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United States Air Force
Plattsburgh Air Force Base



EXCAVATION OF SOLID WASTE DEBRIS
LANDFILLS
C&D: OTH-3505-1 and STUMP DUMP: OTH-3505-2

WORK PLAN

FINAL

October 2000

PLATTSBURGH AIR FORCE BASE

**EXCAVATION OF SOLID WASTE DEBRIS LANDFILLS
C&D: OTH-3505-1 and STUMP DUMP: OTH-3505-2**

Work Plan

October 2000

Prepared for:

Air Force Center for Environmental Excellence (AFCEE)
Environmental Restoration Division
Brooks Air Force Base, Texas 78235-5363

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TABLE OF CONTENTS

| | Page |
|---|------|
| ACRONYMS AND ABBREVIATIONS | iii |
| UNITS OF MEASURE..... | iv |
| 1.0 INTRODUCTION..... | 1 |
| 1.1 Site Description and Background..... | 1 |
| 1.2 Previous Investigations and Regulatory Setting..... | 3 |
| 1.3 Nature and Extent of Contamination..... | 3 |
| 2.0 TECHNOLOGY AND EQUIPMENT OVERVIEW | 7 |
| 2.1 Technology/Equipment Description | 7 |
| 2.2 Site-Specific Application of Equipment | 7 |
| 3.0 PRE-CONSTRUCTION ACTIVITIES | 8 |
| 3.1 Pre-Construction Meeting | 8 |
| 3.2 Site Preparation | 8 |
| 3.3 Security/Safety Mark-out of Working Areas | 8 |
| 4.0 CONSTRUCTION ACTIVITIES | 9 |
| 4.1 Mobilization/Kick-off Meeting | 9 |
| 4.2 Sequencing of Work..... | 9 |
| 4.2.1 Chip in-place C&D Landfill Trees and Stumps | 10 |
| 4.2.2 Initial Survey | 10 |
| 4.2.3 Excavation..... | 10 |
| 4.2.4 Sampling and Analysis..... | 12 |
| 4.2.5 Concrete Crushing..... | 13 |
| 4.2.6 Chipping of Separated Wood | 13 |
| 4.2.7 Loading of Waste Transfer Vehicles for Off-site Disposal..... | 14 |
| 4.2.8 Excavation Survey..... | 14 |
| 4.2.9 Restoration | 14 |
| 4.2.9.1 Backfilling of Clean Soil and Imported Borrow Material..... | 14 |
| 4.2.9.2 Grading..... | 14 |
| 4.2.9.3 Topsoil..... | 15 |
| 4.2.9.4 Seeding and Mulched Hay | 15 |
| 4.2.10 Demobilization..... | 15 |
| 4.3 Closure Report..... | 15 |
| 5.0 POST-EXCAVATION/CONFIRMATORY SAMPLING..... | 16 |
| 6.0 WASTE MANAGEMENT | 17 |

TABLE OF CONTENTS
(Continued)

| | | Page |
|------|---|-------------|
| 7.0 | CLEARING AND GRUBBING | 19 |
| 8.0 | AIR MONITORING | 20 |
| 9.0 | PROJECT MANAGEMENT | 21 |
| 9.1 | Project Organization..... | 21 |
| 9.2 | Schedule | 21 |
| 9.3 | Project Controls..... | 21 |
| | 9.3.1 Record-keeping | 21 |
| | 9.3.2 Reporting..... | 22 |
| 9.4 | Quality Assurance/Quality Control | 22 |
| 10.0 | REFERENCES..... | 25 |

FIGURES

| Figure | Title | Page |
|---------------|---|-------------|
| 1 | Landfill Location Map, Plattsburgh Air Force Base, Plattsburgh, New York | 2 |
| 2 | Site Layout and Suspected Areas of Fill Material at Construction/Demolition Debris Landfill..... | 4 |
| 3 | Site Layout and Suspected Areas of Fill Material at Stump Dump..... | 5 |
| 4 | Project Management Organizational Structure..... | 23 |
| 5 | Project Schedule | 24 |

TABLES

| Table | Title | Page |
|--------------|---|-------------|
| 1 | VOC, PAH, Base Neutrals, and Metals Detected in Soil Samples Collected from the C&D Landfill and Stump Dump (maximum values) | 6 |

ACRONYMS AND ABBREVIATIONS

| | |
|--------|---|
| AFB | Air Force Base |
| AFBCA | Air Force Base Conversion Agency |
| AFCEE | Air Force Center for Environmental Excellence |
| C&D | Construction and Demolition |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| DO | delivery order |
| EE/CA | Engineering Evaluation/Cost Analysis |
| EPA | U.S. Environmental Protection Agency |
| FTL | Field Team Leader |
| N/A | not applicable |
| NCP | National Contingency Plan |
| ND | not detected |
| NY | New York |
| NYSDEC | New York State Department of Environmental Conservation |
| PAH | Poly-cyclic Aromatic Hydrocarbons |
| PARC | Plattsburgh Airbase Redevelopment Corporation |
| PDA | Plattsburgh Development Authority |
| PID | Photo-Ionization Detector |
| PPE | Personnel Protection Equipment |
| QA/QC | quality assurance/quality control |
| RCRA | Resource Conservation and Recovery Act |
| SAP | Sampling and Analysis Plan |
| SOW | Statement of Work |
| TAGM | Technical and Administrative Guidance Memorandum |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TSCA | Toxic Substance Control Act |
| TSDF | Treatment, Storage, Disposal Facility |
| Versar | Versar, Inc. |
| VOC | Volatile Organic Compound |
| WP | Work Plan |

UNITS OF MEASURE

| | |
|--------------------------|----------------------------|
| $\mu\text{g}/\text{kg}$ | micrograms per kilogram |
| $\mu\text{g}/\text{l}$ | micrograms/liter |
| $\mu\text{g}/\text{m}^3$ | micrograms per cubic meter |
| bgs | below ground surface |
| dB | decibel |
| $^{\circ}\text{C}$ | degree Celsius |
| $^{\circ}\text{F}$ | degree Fahrenheit |
| ft | foot/feet |
| ft^2 | square feet |
| ft/d | feet per day |
| gal | gallon |
| gpm | gallons per minute |
| in | inch |
| kV | kilovolt |
| L | liter |
| LF | linear feet |
| mg | milligram |
| MSL | mean sea level |
| ppb | parts per billion |
| ppm | parts per million |
| yd^3 | cubic yard |

1.0 INTRODUCTION

Plattsburgh Air Force Base (AFB) personnel plan to close two former Construction and Demolition Debris Landfills located at Plattsburgh AFB, known as the Construction and Demolition (C&D) Landfill (referred to as OTH-3505-1) and the Stump Dump Landfill (referred to as OTH-3505-2). Closure of the landfills will consist of the exhumation, soil separation, and disposal of all debris material, followed by the backfilling of each excavation area with previously removed and analytically confirmed clean soil and imported borrow material, as necessary. Previous investigations by URS Consultants, Inc., including the test pit delineation of the fill material at each landfill, identified the presence of contamination (asbestos, VOCs, PAHs and metals in the waste material at the C&D Landfill and PAHs and metals in the waste material at the Stump Dump). The C&D Landfill encompasses an area of approximately 1.3 acres, while the Stump Dump contains three separate non-contiguous fill areas totaling 0.3 areas.

This Work Plan (WP) addresses the technical approach associated with the excavation of the fill material and disposal of debris at the C&D Landfill and Stump Dump. Versar has been retained to develop the work plan, and excavate, remove, and dispose of the debris material at each of the two landfills. The field activities will initially involve the chipping/mulching of surficial trees, branches, and stumps atop the C&D Landfill followed by the exhumation of fill material, separation of debris via the sifting of soils, and subsequent disposal of all C&D material and contaminated soil, whose chemical constituents exceed the New York State Department of Conservation (NYSDEC) TAGM 4046 Cleanup Objectives. The clean soil will be staged and backfilled into the excavation area along with imported borrow material to restore the site to an acceptable grade. Similarly, the fill material at the Stump Dump will be processed using the same exhumation, separation, disposal, and backfilling methodology.

1.1 Site Description and Background

Plattsburgh AFB is located in Clinton County in the northeastern corner of New York State. The airbase is bordered by the City of Plattsburgh to the north, Lake Champlain to the east, lake shore residential communities to the southeast, the Salmon River to the south, and Interstate 87 to the west. The base, formerly the home of the 380th Air Refueling Wing, officially closed on September 30, 1995. The former base is currently the responsibility of the Air Force Base Conversion Agency (AFBCA) and the Plattsburgh Airbase Redevelopment Corporation (PARC). Figure 1 shows the approximate location of the two C&D landfills.

The C&D Landfill is located northwest of the north end of the runway and was formerly a sand and gravel pit used for the disposal of construction and demolition waste such as asphalt, concrete, and waste building materials.

The Stump Dump is located in the southwest corner of the base and was reportedly used for the disposal of vegetative wastes, such as tree stumps and branches, C&D material, concrete, bricks, household wastes and a large concrete vault.



NEW YORK
QUADRANGLE LOCATION

PLATTSBURGH AFB, N.Y.
 PLATTSBURGH, NY-VT 7.5' QUADRANGLE
 44073-F4-TF-024
 1966
 DMA 6373 III - SERIES V821
 Mapped, edited and published by the U.S. Geological Survey

FIGURE 1
 Site Location Map

Versar_{INC.}

The approximate layout of the fill areas at the C&D Landfill and the Stump Dump are shown in Figures 2 and 3, respectively.

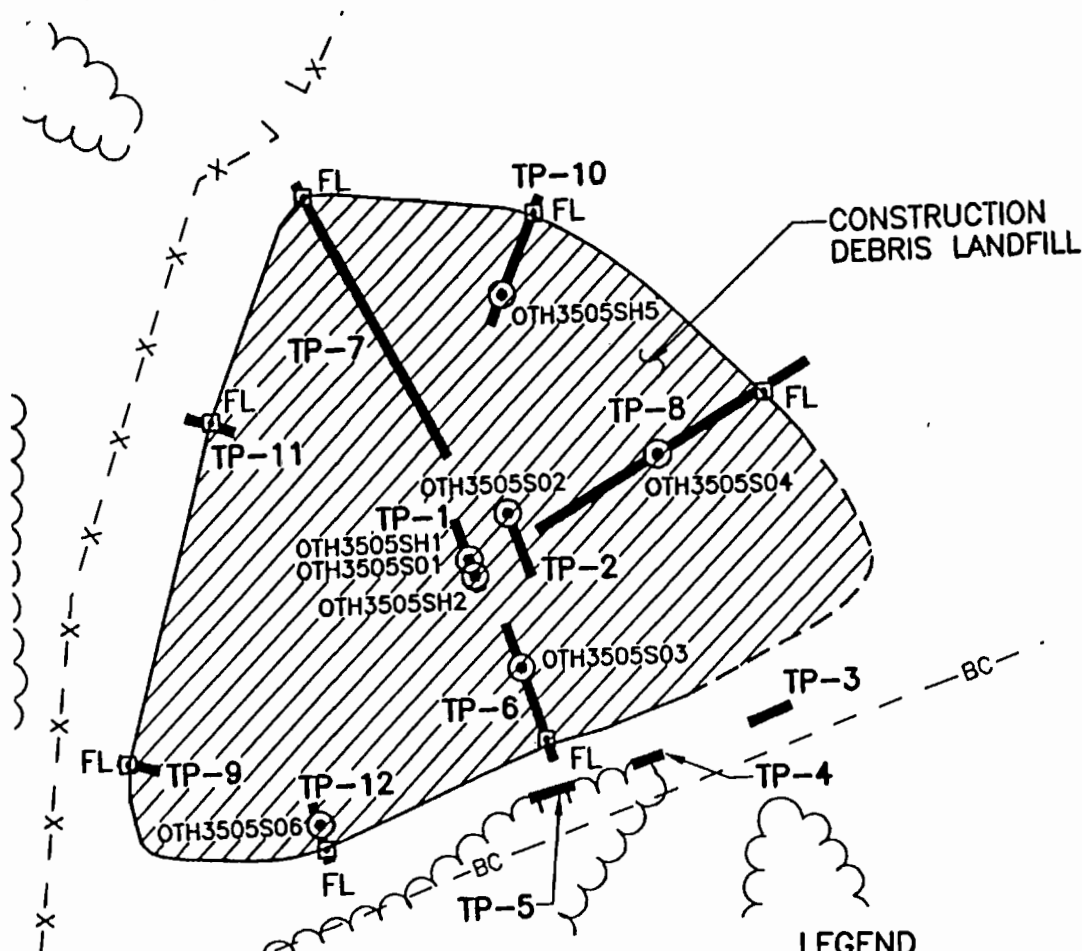
1.2 Previous Investigations and Regulatory Setting

The Air Force and its contractor, URS Consultants, Inc., conducted an electromagnetic conductivity survey and excavated a series of test trenches at each landfill to delineate the depth and lateral extent of the fill material. During these investigation activities, they identified asbestos containing materials (ACM), VOC and PAH contaminated soil and fill material. The concentrations of several PAH constituents were in excess of the NYSDEC TAGM 4046 Cleanup Levels.





In order to satisfy the regulatory agency and achieve proper closure for each landfill in accordance with NYCCR Part 360, the aforementioned fill material will be removed and limits of the excavations sampled and analyzed to confirm that the native soil constituent concentrations are below the NYSDEC TAGM 4046 guidance values.

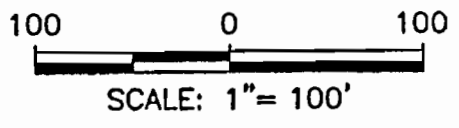
1.3 Nature and Extent of Contamination

Sampling and analysis of the fill material indicated asbestos containing material and detectable levels of VOCs, PAHs, and metals as indicated in Table 1. Nineteen (19) semi-volatile organic compounds (SVOCs), primarily PAHs, were detected in the C&D Landfill fill material, with seven (7) of the PAHs exceeding the NYSDEC TAGM 4046 guideline values (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene). Only one sample at the Stump Dump had a single PAH analyte, benzo(a)pyrene, in excess of the NYSDEC TAGM 4046 Cleanup Objective. The metals that were detected in the C&D Landfill were arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver. Of these metals, barium was detected at concentration greater than the NYSDEC TAGM Cleanup Objectives. The metals that were detected in the Stump Dump were arsenic, barium, cadmium, chromium, lead and mercury. Of these metals, cadmium, chromium, and lead significantly exceed the historical site background levels that serve as the cleanup objectives for these analytes. The C&D Landfill also contained asbestos pipe and insulation, tree trunks and stumps, miscellaneous metal material (wire, cans, re-bar), asphalt, and concrete. The Stump Dump contained yard wastes, trees trunks, tree stumps, and a large concrete vault in one area. Another small area contained household trash in plastic bags, cans, bottles, and a tire, while a third larger area contained tree stumps, tree trunks, asphalt, concrete, fiberglass insulation, metal pipe, wood pieces, yard waste, chain-link fencing, carpet, crushed drums, steel I-beams, telephone poles, wire, household debris, and wallboard.



LEGEND

-  ESTIMATED EXTENT OF CONSTRUCTION DEBRIS/WASTE
-  TP-1 TEST TRENCH LOCATION AND NUMBER
-  OTH3505S04 ANALYTICAL SAMPLE LOCATION
-  FL FILL LIMIT



(Scale Approximate) Source: Draft Supplemental Evaluation to the Environmental Baseline Survey Report, May 2000

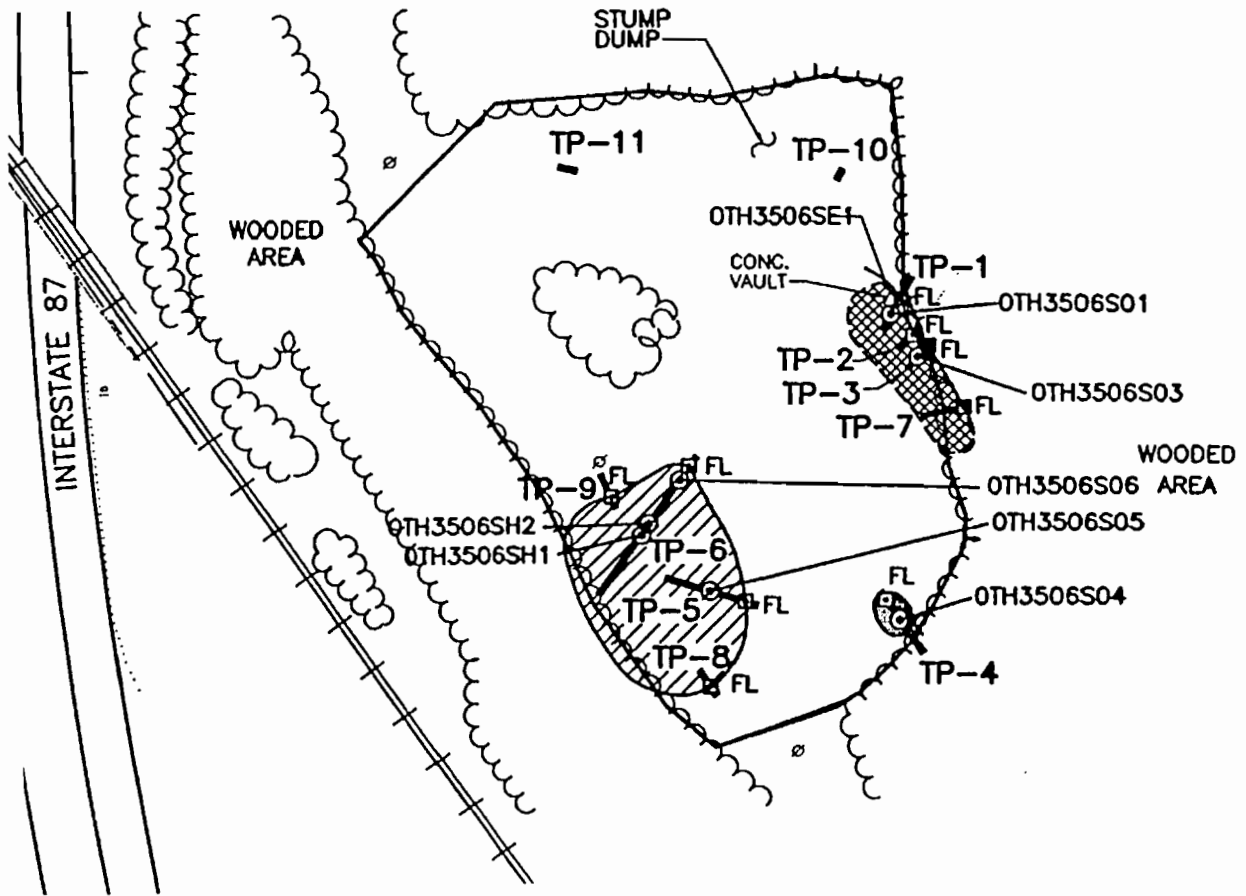
*Construction and Demolition
Debris Landfill -- Fill Area*

**Plattsburgh Air Force Base
Plattsburgh, New York**




Figure 2




DATE: October 2000

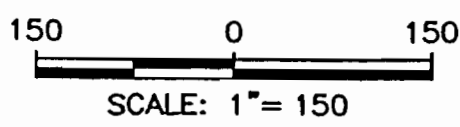




LEGEND

-  ESTIMATED EXTENT OF CONSTRUCTION DEBRIS/WASTE
-  ESTIMATED EXTENT OF STUMPS/VEGETATIVE DEBRIS
-  ESTIMATED EXTENT OF HOUSEHOLD DEBRIS

-  **TP-1** TEST TRENCH LOCATION AND NUMBER
-  **OTH3506S04** ANALYTICAL SAMPLE LOCATION
-  **FL** FILL LIMIT



(Scale Approximate)

Source: Draft Supplemental Evaluation to the Environmental Baseline Survey Report, May 2000

Sump Dump -- Fill Areas

Plattsburgh Air Force Base
Plattsburgh, New York

Figure 3

DATE: October 2000



**TABLE 1
VOC, PAH, BASE NEUTRALS, AND METALS DETECTED IN THE SOIL SAMPLES
COLLECTED FROM THE C&D LANDFILL AND STUMP DUMP (Maximum Values)***

| Parameter (Analyte) | Fill Material Concentration C&D Landfill (ppb) | Fill Material Concentration Stump Dump (ppb) | Recommended Soil Cleanup Objective (ppb)** |
|----------------------------|---|---|---|
| VOC | | | |
| Methylene Chloride | 3.76 | ND | 100 |
| Toluene | 1.56 | ND | 1,500 |
| PAH, BASE NEUTRALS | | | |
| Acenaphthylene | 217 | ND | 41,000 |
| Acenaphthene | 781 | ND | 50,000 |
| Anthracene | 3,300 | ND | 50,000 |
| Benzo(a)anthracene | 156 | 194 | 224 or MDL |
| Benzo(a)pyrene | 5,168 | 264 | 61 or MDL |
| Benzo(b)fluoranthene | 21,022 | 264 | 1,100 |
| Benzo(g,h)perylene | 8,557 | 81 | 50,000 |
| Benzo(k)fluoranthene | 20,138 | 382 | 1,100 |
| Bis(2-Ethylhexyl)phthalate | ND | 5,039 | 50,000 |
| Butylbenzylphthalate | 102 | ND | 50,000 |
| Carbazole | 1,020 | ND | -- |
| Chrysene | 370 | 269 | 400 |
| Dibenzofuran | 928 | ND | 6,200 |
| Fluoranthene | 13,647 | 376 | 50,000 |
| Fluorene | 2,058 | ND | 50,000 |
| Dibenzo(a,h)anthracene | 12 | ND | 14 |
| Indeno(1,2,3-cd)pyrene | 92 | ND | 3,200 |
| Naphthalene | 2,080 | ND | 13,000 |
| Phenanthrene | 13,870 | 189 | 50,000 |
| Pyrene | 17,450 | 551 | 50,000 |
| METALS | | | |
| Arsenic | 3,150 | 3,500 | 7,500 |
| Barium | 136,000 | 724 | 300,000 |
| Cadmium | 1,200 | 2,000 | 1,300 (SB) |
| Chromium | 10,880 | 30,000 | 19,400 (SB) |
| Lead | 45,000 | 1,025,000 | 79,400 (SB) |
| Mercury | 80 | 110 | 650 (SB) |
| Selenium | 1,860 | ND | 2,000 |
| Silver | 1,140 ⁺⁺⁺ | ND | ND (SB) |

• Analytical data obtained from URS Consultants, Inc., Draft Supplemental Evaluation to the Environmental Baseline Survey Report, May 2000.

** NYSDEC TAGM 4046: recommended soil cleanup objective

*** Shaded block identifies sample and associated constituent concentration that exceeds the NYSDEC TAGM cleanup objective (SB): Site background levels. Source: URS Consultants Inc., 1995 Background Surface Soil & Groundwater Survey for the Plattsburgh AFB.

+++Fill material metal analyte exceeds the historical site background levels.

2.0 TECHNOLOGY AND EQUIPMENT OVERVIEW

2.1 Technology/Equipment Description

The exhumation and separation of the fill material at the two landfills will be performed with conventional technology currently employed in the construction and earth-moving industry. Excavators will be used to exhume the fill material, and a shaker screen will be used to separate the C&D debris from the soil. The waste material will be sorted and staged in separated piles or roll-off boxes according to its characteristics (e.g., metal, concrete and asphalt, wood, miscellaneous C&D, soil) for appropriate off-site disposal.

2.2 Site-Specific Application of Equipment

A wood chipper (maxi-grind unit) will be bought to the site to chip and mulch all tree trunks, branches, and stumps that are currently atop the C&D Landfill prior to any excavation activities. The maxi-grind unit will again be mobilized to the site at the end of excavation activities to chip and mulch all wood products that are separated from the fill material.

The excavator will be used to exhume fill material and load it onto the power shaker-screen, which will separate the soil from the C&D debris. The soil will be segregated into discrete 100 cubic yard (cy) piles, which will be sampled and analyzed to determine if the soil is contaminated as defined in the NYSDEC TAGM 4046 Cleanup Objectives or suitable for unrestricted use.

All non-hazardous contaminated soil will be disposed off-site via thermal desorption. All characteristic hazardous material and soil will be disposed off-site in a RCRA permitted landfill.

3.0 PRE-CONSTRUCTION ACTIVITIES

Pre-construction activities will include coordinating Plattsburgh AFB operations impacted by the landfill excavation activities and all tasks necessary to support the excavation operation tasks, including gathering equipment and materials, arranging subcontracts, and obtaining utility clearance and site access. Responsibility for all work will be performed under the direct supervision and management of Versar, the prime contractor.

3.1 Pre-Construction Meeting

A pre-construction meeting will be held with the Air Force to discuss execution of the work, equipment and waste staging areas, proposed excavation sequence, and site security.

The site access and egress routes, on-site traffic flow patterns, runway access areas, and locations of equipment lay down, soil stockpiles, wood stockpiles, and fill material staging areas will be finalized at the meeting.

Dig permits are required for implementation of this project. No other environmental permits are necessary for the excavation activities.

3.2 Site Preparation

Site clearing and grubbing will be performed to remove surficial vegetation from the excavation area, soil stockpile area, and waste staging area. This will consist removing trees and brush around the aforementioned areas and along access roads. Gravel may be added to the roadway in low-lying or wet areas to provide a solid road base for heavy equipment.

3.3 Security/Safety Mark-out of Working Areas

A temporary security mark-out and security fencing, using luminescent identification tape, safety cones, flashing lights, orange plastic roll fencing, and/or barricades, will be established to identify active working areas during the excavation activities. This will also include soil stockpile areas and waste staging areas.

4.0 CONSTRUCTION ACTIVITIES

4.1 Mobilization/Kick-Off Meeting

Mobilization will include delivery of excavation, soil moving/loading, soil screening, and wood chipping equipment, tools, materials, supplies, and miscellaneous articles sufficient to commence and sustain all field activities described in this WP.

Other miscellaneous support equipment for the project include: roll-off boxes, pickup trucks, port-a-john, power saws, supply trailer, and hand tools. Materials include rolls of Visqueen, tarps, silt fence, hay bails, safety fence, PPE level "C" facemask gear on standby, level "D" protective gear, PID, decontamination water, and miscellaneous small items (e.g., sample coolers, duct tape, electrolyte fluids, ice, etc.). Work areas, staging areas, and decontamination areas will be established before actual work begins. Work area identification includes the location of excavation or "waste fill" limits, waste loading area, and the disposal truck routes. Soil separation (screening) areas and staging areas for wood products (dead trees and stumps), uncontaminated soil, contaminated soil, C&D material, and pieces of equipment will also be prepared at this time. All waste material and soil stockpiles staged adjacent to the excavation will be placed on layers of Visqueen and covered with Visqueen or tarps during non-operating hours. Silt fences and/or hay bales will surround each stockpile and enclose the excavation area, on an as needed basis. A decontamination pad will be set up for truck loading operations, wrapping of asbestos containing material, and for the handling of suspected hazardous waste.

Mobilization for field construction work will commence with an on-site kick-off meeting. Items to be discussed at the meeting will include the following:

- Review of the work scope, responsibilities of all parties, and the schedule;
- Discussion of logistical considerations associated with work tasks;
- Introduction of key task order personnel, their reporting relationships, and points of contact along with their telephone numbers; and
- Review of daily and weekly reporting requirements.

The Versar Field Team Leader (FTL) will produce and distribute meeting minutes within one week after the kick-off meeting.

4.2 Sequence of Work

Excavation and associated field activities will start at the C&D Landfill. While excavation, soil separation, and debris disposal activities will proceed in a planned sequence, the final soil backfill and compaction activities at each landfill will not progress until the post-excavation/confirmatory sampling and analysis results have been reviewed and approved by Plattsburgh AFB personnel and regulatory agencies to verify that soil chemical constituent levels do not exceed NYSDEC TAGM 4046 Cleanup Levels.

4.2.1 Chip in-place C&D Landfill Trees and Stumps

All trees and stumps currently located atop the C&D Landfill will be fed into a maxi-grind unit and reduced to approximately two inches. All chipped material will be stockpiled for either off-site disposal or on-site placement near the chipping processing area.

4.2.2 Initial Survey

Following removal of the trees and stumps atop the C&D Landfill, a licensed New York State certified land surveyor will survey both the C&D Landfill and Stump Dump. A baseline drawing of topographical elevations will be provided for each landfill, which will serve as the basis for the excavation activity payment and backfill operation restoration elevations.

The fill material area at the C&D Landfill is estimated to be 1.3-1.5 acres, while the Stump Dump contains three distinct fill material areas totaling 0.3 acres.

4.2.3 Excavation

Versar and its subcontractor will begin scraping the surface topsoil off the C&D Landfill and Stump Dump, and staging it in an area adjacent to the excavations. After the topsoil has been removed, excavation will begin near the center of the fill material. In the case of the Stump Dump, where three (3) distinct fill material areas have been identified, Versar will begin in the Area 1, where the concrete vault is located. Upon completion of the excavation in this area, Versar will move to Area 2, suspected to contain household trash, and then proceed to Area 3, the largest of the three proposed excavation areas, located between the two electric power line poles.

Fill material will be visually screened for suspected contamination by on-site field personnel looking for containers, soil discoloration, or unusual odors. In addition, PID-head space analysis of the fill material will be performed at least once for every 25 cubic yards excavated, particularly in suspected "hot-spot" areas. The fill material will be processed using a power shaker screen. Once screened, the separated material will be segregated and placed into separate piles or containers according to the nature of the material. Suspected "hot spot" areas will be selectively excavated and processed through the power screen separately. Fill material will be separated as follows:

- Soil piles (100 cy) -- staged for analytical testing and classification as: "clean fill" suitable for unrestricted use, non-hazardous contaminated soil, or hazardous waste;
- Concrete, bricks, and asphalt;
- Metals – staged for recycling;
- Wood –staged for future processing by the maxi-grind unit;

- Miscellaneous C&D Debris and Household Waste;
- Asbestos; and
- Suspected Hazardous Waste.

Large bulk material within the fill material areas, that cannot be processed/separated through the soil screening unit will be mechanically and/or manually removed and staged in piles or containers according to aforementioned disposal designation (e.g., wood, metal, asbestos piping insulation, large concrete blocks, large stumps and tree trunks). The majority of soil laden waste material will be processed through a power shaker screen unit, separated into 100 cy piles and categorized according to the following criteria:

1. **Potentially clean soil:** as determined by head space analysis; whereby, photoionization detector (PID) measurements do not exceed background by 5 ppm.
2. **Potentially contaminated soil:** as determined by head space analysis; whereby, photoionization detector (PID) measurements exceed background readings by 5 ppm.
3. **Potentially hazardous waste soil:** as determined by olfactory (obnoxious odor) and visible inspection (oil stains, strange color, drums, free standing fluid, etc.) of the fill material that indicate a potentially hazardous waste; photoionization detector (PID) measurements that exceed background by 300 ppm.

The 100 cy piles will be subsequently sampled and the material analyzed to determine its waste classifications. The sampling and analysis procedure for soil classification is described in Section 4.2.4, Sampling and Analysis.

Excavation activities will proceed in an orderly pattern throughout the landfills and all attempts will be made not to co-mingle non-contiguous soils. In addition, the 100-cubic yards per pile is a guideline volume; should the characteristics of an area suddenly change, a resultant pile may be only 50 cubic yards before it is isolated and sampled.

Soil found to be “clean’ and suitable for unrestricted use, will used as backfill.

Dust controls will be implemented during excavation activities including the sifting, sorting and exhuming operations. A particulate or dust monitor (e.g., Mini-RAM, Dust Trak Aerosol Monitor) will be employed during excavation operations. If the reported levels of particulates are greater than 10 mg per cubic meter, dust control measures, such as water spray, will be utilized.

It has been assumed that no dewatering, sheet piling, or shoring will be required to perform the excavation down to the ground water table. The extent of the excavation will be determined by the interface of the native soil with the waste or “fill” material or upon contact with the groundwater. The limits of the excavation will be designated as “clean”, if the following criteria are satisfied:

1. Native soil is observed;
2. No debris, oil stains, and/or discoloration are observed in the native soil;
3. PID head space analysis do not exceed background by 5 ppm; and
4. Post-excavation/confirmatory samples for VOCs, PAHs and TAL metals of the bottom and side walls of the excavation are below the NYSDEC TAGM 4046 Cleanup Objectives.

Additional native soil will be excavated, separated, and stockpiled if the aforementioned criteria are not achieved, except in the case where the groundwater is encountered.

Suspected asbestos containing material (pipes, insulation, etc.) will be properly wrapped in plastic and also staged near the excavation to await off-site disposal.

The concrete vault located at the Stump Dump will be broken in-place by a hoe-ram, and the concrete pieces and associated re-bar removed from the excavation, separated, and disposed as discussed in Section 6.0, Waste Management. If the vault has any liquid or solid contents or stained concrete, the contents and/or stained portion(s) of concrete will be sampled and analyzed for waste characteristics and classification for off-site disposal. All large concrete pieces will also be reduced to a smaller size (approximately 2-feet in diameter) using the hoe-ram.

Wood encountered within the excavation, including stumps and dead tree trunks, will be separated and staged at each site. This wood will be subsequently processed into wood chips and mulch at the end of the project, using the maxi-grind unit.

Given the low levels of chemical compounds of concern, the laborers and equipment operators will utilize Level D Personnel Protection Equipment (PPE) with a contingency for upgrade to Level C, should monitoring in the breathing zone indicate the need to upgrade PPE. Asbestos monitoring will also be performed at the C&D Landfill, where asbestos has been identified according to previous reports. However, the URS report did not identify ACM as a potential concern at the Stump Dump. Consequently, no asbestos air monitoring is proposed at this site, unless ACM material is discovered; at which point ACM air monitoring will be initiated. Daily safety meetings prior to the start of work will also be implemented.

All suspected ACM will be assumed to be friable. Consequently, when suspected ACM is observed or uncovered by the excavator operator or field laborer, the operator will cease operation and mark-out the ACM area with safety tape. All field personnel are experienced in the identification of ACM (e.g., transite pipe, insulation, tiles, etc) and the various types of ACM that may be encountered during excavation will be reiterated to all field personnel at the daily safety meeting. Excavation in this area will not proceed until asbestos air monitoring equipment has been setup. Asbestos air monitoring will then continue until the material has been properly wrapped in plastic and staged for subsequent disposal. This procedure will be implemented whenever suspected ACM material is encountered. ACM will be processed manually and not through the shaker screen.

Precautionary safety measures will also be taken during excavation activities at the Stump Dump when excavating between the two electric power line poles. The excavator will limit its reach and elevation so as not to contact the wires. It is also uncertain as to the proximity of the waste material to the two power line poles. Versar will also use caution in the removal of waste material around each pole so as not to compromise the structural integrity of the poles.

In addition, Versar will mark and secure the excavation areas with barriers and orange roll safety fencing during non-operation hours. All waste and staged soil stockpiles and open waste containers will also be covered with tarps or Visqueen during non-operating hours.

Decontamination procedures for site equipment will be implemented in conjunction with daily maintenance procedures. This will occur at a minimum of once a day at the end of excavation activities and shaker-screen processing of soils and fill material. The equipment subject to decon includes the excavator, loader, shaker-screen, and miscellaneous hand and power tools. However, if an area of potential contamination is encountered, as measured by the Photo-ionization detector, olfactory sensing of strong emanating odors and/or visual inspection stained/discholorated soils (e.g., oil stain, unknown liquid, metal drum, etc.), the equipment will be properly decontaminated before proceeding to the next area or that area may be processed separately to prevent cross-contamination

After all the fill material is removed from the C&D Landfill and Stump Dump, and field screening PID measurements of the soil at the bottom and side walls do not exceed background by 5 ppm, the area is ready for post-excavation sampling. Versar and its subcontractor will leave the excavation open and not proceed with other field restoration activities until review and approval by AFB personnel and regulatory agencies of the post-excavation sampling results (i.e., soil sample analyte concentrations are below NYSDEC TAGM 4046 Cleanup Objectives).

4.2.4 Sampling and Analysis

The staged soil piles will be sampled and analyzed to characterize the material as: clean fill that is suitable for unrestricted use, non-hazardous contaminated soil that exceeds the NYSDEC TAGM 4046 cleanup objectives or characteristic hazardous material that fails the RCRA TCLP.

The extent of analytical testing will be as follows:

- Soil piles whose PID readings did not exceed background readings by 5 ppm would only be tested for PAHs/Base Neutral Compounds and metals using EPA 8270b and EPA 6010a, respectively. If the results show that analyte concentrations of PAHs/Base Neutral Compounds and metals do not exceed the NYSDEC TAGM 4046 cleanup levels, than the material will be classified as clean fill, suitable for unrestricted use. However, if any analyte exceeds the NYSDEC TAGM 4046 guideline value, then the soil will be classified as contaminated and disposed off-site via thermal desorption.
- Soil piles whose PID readings exceeded background by 5 ppm would be tested for VOCs, PAHs/Base Neutral Compounds, and metals using EPA 8260b, EPA 8270b and EPA 6010a, respectively. If the results show that analyte concentrations of VOCs, PAHs/Base Neutral

Compounds and metals do not exceed the NYSDEC TAGM 4046 cleanup levels, than the material will be classified as clean fill, suitable for unrestricted use. However, if any analyte exceeds the NYSDEC TAGM 4046 guideline value, then the soil will be disposed off-site via thermal desorption.

- Soil piles whose PID readings exceeded background by 300 ppm would be tested for VOCs, PAHs/Base Neutral Compounds, metals using EPA 8260b, EPA 8270b and EPA 6010a, respectively, and RCRA TCLP analysis. If the results show that analyte concentrations of VOCs, PAHs/Base Neutral Compounds and metals exceed the NYSDEC TAGM 4046 cleanup levels, than the material will be classified contaminated requiring off-site disposal. The TCLP analysis will determine if the waste material must be sent to a RCRA permitted hazardous waste landfill for disposal or a thermal desorption facility.

A single grab sample from the pile will be collected for VOCs, while a 4-point composite sample will be collected for PAHs and metals. Samples will be collected from within the pile at a minimum depth of 12-inches. In addition, PCBs samples will also be collected if visual screening of an excavated area reveals oil-stained soils.

To ensure accurate data, quality assurance/quality control (QA/QC) samples will be collected in accordance with EPA SW 846. These QA/QC samples include field blanks and duplicate samples. A QA/QC sample frequency of one QA/QC sample per 10 environmental samples will be implemented. The soil stockpile samples, along with the QA/QC samples, will be submitted with Versar's Chain-of-Custody to a New York State-certified laboratory and analyzed for PAHs, VOCs and metals by EPA Methods 8270b, 8260b, and 6010a, respectively. TCLP analysis for soils and waste material will be performed according to EPA Method 1311.

4.2.5 Concrete Crushing

As part of the off-site disposal requirements for concrete, the individual concrete pieces are not to exceed 2-foot in diameter. Therefore, Versar and its subcontractor plans to use the backhoe attached hoe-ram to breakup and reduce any concrete and masonry debris to an acceptable diameter so it is suitable for loading into debris roll-off containers for off-site disposal.

4.2.6 Chipping of Separated Wood

All wood and stumps that were separated and staged during the excavation of the C&D Landfill and the Stump Dump will be fed into the maxi-grind unit and chipped into wood mulch to approximately 2-inches in size. All exhumed wood and stumps accumulated and staged at the C&D Landfill will be transported to the Stump Dump for processing. All chipped material will be stockpiled for either off-site disposal or on-site placement near the processing area.

4.2.7 Loading of Waste Transfer Vehicles for Off-site Disposal

All staged material designated for off-site disposal will be loaded in roll-off containers and/or tandem dump trucks using a front-end loader. Loading and off-site disposal operations will be an ongoing activity concurrent with the fill excavation activity at each landfill. The final

deposition location and the various types of waste material anticipated is discussed in Section 6.0, Waste Management.

4.2.8 Excavation Survey

After all excavation activities are completed and all the waste material has been removed from the excavation areas, and post-excavation sample results confirm that the bottom and side walls of the excavation are not contaminated, the certified New York State licensed surveyor will again survey the final excavation elevation to determine the quantity of material removed from each landfill.

4.2.9 Restoration

The site restoration tasks consists of the backfilling and compaction of clean soil, grading of all areas to promote positive drainage, and placement of topsoil, followed by the application of seed and mulched hay.

The source of imported fill material will be sampled and tested to ensure that it is not contaminated.

4.2.9.1 Backfilling of Clean Soil and Imported Borrow Material

When excavation activities in an area have been completed, the staged soil stockpile that tested “clean”, suitable for unrestricted use, will be backfilled into the excavation areas. It will be spread and compacted in 2-ft. lifts. All backfilled soil will be compacted using a dozer and/or sheeps-foot roller. Additional backfill borrow material will be imported to the sites from a local source located outside the Plattsburgh AFB. Only certified clean borrow material will be provided. The additional borrow material may be necessary to restore the excavation to its original grade or to a mutually agreed upon elevation to be determined by Versar and Plattsburgh AFB personnel.

4.2.9.2 Grading

The clean backfill will be graded to promote positive drainage. Grade changes from the original site contours are likely. The final contours at the C&D landfill may change because the site is located in a depression with no outlet for stormwater runoff. In addition, the final restoration elevation for the Stump Dump-Area 3, between the two electric power line poles, will probably be lowered by 5 to 8 feet because of the existing mound of fill material currently at this location. The elimination of the mound will result in a considerable reduction in the required quantity of imported borrow material. However, the final elevation in this area requires further investigation, as it cannot compromise the structure integrity of the two electric power poles.

Versar, or the licensed surveyor, may be used to provide the mark-out for the final grade elevations for backfilling operations. However, a licensed surveyor will be used to prepare the drawing of the final elevations upon completion of the landfill closure project.

4.2.9.3 Topsoil

Following the backfill, compaction, and grading activities, all stockpiled topsoil previously scraped off the surface of the sites will be spread back and graded onto the impacted areas. Additional topsoil may also be imported from a local source outside the Plattsburgh AFB to provide a resultant 2 to 3-inch topsoil layer. AFB personnel will determine the need for additional imported topsoil, since these landfills are located in relatively inactive portions of the AFB.

4.2.9.4 Seeding and Mulched Hay

After the clean backfill soil and topsoil have been graded, rye grass and blown mulched hay will be applied to the impacted areas. The recommended seed application rate for virgin soil is 10-12 pounds of rye grass seed mixture per 1,000 ft² of land.

4.2.10 Demobilization

Versar will work with Plattsburgh AFB personnel to develop and implement a project closeout checklist for the field activities. Demobilization of equipment and personnel will not occur until project objectives are accomplished and Plattsburgh AFB personnel provide final site closure approval. After the checklist has been completed and Plattsburgh AFB personnel have reviewed and approved all analytical data, Versar will demobilize all equipment and personnel from the site. Versar and its subcontractors will also properly dispose of all decontamination water, personal protection material, and any miscellaneous solid waste generated by site personnel during field activities. In addition, any damages to roads and utilities will be repaired.

4.3 Closure Report

Upon completion of the excavation, backfill, and disposal activities, Versar will prepare a Closure Report for the C&D Landfill and Stump Dump. The elements of the closure report are discussed in Section 9.3.2.

7.0 CLEARING AND GRUBBING

In the excavation, staging, and parking areas, where brush and small trees impact the field activities at each landfill, clearing and grubbing will be performed. Sound engineering judgment will be used when implementing clearing and grubbing activities to prevent any impact to the surrounding open fields and wooded area during field operations. Versar and its subcontractor will limit clearing and grubbing activities to the impacted area immediately surrounding field operation and work areas. Gravel may be placed on the access roads, as needed, depending upon the wet-weather conditions of the soil around the work areas.

5.0 POST-EXCAVATION / CONFIRMATORY SAMPLING

The bottom and side walls of each excavation area at the C&D Landfill and Stump Dump will be sampled for PAHs, VOCs, and TAL metals following removal of the fill material, associated debris and any native soil that appears to be contaminated (oil stained, discolored, and/or odors). The proposed frequency of sampling is based on a 50-ft. by 50-ft. grid, or approximately one soil sample for every 2,500 ft² of exposed bottom and side walls. The approximate size of the excavation areas and the projected number of soil samples to be collected per location are as follows:

| <u>Location</u> | <u>Floor Area</u> | <u>Side Walls</u> | <u>Number of Samples</u> |
|-----------------|------------------------|-----------------------|--------------------------|
| • C&D Landfill | 56,000 ft ² | 4,000 ft ² | 24 samples |
| • Stump Dump | | | |
| - Area 1 | 4,500 ft ² | 2,000 ft ² | 3 samples |
| - Area 2 | 150 ft ² | 250 ft ² | 2 samples |
| - Area 3 | 10,000 ft ² | 4,000 ft ² | 6 samples |

The anticipated total number of samples to be collected is 35, along with associated duplicates and QA/QC samples. The confirmatory samples, along with the QA/QC samples, will be submitted with Versar's Chain-of-Custody to a New York State-certified laboratory and analyzed for PAHs, VOCs and metals by EPA Methods 8270b, 8260b, and 6061a, respectively. A QA/QC sample frequency of one QA/QC sample per 10 environmental samples will be implemented. Versar will follow the sampling and QA/QC protocols and procedures as outlined in EPA SW 846. All analytical data will be Level 3 validated.

Rather than collect post-excavation samples after all of the fill material has been removed from an aforementioned excavation area, Versar may elect to take samples from portions of the excavation area, as we sequentially reach the limits of the impacted area. This is particularly true for the C&D Landfill, which is approximately 1.3 to 1.5 acres in size.

The subcontracted analytical laboratory will provide preliminary results within a 72-hour turnaround time. If any of the results indicate the concentrations of VOC, PAH, and metal analytes exceed the NYSDEC TAGM 4046 Cleanup Levels, Versar will perform additional excavation in each established grid area where sample results indicate an exceedance of the aforementioned cleanup levels. The excavation procedure provided in Sections 4.2.3 will be employed to remove the contaminated soil.

6.0 WASTE MANAGEMENT

There are several waste management activities that are anticipated during the excavation of each landfill including: characterization, containment, staging, and off-site disposal of the following materials:

- Concrete, Asphalt and Bricks,
- Metals,
- Miscellaneous C&D and household waste,
- Non-hazardous, contaminated soil,
- Hazardous waste,
- Asbestos, and
- Personal protective equipment and other incidentally contaminated materials.

Versar will make the final decision on disposition of the waste material based upon sampling and analysis of separated soil material. All sampling and analysis of separated soils will be performed in accordance with the EPA SW 846. If the material is found to be TSCA and/or RCRA regulated, it will be properly transported to and disposed at a licensed TSCA/RCRA treatment, storage, and disposal facility (TSDF) by a licensed hauler.

All concrete, asphalt, and brick are considered C&D material and will be handled by Valley Sanitation, Inc., who plans to dispose of the material locally for use as suitable fill material.

Excavated metals will be staged on-site in roll-off containers and handled by Valley Sanitation, Inc., who plans to recycle the material.

Miscellaneous C&D debris (glass, plastic, carpet, wallboard, plaster, cans, furniture, white goods, etc.) will be transported and disposed of at the Franklin County Landfill by Valley Sanitation using roll-off containers. Since the miscellaneous C&D material will be disposed at a county municipal solid waste landfill, any household waste that does not fall under the definition of C&D debris, as defined in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) SW-89-2002 Construction and Demolition Debris (December 1989) will also be deposited in the aforementioned county landfill.

Soils with VOC and PAH concentrations exceeding the NYSDEC TAGM 4046 Cleanup Levels will require off-site disposal at the Fort Edward, NY thermal desorption unit, owned and operated by EMSI. EMSI will also provide the necessary transportation.

Soils and fill material that fail the EPA Toxic Characteristics Leachate Procedure (TCLP) are considered a characteristic hazardous waste and will be transported in roll-off containers or tandem vehicles to Chemical Waste Services, Inc. RCRA/TSCA landfill in Model City, NY. Depending on the levels of contamination indicated by the TCLP, the waste material might require additional stabilization at the facility prior to deposition into the landfill.

All asbestos containing material (ACM) identified will be properly wetted, wrapped in plastic and staged for disposal in a roll-off container. Pollution Control Industries, Inc. will handle the transportation and disposal of all ACM to a permitted landfill.

Personal Protection Equipment (PPE) will be sent to a solid waste landfill. Decontamination water will be contained and tested. If it is found to be non-hazardous and characterization sampling indicates that a temporary wastewater permit with the City of Plattsburgh can be obtained, then the decontamination wastewater will be discharged at the local sewage treatment plant. If found hazardous, it will be taken to an appropriate permitted RCRA TSD by a licensed waste hauler contacted to dispose of the wastewater.

Versar will track and maintain records, including weights and measures, of all transportation and disposal activities. If any of the waste material requires a manifest, an AFBCA representative will sign the waste manifest. All staff and subcontractors involved in transportation and disposal activities will be trained as required by the Department of Transportation and EPA.

8.0 AIR MONITORING

VOCs and PAHs found in low concentrations are the contaminants of concern. Consequently, air monitoring using a photo-ionization detector (PID) to monitor the breathing zone and to protect the health and safety of site workers during field activities will be employed. A hand-held Photo-ionization detector (PID) will be utilized to air monitor for organic vapors during excavation activities. A field technician will monitor the PID readings near the active face of the excavation and in the vicinity of the shaker-screen several times over the course of the day.

In addition, asbestos air monitoring will also be implemented during excavation activities at the C&D Landfill. However, no ACM material was found at the Stump Dump during previous investigations. Therefore, no asbestos air monitoring is planned at the Stump Dump unless the presence of ACM is discovered; at which point ACM monitoring will be initiated.

Asbestos air monitoring will be performed on an as needed basis during the excavation of the C&D Landfill. When suspected ACM is observed or uncovered by the excavator operator or field laborer, the operator will cease operation and mark-out the ACM area with safety tape. All field personnel are experienced in the identification of ACM (e.g., transite pipe, insulation, tiles, etc) and the various types of ACM that may be encountered during excavation will be reiterated to all field personnel at the daily safety meeting. Excavation in this area will not proceed until asbestos air monitoring equipment has been setup. Asbestos air monitoring will then continue until the material has been properly wrapped in plastic and staged for subsequent disposal. This procedure will be implemented whenever suspected ACM material is encountered.

Fugitive dust emissions will also be monitored and dust controls will be employed. Dust controls will be utilized during excavation activities including the sifting, sorting and exhuming operations. A particulate or dust monitor (e.g., Mini-RAM, Dust Trak Aerosol Monitor) will be employed during excavation operations. If the reported levels of particulates are greater than 10 mg per cubic meter, dust control measures, such as water spray, will be utilized.

9.0 PROJECT MANAGEMENT

9.1 Project Organization

As the prime contractor for the Air Force, Versar will provide management of all field activities. Typically, these activities include development and procurement of subcontract services; development, implementation, and oversight of field activities; post-excavation/confirmatory sampling, waste characterization sampling, collection and review of data, including sampling results, sample tracking, and custody; QA/QC submittals and technical guidance to on-site personnel; report preparation; cost management; and schedule control.

The COR for this project is Mr. Roy Willis, P.E., AFCEE/ERB Brooks AFB, TX. The Project Manager is Steven Gagnier, AFBCA, Plattsburgh, NY and the Field Engineer is Joseph Szot, AFCEE/DAE, Plattsburgh, NY. The project organization chart is included as Figure 4.

9.2 Schedule

A schedule addressing the field activities for the excavation of the two landfills is provided in Figure 5. This schedule will be updated and resubmitted as work progresses. The scheduling system can be used to provide time and resource schedule controls. The duration of the activities presented in Figure 5 is based on timely approval of permits and subcontractor submittals.

9.3 Project Controls

9.3.1 Record-keeping

Project records and documents will be logged through Versar's project document control center in our Bristol, Pennsylvania office. The function of this administrative service is to provide control and record-keeping of all pertinent documents received and transmitted for this project. Documents received in the Plattsburgh AFB field office will be sent to Versar's project document control center for logging and filing. The documents will be recorded and stamped with the date received.

Versar will keep records pertaining to the construction activities in the field office. These will include, but are not limited to:

- Daily field activities reports, progress reports, meeting minutes, etc.,
- Incident reports,
- FTL field oversight/inspection logs,
- Sampling log, chain-of-custody, sample shipment manifest,
- Analytical test results and QA/QC records,
- Inventory of waste generated, weights and measures, bills of lading, waste manifests, etc.,
- Inventory on imported clean borrow material and topsoil (e.g., number of truck loads and associated weight slips),
- Telephone logs,

- Survey records, survey drawings and records of excavation activities,
- Safety and health records,
- QA/QC records, and
- Monthly status summary reports.

9.3.2 Reporting

Following completion of all field activities, a final report will be prepared and submitted to the Air Force for review and comment. The report will address the closure of the two landfills, as applicable to NYCCR 360 landfill closure regulations. However, unlike conventional landfill closure procedures of capping and installation of monitoring wells, these landfills will be exhumed and any C&D debris and contaminated soil will be removed. Therefore, the report will focus on the quantity of fill material removed, associated contamination, and the post-excavation/confirmatory sampling of the limits of the excavation to demonstrate that the underlying soil constituent concentrations at the bottom and side walls of the excavation are below applicable NYSDEC TAGM 4046 Cleanup Objectives. The report will include discussion of the following:

- Narrative of excavation activities, including summary of material removed;
- Summary of analytical results (stockpiled soil analysis, post-excavation sampling, and disposal analysis requirements);
- QC data collected during field activities;
- Copies of bills of lading for the loads of backfill and topsoil;
- Clean backfill soil certification, analytical data, and origin of backfill and topsoil;
- A photographic log of project activities;
- Weight tickets for off-site disposal of concrete, bricks, masonry, asphalt, and metals;
- Copies of the laboratory analytical reports and field logs;
- Disposal manifests or bills of lading (for the contaminated soils, asbestos, and construction debris), and;
- Report of Findings.

The report will be submitted in Draft, Draft Final, and Final versions, with response to comments provided which addresses Air Force review comments on the Draft versions. The report will be prepared such that the Plattsburgh AFB engineers can submit the document to the regulatory agencies.

9.4 Quality Assurance/Quality Control

Appropriate quality assurance/quality control (QA/QC) criteria will be implemented during field activities and for all field sampling and analytical activities. All QA/QC procedures and protocols will comply with EPA's Manual SW 846, *Test Methods for Evaluating Hazardous Materials and Solid Waste*.

**Figure 4
Project Management Organizational Structure**

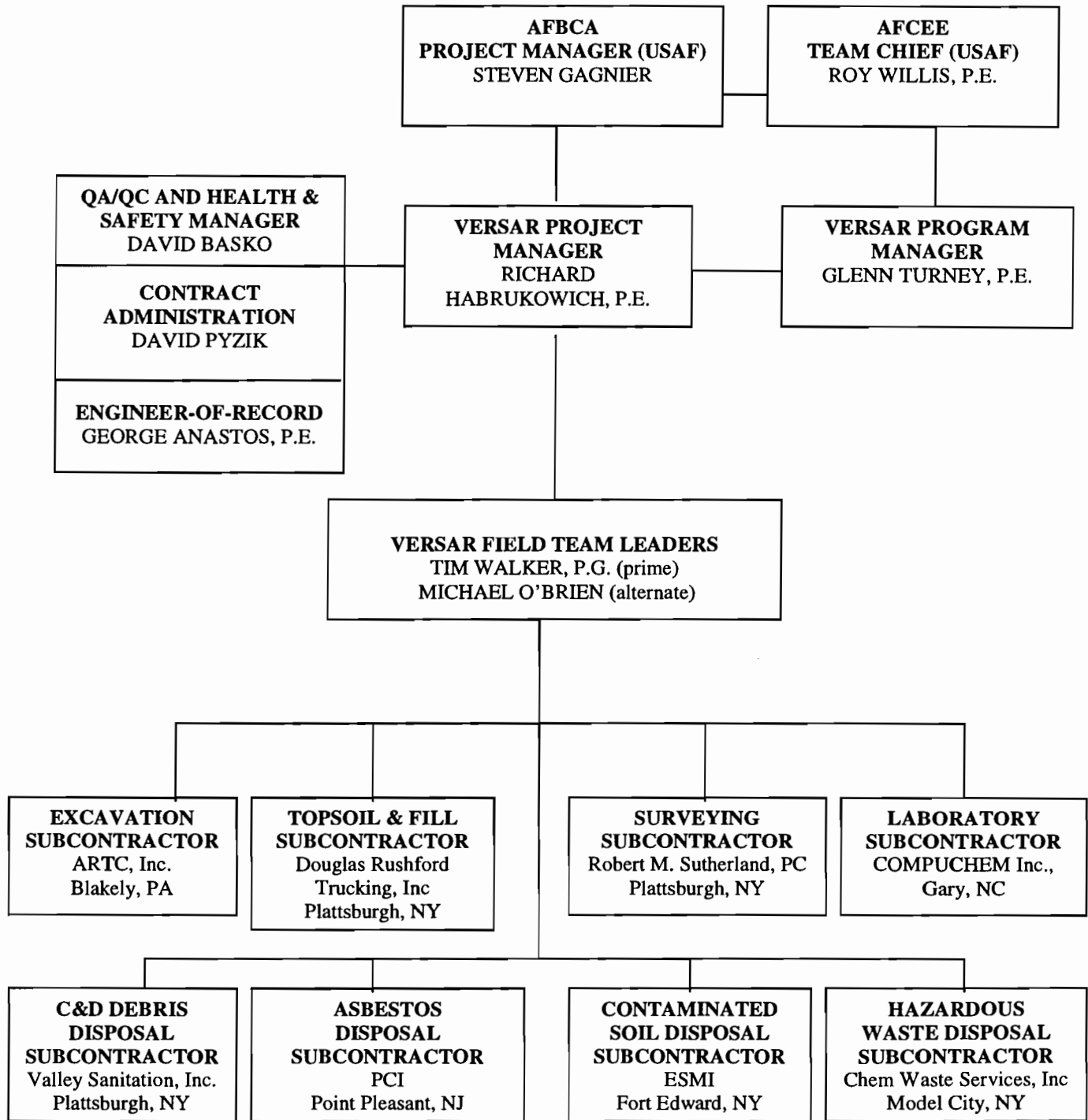
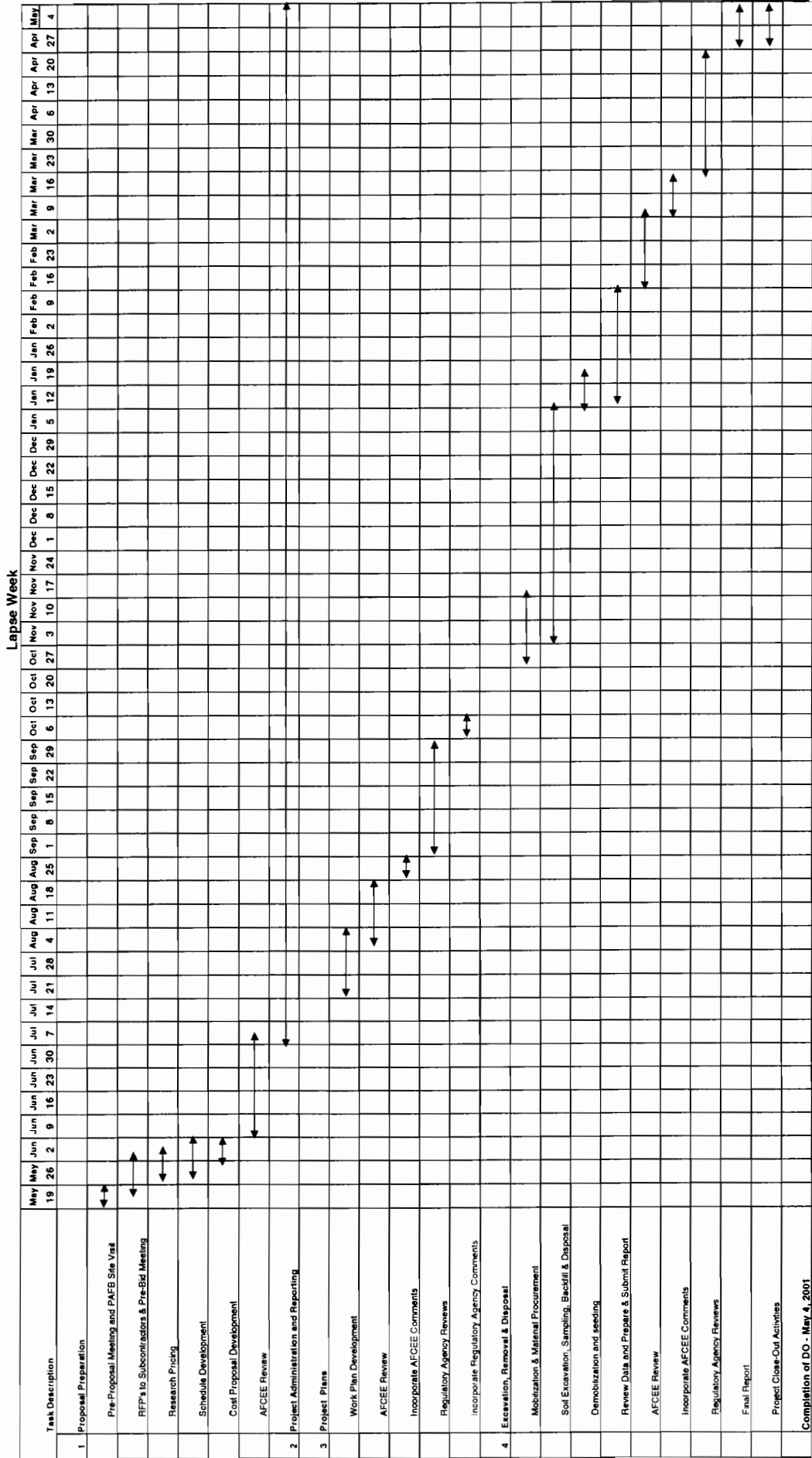


Figure 5
 Schedule for Construction and Demolition Landfill and Stump Dump Excavation
 at Plattsburgh AFB, New York



10.0 REFERENCES

NYSDEC. 1989. *Construction and Demolition Debris*, Technical and Administrative Guidance Memorandum SW-89-2002. Albany, NY: Bureau of Solid Waste Management.

NYSDEC. 1994. *Determination of Soil Clean-up Objectives and Clean-up Levels*, Technical and Administrative Guidance Memorandum HWR-94-4046. Albany, NY: Bureau of Hazardous Waste Remediation.

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