment were bailed to remove the majority of the free product that was present at the time of gauging. Ivey-sol® 103 was then added to each well followed by the surging of the screened interval in order to flush the surfactant through the well screen and incorporate any free product residing in the filter pack. The mixture of surfactant, free product, and groundwater was then purged from the well using a peristaltic pump. Some wells were initially pumped dry during the removal of the surfactant/free product/groundwater mixture and required overnight recharge of the well before any additional volume of materials could be purged. Each well was purged until the purged liquid passed a surfactant field test. At least two well volumes of the mixture and

groundwater were removed from each well. Immediately following the Ivey-sol® 103 treatment, the wells were gauged again.

Numerous VOCs that exceeded the NYSDEC standards were detected in the groundwater samples collected from upgradient monitoring wells 789MW-97, -98, and -99 in the area of the fuel pipeline during 2019 (**Figure 3-1**). While free product associated with the fuel system pipeline is present in several site wells (with thicknesses up to 4.32 ft observed), the areal distribution covers approximately 11,000 sq-ft.

Site soils encountered at or near the water table in the 2018 investigation did not indicate the presence of product within the pore space near the water table. However, the continued and persistent accumulation of product within several site wells does indicate that product is present at some vertical horizon within the soil matrix, penetrated by several wells and not discovered during the 2018 investigation. The lack of VOC exceedances downgradient of the free product area indicates that the free product present has not created a downgradient groundwater plume or impacted Six Mile Creek. Results from 789MW-134 indicate that no immediate downgradient movement of dissolved concentrations has occurred since the sparge system was deactivated, with NYSDEC approval, on July 31, 2019. Monitoring wells 789MW-83 and 789MW-222 are strategically located immediately downgradient of the free product area and upgradient of the deactivated sparge well. Any possible downgradient migration of dissolved phase contamination following the deactivation of the sparge system will be detected at these three locations (789MW-34, 789MW-83, and 789MW-222).

3.4 Current Status

Quarterly (789MW-83, -98, -99, -216, -222, and -251) and semi-annual (789MW-46R, -95, and 102) groundwater monitoring is performed at SS067 for VOC analysis. Free product gauging and bailing occurs on a monthly basis. The 2019 free product footprint at SS067 is approximately 11,000 sq-ft. Based on the 2019 analytical data, contamination remained in the dissolved phase groundwater plume at concentrations above NYSDEC AWQ S/GVs in five of the nine wells sampled (**Figure 3-1**).

3.5 Remedy Evaluation

QUESTION A: Is the remedy functioning as intended by the decision documents? Free product has been reduced from a footprint of approximately 90,000 sq-ft in 2003, before product recovery remedies were implemented, to a 2019 footprint of approximately 11,000 sq-ft. The dissolved plume is stable following cessation of air sparge operation. Product recovery continues on a monthly basis with decreasing volume accumulations. Product accumulation is occurring in an unusual fashion but the footprint of accumulated product and the groundwater plume are both stable. The SS067 remedy is functioning as intended, however, additional remedy modifications may be required to continue removal of the diminishing free product. The USAF is

attempting to determine if free product is entering the recovery wells from a horizon submerged below the water table.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid? Yes, significant changes to the assumptions have not occurred. The NYSDEC Division of Water Technical and Operation Guidance Series AWQ S/GVs are used to evaluate the VOC results for monitoring wells at SS067. These requirements are still in effect and valid.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy? No new information has come to light that calls into question the protectiveness of the remedy at SS067.

3.6 Protectiveness Statement

The remedy at SS067 is protective. It is functioning with continued collection of decreasing free product volumes and the dissolved plume is stable. In addition, land use restrictions have been implemented and have been effective in preventing exposure to groundwater and soil. The property is inspected annually and the inspections are described in a separate report (Bhate, March 2020). Inspection forms are included in Appendix A-2. No information has come to light that could call into question the protectiveness of the remedy.

3.7 Issues/Recommendations

Product accumulation is occurring in an unusual fashion and significant residual product is not found at or near the water table where it would be expected. Continued evaluations are required to determine the source of the remaining product accumulation at SS067.

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4 CSS681-APRON 1 AREA LCP-E9 (NYSDEC SPILL NUMBER 1501553)

4.1 Site Description and History

Site CSS681 is a petroleum spill site (NYSDEC Spill No. 1501553) and is located in the southeastern portion of the former Griffiss AFB in Rome, New York. The site is situated within and adjacent to Apron 1 and is associated with the former fueling system LCP-E9 (shown on **Figure 4-1**). CSS681 (NYSDEC Spill No. 1501553) was identified in 2014 during closure sampling for adjacent Apron 1 NYSDEC Spill Site No. 9707954. When in operation, the fuel system at Apron 1 consisted of two independent refueling systems with several refueling components, including: 18 hydrant pits, 18 LCPs (including LCP-E9), three spool pits, five low point drains, and one valve and vent pit. The fueling system covered an area of approximately 1,500 ft by 1,000 ft. The presence of contamination in the soil and groundwater at Apron 1 was first observed during the decommissioning of the Apron 1 fuel system in the summer of 1996 (PEER, September 1997). The present surface conditions at CSS681 include a concrete apron and a grassy area separated by a chain link fence. The concrete apron within the fence is an airport controlled secure access area.

4.2 Deed Restrictions

Site CSS681 is located within Parcel F4Ca which was transferred to the GLDC, via the OCIDA, on August 12, 2005 (Deed number GRI-EDC-2000-001-D-17). Site CSS681 lies within the area restricted within Parcel F4Ca. Site CSS681 was assigned a NYSDEC spill site number after the Deed was signed but before the original spill site number was closed in 2015. CSS681 is currently being reviewed by the NYSDEC for closure. The deed restrictions are conveyed through environmental covenants in the deeds for Parcel F4Ca include:

- *"The grantee covenants not to perform any type of excavation, digging, drilling, utilization of groundwater, or other ground-disturbing activity at the open non-CERCLA petroleum spill sites, as shown in hatched in blue on Exhibit C, without prior written approval from the Grantor and Grantor coordination with the applicable Federal and State regulatory agencies or until spill site closure has been obtained."*
- *"The Grantee covenants to restrict access to the surface pavements of Apron 1, the location of the petroleum-contaminated soil land farm operation, as shown hatched in blue on Exhibit C, until bioremediation of the land farm is complete."*

  Note: The "hatched in blue on exhibit C" area described in the above two restrictions includes the entirety of the Apron lying within F4Ca.

- *"The Grantee covenants to comply with the provisions of any health or safety plan in effect, or any hazardous substance remediation or response agreement with*

environmental regulatory authorities during the course of any environmental response or remedial action undertaken on the Property. The Grantee covenants that Occupational Safety and Health Administration (OSHA) requirements will be included in the remediation health and safety plans."

4.3 Previous Investigations/Remedial Actions

4.3.1 Investigations and Actions Prior to Current FYR Period

Remedial activities at several Petroleum Spill Sites on Apron 1, prior to the identification of CSS681, included a number of remedial technologies including focused groundwater extraction via vacuum enhanced recovery, biosparging, bioventing, and physical excavation of contaminant hot-spots. These activities were conducted from 1996 until 2014. Soil closure sampling for Apron 1 sites was completed in a Supplemental Investigation performed in September 2013 by AECOM to confirm remediation of multiple Apron 1 hotspots (AECOM/CAPE, November 2014). The results of this closure sampling indicated that the contamination in the vicinity of former LCP-E9 was separate from the main Apron 1 spill and was instead associated with LCP-E9.

Additional investigation and soil borings in January 2014 (AECOM, March 2015) confirmed the separate nature of the contamination and the LCP-E9 area was assigned NYSDEC Spill No. 1501553. The 2014 investigation found residual soil contamination at CSS681 from about 13 to 27 ft bgs, encompassing an area of approximately 85 ft by 50 ft, extending beneath the Apron to the north and west (AECOM/CAPE, July 2015).

4.3.2 Investigations and Actions During the Current FYR Period

Prior to implementation of the remedial action at Site CSS681, five monitoring wells (AP1MW-1, AP1MW-2, AP1MW-3, AP1MW-4, and AP1MW-5) were installed on October 26 and 27, 2017. On November 1, 2017, baseline samples were collected from the five monitoring wells. The selected remedy (Bhate, September 2017a) was in-situ chemical oxidation (ISCO) using Oxygen Biochem™ (OBC™) which was injected via temporary injection points advanced using direct push technology (DPT) between November 14 and December 3, 2017. Performance monitoring of the remedial action at the site was conducted via quarterly groundwater sampling following the injections and confirmation soil samples were collected in December 2017 and July 2018. Soil samples were collected to evaluate changes in chemical of concern (COC) concentrations present in the soil (Bhate, April 2019).

Performance monitoring in 2018 included four quarterly groundwater sampling events conducted in March, July, September, and November, and the collection of confirmation soil samples in July. Although temporary increases in some dissolved phase COC concentrations after injection (AP1MW-3) suggested that contaminant mass was desorbed from the soil and mobilized into groundwater during the treatment process, decreases over time indicated that bioremediation processes are occurring. The rapid and anomalous decrease in VOC

concentrations in the first quarter data at AP1MW-1 to non-detectable levels suggested that this well contained large concentrations of oxidant that may have either affected the analytical method or temporarily depressed the dissolved concentrations. The second quarter increase in COCs at that location indicated that oxidant was being degraded or consumed and concentrations may continue to increase in the future as oxidation effects decrease and bioremediation processes begin.

Analytes were not reported above the screening levels in samples collected from AP1MW-2 and AP1MW-5 during the baseline (November 2017) or in subsequent sampling events.

As noted above, temporary increases in COC concentrations were observed in AP1MW-3, however an overall general downward trend was observed in the dissolved data over time. Total VOCs decreased from baseline (November 2017) to second quarter 2018 in samples from AP1MW-1 by 78%, AP1MW-3 by 28%, and AP1MW-4 by 41%.

Collection and analysis of two rounds of soil samples in December 2017 and July 2018 showed a steady decrease in COC concentrations to below SCOs. This was significant because the majority of contaminant mass at Site CSS681 was adsorbed to soil. Whether through ISCO, bioremediation or a combination of both, treatment of adsorbed contaminant mass was successful at the sample locations.

Performance monitoring in 2019 included four quarterly groundwater sampling events conducted in April, June, August, and November and indicated that the dissolved phase groundwater plume had several compounds present at concentrations in exceedance of their respective NYSDEC standards at AP1MW-3 and AP1MW-4. However, the results also indicated that the concentrations of site COCs continued to decline significantly at downgradient well AP1MW-4. Fluctuating concentrations persisted at AP1MW-3, but total VOC concentrations in November 2019 (5,459 µg/L) were still 48% less than the baseline concentration (10,537 µg/L) in November 2017. The geochemistry of the aquifer was supportive of continued petroleum hydrocarbon degradation.

4.4 Current Status

Sampling results through the end of 2019 indicate that the soil source area has been remediated to the extent possible. The contaminant mass remaining in the dissolved phase groundwater plume is decreasing, indicating that the injections have been successful in reducing the groundwater contamination at Site CSS681. The highest dissolved VOC concentrations in November 2019 (**Figure 4-1**) were reported under the apron in AP1MW-3 with a reported 12 VOCs above respective S/GVs and a maximum concentration of 1,900 µg/L of m,p-xylene (S/GV of 5 µg/L). November 2019 results for AP1MW-4, also located on the apron, reported eight VOCs above respective S/GVs and a maximum concentration of 92 µg/L of 1,2,4-TMB (S/GV of 5 µg/L). Three monitoring wells are located in the grassy area southeast of the apron; only AP1MW-1 contained reported VOC concentrations above S/GVs in November 2019 with two VOCs above

respective S/GVs and a maximum concentration of 13 µg/L of 1,2,4-TMB (S/GV of 5 µg/L). Given the inaccessibility of the area under the apron, the reduction in downgradient concentrations at AP1MW-4, and the relative stability of concentrations in other wells, a request for closure review of NYSDEC Spill No. 1501553 (CSS681) was made in the 2019 Petroleum Spills Report (Bhate, September 2020). Based on the November 2019 analytical data, the contamination remaining in the dissolved phase groundwater plume is present at concentrations above NYSDEC AWQ S/GVs in three of the five wells sampled (**Figure 4-1**).

4.5 Remedy Evaluation

The ISCO remedy to advance the site to closure under NYSDEC spill program is being executed.

QUESTION A: Is the remedy functioning as intended by the decision documents? The ISCO remedy is functioning as intended and dissolved concentrations are decreasing inside of a stable plume.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid? Yes, significant changes to the assumptions have not occurred.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy? No new information has come to light that calls into question the protectiveness of the remedy at Site CSS681.

The NYSDEC Division of Water Technical and Operation Guidance Series AWQ S/GVs are used to evaluate the VOC results for monitoring wells at CSS681. These requirements are still in effect and valid. While the site has not achieved pre-spill conditions, NFA-ATT of CSS681 may be granted by NYSDEC program staff based upon site conditions using their discretion, which is being considered.

4.6 Protectiveness Statement

The remedy for CSS681 is protective of human health and the environment. Site CSS681 lies within the hatched area identified in Exhibits C of Deed F4Ca. Although land use restrictions were established before CSS681 was identified, they were in effect at the time of CSS681's identification. The restrictions were for "open non-CERCLA petroleum spill sites" including the original Apron 1 site that precipitated the discovery of contamination at CSS681. Although the entire site lies within the restricted area, the highest dissolved VOC concentrations at Site CSS681 are located beneath the concrete apron and within a fenced restricted area.

In addition, CSS681 is currently visited four times per year when the five groundwater monitoring wells are sampled and once per year for a well inspection; no unauthorized site use was observed

during these site visits during the period of the FYR. Long-term protectiveness of the remedy has been and will continue to be verified by groundwater monitoring.

4.7 Issues/Recommendations

No issues are identified at Site CSS681 and a determination of NFA-ATT is under review by the NYSDEC for soil and groundwater. Should NYSDEC make a determination of NFA-ATT, the deed restrictions would remain in place and annual property inspections would continue. Several site monitoring wells would be abandoned with two or three left in place for continued monitoring on a once every 5-year schedule to allow future FYRs to be updated. This will reduce the annual cost. If the site remains in its current Spills Program status, quarterly sampling will be required.

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5 SS060 (BUILDING 35)

5.1 Site Description and History

Building 35 AOC was located in the southeast-central section of the Base (**Figure 5-1**), near an area that was used for outside storage of drums and scrap material during the 1940s. The Building 35 AOC stored an unknown quantity of drums and transformers during the late 1960s and 1970s. Site closure was a requirement under the Building 35 RCRA Hazardous Waste Storage permit and the closure activities were performed in the late 1990s (OHM Remediation Services Corporation [OHM], July 1997). SS060 was part of the Building 35 AOC. Parcel F6B-5 includes SS060.

SS060 includes a portion of the former Hazardous Waste Storage Area (HWSA) which was located in the southwest corner of Building 35 and had dimensions of approximately 30 ft by 50 ft, or 1,500 sq-ft. Although a hazardous waste inventory was not available for the area, the area was assumed to contain waste associated with aircraft maintenance activities such as corrosion control painting; degreasing; and routine engine, wheel, and tire services. There is no record of any spills at the HWSA.

SS060 included the former polychlorinated biphenyl (PCB) storage area which was located in the northwest corner of Building 35 and occupied an approximate area of 37 by 46 ft, or approximately 1,702 sq-ft. Inspection reports indicate that PCB items were stored in the area since at least 1985. Also, a spill in the PCB area was recorded on October 25, 1991, when approximately 1 quart of transformer oil leaked from a damaged terminal onto part of a wooden pallet and a 2-inch-diameter spot on the concrete floor. The oil was tested and was reported below 5 parts per million (ppm) PCBs. Base records also indicated that a small PCB spill occurred on March 16, 1995, which reportedly happened when a PCB-containing transformer was moved from the containment area within Building 35. The spill area, approximately 20 sq-ft, was properly remediated.

The SS060 portion of the Building 35 AOC covered an approximately 1 acre area and is now utilized as a paved parking lot for Birnie Bus Service, Inc. The site has a topographic relief of 3 to 4 ft. The soils are predominantly composed of silty, fine to coarse sands with gravel. Surface water drainage from the site enters a shallow drainage swale, which leads southerly to a culvert drainage ditch informally referred to as Rainbow Creek, and ultimately flows east to Six Mile Creek.

5.2 Deed Restrictions

SS060 is located in Parcel F6B-5 which was transferred to the GLDC, via the OCIDA, on August 12, 2013 (Deed number GRI-EDC-2000-001-D-27). Deed restrictions were based on environmental factors identified in the FOST for land parcel F6B-5 (AFCEC, October 2012). The deed restrictions are conveyed through the following environmental covenants in the deed for Parcel F6B-5:

"a. Land Use Restriction. The portions of the Property in SS-33 Proposed Coal Storage Yard partially located in Parcel F6b-3, DRMO west (OTH-5246) located in Parcel F6b-2, [Area of Interest] *AOI-66 Coal Storage Pad located in Parcel F6b-3, SS-17 Lot 69 Former Hazardous Waste Storage Yard located in Parcel F6b-4, and SS-60 Buildings 35 and 36 located in Parcel F6b-5 as described and depicted in Exhibit E shall not be used for residential housing, elementary, and secondary schools, childcare facilities or playgrounds without prior written approval from the Air Force, the United States Environmental Protection Agency ("USEPA") Region 2 and the New York Department of Environmental Conservation (NYSDEC)."*

"c. Construction/Digging Restrictions. The Grantee shall provide written notice to the Air Force prior to any digging activities within the portions of the Property in SS-33 Proposed Coal Storage Yard, DRMO west (OTH-5246), AOI-66 Coal Storage Pad, and SS-60 Buildings 35 and 36 as described and depicted on Exhibit E. All workers performing digging within such sites shall be required to restrict the relocation of contaminated soils greater than 1 foot bgs from outside the boundary of such sites and to recover stockpiled soil. When such soil is returned to the ground, it must be covered with a minimum of 12-inches of clean soil."

NOTE: There was an original deed restriction on groundwater use, which was lifted after cleanup of the groundwater was completed as documented in the Final Site Closure report (FPM, November 2014) and approved by USEPA.

5.3 Previous Investigations/Remedial Actions

5.3.1 Investigations and Actions Prior to Current FYR Period

Closure activities for the Building 35 (SS060) area in association with RCRA NYSDEC Permit #6-3-13-00063/00020-0 were conducted by OHM in 1996 in accordance with Closure Plans approved by the NYSDEC in 1995 (OHM, April 2000). The Closure Plans were designed to ensure that the Building 35 storage areas would require no further maintenance after clean closure and threats to human health and the environment would be minimized or eliminated. The closure activities included the collection of pre-closure wipe samples from each storage area and surface soil samples (0 to 1 ft bgs) from the outside perimeter of the building. Twelve surface soil samples were analyzed for PCBs, and all 12 samples indicated elevated concentrations of PCBs above the recommended action level of 1 ppm (OHM, July 1997).

An interim remedial action was conducted in 1997 to demolish Building 35; excavate, transport, and dispose of PCB-contaminated soil and debris; and backfill the area with clean soil after analysis of confirmation samples. Approximately 5,318 tons of non-hazardous PCB-contaminated soil/concrete was removed during the excavation. The excavation was guided by collection and analysis of confirmatory soil samples (IT Corporation, May 1999). Confirmatory samples were compared to State recommended cleanup levels, where values were taken from the NYSDEC Technical and Administrative Guidance Memorandum 4046 (January 1994).

In Spring 1998, four groundwater monitoring wells were installed to characterize groundwater conditions. Depth to groundwater was approximately 7 ft bgs with a groundwater flow direction to the northeast. The total depth of each well was approximately 14 ft bgs (CAPE/FPM, June 2014). Two groundwater monitoring rounds were conducted in May and July 1998, when samples were submitted for PCBs, VOCs, SVOCs, pesticides, and metals analyses. Results indicated two VOCs – vinyl chloride and total 1,2-dichloroethene (including both the cis and trans isomers) – at levels above New York State Class GA Groundwater Standards. No PCBs were reported above the detection limit during either sampling round (OHM, April 2000).

In accordance with the closure requirements under the RCRA Permit for Building 35 (SS060), threats to human health and the environment had been minimized or eliminated (i.e., source areas had been removed). In addition, land use restrictions were implemented at the site (OHM, April 2000). Closure under the RCRA Permit was approved by the NYSDEC in a letter dated December 8, 1999.

From March 2002 to June 2004, the groundwater at Site SS060 was monitored for VOCs, SVOCs, and total and dissolved metals at monitoring wells B035MW-1, -2, -3, and -4. VOC concentrations were detected above New York State Class GA Groundwater Standards at only B035MW-4. No SVOCs were detected. Total metals analysis was performed on groundwater that contained suspended solids and dissolved metals analysis was performed on the groundwater after filtration removed the suspended solids. SVOC and metals analysis were discontinued after June 2004. Because of analytical trends from 2002 to 2004, the Final Long Term Monitoring (LTM) Work Plan (FPM, October 2004) recommended that future sampling events include only well B035MW04, and include only VOC analysis. Analyses for alkalinity, chloride, nitrate, sulfate, and total organic carbon were also performed to evaluate groundwater chemistry starting in 2008.

Based on LTM sampling results, direct injection of carbon source substrates were performed at the site in 2006, 2008, 2011, and 2012 in an effort to remediate COCs (CAPE/FPM, June 2014). The purpose of the direct injection activities was to degrade and remediate the chlorinated hydrocarbon plume at the site. Groundwater samples were collected from B035MW-4 and analyzed for the VOCs as identified during previous investigations in June 2013. Analytical results indicated that vinyl chloride slightly exceeded the New York State Class GA Groundwater Standard (2.0 µg/L) with a concentration of 3.7 µg/L. In addition, cis-1,2-dichloroethene was detected but at 2.6 µg/L which is below the New York State Class GA Groundwater Standard (5 µg/L). VOC results for the June 2013 sampling round indicated that the 2012 injection promoted enhanced biological breakdown of chlorinated hydrocarbons.

5.3.2 Investigations and Actions During the Current FYR Period

No actions were completed during the current FYR period other than annual property inspections.

5.4 Current Status

LTM results show that remedial actions completed for groundwater had removed contaminant mass and reduced chlorinated hydrocarbon concentrations at the SS060 Building 35 AOC. Vinyl chloride was the only VOC detected above the New York State Class GA Groundwater Standards during the June 2013 sampling round. No VOCs were detected above the New York State Class GA Groundwater Standards during the April 2014 sampling round. All four wells at the site were decommissioned on October 22, 2014, following USEPA and NYSDEC approval of no further sampling and removal of the groundwater restriction at the site. USEPA approval was provided on August 29, 2014, and NYSDEC approval was provided on September 11, 2014 (FPM, November 2014).

5.5 Remedy Evaluation

QUESTION A: Is the remedy functioning as intended by the decision documents? The results described in the previous paragraphs indicate that the SS060 direct injection remedy is functioning as intended. The ongoing annual inspections verified the site use remains industrial/commercial.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid? Yes, significant changes to the assumptions have not occurred; the cleanup levels and exposure assumptions used at the time of the remedy are still valid.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy? No new information has come to light that calls into question the protectiveness of the remedy at SS060.

5.6 Protectiveness Statement

The remedy at SS060 is protective. Source soil has been removed and groundwater received USEPA and NYSDEC approval of no further sampling and removal of the groundwater restriction at the site. In addition, land use restrictions have been implemented and have been effective in preventing unacceptable exposure to soil. The property is inspected annually and the inspections are described in a separate report (Bhate, March 2020). Inspection forms are included in Appendix A-3. No information has come to light that could call into question the protectiveness of the remedy.

5.7 Issues/Recommendations

No issues are identified at SS060.

6 NEXT REVIEW

The next non-CERCLA FYR will be completed in 2025.

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FIGURES

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Former Griffiss Air Force Base
Site Location Map

Figure 1-1

Non-CERCLA Petroleum Spill Sites Five-Year Review Report
Former Griffiss Air Force Base, Rome, New York

DRAWN BY: MRM

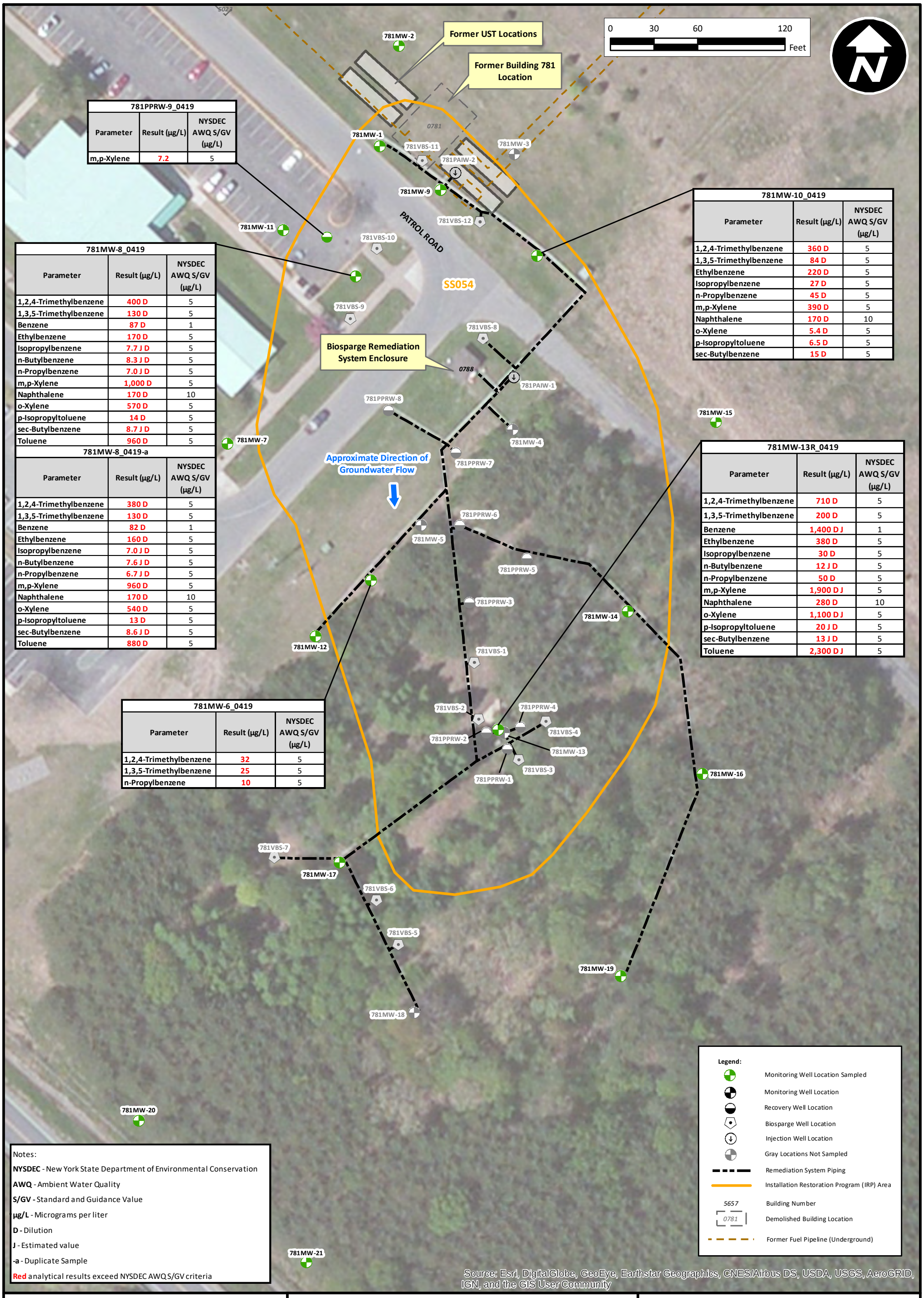
DATE: 9/17/2020

SCALE: As Shown

PROJECT NO: AFCGSA3.0012.00AF

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781PPRW-9_0419

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
m,p-Xylene	7.2	5

781MW-8_0419

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	400 D	5
1,3,5-Trimethylbenzene	130 D	5
Benzene	87 D	1
Ethylbenzene	170 D	5
Isopropylbenzene	7.7 J D	5
n-Butylbenzene	8.3 J D	5
n-Propylbenzene	7.0 J D	5
m,p-Xylene	1,000 D	5
Naphthalene	170 D	10
o-Xylene	570 D	5
p-Isopropyltoluene	14 D	5
sec-Butylbenzene	8.7 J D	5
Toluene	960 D	5

781MW-8_0419-a

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	380 D	5
1,3,5-Trimethylbenzene	130 D	5
Benzene	82 D	1
Ethylbenzene	160 D	5
Isopropylbenzene	7.0 J D	5
n-Butylbenzene	7.6 J D	5
n-Propylbenzene	6.7 J D	5
m,p-Xylene	960 D	5
Naphthalene	170 D	10
o-Xylene	540 D	5
p-Isopropyltoluene	13 D	5
sec-Butylbenzene	8.6 J D	5
Toluene	880 D	5

781MW-6_0419

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	32	5
1,3,5-Trimethylbenzene	25	5
n-Propylbenzene	10	5

781MW-10_0419

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	360 D	5
1,3,5-Trimethylbenzene	84 D	5
Ethylbenzene	220 D	5
Isopropylbenzene	27 D	5
n-Propylbenzene	45 D	5
m,p-Xylene	390 D	5
Naphthalene	170 D	10
o-Xylene	5.4 D	5
p-Isopropyltoluene	6.5 D	5
sec-Butylbenzene	15 D	5

781MW-13R_0419

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	710 D	5
1,3,5-Trimethylbenzene	200 D	5
Benzene	1,400 D J	1
Ethylbenzene	380 D	5
Isopropylbenzene	30 D	5
n-Butylbenzene	12 J D	5
n-Propylbenzene	50 D	5
m,p-Xylene	1,900 D J	5
Naphthalene	280 D	10
o-Xylene	1,100 D J	5
p-Isopropyltoluene	20 J D	5
sec-Butylbenzene	13 J D	5
Toluene	2,300 D J	5

Notes:
NYSDEC - New York State Department of Environmental Conservation
AWQ - Ambient Water Quality
S/GV - Standard and Guidance Value
µg/L - Micrograms per liter
D - Dilution
J - Estimated value
-a - Duplicate Sample
Red analytical results exceed NYSDEC AWQ S/GV criteria

Legend:
- Monitoring Well Location Sampled
- Monitoring Well Location
- Recovery Well Location
- Biosparge Well Location
- Injection Well Location
- Gray Locations Not Sampled
- Remediation System Piping
- Installation Restoration Program (IRP) Area
- 5657 Building Number
- 0781 Demolished Building Location
- Former Fuel Pipeline (Underground)

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Non-CERCLA Petroleum Spill Sites Five-Year Review Report
Former Griffiss Air Force Base, Rome, New York

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
AFCGSA3. 0012.00AF	As Shown	1/28/2021	MRM

SS054 (Building 781 Pumphouse)
Sample Exceedances
(April 2019)

Figure 2-1

SS067 (Building 789 Type II Fuel System) Sample Exceedances (August 2019)

Figure 3-1

Non-CERCLA Petroleum Spill Sites Five-Year Review Report
Former Griffiss Air Force Base, Rome, New York

DRAWN BY: MRM
DATE: 1/28/2021
SCALE: As Shown
PROJECT NO: AFCGSA3.0012.00AF

0 75 150 300 Feet

789MW-251-0819		
Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
Benzene	5.7	1

789MW-102-0819		
Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	200 D	5
1,3,5-Trimethylbenzene	59 D	5
Benzene	92 D	1
Ethylbenzene	130 D	5
Isopropylbenzene	17 D	5
n-Propylbenzene	29 D	5
m,p-Xylene	410 D	5
Naphthalene	67 D	10
o-Xylene	7.5 D	5
sec-Butylbenzene	5.7 DJ	5
Toluene	16 D	5

789MW-98-0819		
Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	520 D	5
1,3,5-Trimethylbenzene	170 D	5
Benzene	100 D	1
Ethylbenzene	130 D	5
Isopropylbenzene	32 D	5
n-Propylbenzene	72 D	5
m,p-Xylene	550 D	5
Naphthalene	96 D	10
o-Xylene	130 D	5
p-Isopropyltoluene	18 D	5
sec-Butylbenzene	25 D	5
Toluene	14 D	5

789MW-222-0819		
Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
Benzene	3.7	1

789MW-99-0819		
Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	8	5
Benzene	10	1
Ethylbenzene	6.6	5
m,p-Xylene	5.2	5
sec-Butylbenzene	6.7 J	5
789MW-99-0819-a		
Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	6.7	5
Benzene	8.1	1
Ethylbenzene	5.3	5

Notes:
NYSDEC - New York State Department of Environmental Conservation
AWQ - Ambient Water Quality
S/GV - Standard and Guidance Value
µg/L - Micrograms per liter
D - Dilution
J - Estimated value
-a - Duplicate Sample
Red analytical results exceed NYSDEC AWQ S/GV criteria

Legend:
- Monitoring Well Location Sampled
- Recovery Well Location
- Gray Locations Not Sampled
- Installation Restoration Program (IRP) Area
- 5657 Building Number
- 0781 Demolished Building Location
- Former Fuel Pipeline (Underground)
- Culvert / Stormwater Drain
- Horizontal Well Screen (Below Ground)
- Horizontal Well Piping (Aboveground)
- Horizontal Well Piping (Below Ground)

Approximate Direction of Groundwater Flow

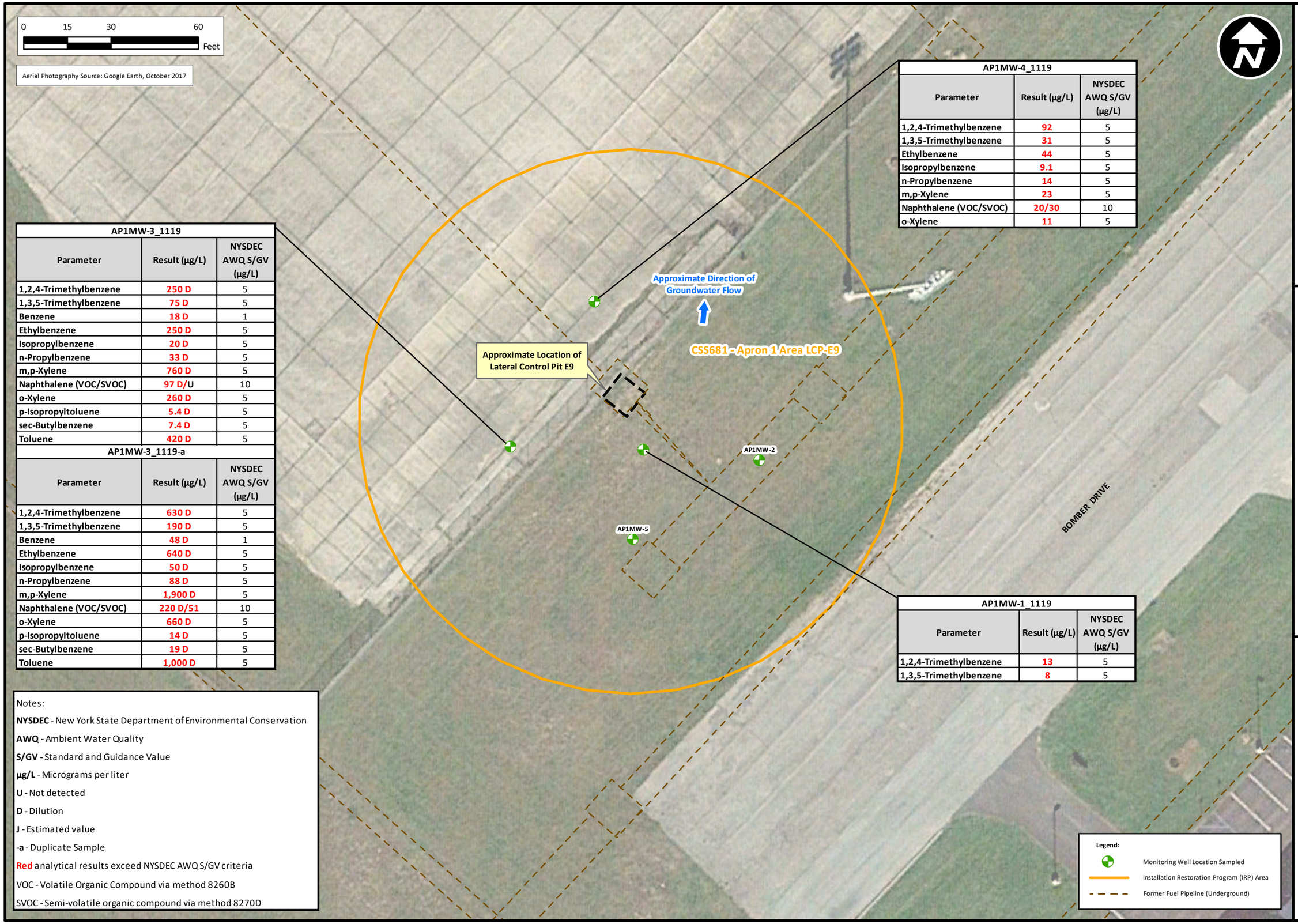
Free Product Skimming System Lines (Aboveground)

Six Mile Creek

Distribution Center

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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AP1MW-4_1119

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	92	5
1,3,5-Trimethylbenzene	31	5
Ethylbenzene	44	5
Isopropylbenzene	9.1	5
n-Propylbenzene	14	5
m,p-Xylene	23	5
Naphthalene (VOC/SVOC)	20/30	10
o-Xylene	11	5

AP1MW-3_1119

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	250 D	5
1,3,5-Trimethylbenzene	75 D	5
Benzene	18 D	1
Ethylbenzene	250 D	5
Isopropylbenzene	20 D	5
n-Propylbenzene	33 D	5
m,p-Xylene	760 D	5
Naphthalene (VOC/SVOC)	97 D/U	10
o-Xylene	260 D	5
p-Isopropyltoluene	5.4 D	5
sec-Butylbenzene	7.4 D	5
Toluene	420 D	5

AP1MW-3_1119-a

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	630 D	5
1,3,5-Trimethylbenzene	190 D	5
Benzene	48 D	1
Ethylbenzene	640 D	5
Isopropylbenzene	50 D	5
n-Propylbenzene	88 D	5
m,p-Xylene	1,900 D	5
Naphthalene (VOC/SVOC)	220 D/51	10
o-Xylene	660 D	5
p-Isopropyltoluene	14 D	5
sec-Butylbenzene	19 D	5
Toluene	1,000 D	5

AP1MW-1_1119

Parameter	Result (µg/L)	NYSDEC AWQ S/GV (µg/L)
1,2,4-Trimethylbenzene	13	5
1,3,5-Trimethylbenzene	8	5

Notes:

NYSDEC - New York State Department of Environmental Conservation

AWQ - Ambient Water Quality

S/GV - Standard and Guidance Value

µg/L - Micrograms per liter

U - Not detected

D - Dilution

J - Estimated value

-a - Duplicate Sample

Red analytical results exceed NYSDEC AWQ S/GV criteria

VOC - Volatile Organic Compound via method 8260B

SVOC - Semi-volatile organic compound via method 8270D

CSS681 - Apron 1 Area LCP-E9 (NYSDEC Spill # 1501553) Sample Exceedances (November 2019)

Figure 4-1

Non-CERCLA Petroleum Spill Sites Five-Year Review Report
Former Griffiss Air Force Base, Rome, New York

DRAWN BY: MRM

DATE: 1/28/2021

SCALE: As Shown

PROJECT NO: AFCGSA3.0012.00AF

bhate

www.bhate.com

Legend:
- Installation Restoration Program (IRP) Area
- Former Fuel Pipeline (Underground)
- Culvert / Stormwater Drain

OLIVE GROVE STREET

SS060

1300

0015

ELLSWORTH ROAD

0 25 50 100 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SS060 - Building 35 Resource Conservation and Recovery Act (RCRA) Hazardous Waste Storage Site Layout Map

Figure 5-1

Non-CERCLA Petroleum Spill Sites Five-Year Review Report
Former Griffiss Air Force Base, Rome, New York

DRAWN BY: MRM

DATE: 9/17/2020

SCALE: As Shown

PROJECT NO: AFCGSA3, 0012.00AC

bhate

www.bhate.com

APPENDIX A
INSPECTION FORMS

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APPENDIX A-1
SS054 INSPECTION FORMS

Former Griffiss Air Force Base LUC/IC

SITE:

SS054 Building 781

On-Site Inspection Completed by:

Junaid Dawud

Date(s) of On-Site Inspection

11/11/19

Site Conditions:

Site consists of parking lot, roadway, grassy area, forested area, and Building 788. Monitoring wells in good condition. Biosparge system currently in operation, isolated portions in need of repair.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request dated 10/25/2019.

Former Griffiss Air Force Base LUC/IC

SITE:

SS054 Building 781

On-Site Inspection Completed by:	Date(s) of On-Site Inspection
Stan Haskins (Bhate)	10/22/18

Site Conditions:

Site consists of parking lot, roadway, grassy area, forested area, and Building 788. Monitoring wells in good condition. Biosparge system currently in operation, isolated portions in need of repair.

LUC/IC 1	Valid/Not Valid
Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval	Valid

LUC/IC 2	Valid/Not Valid

LUC/IC 3	Valid/Not Valid

Owner/Occupant Confirmation	Date	Valid/Not Valid
Frank Sanzone, GLDC	09/21/2018	Valid

Comments/Notes:

Confirmation request dated 9/12/18.



SS054 Building 781 - North edge looking S



SS054 Building 781 - West edge on Ready road looking NE


0 40 80 160
Feet
F4Ca
F4B
0781
0780
F2D
Griffiss Business and Tec
Ready Rd
0788
Ready Rd
SS054
F4A
Legend:
Installation Restoration Program (IRP) Area
Parcel Boundary
5657
Building Number
0781
Demolished Building Location
SS054 Building 781
F11B
bing
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Former Griffiss Air Force Base LUC/IC

SITE:

SS054 Building 781

On-Site Inspection Completed by:

Stephen Liberatore (Parsons)

Date(s) of On-Site Inspection

10/31/17

Site Conditions:

Site consists of parking lot, roadway, grassy area, forested area, and Building 788. Monitoring wells in good condition. SVI system currently in operation, isolated portions in need of repair.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

12/04/2017

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request delivered 11/1/7. Approved intrusive activities (injection wells) concurrent with Site visit.



SS054 Building 781



SS054 Building 781

Former Griffiss Air Force Base LUC/IC

SITE:

SS054 Building 781

On-Site Inspection Completed by:

Stephen Liberatore (Parsons)

Date(s) of On-Site Inspection

10/7/16

Site Conditions:

Site consists of parking lot, roadway, grassy area, forested area, and Building 788. Monitoring wells in good condition. SVI system currently in operation, isolated portions in need of repair.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

12/05/2016

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request delivered 10/6/16.



SS054 Building 781



SS054 Building 781

Excerpt from "Final 2015 LUC/IC Sites Inspection Report"
(FPM/CAPE, December 2015)

3 LUC/IC CONFIRMATION BY NON-CERCLA PETROLEUM SPILL SITE

The following summarizes the former Griffiss AFB LUC/IC sites associated with Griffiss Petroleum Spill Sites Program. The 2015 LUC/ICs interviews and on-site inspections confirmation are summarized in Exhibit 1.

3.1 SS054 BUILDING 781

3.1.1 Site Description

Building 781 contained the former Pumphouse 1 (a 30-ft by 46-ft, one-story building), four 50,000-gallon USTs used for jet fuel storage, and one 2,000-gallon UST used for storing waste jet fuel and separator water. Building 781 was built between 1956 and 1958. Usage was discontinued in 1988 and the USTs were pumped dry and cleaned out between July 1988 and August 1989. NYSDEC Spill #9202658 was assigned to the site in 1992. Building 781 and the associated USTs were demolished and removed in May 1995. The LUC/ICs area is located in Parcels F2, F4A, and F4B. All three parcels have been transferred.

3.1.2 LUC/ICs

The Building 781 site does not require a ROD and is covered under the NYSDEC Spill Program. LUC/ICs at the site provided in the deed for Parcel F2, include:

"The grantee covenants that it will not engage in any activities that will disrupt required remedial investigation, response actions or oversight activities, should any be required on the property. The grantor agrees to coordinate its remediation activities with the grantee so as not to unreasonably disrupt use of the property by the grantee."

"The grantee covenants not to extract, utilize, consume or permit any extraction, use, consumption, of any water from the aquifer below the surface of the ground on the property unless the groundwater has been tested and found to meet all applicable standards and the grantee first obtains the prior written approval from NYSDOH. The grantee further covenants to ensure that the aquifer will not be used in any way that could spread or exacerbate environmental contamination or open exposure pathways to humans or the environment. The grantee and its successors and assignees covenant to comply with all applicable federal and state laws and regulations with regard to activities affecting the groundwater in the aquifer."

LUC/ICs at the site provided in the deed for Parcel F4A/F12A, include:

"The grantee shall be prohibited from accessing or otherwise disturbing or causing exposure to the subsurface soils."

"The grantee is prohibited from extraction, utilization or consumption of any water from the aquifer below the surface of the ground within the property unless the groundwater has been tested and found to meet all applicable standards and such the owner obtains the prior written approval from the NYSDOH."

LUC/ICs at the Building 781 site, provided in the deed for Parcel F4B, include:

"The grantee covenants and agrees that it will not spread or exacerbate environmental contamination or open exposure pathways to humans or the environment, and that it will not disrupt environmental investigations and remedial activities, or jeopardize the protectiveness of such remedies."

"The grantee covenants not to extract, utilize, consume or permit any extraction, use, consumption, of any water from the aquifer below the surface of the ground on the property unless the groundwater has been tested and found to meet all applicable standards and the grantee first obtains the prior written approval from NYSDOH. The grantee further covenants to ensure that the aquifer will not be used in any way that could spread or exacerbate environmental contamination or open exposure pathways to humans or the environment. The grantee and its successors and assignees covenant to comply with all applicable federal and state laws and regulations with regard to activities affecting the groundwater in the aquifer."

The above described Building 781 LUC/IC corresponds with the following restriction as shown in Plate 4:

- Groundwater consumption and soil/groundwater intrusive work – prior approval

3.1.3 LUC/IC Site Inspection Results

The LUC/ICs were confirmed by an on-site inspection and by the LUC/IC confirmation form signed by Frank Sanzone, Facilities Operation Manager, GLDC, on September 22, 2015. The LUC/IC confirmation form is provided in Appendix D.

3.2 SD041 NOSEDOCKS 1 AND 2

3.2.1 Site Description

Nosedocks 1 and 2 are located in the southeast portion of the former Griffiss AFB. The LUC/ICs area is within Parcel A2 which have been transferred.

Two NYSDEC spill numbers, Spill #9109658 (assigned December 10, 1991) and Spill #9413416 (assigned January 9, 1995), are associated with petroleum hydrocarbon contamination possibly originating from releases from OWS 5730-1/2 at the Nosedocks 1 and 2 AOC Site.

3.2.2 LUC/ICs

The ROD for the Nosedocks 1 and 2 site (SD041) was finalized in July 2011. The selected remedy is for No Further Action for CERCLA soils. All LUC/ICs at this site is associated with the NYSDEC Spill Program. The following summarizes the LUC/ICs provided in the deed for Parcel A2:

APPENDIX A-2
SS067 INSPECTION FORMS

Former Griffiss Air Force Base LUC/IC

SITE:

SS067 Building 789

On-Site Inspection Completed by:

Junaid Dawud

Date(s) of On-Site Inspection

11/11/19

Site Conditions:

Site comprised of concrete pavement and open grassy area. Building, concrete pads, and monitoring wells in good condition. Sparge shut off but operational prior.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request dated 10/25/2019.

Former Griffiss Air Force Base LUC/IC

SITE:

SS067 Building 789

On-Site Inspection Completed by:

Stan Haskins (Bhate)

Date(s) of On-Site Inspection

10/22/18

Site Conditions:

Site comprised of concrete pavement and open grassy area. Free product recovery system not active during visit due to on-site investigation. Building, concrete pads, and monitoring wells in good condition. On-Site drilling of multiple borings during October 2018.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

09/21/2018

Valid/Not Valid

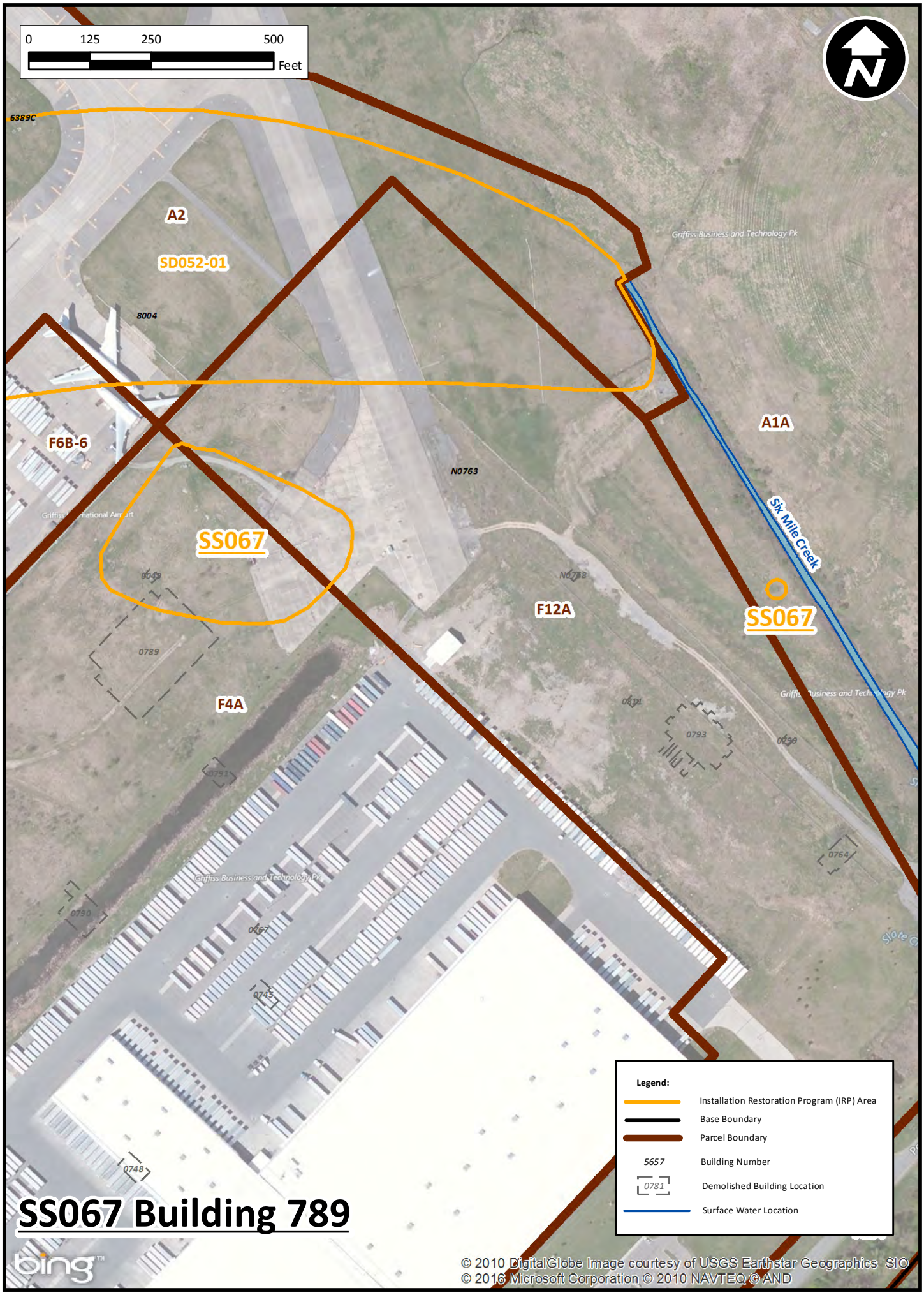
Valid

Comments/Notes:

Confirmation request dated 9/12/18.



SS067 Building 789 – FPR System


0 125 250 500
Feet
6389C
A2
SD052-01
8004
F6B-6
N0763
SS067
A1A
Six Mile Creek
F12A
SS067
F4A
0789
0793
0790
0745
0748
0764
Griffiss Business and Technology Pk
Legend:
Installation Restoration Program (IRP) Area
Base Boundary
Parcel Boundary
5657
Building Number
0781
Demolished Building Location
Surface Water Location
SS067 Building 789
bing
© 2010 DigitalGlobe Image courtesy of USGS Earthstar Geographics SIO
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Former Griffiss Air Force Base LUC/IC

SITE:

SS067 Building 789

On-Site Inspection Completed by:

Stephen Liberatore (Parsons)

Date(s) of On-Site Inspection

10/31/17

Site Conditions:

Site comprised of concrete pavement and open grassy area. Free product recovery system active and in good condition. Building, concrete pads, and most monitoring wells in good condition. Recent mowing activities caused damage to 2 monitoring wells, scheduled to be replaced Fall 17.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

12/04/2017

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request delivered 11/1/17.



SS067 Building 789 – FPR System

Former Griffiss Air Force Base LUC/IC

SITE:

SS067 Building 789

On-Site Inspection Completed by:

Stephen Liberatore (Parsons)

Date(s) of On-Site Inspection

10/6/16

Site Conditions:

Site comprised of concrete pavement and open grassy area. Free product recovery system active and in good condition. Building, concrete pads, and monitoring wells in good condition.

LUC/IC 1

Groundwater consumption and Soil/ Groundwater Intrusive Work-Prior Approval

Valid/Not Valid

Valid

LUC/IC 2

Valid/Not Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Sanzone, GLDC

Date

12/05/2016

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request delivered 10/6/16.



SS067 Building 789 – Free Product Recovery (FPR) System

"The grantee covenants and agrees not to conduct any type of excavation, digging, drilling, utilization of groundwater, or other ground disturbing activity at the open spill sites prior to written Air Force approval and Air Force coordination with applicable federal and State regulatory agencies."

The above described Nosedocks 1 and 2 LUC/IC corresponds with the following restriction as shown in Plate 4:

- soil/groundwater intrusive work – prior approval

3.2.3 LUC/IC Site Inspection Results

The LUC/ICs were confirmed by an on-site inspection and by the LUC/IC confirmation form signed by Chad Lawrence, Deputy Commissioner of Aviation, GIA, on September 2, 2015. The LUC/IC confirmation form is provided in Appendix D.

3.3 SS067 BUILDING 789

3.3.1 Site Description

The former Building 789 is located in the southeast portion of the former base in Parcel F4A/F12A. Building 789 was used as a missile assembly shop from 1942 through 1961. From 1961 through 1983, the building was used as a base supply and equipment warehouse. In 1983, it was converted to the 416th maintenance squadron equipment maintenance shop and remained so until the building was decommissioned in 1989. Parcel F4A/F12A has been transferred.

NYSDEC Spill #9713631 is associated with the former Type II Jet Fuel Pipeline System located at Apron 2. PEER Consultants, P.C. completed the deactivation and closure of the Apron 2 Type II Jet Fuel System in 1996.

3.3.2 LUC/ICs

The Building 789 site does not require a ROD and is covered under the NYSDEC Spill Program. The Building 789 LUC/IC is, provided in the Deed for Parcel F4A/F12A:

"The grantee shall be prohibited from accessing or otherwise disturbing or causing exposure to the subsurface soils."

"The grantee is prohibited from extraction, utilization or consumption of any water from the aquifer below the surface of the ground within the property unless the groundwater has been tested and found to meet all applicable standards and such the owner obtains the prior written approval from the NYSDOH."

The above described Building 789 LUC/IC corresponds with the following restriction as shown in Plate 4:

- Groundwater consumption and soil/groundwater intrusive work – prior approval

3.3.3 LUC/IC Site Inspection Results

The LUC/ICs were confirmed by an on-site inspection and by the LUC/IC confirmation form signed by Frank Sanzone, Facilities Operation Manager, GLDC, on September 22, 2015. The LUC/IC confirmation form is provided in Appendix D.

APPENDIX A-3
SS060 INSPECTION FORMS

Former Griffiss Air Force Base LUC/IC

SITE:

SS060 Building 35 AOC

On-Site Inspection Completed by:

Junaid Dawud

Date(s) of On-Site Inspection

11/11/19

Site Conditions:

Site covered in asphalt, used as bus parking lot. Appears in good condition.

LUC/IC 1

Subsurface Soil Relocation Restriction

Valid/Not Valid

Valid

LUC/IC 2

Land Use Restriction - Industrial/Commerical/Non-Residential

Valid/Not Valid

Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Frank Laubemeier, Birnie Bus

Date

11/25/2019

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request dated 10/25/2019.

Former Griffiss Air Force Base LUC/IC

SITE:

SS060 Building 35 AOC

On-Site Inspection Completed by:

Stan Haskins (Bhate)

Date(s) of On-Site Inspection

10/18/18

Site Conditions:

Site covered in asphalt, used as bus parking lot. Appears in good condition.

LUC/IC	Valid/Not Valid
LUC/IC 1: Subsurface Soil Relocation Restriction	Valid
LUC/IC 2: Land Use Restriction - Industrial/Commerical/Non-Residential	Valid
LUC/IC 3:	Valid/Not Valid

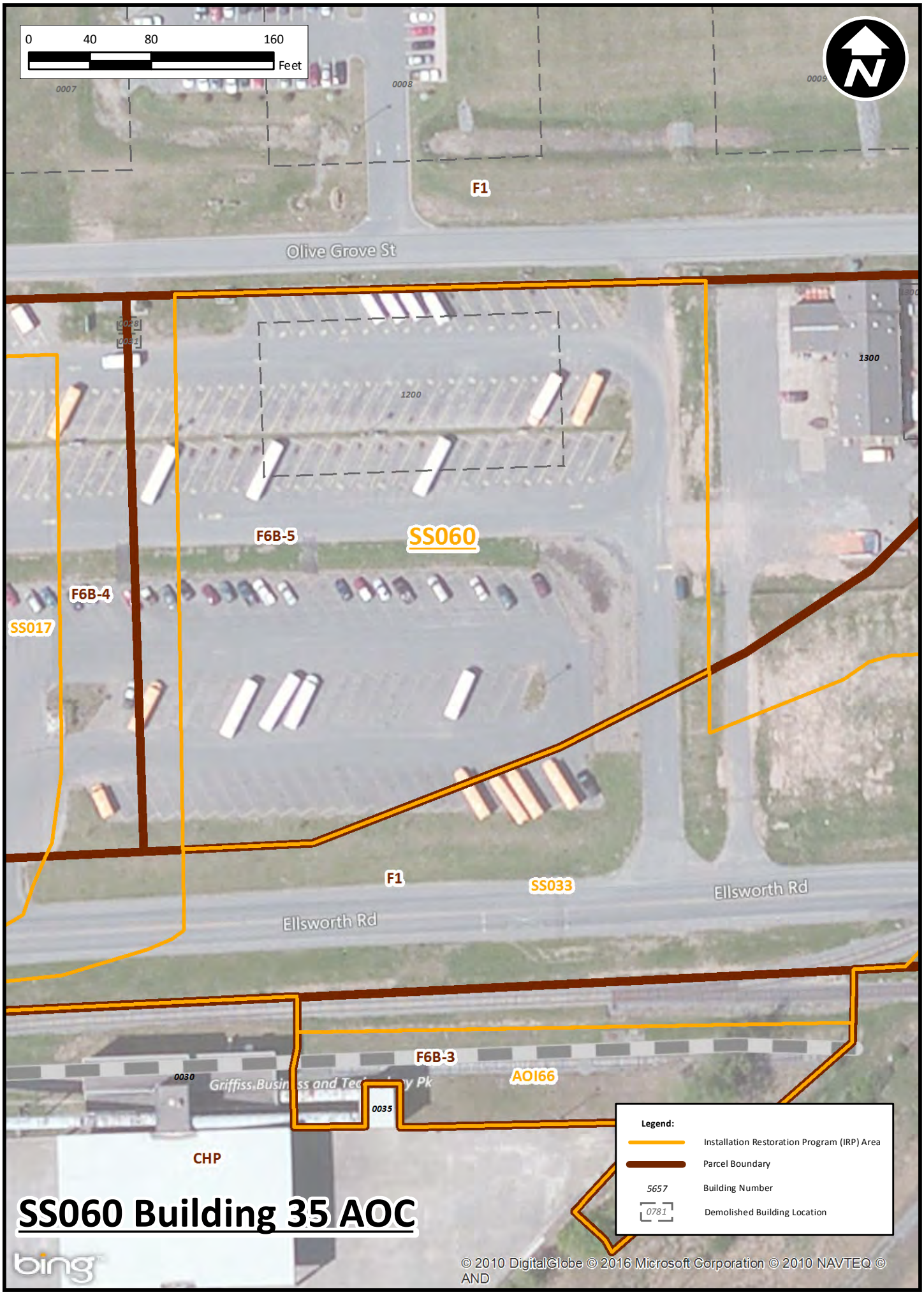
Owner/Occupant Confirmation	Date	Valid/Not Valid
Frank Laubemeier, Birnie Bus	10/24/2018	Valid

Comments/Notes:

Confirmation request dated 9/12/18.



SS060 Building 35 AOC


0 40 80 160
Feet
N
F1
Olive Grove St
1200
1300
F6B-5
SS060
F6B-4
SS017
F1
SS033
Ellsworth Rd
Ellsworth Rd
F6B-3
AOI66
0030
0035
CHP
Legend:
Installation Restoration Program (IRP) Area
Parcel Boundary
5657
Building Number
0781
Demolished Building Location
SS060 Building 35 AOC
bing
© 2010 DigitalGlobe © 2016 Microsoft Corporation © 2010 NAVTEQ © AND

Former Griffiss Air Force Base LUC/IC

SITE:

SS060 Building 35 AOC

On-Site Inspection Completed by:

Stephen Liberatore (Parsons)

Date(s) of On-Site Inspection

10/31/17

Site Conditions:

Site covered in asphalt, used as bus parking lot. Appears in good condition.

LUC/IC 1

Subsurface Soil Relocation Restriction

Valid/Not Valid

Valid

LUC/IC 2

Land Use Restriction - Industrial/Commerical/Non-Residential

Valid/Not Valid

Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Paul D'Aiuto, Birnie Bus

Date

11/30/2017

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request delivered 11/1/17.



SS060 Building 35 AOC

Former Griffiss Air Force Base LUC/IC

SITE:

SS060 Building 35 AOC

On-Site Inspection Completed by:

Stephen Liberatore (Parsons)

Date(s) of On-Site Inspection

10/11/16

Site Conditions:

Site covered in asphalt, used as bus parking lot. Appears in good condition.

LUC/IC 1

Subsurface Soil Relocation Restriction

Valid/Not Valid

Valid

LUC/IC 2

Land Use Restriction - Industrial/Commerical/Non-Residential

Valid/Not Valid

Valid

LUC/IC 3

Valid/Not Valid

Owner/Occupant Confirmation

Paul D'Aiuto, Birnie Bus

Date

01/30/2017

Valid/Not Valid

Valid

Comments/Notes:

Confirmation request delivered 10/6/16.



SS060 Building 35 AOC

Excerpt from "Final 2015 LUC/IC Sites Inspection Report"
(FPM/CAPE, December 2015)

"The area within the fence line will be designated for use as a restricted access electrical substation."

"The owner or occupant of the property shall not extract, utilize, consume, or permit to be extracted, any water from the subsurface aquifer within the boundary of the site unless such owner or occupant obtains prior written approval from the NYSDOH."

"Within the site boundary, the owner or operator will restrict the relocation of the contaminated soils below 1 foot of the surface from being placed outside the site boundaries. If the contaminated soil below 1 foot of the surface is to be excavated, it must remain on site, stay covered if stockpiled, and covered by a minimum of 1 foot of clean fill once it is returned to the ground. Prior to any digging within the site boundary, the owner/operator will notify the Air Force of any digging activities that take place within the restricted area. The Air Force will, in turn, include a such notifications received from the owner/operator as part of the monitoring reports."

The above described EPS LUC/ICs correspond with the following restrictions as shown in Plate 3:

- subsurface soil relocation restriction
- land-use restriction – Electrical power substation
- groundwater consumption / intrusive work – prior approval
- land-use restriction – industrial/ commercial/ non-residential

2.22.3 LUC/IC Site Inspection Results

The LUC/ICs were confirmed by an on-site inspection and by the LUC/IC confirmation forms signed by Daniel Sanders, Manager/Plant Engineer, GUSC on August 28, 2015. The LUC/IC confirmation forms are provided in Appendix D.

2.23 SS060 BUILDING 35 AREA OF CONCERN

2.23.1 Site Description

SS060 Building 35 AOC is located in the central portion of Griffiss AFB near Rainbow Creek and was previously used as storage for scrap drums and transformers. Groundwater restrictions were removed at this site with concurrence from the USEPA and NYSDEC in 2014. SS060 is located in Parcel F6B-5 and has been transferred.

2.23.2 LUC/ICs

A ROD is not required for this site since it is addressed under the Resource Conservation and Recovery Act (RCRA). The LUC/ICs for SS060, from the Draft Building 35 Closure Report (OHM, October 1999) and Deed for Parcel F6B-1, F6B-2, F6B-3, F6B-4, and F6B-5 (AFRPA, August 2012), are presented below and will be included in the deed.

"The owner or occupant will be restricted from relocating soil from within the area during any construction activities. Soil below the clean fill must remain on site (and stay covered while stockpiled) and be covered by a minimum of twelve (12) inches of clean fill."

"The property use will be industrial/commercial use unless permission is obtained from the Air Force, USEPA, NYSDEC, and NYSDOH."

The above described SS060 LUC/ICs correspond with the following restrictions as shown in Plate 4:

- land-use restriction – industrial/commercial/non-residential
- subsurface soil relocation restriction

2.23.3 LUC/IC Site Inspection Results

Trenching activities at SS033 extended into this site. As noted in section 2.23.3, the subsurface soil relocation restriction was not violated. The LUC/ICs were also confirmed by an on-site inspection and by the LUC/IC confirmation forms signed by Lynn Harvey, Operations Manager, Birnie Bus, Services, Inc., on August 27, 2015. The LUC/IC confirmation form is provided in Appendix D.

2.24 ST006 BUILDING 101 AOC

2.24.1 Site Description

Building 101 BADP/Battery Acid Drainage Pit is located south of Apron 3, in the central portion of the former Base. The LUC/ICs are within the boundary of Parcel F13. Parcel F13 has been transferred. A SVI evaluation was conducted in 2013 followed by the installation of a soil vapor extraction (SVE) system. The SVE system has been in operation since October 2013.

2.24.2 LUC/ICs

The following summarizes the LUC/ICs provided in the Building 101 Final ROD dated September 2012:

"Development and use of the entire Building 101 AOC property for residential housing, elementary and secondary schools, childcare facilities and playgrounds will be prohibited unless prior approval is received from the Air Force, EPA, and NYSDEC."

"The owner/occupant of the property shall evaluate the potential for Soil Vapor Intrusion (SVI) if future construction is performed in the SVI restriction area."

The above described Building 101 LUC/ICs correspond with the following restrictions as shown in Plate 3: