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United States Air Force

Plattsburgh Air Force Base

INVESTIGATION AND/OR REMEDIATION OF MISCELLANEOUS EBS FACTORS-SOLID/HAZARDOUS WASTE SITES, PETROLEUM SITE, AND PCB SITES

WORK PLAN

FINAL

July 2002

PLATTSBURGH AIR FORCE BASE

INVESTIGATION AND/OR REMEDIATION OF MISCELLANEOUS EBS FACTORS-SOLID/HAZARDOUS WASTE SITES, PETROLEUM SITE, AND PCB SITES

Final Work Plan

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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
COR	Contractor's Representative
DO	Delivery Order
EBS	Environmental Baseline Survey
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
OTH	Other
PAH	Polycyclic 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
RCO	Recommended Cleanup Objective
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SOW	Statement of Work
SVOC	Semi-Volatile Organic Compounds
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

µg/kg	micrograms per kilogram
µg/l	micrograms/liter
$\mu g/m^3$	micrograms per cubic meter
bgs	below ground surface
dB	decibel
°C	degree Celsius
°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) is located in Clinton County in the northeastern corner of New York State. The AFB 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 and agricultural land to the south, and Interstate 87 to the west. On November 21, 1989, PAFB was placed on the NPL by USEPA. On July 10, 1991, the USAF entered into an interagency Federal Facilities Agreement with the USEPA and the NYSDEC to implement the Installation Restoration Program (IRP). 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).

Plattsburgh AFB personnel plan to investigate and remediate for closure nine (9) miscellaneous Environmental Baseline Survey (EBS) Factors shown in Figure 1. To satisfy the regulatory agencies and achieve proper cleanup/closure of each EBS Factor, Plattsburgh AFB personnel propose the delineation and removal of the contaminated soils and residual waste. The sites are identified as:

- Solid/Hazardous Waste Sites
  - STW-426-2 (Building 426-Drain Line),
  - OTH-1700 (Golf/Course/Trash Dump),
  - OTH-3210-2 (Former Delaware & Hudson Nursery),
  - OTH-3308 (South Junction Road-Crash Site), and
  - OTH-2657 (Building 2657-Maintenance and Storage Area)
- Petroleum Site
  - SPL-428 (Building 428-Pole Barn)
- PCB Sites
  - TF-2753 (Building 2753-Former Aircraft Maintenance Shop),
  - TF-3250 (Former Building 3250-Flight Line Pump House No. 4), and
  - TF-3584 (Building 3584-Weapons Storage Area)

Previous investigations by URS Consultants, Inc. (URS) identified the presence of contamination (asbestos, volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], PCBs, and metals) in soils, sediments, and waste materials at these miscellaneous EBS Factors. A description of each site and the associated contaminants is discussed in Section 2.1, Nature and Extent of Contamination.

With the exception of OTH-1700 and OTH 3210-2, planned field activities at the sites include the collection and analysis of soil samples to delineate the extent of contamination, excavation, characterization, transportation, and off-site disposal of all contaminated soil and/or waste material, collection and analysis of confirmation samples, and site restoration. At OTH-1700 a soil cap will be placed atop the debris piles, while at OTH 3210-2 only a site characterization is planned.

This Work Plan (WP) addresses the technical approach associated with the field activities at each EBS Factor as detailed in Section 4.0.

2.0 PREVIOUS INVESTIGATIONS AND REGULATORY SETTING

The Air Force and its subcontractor, URS, conducted investigative surveys at each EBS Factor. The findings and recommendations were compiled in the *May 2001 Final Supplemental Evaluation to the Environmental Baseline Survey Report.* During these investigative activities, asbestos, VOCs, SVOCs, PCBs, and metal-contaminated soil and residuals were identified that exceeded the NYSDEC TAGM 4046 RCOs.

2.1 Nature and Extent of Contamination

A brief summary of the individual site history and the nature of contamination are presented below for each EBS Factor.

2.1.1 Solid/Hazardous Waste Site STW-426-2

EBS Factor STW-426-2 concerns a floor drain line associated with a basement sink in the former battery storage room of Building 426, adjoining the Power Production Shop. Building 426 is located on the southeast side of U.S. Oval East (Figure 2). The sink was used for neutralization; the batteries were drained and flushed prior to their disposal. The wastewater discharged to an adjacent floor drain and associated sanitary sewer system. Analytical results showed that the sediment in the drain and downgradient manhole contained lead concentrations of 91,491 mg/kg and 42.95 mg/kg, respectively.

2.1.2 Solid/Hazardous Waste Site OTH-1700

EBS Factor OTH-1700 is located in a wooded area north of the third hole of the Barracks Golf Course (Figure 3). Historic records indicated the area was a trash dump created by a hotel or restaurant during the early 1900s. Scattered surface debris and several waste piles were observed at the site. The debris/waste material consists of broken glass, ceramic-ware, bricks, mortar, rusted metal cans, coal, cinders, and ash.

Composite soil samples were collected from several of the waste piles and analyzed for TCLP VOCs, SVOCs, metals, pesticides and herbicides, and RCRA metals. Samples were collected at the 0- to 6-inch depth and 12- to 18-inch depth intervals. The analytical results from the composite samples showed that no TCLP VOCs, SVOCs, pesticides and herbicides were detected and TCLP metals were below toxicity characteristic regulatory limits. However, several RCRA metals (cadmium, lead, mercury, selenium, and silver) exceeded NYDEC TAGM soil cleanup guidelines or background levels, particularly cadmium and lead.

2.1.3 Solid/Hazardous Waste Site OTH-3210-2

EBS Factor OTH-3210-2, the former Delaware & Hudson (D&H) Nursery, is located south of the flight line apron and Barracks Golf Course, immediately west of the D&H Railroad tracks and north of the calibration hard stand (Figure 4). The nursery was believed to be active throughout the mid-1950s.

Soil samples were collected from within the former potting area of the D&H nursery, where signs of past nursery activity were evident. The samples were analyzed for TCL SVOCs, pesticides, herbicides, and arsenic. Arsenic was detected at 21.85 mg/kg, which exceeds the NYSDEC TAGM 4046 RCO.

2.1.4 Solid/Hazardous Waste Site OTH-3308

EBS Factor OTH-3308 is located on the south side of South Junction Road in an area of youthful tree growth approximately 800 feet west of the D&H Railroad tracks (Figure 5). It was the site of a Canberra B-57 jet aircraft crash that occurred in 1979. Scattered metal parts and charred trees were observed at the site. The metallic debris was partially melted by the heat of the fire resulting from the crash.

Surficial soil samples were collected and analyzed for TAL metals. Eleven (11) metals (aluminum, beryllium, cadmium, chromium, copper, magnesium, nickel, selenium, silver, thallium, and zinc) were identified at concentrations exceeding the NYSDEC TAGM 4046 RCOs. The URS report (May 2001) and risk assessment of these sample results indicated that cadmium and copper were the primary contaminants of concern.

2.1.5 Solid/Hazardous Waste Site OTH-2657

EBS Factor OTH-2657 is a maintenance and storage facility located behind the Central Heating Plant (Figure 6). The southern portion of the building is a storage area with a soil and gravel floor. In addition to maintenance and storage, this building was used as an asbestos removal shop. Equipment and hardware in the building, including the soil/gravel floor, were dirty and appeared to be stained. A built-up fill area, or "lobe," south of the building, gave evidence of buried waste and debris (e.g., metal, bricks, concrete block, asphalt, plastic, pallets, etc.).

Surficial soil samples were collected from the lobe and inside the storage area and analyzed for TCL VOCs and SVOCs, RCRA metals, and asbestos. Four (4) VOCs (acetone, tetrachloroethene, toluene, and o-xylene) were detected in two samples, but at concentrations below the NYSDEC TAGM 4046 RCOs. Six (6) SVOCs, primarily PAHs, (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, bis (2-ethylhexyl)phthalate, and chrysene) were detected at concentrations exceeding the NYSDEC TAGM 4046 RCOs. The RCRA metals cadmium, chromium, mercury, selenium, and silver were detected at concentrations that exceed the NYSDEC soil cleanup criteria. The highest concentrations of metals were observed in the earthen floor of Building 2657. With the exception of one outside sample, at least one RCRA metal in each sample exceeded the NYSDEC TAGM 4046 RCO. Asbestos was detected in three samples, both inside and outside Building 2657. The reported concentrations ranged from 2.0 to 6.3 percent asbestos-containing material (ACM), exceeding the 1 percent state regulatory criteria.

2.1.6 Petroleum Site SPL-428

Petroleum Site SPL-428 consists of the 170 linear feet of storm water surface drains and connecting catch basins associated with pole barn Building 428 located on the Old Base along

western side of Wisconsin Avenue (Figure 8). Two (2) separate spills were reported at this location on 6 December 1990 and 20 July 1992. Historical information suggests that the area was contaminated only by the release of petroleum products.

Sediment samples were collected from each catch basin and submitted for NYSDEC STARS Memo #1 VOC and SVOC analyses. Catch basin sediments also exhibited a fuel oil odor. The results of the analyses indicated that the sediments contained nine (9) VOCs at concentrations exceeding their respective NYSDEC STARS Memo #1 alternative guidance values. The compounds included were o-xylene, m,p-xylene, p-isopropyltoluene, n-propylbenzene, 1,2,4-trimethlybenzene, 1,3,5-trimethylbenzene, n-butylbenzene, sec-butylbenzene, and t-butylbenzene. No SVOCs exceeded the NYSDEC TAGM 4046 RCO.

2.1.7 PCB Site TF-2753

This EBS Factor is a transformer pad on the south side of Building 2753 (Figure 9). The building was formerly used as a general aircraft maintenance shop. The pad previously contained three (3) single-phase transformers; currently, the pad houses one active transformer. A tar-like residue material is present on the concrete pad beneath the transformer (Figure 10). A scrape sample of the tar-like residue was taken along with a three-point composite of the soil surrounding the concrete pad. Arocolor 1260 was detected in the tar-like (discrete) scrape sample at a concentration of 5,010 ug/kg, while Arocolor 1254 was detected in the composite soil sample at a concentration of 1,360 ug/kg. Because the composite included three distinct soil samples, the maximum potential PCB concentration in a single discrete sample is 4,080 ug/kg (i.e., 3.0 x 1,360 ug/kg), exceeding the 1,000 ug/kg NYSDEC TAGM 4046 RCO.

2.1.8 PCB Site TF-3250

Site TF-3250 is located east of the runway and on the west side of the flight line apron between markers Nos. 12 and 13 (Figure 11). The site consists of two (2) concrete pad risers surrounded by a chain-link fence. One pad formerly housed three (3) transformers and the other pad supports the active pot head. A four-point composite surface soil sample was collected from around the concrete pad, which contained Arocolor 1260 at a concentration of 897 ug/kg. Because the composite included four distinct soil samples, the maximum potential PCB concentration in a single discrete sample is 3,588 ug/kg (i.e., 4.0 x 897 ug/kg), exceeding the 1,000 ug/kg NYSDEC TAGM 4046 RCO

2.1.9 PCB Site TF-3584

Site TF-3584 is located on the west side of Building 3584 (Figure 12). The site consists of a concrete pad that previously housed three (3) single-phase transformers. A four-point composite soil sample was collected around the concrete pad and analyzed for PCBs. The sample contained Arocolor 1260 at a concentration of 21,800 ug/kg. Because the composite included four distinct soil samples, the maximum potential PCB concentration in a single discrete sample is 87,200 ug/kg (i.e., 4.0 x 21,800 ug/kg), exceeding the 1,000 ug/kg NYSDEC TAGM 4046 RCO.

3.0 PRE-CONSTRUCTION ACTIVITIES

Pre-construction activities will include coordinating Plattsburgh AFB operations impacted by the field activities and all tasks necessary to support the field operation tasks. These activities include mobilizing equipment and materials, arranging subcontracts, obtaining utility clearance permits, and preparation of equipment lay-down and soil stockpile staging areas. Responsibility for all work will be performed under the direct supervision and management of Versar.

3.1 Pre-Construction Meeting

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

Other than utility clearance permits, no other environmental permits are required.

3.2 Site Preparation

If required, site clearing and grubbing will be performed to remove surficial vegetation and trees from the proposed sampling and excavation areas, access roadway, and soil stockpile and waste staging areas. Gravel and stone may be added to the access roadway to provide a solid road base for heavy equipment and disposal dump trailers.

3.3 Security/Safety Mark-out of Working Areas

Temporary security fencing, made up of orange plastic roll fencing and/or barricades, will be used to identify active work areas during the field activities. Active work areas will also include soil stockpile areas and waste staging areas. The three (3) working zones (support, contamination reduction, and exclusion zone) will be established for each EBS Factor.

4.0 FIELD INVESTIGATION AND REMOVAL ACTIVITIES

4.1 Mobilization/Kick-Off Meeting

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

Other miscellaneous support equipment for the project includes: roll-off boxes, pickup trucks, port-a-john, pumps, 55-gallon drums, high-pressure water washer, acid solution, caustic soda, power saws, supply trailer, super-sacks and hand tools. Materials include rolls of Visqueen, tarps, silt fence, hay bales, safety fence, PPE level "C" facemask gear on standby, level "D" protective gear, PID, decontamination water, and miscellaneous 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" limits, waste loading area, soil stockpile/waste staging area, and site access. 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 and inclement weather (i.e., rain, heavy winds, etc.). Silt fences and/or hay bales will surround each stockpile. A decontamination pad will be set up for truck loading operations and for the handling of suspected hazardous waste.

Mobilization 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 responsibilities and reporting relationships, and points of contact, including 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 Field Work

Field activities are separated into two (2) distinct phases: an investigative phase and a removal phase. The level of effort at each EBS Factor varies as described in the following subsections. Site restoration activities will not be initiated until the post-excavation/confirmatory analytical results have been reviewed and approved by Plattsburgh AFB personnel and regulatory agencies.

4.2.1 STW-426-2

The basement sink drain in Building 426 to the sanitary manhole outside the building will be decontaminated (Figure 2). The procedure will consist of a drain line rotor-rooting/scraping of the pipe followed by an acid flushing operation. Prior to filling the pipe with dilute acid, the pipeline will be tested with water to insure the integrity of the line. A plumber's plug will be placed on the inlet side of the manhole and the pipe filled with water for a period of 2 hours. The water volume will be inspected for leakage. If the pipeline has been compromised, the regulatory agencies will be consulted as to an appropriate cleaning plan.

Using a sewer cleaning rotor-rooter unit, the drain line will be scraped to remove the sediment and scale from inside the pipe, which will be subsequently flushed to the draining manhole. A plumber's plug will be installed to prevent any sediment, scale, or wash-down water from exiting the manhole. The sediment, scale, and wastewater will be removed from the manhole and drummed. Another plumber's plug will then be placed on the inlet side of the manhole and dilute sulfuric acid pumped into the drain and allowed to sit in the line to dissolve any remaining scale. After 24 hours, the plug will be removed and the acid wash collected in the manhole and subsequently transferred to 55-gallon drums, neutralized with caustic soda, and characterized for disposal (TCLP-Lead). The drain line will be triple-washed with water. The wastewater will be collected from the manhole and placed in 55-gallon drums for lead analysis and disposal characterization. In addition, the structural integrity of the manhole will be inspected. If the concrete has been compromised, a soil sample adjacent to the manhole will be collected at the invert depth and analyzed for lead. The lead NYSDEC TAGM Recommended Cleanup Objective (Appendix A, Table 4, Column 5 and associated footnotes) is based upon native soil background level at the Plattsburgh AFB of 79.4 mg/kg (URS Consultants Inc., 1995 and table provided in Attachment A).

An equipment lay-down area will be prepared consisting of a Visqueen liner placed adjacent to the sink and surrounding the manhole. All necessary supplies including pumps, drums, chemicals, rotor-rooting unit, tubing, and miscellaneous equipment will be staged on the Visqueen during the decontamination activities.

Wastewater and sediment samples will be analyzed for lead according to EPA Method 6010B. Sampling and QA/QC protocols and procedures outlined in EPA SW 846 will be followed. TCLP-Lead analysis for wastewater and sediments will be performed according to EPA Method 1311. All analytical data will be Level 2 validated for baseline characterization.

A section of the removal activities/closure report will be prepared that documents the decontamination procedures, waste characterization data, and disposal of wastewater and sediments. The elements of the report are discussed in Section 9.2.2.

4.2.2 OTH-1700

Discussions between NYSDEC and the State Historic Preservation Office (SHPO) were held, in which SHPO expressed a preference that the existing on-site debris piles (Figure 3) should be capped to protect the archeological integrity of the site, rather than excavated. The SHPO will be informed of the planned remedial activities and given the opportunity to comment and oversee

the capping operation. All debris piles will be visually delineated using shovels to determine the limits. A New York State-licensed surveyor will survey the location of debris piles and prepare a map that identifies the coordinates of the piles. Because it is anticipated a nine (9) hole expansion will occur in this area, consultation between the golf course manager and the Air Force will be required to determine if one large cap or smaller individual caps will be constructed. The soil cap(s) will consist of an 18-inch bottom layer of clean soil and a 6-inch layer of topsoil. A motorized, hand-guided compactor will be used to compact the soil. To minimize disturbance of the wooded area, a bobcat front-end loader or backhoe will be used to transport the soil from the open golf course area into the woods. After the placement of topsoil, a vegetative cover will be established. Future real estate actions will be implemented in accordance with Section I, Paragraph B, Treatment of Archeological Site, of the Programmatic Agreement for PAFB, NY (September 2000).

A section of the removal activities/closure report will be prepared that documents the delineation of the debris piles and soil capping procedures. The elements of the report are discussed in Section 9.2.2.

4.2.3 OTH-3210-2

A sampling and analysis investigation of the area, as shown in Figure 4, will be performed to determine if soil contamination is widespread. Ten (10) discrete soil samples and one (1) duplicate sample will be collected from five (5) sample locations. A surface sample (0-6 inches) and a subsurface sample (6-18 inches) will be obtained at each location and analyzed for arsenic. A New York State-licensed surveyor will survey the location of each sampling point and prepare a map that identifies the respective sample locations.

All samples will be collected and analyzed for arsenic according to EPA Method 6010B. A frequency of one (1) QA/QC sample per ten (10) environmental samples will be implemented. Sampling and QA/QC protocols and procedures as outlined in EPA SW 846 will be followed. All analytical data will be Level 3 validated and a validation package prepared. Investigative sampling procedures and protocols are also discussed in Section 5.0, Investigative Sampling.

A section of the removal activities/closure report and analytical data package for OTH-3210-2 will be prepared that documents the findings, analytical results, and defines the extent of contamination. The elements of the closure report are discussed in Section 9.2.2.

4.2.4 OTH-3308

Versar will clear and grub the site to obtain vehicular access and visual inspection of the Debris Area. Due to the obvious metal debris contamination and its relatively small size, the Debris Area will be excavated to a depth of 24 inches and the material will be immediately loaded into roll-off containers for off-site disposal. Delineation samples for TAL metals will then be collected (Figure 5). Versar will collect 29 surface samples (0-6 inches) and 29 subsurface samples (6-18 inches) and six (6) duplicates on a 50 ft grid pattern across the entire Crash Site, excluding the Debris Area. The surface samples will be analyzed first, and if NYSDEC TAGM 4046 exceedences are identified in these samples, the corresponding subsurface sample will be

analyzed for the specific analyte(s) exceedence(s). Because of the initial soil removal within the Debris Area, Versar will only collect 12 delineation surface samples (0-6 inches) plus two (2) duplicates on a 25 ft grid pattern.

Versar will follow the sampling and QA/QC protocols and procedures outlined in EPA SW 846. EPA Method 6010B will be used for all metals analyses. Investigative sampling procedures and protocols are also discussed in Section 5.0, Investigative Sampling (Level 3 validation).
After the soil contamination has been delineated, a backhoe will excavate the exceedence locations to their respective depths (6-inches or 18-inches) and continue radially to a point midway between the adjacent sampling locations. The contaminated soil will be staged on Visqueen surrounded by hay bales. A tarp will cover the soil stockpile prior to load-out of the material into dump trailers.

Following removal of the impacted soils in the Crash Site and Debris Area, Versar will collect confirmation samples at the aforementioned metal(s) exceedence locations for the specific metal(s) that exceed the NYSDEC TAGM 4046 cleanup objectives. Regulatory agencies will be provided with preliminary analytical results for review and comment, prior to any additional excavation and/or sampling. Confirmation sampling procedures and protocols are discussed in Section 6.0, Post-Excavation/Confirmatory Sampling (Level 3 validation).

After consultation with Plattsburgh AFB and regulatory agency personnel regarding the sample results, it will be determined which location(s) need further excavation. If additional excavation is required, Versar will selectively excavate the impacted area (6-inches deep and midway between adjacent sampling locations) and re-sample the area. Versar will backfill the excavation area with certified clean fill from an off-base source and perform the necessary site restoration activities only after Plattsburgh AFB personnel and the regulatory agencies have reviewed and approved the confirmatory soil sample analytical data.

The excavated soil and debris stockpile will be sampled and analyzed for purposes of disposal characterization. Sampling and QA/QC protocols and procedures outlined in EPA SW 846 will be followed. TCLP analysis will be performed according to EPA Method 1311. This analytical data package will be Level 2 validated for baseline characterization. The final disposition location is discussed in Section 7.0, Waste Management.

A section of the removal activities/closure report and analytical data package will be prepared that documents the removal activities, analytical results, findings, waste characterization, and waste disposal. The elements of the report are discussed in Section 9.2.2.

4.2.5 OTH-2657

Asbestos, VOCs, SVOCs, and metals were identified in soil at Building 2657 and the C&D debris fill area, immediately south of the building. Versar will perform an initial delineation sampling event. A total of 25 surface soil samples at 0-6 inches depth and 25 subsurface samples at 6-18 inches depth and associated duplicates on a 20-ft. centers sampling grid (approximately 100 ft. by 100 ft. grid – See Figure 6). The surface samples will be analyzed first for asbestos, and if the sample contains in excess of 1 percent asbestos, the corresponding subsurface sample

will be analyzed. The sampling program will confirm and quantify the amount of asbestos-contaminated soil that requires off-site disposal.

Since the disposal requirements for asbestos contaminated soil are more stringent than the disposal requirements for VOCs, SVOCs and metal-contaminated soil, Versar plans to differentiate the contaminated soil types (i.e., ACM-contaminated soils and VOC/SVOC/metals-contaminated soil). After the surface samples have been evaluated and grid areas containing more than one (1) percent asbestos have been identified, Versar will perform an VOC/SVOC/TAL metals sampling event at each previous surface (0-6 inches) and subsurface (6-18 inches) sample locations that demonstrated asbestos levels less than one (1) percent. The surface samples will be analyzed first for VOC/SVOC/TAL metals, and if the surface sample has analyte(s) exceedence(s), then the corresponding subsurface sample will be analyzed for the specific analytes.; thereby, identifying the grids and depths (0-6 inches and 6-18 inches) that contain VOC/SVOC/metals-contaminated soils.

All samples will be collected and analyzed for asbestos according to EPA Region I PLM proprietary method for asbestos analysis in soil, sludges, and sediments (1994). Samples collected and analyzed for VOCs, SVOCs and TAL metals will be quantified according to EPA Methods 8260B, 8270C and 6010B, respectively. A sample frequency of one (1) QA/QC sample per ten (10) environmental samples will be implemented. Sampling and QA/QC protocols and procedures outlined in EPA SW 846 will be followed. All analytical data will be Level 2 validated for baseline characterization of the soil.

After the asbestos- and VOC/SVOC/metals-contaminated soil has been quantified, Versar will mobilize excavation equipment to the site. Surface soils that contain greater than one (1) percent asbestos will be selectively excavated and placed into 1-cubic yard (cy) super-sacks for off-site disposal. Surface and subsurface soils that contain less than one (1) percent asbestos but have VOC/SVOC/metal analytes that exceed the NYSDEC TAGM 4046 RCOs will be staged in a separate contaminated soil stockpiles for possible off-site disposal. All clean soils will be staged in a clean soil stockpile. After the top 6-inches of soil has been removed, the soil below 6-inches at those sampling grids that showed asbestos levels above one (1) percent will be excavated to a depth of 18 inches and bagged/sacked for off-site disposal. At all times during all excavation activities, the impacted areas will be wetted to minimize airborne dust, particulates, and associated asbestos. Subsequently, the VOC/SVOC/metals-contaminated subsurface soil grids will be removed and staged followed by the clean soil grids. If any debris is encountered, it will be manually removed and staged accordingly.

Dust controls, i.e. wetting of soil, will be implemented at all times during excavation and screening activities. A particulate or dust monitor (i.e., Mini-RAM) will also be employed during excavation and screening operations. If the reported levels of particulates are greater than one (1) mg per cubic meter, field personnel will upgrade respiratory protection (dust masks, half-face mask, etc.)

After the asbestos- and VOC/SVOC/metals-contaminated soil grids have been selectively removed and staged, the lobe or fill area will be processed using a power shaker screen. Once screened, the separated material will be segregated and placed into distinct piles or containers according to the nature of the material. Lobe material will be separated as follows:

- Soil piles (50-75 cy) - staged for analytical testing and classification as "clean fill" suitable for unrestricted use or non-hazardous contaminated soil;

- Concrete, bricks, and asphalt;

- Metals - staged for recycling;

- Wood - staged for off-site disposal; and

- Miscellaneous C&D Debris.

The power screen will be placed within the excavation area and the processed soil will be staged in 50-75 cy stockpiles on Visqueen in the Central Heating Plant parking area. Large bulk material within the fill area 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. The staged soil piles will be subsequently sampled and analyzed to characterize the material as clean fill suitable for unrestricted use or non-hazardous contaminated soil.

Soil stockpiles will be tested for VOCs, SVOCs and TAL metals using EPA Methods 8260B, 8270C and 6010B, respectively and Level 2 validated and for asbestos. A grab sample will be collected. If the results show that no analyte concentrations of VOCs, SVOCs or metals exceed the NYSDEC TAGM 4046 RCOs and the asbestos level is less than 1 percent, then the material will be classified as clean fill suitable for unrestricted use or backfill. However, if any analyte exceeds the NYSDEC TAGM 4046 guidelines, the soil will be classified as contaminated and may require off-site disposal.

The extent of the excavation is estimated to be approximately 900 cy with the fill area determined by the interface of the native soil with the "lobe" or fill material. The limits of the excavation will be considered satisfied if the following criteria are achieved:

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 five (5) ppm; and
4. Post-excavation/confirmatory samples for VOCs/SVOCs/TAL metals and asbestos of the bottom and sidewalls of the excavation are below the NYSDEC TAGM 4046 RCOs.

Twenty (20) post-excavation confirmation soil samples and two (2) QA/QC samples for asbestos, VOCs, SVOCs, and TAL metals will be collected from the bottom and sidewalls of the excavation prior to backfilling with clean soil/gravel. Confirmation sampling procedures and protocols are also discussed in Section 6.0, Post-Excavation/Confirmatory Sampling (Level 3 validation).

The soil floor within the building also contains asbestos, VOCs and SVOCs at levels above regulatory guidelines. The top 6-inches of soil will be removed (approximately 42 cy). Prior to backfilling with clean soil/gravel, nine (9) post-excavation confirmation samples and one (1)

QA/QC sample will be collected to confirm that the asbestos has been removed to levels below one (1) percent, VOCs, SVOCs, and TAL metals are below regulatory agency cleanup levels. Confirmation sampling procedures and protocols are also discussed in Section 6.0, Post-Excavation/Confirmatory Sampling (Level 3 validation).

After consultation with Plattsburgh AFB and regulatory agency personnel regarding the confirmation sample results, it will be determined which location(s) need further excavation. Regulatory agencies will be provided with preliminary analytical results for review and comment, prior to any additional excavation and/or sampling. If additional excavation is required, Versar will selectively excavate the impacted area (6-inches deep and midway between adjacent sampling locations) and re-sample the areas. Versar will backfill the excavation areas both outside and within the building with gravel and stone after Plattsburgh AFB personnel and the regulatory agencies have reviewed and approved the confirmatory soil sample analytical data. If excavation is required into the saturated soil, regulatory agencies will be consulted prior to any further actions.

The proposed New York State disposal facility will not allow the bulk disposal of asbestos-contaminated material; it must be individually wrapped in small sealed quantities. Therefore, Versar will package the material into super-sacks, which will be sealed in plastic. The super-sacks will be staged on Visqueen in the adjacent parking lot, covered with tarps, awaiting transportation to the Waste Management, Inc. High Acres Landfill in Rochester, NY.

Volatile organic compounds (VOCs) were also identified in the groundwater in the vicinity of Building 2657. Versar will sample five (5) of the existing wells in the area for TCL VOCs. In addition, a new shallow groundwater-monitoring well (15 ft. deep with a 10 ft. screen) will be installed, developed, and sampled for TCL VOCs. The tentative location was previously determined by URS (See Figure 7). A total of six (6) groundwater samples, one (1) duplicate, one (1) field blank, one (1) trip blank, and one (1) matrix spike/duplicate spike (MS/DS) sample will be collected and analyzed by EPA Method 8260B. As suggested by NYSDEC, the sampling locations include two upgradient wells (MW 31-001 and MW 2657-1) and four downgradient wells (MW 10-001, MW2657-3, MW2657-2 and MW 31-004). Versar will follow the sampling and QA/QC protocols and procedures outlined in EPA SW 846. All analytical data will be Level 3 validated and a validation package prepared. Investigative sampling procedures and protocols are also summarized in Section 5.0, Investigative Sampling.

A section of the removal activities/closure report and analytical data package will be prepared that documents the cleanup activities, analytical results, findings, waste characterization, and waste disposal. The elements of the report are discussed in Section 9.2.2.

4.2.6 SPL-428

The VOC-contaminated sediments in 170 feet of surface collection drains and two (2) catch basins along the west and south sides of Building 428 (Figure 8) will be removed. The contamination was reported to be the result of two (2) spills, a diesel fuel spill and a non-PCB hydraulic fluid spill. Versar will begin with the manual removal of the bolted-down grates on the surface drains and will plug the outlet from the drainage pipe, followed by pressure washing and removal of all sediments. The pressure water-wash will force all sediments and wastewater

into the catch basins. The sediment and decontamination water will be removed from each catch basin and placed into 55-gallon drums. Visual inspection by Versar and Plattsburgh AFB personnel of the surface drain and catch basins for the absence of sediment will be the evaluation criteria used to determine if the area has been adequately cleaned. If residuals are present in the storm water drainage system, the pressure washing procedure will be repeated in the impacted areas. The grates will be re-bolted in-place upon completion of the cleanup activities.

An equipment lay-down area will be prepared consisting of a Visqueen liner placed adjacent to each catch basin. All necessary supplies including suction pumps, drums, hand tools, pressure washer, and miscellaneous equipment, will be staged on the Visqueen during the decontamination activities.

The drummed sediment and wastewater will be sampled and analyzed for TCLP and RCRA characteristics for disposal characterization. Sampling and QA/QC protocols and procedures outlined in EPA SW 846 will be followed. TCLP analysis for wastewater and sediments will be performed using EPA Method 1311. This analytical data will be Level 2 validated for disposal characterization. The final disposition location is discussed in Section 7.0, Waste Management.

In addition, the soils adjacent to the northern catch basin will be sampled and analyzed. URS, in their EBS Factors report, noted that the integrity of the basin was compromised (i.e., cracks in the concrete). Versar will screen the soil around the catch basin using a PID headspace analysis. Two samples will be collected from the areas that show the highest PID readings and analyzed for VOCs (EPA Method 8260B), SVOCs (EPA Method 8270C), PCBs (EPA Method 8082A) and RCRA metals (EPA Method 6010B). Soil screening and sampling will be performed to a depth at least equivalent to the invert elevation. A VOC field blank, and trip blank, will be taken. Sampling and QA/QC protocols and procedures as outlined in EPA SW 846 will be followed. All analytical data will be Level 3 validated and a validation package will be prepared.

A summary report and analytical data package for SPL-428 cleanup action will be prepared that documents the cleanup activities, analytical results, findings, waste characterization, and waste disposal. The elements of the report are discussed in Section 9.2.2.

4.2.7 TF-2753

Prior to any sampling, the remediation activities at EBS Factor OTH-TF-2753 will begin with the decontamination of the tar-like material on the concrete pad where an operating transformer sits (Figure 10). Plattsburgh AFB personnel will make arrangements to temporarily relocate the transformer to facilitate access to the concrete pad and tar-like material. Versar will remove as much of the tar-like material as possible using hand tools (i.e., scrapers, chisels, and wire brushes) followed by the use of a turpentine-based solvent. The pieces of residue, concrete chips and solvent-based turpentine/water solution will be drummed along with all generated rinse water used to decontaminate the concrete pad.

An equipment lay-down area will be prepared consisting of a Visqueen liner placed around the concrete pad. All necessary supplies, including hand tools, drums, chemicals, suction/vacuum

pumps, sponges, spill pads, wipes, and miscellaneous equipment, will be staged on the Visqueen during the decontamination activities.

After the tar-like residue has been addressed, the contaminated soil immediately surrounding the transformer concrete pad will be removed. Versar will use a backhoe and hand tools to excavate the existing soil in a 2-ft. wide strip around the perimeter of the concrete pad to a depth of 12-inches. The contaminated soil will be staged on Visqueen, tarped, and surrounded by hay bales in an area immediately adjacent to the pad. Immunoassay PCB screening tests of the soil within the excavation (bottom and sidewalls) and the surrounding surface soils will be taken (initially 12 test samples) to determine if the PCB soil concentrations are below the 1.0 mg/kg NYSDEC TAGM 4046 Cleanup Level for surface soils.

If the initial PCB screening shows NYSDEC TAGM sample exceedences of greater than 1 mg/kg PCBs, additional soils will be removed from the noted area (approximately 6 inches deep, 2 ft. wide and 4 ft. long for bottom and surrounding soils and 6 inches deep and 6 ft. long for sidewall soils) and the soil subsequently retested with the PCB immunoassay kit. The procedure will be repeated and as many screening samples collected as necessary, until PCB results are below the action levels. When screening results indicate PCB levels are below the action level, confirmation soil samples will be collected at the limits of the excavations (See Figure 9) and analyzed in accordance with EPA Method 8082A. A total of four (4) 4-point soil composite samples and one discrete sample from beneath the pad where the concrete has been compromised are planned. Regulatory agencies will be provided with preliminary analytical results for review and comment, prior to any additional excavation and/or sampling. After consultation with Plattsburgh AFB and regulatory agency personnel regarding the confirmation sample results, it will be determined which location(s) need further excavation. If additional excavation is required, Versar will selectively excavate the impacted area and re-sample the areas. Confirmation sampling procedures and protocols are discussed in Section 6.0, Post-Excavation/Confirmatory Sampling (Level 3 Validation).

The PCB-contaminated soil stockpile will be characterized for PCB content and TCLP to determine if the material is subject to TSCA and/or RCRA regulations, which may govern the ultimate disposal site for the contaminated soil (i.e., permitted TSCA/RCRA landfill or a permitted solid waste landfill). Soil stockpile characterization samples will be collected and analyzed in accordance with EPA Method 8082A and Level 2 validated. The stockpiled soil will be loaded into a roll-off container and transported off-site. The final disposition location is discussed in Section 7.0, Waste Management.

Versar will proceed with the backfilling of the excavation area and perform the necessary site restoration activities only after Plattsburgh AFB personnel and the regulatory agencies have reviewed and approved the confirmatory soil sample analytical data.

A section of the final removal action/closure report will be prepared that documents the decontamination/remediation procedures, findings, analytical results, waste characterization data, and disposal of drummed liquids and bulk soils. The elements of the report are discussed in Section 9.2.2.

4.2.8 TF-3250

Before excavation activities can begin, the fencing will be disassembled to facilitate equipment access to the contaminated material. Prior to any sampling, Versar will excavate the soil in a 2-foot wide strip around the pad to a depth of 12-inches. The contaminated soil will be staged on Visqueen, tarped, and surrounded by hay bales in an area immediately adjacent to the pad. Immunoassay PCB screening tests of the soil within the excavation (bottom and sidewalls) and the surrounding surface soil will be conducted (initially 12 test samples) to determine if the PCB soil concentrations are below the 1.0 mg/kg NYSDEC TAGM 4046 Cleanup criteria for surface.

If the initial PCB screening shows NYSDEC TAGM sample exceedences of greater than 1 mg/kg PCBs, additional soils will be removed from the noted area (approximately 6 inches deep, 2 ft. wide and 4 ft. long for bottom and surrounding soils and 6 inches deep and 6 ft. long for sidewall soils) and the soil subsequently retested with the PCB immunoassay kit. The procedure will be repeated and as many screening samples collected as necessary, until PCB results are below the action levels. When screening results indicate PCB levels are below the action level, confirmation soil samples will be collected at the limits of the excavation (See Figure 11) and analyzed in accordance with EPA Method 8082A. A total of five (5) 4-point composite samples are planned. Regulatory agencies will be provided with preliminary analytical results for review and comment, prior to any additional excavation and/or sampling. After consultation with Plattsburgh AFB and regulatory agency personnel regarding the confirmation sample results, it will be determined which location(s) need further excavation. If additional excavation is required, Versar will selectively excavate the impacted area and re-sample the areas. Confirmation sampling procedures and protocols are discussed in Section 6.0, Post-Excavation/Confirmatory Sampling (Level 3 Validation).

The PCB-contaminated soil stockpile will be characterized for PCB content and TCLP to determine if the material is subject to TSCA and/or RCRA regulations, which govern the ultimate disposal site for the contaminated soil (i.e., permitted TSCA/RCRA landfill or a permitted solid waste landfill). Soil stockpile characterization samples will be collected and analyzed in accordance with EPA Method 8082A and Level 2 validated. The stockpiled soil will be loaded into a roll-off container and transported off-site. The final disposition location is discussed in Section 7.0, Waste Management.

Versar will proceed with the backfilling of the excavation area and perform the necessary site restoration activities only after Plattsburgh AFB personnel and the regulatory agencies have reviewed and approved the confirmatory soil sample analytical data.

A section of the final removal action/closure report will be prepared that documents the decontamination/remediation procedures, findings, analytical results, waste characterization data and disposal of soils. The elements of the report are discussed in Section 9.2.2.

4.2.9 TF-3584

Prior to any sampling, the former transformer concrete pad and surrounding soil will be removed from the west side of Building 3584. Versar will remove the abandoned concrete pad (approximately 20 cubic feet) and then excavate the soil in a 4-ft. wide strip around this pad to a depth of 12-inches. The contaminated soil will be staged on Visqueen surrounded by hay bales in an area immediately adjacent to the pad. A tarp will also cover the soil stockpile.

Immunoassay PCB screening tests of the soil within the excavation (bottom and sidewalls) and the surrounding surface soil will be collected (initially 12 test samples) to determine if the PCB soil concentrations are below the 1.0 mg/kg NYSDEC TAGM 4046 Cleanup Level for surface soils.

If the initial PCB screening shows NYSDEC TAGM sample exceedences of greater than 1 mg/kg PCBs, additional soils will be removed from the noted area (approximately 6 inches deep, 4 ft. wide and 4 ft. long for bottom and surrounding soils and 6 inches deep and 6 ft. long for sidewall soils) and the soil subsequently retested with the PCB immunoassay kit. The procedure will be repeated and as many screening samples collected as necessary, until PCB results are below the action levels. When screening results indicate PCB levels are below the action level, confirmation soil samples will be collected at the limits of the excavations (See Figure 12) and analyzed in accordance with EPA Method 8082A. A total of three (3) 4-point composite samples are planned. Regulatory agencies will be provided with preliminary analytical results for review and comment, prior to any additional excavation and/or sampling. After consultation with Plattsburgh AFB and regulatory agency personnel regarding the confirmation sample results, it will be determined which location(s) need further excavation. If additional excavation is required, Versar will selectively excavate the impacted area and re-sample the areas. Confirmation sampling procedures and protocols are discussed in Section 6.0, Post-Excavation/Confirmatory Sampling (Level 3 Validation).

The PCB-contaminated soil stockpile and concrete pad (chip) will be characterized for PCB content and TCLP to determine if the material is subject to TSCA and/or RCRA regulations, which may govern the ultimate disposal site for the contaminated soil (i.e., permitted TSCA/RCRA landfill or a permitted solid waste landfill). A hammer and chisel will be used to collect the concrete chips (minimum 100 grams), which will be ground and homogenized at the laboratory into a single sample. Soil stockpile and concrete characterization samples will be collected and analyzed in accordance with EPA Method 8082A and Level 2 validated The stockpiled soil and concrete will be loaded into a roll-off container and transported off-site. The final disposition location is discussed in Section 7.0, Waste Management.

Versar will proceed with the backfilling of the excavation area and perform the necessary site restoration activities only after Plattsburgh AFB personnel and the regulatory agencies have reviewed and approved the confirmatory soil sample analytical data.

A section of the final removal action/closure report will be prepared that documents the decontamination/remediation procedures, findings, analytical results, waste characterization data and disposal of soils. These elements of the report are discussed in Section 9.2.2.

4.3 Personnel Protective Equipment/Site Safety

Given the low concentrations 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. Particulate air monitoring will also be performed at the OTH-2657 where asbestos has been identified. Daily safety meetings prior to the start of work will also be conducted. 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 waste containers will also be covered with tarps or Visqueen during non-operating hours.

4.4 Decontamination Procedures

Decontamination procedures for site equipment will be implemented in conjunction with daily maintenance procedures. This will occur a minimum of once each day at the end of field activities. The equipment subject to decon includes the excavator, backhoe, loader, power shaker-screen, sampling equipment, power washer, rotor-rooting unit, and miscellaneous hand and power tools. However, if an area of potential contamination is encountered, as measured by the PID, olfactory sensing of strong odors, and/or visual inspection of stained/discolored 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 (e.g., crash site, asbestos site).

Decontamination procedures and respective locations differ at each site. The following table provides a summary of decontamination procedures and their approximate on-site locations.

DECONTAMINATION PROCEDURES AND APPROXIMATE LOCATIONS

Site	Procedure/Method	Location
STW-426-2	Water wash for cleaning and sampling equipment atop of Visqueen pad surrounding downgradient manhole.	Surrounding manhole (See Figure 2).
OTH-1700	Not Applicable	Not Applicable
OTH-3210-2	Water wash of sampling equipment atop a Visqueen pad.	Adjacent to proposed southern soil sampling point shown in Figure 4.
OTH-3308	Water wash for excavation and sampling equipment atop of Visqueen/clean fill pad with Visqueen wrapped around a PVC pipe border.	South of So. Junction Road and drainage ditch and north of subject debris area at point of site access/egress (See Figure 5).
OTH-2657	Water wash for excavation and sampling equipment atop of Visqueen/clean fill pad with Visqueen wrapped around a PVC pipe border.	Between Building 2657 and the Hazardous Material Storage Shed at the edge of the paved asphalt paved parking area (See Figure 6).
SPL-428	Water wash for decontamination of cleaning and sampling equipment atop of Visqueen pad surrounding the northern catch basin.	Surrounding the northern catch basin (See Figure 8).
TF-2753	Water wash for decontamination of cleaning, excavation, and sampling equipment atop a Visqueen pads (2).	1. Surrounding the concrete pad covered with absorbent pads, as needed. 2. Visqueen pad surrounded by hay bales adjacent to soil excavation area below loading dock (See Figure 9).
TF-3250	Water wash for excavation and sampling equipment atop a Visqueen pad	Visqueen pad surrounded by hay bales adjacent to soil excavation area – southeast corner (See Figure 11).
TF-3584	Water wash for excavation and sampling equipment atop a Visqueen pad	Visqueen pad surrounded by hay bales adjacent to soil excavation area – atop asphalt pavement (See Figure 12).

4.5 Loading of Waste Transfer Vehicles for Off-site Disposal

All staged stockpiled material, including super-sacks, designated for off-site disposal will be loaded into roll-off containers and/or tandem dump trucks using a front-end loader or backhoe. Material staged in 55-gallon drums will be loaded into enclosed trailers via a vehicle hoist. Loading will be an ongoing but periodic activity subject to vehicular availability and disposal facility waste profile approvals. The final disposition location and the various types of waste material anticipated are discussed in Section 7.0, Waste Management.

4.6 Restoration

The site restoration tasks, where applicable, consist of the backfilling and compaction of imported clean soil and stone, and grading of all areas to promote positive drainage, and for select sites, the application of seed and mulched hay. The source of imported fill material will also be sampled and tested to ensure that it is clean unless analytical data is available.

4.7 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, PPE, and any miscellaneous solid waste generated by site personnel during field activities. In addition, any damages to roads and utilities will be repaired.

4.8 Closure Report

Upon completion of the investigative sampling activities, cleanup, excavation, post-excavation/confirmation sampling, backfill, and disposal activities, Versar will prepare one (1) Closure Report encompassing all nine (9) EBS Factors. The elements of the closure report are discussed in Section 9.2.2.

5.0 INVESTIGATIVE SAMPLING

Discrete samples will be collected and analyzed at applicable EBS Factors for compounds of concern to determine the extent of contamination before removal activities are initiated. The proposed frequency of sampling varies for each EBS Factor. The projected number of samples and specific analyses by location are as follows:

INVESTIGATIVE SAMPLING AND ANALYTICAL PLAN AT EBS FACTORS					
Location	No. of Samples	QA/QC Duplicates	Matrix	Type	Analyses
Hazardous Waste Sites					
STW-426	N/A[1]	--	Soil	Discrete	Pb
OTH-1700	N/A	--	--	--	--
OTH-3210-2	10	1	Soil	Discrete	As
OTH-3308 0-6-inches	41	5	--	--	TAL metals
6-18-inches	29	3			Metal(s) Specific
OTH-2567 0-6-inches	25	3	Soil	Discrete	Asbestos, VOCs
6-18-inches	25	3	Soil	Discrete	SVOCs/TAL metals
	6	1	Water	Discrete	VOCs
Petroleum					
SPL-428	2	0	Soil	Discrete	VOCs, SVOCs, PCBs, RCRA metals
PCB Sites					
TF-2753	12[2]	2	Soil	Discrete	PCBs
TF-3250	12[2]	2	Soil	Discrete	PCBs
TF-3584	12[2]	2	Soil	Discrete	PCBs

(1) N/A: Not applicable unless the structural integrity of the concrete structure has been compromised.
(2) PCB Immunoassay test kit will be employed to screen soil samples to determine if the PCB concentrations exceed 1.0 mg/kg for surface soils. Only represents the initial number samples.

The investigative samples, along with the duplicate and QA/QC samples, will be submitted with Versar's Chain-of-Custody to a New York State-certified laboratory, Kemron Environmental Services, Inc., and analyzed for PCBs, VOCs, SVOCs, and metals by EPA Methods 8082A, 8260B, 8270C, and 6010B, respectively. Asbestos will be quantified by EPA Region I PLM proprietary method for asbestos analysis in soil, sludges, and sediments (1994), while PCBs will also be quantified in the field using an immunoassay test kit. A QA/QC sample frequency of one (1) QA/QC sample per ten (10) environmental samples will be implemented. Sampling and QA/QC protocols and procedures as outlined in EPA SW 846 will be followed. All analytical data will be Level 3 validated, with the exception of the STW-426, all PCB sites and Asbestos, SVOCs and metals at OTH-2657.

6.0 POST-EXCAVATION/CONFIRMATORY SAMPLING

The bottom and sidewalls of each excavation area at applicable EBS Factors will be sampled for compounds of concerns following removal of the contaminated soil material, associated debris and any native soil that appears to be contaminated (e.g., oil stained, discolored, and/or odors). The proposed frequency of sampling varies for each EBS Factor. The projected number of samples and specific analyses per location are as follows:

POST-EXCAVATION/CONFIRMATORY SAMPLING AND ANALYTICAL PLAN AT EBS FACTORS

Location	No. of Samples	QA/QC Duplicates	Matrix	Type	Analyses
Hazardous Waste Sites					
STW-426	N/A	--	--	--	--
OTH-1700	N/A	--	--	--	--
OTH-3210-2	N/A	--	--	--	--
OTH-3308 Post-Excavation	9 (est.)	1	Soil	Discrete	Metal(s) Specific
OTH-2567	29 (est.)	3	Soil	Discrete	Asbestos, VOCs SVOCs/TAL metals
Petroleum					
SPL-428	N/A	--	--	--	--
PCB Sites					
TF-2753	4[1]	0	Soil	Composite	PCBs
	1[2]	0	Soil	Discrete	PCBs
TF-3250	5[1]	0	Soil	Composite	PCBs
TF-3584	3[1]	0	Soil	Composite	PCBs

N/A: Not applicable

(1) 4-point composite from the bottom of the excavation, 4-point composite from the outer sidewalls of the excavation, 4-point composite of inner sidewalls beneath concrete pad (if applicable), and 4-point composite surface sample from each side of the excavation approximately five feet from the edge of the excavation.

(2) Core sample through transformer pad at crack in concrete.

Note: Versar will consult with Plattsburgh AFB personnel and the regulatory agencies prior to finalizing the actual number of post-excavation samples to be taken at OTH-3308 and OTH-2567.

The confirmatory samples, along with the duplicate and QA/QC samples, will be submitted with Versar's Chain-of-Custody to a New York State-certified laboratory, Kemron Environmental Services, Inc., and analyzed for PCBs, SVOCs, VOCs or metals by EPA Methods 8082A, 8270C, 8260B and 6010B, respectively. In addition, the PCBs analysis will include an initial calibration of the laboratory equipment for AR1268. A sample frequency of one (1) QA/QC sample per ten (10) environmental samples will be implemented. Sampling and QA/QC protocols and procedures outlined in EPA SW 846 will be followed. All analytical data will be Level 3 validated, with the exception of asbestos analysis.

The subcontracted analytical laboratory will provide preliminary results within a 72-hour turnaround time. If any of the results indicate that the concentrations of PCBs, SVOCs, metal analytes, and/or asbestos exceed the NYSDEC TAGM 4046 RCOs, Versar will notify Plattsburgh AFB personnel and perform additional excavation in the impacted area. The excavation procedure provided in Section 4.2 for the respective EBS Factor will be employed to remove the contaminated soil.

7.0 WASTE MANAGEMENT

Several waste management activities are anticipated during the field activities at each EBS Factor, including characterization, containment, staging, and off-site disposal of the following materials:

- Concrete, Asphalt and Bricks,
- Metals,
- Miscellaneous C&D debris,
- 55-gallon drums of non-hazardous waste liquid, solids, and sediment,
- 55-gallon drums of hazardous waste liquid, solids, and sediment,
- Non-hazardous, non-TSCA regulated contaminated soil,
- TSCA/RCRA regulated soils
- Super-sacked asbestos, and
- Personal protective equipment and other incidentally contaminated materials.

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

All concrete, asphalt, and brick is 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 (e.g., 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 TAGM SW-89-2002, *Construction and Demolition Debris* (December 1989), will also be deposited in the aforementioned county landfill.

Non-hazardous bulk soils with metals, SVOCs, and/or PCBs (non-TSCA regulated) above NYSDEC TAGM 4046 RCOs will be transported off-site and disposed at the High Acres Solid Waste Landfill in Rochester, NY, owned and operated by Waste Management, Inc. Waste Management, Inc. will also provide the necessary transportation.

Soils that fail the EPA Toxic Characteristics Leachate Procedure (TCLP) are considered a characteristic hazardous waste, and/or soils that are found to be TCSA regulated (PCBs greater than 50 mg/kg) 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 concentration

of contaminants indicated by the TCLP, the waste material may require additional stabilization at the facility prior to deposition into the landfill.

All ACM soil identified will be properly wetted, packaged into one cubic yard super-sacks and sent to the High Acres Solid Waste Landfill in Rochester, NY, owned and operated by Waste Management, Inc. Waste Management, Inc. will also provide the necessary transportation.

Used Personal Protection Equipment (PPE) will be transported to a solid waste landfill. All drummed waste material will transported and processed at the Waste Management, Inc. Chemical Waste Services, Inc. TSDF in Model City, NY. Waste Management, Inc. will also provide the necessary transportation.

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 appropriately trained as required by the Department of Transportation and EPA.

8.0 AIR MONITORING

VOCs and/or PAHs were found at low concentrations at several EBS Factors sites. Consequently, air monitoring using a PID in the breathing zone to protect the health and safety of site workers during field activities will be employed. A hand-held PID will be utilized to monitor air for organic vapors during field activities. A field technician will monitor the PID readings near the active work areas. PID readings will be taken and recorded several times over the course of the day.

In addition, air monitoring for dust, particulates, and associated asbestos using a real-time readout, a Mini-RAM will be employed during excavation and soil screening activities at EBS Factor OTH-2657. If the reported levels of particulates are greater than 1 mg per cubic meter, workers will upgrade their respiratory protection (e.g., filter mask, half-face mask, etc.).

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 sample results, sample tracking, and custody; QA/QC submittals and technical guidance to on-site personnel; report preparation; cost management; and schedule control.

The Contractor's Representative (COR) for this project is Mr. Roy Willis, P.E., AFCEE/ERB Brooks AFB, TX. The Project Manager is Dave Farnsworth, AFBCA, Plattsburgh, NY. The Field Engineer is Joseph Szot, AFCEE/DAE, Plattsburgh, NY. The project organization chart is included as Figure 13.

9.2 Project Controls

9.2.1 Record-keeping

Project records and documents will be logged through Versar's project document control center in the 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.,
- Safety and health records, and incident reports,
- Survey records of investigative sample points and new monitoring well locations,
- 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 backfill gravel and stone (e.g., number of truck loads and associated weight slips),
- Telephone logs,
- QA/QC records, and
- Monthly status summary reports.

9.2.2 Reporting

Following completion of all field activities, a final draft closure report will be prepared and submitted to the Air Force for review and comment. The report will address the applicable closure or proposed future actions for the nine (9) EBS Factors sites. A separate section or chapter of the report will be devoted to each EBS Factor. The report will briefly summarize field activities at each site, but will focus primarily on the quantity of waste material removed, associated contamination, and the post-excavation/confirmatory sampling of the limits of the excavation to demonstrate that the adjacent and underlying soil constituent concentrations are below the NYSDEC guidelines, as applicable. Exceptions are the investigative EBS Factors, where only soil samples are collected. The closure report will include discussion of the following:

- Narrative of field activities, including a photographic log;
- Summary of analytical results (stockpiled soil analysis, post-excavation sampling, and disposal analysis requirements);
- Surveyed sample locations at EBS Factors for all investigative samples points;
- QC data collected during field activities;
- Copies of bills of lading for the loads of gravel, backfill, and stone;
- Clean backfill soil certification, analytical data, and origin of backfill;
- Weight tickets or log of loads for off-site disposal of C&D material (asphalt, concrete, recyclables, wood, miscellaneous debris);
- Copies of the laboratory analytical reports, data validation packages and field logs;
- Disposal manifests or bills of lading (contaminated soils, asbestos, and construction debris), and;
- Report of findings, conclusions and recommendations, specifically for the investigation of OTH-3210-2.

The report will be submitted in Draft, Draft Final, and Final versions, with response to comments provided that address 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.

9.3 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*.

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.

URS Consultants, Inc. May *2001. Final Supplemental Evaluation to the Environmental Baseline Survey Report,* United States Department of the Air Force, Plattsburgh Air Force Base, Plattsburgh, New York, Buffalo, NY.

URS Consultants Inc., 1995. *Background Surface Soil & Groundwater Survey for the Plattsburgh AFB*, United States Department of the Air Force, Plattsburgh Air Force Base, Plattsburgh, New York, Buffalo, NY.

United States Air Force. (USAF), Air Force Center for Environmental Excellence (AFCEE), Environmental Restoration Division. April 5, 2001. Statement of Work. Close Miscellaneous EBS Factors- Solid/Hazardous Waste Site (Project THWA 2001-6001), Petroleum Site (THWA 2001-6002) and PCB Sites (THWA 2001-6003) at Plattsburgh Air Force Base, New York. Project Numbers THWA2000-6001; Contract No. F41624-97-D-8011; Delivery Order: 0030.

United State Environmental Protection Agency (USEPA). 1988, updated 2000. *Test Methods for Evaluating Hazardous Materials and Solid Waste*, SW 846, 3rd revision, Washington, D.C.

ATTACHMENT A

SOIL RECOMMENDED CLEANUP OBJECTIVE FOR TAL METALS

SOIL RECOMMENDED CLEANUP OBJECTIVES

TAL METALS

TAL METAL ANALYTE	NYSDEC CLEANUP OBJECTIVE OR BACKGROUND LEVEL (MG/KG)*
Silver, Total	N/A
Aluminum, Total	30,200
Arsenic, Total	7.5
Barium, Total	300 (TAGM)
Beryllium, Total	1.3
Calcium, Total	30,200
Cadmium, Total	1.3
Cobalt, Total	9.2
Chromium, Total	19.5
Copper, Total	44.1
Iron, Total	36,700
Mercury, Total	0.65
Potassium, Total	929
Magnesium, Total	3340
Manganese, Total	474
Sodium, Total	520
Nickel, Total	12.6
Lead, Total	79.4
Antimony, Total	12.6
Selenium, Total	2.0 (TAGM)
Thallium, Total	N/A
Vanadium, Total	90.2
Zinc, Total	63.4

*** URS Consultants Inc., 1995. Background Surface Soil & Groundwater Survey for the Plattsburgh AFB, except for barium and selenium (NYSDEC TAGM 4046 Appendix A, Table 4, Column 5).**

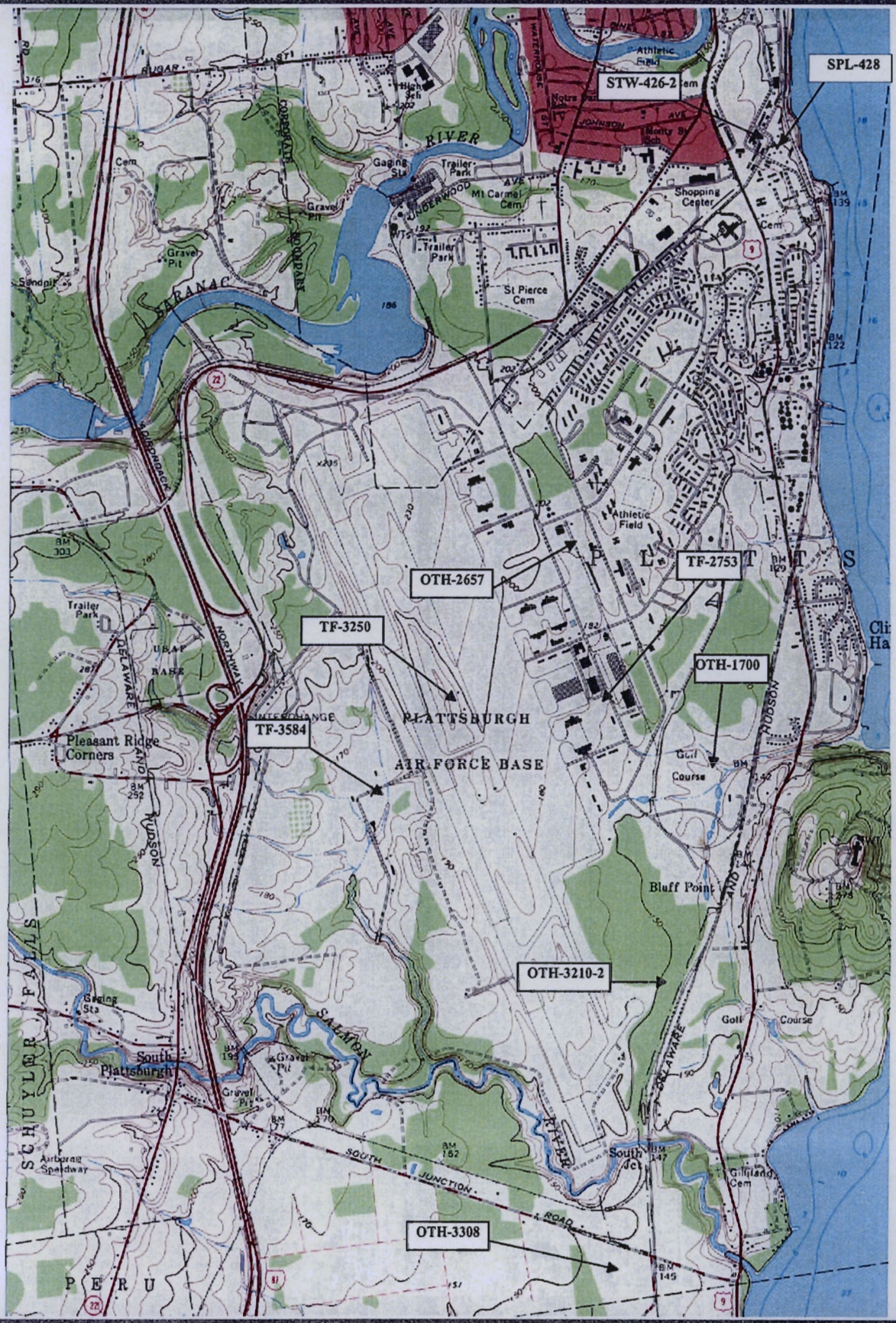

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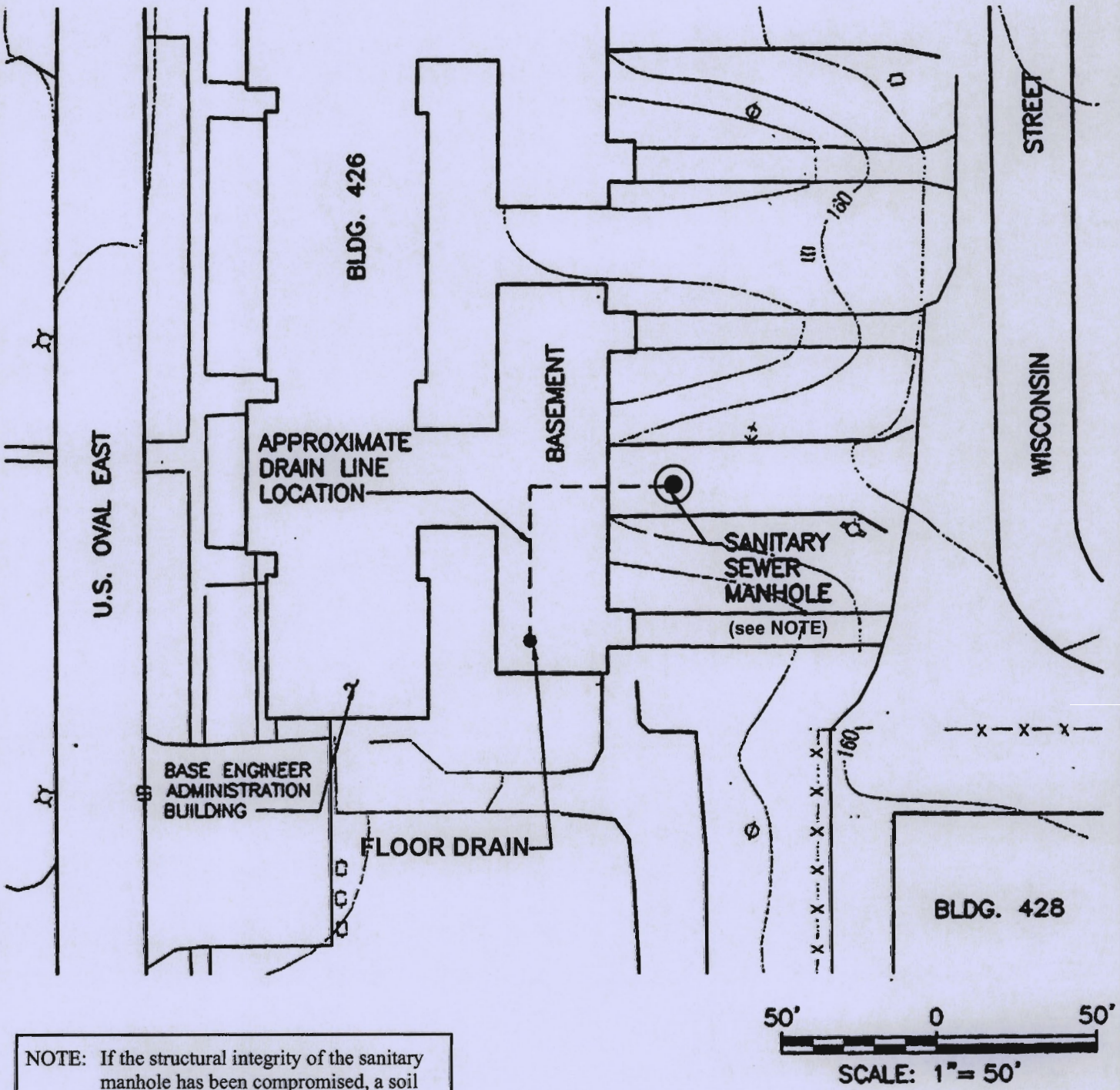
FIGURE 1. LOCATION MAP, PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NY



NOTE: If the structural integrity of the sanitary manhole has been compromised, a soil sample will be collected from adjacent soils at the invert elevation.

Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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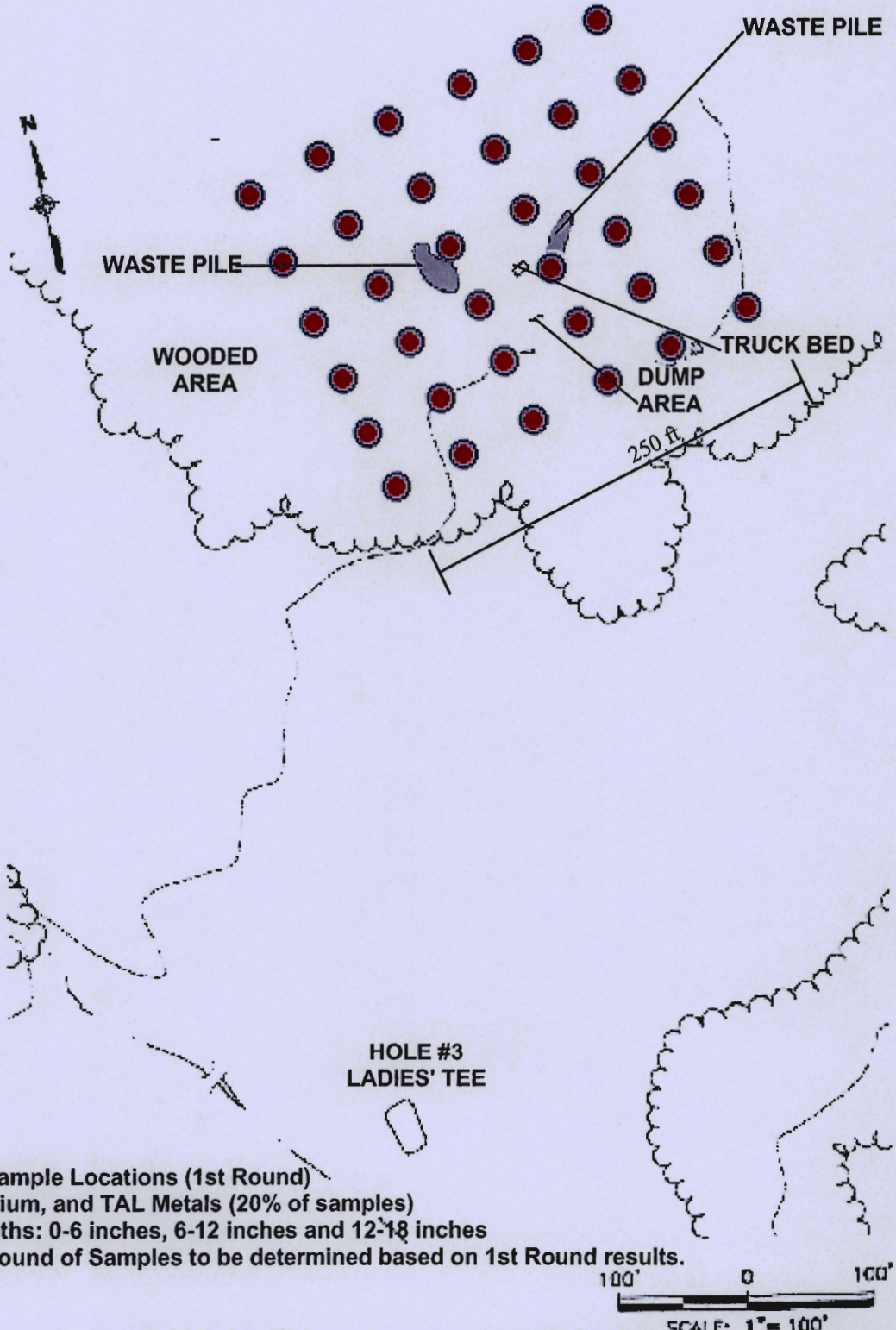
FIGURE 2. STW-426-2 SITE PLAN PLATTSBURGH AFT, NY



LEGEND:

- Proposed Sample Locations (1st Round)
  Lead, Cadmium, and TAL Metals (20% of samples)
  Sample Depths: 0-6 inches, 6-12 inches and 12-18 inches
  Note: 2nd Round of Samples to be determined based on 1st Round results.

Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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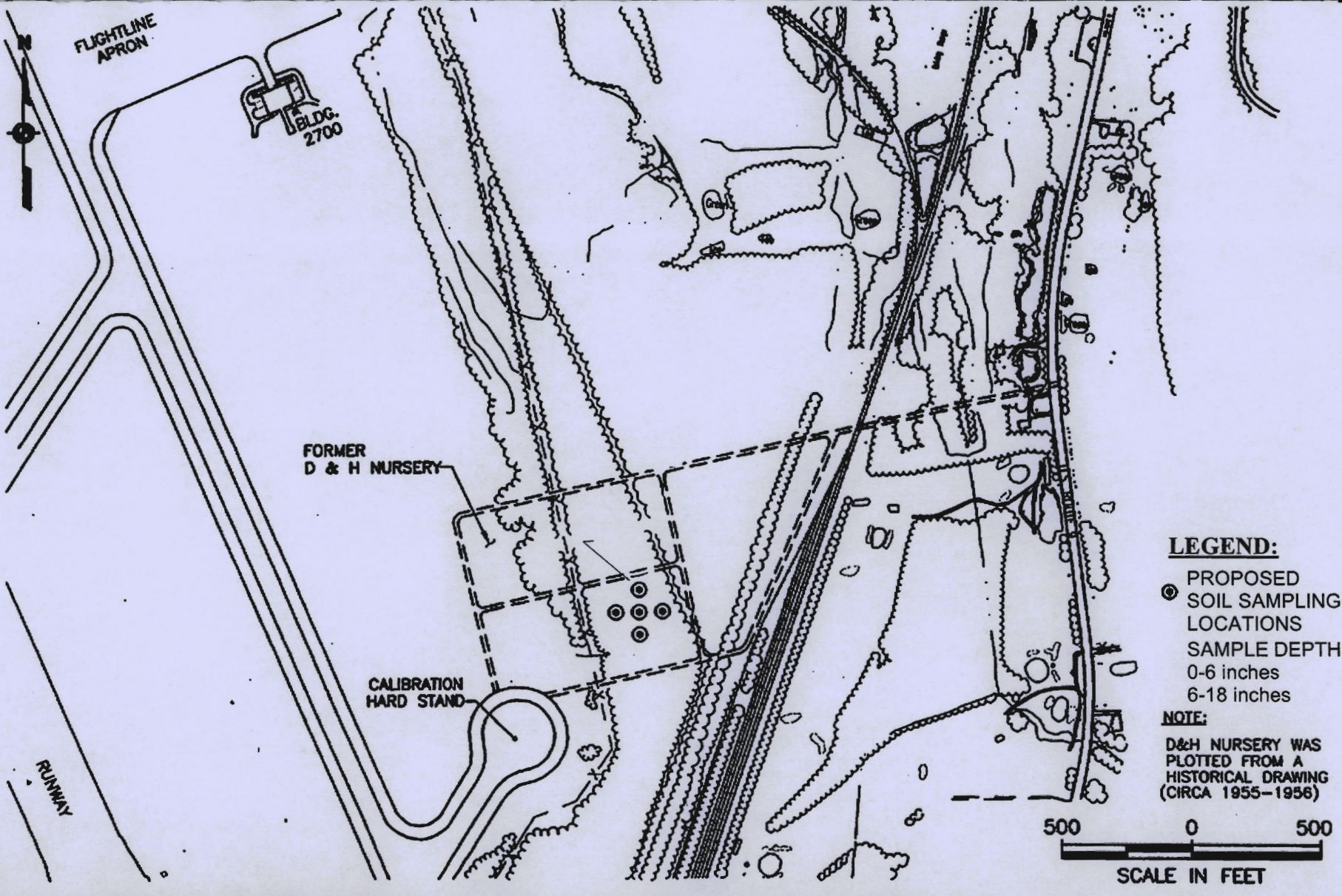
FIGURE 3. OTH-1700
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY



Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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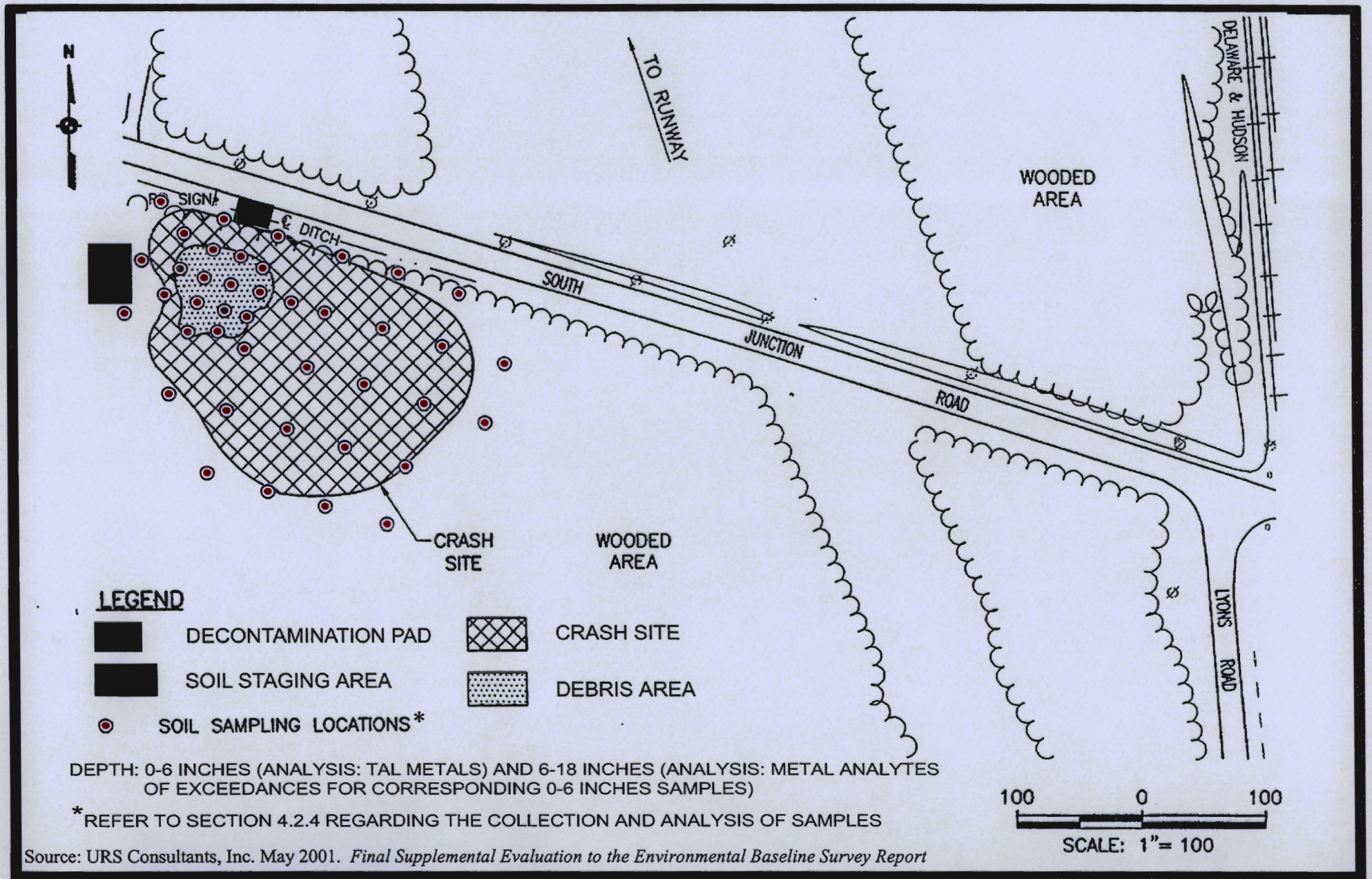
FIGURE 4. OTH-3210-2,
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY



DEPTH: 0-6 INCHES (ANALYSIS: TAL METALS) AND 6-18 INCHES (ANALYSIS: METAL ANALYTES OF EXCEEDANCES FOR CORRESPONDING 0-6 INCHES SAMPLES)

*REFER TO SECTION 4.2.4 REGARDING THE COLLECTION AND ANALYSIS OF SAMPLES

Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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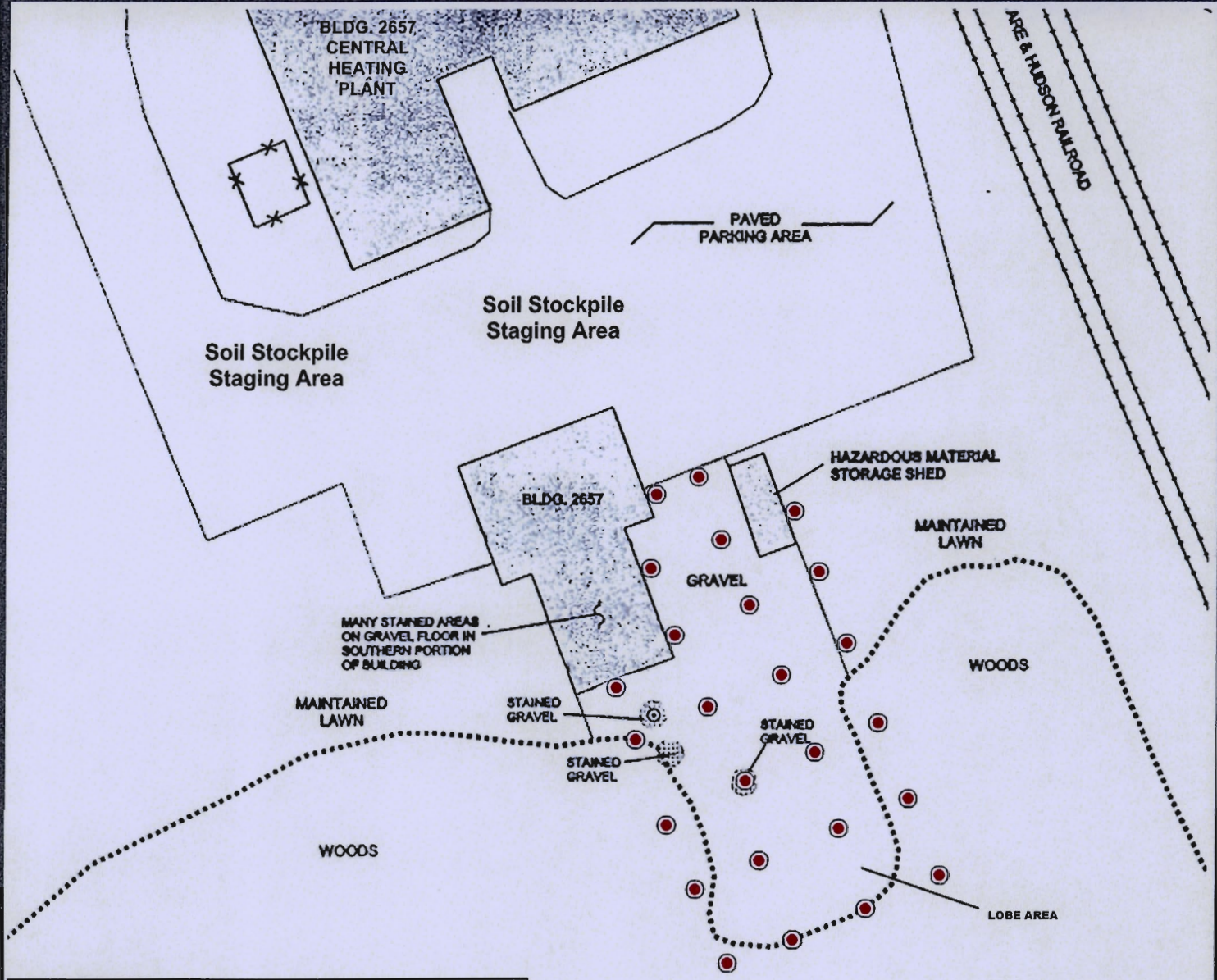
FIGURE 5. OTH-3308
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY



Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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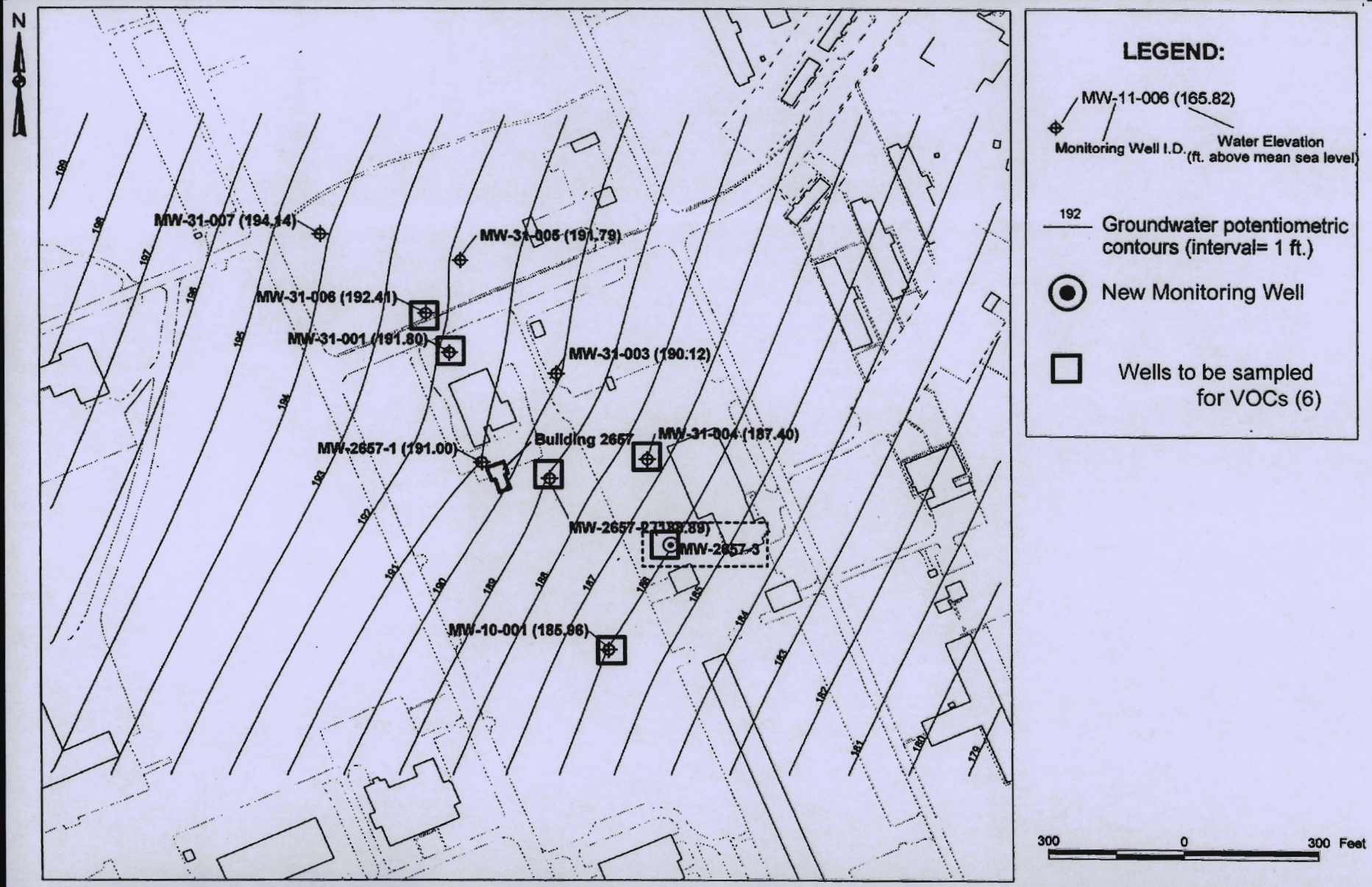
FIGURE 6. OTH-2657
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY



Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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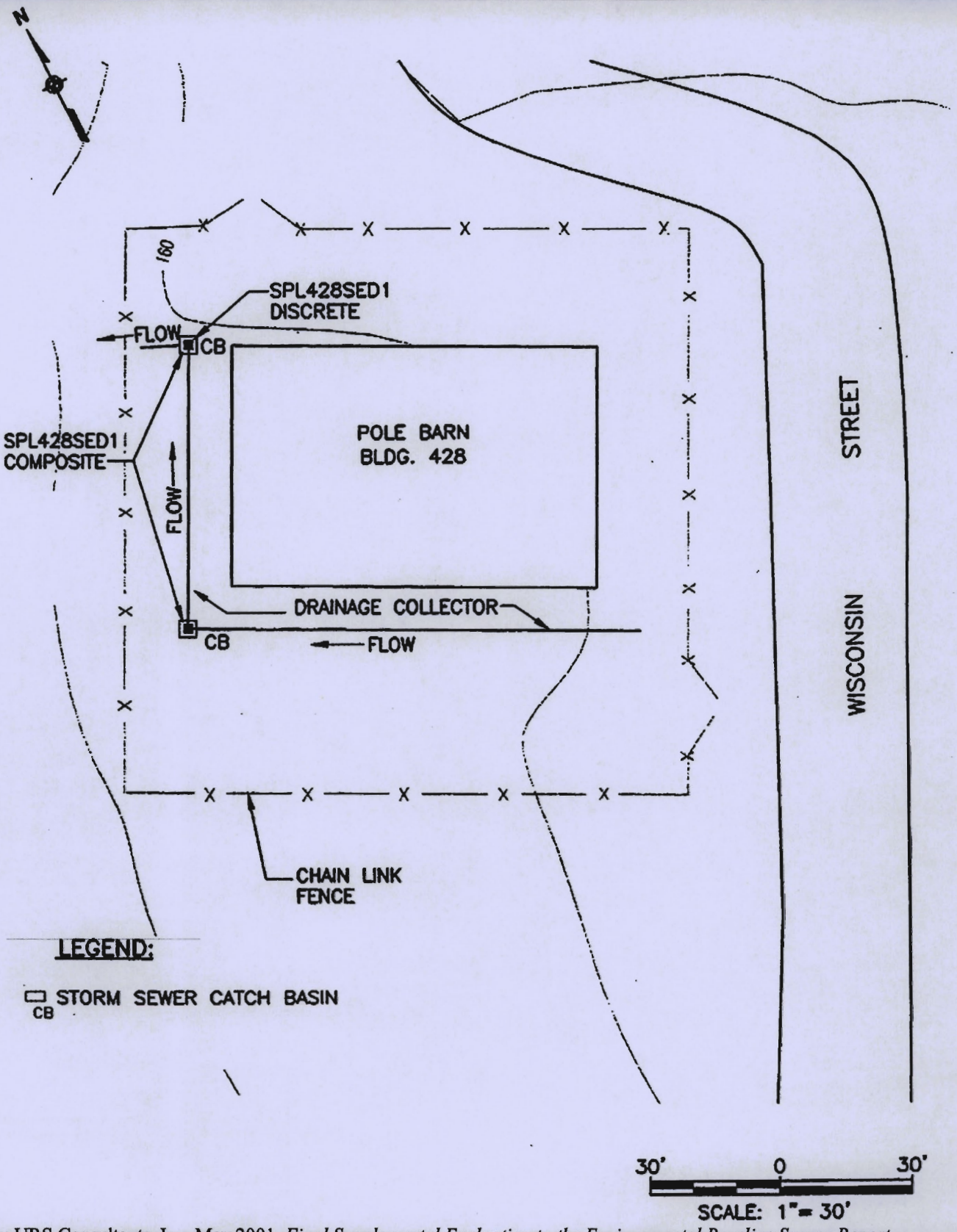
FIGURE 7. OTH-2657
LOCATION OF NEW MONITORING WELL
PLATTSBURGH AFB, NY



Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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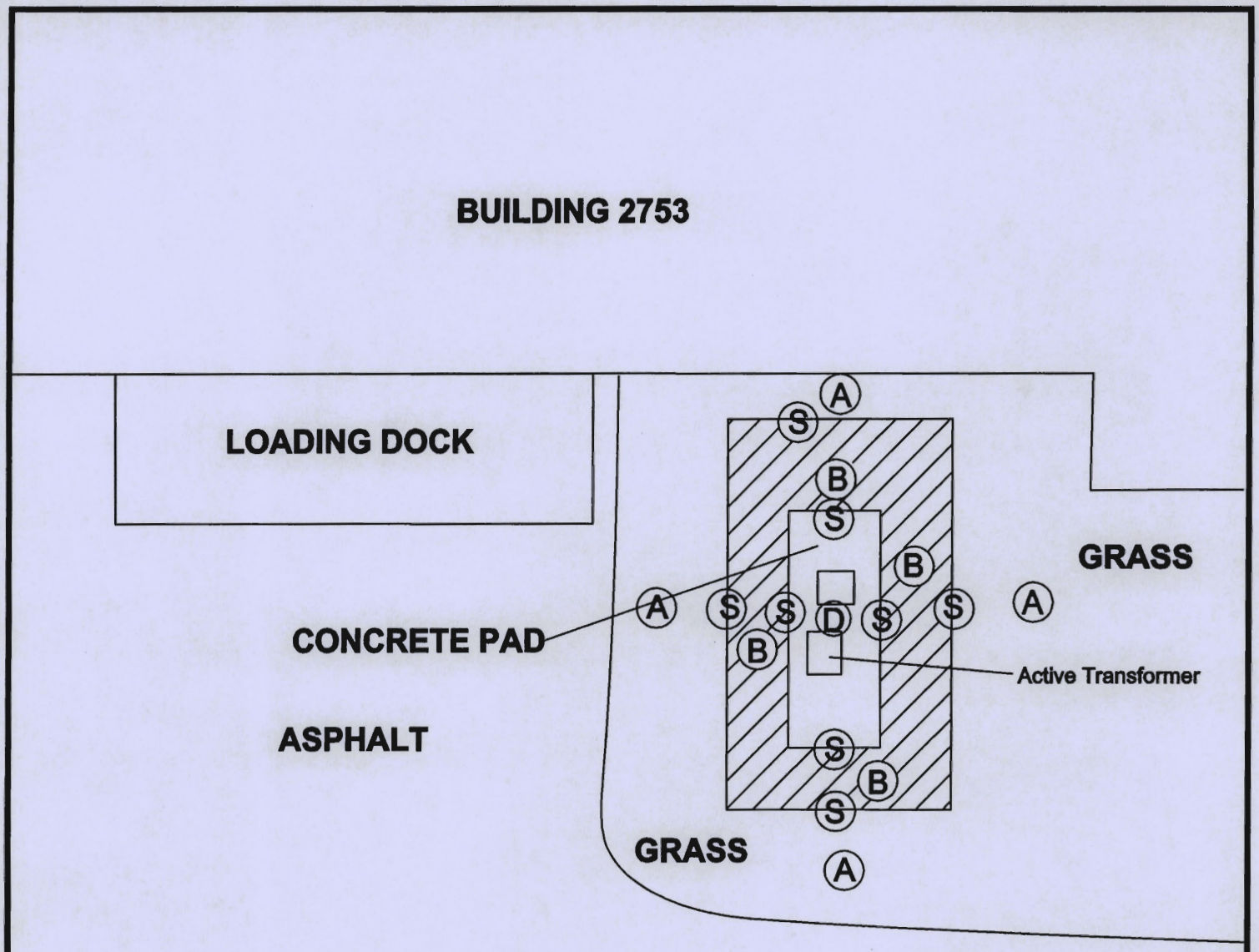
FIGURE 8. SPL-428
SITE PLAN
PLATTSBURGH AFB, NY



LEGEND:

- Limits of Excavation (2 ft. wide and 1 ft. deep)
- (B) Bottom Composite Soil Sampling Location (1 sample - 4pts)
- (S) Sidewall Composite Soil Sampling Location (2 samples - 4pts each)
- (A) Surrounding Area Composite Soil Sampling Location (1 sample - 4pts)
- (D) Discrete Sample Beneath Pad

Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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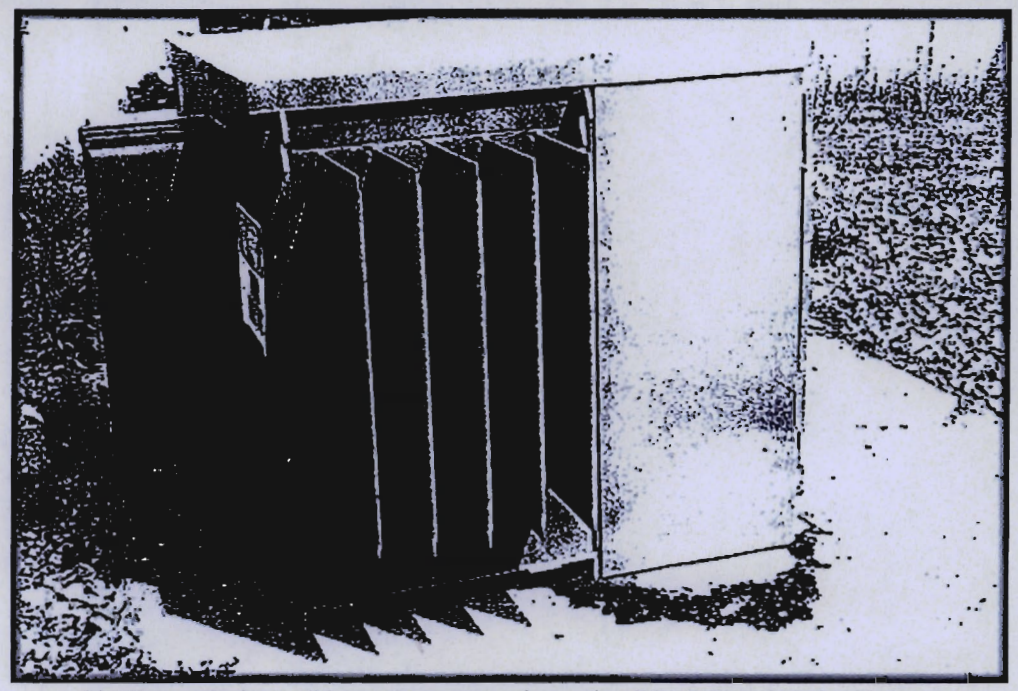
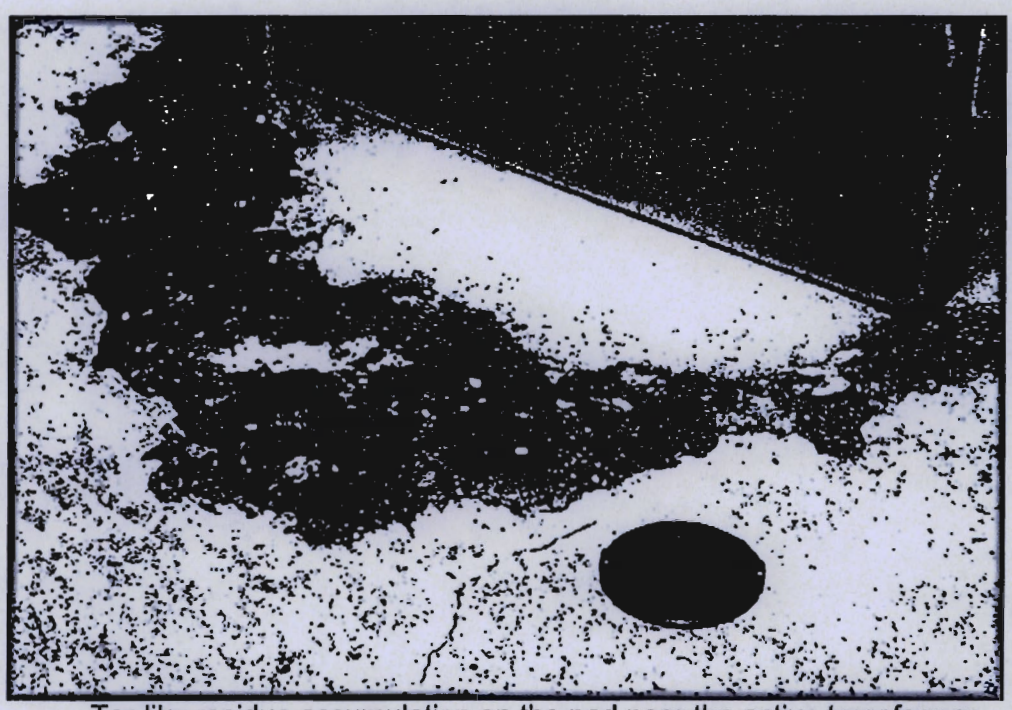
FIGURE 9. TF-2753
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY



Northward view of transformer pad south of Building 2753. Note the circular outlines of the three transformers that were removed.



Tar-like residue accumulation on the pad near the active transformer.

Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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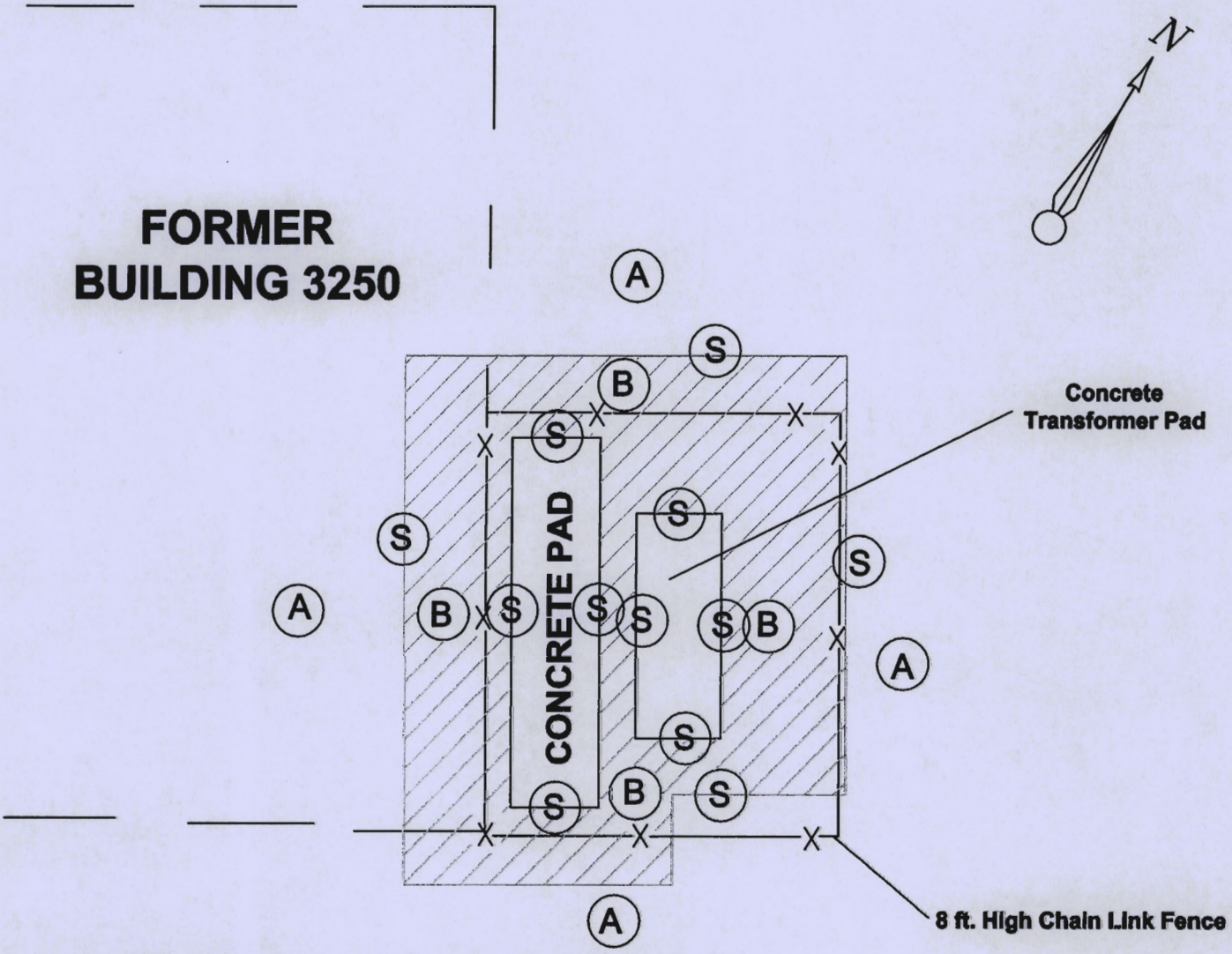
FIGURE 10. TF- 2753 Transformer Pad Adjoining Building 2753 - Tar-like Residue Plattsburgh AFB, NY



LEGEND:

- Limits of Excavation (2 ft. wide and 1 ft. deep)
- (B) Bottom Composite Soil Sampling Location (1 sample - 4 pts)
- (S) Sidewall Composite Soil Sampling Location (3 sample - 4pts)
- (A) Surrounding Area Composite Soil Sampling Location (1 sample - 4pts)

Source: URS Consultants, Inc. May 2001. *Final Supplemental Evaluation to the Environmental Baseline Survey Report*

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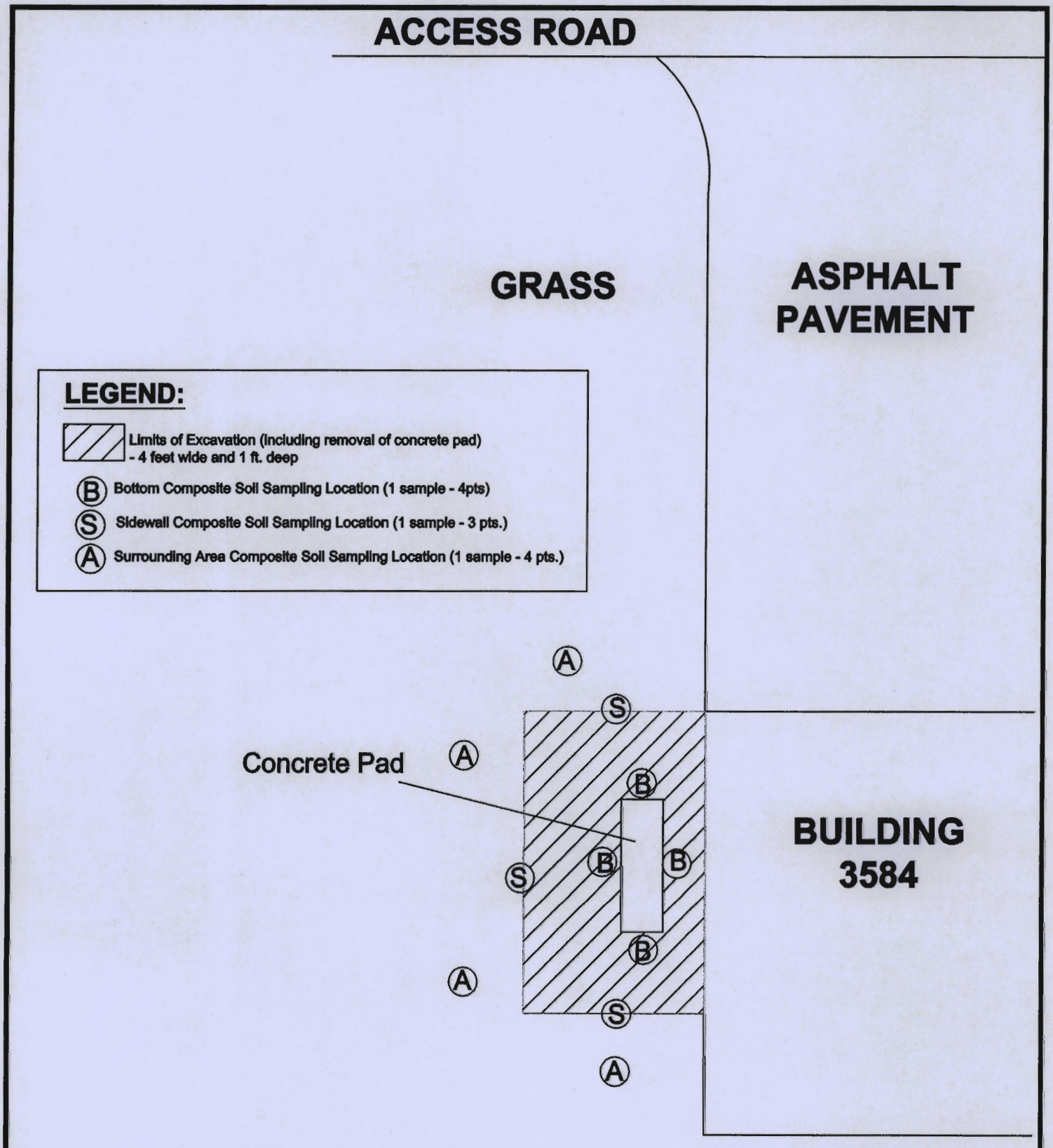
FIGURE 11. TF-3250
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY



Source: URS Consultants, Inc. May 2001. *Final Draft Supplemental Evaluation to the Environmental Baseline Survey Report*

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FIGURE 12. TF-3584
SITE PLAN / SAMPLING LOCATIONS
PLATTSBURGH AFB, NY

Figure 13
Project Management Organizational Structure