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United States Air Force

Plattsburgh Air Force Base

REMOVE DRAIN LINE
AT
WASHRACK AREA

REVISED WORK PLAN

FINAL

DECEMBER 2002

PLATTSBURGH AIR FORCE BASE
Plattsburgh, New York

REMOVE DRAIN LINE AT WASHRACK AREA

REVISED WORK PLAN

FINAL

December 2002

Prepared for:

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

Contract No. F41624-01-D-8522
Task Order No. 0009

Prepared by:

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ACRONYMS AND ABBREVIATIONS

AFBCA	Air Force Base Conversion Agency
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
ARARs	Applicable or Relevant and Appropriate Requirements
ASC	Allowable Soil Concentration
ASTM	American Society of Testing and Materials
BEC	BRAC Environmental Coordinator
BGS	Below Ground Surface
BRAC	Defense Base Realignment and Closure Act of 1990
CDRL	Contract Data Requirements List
CO	Contracting Officer
COR	Contracting Officer's Representative
CQP	Construction Quality Plan
CRDL	Contract Required Detection Limit
DOD	Department of Defense
DQO	Data Quality Objective
ERPIMS	Environmental Restoration Program Information Management System
FTL	Field Team Leader
FSP	Field Sampling Plan
IDW	Investigation-derived Waste
NYSDEC	New York State Department of Environmental Conservation
OBG	O'Brien & Gere Laboratories, Inc.
OHM	OHM Remediation Services Corp., a Member of the IT Group
PAFB	Plattsburgh Air Force Base
PARC	Plattsburgh Airbase Redevelopment Corporation
PID	Photoionization Detector
POC	Point of Contact
PPE	Personal Protective Equipment
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QPP	Quality Program Plan
RCO	Recommended Cleanup Objective
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SOW	Statement of Work
SRCR	Supplemental Removal Closure Report
SSEHSP	Site-Specific Environmental Health and Safety Plan
SVOC	Semi-volatile Organic Compounds

ACRONYMS AND ABBREVIATIONS (Continued)

TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TAT	Turnaround Time
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TO	Task Order
TOGS	Technical Operational Guidance Series
TSDF	Treatment, Storage, Disposal Facility
USAF	United States Air Force
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

The United States (U.S.) Air Force (AF) plans to implement additional removal and sampling activities at the Washrack Area and Buildings 2887 and 2890 at Plattsburgh Air Force Base (PAFB), New York (NY) to address regulatory comments to the *Final Closure Report* (OHM, September 2001). This Work Plan presents the technical approach for conducting field operations relative to:

- excavation of a 6-inch vitrified clay drain line at Building 2887 and confirmatory soil sampling,
- soil and groundwater sampling as described in Section 5 of the *Final Closure Report*, and
- installation and sampling of three (3) groundwater monitoring wells to address concerns of possible contaminant migration from the Washrack Area.

2.0 PROJECT BACKGROUND

2.1 Project Location

PAFB is located in Clinton County in the northeastern corner of New York State, approximately 26 miles south of the Canadian border and 167 miles north of Albany, NY. PAFB is bordered to the north by the Saranac River and the city of Plattsburgh, by Lake Champlain to the east, the Salmon River and agricultural land to the south, and Interstate 87 to the west. Figure 2-1 provides a Site Location Map for PAFB.

The Washrack Area is located between Florida Street and Perimeter Road on the northeast end of the flight line ramp in the industrial support operations area of PAFB. Building 2887, the Industrial Waste Plant, is located to the southeast and Building 2890 (Nose Dock 8) is located to the south of both the Washrack Area and Building 2887.

2.2 Site History and Previous Activities

The Washrack Area and Building 2887 were constructed in 1957. The Washrack Area encompasses approximately 37,320 square feet, excluding the entrance ramp, and was used to clean and prepare aircraft for painting at Nose Dock 8. Water, detergent, and solvents were sprayed onto the planes to remove dirt, paint, oil, and grease. Waste liquids, paint chips, and other solids were directed into the drain inlet for pretreatment in Building 2887 prior to discharge to the sanitary sewer. The facility was operated until 1980.

The Washrack infrastructure was dismantled as part of a removal action completed in 1999 by OHM Remediation Services Corp., a Member of the IT Group (OHM) that included: removal of the service racks and supply lines, removal of a 4-inch diameter solvent transfer line associated with a former aboveground storage tank (AST-2889-1), removal of a 6-inch waste solvent transfer line from Building 2887 to Building 2890, and the removal of a catch basin inlet and associated 24-inch diameter vitrified clay drain line.

Following removal of the catch basin inlet and 24-inch diameter vitrified clay drain line, a test pit was excavated behind Bldg. 2887 to a depth of 15 feet (ft) below ground surface (bgs). The location of the test pit is provided on Figure 4-1. During the test pit excavation, soil was screened at 1-ft intervals from the midpoint of the pipeline at 6-ft bgs to 15-ft bgs. During the excavation, groundwater was observed at 15-16 ft bgs. Headspace vapor concentrations ranged from 20.7 ppm at 6-7 ft bgs, to 606 ppm at 14-15 ft bgs. The test pit was backfilled immediately following completion of assessment sampling. The headspace results and lithologic descriptions are provided below:

Test Pit Log		
Depth (ft bgs)	PID [1] (ppm	Soil Description
6-7	20.7	Drk brn f - c sand, odor, strongly stained [2], [3]
7-8	21.0	Tan f - m sand, odor
8-9	79.5	Tan f - m sand, odor
9-10	0.4	Tan f - m sand, odor
10-11	2.1	Tan f - m sand with some silt, odor
11-12	0.0	Tan f - m sand with some silt, odor
12-13	345	Tan f silty sand, odor, moist
13-14	471	Tan f silty sand, odor, moist [4]
14-15	606	Tan f silty sand, odor, moist to wet

SOURCE: OHM, September 2001
NOTES:
(1) Reported photoionization detector (PID) concentrations are 8-oz jar headspace volatile organic vapor concentrations.
(2) f = fine grained
m = medium grained
c = coarse grained
(3) Sample 24TS-01 from 7 ft bgs for VOC, SVOC, and RCRA metals analysis
(4) Sample 24TS-02 from 13-15 ft bgs for VOC analysis only.

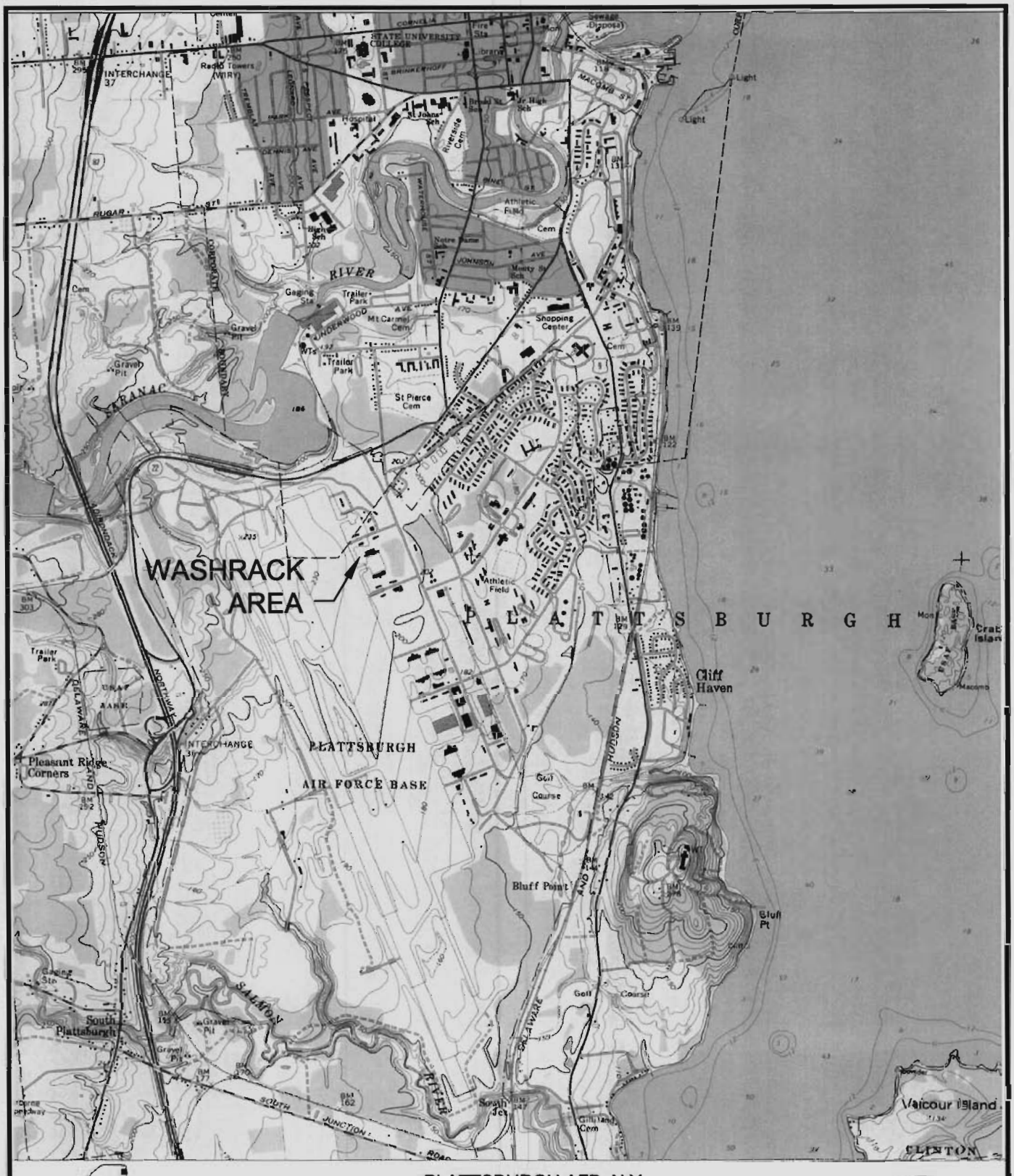
A Closure Report (OHM, September 2001) was submitted to the New York State Department of Environmental Conservation (NYSDEC) and U.S. Environmental Protection Agency (USEPA) for review. Comments noted that confirmatory soil samples collected during the project had not been analyzed for semi-volatile organic compounds (SVOC). Additionally, a six (6)-inch diameter vitrified clay drain line was not identified during prior investigations or the 1999 removal action, and therefore, was not removed. The drain line extends for approximately 50 feet from the south side of Building 2887 and discharges into a sanitary sewer manhole.

2.3 Project Site Contamination History

Given the historic discharge of wastes from the Washrack Area to Building 2887 (e.g., water, detergent, solvents, paint chips, and other solids) and assuming that these same materials may have been discharged via the 6-inch drain line, the potential contaminants of concern include volatile organic compounds (VOC), SVOC, and metals.

Confirmation and assessment sampling were performed at the Washrack Area as part of the 1999 Removal Action.

Confirmation sampling was performed as shown on Figure 4-1. Tetrachloroethene (PCE) was detected in sample SC-1, collected along the former 6-inch waste solvent line, at an estimated concentration of 1ug/Kg. The NYSDEC soil cleanup objective (SCO) presented in Technical and Administrative Guidance Memorandum HWR-94-4046 (TAGM#4046), Determination of



PLATTSBURGH AFB, N.Y.

PLATTSBURGH, NY-VT 7.5' QUADRANGLE
44073-F4-TF-024
1966+DMA 8373 III - SERIES V821
MAPPED, EDITED AND PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044-2314
(215) 957-0955

FIGURE 2-1

SITE LOCATION MAP
PLATTSBURGH AIR FORCE BASE

DATE:	08/08/02
DESIGNED BY:	TWillans
SCALE:	NTS
JOB NO.:	1110001.016
DWG. NO.:	016-02

Soil Cleanup Objectives and Cleanup Levels, for PCE is 1,400 ug/Kg. At the Washrack Area, toluene and total xylenes were detected in sample CSS-05 at reported concentrations of 12 and 17.6 ug/Kg, respectively, as compared to the respective SCOs of 1,500 ug/Kg (toluene) and 1,200 ug/Kg (total xylenes). Carbon disulfide was detected in sample CSS-06 at an estimated concentration of 2.1 ug/Kg, below the respective SCO of 2.7 ug/Kg.

Two (2) assessment soil samples were collected following the text pit excavation conducted at Bldg. 2887. Soil from 6-7 ft bgs was submitted as sample 24TS-01 for analysis of Target Compound List (TCL) VOC, Toxicity Characteristic Leaching Procedure (TCLP) SVOC, TCLP Resource Conservation and Recovery Act (RCRA) metals, and polychlorinated biphenyls (PCBs). Ethylbenzene was detected at a concentration of 16 ug/Kg, versus an SCO of 5,500 ug/Kg and total xylenes were detected at 220 ug/Kg versus an SCO of 1,200 ug/Kg. In addition, arsenic was detected at 0.6 mg/Kg, chromium at 8 mg/Kg, and selenium at 0.5 mg/Kg, respectively; concentrations below their respective SCOs. Lead was detected at a concentration of 270 mg/Kg, which exceeded the established site background level for lead of 79.6 mg/Kg and cadmium was detected at its' SCO of 1 mg/Kg. No SVOC or PCBs were detected. Soil from 13-15 ft bgs was submitted as sample 24TS-02 for TCL VOC only (due to a lack of sample volume). Total xylenes were detected at a concentration of 3,000 ug/Kg, in excess of the respective SCO of 1,200 ug/Kg. No other VOC were detected.

3.0 PRE-CONSTRUCTION ACTIVITIES

Pre-construction activities will include coordinating Plattsburgh Airbase Redevelopment Corporation (PARC) operations impacted by the project and all tasks necessary to support the fieldwork including: mobilizing equipment and materials, arranging subcontracts, obtaining utility clearance permits, and preparation of equipment lay-down and soil stockpile staging areas. All work will be performed under the direct supervision and management of Versar.

3.1 Pre-construction Meeting/Permits

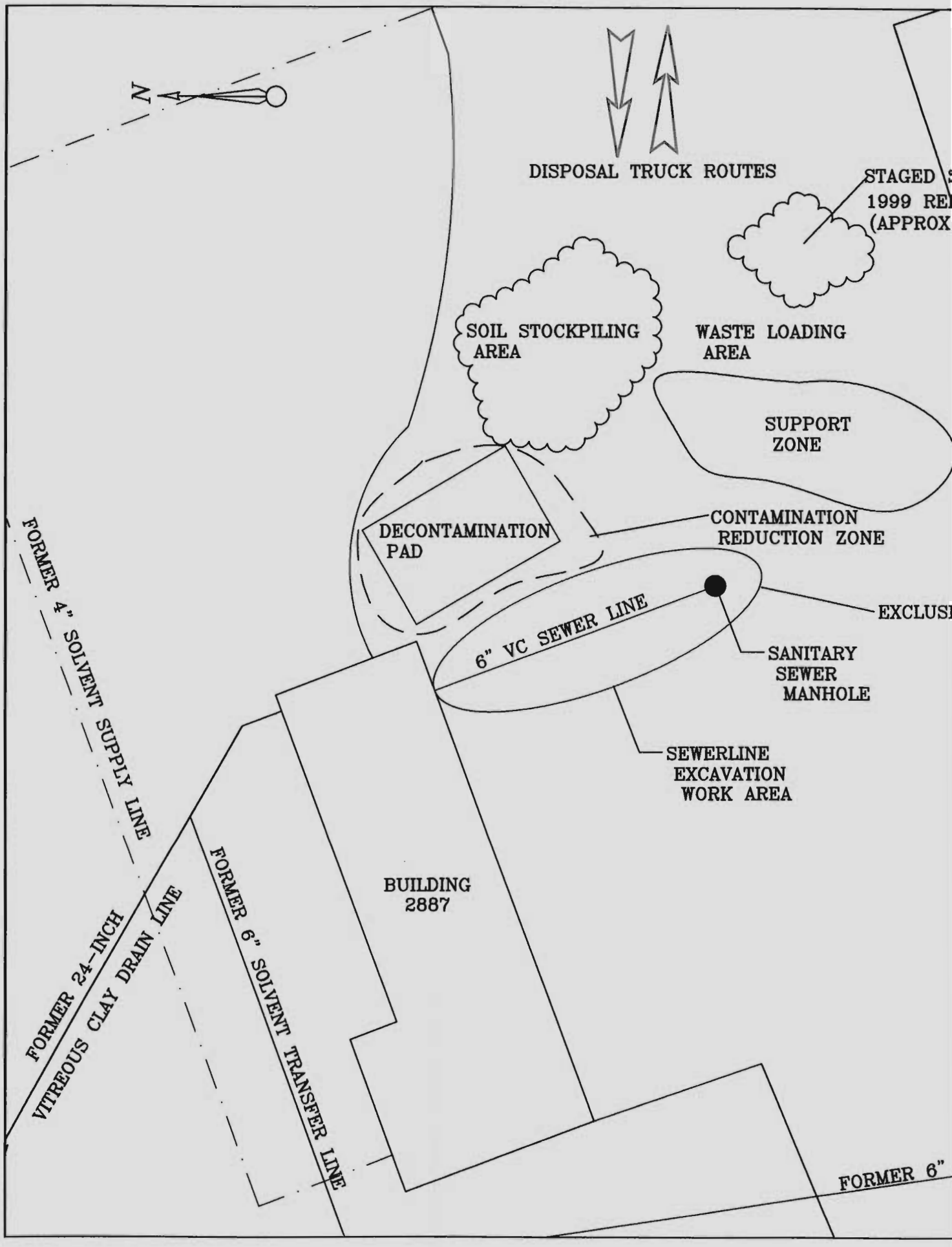
A pre-construction meeting will be held with the Air Force Base Conversion Agency (AFBCA)/ PARC to discuss the execution and sequence of work, roles and responsibilities of personnel, equipment staging and soil stockpile areas, and site access and security. Other than utility clearance and burning permits, no other permits are required.

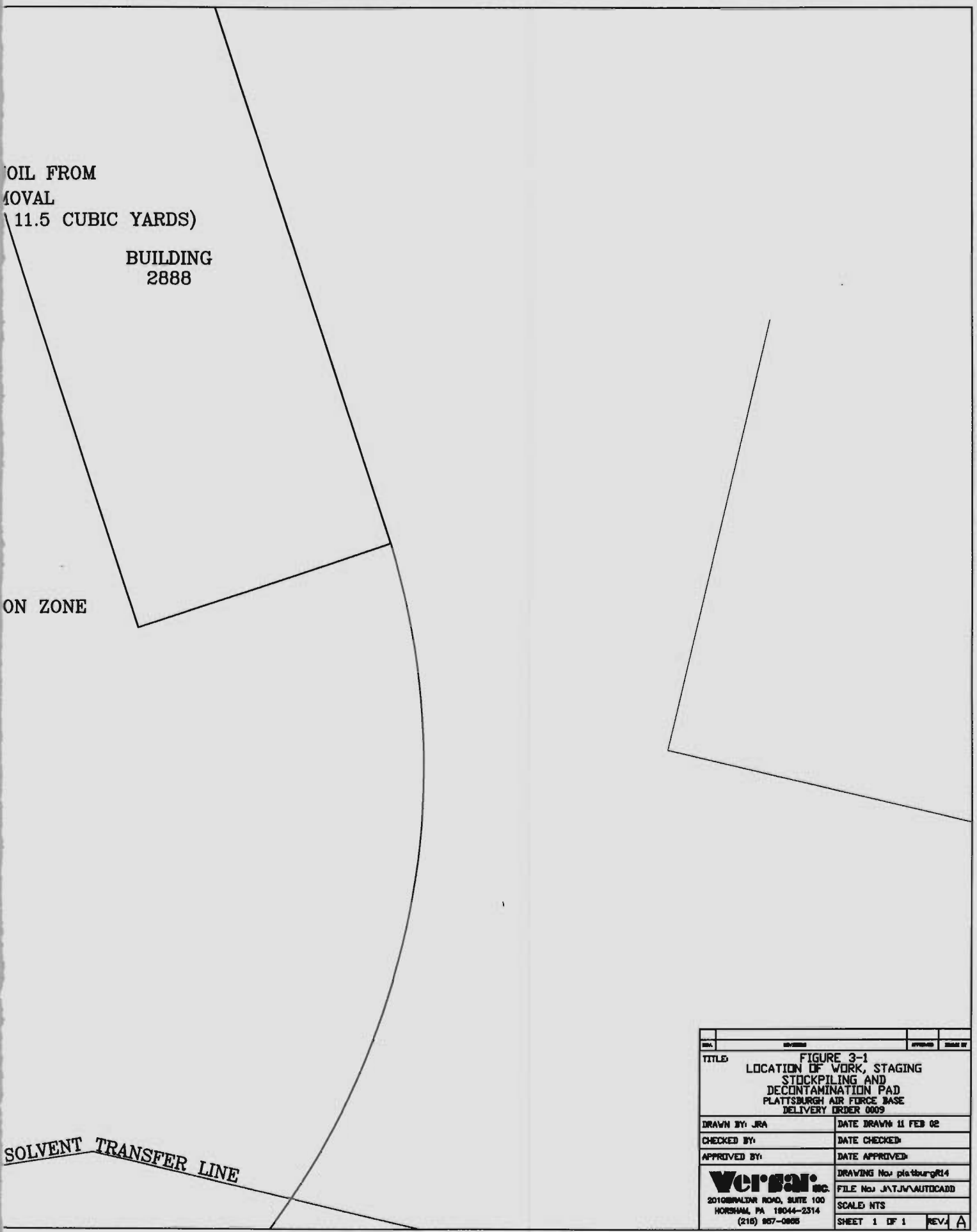
3.2 Site Preparation

Work zones including exclusion, contamination reduction, and support as well as equipment and materials staging and soil stockpiling areas will be established in the direct vicinity of Building 2887 as shown in Figure 3-1. A temporary decontamination pad will be constructed adjacent to the planned sewer line excavation location. Visqueen will be placed on the ground for containment, and a perimeter berm established with hay bales. Figure 3-2 shows a cross-section of the planned decontamination pad. The remaining site activities (i.e., installation of soil borings and groundwater monitoring wells) will also utilize the temporary decontamination pad.

3.3 Security/Safety Mark-out of Work Areas

Temporary security fencing will consist of orange plastic roll fencing to identify active working areas during the field activities. This will include the excavation and soil stockpile areas.


N
DISPOSAL TRUCK ROUTES
STAGED
1999 RE
(APPROX
SOIL STOCKPILING AREA
WASTE LOADING AREA
SUPPORT ZONE
DECONTAMINATION PAD
CONTAMINATION REDUCTION ZONE
EXCLUSI
6" VC SEWER LINE
SANITARY SEWER MANHOLE
SEWERLINE EXCAVATION WORK AREA
FORMER 4" SOLVENT SUPPLY LINE
FORMER 24-INCH VITREOUS CLAY DRAIN LINE
FORMER 6" SOLVENT TRANSFER LINE
BUILDING 2887
FORMER 6"



TITLE: FIGURE 3-1 LOCATION OF WORK, STAGING STOCKPILING AND DECONTAMINATION PAD PLATTSBURGH AIR FORCE BASE DELIVERY ORDER 0009			
DRAWN BY: JRA	DATE DRAWN: 11 FEB 02		
CHECKED BY:	DATE CHECKED:		
APPROVED BY:	DATE APPROVED:		
Versar INC. 2010 BRALDR ROAD, SUITE 100 HORSHAM, PA 19044-2314 (215) 957-0855	DRAWING No.: plattburgR14		
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	SCALE: NTS		
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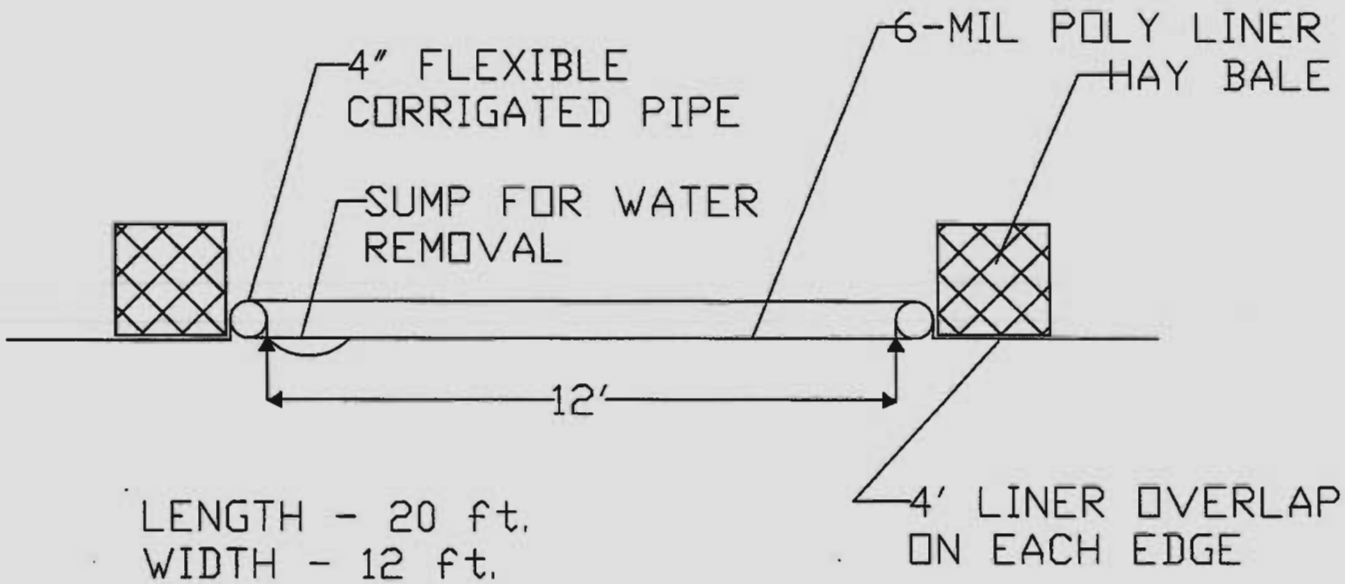

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FIGURE 3-2
CROSS-SECTION OF
DECONTAMINATION AREA
PLATTSBURGH AIR FORCE BASE
DELIVERY ORDER 0009

DATE:	11 FEB 02
DESIGNED BY:	TJW
SCALE:	1" = 40'
JOB NO.:	111000.1009.121
DWG. NO.:	FIG 3-2

4.0 FIELD ACTIVITIES

4.1 Mobilization

Mobilization will include delivery of excavation/loading equipment, tools, materials, and supplies sufficient to complete all field activities described in this Work Plan. Support equipment for the project includes: decontamination pressure water washer, asphalt/concrete saw, a truck-mounted welder, a small compactor, Levels "C" and "D" personal protective equipment (PPE), photoionization detector (PID), and hand tools. Materials include rolls of Visqueen, tarps, silt fence, hay bales, safety fence, and miscellaneous items (e.g., sample coolers, duct tape, electrolyte fluids, ice, etc.).

Prior to commencing field activities, an onsite kickoff meeting will be held to discuss the following:

- Review of the work scope, responsibilities of all parties, and the schedule;
- Discussion of logistical considerations associated with planned work tasks. This will include finalizing work area boundaries, site security requirements, site access and egress routes, on-site traffic flow patterns, and the locations of equipment and material staging areas;
- Utility mark-outs;
- Finalize proposed Geoprobe and groundwater monitoring well locations; and
- Review daily and weekly reporting requirements.

The Versar Field Team Leader (FTL) will distribute meeting minutes summarizing the discussions held during mobilization and the onsite kickoff meeting.

4.2 Excavation and Removal of Drain Line

Approximately 50 feet of 6-inch vitrified clay drain line extending southeast from Building 2887 to a sanitary sewer manhole located in an asphalt parking lot will be excavated. An asphalt/concrete saw will be used to "score" a four (4) foot-wide channel and the existing asphalt and cover material (e.g., gravel) will be removed and staged separately for local disposal.

Versar will then excavate to a depth of approximately 6 ft bgs and remove the 6-inch vitrified clay drain line and associated soil, observing for areas of structural damage to the pipe as potential sampling locations. Depending on soil conditions, additional asphalt and cover material may be removed and the excavation sidewalls sloped to ensure stability during trenching (e.g., 1:1). It is anticipated that approximately 75-100 cubic yards (CY) of soil will be generated as a result of the excavation and removal of the drain line. The drain line will then be removed, transferred to the decontamination pad, and pressure washed. One (1) sample each of the washwater and discharged sediments will be collected and submitted for TCL VOC, TCL SVOC, and Target Analyte List (TAL) metals analysis. The drain line connections to Building 2887 and the manhole will then be capped either with grout or a welded plate.

A PID will be used to screen the excavated soil using headspace analysis. A portion of soil will be transferred into a ziplock bag or precleaned glass jar, which is then sealed and agitated. The VOC will then be allowed to volatilize into the headspace and equilibrate in a controlled (e.g., room temperature) environment for 15 minutes. The instrument probe is then inserted into the ziplock bag/container to sample the headspace. The instrument response is then recorded in the field logbook.

Excavation activities will be continued until PID readings are less than 5 parts per million (ppm) above background, or obvious signs of significant contamination are observed in which case excavation activities may be suspended and soil borings performed to determine the depth and areal extent of contamination. All soil exhibiting a PID reading of five (5) ppm above background will be separately stockpiled from soil exhibiting a PID reading of less than 5 ppm. All soil will be stockpiled adjacent to the excavation on Visqueen, and will be covered with Visqueen or tarps during non-operating hours. Upon the cessation of excavation activities, the open excavation will be covered with an impermeable liner to prevent precipitation from directly entering the open excavation and the excavation perimeter will be bermed to prevent the run-on of surface water into the excavation. Silt fences and/or hay bales will surround each stockpile and the excavation area. Dust controls will also be implemented during excavation activities (i.e., water spray).

Versar will collect seven (7) post-excavation/confirmation samples and associated duplicate and quality assurance/quality control (QA/QC) samples for TCL VOC, TCL SVOC, and TAL metals analysis. Three (3) discrete samples will be collected from the bottom of the excavation and two (2) discrete samples will be collected from each excavation sidewall. The soil samples will be collected using either a decontaminated, stainless steel trowel or long-handled hand auger. Versar will then grout the drain line connection at the manhole and at Building 2887. The residual sediments will be removed from the manhole (e.g., via a vac-truck), collected in 55-gallon drums, and analyzed for waste characterization/disposal. The manhole will then cleaned using a high-pressure power wash and the washwaters also collected in 55-gallon drums and analyzed for waste characterization/disposal.

The analytical results will be compared to the respective RCOs listed in NYSDEC TAGM #4046 (Appendix A: Table 1 – VOC (Column 5), Table 2 – SVOC (Column 5), and Table 4 – Heavy Metals (Column 5)). Should sampling determine that additional soil requires excavation, the lateral or radial extent of the excavation surrounding the affected sampling location(s) will be extended halfway to the adjacent "clean" sampling location and/or the limits of the excavation. The soil will be removed to an additional depth of 12 inches and additional confirmatory soil sample(s) will be collected. The analytical data will be Level 3 validated and a validation package prepared.

Upon receipt of acceptable analytical results from the laboratory and confirmation of acceptance by the Air Force and regulatory agencies, Versar will backfill the excavation area. The excavation will be backfilled with certified clean fill material from an off-base source and/or stockpiled soil if analytical results show that the stockpiled soil is uncontaminated.

The soil resulting from excavation of the drain line will be stockpiled and sampled at a frequency of one (1) discrete sample per approximately 50 cubic yards (CY) of soil for waste

characterization/classification purposes. The collected samples will be analyzed for "totals" analysis (i.e., TCL VOC, TCL SVOC, TAL metals, Pesticides, and total PCBs) and compared to respective TAGM 4046 values. Should analytical results contain exceedences of the respective TAGM values that prohibit use as backfill material, the stockpiled soils will be sampled for RCRA characteristics (corrosivity, reactivity, ignitability, and the TCLP) for waste disposal acceptance. Excavated and stockpiled soil will not be used as backfill until consultation with and approval is received from the regulatory agencies. Sampling and QA/QC protocols and procedures outlined in SW-846 will be followed. TCLP analysis will be performed according to USEPA Method 1311. This analytical data package will be Level 2 validated for baseline characterization. Any additional analyses for disposal characterization will be performed as a baseline analysis and not per AFCEE testing protocol.

If determined to be RCRA hazardous waste, the stockpiled soil/debris will be transported by a licensed waste hauler to the Chemical Waste Management, Inc. RCRA permitted treatment, storage, and disposal facility (TSDF) located in Model City, NY. Versar will load the stockpiled soil/debris into trucks for off-site transport. Contaminated but non-hazardous soil/debris will be transported off-site by a licensed waste hauler to a permitted, local solid waste landfill or other acceptable disposal facility (e.g., asphalt batch plant).

4.2.1 General Safety Requirements

Prior to opening a trench or pit, the FTL will review the provisions of the Occupational Safety and Health Administration (OSHA) standards, 29 CFR 1926, to ensure compliance. Excavations less than four (4) feet in depth will be inspected by the FTL to ensure the site provides no indication of potential cave–in. Unknown hazards may exist in the subsurface layers of excavation sites. Established PPE standards must be complied with through performance of on site monitoring.

Confined space entry is not anticipated during the execution of this project. The excavation trench will be sloped/benched as required to ensure stability and conformance with applicable confined space entry requirements during excavation and removal of the drain line and the collection of confirmatory soil samples. If an excavation exceeds four (4) feet in depth and is to be entered, it will be considered a confined space, and Versar's Corporate Confined Space Entry Program, which meets the requirements of 29 CFR 1910.146 will be activated.

Personnel working in the general area of mechanical equipment will wear high visibility coveralls or reflective body garments. Personnel are not to come within twenty feet of mechanical equipment until the operator has secured all moving parts and authorizes approach through positive oral communication.

4.2.2 Trenching Procedure

The following procedures are to be followed during trench excavation:

- Equipment will be staged in the established work area;
- Mechanical equipment will be driven only over stable ground;
- Personnel are to be positioned beyond the operating radius of the excavation equipment;
- The FTL will observe the excavation at the rear and upwind of excavation equipment;

- Equipment will be secured and the boom placed to the ground prior to authorizing entry of field teams to investigate the open trench;
- The excavation process is to be observed for any suspect material that may be encountered; excavation operations are to be halted when a visual inspection is required or sampling must be conducted;
- Periodic air monitoring of the exposed surface, excavated soils and the breathing zone of investigating teams will be maintained;
- The excavation trench will be advanced using sloping procedures, if necessary; sloping will be at a maximum of 1 foot horizontal to 1 foot vertical;
- Excavated material will be staged no higher than one half the depth of the trench and no closer than two feet from the trench;
- Excavation equipment will be decontaminated with a pressure washer or steam cleaner.

4.2.3 Shoring /Sloping

Trenches that may pose a danger of sliding ground or potential cave-in are to be completed with a shoring system or by using sloping techniques. Sloping of excavated trenches is the preferred method for exploratory trenching. Sloping is conducted based on a maximum of 1foot horizontal to 1 foot vertical. All slopes will be excavated to this angle of repose.

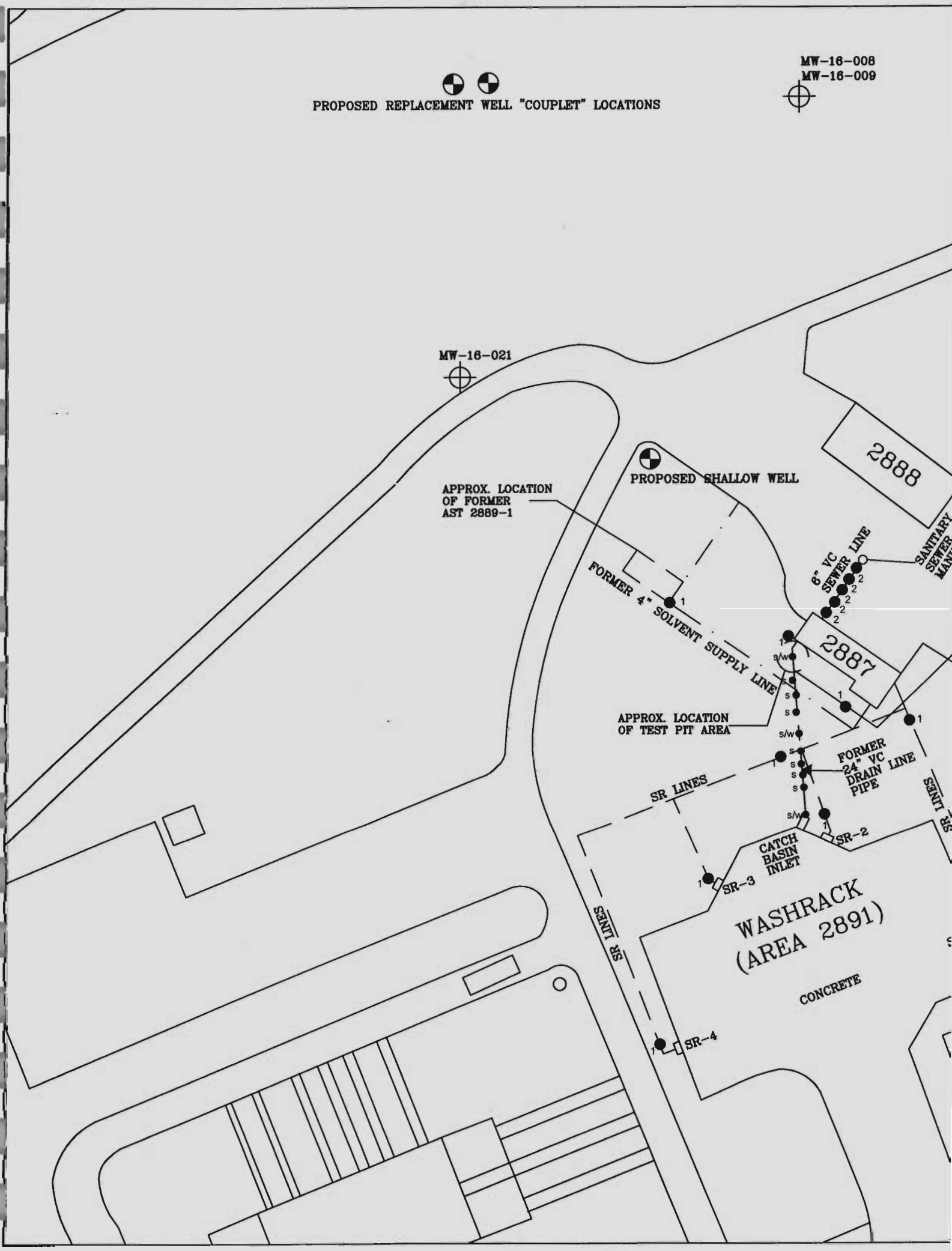
4.2.4 Air Monitoring

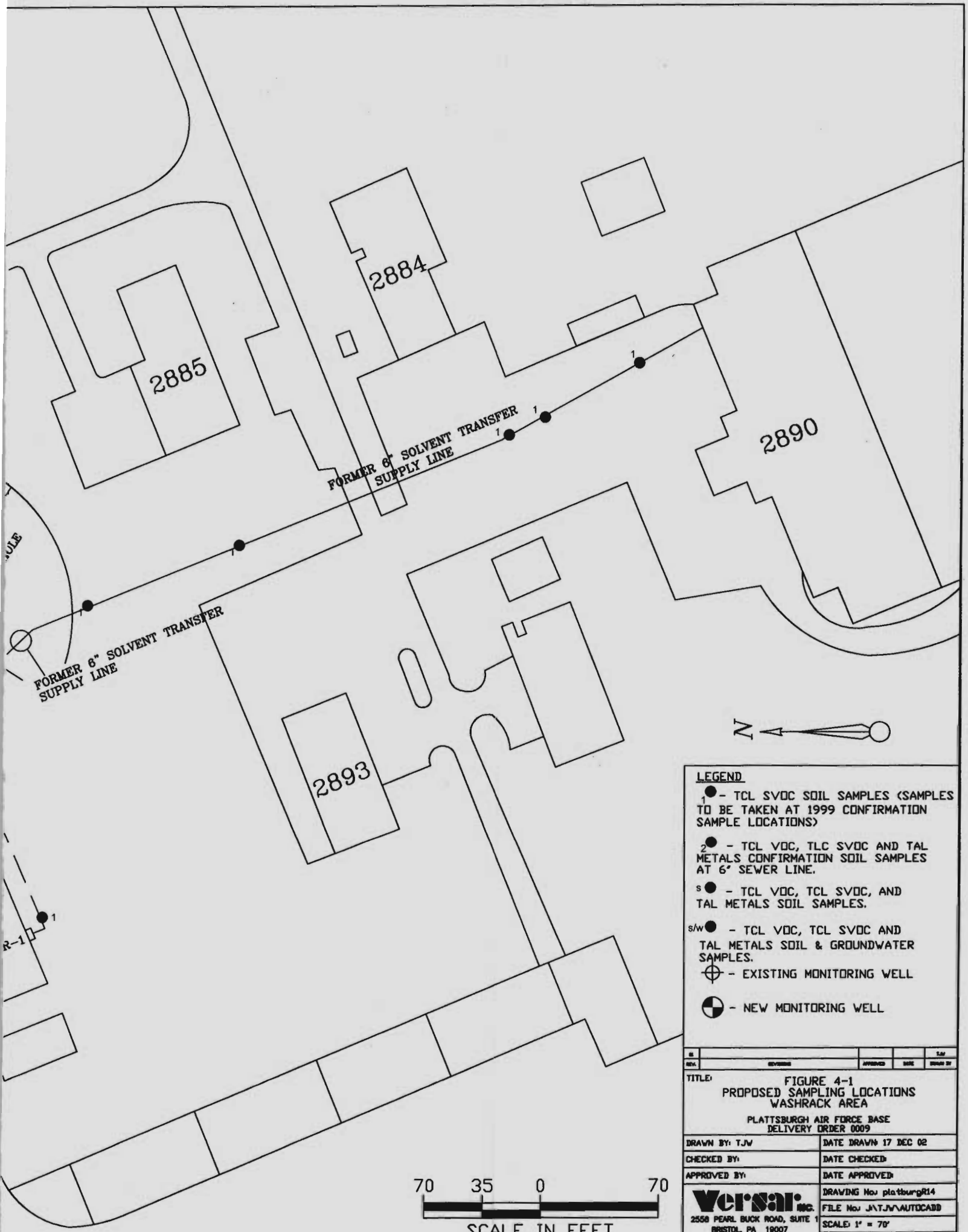
Air monitoring, as established in the SSEHSP, will be conducted periodically during trenching operations using a PID. The air immediately adjacent to the trench, in the breathing zone, and adjacent to excavated materials will be monitored and recorded. If monitoring results indicate the presence of VOC, steps outlined in the SSEHSP will be followed.

4.3 Geoprobe Sampling

Geoprobe sampling will be performed at the following areas (Figure 4-1):

- Along the former 4-inch solvent supply line from former AST 2889-1 to Building 2887, observed headspace readings during the 1999 Removal Action did not exceed 5 ppm above background levels. To ensure completeness, one (1) confirmation sample was collected at the mechanical joint of the supply line. One (1) confirmatory soil sample will be collected at a location similar to the 1999 OHM removal action confirmation sample and at a depth of 5 ft bgs for TCL SVOC analysis.
- Along the former Service Rack Supply Lines around the Washrack Area, six (6) confirmatory soil samples will be collected at locations similar to the 1999 OHM removal action confirmation samples for TCL SVOC analysis and at a depth of approximately 5 ft bgs;
- Along the former 6-inch solvent transfer supply line from Building 2890 to Building 2887, seven (7) confirmatory soil samples will be collected at locations similar to the 1999 OHM removal action confirmation samples for TCL SVOC analysis and at a depth of approximately 6 ft bgs;


PROPOSED REPLACEMENT WELL "COUPLET" LOCATIONS
MW-16-008
MW-16-009
MW-16-021
PROPOSED SHALLOW WELL
APPROX. LOCATION OF FORMER AST 2889-1
FORMER 4" SOLVENT SUPPLY LINE
APPROX. LOCATION OF TEST PIT AREA
6" VC SEWER LINE
SANITARY SEWER MAN
2888
2887
FORMER 24" VC DRAIN LINE PIPE
SR LINES
SR-2
SR-3
SR-4
CATCH BASIN INLET
WASHRACK (AREA 2891)
CONCRETE



TITLE: FIGURE 4-1
PROPOSED SAMPLING LOCATIONS
WASHRACK AREA

PLATTSBURGH AIR FORCE BASE
DELIVERY ORDER 0009

DRAWN BY: TJW	DATE DRAWN: 17 DEC 02
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: plattsburgR14
	FILE No.: J:\TJW\AUTOCADD
	SCALE: 1" = 70'
	SHEET 1 OF 1

REV.: 00

Versar INC.
2550 PEARL BUCK ROAD, SUITE 1
BRISTOL, PA 19007
(215) 788-7844

- Along the former 24-inch vitreous clay drain line and catch basin inlet, ten (10) soils and three (3) groundwater samples will be collected for TCL VOC, TCL SVOC, and TAL metals analysis. The soil samples will be collected at the location of the highest observed PID reading during collection of the soil borings. If no PID readings are encountered throughout the boring, the sample will be collected just above the observed groundwater interface. The collection of groundwater samples will determine if groundwater contamination exists at this location, based on the limited soils analysis that has previously been performed.

A total of twenty-four (24) soil samples and three (3) discrete groundwater samples will be obtained from Geoprobe boring locations and submitted with required QA/QC samples. The analytical data will be Level 3 validated and a validation package prepared. An electronic deliverable and a hard copy data package with Air Force Center for Environmental Excellence (AFCEE) Forms (or comparable) will be provided.

4.3.1 Soil Boring Installation

The following information will be obtained during installation of soil borings:

1. The drilling equipment (Geoprobe manufacturer and model) will be described in a general legend including a description and dimensions of the core barrel used (if applicable);
2. Depths/heights will be recorded in feet and/or fractions of feet;
3. Depth to first encountered free water will be indicated along with the method of determination. The first encountered water will be allowed to partially stabilize (5 to 10 minutes) and a secondary level and time between measurements will be recorded. Any other distinct water level(s) identified below the first level will be noted;
4. The drilling sequence and time log will be recorded;
5. All special problems and their resolution will be noted on the log;
6. The dates and times for the start and completion of borings will be recorded;
7. Each sequential boundary between various soils and individual lithologies will be noted on the log by depth. When depths are estimated, the estimated range will be noted;
8. The total depth of drilling or sampling, whichever is deeper, will be clearly identified on the log;
9. Significant color changes in the drill cuttings, depth at which the change occurred, and a lithologic description of the cuttings before and after the change will be recorded; and
10. Special abbreviations used on a log will be defined in the general legend.

All boring logs (original copies) will be submitted to AFBCA following completion of individual borings.

4.3.2 Subsurface Soil Sampling

Subsurface soil sampling will be accomplished using a truck-mounted Geoprobe. A macro-core sampler will be used to obtain soil samples from the required depth and Encore samplers will be

used for the collection of soil samples to be analyzed for VOC. Decontaminated samplers will be used for each sample collected for laboratory analysis. Upon retrieval of each soil sample, the sample's physical characteristics will be described (e.g. color, lithology, general appearance, etc.). Visible indication of contamination will be noted. For samples retained for chemical analysis, physical sample description will take place after the chemical samples have been placed in the appropriate containers. Each sample will be screened with a PID and the reading recorded on the boring log. The screened soil boring cuttings will be segregated by quality (i.e., above/below 5ppm above background). Each chemical sample will be opened, extracted, and bottled in the shortest possible time following collection of the sample. Samples for analysis of parameters other than VOC will be peeled prior to placement in sample containers. Peeling is the process whereby the portion of the sample that is in direct contact with the sampler is removed and discarded. In addition, the ends of the sample are removed and discarded. Samples for VOC analysis will not be peeled, but will be bottled and capped in a period of time no longer than 15 seconds after the sampler is opened, and will not be homogenized to minimize potential contaminant losses through volatilization. The remaining sample fractions will be obtained after the soil core has been well mixed to ensure homogeneity. Samples will be placed into the appropriate laboratory prepared sample containers. After the sample containers are sealed, they will be placed in individual zipper-type bags, placed immediately on ice, and prepared for shipment to the analytical laboratory. Sample jars will be labeled to include boring number, depth interval, date, project name, project number, and sampler's initials.

4.3.3 Ground Water Grab Sampling

At the three (3) proposed groundwater sampling locations, a temporary screened polyvinyl chloride (PVC) casing will be installed and the borehole left open for 24-hours to allow for the observance and collection of groundwater samples. Following the collection of groundwater samples the PVC casing will be removed and the borehole grouted. A disposable Teflon® bailer will be lowered into the water column, and a ground water grab sample withdrawn. No development or purging will take place, and a new (decontaminated) bailer will be used at each boring location. Ground water grab samples will be placed in sample containers, into individual zipper-type plastic bags and then immediately into a cooler with ice.

4.3.4 Boring Completion

All borings will be abandoned using a bentonite grout mixture that will be placed using a tremie pipe. The boring locations will be marked with a pin flag or wooden stake marked with the sample location and referenced to permanent physical landmarks (e.g., groundwater monitoring wells when possible) in the immediate vicinity.

Soil boring cuttings will be temporarily placed in 55-gallon drums and then accumulated with the stockpiled soils resulting from the drain line removal.

4.4 Groundwater Monitoring Well Installation

Two (2) 2-inch diameter, schedule 40, threaded flush joint polyvinyl chloride (PVC) monitoring wells will be installed as a "couplet" east of the Washrack Area as shown in Figure 4-1 to improve the site knowledge of groundwater flow direction and contaminant migration and to

replace a monitoring well that was decommissioned because of new building construction. One (1) 2-inch diameter PVC monitoring well will be installed next to Building 2887 as shown on Figure 4-1.

The first well of the couplet will be installed to a depth of approximately 20 feet bgs within the surficial aquifer and screened from 10 to 20 ft bgs with a screen slot size of 0.010 inch. The second couplet well will be installed to a depth of 40 ft bgs and screened from 30 to 40 ft bgs with a screen slot size of 0.010 inch. The third monitoring well will be installed to a depth of approximately 20 feet bgs within the surficial aquifer and screened from 10 to 20 ft bgs with a screen slot size of 0.010 inch. During installation of the monitoring wells, the boring will be logged for lithologic properties and soil samples will be collected for geologic characterization according to American Society of Testing Materials (ASTM) D-1586-99 "Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils." The wells will be constructed in accordance with standard practices that meet the minimum requirements of the NYSDEC and/or the New York State Department of Health.

A well construction diagram will be prepared for each monitoring well and will depict the following details of well construction:

1. Bottom of the boring,
2. Screen location,
3. Coupling location,
4. Granular filterpack placement,
5. Location of bentonite seal,
6. Grout location,
7. Cave-in areas,
8. Casing stick-up,
9. Protective casing details, and
10. As-built composition of well materials.

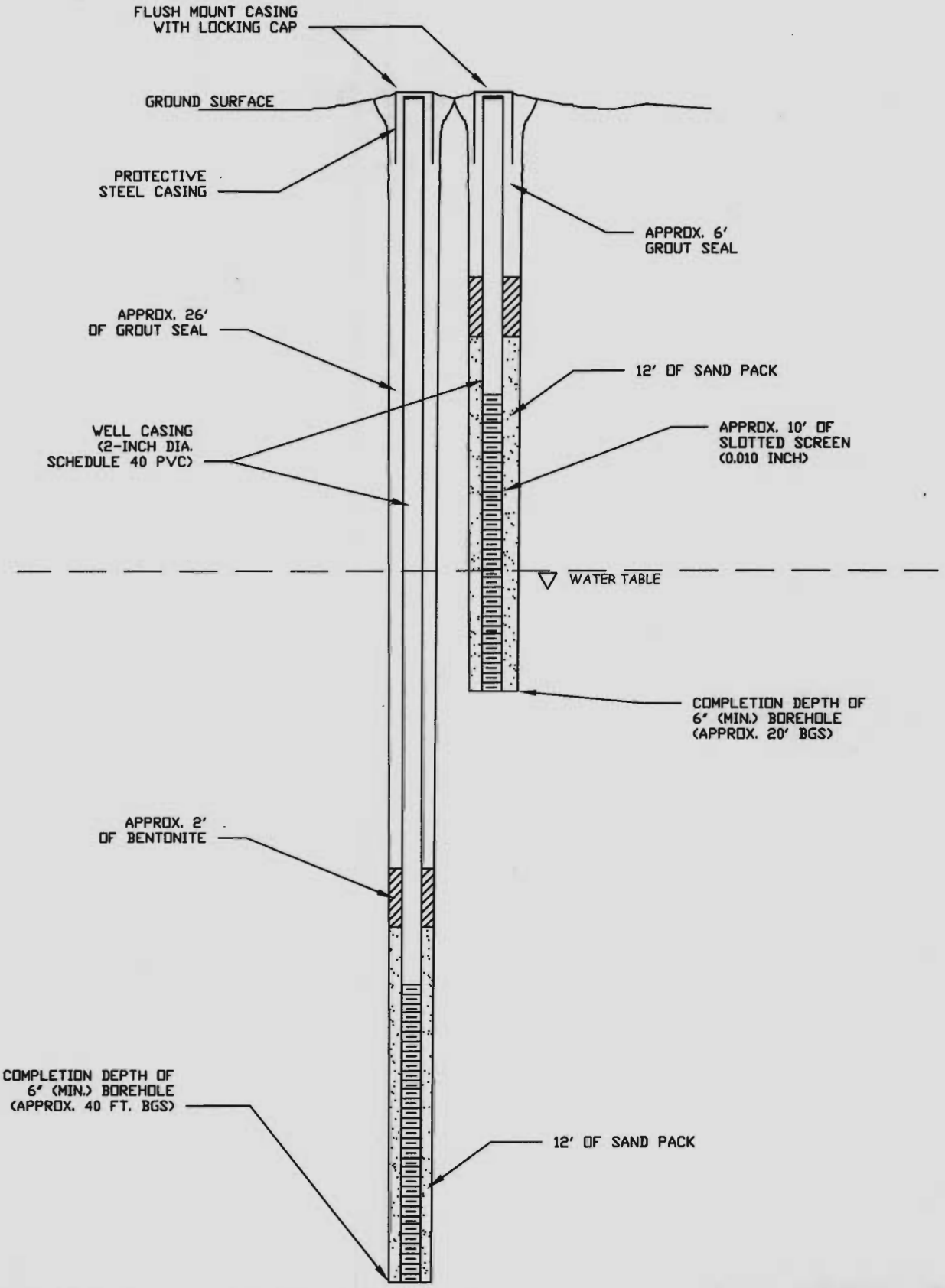
Figure 4-2 provides a construction detail for the well couplet and Figure 4-3 depicts the single monitoring well.

Versar will collect one (1) discrete soil sample from each well soil column at the location of the highest observed PID reading. The samples will be submitted for TCL VOC and TCL SVOC analysis.

4.4.1 Monitoring Well Development

The wells will then be developed. Well development will commence no sooner than 24-hours after installation to allow for concrete well apron curing. Approximately 24 hours after the grout has set, the well site will be inspected to determine if grout settling has occurred. If settling is observed, additional grout of approved composition will be added to fill any depressions. The well number will then be marked on the side of the protective casing. Well development will cease upon stabilization of temperature, specific conductance, and pH and upon achieving a turbidity of less than 50 nephelometric units. Discharge water color and volume will also be documented. If any municipal water is added to the borehole during well construction, a minimum of three (3) times that volume of water will be removed during development.

PERMANENT MONITORING WELL
CONSTRUCTION (TYP.)



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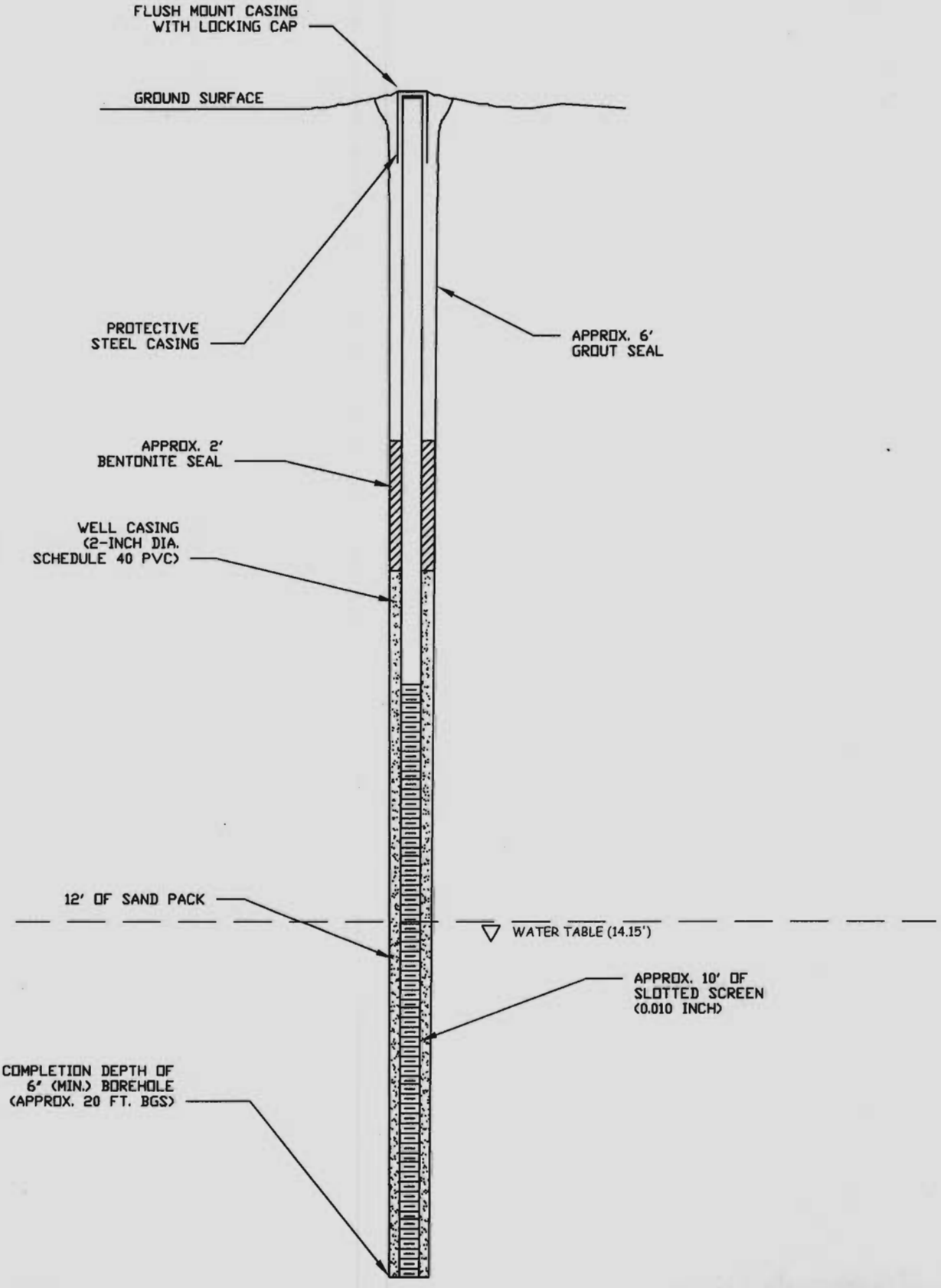
HORSHAM, PA 19044-2314
(215) 957-0955

FIGURE 4-2
WELL COUPLET CONSTRUCTION DIAGRAM
PLATTSBURGH AIR FORCE BASE
DELIVERY ORDER 0009

DATE:	17 DEC 02
DESIGNED BY:	TJW
SCALE:	nts
JOB NO.:	111000.1009.121
DWG. NO.:	FIG. 4-2

PERMANENT MONITORING WELL
CONSTRUCTION (TYP.)



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201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044-2314
(215) 957-0955

FIGURE 4-3
SINGLE WELL CONSTRUCTION DIAGRAM
PLATTSBURGH AIR FORCE BASE
DELIVERY ORDER 0009

DATE:	17 DEC 02
DESIGNED BY:	TJW
SCALE:	NTS
JOB NO.:	111000.1009.121
DWG. NO.:	FIG. 4-3

Wells which recharge very slowly causing them to be pumped to dryness during development will be pumped to dryness five times. Wells continuing to produce turbid water after the appropriate volumes of water have been removed, will be pumped to remove two additional well volumes, or to dryness two additional times, in an attempt to clear the water as much as possible. During well development, the pump or pump intake pipe will periodically be raised and lowered through the entire saturated length of the casing to ensure that all portions of the water column are affected. The well development process will include the washing of the well cap and interior of the well casing above the ground water level. This washing will take place before or during the development process.

During development, the site geologist or designated field technician will maintain a well development log. Information to be recorded on this log is as follows:

1. Well designation;
2. Date(s) of well installation;
3. Date(s) of well development;
4. Static water level from top of well casing before and 24 consecutive hours after development;
5. Quantity of fluid in well prior to development:
   a. Standing in well, and
   b. Contained in saturated annulus;
6. Field measurement of pH and specific conductance, temperature, and turbidity before, twice during, and after development;
7. Depth from top of well casing to bottom of well (from well construction diagram);
8. Screen length (from well construction diagram);
9. Depth from top of well casing to top of sediment inside well, before and after development;
10. Physical character of removed water, including changes during development in clarity, color, particulates, and odor;
11. Type and size/capacity of pump and/or bailer used;
12. Description of surge technique, if used;
13. Height of well casing above ground surface;
14. Typical pumping rate;
15. Estimated recharge rate; and
16. Quantity of fluid/water removed and time for removal (incremental and total).

All development logs (original copies) will be submitted to the Project Manager.

Groundwater monitoring well development/purge water will be discharged to the ground surface at the well locations/points of generation. The completed wells will be flush mounted with bolt-down manhole covers.

4.4.2 Surveying

A New York State Licensed surveyor will establish certified coordinates (e.g., latitude and longitude) and top of casing elevations and provide a location map for the three new groundwater monitoring wells.

4.4.3 Well Purging and Sampling

Approximately one month following well completion, Versar will return and sample the three wells. The collected samples (and required QA/QC samples) will be submitted for TCL VOC, TCL SVOC, and total lead analysis. An electronic deliverable and a hard copy data package with AFCEE Forms (or comparable) will be provided in a format compatible with the Air Force's Environmental Restoration Program Information Management System (ERPIMS).

The following sampling protocols will be followed:

1. The depth to water will be measured from the reference point on the top of the well casing (All water level measurements will be made relative to a notch or other permanent mark which serves as a consistent reference point. These measurements will be accurate to ± 0.01 feet.)
2. The well depth will be sounded and recorded, and the depth of the water in the well will be calculated.
3. A quantity of water will be removed equal to five times the calculated volume of standing water in the well (including the saturated annulus) wherever possible. Once the well has recovered to 80% of its original volume, the well will be sampled. Sampling logs will identify the type of equipment used for purging and sampling.
4. To eliminate the potential for well contamination during well sampling, the following procedures will be followed:
   a. A separate (e.g., dedicated) Teflon® bailer will be used at each well; therefore, the bailers will not be decontaminated in the field,
   b. For wells that are purged with a submersible pump, dedicated PVC discharge pipe will be used for each well. The pump will be thoroughly cleaned between each well using water from the approved water source and non-phosphate detergent, followed by a deionized (DI) water rinse, and
   c. All sampling equipment will be protected from contact with the ground surface by polyethylene plastic sheeting placed around the wellhead.
5. Specific conductance, pH, oxidation-reduction potential (Eh), temperature, and turbidity (if necessary, based upon turbidity measurements recorded during well development) measurements will be taken prior to and throughout well purging. These parameters will be allowed to stabilize prior to sample collection.
6. Water purged from each well will be separately containerized.

During the sampling of each monitoring well, information regarding the sampling will be recorded in the bound project field logbook. The following specific data will be noted:

1. Well number;
2. Date and time;

3. Static water level;
4. Depth of well;
5. Volume of water removed;
6. Time required for removal;
7. Type of equipment used for purging and sampling, and pump rate and time of pumping, if applicable;
8. Drawn down water level;
9. Specific conductance, pH, Eh, temperature, and turbidity readings;
10. Sample fractions taken and preservation methods used;
11. Weather conditions and/or miscellaneous observations; and
12. Signature of sampler.

4.5 Personnel Protective Equipment/Site Safety

The SSEHSP addresses safety and health issues related to the planned site activities at the Washrack Area and Buildings 2887 and 2890. Field Personnel will utilize Level D PPE with a contingency for an upgrade to Level C, should PID monitoring in the breathing zone indicate a reading of 5 ppm above background levels. 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 and cover the soil stockpile with tarps or Visqueen during non-operational hours.

4.6 Decontamination Procedures

All equipment that may directly or indirectly contact potentially contaminated soils will be decontaminated prior to arrival at PAFB. Decontamination procedures for site equipment will be implemented in conjunction with daily sampling activities and maintenance procedures. Decontamination of sampling equipment will be performed after each individual sampling event. Decontamination water generated during the field activities will be accumulated in 55-gallon drums and sampled to determine final disposition.

The following procedure will be used to decontaminate large pieces of equipment. The external surfaces of equipment will be washed with high-pressure hot water and Alconox, or equivalent laboratory-grade detergent, and, if necessary, scrubbed until all visible dirt, grime, grease, oil, loose paint, rust flakes, etc., have been removed. The equipment will then be rinsed with potable water.

The following procedure will be used to decontaminate sampling devices that can be hand-manipulated. The sampling devices will be scrubbed with a solution of potable water and Alconox, or equivalent laboratory-grade detergent. Then, they will be rinsed with potable water followed by an ASTM Type II Reagent Water. High-performance liquid chromatograph-grade water and distilled water purchased in stores are not acceptable substitutes for ASTM Type II Reagent-Grade Water. If equipment comes in contact with oil or grease, it will be rinsed with pesticide-grade methanol followed by pesticide-grade hexane.

Subsequently, the equipment will be allowed to air dry on a clean surface or rack, such as Teflon®, stainless steel, or oil-free aluminum elevated at least two feet above ground. If the

sampling device will not be used immediately after being decontaminated, it will be wrapped in oil-free aluminum foil, or placed in a closed stainless steel, glass, or Teflon® container.

Reagent-Grade II Water, methanol, and hexane will be purchased, stored, and dispensed only in glass, stainless steel, or Teflon® containers. These containers will have Teflon® caps or cap liners. It is the contractor's responsibility to assure these materials remain free of contaminants. If any question of purity exists, new materials will be used.

4.7 Management of Staged Soils from 1999 Removal

Approximately 11.5 cubic yards of soil remains staged onsite as a result of the 1999 Removal (OHM, September 1999). The stockpiled soil was generated during removal of the concrete sump and 6-inch solvent supply line during the 1999 removal action and not previously disposed because of contractual issues. These were the only soils during the project to exhibit a PID reading greater than 5 ppm above background. One (1) discrete sample will be collected from the staged soils for waste characterization/disposal acceptance and analyzed for RCRA characteristics (corrosivity, reactivity, ignitability, and TCLP VOC, TCLP SVOC and TCLP metals). Sampling and QA/QC protocols and procedures outlined in SW-846 will be followed. The TCLP analysis will be performed according to USEPA Method 1311. This analytical data package will be Level 2 validated for baseline characterization.

If uncontaminated (i.e., analytical results are below respective RCOs), the staged soil will be used to backfill the excavation. If contaminated but non-hazardous, the staged soil will be removed and transported by a licensed waste hauler to an off-site-permitted solid waste landfill or other acceptable disposal facility (e.g., asphalt batch plant). If determined to be RCRA hazardous waste, the staged soil will be removed and transported by a licensed waste hauler to the Chemical Waste Management, Inc. RCRA permitted treatment, storage, and disposal facility (TSDF) located in Model City, NY.

4.8 Loading of Waste Transfer Vehicles for Off-site Disposal

If analytical results determine that stockpiled soils/debris require off-site disposition, the soil/debris will be loaded into dump trailers using a front-end loader. The loading will be subject to vehicular availability and disposal facility waste profile approvals, but will otherwise be disposed of as soon as practical.

4.9 Site Restoration

Site restoration activities will not be initiated until the post-excavation/confirmatory analytical results have been reviewed and approved by PAFB personnel and the regulatory agencies. Site restoration will consist of restoring the excavated length of the drain line. Versar will backfill the excavation area in 6-inch lifts with clean fill or stockpiled soil from the excavation if determined to be uncontaminated. The clean fill will be "certified clean" with the source location identified at the time of delivery. If the source location does not have current analytical testing data available for a "clean" certification, the source location will be sampled and tested for NYSDEC TAGM #4046 and TCLP parameters. After soil placement, a 4-inch layer of stone aggregate will be placed and compacted, and the area will be paved/patched with asphalt. The

paving/patching will match the existing parking lot surface/grade and consist of 2-inches of binder coat and 1-inch of topcoat.

4.10 Demobilization

Following completion of the field activities and site restoration, Versar will demobilize all equipment and personnel from the site. All expendable PPE and any miscellaneous solid waste generated by site personnel during field activities will be transported to the local solid waste landfill. In addition, any damages to roads and utilities will be repaired.

5.0 POST-EXCAVATION/CONFIRMATION SAMPLING

Confirmatory soil sampling will be performed following removal of the existing 6-inch vitrified clay drain line at Building 2887. Seven (7) discrete soil samples and associated QA/QC samples will be collected along the length of the excavation at locations identified during the removal actions as described in the FSP.

The collected samples will be submitted for TCL VOC, TCL SVOC, and TAL metals analysis using USEPA Methods 8260B, 8270C, and 6010A/6020/7000 Series, respectively. Sampling and QA/QC protocols and procedures as outlined in SW-846 will be followed. Analytical data will be Level 3 validated and a validation package will be prepared and submitted to the regulatory agencies for review. If any of the results indicate that the reported concentrations exceed their respective RCOs, Versar will notify the Air Force that additional excavation activities may be required.

6.0 GEOPROBE AND MONITORING WELL SAMPLING

A summary of the planned Geoprobe and groundwater monitoring well sampling is provided below:

Location	Number of Samples*	Matrix	Type	Analyses[1]
Along the length of the former 4-inch solvent supply line	1	Soil	Discrete	TCL SVOC
Along the perimeter of the former Wash Rack Area	6	Soil	Discrete	TCL SVOC
Along the former 6-inch solvent transfer supply line from Building 2890 to Building 2887	7	Soil	Discrete	TCL SVOC
Along the former 24-inch vitreous clay drain line and catch basin inlet	10	Soil	Discrete	TCL VOC, TCL SVOC, and TAL metals
	3	Groundwater	Grab	TCL VOC, TCL SVOC, and TAL metals
East of the Washrack Area (Groundwater Monitoring Wells)	3	Soil	Discrete	TCL VOC, TCL SVOC, and total lead analysis
	6	Groundwater	Grab	

* **Excluding QA/QC Samples**
[1] **Proposed Analytical Methods**
TCL VOC – USEPA Method 8260B
TCL SVOC – USEPA Method 8270C
TAL Metals – USEPA Method 6010A/6020/7000 Series

A total of twenty-seven (27) soil samples and three (3) groundwater samples will be collected from Geoprobe and monitoring well locations and submitted along with the respective duplicate and QA/QC samples. The soil and groundwater samples will be submitted for TCL VOC, TCL SVOC, and TAL metals analysis as summarized above. Approximately one (1) month following well completion, Versar will return and sample the groundwater monitoring wells, submitting the collected samples (and required QA/QC samples) for analysis of TCL VOC and TCL SVOC, and total lead analysis. Sampling and QA/QC will follow the protocols and procedures outlined in USEPA Publication SW-846.

The soils results will be compared to the respective NYSDEC TAGM #4046 RCOs. The groundwater results will be compared to the NYSDEC Division of Water and Technical Operational Guidance Series (TOGS) (1.1.1) "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", Water Quality Class A Drinking Water, 1998.

7.0 WASTE MANAGEMENT

Planned waste management activities include: stockpiling, containment, characterization, and disposition of the following materials:

- Staged and excavated soils including Geoprobe and monitoring well soil cuttings,
- Drain line/debris,
- Decontamination water, and
- Personal protective equipment and other incidental materials.

Staged soils resulting from the 1999 Removal, excavated/stockpiled soils and debris resulting from the drain line removal, and soil boring/well cuttings will be sampled and analyzed for "totals" analysis (i.e., TCL VOC, TCL SVOC, TAL metals, Pesticides, and total PCBs) and compared to respective TAGM 4046 values. The analytical results will be reviewed with the regulatory agencies. Excavated and stockpiled soil will not be used as backfill until consultation with and approval is received from the regulatory agencies. Should analytical results contain exceedences of the respective TAGM values that prohibit use as backfill material, the selected stockpiled soils will then be sampled for RCRA characteristics (corrosivity, reactivity, ignitability, and the TCLP) for waste disposal acceptance. If contaminated but non-hazardous, the stockpiled soils/debris will be removed and transported by a licensed waste hauler to an off-site-permitted solid waste landfill or other acceptable disposal facility (e.g., asphalt batch plant). If determined to be RCRA hazardous waste, the stockpiled soil/debris will be removed and transported by a licensed waste hauler to the Chemical Waste Management, Inc. RCRA permitted landfill in Model City, NY.

Decontamination water will be staged in 55-gallon drums and also sampled and analyzed for hazardous constituents. If uncontaminated, the staged water will be discharged to the ground surface. If contaminated or hazardous, the staged water will be transported off-site by a licensed waste hauler to an acceptable, permitted treatment/disposal facility.

Accumulated PPE will be staged in plastic bags and transported to the local solid waste landfill.

All sampling and analysis of waste material will be performed in accordance with USEPA SW-846 as stated in the FSP. Versar will track and maintain records, including weights and measures, of all transportation and disposal activities. If any waste material proposed for offsite transportation/disposal requires completion of a waste manifest, Versar will prepare the manifest for review and signature by an AFBCA representative. All staff and subcontractors involved in transportation and disposal activities will be trained as required by applicable Department of Transportation (DOT) and USEPA requirements.

8.0 PROJECT MANAGEMENT

8.1 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; implementation and oversight of field activities; performance of post-excavation/confirmatory waste characterization sampling, sample tracking and custody; QA/QC submittals; review of analytical data; report preparation; cost management; schedule control; and technical guidance to on-site personnel.

The Contracting Officer's Representative (COR) for this project is Mr. Roy Willis, P.E., AFCEE/ERB, Brooks AFB, TX. The BRAC Environmental Coordinator (BEC) for PAFB is Mr. Mike Sorel, PE, AFBCA/DA, Plattsburgh, NY and the AFCEE Field Engineer is Mr. Joseph Szot, AFCEE/DA, Plattsburgh, NY. The project organization chart is included as Figure 8-1.

8.2 Project Controls

8.2.1 Record-keeping

Project records and documents will be logged through Versar's project document control center in our Horsham, 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 PAFB 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 project activities in the field office. These will include, but are not limited to:

- Daily field activities reports, photographs, progress reports, meeting minutes, etc. (The location and subject matter of the photographs will be recorded in the project field logbook in the form of a photograph log),
- Safety and health records and incident reports,
- Field records sufficient to recreate all sampling locations and to meet all ERPIMS data loading requirements,
- Sampling log, chain-of-custody, sample shipment manifests,
- Analytical test results and QA/QC records,
- An inventory of waste generated, weights and measures, bills of lading, waste manifests, etc.,
- An inventory of imported clean backfill (e.g., number of truck loads and associated weight slips),
- Telephone logs, and
- Monthly status summary reports.

Versar INC.

Figure 8-1
Project Organization Chart

Plattsburgh AFB
DO 0009
Remove Drainline at Washrack Area

BRAC ENVIRONMNETAL COORDINATOR AFBCA/CA
Mike Soral, PE

VERSAR PROGRAM MANAGER
Glen Turney, PE

AFCEE FIELD ENGINEER
Joseph Szot

AFCEE TEAM CHIEF (USAF)
Roy Willis, PE

QA/QC AND HEALTH & SAFETY MANAGER
David Basko

CONTRACT ADMINISTRATION
David Pyzik

VERSAR PROJECT MANAGER
Steven Egnaczyk

ENGINEER-OF-RECORD
George Anastos, Ph.D., PE

VERSAR FIELD TEAM LEADER
Tim Walker, PG
Bryan Foley (Alt.)

LABORATORY QA COORDINATOR
Donna Oswald, Ph.D.

SUBCONTRACTORS

GEOPROBE DRILLING & WELL INSTALLATION
TriState Probing/Drilling Services
Bensalem, PA

ANALYTICAL LABORATORY
O'Brien & Gere Laboratories, Inc.
Syracuse, NY

ASPHALT PATCHING/PAVING
Noel J. Brunnell & Son, Inc.
Plattsburgh, NY

CONTAMINATED SOIL TRANSPORATION/DISPOSAL
Chemical Waste Management, Inc.
Division of Waste Management, Inc.
Model City, NY

DRAIN LINE EXCAVATION
MC Environmental Services, Inc.
South Glens Falls, NY

SURVEYING
Robert M. Sutherland, PC
Plattsburgh, NY

GRAVEL & CLEAN FILL -
Local Subcontractor

8.2.2 Reporting

Versar will summarize the field activities conducted and incorporate the analytical data into a Supplemental Removal Closure Report (SRCR) for submittal to the Air Force and the regulatory agencies. The SRCR will discuss the results and findings of the current work and provide conclusions and recommendations. The SRCR will be an Addendum to the Final Closure Report (i.e., OHM, September 2001) to facilitate Final Closure Approval from NYSDEC and USEPA.

9.0 REFERENCES

AFCEE, 2001. United States Air Force. (USAF), HQ, Air Force Center for Environmental Excellence (AFCEE), *Guidance for Contract Deliverables, Appendix C, Quality Assurance Project Plan (QAPP)*, Ver. 3.1, August 2001.

NYSDEC, 1994. *Determination of Soil Clean-up Objectives and Clean-up Levels*, Technical and Administrative Guidance Memorandum HWR-94-4046, New York State Department of Environmental Conservation (NYSDEC), Bureau of Hazardous Waste Remediation, Albany, NY.

OHM. 2001. *Final Closure Report For Removal Actions at the Washrack (Area 2891) and Building 2890 (Nose Dock 8) at Plattsburgh Air Force Base*, Final Closure Report, OHM Remediation Services Corp., September 2001.

SOW, 2001. Statement of Work (SOW) to Remove Drain Lines at Washrack Area at Plattsburgh Air Force Base, New York. United States Air Force (USAF), Air Force Center for Environmental Excellence (AFCEE), Environmental Restoration Division, Project Number: THWA 2001-6006; Delivery Order: 0009, October 24, 2001.

SW-846. U.S. Environmental Protection Agency (USEPA), 1986, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third edition, Final Update I (July 1992), Final Updates II and IIA (September 1994), Update III (December 1996), and Draft Update IVA (January 1998).

URS, 1996. *Background Surface Soil & Groundwater Survey for the Plattsburgh AFB*, United States Department of the Air Force, Plattsburgh Air Force Base, Plattsburgh, New York, URS Consultants Inc. (URS), Buffalo, NY.