

**EPA Superfund
Record of Decision:**

**GRIFFISS AIR FORCE BASE (11 AREAS)
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ROME, NY
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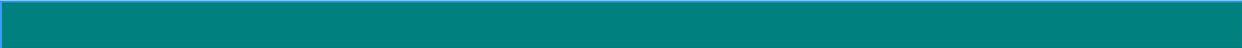
**Final Record of Decision for the
Landfill 6 Area of Concern (LF-09)
at the
Former Griffiss Air Force Base
Rome, New York**

March 2001

Air Force Base Conversion Agency

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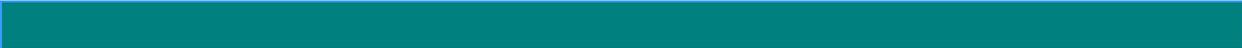
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List of Abbreviations and Acronyms

AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
BGS	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPCs	chemicals of potential concern
DFAS	Defense Finance and Accounting Services
DoD	Department of Defense
EPA	United States Environmental Protection Agency
FFA	Federal Facility Agreement
GPR	ground-penetrating radar
HI	Hazard Index
HQ	Hazard Quotient
IRP	Installation Restoration Program
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEADS	Northeast Air Defense Sector
NPL	National Priorities List
NYANG	New York Air National Guard
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
O&M	operation and maintenance
PCB	polychlorinated biphenyl
RAB	Restoration Advisory Board
RI	Remedial Investigation
ROD	Record of Decision
SAC	Strategic Air Command
SI	Supplemental Investigation
SVOC	semivolatile organic compound
TBCs	To-be-Considereds
VOC	volatile organic compound

1.1 Site Name and Location

The Landfill 6 Area of Concern (AOC) (site identification designation LF-09) is located at the former Griffiss Air Force Base (AFB) in Rome, Oneida County, New York.

1.2 Statement of Basis and Purpose

This Record of Decision (ROD) presents the Presumptive Remedy alternative as the selected remedial action for the Landfill 6 AOC at the former Griffiss AFB. This alternative has been chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (USEPA 1980), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (USEPA 1968). The Air Force Base Conversion Agency (AFBCA), the United States Environmental Protection Agency (EPA), and the New York State Department of Environmental Conservation (NYSDEC) have adopted this ROD through joint agreement. Information supporting this decision is contained in the administrative record file for this site.

1.3 Assessment of the Site

Actual or threatened release of hazardous substances from the AOC, if not addressed by implementing the response action selected in this ROD, may present a potential threat to public health, welfare, or the environment.

1.4 Description of Selected Remedy

The selected remedy for the Landfill 6 AOC is the Presumptive Remedy, which was developed in accordance with EPA Presumptive Remedy Guidance for Military Landfills, dated April 29, 1996 (USEPA 1996), for the expeditious cleanup of sites that are similar in character to a large number of CERCLA sites that have already been remediated. Presumptive remedies are preferred technologies for common categories of sites based on historical patterns of remedy selection and EPA's scientific and engineering evaluations of performance data on technology implementation. The remedy addresses the threats to human health and the environment that are posed by exposure to soil at the site. The major components of the selected remedy include:

- ⊘ Installation of an impermeable cover in accordance with 6 New York Codes, Rules and Regulations (NYCRR) Part 360 landfill closure regulations, dated November 26, 1996 (NYSDEC 1996); this action would include placing a gas venting layer, a geomembrane cover and a barrier protection layer over the entire landfill to reduce the amount of water infiltrating through the landfill;
- ⊘ Maintenance of the impermeable cover;
- ⊘ Long-term monitoring of the groundwater and stream environment downgradient of the site to evaluate the effectiveness of the Presumptive Remedy; the groundwater will be monitored in accordance with the Air Force's On-base Groundwater Monitoring Plan and the stream environment will be monitored in accordance with a future plan to be prepared for the Three Mile Creek AOC; both plans will be subject to the approval of the EPA and NYSDEC;
- ⊘ Implementation of institutional controls in the form of deed restrictions within the main landfill boundary and for affected groundwater to prohibit use of the area and groundwater, and to ensure the impermeable cover is not damaged and the area is maintained as a landfill; and
- ⊘ Evaluation of site conditions at least once every five years to ensure that the remedy is protective of human health and the environment.

Executive Order 11990 Finding of No Practicable Alternative – Wetlands

There are no practicable alternatives to prevent disturbance of the wetlands during construction of the landfill cover (USEPA 1977). Some disturbance and discharge of fill

material may occur either in or immediately adjacent to the wetlands. The Air Force will take all practicable measures to minimize harm to the wetlands. An Environmental Program (Basewide) Wetlands Management Plan (e.g., wetlands restoration/enhancement plan in consultation with the Army Corps of Engineers, EPA, and NYSDEC) is being prepared to evaluate disturbances at this wetland as well as the wetlands at other AOCs located on base. The Air Force will obtain the necessary funding, to the extent Congress appropriates such funds, to implement the wetlands management plan.

1.5 Declaration Statement

The AFBCA, EPA, and NYSDEC have determined that the selected remedy will be protective of human health and the environment and meets the requirements for remedial action set forth in CERCLA, Section 121. The Presumptive Remedy is cost effective and includes a review of the remedial action, which will be conducted five years after commencement of the remedy action, to ensure that the remedial action continues to provide adequate protection of human health and the environment. Future potential risks associated with the site will be abated through the implementation of the selected remedy of landfill capping, groundwater restrictions, and monitoring. Installation of an impermeable cover, in accordance with 6 NYCRR Part 360 landfill closure regulations, will eliminate the possibility of human exposure to the landfill mass and reduce the amount of water infiltration through the landfill, which, in turn, will reduce the production of leachate and reduce further groundwater degradation. The groundwater associated with Landfill 6 will be further evaluated and addressed in a separate comprehensive study for all groundwater contamination in the area near the landfill. Wetland soils will be further evaluated under the Three Mile Creek AOC. In addition, institutional controls in the form of land use restrictions will prohibit use of the area, with groundwater consumption being specifically restricted.

In every case, the goal of each institutional control will be to prevent exposure to residual contamination, while at the same time allowing for redevelopment of the property adjacent to the landfill in a manner that will not endanger human health and the environment. Each identified institutional control will specify the restriction imposed on

the property, how such restriction will be implemented, monitored, and later enforced in the event a violation occurs.

The selected remedy represents the most appropriate approach to containment and reliable long-term protection of human health and the environment at the Landfill 6 AOC.

1.6 Signature of Adoption of the Remedy

On the basis of the remedial investigations performed at the Landfill 6 AOC and the baseline risk assessment, the Presumptive Remedy is the selected remedy for the Landfill 6 AOC. The selected remedy meets the requirements for remedial action set forth in CERCLA, Section 121. NYSDEC has concurred with the selected remedial action presented in this ROD.

2.1 Site Name, Location, and Brief Description

The Landfill 6 Area of Concern (AOC) (site identification designation LF-09) is located at the former Griffiss Air Force Base (AFB) in Rome, Oneida County, New York.

Landfill 6 is an approximately 8-acre area located in the southern portion of the former Griffiss AFB between Perimeter Road and Three Mile Creek (see Figures 1 and 2). Disposal activities were conducted in two areas separated by a dirt access road that passes along the southern boundary of the landfill and bisects the northern area of the landfill. The landfill is unlined but the southern areas of the landfill are capped. The remaining areas of Landfill 6 are not capped. A hardfill area containing construction and other debris is located adjacent to the northwest side of Landfill 6.

2.2 Site History and Investigation Activities

The Former Griffiss AFB Operational History

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 U.S. Army Air Corps. Upon creation of the U.S. Air Force in 1947, the depot was renamed Griffiss Air Force Base. The base became an electronics center in 1950, with the transfer of Watson Laboratory Complex (later Rome Laboratory). The 49th Fighter Interceptor Squadron was also added in that year. In June 1951, the Rome Air Development Center was established with the mission

of accomplishing applied research, development, and testing of electronic air-ground systems. The Headquarters of the Ground Electronics Engineering Installations Agency was added in June 1958 to engineer and install ground communications equipment throughout the world. On July 1, 1970, the 416th Bombardment Wing of the Strategic Air Command (SAC) was activated with the mission of maintenance and implementation of both effective air refueling operations and long-range bombardment capability. Griffiss AFB was designated for realignment under the Base Realignment and Closure Act in 1993 resulting in deactivation of the 416th Bombardment Wing in September 1995. Rome Laboratory and the Northeast Air Defense Sector (NEADS) will continue to operate at their current locations; the New York Air National Guard (NYANG) operated the runway for the 10th Mountain Division deployments until October 1998 when they were relocated to Fort Drum; and the Defense Finance and Accounting Services (DFAS) has established an operating location at the former Griffiss AFB.

Environmental Background

As a result of the various national defense missions carried out at the former Griffiss AFB since 1942, hazardous and toxic substances were used and hazardous wastes were generated, stored, or disposed at various sites on the installation. The defense missions involved, among others, procurement, storage, maintenance, and shipping of war materiel; research and development; and aircraft operations and maintenance.

Numerous studies and investigations under the U.S. Department of Defense (DoD) Installation Restoration Program (IRP) have been carried out to locate, assess, and quantify the past toxic and hazardous waste storage, disposal, and spill sites. These investigations included a records search in 1981 (Engineering Science 1981), interviews with base personnel, a field inspection, compilation of an inventory of wastes, evaluation of disposal practices, and an assessment to determine the nature and extent of site contamination; Problem Confirmation and Quantification studies (similar to what is now designated a Site Investigation) in 1982 (Weston 1982) and 1985 (Weston 1985); soil and groundwater analyses in 1986; a base-wide health assessment in 1988 by the U.S. Public Health Service, Agency for Toxic Substances and Disease Registry (ATSDR) (ATSDR

1988); base-specific hydrology investigations in 1989 and 1990 (Geotech 1991); a groundwater investigation in 1991; and site-specific investigations between 1989 and 1993. ATSDR issued a Public Health Assessment for Griffiss AFB, dated October 23, 1995 (ATSDR 1995), and an addendum, dated September 9, 1996.

Pursuant to Section 105 of CERCLA, Griffiss AFB was included on the National Priorities List (NPL) on July 15, 1987. On August 21, 1990, the Air Force, EPA, and NYSDEC entered into a Federal Facility Agreement (FFA) under Section 120 of CERCLA. Under the terms of the agreement, the Air Force was required to prepare and submit numerous reports to NYSDEC and EPA for review and comment. These reports address remedial activities that the Air Force is required to undertake under CERCLA and include identification of Areas of Concern on base; a scope of work for a remedial investigation (RI); a work plan for the RI, including a sampling and analysis plan and a quality assurance project plan; a baseline risk assessment; a community relations plan; an RI report; a work plan and the report for a supplemental investigation (SI); and a Landfill Cover Investigation Report. The Air Force delivered the draft-final RI report (Law 1996) covering 31 AOCs to EPA and NYSDEC on December 20, 1996, and the final SI report (E & E 1998) was delivered on July 24, 1998. The Final Landfill Cover Investigation Report (Law 1997) was delivered on December 8, 1997.

This ROD for remedial action is based on an evaluation of potential threats to human health and the environment due to contamination at the Landfill 6 AOC and adjacent areas. During the RI, a site-specific baseline risk assessment (using appropriate toxicological and exposure assumptions to evaluate cancer risks and non-cancer health hazards) was conducted in order to evaluate the risks posed by detected site contaminants to the reasonably maximally exposed individual under current and future land use assumptions. The risk assessment for this site evaluated an unrestricted use scenario. In the RI report, the levels of contaminants were compared to available standards and guidance values using federal and state environmental and public health laws that were identified as potentially applicable or relevant and appropriate requirements (ARARs) at the site. Chemical-specific ARARs are usually health- or risk-based numerical values or methodologies that result in a numerical value when applied to site-specific conditions. Currently, there are no chemical-specific ARARs for soil (other than for polychlorinated

biphenyls [PCBs]), sediments, or air. Therefore, other non-promulgated federal and state advisories and guidance values, referred to as To-Be-Considereds (TBCs), and background levels of the contaminants in the absence of TBCs, were considered. This comparison was used in the selection of the preferred remedial action.

Initial Site Investigations

Initial site investigations were performed in 1981. As part of this preliminary investigation, a groundwater monitoring well (TMCMW-9) was installed at Landfill 6. Groundwater samples collected in 1982 indicated the presence of phenols and dissolved chromium, copper, and zinc. A passive soil gas survey performed in 1993 indicated the presence of petroleum and fuel constituents.

Remedial Investigation

In 1994, an RI was performed (Law 1996). The main objective of the RI was to investigate the nature and extent of environmental contamination from historical releases at the AOC in order to determine whether any remedial action was necessary to prevent potential threats to human health and the environment that might arise from exposure to site conditions. The RI included a geophysical survey consisting of a magnetometry survey and ground-penetrating radar (GPR) survey; a passive soil gas survey; sampling and analysis of surface soil (0-to-1-foot depth interval); and the installation of six new groundwater monitoring wells.

Geophysical Surveys. The results of the geophysical survey indicated discrete and widely distributed anomalies indicative of relatively shallow metallic objects in the soil. In addition, two strong subsurface reflections were detected in the southern area of the landfill.

Passive Soil Gas Survey. The passive soil gas survey indicated the presence of toluene and benzene emissions.

Surface Soil Investigation. One surface soil sample was collected from each of two erosion gullies present at Landfill 6 (samples LF6SS-1 and LF6SS-2). Analytical results indicated the presence of 12 semivolatile organic compounds (SVOCs), seven pesticides/PCBs, 19 metals, cyanide, and petroleum hydrocarbons. Two of the metals were detected at concentrations exceeding the most stringent criterion (see Table 1). Three planned sediment sampling locations (LF6SD-1, LF6SD-2, LF6SD-3) were sampled for surface soils downhill of Landfill 6. Although the area is within the jurisdictional wetlands associated with Three Mile Creek, the area was dry and the samples were considered to be soil, not sediments. Two depth intervals were sampled from each location, 0 to 0.5 foot BGS and 0.5 to 1.0 foot BGS. Analytical results indicated the presence of four volatile organic compounds (VOCs), 12 SVOCs, 12 pesticides/PCBs, and 23 metals, cyanide, and petroleum hydrocarbons. One VOC, two SVOCs, and 12 metals were detected at concentrations exceeding the most stringent criterion (see Table 2).

Groundwater Investigation. Seven groundwater monitoring wells were sampled during the RI. Analysis of the groundwater samples indicated that three VOCs, one pesticide, seven metals, total glycols, and petroleum hydrocarbons exceeded the most stringent criterion (see Table 3). The groundwater associated with Landfill 6 will be evaluated and addressed in a separate comprehensive study for all groundwater contamination in the area near the landfill.

Supplemental Investigations

In 1997, an RI supplemental investigation was performed (E & E 1998). During the investigation, two test pits were excavated to determine the source of two significant subsurface geophysical anomalies detected during the RI geophysical investigations. No buried drums were encountered in these test pits; however, a petroleum odor was noticed at 6 feet BGS and field readings obtained with a photoionization detector ranged from 100 parts per million (ppm) to 400 ppm. Also, three large steel pipes ranging from 6 to 10 feet in length were located in one test pit. Nothing was found in the other test pit.

A Landfill Cover Investigation performed in 1997 (Law 1997) included the following tasks: historical records search, field survey, aerial photographic survey, auger investigation, permeability sample collection, and a landfill performance model analysis. The investigation further defined the areal extent of the landfill and revealed that the thickness of the existing landfill cover ranges from 1.7 to 4 feet.

2.3 Highlights of Community Participation

The final proposed plan and a fact sheet for the Landfill 6 AOC indicating Presumptive Remedy as the selected remedial action were released to the public on November 15, 2000 (AFBCA 2000). The document was made available to the public in both the administrative record file located at Building 301 in the Griffiss Business and Technology Park and in the Information Repository maintained at the Jervis Public Library. The notice announcing the availability of this document was published in the *Rome Sentinel* on November 16, 2000. A public comment period lasting from November 17, 2000, to December 18, 2000, was set up to encourage public participation in the remedial action selection process. In addition, a public meeting was held on December 6, 2000. At this meeting, representatives from AFBCA, EPA, and NYSDEC answered questions about issues at the AOC and the Presumptive Remedy proposal under consideration. A response to the comments received during this period is included in the Responsiveness Summary, which is part of this ROD (see Section 3).

2.4 Scope and Role of Site Response Action

The scope of the Presumptive Remedy Alternative for the Landfill 6 AOC addresses the concerns for human health and the environment. The Presumptive Remedy will bring the landfill cap into compliance with NYSDEC's standards of November 1996.

2.5 Site Characteristics

Landfill 6 is an approximately 8-acre area located in the southern portion of the former Griffiss AFB between Perimeter Road and Three Mile Creek (see Figures 1 and 2). Disposal activities were conducted in two areas separated by a dirt access road that passes along the southern boundary of the landfill and bisects the northern area of the

landfill. The landfill is unlined but the southern areas of the landfill are capped. The remaining areas of Landfill 6 are not capped. A hardfill area containing construction and other debris is located adjacent to the northwest side of Landfill 6.

Landfill 6 was in operation from 1955 to 1959. The majority of disposal activity occurred on a hillside north and east of the road; between 38,000 and 62,000 cubic yards of hardfill and general refuse were placed on the ground and burned in this area. The layer of waste and burned residue is estimated to be 5 to 10 feet thick. In the 1980s, fuel contaminated soils were disposed to a depth of 3 feet in the central and southern portions of Landfill 6, and in 1986, a clay cap was constructed over this disposal area. According to the technical specifications for the final disposal and capping of the fuel contaminated soils area, the fuel contaminated fill was placed in compacted 6-inch-thick layers to a total depth of 3 feet BGS. The contaminated fill was covered with a 12-inch-thick clay layer, which was then covered with at least 6 inches of topsoil and seeded with grass.

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 to the 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. Due to its high average precipitation and predominantly silty sands, the former Griffiss AFB is considered a groundwater recharge zone.

Landfill 6 is currently well vegetated with grasses, low vegetation, and trees in the area north of the access road and woodlands in the area west of the access road. The topography tends toward the southwest, with 40 feet of relief occurring across the site. Surface water runoff follows the topography, flowing across the site toward Three Mile Creek. Based on the groundwater data from seven monitoring wells at the site, groundwater flows south-southwest toward Three Mile Creek. Groundwater was encountered at depths of 9 feet to 60.5 feet below ground surface (BGS), and groundwater elevations declined approximately 9 feet across the site. Site soils consist of

brown, silty sand to a depth of 2 feet BGS, and brown, fine sand with variable silt and gravel to depths of 2 to 74 feet BGS.

2.6 Current and Potential Future Site Use

As proposed in the Griffiss Redevelopment Planning Council redevelopment scenario, the current and future land use designation for the Landfill 6 AOC is open space.

2.7 Summary of Site Risks

Site risks were analyzed based on the extent of contamination at the Landfill 6 AOC. As part of the RI, a baseline risk assessment was conducted to evaluate current and future potential risks to human health and the environment associated with contaminants found in the soils, soil gas, and groundwater at the site. The results of this assessment were considered in the cleanup goals selection process.

Groundwater contamination emanating from the landfill will be evaluated and addressed, together with groundwater and surface water contamination from other sources in the area, in a separate comprehensive study for all groundwater contamination near the landfill. The fact that groundwater contamination does exist and a risk has been shown was a consideration in the selection of the preferred remedial action.

Human Health Risk Assessment

A baseline human health risk assessment was conducted during the RI to determine whether chemicals detected at the Landfill 6 AOC could pose health risks to individuals under current and proposed future land uses if no remediation occurs. As part of the baseline risk assessment, the following four-step process was used to assess site-related human health risks for a reasonable maximum exposure scenario:

- ⊘ Hazard Identification—identifies the contaminants of concern at the site based on several factors such as toxicity, frequency of occurrence, and concentration;
- ⊘ Exposure Assessment—estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these

exposures, and the pathway (e.g., ingestion of contaminated soils) by which humans are potentially exposed;

- ∃ Toxicity Assessment—determines the types of adverse health effects associated with chemical exposures and the relationship between magnitude of exposure (dose) and severity of adverse effects (response); and
- ∃ Risk Characterization—summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative (e.g., one-in-a-million excess cancer risk and non-cancer Hazard Index value) assessment of site-related risks and a discussion of uncertainties associated with the evaluation of the risks and hazards for the site.

Chemicals of potential concern (COPCs) were selected for use in the risk assessment based on the analytical results and data quality evaluation. All contaminants detected in the soils and soil gas at the site were considered chemicals of potential concern with the exception of inorganics detected at concentrations less than twice the mean background concentrations; iron, magnesium, calcium, potassium, and sodium, which are essential human nutrients; and compounds detected in less than 5% of the total samples (unless they were known human carcinogens). As a class, petroleum hydrocarbons were not selected as chemicals of concern; but the individual toxic constituents (e.g., benzene, toluene, and ethylbenzene) were evaluated. The presence of petroleum hydrocarbons as a class of contaminants was considered in the selection of the preferred remedial action.

The human health risk assessment evaluated potential exposure of residential, recreational, and occupational (landscape worker) populations that may be exposed to chemicals detected in the site media. The various exposure scenarios for each population are described in Table 4. Intake assumptions, which are based on EPA guidance, are more fully described in the RI.

Quantitative estimates of carcinogenic and noncarcinogenic risks were calculated for the Landfill 6 AOC as part of a risk characterization. The risk characterization evaluates potential health risks based on estimated exposure intakes and toxicity values. For carcinogens, risks are estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to the potential carcinogen. The risks of the individual chemicals are summed for each pathway to develop a total risk

estimate. The range of acceptable risk is generally considered to be 1 in 10,000 (1×10^{-4}) to 1 in 1,000,000 (1×10^{-6}) of an individual developing cancer over a 70-year lifetime from exposure to the contaminant(s) under specific exposure assumptions. Therefore, sites with carcinogenic risk below the risk range for a reasonable maximum exposure do not generally require cleanup based upon carcinogenic risk under the NCP.

To assess the overall noncarcinogenic effects posed by more than one contaminant, EPA has developed the Hazard Quotient (HQ) and Hazard Index (HI). The HQ is the ratio of the chronic daily intake of a chemical to the reference dose for the chemical. The reference dose is an estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure level for the human population, including sensitive sub-populations, that is likely to be without an appreciable risk of deleterious effects during a portion of a lifetime. The HQs are summed for all contaminants within an exposure pathway (e.g., ingestion of soils) and across pathways to determine the HI. When the HI exceeds 1, there may be concern for potential noncarcinogenic health effects if the contaminants in question are believed to cause similar toxic effects.

EPA bases its decision to conduct site remediation on the risk to human health and the environment. Cleanup actions may be taken when EPA determines that the risk at a site exceeds the cancer risk level of 1 in 10,000 (1×10^{-4}) or if the noncarcinogenic HI exceeds 1. Once either of these thresholds has been exceeded, the 1 in 1,000,000 (1×10^{-6}) risk level and an HI of 1 or less may be used as the point of departure for determining remediation goals for alternatives.

The carcinogenic risks to the adult residential, agricultural, and recreational receptor were presented in the RI report. Specific exposure assumptions are described in the RI report.

Although it is unlikely that the adjacent land will be developed, the hypothetical future use of the land for residential purposes was considered. The total carcinogenic risks to potential future adult residential receptors from inhalation of airborne chemicals, inhalation of fugitive dust, dermal contact with compounds in groundwater, and ingestion of crops were calculated as 1 in 100,000,000 (1×10^{-8}); 6 in 1,000,000 (6×10^{-6}); 4 in 100,000 (4×10^{-5}); and 6 in 100,000 (6×10^{-5}), respectively, which are below or within

the NCP's carcinogenic risk range of 1 in 10,000 (1×10^{-4}) to 1 in 1,000,000 (1×10^{-6}) for Superfund sites.

The total carcinogenic risks to potential future adult residents from inhalation of VOCs from groundwater and ingestion of groundwater were 5×10^{-4} and 1×10^{-3} , respectively, which are above EPA's target risk range. Vinyl chloride detected in well LF6MW-2 was the greatest contributor to this risk.

The total carcinogenic risk to adult recreation receptors from the combined air and soil pathways was calculated as 6 in 100,000 (6×10^{-5}), which is within EPA's target risk range.

The total carcinogenic risk for occupational landscape workers (25-year exposure assumption) from the combined air and soil pathways was calculated as 2 in 100,000 (2×10^{-5}), which is within EPA's target risk range.

The total carcinogenic risk from exposure to contaminants in groundwater by industrial workers was calculated as 2×10^{-4} , which is above EPA's target risk range. The greatest contributor to this risk was ingestion of groundwater derived from vinyl chloride contamination in monitoring well LF6MW-2.

For noncarcinogenic risks, the child is the receptor generally assumed to have the greatest estimated risk; therefore, HIs were calculated for the adult, adolescent, youth, and child. The total HIs for the future residential adult, adolescent, youth, and child exposed to airborne chemicals and fugitive dust were calculated as 0.02, 0.02, 0.05, and 0.08, respectively, which are all below the acceptable level of 1. The total HIs for the future residential adult, adolescent, youth, and child exposed to groundwater were 10, 10, 20, and 30, which are above the acceptable level of 1. Ingestion of groundwater contaminated with selenium and manganese (well LF6MW-2) was the major contributor to this risk.

The total HIs calculated for the current and future recreational adult, adolescent, youth, and child receptors from all pathways were calculated as 0.2, 0.2, 0.2, and 0.8, respectively, all of which are below the acceptable level of 1.

The total HI for an adult landscape worker was 0.1, which is below the acceptable level of 1.

The total HI for industrial workers exposed to groundwater was 4, which is above the acceptable level of 1. Ingestion of groundwater contaminated with selenium (well LF6MW-2) was the major contributor to this risk.

The results of the human health risk assessment indicate that chemicals detected in the air and soil do not present a risk to future residents or current and future recreational receptors and landscape workers. The only potential unacceptable risk would be to future residents and industrial workers from ingestion of groundwater at Landfill 6. The quantitative evaluation of risk is subject to several conservative assumptions and should not be considered an absolute measure of risk.

Uncertainties exist in many areas of the human health risk assessment process. However, use of conservative variables in intake calculations and health protective assumptions throughout the entire risk assessment process results in an assessment that is protective of human health and the environment. Examples of uncertainties associated with the risk assessment for the Landfill 6 AOC include: (1) chemical samples were collected from the suspected source of contamination rather than through random sampling, which may result in a potential overestimation of risk; (2) the HIs associated with dermal contact with soil were not quantified for the majority of COPCs, which may lead to underestimation of the overall risk due to dermal contact; (3) the models used in the RI are likely to overestimate exposure point concentrations in air, which would cause a potential overestimation of risk for the inhalation pathway; and (4) two of three soil sampling locations, although dry at the time of sampling, are subject to periodic flooding, which would limit human contact, especially through exposure to fugitive dusts. This may result in a potential overestimation of risk.

Ecological Risk Assessment

A baseline risk assessment for ecological receptors at the Landfill 6 AOC was conducted during the RI. The environmental evaluation modeled risks to raccoons, shrews, and American woodcocks from exposures to surface soil. The HQs indicative of risks to the raccoon were calculated to be below 1; therefore, the potential for adverse impact on this ecological receptor is considered to be insignificant. The HQ for the short-tailed shrew exceeded 1 for 2 chemicals (2,3,7,8-tetrachlorodibenzodioxin [TCDD]),

HQ = 39; selenium, HQ = 1.6). The HQ exceeded 1 for the American woodcock for one chemical (2,3,7,8-tetrachlorodibenzodioxin [TCDD], HQ = 8.0). These values indicate a potential for adverse effects.

Modeling of bioaccumulation to higher order species was not performed, nor was the cumulative effect of multiple contaminants considered; this tends to underestimate the risk to ecological receptors. Also, the risks to ecological receptors in impacted areas (e.g., wetlands, and Three Mile Creek) were not considered in this AOC's risk assessment but were considered in the selection of the preferred remedial action.

Although certain state-listed endangered plants and animals have been observed on or in the vicinity of the base, no threatened and/or endangered species have been identified at this site (Corey 1994). There are no federally listed (U.S. Department of the Interior) threatened or endangered plant or animal species at the former base. Overall, this AOC poses only a moderate threat to the environment in its unremediated state.

2.8 Remedial Action Objectives

The following are the remedial action objectives developed for this site based upon the use of the Presumptive Remedy guidance and the site data:

Containment of Contamination

- ⊘ Consolidation of various debris and waste areas into the main landfill boundary in order to reduce the area to be capped and the potential for nearby wildlife and human populations to be exposed to the landfill mass; and
- ⊘ Significantly reduce infiltration of rain water and snow-melt water through the landfill mass in order to minimize the potential for leachate generation and groundwater contamination.

Evaluate Effectiveness of the Remedy

- ⊘ Monitoring the groundwater and stream environment (which may include, but is not necessarily limited to, sediment, surface water, and biota) downgradient of the site to evaluate the effectiveness of the Presumptive Remedy.

Restrict Exposure to Contamination

- ⊘ Implementation of institutional controls in the form of deed restrictions within the main landfill boundary and for the affected groundwater to prohibit use of the area and groundwater.

2.9 Description and Evaluation of Remedial Action Alternatives

Superfund remedial and removal programs have found that certain categories of sites have similar characteristics, such as types of contaminants, types of disposal practices, or how environmental media are affected. Based on information acquired from evaluating the past cleanups at these sites, the Superfund program has developed presumptive remedies to accelerate future cleanups of these sites. Containment has been established as the Presumptive Remedy for CERCLA municipal landfills. Containment technologies are usually deemed appropriate for municipal landfills because volume and heterogeneity of the waste can generally be presumed to make excavation and/or treatment impractical as well as more costly than containment.

CERCLA regulations mandate that a remedial action must be protective of human health and the environment, cost effective, and utilize permanent solutions and treatment technologies to the maximum extent practicable. These regulations also establish a preference for remedial actions that employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of contaminants at a site. As part of the Presumptive Remedy approach, the proposed plan evaluated a no action scenario as dictated by CERCLA and compared it to the Presumptive Remedy alternative. A summary of the two alternatives is presented below.

No Action Alternative

CERCLA requires that the No Action alternative be compared with other alternatives. Under the No Action alternative, no remedy would be implemented at the Landfill 6 AOC. The site would remain as it is now and there would be no monitoring of contaminants in the groundwater or stream environment. No institutional controls restricting habitation or use would be established. Costs and construction time are not associated with this alternative.

Presumptive Remedy Alternative

The Presumptive Remedy alternative includes: (1) installation of an impermeable cover in accordance with 6 NYCRR Part 360 landfill closure regulations, dated November 26, 1996; this action would include placing a gas venting layer, a geomembrane cover and a barrier protection layer over the entire landfill to reduce the amount of water infiltrating through the landfill; (2) maintenance of the impermeable cover; (3) long-term monitoring of the groundwater and stream environment (which may include, but is not necessarily limited to, sediment, surface water, and biota) downgradient of the site to evaluate the effectiveness of the presumptive remedy; the groundwater will be monitored in accordance with the Air Force's Long-Term Groundwater Monitoring Program and the stream environment will be monitored in accordance with a future plan to be prepared for the Three Mile Creek AOC; both plans will be subject to the review and approval of the EPA and NYSDEC; (4) implementation of institutional controls in the form of deed restrictions within the main landfill boundary and for affected groundwater to prohibit use of the area and groundwater, and to ensure the cap is not damaged and the area is maintained as a landfill.

Any wetlands disturbed during the remedial action will be restored. In addition, if leachate discharges are observed during routine walkovers of the landfill, leachate management will be considered at that time.

2.10 Summary of Comparative Analysis

Remedial alternatives are assessed on the basis of both a detailed and a comparative analysis pursuant to the NCP. The analyses of Landfill 6 consisted of (1) an assessment of the individual alternatives against nine evaluation criteria and (2) a comparative analysis focusing upon the relative performance of each alternative against the criteria. In general, the following “threshold” criteria must be satisfied by an alternative for it to be eligible for selection:

1. Overall protection of human health and the environment addresses whether a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. Compliance with ARARs addresses whether a remedy would (1) meet all of the ARARs or (2) provide grounds for invoking a waiver.

In addition, the following “primary balancing” criteria are used to make comparisons and identify the major trade-off among alternatives:

3. Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
4. Reduction of toxicity, mobility, or volume via treatment refers to a remedial technology’s expected ability to reduce the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants at the site.
5. Short-term effectiveness addresses (1) the period of time needed to achieve protection and (2) any adverse impacts on human health and the environment that may be posed during the construction and implementation periods until cleanup goals are achieved.
6. Implementability refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed.
7. Cost includes estimated capital, operation and maintenance, and present-worth costs.

Finally, the following “modifying” criteria are considered fully after the formal public comment period on the Proposed Plan is complete:

8. State acceptance indicates whether, based on its review of the RI and the Proposed Plan, the State supports or opposes the preferred alternative and/or has identified any reservations with respect to the preferred alternative.
9. Community acceptance refers to the public’s general response to the alternatives described in the Proposed Plan and the RI reports. Factors of community acceptance include support, reservation, or opposition by the community.

A comparative analysis of the two alternatives based on the nine evaluation criteria follows:

1. Overall Protection of Human Health and the Environment

The No Action alternative would potentially not provide adequate protection of human health and the environment. No remedy would be implemented at the Landfill 6 AOC. Based on the levels of contaminants in the surface and subsurface soils, the results of the baseline risk assessment indicates that, although the concentrations of some chemicals exceeds soil guidance values, Landfill 6 poses no unacceptable risk from the soils to the human population. However, there is a risk to ecological receptors from surface soils and the contamination levels within the groundwater are above ARARs and could pose potential health risks to individuals under current and proposed future land uses.

The Presumptive Remedy alternative will prevent unnecessary exposure to the soils and landfill mass by limiting the future use of the landfill through the implementation of institutional controls and by providing additional landfill cover materials. The Presumptive Remedy will also be effective in limiting infiltration of rain water, which will potentially reduce leachate generation and the potential transportation of contaminants from the landfill to the creek via groundwater migration. Finally, the Presumptive Remedy will provide protection from exposure to groundwater via institutional controls.

2. Compliance with ARARs

Contaminant concentrations will not immediately comply with the ARARs under the No Action alternative or the Presumptive Remedy alternative. Currently there are no chemical specific ARARs for soil (other than for PCBs). Therefore, other non-promulgated federal and state advisories and guidance values, referred to as To-Be-Considereds and background levels of the contaminants were used.

The Presumptive Remedy alternative addresses soils and groundwater at the site. Groundwater on a portion of the site that requires further evaluation will be addressed in the Air Force's On-base Groundwater Monitoring Plan. However, the Presumptive Remedy alternative will limit exposure to groundwater and soil through the implementation of institutional controls and by the addition of the landfill cover. Chemical concentrations in the surface and subsurface soils that exceed guidance values and that pose an ecological risk are addressed through containment of the contamination. Further, groundwater monitoring will be conducted to assure that there is no further

contaminant migration and ascertain whether groundwater standards will be achieved in the future.

3. Long-term Effectiveness and Permanence

Due to the potential for future groundwater ingestion by the human population and soil ingestion by ecological receptors, the No Action alternative would not allow for reliable protection of human health and the environment in the long term.

For the Presumptive Remedy alternative, the installation and maintenance of an impermeable cover will reduce water infiltration and reduce contact with the contaminated soil and landfill mass. This action coupled with the long-term monitoring program of the groundwater, surface water, sediment and biota is the most aggressive approach to containment and reliable long-term protection of human health and the environment.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

The No Action alternative provides no treatment or containment of contaminant migration, therefore, it does not result in any reduction of toxicity, mobility, or volume.

The construction of an impermeable cover will decrease the opportunity for contaminated soil migration via erosion and infiltration of rain and surface water through the landfill. In addition, the cover is expected to reduce leachate generation, which in turn will reduce the potential for transporting contaminants from the landfill to the creek via groundwater. Although treatment will not be employed, this alternative will reduce the mobility of the contaminated soils and landfill mass, and the volume of leachate that is generated.

5. Short-term Effectiveness

The No Action alternative would not be an effective alternative because potential human exposure to contaminated soils and landfill mass, ingestion of groundwater, and the potential risks from exposure to soils by ecological receptors would continue to exist.

For the Presumptive Remedy alternative, construction of the landfill cover would be completed in approximately one year. During this time, no exposure to hazardous substances would occur in the community. Potential risks to construction workers would primarily be associated with equipment movement. Any wetlands disturbed during the remedial action will be minimal and will be restored.

6. Implementability

There would be no limitations to implementing the No Action alternative.

Construction of the landfill cover for the Presumptive Remedy is relatively straightforward. Materials and equipment necessary for the cover construction are readily available. Likewise, performance of a long-term monitoring program and implementation of institutional controls in the form of deed restrictions within the main landfill boundary are feasible.

7. Cost

There would be no costs associated with the No Action alternative.

Capital costs for capping of the landfill will be approximately 4 to 6 million dollars. Operation and Maintenance (O & M) costs will be approximately \$15,000 per year. The project construction duration will be approximately 1 to 2 years.

8. Agency Acceptance

AFBCA, NYSDEC, and EPA have mutually agreed to select the Presumptive Remedy alternative. The Presumptive Remedy alternative satisfies the threshold criteria and ensures compliance with applicable regulations.

9. Community Acceptance

Community acceptance of the Presumptive Remedy alternative was assessed at the public meeting and during the public comment period. The Restoration Advisory Board (RAB) suggested that the capping of Landfill 6 be put on hold until the groundwater is addressed. The RAB also recommended that a slurry wall be constructed with the cap to control groundwater.

2.11 Principal Threat Waste

Actual or threatened release of hazardous substances from this AOC, if not addressed by implementing the response action selected in this ROD, may present a potential threat to public health, welfare, or the environment. Future potential risks will be abated throughout the implementation of the selected remedy of landfill capping, groundwater use restrictions, and groundwater monitoring. Installation of an impermeable cover, in accordance with 6 NYCRR Part 360 landfill closure regulations,

will eliminate the possibility of human exposure to the landfill mass, and reduce the amount of water infiltration through the landfill, which, in turn, will reduce the production of leachate and further groundwater degradation.

2.12 Description of the Selected Remedy

The selected remedial action alternative for the Landfill 6 AOC is the Presumptive Remedy. This alternative was chosen because it has been demonstrated to be effective for similar military landfills and is known to be both cost-effective and easy to implement. The threshold criteria are satisfied by the Presumptive Remedy. The Presumptive Remedy includes the following actions:

1. Preparation of the landfill surface prior to providing cover materials. The landfill cover will be cleared and grubbed, and low areas will be filled. The landfill surface also will be regraded to prevent future erosion or ponding. Any wetlands disturbed during the remedial action will be restored.
2. Decommissioning of monitoring wells located within the construction limits.
3. Installation of an impermeable cover in accordance with 6 NYCRR, Part 360, landfill closure regulations, dated November 26, 1996; this action would include placing a gas venting layer, a geomembrane cover and a barrier protection layer over the entire landfill to reduce the amount of water infiltrating through the landfill.
4. Maintenance of the impermeable cover.
5. Long-term monitoring of the groundwater and stream environment downgradient of the site to evaluate the effectiveness of the Presumptive Remedy; the groundwater will be monitored in accordance with the Air Force's Long-Term Groundwater Monitoring Program and the stream environment will be monitored in accordance with a future plan to be prepared for the Three Mile Creek AOC; both plans will be subject to the review and approval of the EPA and NYSDEC.
6. Implementation of institutional controls in the form of deed restrictions within the main landfill boundary and for affected groundwater to prohibit use of the area and groundwater, and to ensure the cap is not damaged and the area is maintained as a landfill.

7. Evaluation of site conditions at least once every 5 years as required by and conducted in accordance with Section 121 (c) of CERCLA and NCP Section 300.430(f)(5)(iii)(C).

2.13 Statutory Determinations

The selected remedy must meet the statutory requirements of CERCLA, Section 121, which are itemized in Section 1.5 of this ROD and described below.

Protection of Human Health and the Environment

The Presumptive Remedy will provide adequate protection from exposure to contaminants by limiting the future use of the landfill through the implementation of institutional controls. Also, the additional landfill cover materials will eliminate the possibility of human or ecological exposure to the contaminated soils and landfill mass. The Presumptive Remedy will also be effective in limiting infiltration of rain water, which will potentially reduce leachate generation and the transportation of contaminants from the landfill to the creek via groundwater migration.

Compliance with ARARs

Contaminant concentrations will not immediately comply with the ARARs under the No Action alternative or the Presumptive Remedy alternative. Currently there are no chemical-specific ARARs for soil (other than for PCBs). Therefore, other non-promulgated federal and state advisories and guidance values, referred to as TBCs and background levels of the contaminants in the absence of TBCs were considered.

The contaminated groundwater associated with Landfill 6 will be evaluated and addressed in a separate comprehensive ROD for all groundwater contamination in the area near the landfill. However, the Presumptive Remedy alternative will prevent unnecessary exposure to contaminated groundwater, soil, and landfill mass through the implementation of institutional controls and by the addition of the landfill cover. The Presumptive Remedy addresses the contamination in the surface and subsurface soils through containment of the contamination. Further, groundwater monitoring will be conducted to assure that there is no further contaminant migration and ascertain whether groundwater standards will be achieved in the future.

Cost-Effectiveness

The cost of the remedy is typical for the scope of the remedial action.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

Installation and maintenance of an impermeable cover does not represent a completely permanent solution to contamination at the site. However, the combination of capping and long-term monitoring of the groundwater and the stream environment present the most aggressive approach to this contamination with the exception of landfill excavation. Thorough investigations during the RI demonstrated that no distinct sources of contamination are present in the landfill. Thus, the approach adopted by the selected remedy represents the greatest long-term effectiveness appropriate for this AOC and is consistent with the standard practices for actions at CERCLA landfills.

Preference for Treatment as a Principal Element

The presumptive remedy does not employ treatment of the soil because no distinct sources of contamination were identified in the landfill. However, exposure to contaminated soils and the landfill mass will be limited by the implementation of institutional controls at the landfill. The installation and maintenance of the landfill cover will potentially benefit groundwater quality by reducing the amount of leachate generated, thus limiting potential transportation of contaminants to the creek through groundwater migration.

2.14 Documentation of Significant Changes

No significant changes have been made to the selected remedy from the time the proposed plan was released for public comment.

**Table 1
COMPOUNDS EXCEEDING GUIDANCE VALUES
LANDFILL 6 AOC
SURFACE SOIL SAMPLES (Erosion Gullies)**

Compound	Range of Detected Concentrations	Frequency of Detection Above Most Stringent Criterion	Most Stringent Criterion
Metals (mg/L)			
Chromium, hexavalent	0.5	1/2	0.45 ^a
Molybdenum	14.5	1/2	ND ^a

^a Background screening concentration.

Key:

ND = Nondetect

**Table 2
COMPOUNDS EXCEEDING GUIDANCE VALUES
LANDFILL 6 AOC SOIL SAMPLES
(Downhill of Landfill 6)**

Compound	Range of Detected Concentrations	Frequency of Detection Above Most Stringent Criterion	Most Stringent Criterion
VOCs (µg/kg)			
Acetone	6 J - 470 J	2/6	200 ^a
SVOCs (µg/kg)			
Benzo(a)anthracene	170 J - 250 J	1/6	224 ^a
Benzo(a)pyrene	69 J - 290 J	3/6	61 ^a
Metals (mg/kg)			
Arsenic	2.9 - 22 J	5/6	4.9 ^b
Barium	51 - 523	2/6	300 ^b
Beryllium	0.25 J - 1.07 J	3/6	0.64 ^b
Cadmium	0.55 J - 2.9 J	2/6	1.1 ^b
Calcium	1,600 - 24,700	1/6	23,820 ^b
Copper	13.4 - 68	3/6	43 ^b
Lead	11 - 69	3/6	36 ^b
Mercury	0.087 J - 0.63	5/6	0.1 ^b
Selenium	0.33 J - 2.7 J	1/6	2 ^a
Silver	0.45 J - 1.17 J	1/6	1.1 ^b
Strontium	6.61 - 195	2/6	55 ^b
Zinc	54 - 169	3/6	120 ^b

^a NYS-recommended soil cleanup objective.

^b Background screening concentration.

Key:

J = Estimated concentration.

**Table 3
COMPOUNDS EXCEEDING STANDARDS AND GUIDANCE VALUES
LANDFILL 6 AOC GROUNDWATER SAMPLES**

Compound	Range of Detected Concentrations	Frequency of Detection Above Most Stringent Criterion	Most Stringent Criterion
VOCs (µg/kg)			
Benzene	1.4	1/7	1 ^a
Vinyl Chloride	0.12 J - 30	1/7	2 ^a
Cis-1,2-Dichloroethylene	0.4 J - 170	1/7	5 ^a
Pesticides/PCBs (µg/L)			
Aldicarb	0.8 J - 1 J	2/21	0.35 ^a
Metals (mg/kg)			
Aluminum	0.13 - 0.21	2/7	0.05 ^b
Iron	0.04 - 14.1	1/7	0.3 ^a
Magnesium	1.1 - 51.4	1/7	35 ^c
Manganese	0.011 - 1.1	1/7	0.05 ^b
Nickel	0.38	1/7	0.1 ^d
Selenium	0.00059 J - 1.7	1/7	0.01 ^a
Sodium	2.7 - 104	4/7	20 ^a

^a NYSDEC Class GA groundwater standard; June 1998.

^b Federal secondary maximum contaminant level.

^c NYSDEC Class GA groundwater guidances; June 1998.

^d Federal maximum contaminant level.

Key:

J = Estimated concentration.

**Table 4
LANDFILL 6 AOC
RISK ASSESSMENT EXPOSURE SCENARIOS**

RESIDENTIAL RECEPTOR	RECREATIONAL RECEPTOR	LANDSCAPE WORKER	INDUSTRIAL WORKER
Adult, Child, Youth, Adolescent	Adult, Child, Youth, Adolescent	Adult	Adult
<ul style="list-style-type: none"> Inhalation of airborne chemicals Inhalation of fugitive dust from surface soil Ingestion of groundwater Dermal contact with groundwater (during showering) Inhalation of VOCs from groundwater (during showering) Ingestion of crops irrigated with groundwater 	<ul style="list-style-type: none"> Inhalation of airborne chemicals Inhalation of fugitive dust from surface soil Incidental ingestion of surface soil Dermal contact with surface soil 	<ul style="list-style-type: none"> Incidental ingestion of surface soil Inhalation of fugitive dust from surface soil Dermal contact with surface soil Inhalation of airborne chemicals 	<ul style="list-style-type: none"> Ingestion of groundwater Dermal contact with groundwater (during showering) Inhalation of VOCs from groundwater (during showering)

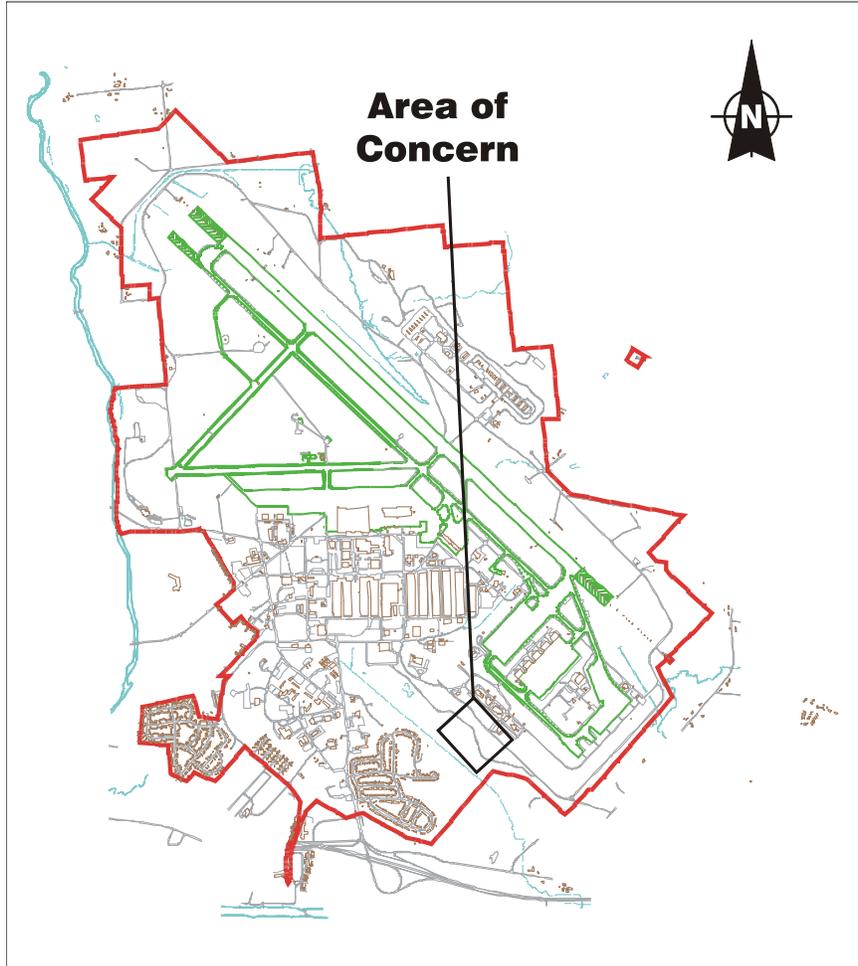


Figure 1: Landfill 6 AOC Location Map

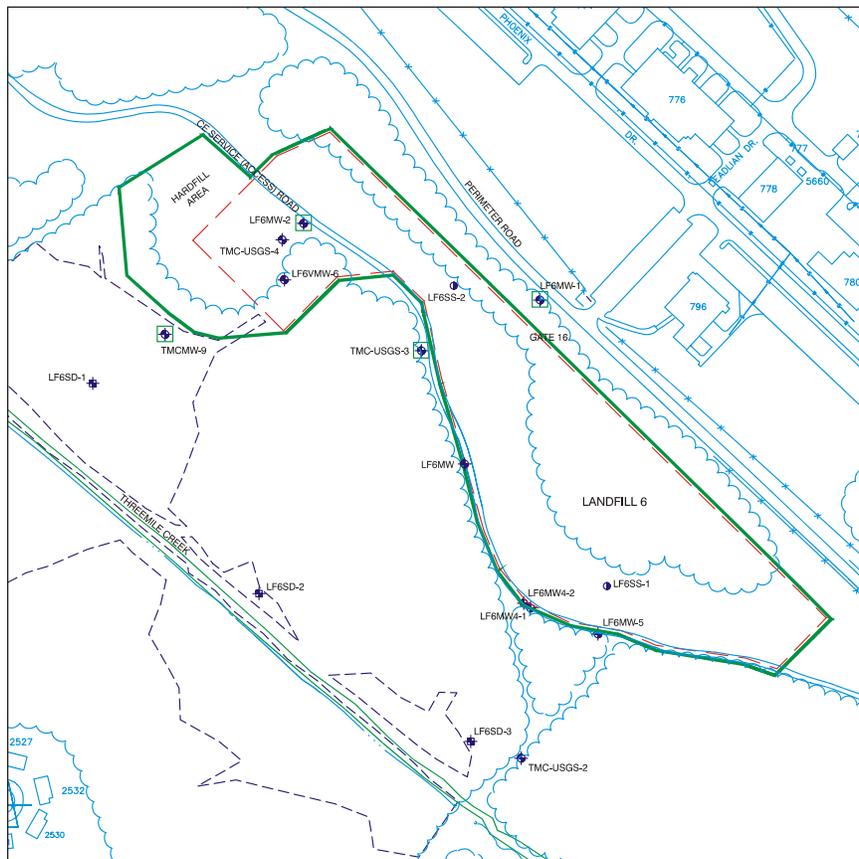


Figure 2: Landfill 6 AOC Site Map

On Wednesday, November 15, 2000, AFBCA, following consultation with and concurrence of the EPA and NYSDEC, released for public comment the proposed plan for remedial action at Landfill 6 AOC at the former Griffiss Air Force Base. The release of the proposed plan initiated the public comment period, which began on November 17, 2000 and concluded on December 18, 2000.

During the public comment period, a public meeting was held on Wednesday, December 6, 2000, at 5:00 p.m. at the Floyd Town Hall located at 8299 Old Floyd Road, Rome, NY. A court reporter recorded the proceedings of the public meeting. Copies of the transcript and attendance list are included in the Administrative Record. The public comment period and the public meeting were intended to elicit public comment on the proposal for remedial action at the Landfill 6 AOC.

This document summarizes and provides responses to the verbal comments received at the public meeting and the written comments received during the public comment period.

Comment #1 (oral – Malcom Didio)

Mr. Didio expressed concern on behalf of the RAB regarding the groundwater contamination at the site. He suggested that the capping of Landfill 6 be put on hold until the groundwater is addressed. He also recommended that a slurry wall be constructed with the cap to control groundwater.

Response #1

The groundwater at the Landfill 6 AOC is being evaluated as a separate comprehensive AOC study which will address all groundwater contamination in the area near the landfill. The groundwater AOC study will address the fact that groundwater contamination does exist within the Landfill 6 area and poses a concern not only to human health, if people are ever exposed to it, but also to wildlife in the area and to Three Mile Creek. The implementation of the Presumptive Remedy will reduce rainwater infiltration and the production of leachate which could further contaminate the groundwater. The decision to cap the landfill was made before the full extent of the groundwater contamination was known. However, the selection of the Presumptive Remedy (i.e., capping) will not impact any remedy selected to address the groundwater contamination (e.g., a slurry wall [as proposed by the RAB]) or another feasible alternative. Therefore, the Air Force, following discussions with the EPA and NYSDEC, has determined not to delay construction of the cap and to evaluate the construction of a slurry wall (as well as other appropriate alternatives) as part of the groundwater AOC feasibility study.

Comment #2 (oral – John Koziarz)

Mr. Koziarz asked about the endangered species located on the base and requested further information.

Response #2

Mr. Koziarz was told that an endangered species report is available and was sent a copy of the report on December 7, 2000. Mr. Koziarz has also been added to the AFBCA mailing list.

Comment #3 (oral – John Fitzgerald)

Mr. Fitzgerald expressed concern about the high HQ for the short-tailed shrew that was driven by dioxins and requested the results of the soil sampling at the Landfill 6 AOC. He also questioned the effects of the dioxins on human health.

Response #3

The soil sampling results and health related information concerning dioxins were sent to Mr. Fitzgerald on December 11, 2000.

Comment #4 (written – C. Jerrard)

Ms. Jerrard requested that the description of the presumptive remedy be corrected by verifying the cover descriptions and adding the geomembrane that is planned.

Response #4

The cover descriptions and the placement of a geomembrane cover have been included in the ROD.

Comment #5 (written – C. Jerrard)

Ms. Jerrard requested that the description of the plan as a no further action alternative (page 12 of the proposed plan) be corrected.

Response #5

Although the proposed plan will not be corrected at this time, the proposed alternative in the ROD will be accurately stated.

Agency for Toxic Substances and Diseases Registry (ATSDR), 1988, *Health Assessment for Griffiss Air Force Base, Rome, New York*, prepared for U.S. Department of Health and Human Services, Public Health Service, Albany, New York.

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_____, December 1982, *Installation Restoration Program Phase II - Problem Confirmation and Quantification Study Stage 1, Griffiss Air Force Base, Rome, New York*, prepared for United States Air Force, Brooks AFB, Texas.