CLOSURE REPORT FOR THE REMOVAL ACTION AT THE WEAPONS STORAGE AREA – BUILDINGS 3578 AND 3569 (SS-013)

FINAL

PLATTSBURGH AIR FORCE BASE
PLATTSBURGH, NEW YORK

AFCEE Contract No. F41624-97-D-8011
Delivery Order No. 0012

***Prepared for*:**

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

and the

Air Force Real Property Agency
Plattsburgh Air Force Base, New York

***Prepared by*:**

Versar INC.

201 Gibraltar Road Suite 100
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February 2003

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Erin M. Crotty
Commissioner

MEMORANDUM

TO: Rich Wagner, Region 5 - Ray Brook

FROM: Jim Quinn, Federal Projects Section, BERA, DER JQ

SUBJECT: Plattsburgh Air Force Base ID No. 510003

DATE: February 20, 2003

Attached is a copy of the Final Closure Report For The Removal Action At The Weapons Storage Area - Buildings 3578 and 3569 (SS-013) at the former Plattsburgh Air Force Base.

If you have any questions, please contact me at 402-9697.

Attachment

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AFCEE	Air Force Center for Environmental Excellence
amsl	above mean sea level
ARAR	Applicable or Relevant and Appropriate Requirement
AST	Aboveground Storage Tank
BTEX	benzene, toluene, ethyl benzene, xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability
DOD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
FFA	Federal Facilities Agreement
HQ	Headquarters
IRP	Installation Restoration Program
MTBE	methyl tertiary butyl ether
NCP	National Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
PAH	polycyclic aromatic hydrocarbons
PARC	Plattsburgh Airbase Redevelopment Corporation
RAB	Restoration Advisory Board
RCO	Recommended Cleanup Objective
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
SARA	Superfund Amendments and Reauthorization Act
SI	site investigation
SS	spill site
SVOC	semivolatile organic compounds
TAGM	Technical and Administrative Guidance Memorandum
TCLP	Toxicity Characteristic Leaching Procedure
USAF	United States Air Force
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
VOC	volatile organic compound

LIST OF UNITS OF MEASURE

bgs	below ground surface
ft/ft	foot/feet
ft^2	square feet
ft/d	feet per day
gpm	gallons per minute
K_{oc}	organic carbon-water partition coefficient
L	liter
mg	milligram
MSL	mean sea level
ppb	parts per billion
ppm	parts per million
µg/kg	micrograms per kilogram
µg/l	micrograms/liter
$µg/m^3$	micrograms per cubic meter
yd^3	cubic yard

1.0 INTRODUCTION

The United States Air Force (USAF) performed a "time critical" removal action of contaminated soil at two small areas within the soils operable unit of the Weapons Storage Area, designated as SS-013, located at the former Plattsburgh Air Force Base (AFB) in Plattsburgh, Clinton County, New York. This removal action was performed pursuant to the Federal Facilities Agreement (FFA), as part of the Department of Defense (DOD) Installation Restoration Program (IRP). The IRP was developed as a component of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. The IRP at Plattsburgh AFB is currently being administered by the Air Force Base Conversion Agency (AFBCA) and implemented according to an interagency FFA (Docket No. II – CERCLA-FFA-10201) among the USAF, the United States Environmental Protection Agency (USEPA), and the New York State Department of Environmental Conservation (NYSDEC).

The Action Memorandum was prepared in May 2000 and submitted to the NYSDEC and USEPA for review and comment. It was presented to the public at a public meeting in Plattsburgh, New York in June 2000. It served as the basis for the removal action addressing the technical approach, excavation of contaminated soil, confirmation sampling, and off-site disposal of contaminated material.

1.1 Site Description and History

Plattsburgh AFB is located in Clinton County in the northeastern corner of New York State (**Figure 1**), as shown on the U.S. Geological Survey (USGS) topographic quadrangle dated 1966. It is bordered to the north by the City of Plattsburgh, to the east by Lake Champlain, lakeshore residential communities to the southeast, the Salmon River and agricultural land to the south, and Interstate 87 to the west. The base, formerly the home of the 380th Air Refueling Wing, officially closed on September 30, 1995. **Figure 1** also shows the approximate location of the Weapons Storage Area, also referred to as SS-013 (Site).

The Weapons Storage Area SS-013 is shown in detail on **Figure 2.** Soil contamination addressed in this removal action closure report is associated with Buildings 3578 and 3569. The first impacted area is the former location of an underground storage tank (UST) and associated piping that were removed by OHM in 1996, along with petroleum contaminated soil in and around the tank and piping of Building 3578. The complete excavation of impacted soil, however, was not performed at the time of UST removal. The second impacted area is associated with Building 3569 and is located along the sewage pipe, which ran from the building to a nearby leach field. Surface samples from the sewage pipe area identified PAH contamination above the NYSDEC TAGM 4046 recommended soil cleanup objectives (RCOs). Both areas were originally identified in the RI (URS, 1996) as potential sources of contamination.

1.1.1 Site Location

SS-013 is located in the southwestern portion of Plattsburgh AFB. The entire site consists of the industrial portion of the former Weapons Storage Area and is approximately 20 acres in size. The two areas of concern addressed in this closure report are situated adjacent to the Buildings 3578 and 3569. The site is bordered to the west-northwest by Interstate 87, and by wetlands and the Salmon River to the south-southwest.

Land uses near Plattsburgh AFB include residential, commercial, industrial, and recreational. The original base reuse plan designated SS-013 for commercial use (PARC, 1995). Additional options for reuse are currently being considered.

1.1.2 Physical Features

SS-013 consists of open, grass-covered fields with drainage swales, a paved roadway, paved parking and storage areas, and a few isolated buildings. The site slopes gently to the south-southwest at an elevation ranging from approximately 140 to 180 feet above mean sea level (amsl). During the spring and times of heavy precipitation, the water conveyed by the drainage swales within the site becomes an intermittent stream (unnamed) on the southern portion of the site as it enters the Salmon River.

Protected wetlands are located in the southern portion of SS-013 along areas of the ditch/intermittent unnamed stream that discharges to the Salmon River, and along the Salmon River itself.

1.1.3 Site Stratigraphy

Stratigraphy in the SS-013 area generally consists of four hydrogeologic units: 1.) an upper unconsolidated sand aquifer; 2.) an underlying confining layer formed by a silt and clay unit; 3.) a glacial till unit; and 4.) a thinly bedded dolomite bedrock aquifer.

The shallow sand aquifer consists of fine to medium grain sand with variable amounts of silt, coarse sand, and gravel. The groundwater in some areas of the site is 2 to 5 feet below ground surface. This shallow aquifer ranges from 10 to 30 feet thick in the vicinity of the site. The sand unit typically becomes finer grained with depth, grading into the underlying silt and clay unit.

A gray silty clay unit lies beneath the unconfined sand aquifer and is approximately 6 to 10 feet thick in the area of the site.

Glacial till overlies the bedrock in the vicinity of the site and consists of poorly sorted gray sand, silt, and a clay matrix intermixed with gravel, cobbles, and boulders. The till is reported to be 3 to 15 feet thick. The till is a water-bearing unit, however, it is separated hydraulically from the overlying water table aquifer by the silty-clay confining unit. The bedrock, which underlies the till in the area, is described as thinly, horizontally to sub-horizontally, bedded dolomite.

1.1.4 Site Hydrology

Groundwater in the Plattsburgh area generally occurs in both the overburden deposits (unconfined aquifer) and in the bedrock (confined aquifer). The Adirondack Mountains to the west and south of Plattsburgh represent the major recharge area for the region, and Lake Champlain represents the regional discharge area. Other locally significant discharge areas include the Salmon River and the Saranac River. Local shallow groundwater flow from SS-013 is to the south-southwest towards the Salmon River. The Salmon River is approximately one mile south and west of the site.

Plattsburgh AFB obtains its potable water from the City of Plattsburgh municipal water system. Some residences adjacent to the base rely on private wells for drinking water. These private wells are not likely to be influenced by groundwater conditions present at the site because local groundwater flow is away from the residential wells and towards the Salmon River.

1.1.5 Site Utilities and Sensitive Features

A utilities mark-out was requested for all active underground lines. No electric, communications, or gas lines were identified. However, one underground active water line was identified within the limits of the excavation at Building 3578. One monitoring well (MW-13-008) was also identified within the limits of excavation of Building 3578. Both of these features were protected during the removal activities.

1.2 Previous Investigations and Removal Actions

1.2.1 Previous Soil Investigations at Building 3578

The SI and RI (URS, 1995 and 1996) identified soil contaminants consisting of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) known as polycyclic aromatic compounds (PAHs) that exceeded the NYSDEC TAGM Recommended Cleanup Objectives (RCOs).

1.2.2 Previous Soil Removal Actions at Building 3578

An UST removal action was performed in 1996, which included a tank, associated piping, and several cubic yards of contaminated soil, which did not achieve clean closure of the area. Confirmation samples from this action showed exceedences occurred only in samples collected along sidewalls of the excavated piping trench, while contaminant concentrations in the soil surrounding the former UST tank were below the recommended regulatory limits. Exceedences of xylenes, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene were observed in the soil samples from the trench area. This piping trench area extended approximately 63 feet southwest from the southwest corner of Building 3578. The UST excavation area was approximately 30 ft. by 30 ft. It was estimated that approximately 250 cubic yards of contaminated soil

remained onsite within the trench area of the former excavation. The former OHM excavation area is outlined in **Figure 3**.

1.2.3 Previous Soil Investigations at Building 3569

The RI report (URS, 1996) identified PAH exceedences of NYSDEC TAGM 4046 RCOs (Appendix A, Table 2, Column 9) in surface samples for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and chrysene along the piping that ran from the building to the leachfield.

1.2.4 Previous Groundwater Investigations

Limited data was available regarding the groundwater quality in the vicinity of Buildings 3578 and 3569. Only one sample was collected by OHM (June 5, 1996) from monitoring well MW-13-008 adjacent to Building 3578 (**Figure 3**), and it had significant levels of benzene, toluene, ethylbenzene, xylenes, naphthalene, acenaphthene, fluorene, phenanthrene, and 2,4-dimethylphenol above NYSDEC Groundwater Quality Standards or Guidance Values. The laboratory data is presented in **Table 1**.

1.2.5 Release or Threatened Release of a Contaminant

Based on the soil sampling results of the SI, RI (URS, 1995 and 1996) and UST closure (OHM, 1996), VOCs (benzene, toluene, ethyl benzene, and xylenes) and SVOCs/PAHs [including acenaphthene, naphthalene, fluorene, phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene] were detected at the site, particularly in the areas adjoining Buildings 3578 and 3569. The referenced compounds are all common to petroleum distillates such as gasoline, diesel fuel, heating oil, hydraulic oil, and/or lubricating oils. Several of the soil analytes were detected at concentrations exceeding the respective NYSDEC TAGM 4046 RCOs.

Several VOCs and PAH compounds were also detected in the groundwater from the monitoring well adjacent to Building 3578 (MW-13-008). The compounds that exceeded the New York State Class GA Groundwater Quality Standards (**Table 1**) included benzene, toluene, ethylbenzene, xylenes, naphthalene, acenaphthene, fluorene, phenanthrene, and 2,4-dimethylphenol.

1.2.6 National Priority List Status

Plattsburgh AFB has been listed on the National Priorities List (NPL) since November 1989. Multiple locations within the base are of concern, including several areas within the Weapons Storage Area, SS-013. The removal action discussed in this Closure Report addresses the mitigation activities performed to achieve closure of the soils operable unit associated with Buildings 3578 and 3569.

1.2.7 Other Actions Performed Buildings 3578 and 3569

Other than the above-referenced AFCEE-funded UST removal, there were no other federal, state, or local actions implemented at SS-013, Buildings 3578 and 3569, for the soils operable unit with the exception of a removal action conducted at the former Waste Accumulation Area (FWAA) to the east of Building 3578 by OHM in 1997 (November).

2.0 REMOVAL/REMEDIATION NARRATIVE

This section describes the contaminated soil removal, confirmation sampling, and site restoration activities performed by VERSAR at the SS-013 for Buildings 3578 and 3579.

2.1 Site Preparation

During this removal action, the following site preparation activities were conducted:

- Access to site for VERSAR representatives and subcontractors was coordinated with AFCEE personnel and Plattsburgh AFB security;
- Site inspections with appropriate AFB and utility company personnel were conducted to identify aboveground and underground utilities and other sensitive site features;
- Utilities and other site features were located and marked with flags, tape, or paint to prevent danger;
- Containment areas were constructed with Visqueen and hay bales to stage excavated soil for characterization at Buildings 3578 and 3569;
- Asphalt was removed from Building 3578 area and stockpiled using a backhoe;
- Concrete was broken, removed from Building 3578, and stockpiled using a backhoe with hoe ram hammer attachment to expose the contaminated soil.

No clearing or grubbing activities were necessary during the removal action at either location.

2.2 Health and Safety

The VERSAR Field Team Leader served as the Site Health and Safety (H&S) Officer. He insured that all VERSAR and subcontractor personnel were familiar with the approved site-specific Health and Safety Plan (HASP) (VERSAR, 2000) and conducted a site orientation for all personnel to familiarize them with site features and conditions, the scope of work, and site-specific hazards. He also conducted daily H&S meetings each morning prior to beginning work, and ensured all work was conducted in accordance with the HASP.

The onsite work was conducted using personal protective equipment, Level D (hardhat, safety glasses, steel-toed work boots, and work gloves). Tyvek coveralls and booties were worn when appropriate. Sound pollution (i.e., noise) protection was worn when the hoe ram was deployed to remove the concrete. Access to open excavation areas was restricted using a combination of high-visibility fencing, caution tape, and traffic cones.

2.2.1 Volatile Organic Vapor Air Monitoring

A number of VOCs and SVOCs were detected during the previous work conducted at the SS-013 buildings. They include four VOCs (benzene, toluene, ethylbenzene, and xylenes) and thirteen SVOCs (acenaphthene, fluorene, naphthalene, phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene,

benzo(a)pyrene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene). Due to the varying ionization potential of the different VOCs and SVOCs/PAHs, air monitoring was conducted at regular intervals using an H-NU PI 101 intrinsically safe photoionization detector (PID) with a 10.2 electron volt (eV) lamp. No elevated PID readings were observed within the breathing zone during field activities.

2.3 Soil Screening

Soil samples were collected periodically within the excavations from random points along the sidewalls and bottom, as well as from areas of stained or malodorous soils. These samples were subjected to headspace analysis with the PID. Approximately 4 to 8 ounces of soil were placed in a sample jar and covered with plastic wrap and aluminum foil. The sample was then warmed using a vehicle heating vent for 10 to 15 minutes, allowing the volatile organic vapors to collect and equilibrate in the headspace above the soil. The aluminum/plastic cover was then punctured using the wand of the PID and the highest vapor concentration for each sample was noted in the field log.

If the PID headspace volatile organic vapor concentration was above background level of 4-5 ppm, the soil was suspected to be contaminated and was staged in a separate "contaminated" stockpile. If the headspace concentration was below the background level, the soil was considered clean and staged in a clean stockpile. This screening process was used to aid in the separation and stockpiling of clean and contaminated soil, and to preliminarily determine if the clean limits of excavation had been achieved.

2.4 Excavation and Removal Activities

VERSAR and its subcontractor, ARTC/Scaccia, using a backhoe, excavator, and front-end loader, performed the excavation and stockpiling of soil.

2.4.1 Excavation and Removal of Soil at Building 3578

Excavation activities began August 7, 2000, at the northeastern corner of the site. The asphalt and concrete were removed to the approximate limits of excavation achieved by the previous OHM removal action (**Figure 3**), followed by the removal of soil in consecutively deeper layers or stages. In accordance with the Action Memorandum, excavated soils were staged in approximately 75 ton (50 cubic yard) stockpiles, staged atop Visqueen and surrounded by hay bales along the east and west sides of Building 3578. As expected the first three (3) ft. layer of soil removed from the former trench area exhibited no PID headspace readings above background and was presumed "clean." As the excavation progressed, odors began emanating from the soil on the bottom and sidewalls of the excavation.

VERSAR notified Air Force personnel regarding the odors and performed headspace analysis on retained soil samples. The headspace analysis registered PID readings considerably above background levels of 4-5 ppm, ranging as high as 40 ppm. After consulting with Air Force personnel, VERSAR was instructed to cease excavation

activities on August 8, 2000 and dig selected test pits. Test pits were excavated on either side of Weapons Storage Area Road. PID readings from soils in these test pits suggested that the contamination might have migrated beyond Weapons Storage Area Road. Maximum PID readings were observed immediately above a gray clay layer.

Consequently, VERSAR was directed by AFCEE to perform a GeoProbe soil boring study of the area to determine the approximate extent of contamination. VERSAR and its subcontractor, Tristate Environmental Management Services, Inc., performed the GeoProbe subsurface assessment sampling on August 21, 2000 (**Figure 4**). The GeoProbe analytical results detected VOC and SVOC contaminants, however, all of the results were below NYSDEC TAGM 4046 RCOs (See Section 3.1.1 for details).

Excavation activities resumed November 9, 2000, following review of the analytical data by AFCEE personnel and regulatory agencies. Soil was removed in 1 to 2 ft layers, separated, and staged. Eleven soil stockpiles were generated (See Section 3.1.3 for details). Excavation continued until the soils showed no discoloration and PID readings approached background levels. Having achieved a preliminary indication of the clean limits of excavation, confirmation sampling was performed. Approximately 900 tons (600 cubic yards) of soil was removed from the excavation and stockpiled for characterization.

Confirmation sampling indicated a "hot spot" (exceedence) along the western sidewall, with analytes including benzo(a)anthracene, benzo(a)pyrene, and chrysene at concentrations greater than the NYSDEC TAGM RCOs (Location No. 4, Sample PAFB-SS 13-028). In accordance with the Action Memorandum, approximately 15-30 tons (10-20 cubic yards) of soil was excavated and the area around soil sample PAFB-SS 13-028 was re-sampled (Refer to 3.1.2.1 for additional details). The re-sample showed no exceedences of the NYSDEC TAGM RCOs. The site was secured for the winter with the excavation remaining open and the exposed waterline covered with sufficient soil to prevent freezing. After the Data Validation/Usability Report was submitted to the regulatory agency for review and comment, VERSAR was permitted to backfill the area the following year (November 2001).

2.4.2 Excavation and Removal of Soil at Building 3569

Excavation began November 15, 2000. The excavation began at the northwestern corner of the building and continued to a depth of 2 ft and a width of approximately 4 ft to the leach field approximately 75 ft. The excavated soil was staged in one pile next to the excavation on Visqueen. Approximately 35 to 40 tons (23-27 cubic yards) of soil was excavated from the area. Confirmation samples were collected December 11, 2000, and the site was secured for the winter with the excavation remaining open. Analytical results of the sampling indicated that Location No. 1, sample PAFB-SS 13-001, had exceedences of the NYSDEC TAGM recommended soil cleanup levels for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and chrysene. As a result, an additional 4-5 cubic yards of soil was removed from that location and the area was re-sampled (Location No 1A, PAFB-013-3569-01A) on May

8, 2001. The re-sample results indicated no exceedences of the RCOs. After the Data Validation/Usability Report was submitted to the regulatory agency for review and comment, VERSAR was permitted to backfill the area (November 2001).

2.5 Site Restoration

The excavation areas were restored by backfilling with soil from the original excavations that was designated as clean, according to the analytical data (See Section 3.2.3), supplemented by certified clean fill material that replaced the contaminated soil transported off-site for disposal. Approximately 400 tons (270 cubic yards) of certified clean fill supplied by D. Rushford Trucking, Inc., was used to backfill the excavation, in addition to the clean, native materials. Each area was filled and compacted using the front-end loader and a walk-behind sheepsfoot compactor. **Appendix A** provides documentation of the amount of clean fill material delivered to the site, and the clean fill laboratory certification is provided in **Appendix B**. After backfilling was completed, the sites were dressed and debris (asphalt and concrete) was removed. The chipped asphalt and concrete were transported in roll-off containers to the Construction and Demolition (C&D) Landfill (OTH 3505-1) located at the far northwestern corner of the runway for final deposition. No seeding or landscaping was required at these sites.

3.0 ASSESSMENT, CONFIRMATION AND CHARACTERIZATION SAMPLING

3.1 Sampling and Analysis

The sampling program was performed as three events as shown below:

- GeoProbe Assessment sampling
- Post-excavation or confirmation sampling
- Characterization sampling

Assessment and confirmation sampling were accompanied by a data validation/usability report. In accordance with the Work Plan, grab samples collected were used to determine the extent of contamination and adequacy of contaminated soil removal at the anticipated limits of the excavation areas, while composite characterization sampling was used to characterize (for clean fill and disposal) the potentially contaminated waste stockpiles generated from the removal action. A data validation report was not required for the characterization samples.

All samples were analyzed for VOCs and SVOCs in accordance with EPA Methods SW846-8260B and SW846-8270C, respectively. Analyte concentrations were compared to NYSDEC TAGM 4046 (Appendix A, Tables 1 and 2) Recommended Cleanup Objectives (RCOs) for soil to determine if clean conditions had been achieved and offsite disposal requirements.

3.1.1 GeoProbe Assessment Samples

On August 21, 2000, VERSAR was directed by Air Base personnel to conduct a GeoProbe investigation to determine if the contamination associated with Building 3578 had migrated west of Weapons Storage Area Road. Eighteen soil borings were collected, including one immediately east and one immediately west of the former UST location. The respective sample locations are shown in **Figure 4**. Soil borings were extracted in 2-inch diameter acetate tubes advanced to depths ranging from 3 to 8 ft., depending on the below ground surface depth of the underlying clay layer (topography west of Weapons Storage Road declines). The boring soils were characterized with respect to color, soil texture, odor, maximum PID headspace reading, and approximate thickness of the contaminated soil layer. The apparent soil contamination was limited to a narrow 6-inch to 2-foot band of discolored, oil-stained soil immediately above a clean gray clay layer. The soil was clean, i.e., free of odors and discoloration, throughout the clays lens, whose thickness was greater than two feet. **Table 2** provides a summary of these soil characteristics. Two NYSDEC agency officials from Ray Brook and Albany, NY, were present to oversee the drilling of the soil borings and collection of the soil samples. VERSAR was instructed to bias sample collection and extract the soil samples within the layer of maximum apparent soil contamination.

The results for the GeoProbe samples are summarized in **Table 3**. A data validation/usability report for Kemron Project No. L008471, dated September 27, 2000 was prepared and submitted for regulatory agency review (**Appendix C**).
There was one VOC NYSDEC TAGM 4046 RCO exceedence, acetone, which was qualified as an artifact associated with the field sampling blank and as a common laboratory contaminant. There were no SVOC exceedences. Consequently, no further action was necessary outside the originally proposed work plan excavation area.

3.1.2 Excavation Confirmation Samples

3.1.2.1 Building 3578

Confirmation samples were collected from the limits of the excavation on November 20 and 21, 2000. Fifteen samples were collected and analyzed from the bottom and sidewalls of the excavation. Sample locations are depicted in **Figure 5** and the analytical results are provided in **Table 4**. The results show a single sidewall sample (Location No. 4, Sample No. SS013-28) along Weapon Storage Area Road had analyte exceedences of the NYSDEC TAGM RCOs for benzo(a)anthracene, benzo(a)pyrene, and chrysene. A data validation/usability report for Kemron Project No. L0011491, dated January 21, 2001, was prepared and submitted for review by the regulatory agencies (**Appendix C**).

VERSAR removed additional soil from the impacted area around Location No. 4, Sample No. SS013-28, and the soil was re-sampled on December 12, 2000. The sample location (Location No. 4A, also known as Location No. 16 in previous submissions and data packages) is depicted in **Figure 6** and the analytical results are provided in **Table 4**. A data validation/usability report for Kemron Project No. L0012290, dated February 7, 2001 (rev March 22, 2001) was prepared and submitted to the regulatory agencies for review (**Appendix C**).
Analytical results show no exceedences of the NYSDEC TAGM 4046 RCOs (Location No. 4A, Sample No. SS013-28b) in the re-sample. Consequently, the area was considered clean and no further action was necessary.

3.1.2.2 Building 3569

Confirmation samples were collected from the limits of the excavation on December 11, 2000. Eleven samples were collected and analyzed from the bottom and sidewalls of the excavation. Confirmation sampling locations and analytical results for Building 3569 are shown in **Figure 7** and **Table 5**, respectively. There were no VOC exceedences of the NYSDEC TAGM 4046 RCOs (Appendix A, Table 1, Column 9) at any sample location and only one sample location showed exceedences of the RCOs (Appendix A, Table 2, Column 9) for PAHs at sidewall sample Location No. 1 (Sample No. SS013B-01) for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and chrysene. A data validation/usability report for Kemron Project No. L0012251, dated February 7, 2001 (rev March 22, 2001), was prepared and submitted for review by the regulatory agencies (**Appendix C**).

VERSAR removed additional soil from the impacted area around Sample No. SS013B-01 and re-sampled the sidewall on May 8, 2001. The sample location (Location No. 1A, SS013B–01A) is shown in **Figure 8** and the analytical results are provided in **Table 5**. A data validation/usability report, dated June 27, 2001 (rev July 10, 2001) was prepared and submitted to the regulatory agencies for review (**Appendix C**).

Analytical results show no exceedences of NYSDEC TAGM 4046 RCOs for VOCs or SVOCs in the re-sample. Consequently, the area was considered clean and no further action was necessary.

3.1.3 Characterization Samples

Table 6 presents the analytical results for characterization soil samples collected from eleven (11) soil stockpiles removed from the excavation area adjacent to Building 3578. The locations of the stockpiles are shown in **Figure 9**. Four-point composite soil samples were collected approximately 12 inches below the soil surface from each pile. There were no VOC analyte exceedences of the NYSDEC TAGM 4046 RCOs in soil samples collected from any stockpile. Stockpiles Nos. 4, 6, and 10 showed SVOC/PAH concentrations exceeding the NYSDEC TAGM 4046 RCOs (Appendix A, Table 2, Column 9) for benzo(a)anthracene, benzo(a)pyrene, and chrysene. All other soil stockpiles were considered clean and suitable for backfill, except as otherwise noted below.

Although Stockpile No. 11 showed no NYSDEC TAGM exceedences of the RCOs, it was also considered to be contaminated as a precautionary measure because it exhibited a strong petrochemical odor. Laboratory data indicated the presence of both regulated and non-regulated NYSDEC TAGM 4046 benzene-related compounds (**Table 6**).

All of the surficial soil excavated from the septic tank area north of Building 3569 was considered contaminated because the small quantity of excavated soils (35-40 tons) could not easily be separated into clean and contaminated stockpiles. This soil was disposed of appropriately off-site.

3.1.4 Certified Clean Backfill

A sample from D. Rushford Trucking, Inc., Plattsburgh NY, was submitted for TCLP and TAL metals analysis. The results showed no exceedences of NYSDEC TAGM 4046 RCOs. Therefore, the material was certified for use as clean fill. As stated previously, laboratory analytical results for the clean fill are presented in **Appendix B**.

3.2 Sample Handing and Documentation

All samples were immediately placed into appropriate laboratory-supplied sample jars. Labels with all pertinent data were fixed to each sample jar for identification. Samples were then placed on ice in sample coolers to maintain a temperature of 4°C. All sample locations, dates, times, depths (if needed) and other observations were recorded in the logbook. Strict chain-of-custody (COC) procedures were followed to establish a complete sample custody record from the time of sample collection to laboratory receipt.

3.3 Data Validation

A data validation usability report was produced for all assessment and confirmation samples (**Appendix C**). The results were reviewed and "qualified" if there were any concerns regarding the usability of the data, including an "R" or rejection qualifier as showed in the tables referenced in Sections 3.1.1 and 3.1.2 and in **Appendix C.** The qualifiers had no impact on data usability or the conclusions presented in this closure report. The validation packages were provided to the regulatory agencies for review and comment.

4.0 WASTE CHARACTERIZATION AND DISPOSAL

4.1 Contaminated Soil

Eleven (11) soil stockpiles (**Figure 9**) were removed and staged from the excavation at Building 3578. Based on the analytical results presented in Section 3.2.3 (**Table 6**), it was determined Stockpile Nos. 4, 6, 10, and 11 were considered contaminated and required off-site disposal. The remaining soil stockpiles were considered clean and suitable for backfilling the open excavation area, with the exceptions noted below.

All soil excavated from septic tank area north of Building 3569 was also considered contaminated because of the small quantity (35-40 tons) and the problem of differentiating the clean soil from the contaminated material. This entire soil volume was disposed of offsite as a regulated waste material.

Total petroleum hydrocarbon (TPH) concentration was part of the waste characterization disposal profile as required by the thermal desorption facility (one sample per 300 cubic yards of material). Three TPH samples were collected and analyzed, in addition to the VOC/SVOC/PAH content. The TPH content for Gasoline Range Organics (GRO) ranged from 2,000 to 2,900 micrograms per kilogram (ug/kg), and the Diesel Range Organics (DRO) ranged from 260,000 to 350,000 ug/kg. Other SVOC/PAHs were detected in the waste material, consistent with the expected waste profile.

The contaminated soil was loaded onto dump trailers via a front-end loader and transported to the ESMI thermal desorption processing facility in Fort Edward, New York, for final disposition. A total of 332.17 tons of contaminated soil were transported to the facility. The waste disposal characterization sample results are presented in **Appendix D**. Waste Disposal weight tickets are presented in **Appendix E**.

4.2 Concrete and Asphalt

The surface concrete and asphalt removed from the parking area of Building 3578 was transported via 20 cubic yard roll-off container and deposited on the Air Base at the C&D Landfill (OTH 3505-1). The C&D Landfill was the former depository of several tons of concrete and asphalt. One load of asphalt (~20 tons) and two loads of concrete (~40 tons) were placed in the C&D Landfill.

4.3 Miscellaneous Materials

The Visqueen cover/liner and hay bales associated with the soil stockpiles were placed into the last dump trailer and sent to the ESMI facility for thermal treatment/destruction.

5.0 CONCLUSIONS AND RECOMMENDATIONS

A total of 332 tons of contaminated soils were removed and transported off-site to the ESMI thermal desorption facility in Fort Edward, New York.

Confirmation sampling indicates that the remaining soils at the respective sites have analyte concentrations below the NYSDEC TAGM 4046 RCOs; therefore, no further action is necessary at Building 3578 and Building 3569 for the soils operable unit. The groundwater operable unit for the site is discussed in the 2002 Supplemental RI Report and was not part of this removal action.

6.0 REFERENCES

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TABLE 1
SS-013: VOC, PAH, BASE NEUTRALS, PHENOLS, AND METALS DETECTED IN GROUNDWATER FROM MONITORING WELL (MW-13-008) – BUILDING 3578

PARAMETER (Analyte)	URS Remedial Investigation Data Max. Concentration (ppb)**	OHM Closure Report Data Concentration (ppb)	ARAR: NYSDEC Groundwater Quality Standards (ppb)***
VOC			
Vinyl Chloride	**53**	--	2
Benzene	**4.1**	--	0.7
Chloromethane	**9**	--	5
Chlorform	0.2	--	7
1,2 Dichloroethane	4	--	5
1,2 Dichloroethene	1	--	5
Tolulene	**6**	**9.5**	5
Ethylbenzene	**23**	**41.8**	5
Styrene	2	--	5
Xylene (total)	**21**	**42.7**	5
PAH/BASE NEUTRALs/PHENOLS			
Acenaphthene	**120**	**1,596**	20
Acenaphthylene	2	--	50
Anthracene	--	32.1	50
Carbazole	**53**	--	50
Dibenzofuran	33		50
Fluorene	22	**394**	50
Naphthalene	**2,700**	**41,059**	10
2-Methylnapthalene	**330**	--	1
Phenanthrene	5	**90.3**	50
2,4-Dimethylphenol	**430**	--	1
METALS** **unfiltered (filtered)**			
Arsenic	19.5 (2.1)	--	25
Barium	307 (169)	--	1,000
Cadmium	2.8 (ND)	--	5
Chromium	**56.7** (ND)	--	50
Lead	**19.8** (ND)	--	15

NOTES:

* Analytical data obtained from URS Consultants Draft Final Report, February 1996 and OHM Closure Report 1996/1997.
** Shaded and bold block (i.e., **2,700**) identifies sample and associated constituent concentration that exceeds the ARAR.
*** Groundwater Quality Limitations are based on applicable ARARs.
**** Metal data for URS consultants is presented in two forms (filtered sample result and unfiltered sample result).

TABLE 2

SS-013: GEOPROBE SOIL PROFILES – WEAPONS STORAGE AREA ROAD*

Depth (inches)	Sample Location-Sample Profile (Depth – inches)																	
	1 (72-90)	**2** (54-66)	**3** (66-90)	**4** (54-66)	**5** (66-84)	**6** (54-60)	**7** (66-84)	**8** (66-72)	**9** (64-78)	**10** (60-72)	**11** (64-72)	**12** (64-78)	**13** (72-84)	**14** (75-81)	**15** (70-81)	**16** (72-84)	**17** (52-60)	**18** (10-15)
0 – 6	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Topsoil
6 – 12	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Topsoil Dk Br Sand
12 – 18	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Dk Gry Clay
18 – 24	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Gry Clay
24 – 30	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Blue-Gry Clay
30 – 36	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Dk Br Sand	Dk Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Blue-Gry Clay
36 – 42	Lt Br Sand	Lt Br Sand	Lt Br Sand	Brown Sand	Lt Br Sand	Lt Br Sand	Brown Sand	Lt Br Sand	Lt Br Sand	Dk Br Sand	Brown sand	Brown Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	Lt Br Sand	
42 – 48	Lt Br Sand	Brown Sand	Rd Br Sand	Rd Br Sand	Lt Br Sand	Lt Br Sand	Dk Br Sand	Dk Br Sand	Dk Br sand	Dk Br Sand	Dk Br Sand	Dk Br Sand	Rd Br Sand	Lt Br Sand	Lt Br Sand	Brown Sand	Brown Sand	
48 – 54	Brown Sand	Br-Gry Sand	Rd Br Sand	Rd Br Sand	Rd Br Sand	Rd Br Sand	Rd Br Sand	Dk Br Sand	Rd Br Sand	Dk Br Sand	Dk Br Sand	Rd Br Sand	Rd Br Sand	Lt Br Sand	Brown Sand	Brown Sand	Dk Br Sand	
54 – 60	Rd Br Sand	Gry-Blk Sand	Rd-Gry Sand	Dk Gry Sand	Gry Sand	Blk Sand	Lt Gry Sand	Lt Br Sand	Dk Br Sand	Gry Sand	Gry Sand	Rd Br Sand	Rd Br Sand	Brown Sand	Rd Br Sand	Rd Br Sand	Blk Clay	
60 – 66	Lt Gry Sand	Blk-Gry Clay	Gry Sand	Blk-Gry Clay	Dk Gry Sand	Dk Gry Clay	Gry Sand	Gry Sand	Gry Sand	Blk Sand	Blk Sand	Blk Sand	Rd Br Sand	Dk Br Sand	Rd Br Sand	Rd Br Sand	Gry Clay	
66 – 72	Gry Sand	Gry Clay	Gry Sand	Gry Clay	Blk Sand	Gry Clay	Dk Gry Sand	Blk Sand	Dk Gry Sand	Blk Clay	Blk Sand	Dk Gry Sand	Br Blk Sand	Dk Br Sand	Blk-Gry Sand	Rd Br Sand	Gry Clay	
72 – 78	Dk Gry Sand	Gry Clay	Dk Gry Sand	Gry Clay	Blk Sand-Clay	Gry Clay	Blk Sand	Gry Clay	Blk Sand-Clay	Gry Clay	Blk-Gry Clay	Blk Sand	Blk Sand	Blk-Gry Sand	Blk Sand	Blk Sand	Gry Clay	
78 – 84	Blk-Gry Sand	Gry Clay	Blk Sand	Gry Clay	Blk Clay	Gry Clay	Blk Clay	Gry Clay	Gry Clay	Gry Clay	Gry Clay	Dk Gry Clay	Blk Silt	Blk Sand-Clay	Blk Clay	Blk Clay		
84 – 90	Blk Clay		Blk Sand-Clay		Gry Clay		Dk Gry Clay		Gry Clay		Gry Clay	Gry Clay	Gry Clay	Gry Clay	Gry Clay	Gry Clay		
88 – 96	Gry Clay		Gry Clay		Gry Clay		Gry Clay		Gry Clay		Gry Clay	Gry Clay	Gry Clay	Gry Clay	Gry Clay	Gry Clay		
PID reading	40	6	30	11	15	5	27	31	15	5.5	140	10	4	16	30	6	6	4

* Refer to Figure 4, GeoProbe Location Map for SS-013 UST Area for specific location of soil sample along Weapons Storage Road.
PID readings for background soils ranged from 4-5 ppm.
Shaded block identifies sample depth where chemical odors were identified and test sample was collected.

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SS-013: GEOPROBE ANALYTICAL RESUI

ANALYTE	MDL (mg/kg)	SAMPLE						
		1 (72-90)	2 (54-66)	4 (54-66)	6 (54-66)	7 (66-84)	8 (66-84)	
VOCs								
Acetone***	0.0065	ND	0.11 M,F	0.24 M	0.074 M,F	0.032 M,F	0.075 M,F	0.0
Benzene	0.0004	ND	ND	ND	ND	ND	ND	
Benzoic Acid	0.022	ND	ND	ND	ND	ND	ND	
2-Butanone	0.004	ND	0.027 F	0.072 F	ND	ND	0.014 F	0.
Chloroform	0.0004	ND	ND	ND	ND	ND	ND	
Chloroethane	0.001	ND	ND	ND	ND	ND	ND	
1,2 Dichloroethane	0.0006	ND	ND	ND	ND	ND	ND	
1,2 Dichloroethene	0.0008	ND	ND	ND	ND	ND	ND	
Ethylbenzene	0.0002	ND	<0.001	0.0031	ND	ND	ND	<0.
Methylene Chloride	0.0006	ND	<0.001 F	<0.001 F	ND	ND	ND	
Toluene	0.0004	ND	ND	<0.001 F	ND	ND	ND	0.
Styrene	0.006	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	0.001	ND	ND	ND	ND	ND	ND	
Xylene (total)	0.0006	ND	0.002 M	0.014 M	ND	ND	ND	
SVOCs/PAHs								
Acenaphthene	0.000046	ND	ND	ND	ND	ND	ND	
Acenaphthylene	0.000046	ND R	ND R	ND R	ND R	ND R	ND R	N
Anthracene	0.000038	ND M	ND M	ND M	ND M	ND M	ND M	N
Benzo(a)anthracene	0.000032	ND	ND	ND	ND	ND	ND	
Benzo(b)fluoranthene	0.00003	ND	ND	ND	ND	ND	ND	
Benzo(k)fluoranthene	0.00003	ND	ND	ND	ND	ND	ND	
Benzo(g,h,i)perylene	0.00004	ND	ND	ND	ND	ND	ND	
Benzo(a)pyrene	0.000028	ND	ND	ND	ND	ND	ND	
Bis(2-ethylhexyl) phalate	0.000042	0.069 F	ND	ND	ND	ND	0.1 F	
Chrysene	0.000045	ND	ND	ND	ND	ND	ND	
Dibenzo(a,h)anthracene	0.000042	ND R	ND R	ND R	ND R	ND R	ND R	N
Dibenzofuran	0.000047	ND	ND	ND	ND	ND	ND	
Fluoranthene	0.0000035	ND	ND	ND	ND	ND	0.066 F	
Fluorene	0.000048	ND	ND	ND	0.046 F	ND	ND	
Indeno(1,2,3-cd)pyrene	0.000039	ND	ND	ND	ND	ND	ND	
Naphthalene	0.000039	ND	0.017	0.0075 F	0.05 F	0.11	0.0068 F	0.0
2-Methylnaphthalene	0.00004	ND	0.13 F	0.094 F	ND	0.43	0.17 F	
Phenanthrene	0.0000047	ND	ND	ND	ND	0.37	0.16	
Pyrene	0.000033	73	ND	ND	ND	0.066 M,F	0.11 M,F	0.9

ND = Not Detected above MDL; MDL = Method Detection Limit; CQDL = Contract Required Detection Limit; N/A = Not Applicab

F = Result is above the MDL but below the CRDL and is subject to poor precision.

M = A matrix interference was present. Reported value or quantitiation limit may be an estimate.

R = QAPP QA/QC criteria (typically calibration) were not met and result may not be usable.

J = Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable, but quantitatively unreli

* Refer to Figure 4, GeoProbe Location Map of SS-013 UST Area, for specific location of soil sample analyte concentrations. S

** GeoProbe borings Nos. 3,5, and 9 received a soil characterization profile and PID screening. The samples were not analyzed f

*** Acetone identified in field blank. Common laboratory/field contaminant.

**** Acetone result exceeds NYSDEC TAGM RCO, but this analyte was found in field blank and should be considered laboratory

0.24 M Shaded block identifies sample and associated constituent concentration that exceeds the NYSDEC TAGM RCOs, Appendix

ABLE 3
TS - WEAPONS STORAGE AREA ROAD (mg/kg)*

LOCATION (depth in inches)**									NYSDEC TAGM Recommended Soil Cleanup Objectives[1] (mg/kg)
0 -72)	11 (64-78)	12 (72-84)	13 (72-84)	14 (75-81)	15 (70-81)	16 (72-84)	17 (52-60)	18 (10-15)	
) M,F	0.034 M,F,J	0.039 M,F	0.033 M,F	0.15 M	0.17 M	0.06 M,F	0.084 M,F	0.120 M	0.2
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06
TD	ND	ND	0.29 F	ND	ND	ND	ND	ND	2.7
11 F	ND	0.0059 F	0.006 F	0.043 F	0.023 F	0.016 F	0.013 F	ND	0.3
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3
ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9
D	ND	ND	ND	ND	ND	ND	ND	ND	0.1
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3
01 M	0.044 M,J	0.001 M,F	ND	ND	ND	0.001 M,F	ND	ND	5.5
ND	ND	0.0013 F	0.001 F	ND	<0.001 F	ND	0.0013 F	0.0011 F	0.1
07 F	ND	0.001 F	0.001 F	ND	ND	0.001 F	ND	ND	1.5
ND	ND	ND	ND	ND	ND	ND	ND	ND	--
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
ND	0.085 M,J,F	ND	ND	ND	ND	0.001 M,F	ND	ND	1.2
ND	ND	ND	ND	ND	ND	ND	ND	ND	50
) R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	41
) M	ND M	ND M	ND M	ND M	ND M	ND M	ND M	ND M	50
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.244 or MDL
ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1
ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1
ND	ND	ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.061or MDL
.2	0.1 F	ND	0.071 F	0.081 F	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4
D R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	0.014 or MDL
ND	ND	ND	ND	ND	ND	ND	ND	ND	6.2
ND	ND	ND	ND	ND	ND	ND	ND	ND	50
ND	0.068 F	ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	ND	3.2
035 F	0.36	0.054 F	0.002 F	0.003 F	0.0079 F	0.0065 F	0.01 F	0.0074 F	13
ND	1.1	ND	ND	ND	ND	ND	0.13	ND	36.4
.5	0.085 F	ND	ND	ND	ND	ND	ND	ND	50
2 M	ND	ND	ND	ND	ND	ND	ND	ND	50

e; mg/kg = milligrams per kilogram

ole.
amples collected immediately above clay layer.
.r VOCs and PAHs.

rror. Not a representative reading.
A: VOCs Table 1, Column 9; SVOCs Table 2, Column 9.

SS-013: CONFIRMATION SAMP

SAMPLE LOCATION (Sample No.) / ANALYTE	MDL (mg/kg)	1 SS013-25	2 SS013-26	3 SS013-27	4 SS013-28	4A [1] SS013-28b	5 SS013-29	
VOCs								
Acetone	0.0039	ND	ND	ND	ND	ND	ND	
Benzene	0.0004	ND	ND	ND	ND	ND	ND	
n-butylbenzene	0.0003	ND	60.2	ND	ND	ND	ND	
2-Butanone	0.0036	ND	ND	ND	ND	ND	ND	
Chloroform	0.0004	ND	ND	ND	ND	ND	ND	
Chloroethane	0.0012	ND	ND	ND	ND	ND	ND	
1,2 Dichloroethane	0.0005	ND	ND	ND	ND	ND	ND	
1,2 Dichloroethene	0.0006	ND	ND	ND	ND	ND	ND	
Ethylbenzene	0.0002	ND	ND	ND	ND	ND	ND	
Methylene Chloride	0.0006	ND	ND	ND	ND	ND	ND	
Naphthalene	0.0005	ND	ND	ND	ND	ND	ND	
Toluene	0.0004	ND	ND	ND	ND	ND	ND	
Trichloroethene	0.0006	ND	ND	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	0.0002	0.00027F	0.00019F	ND	ND	0.0005F	ND	0.0
1,3,5-Trimethlybenzene	0.0002	ND	ND	ND	ND	ND	ND	
Styrene	0.0002	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	0.001	ND	ND	ND	ND	ND	ND	
Xylene (total)	0.0002	ND	ND	ND	ND	ND	ND	
SVOCs /PAHs								
Acenaphthene	0.042	ND	ND	ND R	ND	ND	ND	
Acenaphthylene	0.042	ND	ND	ND	ND	ND	ND	
Anthracene	0.035	ND	ND	ND	ND	ND	ND	
Benzoic Acid	0.02	ND	ND	ND	ND	ND R	ND	
Benzo(a)anthracene	0.029	ND	ND	ND	0.699F	ND	ND	
Benzo(b)fluoranthene	0.028	ND	ND	ND	0.626F	ND	ND	
Benzo(k)fluoranthene	0.028	ND	ND	ND	0.419F	ND	ND	
Benzo(g,h,I)perylene	0.037	ND	ND	ND	0.216F	ND	ND	
Benzo(a)pyrene	0.026	ND	ND	ND	0.584F	ND	ND	
Bis(2-ethylhexyl) phalate	0.039	ND	ND	ND	ND	0.047F	ND	
Carbazole	0.044	ND	ND	ND	ND	ND	ND	
Chrysene	0.041	ND	ND	ND	0.649F	ND	ND	
Dibenzo(a,h)anthracene	0.0039	ND	ND	ND	ND	ND	ND	
Dibenzofuran	0.043	ND	ND	ND	ND	ND	ND	
Fluoranthene	0.032	ND	0.323F	ND R	2.83	ND	ND	0.0
Fluorene	0.044	ND	ND	ND	ND	ND	ND	
Indeno(1,2,3-cd)pyrene	0.036	ND	ND	ND	0.198F	ND	ND	
Naphthalene	0.036	ND	0.0865F	ND	ND	ND	ND	
2-Methylnaphthalene	0.037	ND	1.99F	ND	1.07	ND	ND	
Phenanthrene	0.043	ND	0.688F	ND R	2.82	ND	ND	0.0
Pyrene	0.03	ND	0.0436F	ND	ND	ND	ND	0.0

ND = Not Detected above MDL; MDL = Method Detection Limit; CQDL = Contract Required Detection Limit; N/A = Not Applicab

F = Result is above the MDL but below the CRDL and is subject to poor precision.

M = A matrix interference was present. Reported value or quantitiation limit may be an estimate.

R = QAPP QA/QC criteria (typically calibration) were not met and result may not be usable.

D = Results from subsequent dilution of the sample to bring target analytes within calibration range.

* Refer to Figure 1, Sample Location Map of SS-013 Building 3578 soil sample locations.

Shaded block and bold font identifies sample and associated analyte concentration that exceeds the NYSDEC TAGM RC

[1] The soil surrounding Sample Location No. 4 was excavated, removed and re-sampled. The re-sample is identified above as Location

[2] NYSDEC TAGM 4046 Appendix A: VOCs Table 1, Column 9; SVOCs Table 2, Column 9.

ABLE 4
NG RESULTS - BUILDING 3578 (mg/kg)*

6 13- 0	7 SS013- 31	8 SS013- 32	9 SS013- 33	10 SS013- 34	11 SS013- 35	12 SS013- 36	13 SS013- 37	14 SS013- 38	15 SS013- 39	NYSDEC TAGM Recommended Soil Cleanup Objectives[2] (mg/kg)
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06
D	ND	ND	ND	0.0232F	0.018F	0.107	ND	0.0953	0.0208M	N/A
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	6
D	ND	ND	ND	ND	ND	ND	ND	0.014F	0.035M	100
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
31F	0.00048F	0.00032F	ND	0.0090M	ND	0.0455F	0.00046F	0.11	0.218M	N/A
D	ND	ND	ND	0.0304M	0.0274	ND	ND	0.2	0.331M	N/A
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
D	ND	ND	ND	ND	ND	ND	ND	0.061	0.0943M	1
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	41
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
D	ND	ND	ND	ND	ND	0.037F	ND	ND	ND	0.224 or MDL
D	ND	ND	ND	ND	ND	0.034F	ND	ND	ND	1
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
D	ND	0.0688F	ND	ND	ND	ND	ND	ND	ND	50
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.061 or MDL
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.014 or MDL
D	ND	ND	ND	ND	ND	ND	ND	ND	ND	6
8F	ND	ND	ND	0.261F	0.138F	0.403F	ND	0.0504F	ND	50
D	ND	ND	ND	0.867	0.474F	ND	ND	0.302F	0.699M	50
D	ND	0.0532F	ND	ND	ND	ND	ND	ND	ND	3
	ND	ND	ND	ND	0.220F	ND	ND	0.686F	0.969	13
	ND	ND	ND	0.906	0.841F	3.32	ND	3.01	0.645D	36
5F	ND	ND	ND	1.68F,M	0.834F	3.00J	ND	0.620F	1.61	50
2F	ND	ND	ND	0.408F	0.184F	ND	ND	0.0766F	0.155F	50

mg/kg = milligrams per kilogram

No. 4A (SS013-28b).

SS-013: CONFIRMATION SAMPL

SAMPLE LOCATION (Sample No.) / ANALYTE	MDL (mg/kg)	1 SS013-01	1A [1] SS013-01A	2 SS013-02	3 SS013-03
VOC					
Acetone	0.0039	ND	ND	ND	ND
Benzene	0.004	ND	ND	ND	ND
2-Butanone	0.0036	ND	ND	ND	ND
Chloroform	0.0004	ND	ND	ND	ND
Chloroethane	0.0012	ND	ND	ND	ND
1,2 Dichloroethane	0.0005	ND	ND	ND	ND
1,2 Dichloroethene	0.0006	ND	ND	ND	ND
Ethylbenzene	0.0002	ND	ND	ND	ND
Methylene Chloride	0.0006	ND	0.0013 F	ND	ND
Naphthalene	0.0005	ND	ND	ND	ND
Toluene	0.0004	ND	ND	ND	ND
Trichloroethene	0.0006	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.0002	0.00028F	ND	0.00042F	0.00038F
Styrene	0.0002	ND	ND	ND	ND
Vinyl Chloride	0.001	ND	ND	ND	ND
Xylene (total)	0.002	ND	ND	ND	ND
SVOC (PAHs)					
Acenaphthene	0.042	1.2	ND	ND	ND
Acenaphthylene	0.042	ND	ND	ND	ND
Anthracene	0.035	2.69	ND	ND	ND
Benzoic Acid	0.02	ND R	ND	ND R	ND R
Benzo(a)anthracene	0.029	5.32	ND	ND	ND
Benzo(b)fluoranthene	0.028	4.67D	ND	ND	ND
Benzo(k)fluoranthene	0.028	3.34D	ND	ND	ND
Benzo(g,h,I)perylene	0.037	1.51	ND R	ND	ND
Benzo(a)pyrene	0.026	4.44D	ND	ND	ND
Bis(2-ethylhexyl) phalate	0.39	ND	ND	ND	ND
Carbazole	0.044	ND	ND	ND	ND
Chrysene	0.041	5.29	ND	ND	ND
Dibenzo(a,h)anthracene	0.039	ND	ND	ND	ND
Dibenzofuran	0.043	0.0821	ND	ND	ND
Fluoranthene	0.032	17.4D	0.0353 F	ND	ND
Fluorene	0.044	1.66	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.036	1.46	ND R	ND	ND
Naphthalene	0.036	0.280F	ND	ND	ND
2-Methylnaphthalene	0.037	0.133F	ND	ND	ND
Phenanthrene	0.043	16.5D	ND	ND	ND
Pyrene	0.03	12.7D	ND	ND	ND

ND = Not Detected above MDL; MDL = Minmum Detection Level; CQDL = Contract Required Detection Limit; N/

F = Result is above the MDL but below the CRDL and is subject to poor precision.

R = QAPP QA/QC criteria (typically calibration) were not met and result may not be usable.

D = Results from subsequent dilution of the sample to bring target analytes within calibration range.

* Refer to Figures 7 & 8, Sample Location Map of SS-013 Building 3569 for location of soil sample analyte concen

Shaded block and bold font identifies sample and associated analyte concentration that exceeds the NYS

1

[2] NYSDEC TAGM 4046 Appendix A: VOCs Table 1, Column 9; SVOCs Table 2, Column 9.

TABLE 5
ING RESULTS - BUILDING 3569 (mg/kg)*

4 SS013-04	5 SS013-05	6 SS013-06	7 SS013-07	8 SS013-08	9 SS013-09	10 SS013-010	11 SS013-011	NYSDEC TAGM Recommended Soil Cleanup Objectives[2] mg/kg
0.028	0.042	ND	ND	ND	ND	ND	ND	0.2
ND	ND	ND	ND	ND	ND	ND	ND	0.06
ND	ND	ND	ND	ND	ND	ND	ND	0.3
ND	ND	ND	ND	ND	ND	ND	ND	0.3
ND	ND	ND	ND	ND	ND	ND	ND	1.9
ND	ND	ND	ND	ND	ND	ND	ND	0.1
ND	ND	ND	ND	ND	ND	ND	ND	0.3
ND	ND	ND	ND	ND	ND	ND	ND	5.5
ND	ND	ND	ND	ND	ND	ND	ND	0.1
ND	ND	ND	ND	ND	ND	ND	ND	13
ND	ND	ND	ND	ND	ND	ND	ND	1.5
ND	ND	ND	ND	ND	ND	ND	ND	0.7
0.00037F	0.00035F	0.00033F	0.00031F	0.00031F	0.00036F	0.41F	0.30F	N/A
ND	ND	ND	ND	ND	ND	ND	ND	N/A
ND	ND	ND	ND	ND	ND	ND	ND	0.2
ND	ND	ND	ND	ND	ND	ND	ND	1.2
ND	ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	41
ND	ND	ND	ND	ND	ND	ND	ND	50
ND R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	2.7
ND	ND	ND	ND	0.049F	ND	ND	ND	0.224 or MDL
ND	ND	ND	ND	ND	ND	ND	ND	1.1
ND	ND	ND	ND	ND	ND	ND	ND	1.1
ND	ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	0.061 or MDL
ND	ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	N/A
ND	ND	ND	ND	0.048F	ND	ND	ND	0.4
ND	ND	ND	ND	ND	ND	ND	ND	0.014 or MDL
ND	ND	ND	ND	ND	ND	ND	ND	6.2
ND	ND	ND	ND	0.103F	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	ND	3.2
ND	ND	ND	ND	ND	ND	ND	ND	13
ND	ND	ND	ND	ND	ND	ND	ND	36.4
ND	ND	ND	ND	0.068F	ND	ND	ND	50
ND	ND	ND	ND	0.079F	ND	ND	ND	50

A = Not Apllicable; mg/kg = milligrams per kilogram

rations.

)EC TAGM cleanup objective.

T
SS-013: BUILDING 3578 CHARACTERIZATION S

STOCKPILE LOCATION (Sample No.) / ANALYTE	MDL (mg/kg)	1 SS013-21	2 SS013-22	3 SS013-23	4 SS013-24
VOC					
Acetone	0.004	ND	ND	ND	ND
Benzene	0.0004	ND	ND	ND	ND
n-butylbenzene	0.0003	ND	ND	ND	ND
2-Butanone	0.0037	ND	ND	ND	ND
Chloroform	0.0005	ND	ND	ND	ND
Chloroethane	0.0006	ND	ND	ND	ND
1,2 Dichloroethane	0.0005	ND	ND	ND	ND
1,2 Dichloroethene	0.0006	ND	ND	ND	ND
Ethylbenzene	0.0002	ND	ND	ND	ND
Naphthalene	0.0005	ND	ND	ND	ND
Toluene	0.0005	ND	ND	ND	ND
Trichloroethene	0.0006	ND	0.0067	ND	ND
1,2,4-Trimethylbenzene	0.0002	0.0003	0.0003	0.0004	0.0004
1,3,5-Trimethlybenzene	0.0002	ND	ND	ND	ND
Styrene	0.0002	ND	ND	ND	ND
Vinyl Chloride	0.001	ND	ND	ND	ND
Xylene (total)	0.0002	ND	ND	ND	ND
SVOC (PAHs)					
Acenaphthene	0.043	ND	ND	ND	ND
Acenaphthylene	0.043	ND	ND	ND	ND
Anthracene	0.036	ND	ND	ND	ND
Benzoic Acid	0.021	ND	ND	ND	ND
Benzo(a)anthracene	0.03	ND	ND	ND	**0.185**
Benzo(b)fluoranthene	0.03	ND	ND	ND	0.204
Benzo(k)fluoranthene	0.029	ND	ND	ND	0.107
Benzo(g,h,I)perylene	0.038	ND	ND	ND	0.107
Benzo(a)pyrene	27	ND	ND	ND	**0.194**
Bis(2-ethylhexyl) phalate	0.04	ND	ND	ND	ND
Carbazole	0.045	ND	ND	ND	ND
Chrysene	0.042	ND	ND	ND	**0.186**
Dibenzo(a,h)anthracene	0.04	ND	ND	ND	ND
Dibenzofuran	0.044	ND	ND	ND	ND
Fluoranthene	0.033	ND	ND	ND	0.353
Fluorene	0.045	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.037	ND	ND	ND	0.0935
Naphthalene	0.037	ND	ND	ND	ND
2-Methylnaphthalene	0.038	ND	ND	ND	ND
Phenanthrene	0.044	ND	ND	ND	0.0918
Pyrene	0.031	ND	ND	ND	0.314

ND = Not Detected above MDL; MDL = Method Detection Limit; CQDL = Contract Required Detection Limit; N/A =

* Refer to Figure 9, Sample Location Map of SS-013 Building 3578 for specific stockpile location of soil sample analyte

[1] NYSDEC TAGM 4046 Appendix A: VOCs Table 1, Column 9; SVOCs Table 2, Column 9.

Shaded block with bold numbers identifies sample and associated constituent concentration that exceeds th

Area 1 stockpile numbers designated for off-site disposal.

ABLE 6
SAMPLING RESULTS FOR SOIL STOCKPILES (mg/kg)*

5 SS013-19	6 SS013-20	7 SS013-40	8 SS013-41	9 SS013-42	10 SS013-43	11 SS013-44	NYSDEC TAGM Recommended Cleanup Objective[1] (mg/kg)
0.028	0.042	ND	ND	ND	ND	ND	0.2
ND	ND	ND	ND	ND	ND	ND	0.06
ND	ND	ND	0.0266	ND	ND	0.278	0.3
ND	ND	ND	ND	ND	ND	ND	0.3
ND	ND	ND	ND	ND	ND	ND	1.9
ND	ND	ND	ND	ND	ND	ND	0.1
ND	ND	ND	ND	ND	ND	ND	0.3
ND	ND	ND	ND	ND	ND	ND	5.5
ND	ND	ND	ND	ND	ND	ND	0.1
0.026	ND	ND	ND	ND	ND	ND	13
ND	ND	ND	ND	ND	ND	ND	1.5
ND	ND	ND	ND	ND	ND	ND	0.7
0.0021	0.012	0.002	0.0432	ND	0.002	0.266	N/A
ND	0.018	0.0116	ND	ND	ND	0.639	N/A
ND	ND	ND	ND	ND	ND	ND	N/A
ND	ND	ND	ND	ND	ND	ND	0.2
ND	ND	ND	ND	ND	ND	ND	1.2
ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	41
ND	ND	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	2.7
ND	0.064	ND	ND	ND	0.0614	ND	0.224 or MDL
ND	0.075	0.0323	ND	ND	0.0337	0.032	1.1
ND	0.043	ND	ND	ND	ND	ND	1.1
ND	ND	ND	ND	ND	ND	0.0688	50
ND	0.06	ND	ND	ND	ND	ND	0.061 or MDL
ND	44	ND	ND	ND	ND	ND	50
ND	ND	ND	ND	ND	ND	ND	N/A
ND	0.065	ND	ND	ND	0.0534	ND	0.4
ND	ND	ND	ND	ND	ND	ND	0.014 or MDL
ND	ND	ND	ND	ND	ND	ND	6.2
ND	0.15	0.274	0.18	ND	0.586	ND	50
ND	0.049	ND	ND	ND	1	ND	50
ND	ND	ND	ND	ND	ND	0.0532	3.2
ND	ND	ND	ND	ND	ND	ND	13
ND	ND	ND	1.08	0.072	0.39	2	36.4
0.099	0.1	ND	0.77	0.105	1.48	5	50
0.049	0.15	0.266	0.232	0.0563	0.384	ND	50

Not Applicable; mg/kg = milligrams per kilogram
concentrations.

e NYSDEC TAGM cleanup objective for 4-point composite sample.

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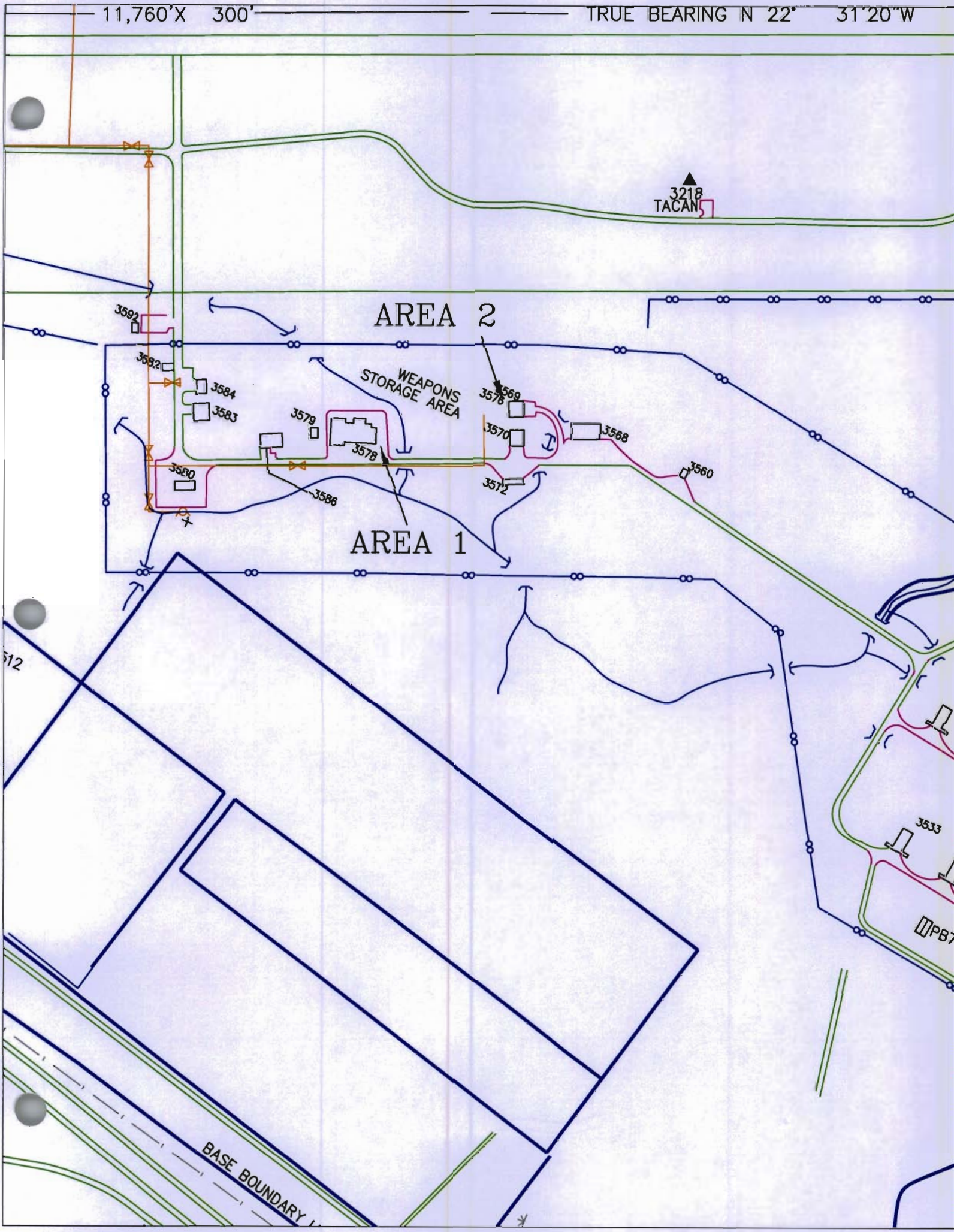
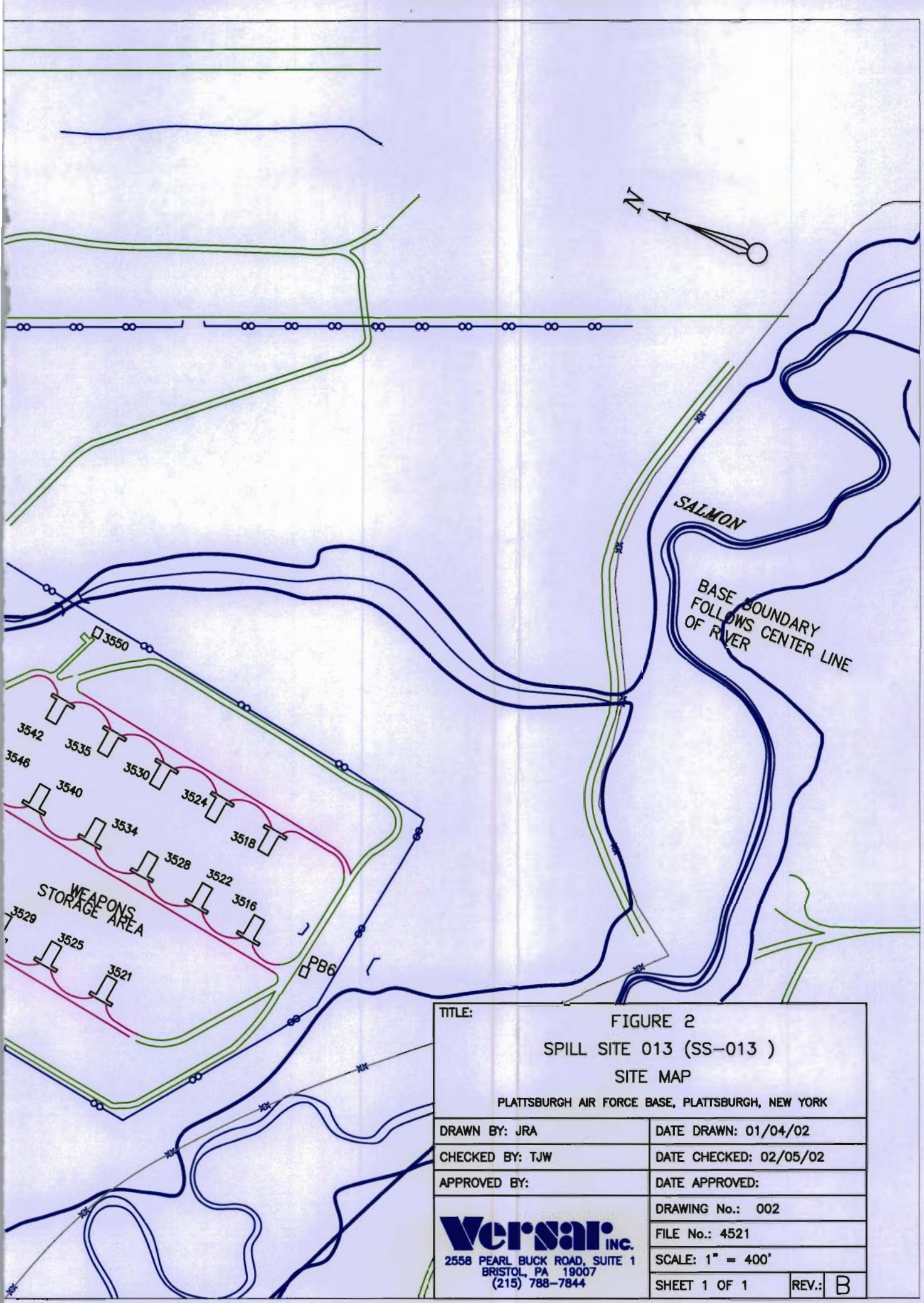
FIGURE 1

SITE LOCATION MAP

PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE:	NO SCALE
FILE NO.: 4521	
DWG. NO.: 001	


11,760'X 300'
TRUE BEARING N 22° 31'20"W
3218
TACAN
AREA 2
AREA 1
WEAPONS STORAGE AREA
3592
3582
3584
3583
3579
3578
3576
3569
3570
3568
3560
3572
3580
3586
3533
BASE BOUNDARY



TITLE:

FIGURE 2

SPILL SITE 013 (SS-013)

SITE MAP

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE DRAWN: 01/04/02
CHECKED BY: TJW	DATE CHECKED: 02/05/02
APPROVED BY:	DATE APPROVED:
	DRAWING No.: 002
	FILE No.: 4521
	SCALE: 1" = 400'
	SHEET 1 OF 1 REV.: B

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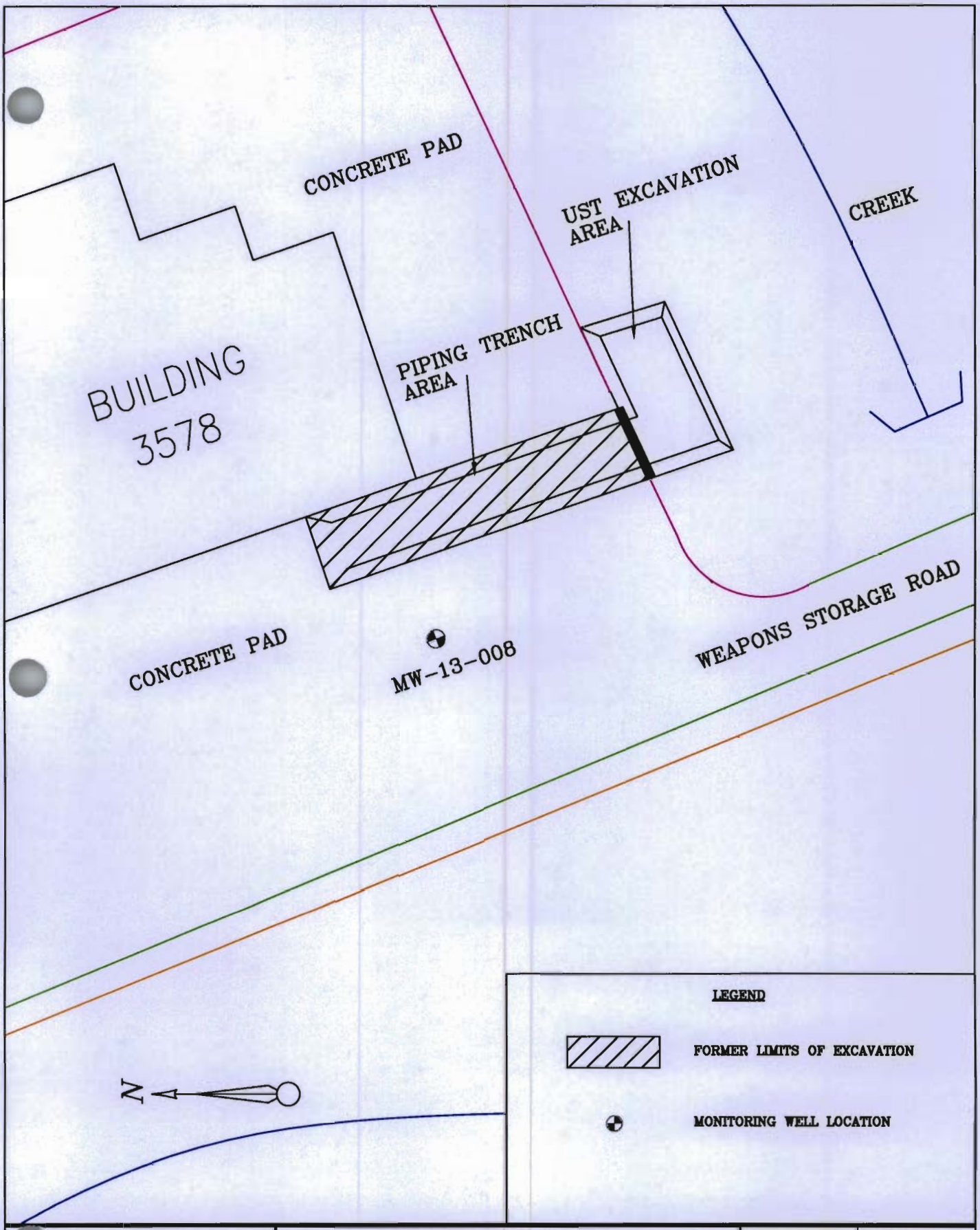

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FIGURE 3

SS-013: FORMER OHM EXCAVATION AREA

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/04/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE:	1" = 30'
FILE NO.:	4521
DWG. NO.:	003

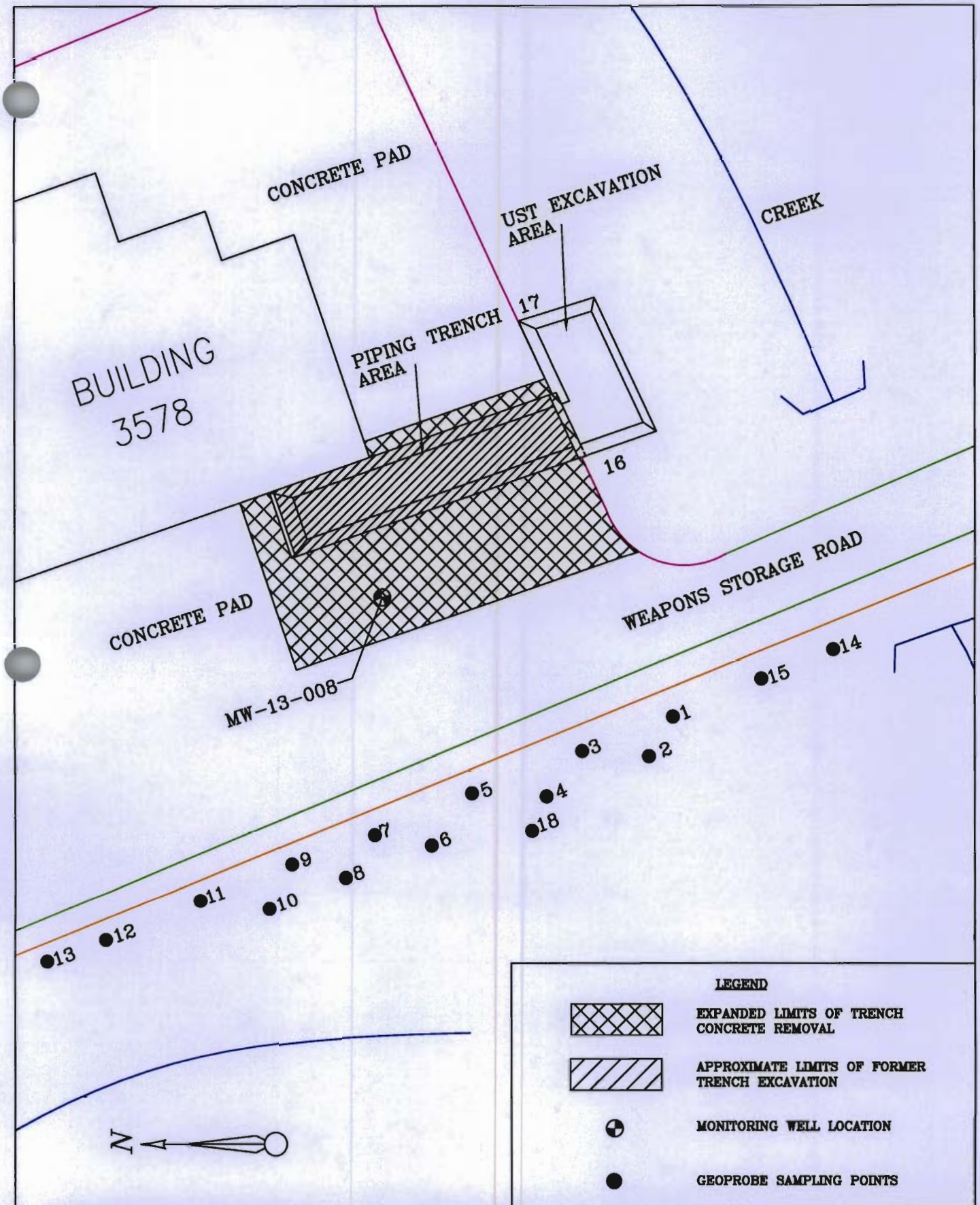

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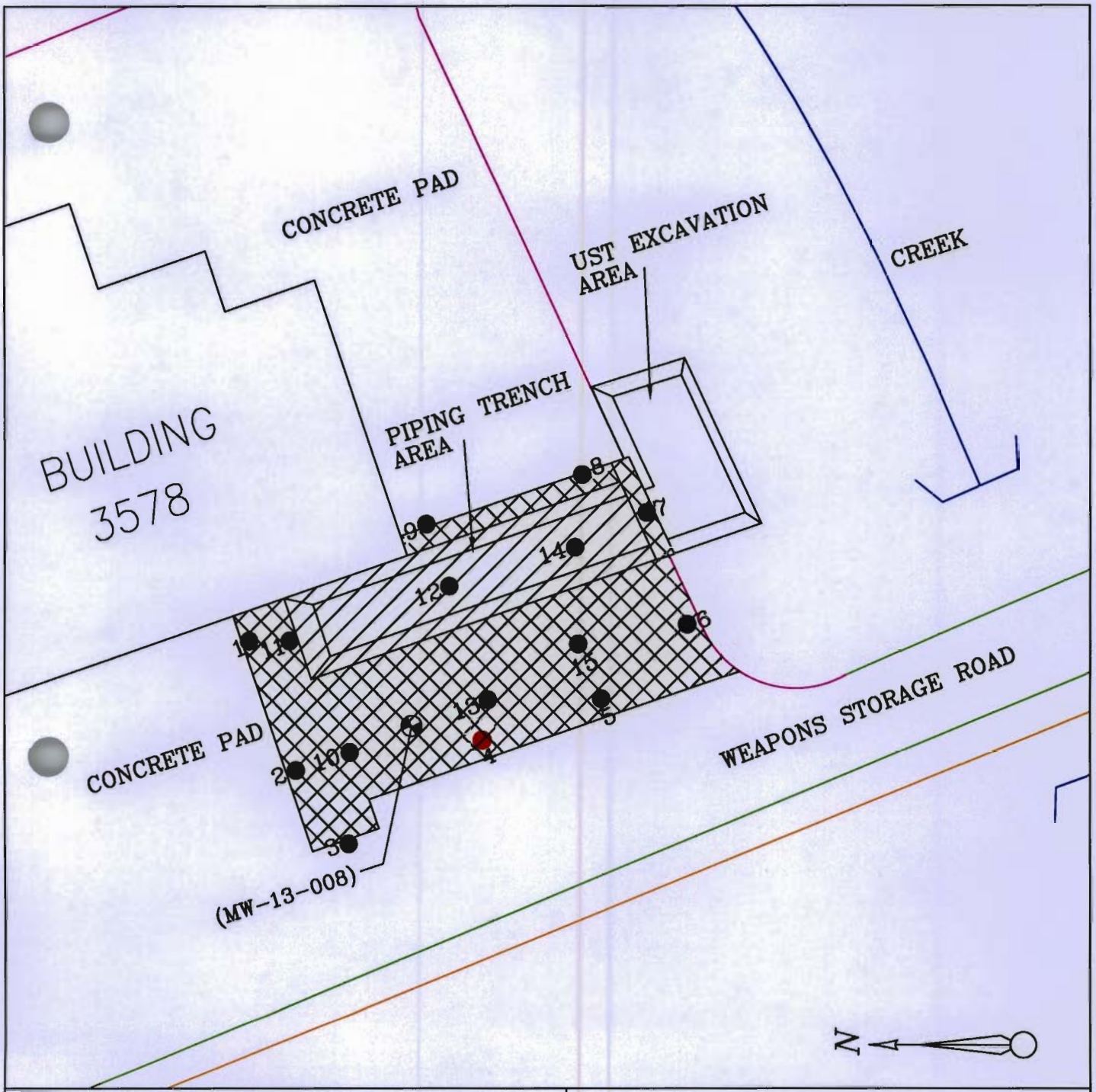
FIGURE 4

SS-013: GEOPROBE SAMPLE LOCATIONS
WEAPONS STORAGE AREA ROAD

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE:	1" = 30'
FILE NO.:	4521
DWG. NO.:	004



NOTES

SAMPLES 1 THROUGH 9 ARE SIDEWALL SAMPLES (DISCRETE)

SAMPLES 10 THROUGH 15 ARE BOTTOM SAMPLES (DISCRETE)

SAMPLE NO. 4 ANALYTES EXCEEDED NYSDEC TAGM 4046

LEGEND

- APPROXIMATE LIMITS OF FORMER TRENCH EXCAVATION
- FINAL LIMITS OF TRENCH EXCAVATION
- MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION EXCEEDS NYSDEC TAGM 4046 CRITERIA
- SOIL SAMPLE LOCATION

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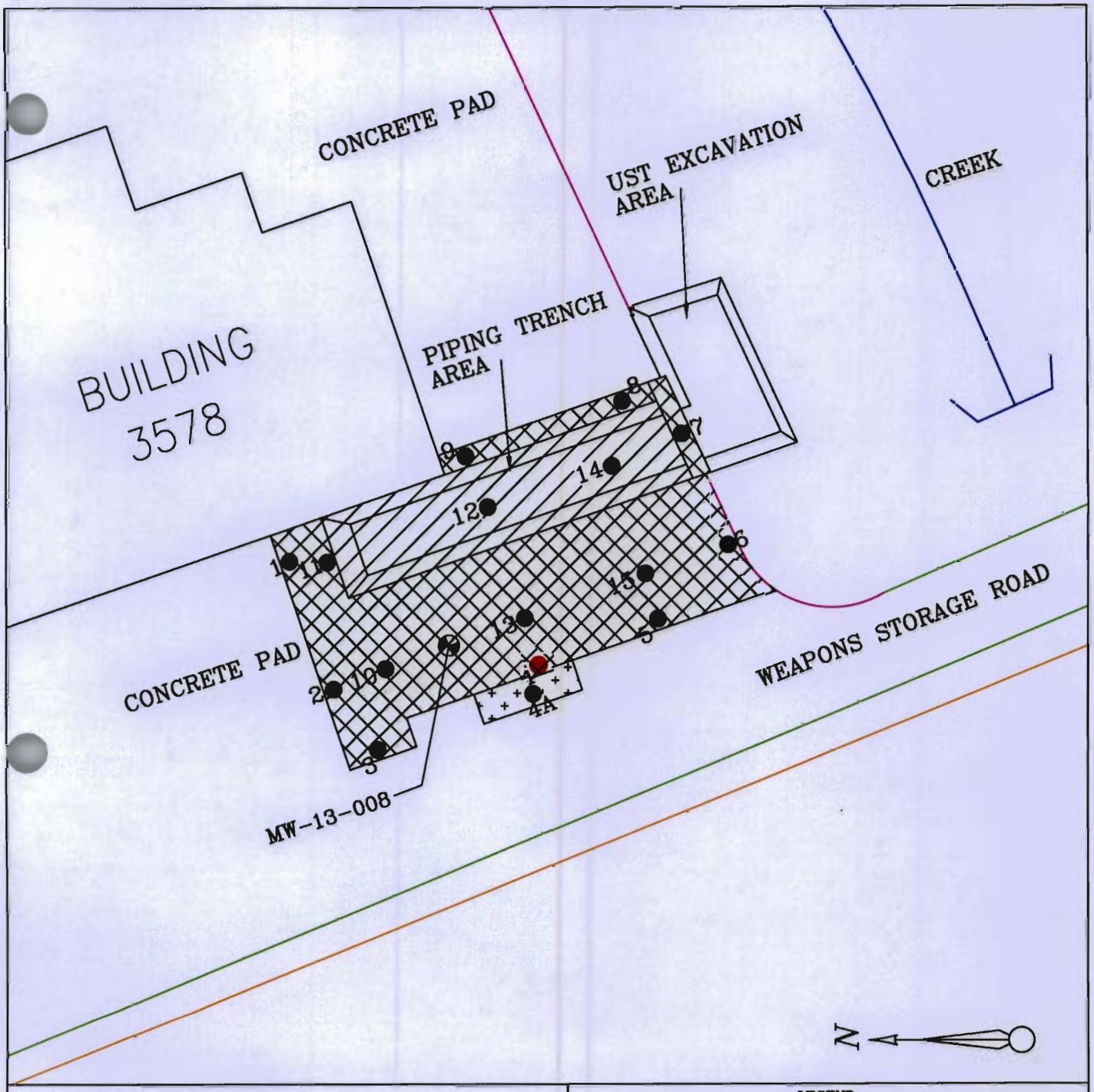
FIGURE 5

SS-013: INITIAL LIMITS OF EXCAVATION AND SAMPLE LOCATIONS – BUILDING 3578

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE:	1" = 30'
FILE NO.:	4521
DWG. NO.:	005



NOTES

SAMPLES 1 THROUGH 9 AND 4A ARE SIDEWALL SAMPLES (DISCRETE)

SAMPLES 10 THROUGH 15 ARE BOTTOM SAMPLES (DISCRETE)

SAMPLE NO. 4 ANALYTES EXCEEDED NYSDEC TAGM 4046

LEGEND

- APPROXIMATE LIMITS OF FORMER TRENCH EXCAVATION
- FINAL LIMITS OF TRENCH EXCAVATION
- HOT-SPOT EXCAVATION
- MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- SOIL SAMPLE LOCATION EXCEEDS NYSDEC TAGM 4046 CRITERIA

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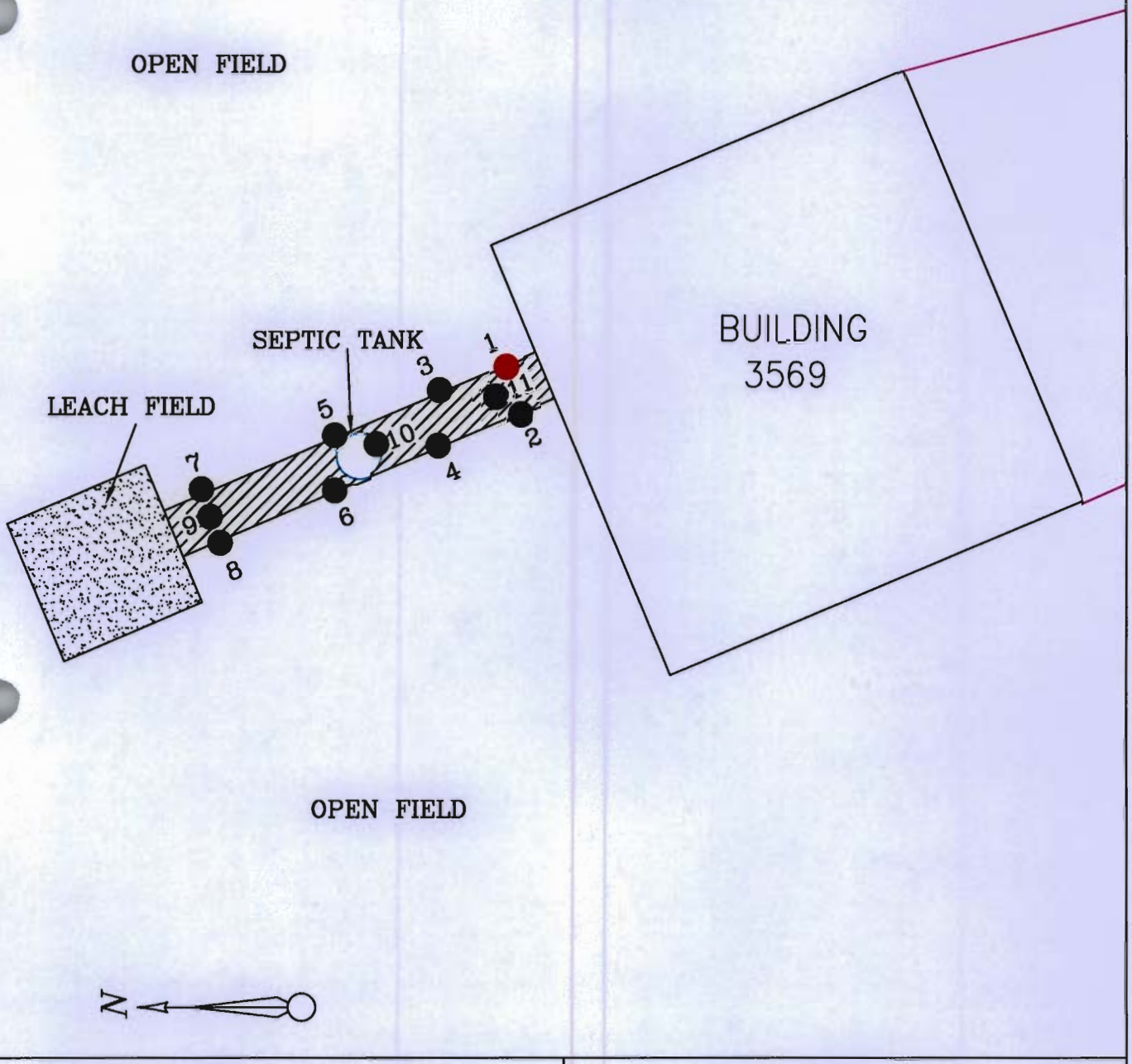
FIGURE 6

SWS-013: FINAL LIMITS OF EXCAVATION AND SAMPLE LOCATIONS - BUILDING 3578

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE:	1" = 30'
FILE NO.: 4521	
DWG. NO.: 006	



NOTES

SAMPLES 1 THROUGH 8 ARE SIDEWALL SAMPLES (DISCRETE)

SAMPLES 9 THROUGH 11 ARE BOTTOM SAMPLES (DISCRETE)

SAMPLE NO. 1 ANALYTES EXCEEDED NYSDEC TAGM 4046

LEGEND

LIMITS OF TRENCH EXCAVATION

SOIL SAMPLE LOCATION

SOIL SAMPLE LOCATION EXCEEDES NYSDEC TAGM CRITERIA

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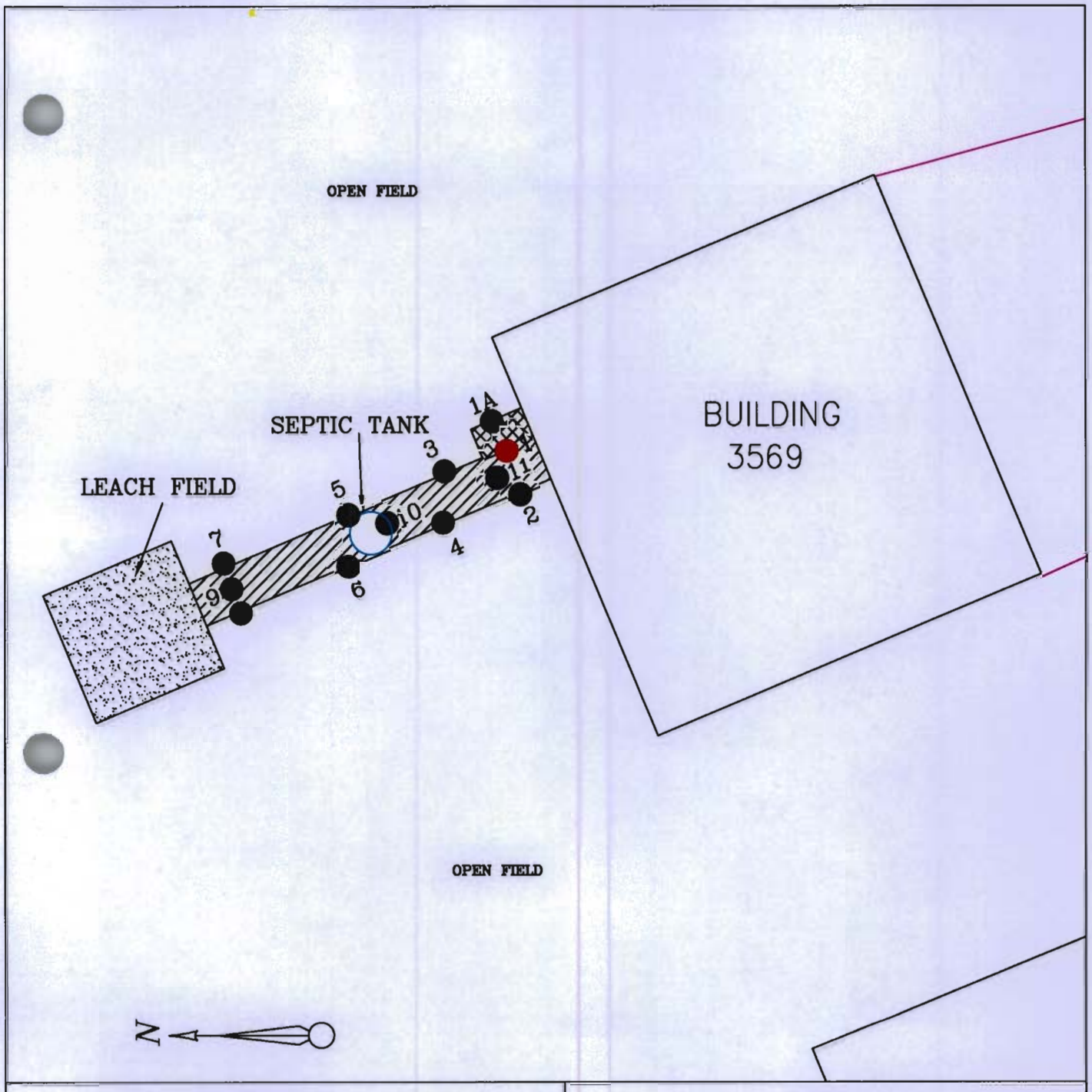
FIGURE 7

SS-013: INITIAL LIMITS OF EXCAVATION SAMPLE LOCATIONS – BUILDING 3569

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE: 1" = 20'	
FILE NO.: 4521	
DWG. NO.: 007	



NOTES

SAMPLES 1 THROUGH 8 AND 1A ARE SIDEWALL SAMPLES (DISCRETE)

SAMPLES 9 THROUGH 11 ARE BOTTOM SAMPLES (DISCRETE)

SAMPLE NO. 1 ANALYTES EXCEEDED NYSDEC TAGM 4046

LEGEND

HOT-SPOT EXCAVATION

LIMITS OF TRENCH EXCAVATION

SOIL SAMPLE LOCATION

SOIL SAMPLE LOCATION EXCEEDES NYSDEC TAGM 4046 CRITERIA

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FIGURE 8

SS-013: FINAL LIMITS OF EXCAVATION AND SAMPLE LOCATIONS – BUILDING 3569

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE: 1" = 20'	
FILE NO.: 4521	
DWG. NO.: 008	

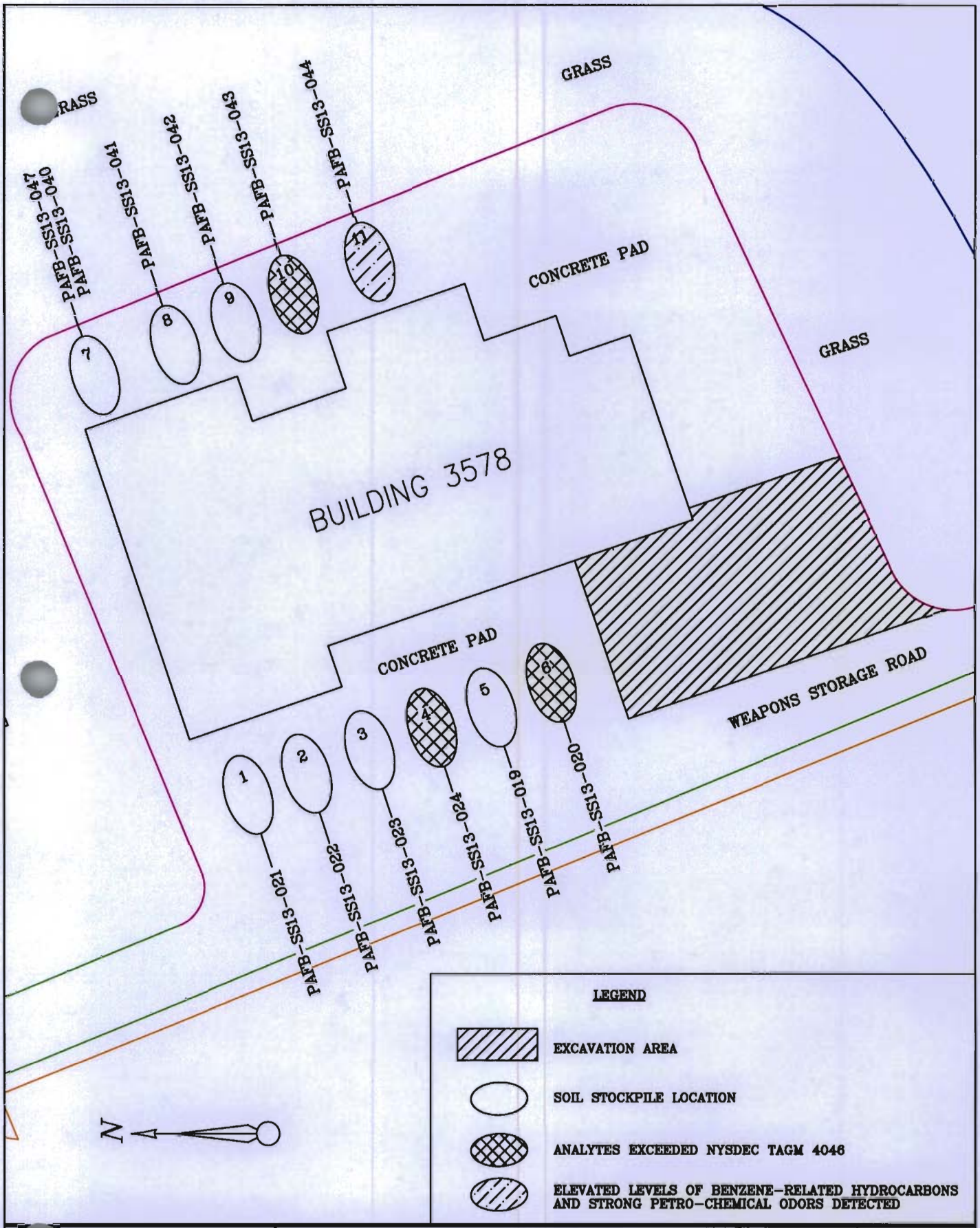

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FIGURE 9

SS-013: SOIL STOCKPILE LOCATIONS

PLATTSBURGH AIR FORCE BASE, PLATTSBURGH, NEW YORK

DRAWN BY: JRA	DATE: 01/23/02
CHECKED BY: TJW	DATE: 02/05/02
SCALE: 1" = 40'	
FILE NO.: 4521	
DWG. NO.: 009	

APPENDIX A

CLEAN FILL MATERIAL – VOLUME DOCUMENTATION

512896

DATE 11/7/01

NAME BRIAN FOLEY Union INC

ADDRESS Back Job

CITY, STATE, ZIP

ORDER NO.	SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
	#7			X			

QUAN.	DESCRIPTION	PRICE	AMOUNT
1	P Sand		
2	P sand		
3	P sand		
4	P sand		
5	P sand		
6	P sand		
7	P sand		
8	P sand		
9	P sand		
10	P sand		
11			
12			
13			
14			
15			
16			
17			
18			

10

RECEIVED BY BJ

TAX

TOTAL

Adams
35805

512897

DATE 11/8/01

NAME BRIAN FOLEY

ADDRESS VERSAR INC.

CITY, STATE, ZIP

ORDER NO.	SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
	#7			X			

QUAN.	DESCRIPTION	PRICE	AMOUNT
1	1p sand		
2	1p sand		
3	1p sand		
4	1p sand		
5	1p sand		
6	1p sand		
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
RECEIVED BY		TAX	
		TOTAL	

Adams
35805

313324

CUSTOMER'S ORDER NO.	DEPARTMENT	DATE
Rush Food Trucking		11/13/01

NAME: BRYAN FOLEY (CUEVAS INC)

ADDRESS: PAFB ARROW DUMP 2%.

CITY, STATE, ZIP:

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE RETD	PAID OUT
R-5						

	QUANTITY	DESCRIPTION	PRICE	AMOUNT
1	1	LOAD SAND		
2	1	" "		
3	1	" "		
4	1	" "		
5	1	LOAD SAND		
6	1	" "		
7				
8				
9				
10				
11				
12				
13				
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18				
19				
20				

RECEIVED BY

adams 5805

KEEP THIS SLIP FOR REFERENCE

APPENDIX B

CLEAN FILL MATERIAL –

CERTIFIED LABORATORY DATA

TEST CERTIFICATE
KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (740) 373-4071

Versar, Inc. Division 35
1900 Frost Road
Suite 110
Bristol, PA 19007
Attention: Rich Habrukowich

Login #: L0110387
Report Date: 11/01/01
Work ID: SS-13/PLATTSBURGH
Date Received: 10/18/01

PO Number:
Account Number: VERSAR-PA-318

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L0110387-01	FILL		

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the written approval of KEMRON.

NYSDOH ELAP ID: 10861

Certified By
David L. Bumgarner

Login #L0110387
November 1, 2001 10:41 am

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L0110387-01
Client Sample ID: FILL
Site/Work ID: SS-13/PLATTSBURGH

Matrix: Soil
Collected: 10/17/01 10:00

% Solid: 94
COC Info: 18702/

Analyte	Units	Result	Qualifiers	RL	Dil	Type	Analyst	Analysis Date	Time	Method
Percent Solids.....	weight %	94		1.0	1	N/A	TMM	10/18/01	11:25	D2216-90
Silver, Total.....	mg/kg		U	1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Aluminum, Total.....	mg/kg	2740		22	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Arsenic, Total.....	mg/kg	1.10		1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Barium, Total.....	mg/kg	14.9		1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Beryllium, Total.....	mg/kg	0.164	F	0.30	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Calcium, Total.....	mg/kg	1780		100	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Cadmium, Total.....	mg/kg		U	0.10	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Cobalt, Total.....	mg/kg	1.88	F	10	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Chromium, Total.....	mg/kg	3.64	F	20	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Copper, Total.....	mg/kg	2.76		2.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Iron, Total.....	mg/kg	5450		3.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Mercury, Total.....	mg/kg		U	0.10	.94	N/A	MMB	10/23/01	14:27	7471A\METHO
Potassium, Total.....	mg/kg	552	F	600	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Magnesium, Total.....	mg/kg	964		100	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Manganese, Total.....	mg/kg	131		2.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Sodium, Total.....	mg/kg	43.4		10	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Nickel, Total.....	mg/kg	2.79		2.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Lead, Total.....	mg/kg	2.04		1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Antimony, Total.....	mg/kg		U	1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Selenium, Total.....	mg/kg	1.02	F	1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Thallium, Total.....	mg/kg	0.0893	F	0.30	.94	N/A	ALT	10/26/01	11:03	7841\3050B
Vanadium, Total.....	mg/kg	7.03		1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B
Zinc, Total.....	mg/kg	7.89		1.0	.94	N/A	SLP	10/22/01	20:29	6010B\3050B

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: 8081P - Organochlorine Pesticides

Lab Sample ID: L0110387-01
Client Sample ID: FILL
Site/Work ID: SS-13/PLATTSBURGH
Matrix: Soil

Dil. Type: C101
COC Info: 18702/
Date Collected: 10/17/01

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 10/22/01
Analysis Date: 10/22/01 Time: 17:23

Instrument: HP9
Analyst: ECL
Lab File ID: 9G17481.F

Method: 8081A\3550B
Run ID: R201836
Batch : WG106860

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
319-84-6	alpha-BHC	ug/kg		U	19	1
319-85-7	beta-BHC	ug/kg		U	19	1
319-86-8	delta-BHC	ug/kg		U	19	1
58-89-9	gamma-BHC (Lindane)	ug/kg		U	19	1
76-44-8	Heptachlor	ug/kg		U	19	1
309-00-2	Aldrin	ug/kg		U	19	1
1024-57-3	Heptachlor epoxide	ug/kg		U	19	1
959-98-8	Endosulfan I	ug/kg		U	19	1
60-57-1	Dieldrin	ug/kg		U	37	1
72-55-9	4,4'-DDE	ug/kg		U	37	1
72-20-8	Endrin	ug/kg		U	37	1
33213-65-9	Endosulfan II	ug/kg		U	37	1
72-54-8	4,4'-DDD	ug/kg		U	37	1
1031-07-8	Endosulfan sulfate	ug/kg		U	37	1
50-29-3	4,4'-DDT	ug/kg		U	37	1
72-43-5	Methoxychlor	ug/kg		U	190	1
53494-70-5	Endrin ketone	ug/kg		U	37	1
7421-93-4	Endrin aldehyde	ug/kg		U	37	1
5103-71-9	alpha Chlordane	ug/kg		U	19	1
5103-74-2	gamma Chlordane	ug/kg		U	19	1
8001-35-2	Toxaphene	ug/kg		U	35	1

SURROGATES- In Percent Recovery:

2,4,5,6-Tetrachloro-m-xylene	68.8	(35 - 135%)
Decachlorobiphenyl	82.8	(25 - 143%)

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: 8081P - Organochlorine Pesticides

Lab Sample ID:	L0110387-01	Dil. Type: C202	Sample Weight: N/A
Client Sample ID:	FILL	COC Info: 18702/	Extract Volume: N/A
Site/Work ID:	SS-13/PLATTSBURGH		
Matrix:	Soil	Date Collected: 10/17/01	% Solid: 94
TCLP Extract Date:	N/A	Instrument: HP9	Method: 8081A\3550B
Extract Date:	10/22/01	Analyst: ECL	Run ID: R201837
Analysis Date:	10/22/01 Time: 17:48	Lab File ID: 9G17481.R	Batch : WG106860

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
319-84-6	alpha-BHC	ug/kg		U	19	1
319-85-7	beta-BHC	ug/kg		U	19	1
319-86-8	delta-BHC	ug/kg		U	19	1
58-89-9	gamma-BHC (Lindane)	ug/kg		U	19	1
76-44-8	Heptachlor	ug/kg		U	19	1
309-00-2	Aldrin	ug/kg		U	19	1
1024-57-3	Heptachlor epoxide	ug/kg		U	19	1
959-98-8	Endosulfan I	ug/kg		U	19	1
60-57-1	Dieldrin	ug/kg		U	37	1
72-55-9	4,4'-DDE	ug/kg		U	37	1
72-20-8	Endrin	ug/kg		U	37	1
33213-65-9	Endosulfan II	ug/kg		U	37	1
72-54-8	4,4'-DDD	ug/kg		U	37	1
1031-07-8	Endosulfan sulfate	ug/kg		U	37	1
50-29-3	4,4'-DDT	ug/kg		U	37	1
72-43-5	Methoxychlor	ug/kg		U	190	1
53494-70-5	Endrin ketone	ug/kg		U	37	1
7421-93-4	Endrin aldehyde	ug/kg		U	37	1
5103-71-9	alpha Chlordane	ug/kg		U	19	1
5103-74-2	gamma Chlordane	ug/kg		U	19	1
8001-35-2	Toxaphene	ug/kg		U	35	1

SURROGATES- In Percent Recovery:

2,4,5,6-Tetrachloro-m-xylene	65.2	(35 - 135%)
Decachlorobiphenyl	76.1	(25 - 143%)

RL = Reporting Limit

Product: 8082 - PCB

Lab Sample ID: L0110387-01
Client Sample ID: FILL
Site/Work ID: SS-13/PLATTSBURGH
Matrix: Soil

Dil. Type: 01
COC Info: 18702/
Date Collected: 10/17/01

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 10/22/01
Analysis Date: 10/22/01 Time: 16:33

Instrument: HP4
Analyst: ECL
Lab File ID: 4GF10089

Method: 8082\3550B
Run ID: R201790
Batch : WG106861

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
12674-11-2	Aroclor-1016	ug/kg		U	19	1
11104-28-2	Aroclor-1221	ug/kg		U	19	1
11141-16-5	Aroclor-1232	ug/kg		U	19	1
53469-21-9	Aroclor-1242	ug/kg		U	19	1
12672-29-6	Aroclor-1248	ug/kg		U	19	1
11097-69-1	Aroclor-1254	ug/kg		U	19	1
11096-82-5	Aroclor-1260	ug/kg		U	19	1
	SURROGATES- In Percent Recovery:					
	2,4,5,6-Tetrachloro-m-xylene		74.6	(35 - 135%)		
	Decachlorobiphenyl		65.4	(25 - 143%)		

Product: 827-AF98 - Semivolatile Compounds

Lab Sample ID: L0110387-01
Client Sample ID: FILL
Site/Work ID: SS-13/PLATTSBURGH
Matrix: Soil

Dil. Type: N/A
COC Info: 18702/
Date Collected: 10/17/01

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 10/22/01
Analysis Date: 10/25/01 Time: 01:31

Instrument: HPMS3
Analyst: CLK
Lab File ID: 3M24312

Method: 8270C\3550B
Run ID: R202586
Batch : WG107082

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
83-32-9	Acenaphthene	mg/kg		U	0.70	1
208-96-8	Acenaphthylene	mg/kg		U	0.70	1
120-12-7	Anthracene	mg/kg		U	0.70	1
56-55-3	Benzo(a)anthracene	mg/kg		U	0.70	1
205-99-2	Benzo(b)fluoranthene	mg/kg		U	0.70	1
191-24-2	Benzo(g,h,i)Perylene	mg/kg		U	0.70	1
50-32-8	Benzo(a)pyrene	mg/kg		U	0.70	1

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: 827-AF98 - Semivolatile Compounds

Lab Sample ID: L0110387-01
Client Sample ID: FILL
Site/Work ID: SS-13/PLATTSBURGH
Matrix: Soil

Dil. Type: N/A
COC Info: 18702/
Date Collected: 10/17/01

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 10/22/01
Analysis Date: 10/25/01 Time: 01:31

Instrument: HPMS3
Analyst: CLK
Lab File ID: 3M24312

Method: 8270C\3550B
Run ID: R202586
Batch : WG107082

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
207-08-9	Benzo(k)fluoranthene	mg/kg		U	0.70	1
111-91-1	Bis(2-Chloroethoxy)Methane	mg/kg		U	0.70	1
111-44-4	Bis(2-Chloroethyl)ether	mg/kg		U	0.70	1
117-81-7	bis(2-Ethylhexyl)phthalate	mg/kg		U	0.70	1
101-55-3	4-Bromophenyl-phenylether	mg/kg		U	0.70	1
85-68-7	Butylbenzylphthalate	mg/kg		U	0.70	1
106-47-8	4-Chloroaniline	mg/kg		U	1.3	1
91-58-7	2-Chloronaphthalene	mg/kg		U	0.70	1
95-57-8	2-Chlorophenol	mg/kg		U	0.30	1
7005-72-3	4-Chlorophenyl-phenyl ether	mg/kg		U	0.70	1
218-01-9	Chrysene	mg/kg		U	0.70	1
95-48-7	2-Methylphenol	mg/kg		U	0.30	1
106-44-5	3-,4-Methylphenol	mg/kg		U	0.30	1
84-74-2	Di-N-Butylphthalate	mg/kg		U	0.70	1
53-70-3	Dibenzo(a,h)Anthracene	mg/kg		U	0.70	1
132-64-9	Dibenzofuran	mg/kg		U	0.70	1
106-46-7	1,4-Dichlorobenzene	mg/kg		U	0.70	1
91-94-1	3,3'-Dichlorobenzidine	mg/kg		U	1.3	1
120-83-2	2,4-Dichlorophenol	mg/kg		U	0.30	1
84-66-2	Diethylphthalate	mg/kg		U	0.70	1
105-67-9	2,4-Dimethylphenol	mg/kg		U	0.30	1
131-11-3	Dimethylphthalate	mg/kg		U	0.70	1
51-28-5	2,4-Dinitrophenol	mg/kg		U	3.3	1
121-14-2	2,4-Dinitrotoluene	mg/kg		U	0.70	1
606-20-2	2,6-Dinitrotoluene	mg/kg		U	0.70	1
117-84-0	Di-n-octylphthalate	mg/kg		U	0.70	1
206-44-0	Fluoranthene	mg/kg		U	0.70	1
86-73-7	Fluorene	mg/kg		U	0.70	1
118-74-1	Hexachlorobenzene	mg/kg		U	0.70	1
77-47-4	Hexachlorocyclopentadiene	mg/kg		U	0.70	1
67-72-1	Hexachloroethane	mg/kg		U	0.70	1
87-68-3	Hexachlorobutadiene	mg/kg		U	0.70	1
193-39-5	Indeno(1,2,3-cd)pyrene	mg/kg		U	0.70	1
78-59-1	Isophorone	mg/kg		U	0.70	1
91-57-6	2-Methylnaphthalene	mg/kg		U	0.70	1
91-20-3	Naphthalene	mg/kg		U	0.70	1
88-74-4	2-Nitroaniline	mg/kg		U	3.3	1
99-09-2	3-Nitroaniline	mg/kg		U	3.3	1
100-01-6	4-Nitroaniline	mg/kg		U	3.3	1

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: 827-AF98 - Semivolatile Compounds

Lab Sample ID: L0110387-01
Client Sample ID: FILL
Site/Work ID: SS-13/PLATTSBURGH
Matrix: Soil

Dil. Type: N/A
COC Info: 18702/
Date Collected: 10/17/01

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 10/22/01
Analysis Date: 10/25/01 Time: 01:31

Instrument: HPMS3
Analyst: CLK
Lab File ID: 3M24312

Method: 8270C\3550B
Run ID: R202586
Batch : WG107082

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
98-95-3	Nitrobenzene	mg/kg		U	0.70	1
88-75-5	2-Nitrophenol	mg/kg		U	0.30	1
100-02-7	p-Nitrophenol	mg/kg		U	1.6	1
86-30-6	N-Nitrosodiphenylamine	mg/kg		U	0.70	1
621-64-7	N-Nitroso-di-n-propylamine	mg/kg		U	0.70	1
87-86-5	Pentachlorophenol	mg/kg		U	3.3	1
85-01-8	Phenanthrene	mg/kg		U	0.70	1
108-95-2	Phenol	mg/kg		U	0.30	1
129-00-0	Pyrene	mg/kg		U	0.70	1
120-82-1	1,2,4-Trichlorobenzene	mg/kg		U	0.70	1
95-95-4	2,4,5-Trichlorophenol	mg/kg		U	3.3	1
88-06-2	2,4,6-Trichlorophenol	mg/kg		U	0.30	1
541-73-1	1,3-Dichlorobenzene	mg/kg		U	0.70	1
100-51-6	Benzyl alcohol	mg/kg		U	1.3	1
95-50-1	1,2-Dichlorobenzene	mg/kg		U	0.70	1
108-60-1	bis(2-Chloroisopropyl)ether	mg/kg		U	0.70	1
59-50-7	4-Chloro-3-methylphenol	mg/kg		U	1.3	1
534-52-1	4,6-Dinitro-2-methylphenol	mg/kg		U	3.3	1
65-85-0	Benzoic acid	mg/kg		U	1.6	1

SURROGATES- In Percent Recovery:

2-Fluorophenol	50.5	(25 - 135%)
Phenol-d5	53.5	(25 - 135%)
Nitrobenzene-d5	47.6	(25 - 135%)
2-Fluorobiphenyl	51.9	(34 - 135%)
2,4,6-Tribromophenol	49.3	(25 - 144%)
p-Terphenyl-d14	87.4	(32 - 136%)

RL = Reporting Limit

APPENDIX C

DATA VALIDATION USABILITY REPORTS

Revised July 10, 2001

MEMORANDUM

TO: Rich Habrukowich, Versar, Bristol, PA

FROM: Donna Oswald, Versar, Lombard, IL

DATE: June 27,2001

RE: **Data Validation/Usability Report for Plattsburgh AFB**

SS-013, Building 3569

1.0 INTRODUCTION

On May 8, 2001, one soil sample was collected at Plattsburgh AFB SS-013, north of building 3569, from the limits of excavation near the septic tank sewer line. This was a re-sampling of a sample location previously identified as PAFB-SS-013-01 and reported in Kemron data package L0011491. The sample was sent to Kemron Environmental Services (Kemron), located in Marietta, Ohio, for testing. Analyses were preformed in accordance with Air Force Center for Environmental Excellence (AFCEE) Quality Assurance Project Plan (QAPP) Version 3.0 (March 1998) with the exception of several laboratory variances for EPA Method SW260B volatile organics (VOCs) and EPA Method SW8270C semivolatile organics (SV)Cs). Several compounds that are not part of the AFCEE target analyte list for methods 8260B and 8270C were also included to satisfy NYDEC reporting requirements. The additional compounds are the VOCs acetone, 4-methyl-2-pentanone, 2-hexanone and 2-butanone and the SVOC benzo(k)fluoranthene by EPA Method SW8270C. As these compounds are not included in the AFCEE QAPP, laboratory historical statistical limits were used to evaluate the VOC analytical results while benzo(k)fluoranthene was evaluated according to QAPP limits for its isomer benzo(b)fluoranthene. The analytical results are presented in Tables 1 and 2. The laboratory variations from the AFCEE QAPP and case narratives are included as attachments to this memorandum.

The data were qualified in accordance with the validation protocols in the AFCEE QAPP, Version 3.0 (March 1998). The laboratory performed the initial review of the data package, and qualified the data in accordance with the AFCEE QAPP requirements. Final qualification of the data was made by the Versar project chemist based on the results of the data validation. The following items were reviewed during the data validation process: chain of custody, sample condition upon receipt, extraction/analysis holding times, method detection/reporting limits, internal standards, surrogates, matrix spike/matrix spike duplicate (MS/MSD) analysis results, laboratory control sample (LCS) recoveries, initial and continuing calibrations, second source calibration verification standards, laboratory method and field QC blank contamination, instrument tuning, and report completeness.

The hierarchy of AFCEE qualifiers from most to least severe are as follows; "R" (rejected), "M" (matrix effect present), "F" (results above method detection limit, but below reporting limit), "J" (estimated value), "B" (blank contamination), "U" (not detected) and "D" (sample analyzed at a dilution). "B" and "D" are informational qualifiers that do not provide information regarding the usability of a data point. Evaluation of other factors (such as the magnitude of the blank contamination relevant to the sample concentration or sample result/action level relevant to the elevated RLD) is required to determine the usability of the qualified data point.

The samples were received by Kemron on ice, intact and under proper chain-of-custody. The temperature of the sample cooler upon receipt at the laboratory was 1°C. This is outside the QAPP limits of 4 $\pm$ 2C, however the samples were not impacted but the lower temperature.

2.0 VALIDATION

Volatile Data (Method 8260B)

All project specific QC criteria were met, except as indicated below:

All calibration requirements as specified in attachment A were run and met criteria specified in the QAPP. In the initial calibration, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (chloromethane in the aqueous calibration and acetone, chloromethane, 4-methyl-2-pentanone, cis-1,3-dichloropropene, 1-chlorohexane, 1,3,5-trimethylbenzene and tert-butylbenzene in the soil calibration), or a quadratic 2nd order curve (vinyl chloride in the soil calibration) than by using an average response factor. Linearity acceptance criteria as specified in Table 7.2.10-2 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.10-2 of the AFCEE QAPP were met for all other compounds.

No target analytes were detected above the reporting limit (RL) in the laboratory method blanks. Trace levels (> MDL, but < RL) of naphthalene were detected in the method blank associated with the soil field sample. This compound was not detected in the associated field sample.

In the soil Volatile Laboratory Control Sample (LCS) analyzed on 05/14/01, the results for the compound 1,1,1,2-Tetrachloroethane were greater than the control limits in the AFCEE QAPP. This result indicates the possibility of high bias; this compound was not detected in the associated field sample, therefore qualification was not required.

Methylene chloride was detected below the RL but above the MDL. This is considered to be a trace level and was qualified "F" in accordance with the QAPP. It is considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

Semivolatile Data (Method 8270C)

All project specific QC criteria were met, except as indicated below.

All calibration requirements as specified in attachment A were run and met criteria specified in the QAPP. In the initial calibration, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (hexachlorocyclopentadiene, 4,6-dinitro-2-methyl phenol, 2,4-dinitrophenol, pentachlorophenol, 2,4,6-tribromophenol and di-n-octyl phthalate), or a quadratic 2nd order curve (benzoic acid, benzo(ghi)perylene and 3,3'-dichlorobenzidine) than by using an average response factor. Linearity acceptance criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for all other compounds. The second source calibration (SSC) standard results met criteria for all target analytes.

In the Continuing Calibration Verification (CCV) analyses, the % difference for indeno(1,2,3-cd)pyrene and benzo(ghi)perylene minimally exceeded the quality control limits for the 5/18/01 analysis. Calibration results indicate that instrument sensitivity for these compounds was marginally lower on the dates in question. In accordance with the AFCEE QAPP, the results for these these compounds in the associated samples are qualified "R". Neither of these compounds were detected in the associated sample. Minor exceedences of daily calibration drift or SSC criteria typically have no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. The non-detect results for these analytes should be acceptable for use.

In the soil semi-volatile laboratory control sample (LCS) analyzed on 05/18/01, the results for the compound 2-chloronaphthalene were less than the control limits in the AFCEE QAPP. This result indicates the possibility of low bias or possible false negatives; this compound was qualified "R" per the QAPP.

3.0 COMPLETENESS

The AFCEE QAPP goal for completeness is 90% for soil matrixes. Percent completeness is defined as the number of valid results divided by the total number of individual target compound results. Valid results are those that have not been rejected (qualified "R"). The percent completeness for each method and matrix is as follows:

Method	Matrix	Percent Completeness
Volatiles (SW8260B)	Soil	100%
Semivolatiles (SW8270C)	Soil	95.4 %

The completeness goal of 90% was met for the soil samples.

ATTACHMENTS

Attachment A

Initial Calibration quality control requirements for reportable analytes

QC requirement	multi-point calib.	Multi-point %RSD or r OK	Low standard < RL	Second Source Standard (SSC)	SSC %D OK	Tune within 12 hours & tune OK	CCC RSD OK	SPCC RRFs OK
Analytical Method								
8260B	x	x	x	x	x	x	x	x
8270C	x	x	x	x	x	x	x	x
6010B/7000	x	x	x	x	x			

Continuing Calibration quality control requirements for reportable analytes

QC requirement	Acceptable tune within 12 hours	CCC %D OK	SPCC RF(50) OK	Column Breakdown Check ok	Continuing Calibration Verification Standard (CCV)	CCV %D OK
Analytical Method						
8260B	x	X	X			
8270C	x	X	X			
6010B/7000					x	x

CASE NARRATIVES

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE

L0105182

CHAIN OF CUSTODY:

The chain of custody number was 104254.

SHIPMENT CONDITIONS:

The chain of custody was received sealed in a cooler. The cooler temperature was 1° C.

SAMPLE MANAGEMENT:

All samples were received intact. Only one vial was received for the Trip Blank. Kemron was instructed to analyze for volatile organics, only.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

REVIEWED: Jay M Thomas DATE: 5-12-01

3
Me

REPORT NARRATIVE
GC/MS VOLATILE ORGANICS

KEMRON Login No: L0105182

METHOD

Preparation: SW- 846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Samples: The LCS analyzed on 05/14/01 on HPMS-9 yielded a % recovery for 1,1,1,2-tetrachloroethane that was above the upper advisory limit. This outlier was not detected in tha associated sample above the reporting limit. All other acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: MES REVIEWED: _____ DATE: 5/29/01

REPORT NARRATIVE
GC/MS SEMIVOLATILE ORGANICS

KEMRON Report No.: L0105182

METHOD

Preparation: SW- 846 3550B(Soils) 3510C(Waters)
Analysis: SW-846 8270C

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on HPMS4 on 5/18/01 at 8:57 yielded a %D for benzo[ghi]perylene that exceeded the criteria of less that +/-20%; this CCV was associated with the method blank and LCS only. All acceptance criteria were met. The CCV analyzed on HPMS4 on 5/18/01 at 13:26 yielded %D for indeno[1,2,3=cd]pyrene and benzo[ghi]perylene that exceeded the criteria of less that +/-20%; samples were flagged accordingly.

BATCH QA/QC

Method Blank: All acceptance criteria were met.
Laboratory Control Samples: The LCS associated with these samples yielded a % recovery for 2-chloronaphthalene that was below the lower advisory limit; samples were flagged accordingly. All other acceptance criteria were met.
Matrix Spikes: The MS/MSD were not associated with this sample delivery group.

SAMPLES

Internal Standards: All acceptance criteria were met.
Surrogates: All acceptance criteria were met.
Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: mdc

REVIEWED Stephanie Lopez DATE: 5/24/01

CHAIN OF CUSTODIES

COC No. B 104254

109 Starlite Park
Marietta, OH 45750

ENVIRONMENTAL SERVICES
CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: VERSAR

Project Contact: RICH HABRUKOWICH
Contact Phone #: 215 356 3506

Turn Around Requirements: STANDARD
Location: PLATTSBURGH NY

Project #: 4512.451
Project Name: 3569 + 3578 BLDGS

Sampler (print): BRYAN FOLEY
Signature:

Program: ☐ NPDES ☒ AFCEE ☐ RCRA ☐ USACE ☐ Other

Mail Report To: RICH HABRUKOWICH
2258 PEARL BUCK RD.
SUITE 1
BRISTOL, PA 19007

Sample I.D. No	Location I.D.	SED	SED SOIL	Date	Time	Comp*	Grab	NUMBER of CONTAINERS	SVOC	VOC	TAL METALS	TPH			Comments
PAFB-013-3569-SD1			X	5/8/01	8:30		X	2	X	X					
PAFB-013-3569-SD2			X		8:40			2	X			X			
TRIP BLANK								1		X	X	NO	JMT		

ERPIMS REQUIRED FIELDS

COOLER ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
	5/8/01	10:00					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Cooler Temp in °C	Remarks
			Brenda Gregory	5/9/01	1217	1	UC Dated Sp intact bg

* Homogenize all composite samples prior to analysis

Page ____ of ____

VARIANCES

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
ENVIRONMENTAL RESTORATION SERVICES
BROOKS AFB, TX 78235

29 Nov 00

MEMORANDUM FOR HQ AFCEE/ERB
ATTENTION: Roy Willis/RTC/Plattsburg AFB

FROM: Burt Harrison
Environmental Chemistry Consultant
AFCEE/ERC
3207 North Road
Brooks AFB, Tx 78235

SUBJECT: Environmental Chemistry Review of the Kemron Laboratory QAPP Variances Prepared by Versar for the Plattsburg AFB Project.

References: (a) Handbook for the Installation Restoration Program (IRP) - Remedial Investigation/Feasability Studies (RI/FS), AFCEE, Sept. 1993. (b) U.S. EPA Test Methods for Evaluating Solid Wastes (SW 846), third edition, July 1992. (c) HQ AFCEE Quality Assurance Project Plan, March 1998.

A review of the Quality Assurance Project Plan variances for the Plattsburg AFB, NY project prepared by Versar are acceptable with the following exceptions. Recommend sample results be reported on a dry weight basis except for SW5035 samples where it is not possible. Concur with all Reporting Limit variances if approved by the New York State RPM and the USEPA RPM. Do not concur with calibration variances. Do not concur with recovery limits lower than 20% for any analyte for any analytical procedure. Concur with the MDL variance request after a survey of a number of AFCEE laboratories concerning this MDL issue requirement.

If you have any questions regarding this review or these comments, please contact me at (210) 536-5226.

Burt Harrison
Environmental Chemistry Consultant
Consultant Operations Division
AFCEE/ERC

KEMRON Environmental Services, Inc.
Variance Request AFCEE QAPP Version 3.0, March 1998
Versar – Plattsburgh, NY
Revised 11/20/00

QAPP Section 4.3.1: MDL Spike Levels

AFCEE REQUIREMENT:

Item (6) of Section 4.3.1 states "If the spike level in step 2 is more than five times the calculated MDL, repeat the process using a smaller spiking level."

VARIANCE REQUEST:

The laboratory requests a variance to change "five times" to read "ten times".

JUSTIFICATION:

The analytes that fail the "five times" criteria are on those instruments or methods that are very precise and have low relative standard deviations. Any procedure with a relative standard deviation less than 6.67% (at the spiked level) will produce MDLs that do not meet the 'fives times" criteria. Furthermore, this process tends to underestimate the MDL, so repeating the process at a lower spiking level may not produce meaningful data, particularly, if the spike level is below the quantitation limit (lowest calibration standard).

If so desired, the MDLs for those few analytes that fail the "five times" criteria MDL could be assigned a value equal to one-tenth the spike level, or one-half the project required RL, whichever is higher. This will assure that all project DQOs related to the MDLs and RLs will be met.

KEMRON meets the EPA criteria that the spike concentration should not exceed ten times the estimated MDL and AFCEE has accepted this interpretation on previous projects.

QAPP Section 8.2 – Wet Weight vs. Dry Weight

AFCEE REQUIREMENT:

Section 8.2 of the AFCEE QAPP V3.0 requires that "A wet weight aliquot of sample equivalent to the method specified dry weight aliquot of sample shall be taken for analysis."

KEMRON VARIANCE REQUEST:

The laboratory requests a variance to allow the method prescribed sample weights to be determined on the "as-received" basis, as specified in SW846.

JUSTIFICATION:

1) Increasing the amount of wet weight changes the sample/solvent ratios, which may significantly reduce the recovery of analytes from the matrix, resulting in poor surrogate recovery and more R flagged data. Altering the sample/solvent reagent ratios is a direct violation of the SW-846 methods.2) Organic extraction methods such as 3540, 3545 and 3550 have a limit on the quantity of sample they can effectively process. 3) The QAPP procedure cannot be applied to samples collected by method 5035 for volatile organic analysis.

QAPP Section 7.1.9.1 SW8260 Reporting Limits

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes:

Analyte	AFCEE RL (ug/L)	Proposed RL (ug/L)
1,1,2,2 Tetrachloroethane	0.4	0.8
1,1-Dichloroethane	0.4	0.5
1,2,3-Trichlorobenzene	0.3	1
1,2,4-Trichlorobenzene	0.4	2
1,2-Dichlorobenzene	0.3	1
1,2-Dichloropropane	0.4	0.5
1,3-Dichloropropane	0.4	0.5
1-Chlorohexane	0.5	1
1,4-Dichlorobenzene	0.3	1

2-Chlorotoluene	0.4	1
Benzene	0.4	0.5
Bromobenzene	0.3	1
Bromochloromethane	0.4	0.5
Bromodichloromethane	0.8	1
Chlorobenzene	0.4	0.5
Chloroform	0.3	0.5
Ethylbenzene	0.6	1
Methylene Chloride	0.3	2
n-propylbenzene	0.4	1
Naphthalene	0.4	1
Styrene	0.4	1
Trichlorofluoromethane	0.8	1
Dibromochloromethane	0.5	0.6
1,2-Dichloroethane	0.6	0.7
m,p-Xylene		1

JUSTIFICATION:

The laboratory low calibration standard is not at the AFCEE RL. The proposed RL will meet the project requirements.

AFCEE REQUIREMENT:

Table 7.2.9-1 lists m-Xylene and p-Xylene as separate analytes.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to report m-Xylene and p-Xylene as one analyte, since the compounds co-elute.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests that method 5035 soil preservation be limited to freezing and that the holding time be accepted as 14 days.

JUSTIFICATION:

This variance is needed to prevent the degradation of performance of several (8260) target analytes and the failure of these analytes to meet the QAPP 3.0 quality control requirements for the second source verification and continuing calibration verification (CCV). The analytes most affected by affected by the sodium bisulfate are clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane. These compounds have a high probability of failing ICV/CCV criteria, resulting in R flags on all samples. Using the freezing option will eliminate these problems. The freezing option and 14-day hold time is being accepted by some states and selected US-EPA regions.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests a variance to change the second source initial calibration verification (ICV) and continuing calibration verification (CCV) criteria from +/- 25 % to +/- 40% for clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane.

JUSTIFICATION:

These compounds are very prone to ICV/CCV failure when sodium bisulfate is used as a preservative. Without the variance these compounds will probably have to be R-flagged.

QAPP Section 7.2.10 SW8270 Surrogate Control Limit

AFCEE REQUIREMENT:

Table 7.2.10-2 lists the acceptance limit for phenol-D5 as 25-125 % recovery in water.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to use 10 – 125 % recovery as the acceptance limit in water

JUSTIFICATION:

Phenol recovery above 10% is not achievable routinely due to poor extraction efficiency. Industry-wide statistics do not support the 25 – 125 % recovery limit.

QAPP Section 7.2.10 SW8270 LCS Control Limits

AFCEE REQUIREMENT: see table below

VARIANCE REQUEST:

LCS Control Limit variances for 8270 compounds in water:

Compound	AFCEE LCS LIMITS	PROPOSED LCS LIMITS
Phenol	25-125	20-125
2-Chloronaphthalene	60-125	49-120
Hexachlorocyclopentadiene	Delete as a target analyte	
Benzoic Acid	25-162	20-125
3,3'-Dichlorobenzidine	29-175	20-125
Phenol-d5 (surrogate)	25-125	20-125

JUSTIFICATION:

These compounds are industry-wide poor performers and consistently give recoveries below the AFCEE lower control limits. Hexachlorocyclopentadiene has been proposed for deletion as an analyte from the AFCEE 3.1 QAPP. The proposed limits are taken from the AFCEE 3.1 QAPP.

QAPP Section 7.2.15.1 SW6010B ICP

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes in water:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Zinc	0.01	0.02

JUSTIFICATION:

The proposed RL will meet the project requirements.

QAPP Section 7.2.17.7 SW7000 Method Variance - Water

AFCEE REQUIREMENT:

AFCEE projects often specify that arsenic, antimony, chromium, cadmium, lead, selenium, thallium and vanadium shall be performed by their respective 7000 – GFAA methods:

Metal	Method	AFCEE RL (mg/L)
Arsenic	7060A	0.005
Chromium	7191	0.005
Cadmium	7131A	0.001
Lead	7421	0.005
Vanadium	7911	0.004
Antimony	7041	0.005
Selenium	7740	0.005
Thallium	7841	0.001

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. Analyzing these metals by ICP-AES or ICP-MS will not elevate the reporting limits, but will eliminate the inherent errors of GFAA methods:

Metal	Method	Proposed RL (mg/L)
Arsenic	6010B/6020A	0.005
Chromium	6010B	0.005
Cadmium	6010B	0.001
Lead	6010B/6020A	0.005
Vanadium	6010B	0.004
Antimony	6020A	0.005
Selenium	6020A	0.005
Thallium	6020A	0.001

JUSTIFICATION:

The proposed RLs are equal to the 7000 method RLs and meet the project DQOs.

QAPP Section 7.2.17.7 SW7000 Method Variance - Soil

AFCEE REQUIREMENT:

AFCEE DQOs often specifies that arsenic, antimony, selenium, thallium, chromium, cadmium, lead and vanadium be performed by their respective 7000 – GFAA methods:

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. KEMRON will use a method that will meet the project action limits, either by ICP-AES or ICP-MS. The following RLs are proposed:

	AFCEE 7000 RL (mg/kg)	Proposed 6010 RL (mg/kg)	Proposed 6020A RL (mg/kg)
Antimony	0.5	1	0.2
Arsenic	0.5	1	0.5
Lead	0.5	1	0.5
Selenium	0.5	1	0.5
Vanadium	0.4	0.5	N/A
Chromium	0.5	0.5	N/A
Cadmium	0.1	0.1	N/A
Thallium	0.1	2	0.1

JUSTIFICATION:

Project DQOs will not be affected, and the inherent errors of GFAA methods will be eliminated.

QAPP Section 7.2.17.7 SW7000 Reporting Limits - Soil

KEMRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/kg)	Proposed RL (mg/kg)
Thallium	0.1	0.25

JUSTIFICATION:

The laboratory MDL does not support the AFCEE RL. This variance is needed if 7000 methods are required.

Part Section 2a: DoD 7000 Reporting Limit - Water

MRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Thallium	0.001	0.005
Antimony	0.005	0.006

JUSTIFICATION:

The laboratory MDLs for the 7000 methods do not support the AFCEE RL.This variance is needed if 7000 methods are required.

TABLES

Table 1
Analytical Results for Volatiles by Method 8260B
(mg/kg)

Field ID Lab ID Analysis Date UNITS	TAGMS Cleanup Objective	PAFB-013-3569-01A L0105182-01 05-14-01 (mg/kg)				TRIP BLANK L0105182-03 5-11-01 (ug/L)			
		Result	QUAL	RL	MDL	Result	QUAL	RL	MDL
Percent Solids		96%				NA			
1,1,1,2-Tetrachloroethane	NL		U	3.1	0.5		U	0.5	0.25
1,1,1-Trichloroethane	0.8		U	4.2	0.5		U	0.8	0.25
1,1,2,2-Tetrachloroethane	0.6		U	2.1	0.5		U	0.8	0.13
1,1,2-Trichloroethane	6		U	5.2	0.5		U	1	0.25
1,1-Dichloroethane	0.2		U	2.1	1		U	0.5	0.13
1,1-Dichloroethene	0.4		U	6.3	0.5		U	1.2	0.5
1,1-Dichloropropene	NL		U	5.2	0.5		U	1	0.25
1,2,3-Trichlorobenzene	NL		U	2.1	0.5		U	1	0.13
1,2,3-Trichloropropane	0.4		U	21	0.64		U	3.2	0.75
1,2,4-Trichlorobenzene	3.4		U	2.1	0.5		U	2	0.2
1,2,4-Trimethylbenzene	NL		U	7.3	0.5		U	1.3	0.25
1,2-Dibromo-3-chloropropane	NL		U	10	0.5		U	2.6	1
1,2-Dibromoethane	NL		U	3.1	0.5		U	0.6	0.25
1,2-Dichlorobenzene	7.9		U	2.1	0.5		U	1	0.13
1,2-Dichloroethane	0.1		U	3.1	0.5		U	0.7	0.25
1,2-Dichloropropane	NL		U	2.1	0.5		U	0.5	0.13
1,3,5-Trimethylbenzene	NL		U	3.1	0.5		U	0.5	0.25
1,3-Dichlorobenzene	1.6		U	6.3	0.5		U	1.2	0.25
1,3-Dichloropropane	0.3		U	2.1	0.5		U	0.5	0.2
1,4-Dichlorobenzene	8.5		U	2.1	0.5		U	1	0.13
1-Chlorohexane	NL		U	3.1	0.05		U	1	0.13
2,2-Dichloropropane	NL		U	21	0.5		U	3.5	0.25
2-Butanone	0.3		U	10	2.5		U	10	2.5
2-Chlorotoluene	NL		U	2.1	0.5		U	1	0.13
2-Hexanone	NL		U	10	2.5		U	10	2.5
4-Chlorotoluene	NL		U	3.1	0.5		U	0.6	0.25
4-Methyl-2-pentanone	1		U	10	2.5		U	10	2.5
Acetone	0.2		U	10	2.5		U	10	2.5
Benzene	0.06		U	2.1	0.5		U	0.5	0.13
Bromobenzene	NL		U	2.1	0.5		U	1	0.13
Bromochloromethane	NL		U	2.1	0.5		U	0.5	0.2
Bromodichloromethane	NL		U	4.2	0.5		U	1	0.25
Bromoform	NL		U	6.3	0.5		U	1.2	0.54
Bromomethane	NL		U	5.2	1		U	1.1	0.5
Carbon tetrachloride	0.6		U	10	0.5		U	2.1	0.25
Chlorobenzene	1.7		U	2.1	0.5		U	0.5	0.13
Chloroethane	1.9		U	5.2	1		U	1	0.5
Chloroform	0.3		U	2.1	0.5		U	0.5	0.13
Chloromethane	NL		U	7.3	2		U	1.3	0.25
cis-1,2-Dichloroethene	NL		U	6.3	0.5		U	1.2	0.25
cis-1,3-Dichloropropene	NL		U	5.2	0.5		U	1	0.25
Dibromochloromethane	N/a		U	3.1	0.5		U	0.6	0.25
Dibromomethane	NL		U	10	0.5		U	2.4	0.25
Dichlorodifluoromethane	NL		U	5.2	1		U	1	0.25
Ethylbenzene	5.5		U	3.1	0.5		U	1	0.25
Hexachlorobutadiene	NL		U	5.2	0.5		U	1.1	0.25
Isopropylbenzene	NL		U	8.3	0.5		U	0.5	0.25
m-,p-Xylene	1.2 (TOTAL)		U	5.2	0.5		U	1	0.5
Methylene chloride	0.1	1.3	F	2.1	1		U	2	0.25
n-Butylbenzene	NL		U	5.2	0.5		U	1.1	0.25
n-Propylbenzene	NL		U	2.1	0.5		U	1	0.13
Naphthalene	13		U	2.1	0.5		U	1	0.2
o-Xylene	1.2 (TOTAL)		U	5.2	0.5		U	1.1	0.25
p-Isopropyltoluene	NL		U	6.3	0.5		U	1.2	0.25
sec-Butylbenzene	NL		U	7.3	0.5		U	1.3	0.25
Styrene	NL		U	2.1	0.5		U	1	0.13
tert-Butylbenzene	NL		U	7.3	0.5		U	1.4	0.25
Tetrachloroethene	1.4		U	7.3	0.5		U	1.4	0.25
Toluene	1.5		U	5.2	0.5		U	1.1	0.25
trans-1,2-Dichloroethene	0.3		U	3.1	0.5		U	0.6	0.25
trans-1,3-Dichloropropene	NL		U	5.2	0.5		U	1	0.5
Trichloroethene	0.7		U	10	0.5		U	1	0.25
Trichlorofluoromethane	NL		U	4.2	1		U	1	0.25
Vinyl chloride	0.2		U	9.4	1		U	1.1	0.25

Table 2
Analytical Results for Semivolatiles by Method 8270C
(mg/kg)

Field ID		PAFB-013-3569-01A			
Lab ID	TAGMS	L0105182-02			
Analysis Date	Cleanup	5/11/01			
Analytes	Objective	Result	Qualifier	RL	MDL
Percent Solids		98%			
1,2,4-Trichlorobenzene	3.4		U	0.71	0.033
1,2-Dichlorobenzene	7.9		U	0.71	0.033
1,3-Dichlorobenzene	1.6		U	0.71	0.032
1,4-Dichlorobenzene	8.5		U	0.71	0.034
2,4,5-Trichlorophenol	0.1		U	3.4	0.047
2,4,6-Trichlorophenol	NL		U	0.31	0.042
2,4-Dichlorophenol	0.4		U	0.31	0.041
2,4-Dimethylphenol	NL		U	0.31	0.037
2,4-Dinitrophenol	0.2 or MDL		U	3.4	0.11
2,4-Dinitrotoluene	1		U	0.71	0.042
2,6-Dinitrotoluene	1		U	0.71	0.04
2-Chloronaphthalene	NL		R	0.71	0.04
2-Chlorophenol	0.8		U	0.31	0.034
2-Methylnaphthalene	36.4		U	0.71	0.037
2-Methylphenol	0.1 or MDL		U	0.31	0.063
2-Nitroaniline	0.43 or MDL		U	3.4	0.046
2-Nitrophenol	0.33 or MDL		U	0.31	0.032
3,3'-Dichlorobenzidine	NL		U	1.3	0.15
3-Nitroaniline	0.5 or MDL		U	3.4	0.072
4,6-Dinitro-2-methylphenol	NL		U	3.4	0.036
4-Bromophenyl-phenylether	NL		U	0.71	0.038
4-Chloro-3-methylphenol	0.24 or MDL		U	1.3	0.046
4-Chloroaniline	0.22 or MDL		U	1.3	0.053
4-Chlorophenyl-phenyl ether	NL		U	0.71	0.044
4-Methylphenol	0.9		U	0.31	0.041
4-Nitroaniline	NL		U	3.4	0.04
p-Nitrophenol	0.1 or MDL		U	1.6	0.057
Acenaphthene	50		U	0.71	0.042
Acenaphthylene	41		U	0.71	0.042
Anthracene	50		U	0.71	0.035
Benzo(a)anthracene	0.224 or MDL		U	0.71	0.029
Benzo(a)pyrene	0.061 or MDL		U	0.71	0.026
Benzo(b)fluoranthene	1.1		U	0.71	0.028
Benzo(g,h,i)Perylene	50		R	0.71	0.037
Benzo(k)fluoranthene	1.1		U	0.71	0.043
Benzoic acid	NL		U	1.6	0.02
Benzyl alcohol	NL		U	1.3	0.06
Bis(2-Chloroethoxy)Methane	NL		U	0.71	0.047
Bis(2-Chloroethyl)ether	NL		U	0.71	0.041
bis(2-Chloroisopropyl)ether	NL		U	0.71	0.041
bis(2-Ethylhexyl)phthalate	50		U	0.71	0.039
Butylbenzylphthalate	50		U	0.71	0.031
Chrysene	0.4		U	0.71	0.041
Di-N-Butylphthalate	8.1		U	0.71	0.031
Di-n-octylphthalate	50		U	0.71	0.031
Dibenzo(a,h)Anthracene	0.014 or MDL		U	0.71	0.039
Dibenzofuran	6.2		U	0.71	0.043
Diethylphthalate	7.1		U	0.71	0.049
Dimethylphthalate	2		U	0.71	0.046
Fluoranthene	50	0.0353	F	0.71	0.028
Fluorene	50		U	0.71	0.044
Hexachlorobenzene	0.41		U	0.71	0.04
Hexachlorobutadiene	NL		U	0.71	0.037
Hexachlorocyclopentadiene	NL		U	0.71	0.087
Hexachloroethane	NL		U	0.71	0.033
Indeno(1,2,3-cd)pyrene	3.2		R	0.71	0.036
Isophorone	4.4		U	0.71	0.043
N-Nitrosodiphenylamine	NL		U	0.71	0.048
N-Nitroso-di-n-propylamine	NL		U	0.71	0.035
Naphthalene	13		U	0.71	0.036
Nitrobenzene	0.2 or MDL		U	0.71	0.034
Pentachlorophenol	1.0 or MDL		U	3.4	0.02
Phenanthrene	50		U	0.71	0.043
Phenol	0.03 or MDL		U	0.31	0.032
Pyrene	50		U	0.7	0.030

Tables 1 and 2
Analytical Results
(footnotes)

TAGMS Cleanup Objective: Recommended Soil cleanup Objective (NYSDEC TAGM #4046 - Appendix A, Tables 1-4

Abbreviations used in the Table:
N/A - Not applicable
NL - no TAGM value listed in table.
RDL - Reportable Detection Limit
MDL - Method Detection Limit

Qualifier Footnotes:

J -	Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable but quantitatively unreliable.
UJ -	The reported quantitation limit is estimated because associated quality control criteria were not met.
B -	Results are estimated because the compound was detected in an associated blank.
R-	Reported value or quantitation limit is rejected. Resampling or reanalysis may be necessary to verify the presence or absence of the compound.
M-	A matrix interference was present. Reported value or quantitation limit may be an estimate.
-	Results are qualitatively acceptable but quantitatively unreliable due to uncertainity in precision near the limit of detection.

MEMORANDUM

TO: Rich Habrukowich, Versar, Bristol, PA

FROM: Michael D'Auben, Versar, Lombard, IL

DATE: September 29, 2000

RE: **Data Validation/Usability Report for Plattsburg AFB**
SS-013, West of Weapons Storage Area
Geo Probe™ Soil Boring Samples

CC: Donna Oswald, Versar, Lombard, IL

1.0 INTRODUCTION

On August 21, 2000, 15 Geo Probe™ soil samples, one matrix spike/matrix spike duplicate (MS/MSD) and one trip blank were collected at Plattsburg AFB SS-013-10 (Heavy Equipment Maintenance Facility) and sent to Kemron Environmental Services (Kemron), located in Marietta, Ohio, for testing. Analyses were preformed in accordance wit Air Force Center for Environmental Excellence (AFCEE) Quality Assurance Project Plan (QAPP) Version 3.0 (March 1998) with the exception of several laboratory variances for EPA Method SW260B volatile organics and EPA Method SW8270C semivolatile organics. The analytical results are presented in Table 1. The laboratory variations from the AFCEE QAPP and case narratives are included as attachments to this memorandum.

The data were qualified in accordance with the validation protocols in the AFCEE QAPP, Version 3.0 (March 1998) and the laboratory specific control limits supplied by Kemron. The laboratory performed the initial review of the data package, and qualified the data in accordance with their internal QC requirements. Final qualification of the data was made by the Versar project chemist based on the results of the data validation. The following items were reviewed during the data validation process: chain of custody, sample condition upon receipt, extraction/analysis holding times, method detection/reporting limits, internal standards, surrogates, matrix spike/ matrix spike duplicate (MS/MSD) analysis results, laboratory control sample (LCS) recoveries, initial and continuing calibrations, second source calibration verification standards, laboratory method and field QC blank contamination, instrument tuning, and report completeness.

The hierarchy of AFCEE qualifiers from most to least severe are as follows; "R" (rejected), "M" (matrix effect present), "F" (results above method detection limit, but below reporting limit), "J" (estimated value), "B" (blank contamination) and "U" (not detected).

The samples were received by Kemron intact and under proper chain-of-custody. The temperature of the sample cooler upon receipt at the laboratory was 2°C.

2.0 VALIDATION

Volatile Data (Method 8260B)

All project specific QC criteria were met, except as indicated below.

No target analytes were detected above the reporting limit (RL) in the laboratory method blanks. Trace levels (> MDL, but < RL) of several target analytes were detected. Methylene Chloride was detected in one method blank, while 1,2,4-Trimethylbenzene and Naphthalene were detected all of the laboratory method blanks. Positive results for these compounds in the associated field samples are likely either artifacts not representative of actual field conditions or biased high as a result of the observed laboratory contamination.

Trace levels (> MDL, but < RL) of the volatile compounds acetone (a common lab artifact), 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene were detected in the Trip Blank. None of these compounds were detected above the MDL in the aqueous laboratory preparation blank associated with the Trip Blank. These compounds were detected at similar concentrations in some of the associated field samples. Per the AFCEE QAPP, qualification is only required when blank contamination above the RL is observed. The amounts in the Trip Blank were below the reporting limit, therefore no qualification is required, however based on the trip blank results, associated field sample results for these compounds are most likely artifacts and not representative of actual field conditions.

In the daily continuing calibrations, the compounds acetone, 2-chloroethylviny ether, and 4-methyl-2-pentanone (MIBK) exceeded the percent difference control limits. These compounds are not included in the target list of analytes in the AFCEE QAPP for method 8260B, therefore the results were not qualified. Standards of these compounds are known for their instability. Variability in instrument response may cause bias in positive results but does not affect the laboratory's ability to detect these compounds. Non-detect results for 2-chloroethylvinyl ether and MIBK are fully acceptable for use. Acetone was detected in several of the associated field samples, however these results are believed to be artifacts and not representative of actual field conditions.

The laboratory LCS % recovery for 2-chloroethylvinyl ether exceeded the control limits. This result indicates the possibility of high bias, and as the compound was not reported in any of the associated samples, no qualification is required.

A potential matrix effect, as evidenced by sample surrogate recoveries above the laboratory's upper control limit was observed for two samples (SS-13-04 and SS-13-11). This may result in high bias for positive results but have no impact on non-detects. The surrogate recovery in SS-13-04 while slightly above the laboratory's in-house limits was within AFCEE QAPP criteria. Only trace levels (< RL) were reported in SS-13-04. Positive results in SS-13-04 were not qualified as they met AFCEE QAPP criteria and are acceptable for use. Sample SS-13-11 shows evidence of a hydrocarbon background that is impacting late eluting analytes including the last surrogate, leading to a very high recovery (> 200%) even when the sample was re-analyzed at a 5-fold dilution. Positive results in this sample were qualified 'J' for use as estimates and may be biased high.

The laboratory records indicate that numerous samples exhibited a high hydrocarbon background associated with the later eluting (heavier) compounds. These samples were subsequently analyzed at a 5-fold dilution to either quantitate higher levels of target analytes an/or reduce the observed hydrocarbon background levels. The dilution resulted in a corresponding 5-fold increase in reporting limtits.

In the MS/MSD analyses (performed on sample SS-13-10) , low bias was observed for acetone and most of the aromatic compounds (substituted benzenes). The associated LCS results were acceptable, indicating a matix effect is responsible for the observed low recoveries. Associated results in all samples have been qualified with a "M". Trace amounts of many of these compounds were detected in one or more of the associated field samples. The low bias should not preclude the use of these results to demonstrate compliance with action levels.

Several target analytes were detected below the RL but above the MDL. They are considered to be trace levels and were qualified "F" in accordance with the QAPP. These are considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

Semivolatile Data (Method 8270C)

All project specific QC criteria were met, except as indicated below.

In the initial calibration, the laboratory reported a that several target compounds were more accurately quantitated using a linear regression (4,6-Dinitro-2-methylphenol and 4-nitroaniline), or a quadratic 2nd order curve (pentachlorobenzene, 3,3'dichlorobenzidine, 2,4-dinitrophenol, benzoic acid and hexachloro cyclopentadiene) than by using an average response factor. Linearity acceptance criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for all other compounds.

The second source calibration (SSC) standard results for acenaphthylene and dibenzo[a,h]anthracene exceeded the QC acceptance limits for % difference relative to the initial calibration. In accordance with the AFCEE QAPP, the associated results for these two compounds in all samples are qualified "R". During the continuing calibrations, the % difference for the compounds benzoic acid and 2,4-dinitrophenol exceeded the quality control limits on one analysis date. Calibration results indicate that instrument sensitivity for these compounds was higher on the date in question. In accordance with the AFCEE QAPP, the results for these these compounds in the associated sample (SS-13-18) are qualified "R". None of these compounds were detected in any of the associated samples. Minor exceedence of daily calibration drift or SSC criteria has no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. The non-detect results for these analytes should be acceptable for use.

A potential matrix effect, as evidenced by sample surrogate recoveries above the laboratory's upper control limit was observed for sample SS-13-11. The same high bias was observed during the analysis of the volatile fraction. This may result in high bias for positive results but have no impact on non-detects. Sample SS-13-11 shows evidence of a hydrocarbon background that is impacting late eluting analytes including one surrogate(4-Nitrobenzene), leading to a very high recovery (> 400%) even when the sample was re-analyzed at a 10-fold dilution. None of the target analytes associated with this surrogate were detected above the MDL in this sample, therefore qualification was not required.

In the MS/MSD analyses, the laboratory reported benzoic acid, 4-chlorophenyl-phenyl ether, hexachlorobenzene, pentachlorophenol, anthracene, pyrene, and di-n-octylphthalate with high recoveries, indicating a potential high bias to the associated data. Positive results for these analytes in any of the field samples were qualified with a 'M'. These results are fully usable.

Bis(2-ethylhexyl)phthalate was detected in several of the field samples. This compound while not detected in the associated laboratory preparation blank is a pervasive contaminant. It is used as a plasticizer in many of the items used in the laboratory and the field. The field results are believed to be artifacts and not representative of actual field conditions.

3.0 COMPLETENESS

The AFCEE QAPP goal for completeness is 90% for soil matrixes. Percent completeness is defined as the number of valid results divided by the total number of individual target compound results. Valid results are those that have not been rejected (qualified "R"). The percent completeness for each method and matrix is as follows:

Method	Matrix	Percent Completeness
Volatiles (SW8260B)	Soil	100%
	Field QC (Aqueous)	100%
Semivolatiles (SW8270C)	Soil	97%
	Field QC (Aqueous)	N/A

The completeness goal of 90% was met for the soil and field QC samples.

ATTACHMENTS

LABORATORY VARIATIONS FROM AFCEE QAPP

1. AFCEE: AFCEE reports non-detects at the MDL and qualifies as estimates any trace levels detected between the MDL and the RL.

KEMRON: Kemron reports non-detects at the reporting limit (RL) and qualifies as estimates any trace levels detected between RL and the method detection limit (MDL).

2. AFCEE: AFCEE requires the sample size for the determined moisture content (using a dry weight equivalent to the sample size specified in the method) and therefore does not adjust sample results, MDLs or RLs for moisture content.

KEMRON: Kemron does not adjust the individual method specified sample sizes for percent moisture, rather the results, MDLs and RLs are adjusted for moisture content after the analytical determinations have been completed.

NOTE: For sample results, there is no mathematical difference between the 2 procedures. For MDLs and RLs, the AFCEE protocol results in MDLs and RLs that are constant from sample to sample regardless of moisture content, whereas Kemron's approach which is more of the industry standard will have RLs and MDLs that will vary from sample to sample as moisture content varies.

3. AFCEE: The AFCEE QAPP has quality control (QC) limits for surrogates, Laboratory Control Samples (LCS) and Matrix Spike (MS) determinations for each analytical test per matrix.

KEMRON: Kemron used in-house limits for the LCS and MS determinations. These limits are statistically derived based on the laboratory's actual performance. Surrogate limits are tighter (more restrictive) for all surrogates. LCS and MS limits may be more or less restrictive than the AFCEE QAPP limits on a analyte by analyte basis.

NOTE: Data were qualified using the laboratory's in-house limits, as Kemron was not informed until after the fact that AFCEE protocols were required. AFCEE data qualification procedures for calibrations were used as the AFCEE QC limits are the same as the method and the laboratory standard operating procedure (SOP).

TABLES

Work Order: L0008471 COMPOUND TEST: 8260 Collection Date	LAB Detection Limit	UNITS	NYSDEC Cleanup Objectives	UNITS	USEPA Health Based	UNITS
1,2,4-Trichlorobenzene	200	ug/kg		ug/kg		ug/kg
1,2-Dichlorobenzene	200	ug/kg		ug/kg		ug/kg
1,3-Dichlorobenzene	200	ug/kg		ug/kg		ug/kg
1,4-Dichlorobenzene	200	ug/kg		ug/kg		ug/kg
2,4,5-Trichlorophenol	1,000	ug/kg		ug/kg	8,000,000	ug/kg
2,4,6-Trichlorophenol	200	ug/kg		ug/kg		ug/kg
2,4-Dichlorophenol	200	ug/kg		ug/kg	200,000	ug/kg
2,4-Dimethylphenol	200	ug/kg		ug/kg		ug/kg
2,4-Dinitrophenol	1,000	ug/kg		ug/kg	200,000	ug/kg
2,4-Dinitrotoluene	200	ug/kg		ug/kg		ug/kg
2,6-Dinitrotoluene	200	ug/kg		ug/kg		ug/kg
2-Chloronaphthalene	200	ug/kg		ug/kg		ug/kg
2-Chlorophenol	200	ug/kg		ug/kg		ug/kg
2-Methylnaphthalene	200	ug/kg	36,400	ug/kg		ug/kg
2-Methylphenol	200	ug/kg		ug/kg		ug/kg
2-Nitroaniline	1,000	ug/kg		ug/kg		ug/kg
2-Nitrophenol	200	ug/kg		ug/kg		ug/kg
3,3'-Dichlorobenzidine	410	ug/kg		ug/kg		ug/kg
3-Methylphenol	200	ug/kg		ug/kg		ug/kg
3-Nitroaniline	1,000	ug/kg		ug/kg		ug/kg
4,6-Dinitro-2-methylphenol	1,000	ug/kg		ug/kg		ug/kg
4-Bromophenyl-phenylether	200	ug/kg		ug/kg		ug/kg
4-Chloro-3-methylphenol	200	ug/kg		ug/kg		ug/kg
4-Chloroaniline	200	ug/kg		ug/kg	200,000	ug/kg
4-Chlorophenyl-phenyl ether	200	ug/kg		ug/kg		ug/kg
4-Methylphenol	200	ug/kg		ug/kg	4,000,000	ug/kg
4-Nitroaniline	1,000	ug/kg		ug/kg		ug/kg
4-Nitrophenol	1,000	ug/kg		ug/kg		ug/kg
Acenaphthene	200	ug/kg	50,000	ug/kg	5,000,000	ug/kg
Acenaphthylene	200	ug/kg	41,000	ug/kg		ug/kg
Anthracene	200	ug/kg	50,000	ug/kg	20,000,000	ug/kg
Benzo(a)anthracene	200	ug/kg	244	ug/kg*	224	ug/kg
Benzo(a)pyrene	200	ug/kg	61	ug/kg*	61	ug/kg
Benzo(b)fluoranthene	200	ug/kg	1,100	ug/kg		ug/kg
Benzo(g,h,i)Perylene	200	ug/kg	50,000	ug/kg		ug/kg
Benzo(k)fluoranthene	200	ug/kg	1,100	ug/kg		ug/kg
Benzoic acid	1,000	ug/kg		ug/kg		ug/kg
Benzyl alcohol	200	ug/kg		ug/kg		ug/kg
Bis(2-Chloroethoxy)Methane	200	ug/kg		ug/kg		ug/kg
Bis(2-Chloroethyl)ether	200	ug/kg		ug/kg		ug/kg
Butylbenzylphthalate	200	ug/kg		ug/kg	20,000,000	ug/kg
Chrysene	200	ug/kg	400	ug/kg		ug/kg
Di-N-Butylphthalate	200	ug/kg		ug/kg	8,000,000	ug/kg
Di-n-octylphthalate	200	ug/kg		ug/kg	2,000,000	ug/kg
Dibenzo(a,h)Anthracene	200	ug/kg	14	ug/kg*		ug/kg
Dibenzofuran	200	ug/kg	6,200	ug/kg		ug/kg

Diethylphthalate	200 ug/kg	ug/kg	60,000,000 ug/kg
Dimethylphthalate	200 ug/kg	ug/kg	80,000,000 ug/kg
Fluoranthene	200 ug/kg	50,000 ug/kg	3,000,000 ug/kg
Fluorene	200 ug/kg	50,000 ug/kg	3,000,000 ug/kg
Hexachlorobenzene	200 ug/kg	ug/kg	410 ug/kg
Hexachlorobutadiene	200 ug/kg	ug/kg	ug/kg
Hexachlorocyclopentadiene	200 ug/kg	ug/kg	ug/kg
Hexachloroethane	200 ug/kg	ug/kg	ug/kg
Indeno(1,2,3-cd)pyrene	200 ug/kg	3,200 ug/kg	ug/kg
Isophorone	200 ug/kg	ug/kg	ug/kg
N-Nitrosodiphenylamine	200 ug/kg	ug/kg	ug/kg
N-Nitrosodipropylamine	200 ug/kg	ug/kg	ug/kg
Naphthalene	200 ug/kg	13,000 ug/kg	300,000 ug/kg
Nitrobenzene	200 ug/kg	ug/kg	40,000 ug/kg
Pentachlorophenol	1,000 ug/kg	ug/kg	2,000,000 ug/kg
Phenanthrene	200 ug/kg	50,000 ug/kg	ug/kg
Phenol	200 ug/kg	ug/kg	50,000,000 ug/kg
Pyrene	200 ug/kg	50,000 ug/kg	2,000,000 ug/kg
bis(2-Chloroisopropyl)ether	200 ug/kg	ug/kg	ug/kg
bis(2-Ethylhexyl)phthalate	200 ug/kg	50,000 ug/kg	50,000 ug/kg

* Or MDL

Analytical Results for Volatiles
by SW 846 Method 8260B

Field Sample ID	SS-13-01			SS-13-02			SS-13-04		
Collection Date	8/21/00			8/21/00			8/21/00		
COMPOUND	Result UNITS	Detection Limit	QUAL	Result UNITS	Detection Limit	QUAL	Result UNITS	Detection Limit	QUAL
Percent Solids	79 weight %	1		86 weight %	1		72 weight %	1	
1,1,1,2-Tetrachloroethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,1,1-Trichloroethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,1,2,2-Tetrachloroethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,1,2-Trichloroethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,1-Dichloroethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,1-Dichloroethene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,1-Dichloropropene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,2,3-Trichlorobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
1,2,3-Trichloropropane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,2,4-Trichlorobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
1,2,4-Trimethylbenzene	3.5 ug/kg	32	F,U	2.8 ug/kg	5.8	M, F	24 ug/kg	6.9	M
1,2-Dibromo-3-chloropropane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,2-Dibromoethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,2-Dichlorobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
1,2-Dichloroethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,2-Dichloropropane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,3,5-Trimethylbenzene	1.9 ug/kg	32	F,U	2.2 ug/kg	5.8	M, F	14 ug/kg	6.9	M
1,3-Dichlorobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
1,3-Dichloropropane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
1,4-Dichlorobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
2,2-Dichloropropane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
2-Butanone	630 ug/kg	630	U	27 ug/kg	120	F	72 ug/kg	140	F
2-Chloroethyl vinyl ether	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
2-Chlorotoluene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
2-Hexanone	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
4-Chlorotoluene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
4-Methyl-2-pentanone	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Acetone	630 ug/kg	630	M, U	110 ug/kg	120	M, F	240 ug/kg	140	M
Benzene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Bromobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
Bromochloromethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Bromodichloromethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Bromoform	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Bromomethane	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Carbon disulfide	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Carbon tetrachloride	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Chlorobenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	6.9 ug/kg	6.9	M, U
Chlorodibromomethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Chloroethane	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Chloroform,	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Chloromethane	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Dibromomethane	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Dichlorodifluoromethane	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Ethylbenzene	32 ug/kg	32	M, U	0.31 ug/kg	5.8	M, F	3.1 ug/kg	6.9	M, F
Hexachlorobutadiene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Isopropylbenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	1.4 ug/kg	6.9	M, F
Methylene chloride	32 ug/kg	32	U	0.84 ug/kg	5.8	F	0.97 ug/kg	6.9	F
Naphthalene	63 ug/kg	63	U	17 ug/kg	12		7.5 ug/kg	14	F
Styrene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Tetrachloroethene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Toluene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	0.86 ug/kg	6.9	F
Trichloroethene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
Trichlorofluoromethane	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Vinyl acetate	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
Vinyl chloride	63 ug/kg	63	U	12 ug/kg	12	U	14 ug/kg	14	U
cis-1,2-Dichloroethene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
cis-1,3-Dichloropropene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
m/p-Xylene(1)	32 ug/kg	32	M, U	0.55 ug/kg	5.8	F,Z	6.9 ug/kg	6.9	M, F
n-Butylbenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	4.1 ug/kg	6.9	M, F
n-Propylbenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	1.5 ug/kg	6.9	M, F
o-Xylene	32 ug/kg	32	M, U	1.5 ug/kg	5.8	F	7.6 ug/kg	6.9	M
p-Isopropyltoluene	32 ug/kg	32	M, U	1 ug/kg	5.8	M, U	7.8 ug/kg	6.9	M
sec-Butylbenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	1.3 ug/kg	6.9	M, F
tert-Butylbenzene	32 ug/kg	32	M, U	5.8 ug/kg	5.8	M, U	0.44 ug/kg	6.9	M, F
trans-1,2-Dichloroethene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U
trans-1,3-Dichloropropene	32 ug/kg	32	U	5.8 ug/kg	5.8	U	6.9 ug/kg	6.9	U

(1) m-Xylene & p-Xylene co-elute

Analytical Results for Volatiles
by SW 846 Method 8260B

Field Sample ID	SS-13-06				SS-13-07				SS-13-08			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	74	weight %	1		67	weight %	1		84	weight %	1	
1,1,1,2-Tetrachloroethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,1,1-Trichloroethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,1,2,2-Tetrachloroethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,1,2-Trichloroethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,1-Dichloroethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,1-Dichloroethene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,1-Dichloropropene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,2,3-Trichlorobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
1,2,3-Trichloropropane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,2,4-Trichlorobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
1,2,4-Trimethylbenzene	6.3	ug/kg	34	M, F	7.3	ug/kg	37	M, F	4	ug/kg	6	M, F
1,2-Dibromo-3-chloropropane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,2-Dibromoethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,2-Dichlorobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
1,2-Dichloroethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,2-Dichloropropane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,3,5-Trimethylbenzene	19	ug/kg	34	M, F	4.7	ug/kg	37	M, F	3.5	ug/kg	6	M, F
1,3-Dichlorobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
1,3-Dichloropropane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
1,4-Dichlorobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
2,2-Dichloropropane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
2-Butanone	680	ug/kg	680	U	750	ug/kg	750	U	14	ug/kg	120	F
2-Chloroethyl vinyl ether	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
2-Chlorotoluene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
2-Hexanone	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
4-Chlorotoluene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
4-Methyl-2-pentanone	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Acetone	74	ug/kg	680	M, F	32	ug/kg	750	M, F	75	ug/kg	120	M, F
Benzene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Bromobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
Bromochloromethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Bromodichloromethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Bromoform	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Bromomethane	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Carbon disulfide	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Carbon tetrachloride	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Chlorobenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
Chlorodibromomethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Chloroethane	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Chloroform	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Chloromethane	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Dibromomethane	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Dichlorodifluoromethane	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Ethylbenzene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
Hexachlorobutadiene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Isopropylbenzene	4.1	ug/kg	34	M, F	37	ug/kg	37	M, U	6	ug/kg	6	M, U
Methylene chloride	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Naphthalene	50	ug/kg	68	F	49	ug/kg	75	F	6.8	ug/kg	12	F
Styrene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Tetrachloroethene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Toluene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Trichloroethene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
Trichlorofluoromethane	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Vinyl acetate	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
Vinyl chloride	68	ug/kg	68	U	75	ug/kg	75	U	12	ug/kg	12	U
cis-1,2-Dichloroethene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
cis-1,3-Dichloropropene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
m/p-Xylene(1)	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
n-Butylbenzene	60	ug/kg	34	M	9.4	ug/kg	37	M, F	4.8	ug/kg	6	M, F
n-Propylbenzene	5.7	ug/kg	34	M, F	37	ug/kg	37	M, U	6	ug/kg	6	M, U
o-Xylene	34	ug/kg	34	M, U	37	ug/kg	37	M, U	6	ug/kg	6	M, U
p-Isopropyltoluene	29	ug/kg	34	M, F	12	ug/kg	37	M, F	4.7	ug/kg	6	M, F
sec-Butylbenzene	20	ug/kg	34	M, F	37	ug/kg	37	M, U	0.69	ug/kg	6	M, F
tert-Butylbenzene	2.1	ug/kg	34	M, F	37	ug/kg	37	M, U	6	ug/kg	6	M, U
trans-1,2-Dichloroethene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U
trans-1,3-Dichloropropene	34	ug/kg	34	U	37	ug/kg	37	U	6	ug/kg	6	U

(1) m-Xylene & p-Xylene co-elute

Analytical Results for Volatiles
by SW 846 Method 8260B

Field Sample ID	SS-13-10			SS-13-11			SS-13-12		
Collection Date	8/21/00			8/21/00			8/21/00		
COMPOUND	Result UNITS	Detection Limit	QUAL	Result UNITS	Detection Limit	QUAL	Result UNITS	Detection Limit	QUAL
Percent Solids	81 weight %	1		81 weight %	1		76 weight %	1	
1,1,1,2-Tetrachloroethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,1,1-Trichloroethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,1,2,2-Tetrachloroethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,1,2-Trichloroethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,1-Dichloroethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,1-Dichloroethene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,1-Dichloropropene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,2,3-Trichlorobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
1,2,3-Trichloropropane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,2,4-Trichlorobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
1,2,4-Trimethylbenzene	0.83 ug/kg	6.2	M, F	100 ug/kg	31	M , J	16 ug/kg	6.6	M
1,2-Dibromo-3-chloropropane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,2-Dibromoethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,2-Dichlorobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
1,2-Dichloroethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,2-Dichloropropane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,3,5-Trimethylbenzene	6.2 ug/kg	6.2	M, U	700 ug/kg	31	M, J	2.8 ug/kg	6.6	M, F
1,3-Dichlorobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
1,3-Dichloropropane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
1,4-Dichlorobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
2,2-Dichloropropane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
2-Butanone	10 ug/kg	120	F	620 ug/kg	620	U	5.9 ug/kg	130	F
2-Chloroethyl vinyl ether	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
2-Chlorotoluene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M
2-Hexanone	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
4-Chlorotoluene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M
4-Methyl-2-pentanone	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Acetone	49 ug/kg	120	M, F	34 ug/kg	620	M, F, J	39 ug/kg	130	M, F
Benzene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Bromobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
Bromochloromethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Bromodichloromethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Bromoform	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Bromomethane	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Carbon disulfide	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Carbon tetrachloride	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Chlorobenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	6.6 ug/kg	6.6	M, U
Chlorodibromomethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Chloroethane	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Chloroform	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Chloromethane	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Dibromomethane	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Dichlorodifluoromethane	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Ethylbenzene	6.2 ug/kg	6.2	M, U	44 ug/kg	31	M, J	1 ug/kg	6.6	M, F
Hexachlorobutadiene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Isopropylbenzene	6.2 ug/kg	6.2	M, U	31 ug/kg	31	M, U	0.43 ug/kg	6.6	M, F
Methylene chloride	6.2 ug/kg	6.2	U	31 ug/kg	31	U	1.3 ug/kg	6.6	F
Naphthalene	3.5 ug/kg	12	F	360 ug/kg	62	J	54 ug/kg	13	
Styrene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Tetrachloroethene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Toluene	0.65 ug/kg	6.2	F	31 ug/kg	31	U	0.83 ug/kg	6.6	F
Trichloroethene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
Trichlorofluoromethane	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Vinyl acetate	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
Vinyl chloride	12 ug/kg	12	U	62 ug/kg	62	U	13 ug/kg	13	U
cis-1,2-Dichloroethene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
cis-1,3-Dichloropropene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
m/p-Xylene[1]	6.2 ug/kg	6.2	M, U	62 ug/kg	31	M, J	3.5 ug/kg	6.6	M, F
n-Butylbenzene	0.56 ug/kg	6.2	M, F	470 ug/kg	31	M, J	2 ug/kg	6.6	M, F
n-Propylbenzene	6.2 ug/kg	6.2	M, U	32 ug/kg	31	M ,J	0.93 ug/kg	6.6	M, F
o-Xylene	6.2 ug/kg	6.2	M, U	13 ug/kg	31	M, F ,J	6.6 ug/kg	6.6	M, U
p-Isopropyltoluene	0.36 ug/kg	6.2	M, F	160 ug/kg	31	M ,J	1.7 ug/kg	6.6	M, F
sec-Butylbenzene	6.2 ug/kg	6.2	M, U	12 ug/kg	31	M, F	6.6 ug/kg	6.6	M, U
tert-Butylbenzene	6.2 ug/kg	6.2	M, U	29 ug/kg	31	M, F	6.6 ug/kg	6.6	M, U
trans-1,2-Dichloroethene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U
trans-1,3-Dichloropropene	6.2 ug/kg	6.2	U	31 ug/kg	31	U	6.6 ug/kg	6.6	U

(1) m-Xylene & p-Xylene co-elute

Analytical Results for Volatiles
by SW 846 Method 8260B

Field Sample ID	SS-13-13				SS-13-14				SS-13-15			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	76	weight %	1		81	weight %	1		83	weight %	1	
1,1,1,2-Tetrachloroethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,1,1-Trichloroethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,1,2,2-Tetrachloroethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,1,2-Trichloroethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,1-Dichloroethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,1-Dichloroethene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,1-Dichloropropene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,2,3-Trichlorobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
1,2,3-Trichloropropane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,2,4-Trichlorobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
1,2,4-Trimethylbenzene	0.57	ug/kg	6.6	M, F	6.2	ug/kg	6.2	M, U	1.5	ug/kg	6	M, F
1,2-Dibromo-3-chloropropane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,2-Dibromoethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,2-Dichlorobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
1,2-Dichloroethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,2-Dichloropropane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,3,5-Trimethylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	0.7	ug/kg	6	M, F
1,3-Dichlorobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
1,3-Dichloropropane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
1,4-Dichlorobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
2,2-Dichloropropane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
2-Butanone	6	ug/kg	130	F	43	ug/kg	120	F	23	ug/kg	120	F
2-Chloroethyl vinyl ether	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
2-Chlorotoluene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
2-Hexanone	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
4-Chlorotoluene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
4-Methyl-2-pentanone	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Acetone	33	ug/kg	130	M, F	150	ug/kg	120	M	170	ug/kg	120	M
Benzene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Bromobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
Bromochloromethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Bromodichloromethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Bromoform	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Bromomethane	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Carbon disulfide	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Carbon tetrachloride	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Chlorobenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
Chlorodibromomethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Chloroethane	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Chloroform	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Chloromethane	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Dibromomethane	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Dichlorodifluoromethane	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Ethylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
Hexachlorobutadiene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Isopropylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
Methylene chloride	1	ug/kg	6.6	F	6.2	ug/kg	6.2	U	0.99	ug/kg	6	F
Naphthalene	2.1	ug/kg	13	F	3	ug/kg	12	F	7.9	ug/kg	12	F
Styrene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Tetrachloroethene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Toluene	0.68	ug/kg	6.6	F	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Trichloroethene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
Trichlorofluoromethane	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Vinyl acetate	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
Vinyl chloride	13	ug/kg	13	U	12	ug/kg	12	U	12	ug/kg	12	U
cis-1,2-Dichloroethene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
cis-1,3-Dichloropropene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
m/p-Xylene[1]	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
n-Butylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
n-Propylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
o-Xylene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
p-Isopropyltoluene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	0.29	ug/kg	6	M, F
sec-Butylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
tert-Butylbenzene	6.6	ug/kg	6.6	M, U	6.2	ug/kg	6.2	M, U	6	ug/kg	6	M, U
trans-1,2-Dichloroethene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U
trans-1,3-Dichloropropene	6.6	ug/kg	6.6	U	6.2	ug/kg	6.2	U	6	ug/kg	6	U

(1) m-Xylene & p-Xylene co-elute

Analytical Results for Volatiles
by SW 846 Method 8260B

Field Sample ID	SS-13-16				SS-13-17				SS-13-18			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	93	weight %	1		85	weight %	1		82	weight %	1	
1,1,1,2-Tetrachloroethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,1,1-Trichloroethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,1,2,2-Tetrachloroethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,1,2-Trichloroethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,1-Dichloroethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,1-Dichloroethene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,1-Dichloropropene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,2,3-Trichlorobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
1,2,3-Trichloropropane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,2,4-Trichlorobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
1,2,4-Trimethylbenzene	1.7	ug/kg	5.4	M, F	0.46	ug/kg	5.9	M, F	0.37	ug/kg	6.1	M, F
1,2-Dibromo-3-chloropropane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,2-Dibromoethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,2-Dichlorobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
1,2-Dichloroethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,2-Dichloropropane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,3,5-Trimethylbenzene	0.45	ug/kg	5.4	M, F	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
1,3-Dichlorobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
1,3-Dichloropropane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
1,4-Dichlorobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
2,2-Dichloropropane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
2-Butanone	16	ug/kg	110	F	13	ug/kg	120	F	120	ug/kg	120	U
2-Chloroethyl vinyl ether	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
2-Chlorotoluene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
2-Hexanone	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
4-Chlorotoluene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
4-Methyl-2-pentanone	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Acetone	60	ug/kg	110	M, F	84	ug/kg	120	M, F	120	ug/kg	120	M
Benzene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Bromobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
Bromochloromethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Bromodichloromethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Bromoform	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Bromomethane	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Carbon disulfide	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Carbon tetrachloride	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Chlorobenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
Chlorodibromomethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Chloroethane	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Chloroform	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Chloromethane	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Dibromomethane	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Dichlorodifluoromethane	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Ethylbenzene	0.75	ug/kg	5.4	M, F	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
Hexachlorobutadiene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Isopropylbenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
Methylene chloride	5.4	ug/kg	5.4	U	1.3	ug/kg	5.9	F	1.1	ug/kg	6.1	F
Naphthalene	6.5	ug/kg	11	F	10	ug/kg	12	F	7.4	ug/kg	12	F
Styrene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Tetrachloroethene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Toluene	0.63	ug/kg	5.4	F	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Trichloroethene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
Trichlorofluoromethane	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Vinyl acetate	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
Vinyl chloride	11	ug/kg	11	U	12	ug/kg	12	U	12	ug/kg	12	U
cis-1,2-Dichloroethene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
cis-1,3-Dichloropropene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
m/p-Xylene[1]	0.66	ug/kg	5.4	M, F	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
n-Butylbenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
n-Propylbenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
o-Xylene	1.1	ug/kg	5.4	M, F	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
p-Isopropyltoluene	0.62	ug/kg	5.4	M, F	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
sec-Butylbenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
tert-Butylbenzene	5.4	ug/kg	5.4	M, U	5.9	ug/kg	5.9	M, U	6.1	ug/kg	6.1	M, U
trans-1,2-Dichloroethene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U
trans-1,3-Dichloropropene	5.4	ug/kg	5.4	U	5.9	ug/kg	5.9	U	6.1	ug/kg	6.1	U

(1) m-Xylene & p-Xylene co-elute

Analytical Results for Volatiles
by SW 846 Method 8260B

Field Sample ID	SS-13-TRIP BLANK			
Collection Date	8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL
Percent Solids	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	5	ug/L	5	U
1,1,1-Trichloroethane	5	ug/L	5	U
1,1,2,2-Tetrachloroethane	5	ug/L	5	U
1,1,2-Trichloroethane	5	ug/L	5	U
1,1-Dichloroethane	5	ug/L	5	U
1,1-Dichloroethene	5	ug/L	5	U
1,1-Dichloropropene	5	ug/L	5	U
1,2,3-Trichlorobenzene	0.53	ug/L	5	F
1,2,3-Trichloropropane	5	ug/L	5	U
1,2,4-Trichlorobenzene	0.32	ug/L	5	F
1,2,4-Trimethylbenzene	5	ug/L	5	U
1,2-Dibromo-3-chloropropane	5	ug/L	5	U
1,2-Dibromoethane	5	ug/L	5	U
1,2-Dichlorobenzene	5	ug/L	5	U
1,2-Dichloroethane	5	ug/L	5	U
1,2-Dichloropropane	5	ug/L	5	U
1,3,5-Trimethylbenzene	5	ug/L	5	U
1,3-Dichlorobenzene	5	ug/L	5	U
1,3-Dichloropropane	5	ug/L	5	U
1,4-Dichlorobenzene	5	ug/L	5	U
2,2-Dichloropropane	5	ug/L	5	U
2-Butanone	100	ug/L	100	U
2-Chloroethyl vinyl ether	10	ug/L	10	U
2-Chlorotoluene	5	ug/L	5	U
2-Hexanone	10	ug/L	10	U
4-Chlorotoluene	5	ug/L	5	U
4-Methyl-2-pentanone	10	ug/L	10	U
Acetone	2.1	ug/L	100	F
Benzene	5	ug/L	5	U
Bromobenzene	5	ug/L	5	U
Bromochloromethane	5	ug/L	5	U
Bromodichloromethane	5	ug/L	5	U
Bromoform	5	ug/L	5	U
Bromomethane	10	ug/L	10	U
Carbon disulfide	5	ug/L	5	U
Carbon tetrachloride	5	ug/L	5	U
Chlorobenzene	5	ug/L	5	U
Chlorodibromomethane	5	ug/L	5	U
Chloroethane	10	ug/L	10	U
Chloroform	5	ug/L	5	U
Chloromethane	10	ug/L	10	U
Dibromomethane	5	ug/L	5	U
Dichlorodifluoromethane	10	ug/L	10	U
Ethylbenzene	5	ug/L	5	U
Hexachlorobutadiene	5	ug/L	5	U
Isopropylbenzene	5	ug/L	5	U
Methylene chloride	5	ug/L	5	U
Naphthalene	10	ug/L	10	U
Styrene	5	ug/L	5	U
Tetrachloroethene	5	ug/L	5	U
Toluene	5	ug/L	5	U
Trichloroethene	5	ug/L	5	U
Trichlorofluoromethane	10	ug/L	10	U
Vinyl acetate	10	ug/L	10	U
Vinyl chloride	10	ug/L	10	U
cis-1,2-Dichloroethene	5	ug/L	5	U
cis-1,3-Dichloropropene	5	ug/L	5	U
m/p-Xylene(1)	5	ug/L	5	U
n-Butylbenzene	5	ug/L	5	U
n-Propylbenzene	5	ug/L	5	U
o-Xylene	5	ug/L	5	U
p-Isopropyltoluene	5	ug/L	5	U
sec-Butylbenzene	5	ug/L	5	U
tert-Butylbenzene	5	ug/L	5	U
trans-1,2-Dichloroethene	5	ug/L	5	U
trans-1,3-Dichloropropene	5	ug/L	5	U

(1) m-Xylene & p-Xylene co-elute

Analytical Results for Semivolatiles
by SW 846 Method 8270C

Field Sample ID	SS-13-01				SS-13-02				SS-13-04			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	79	weight %	1		86	weight %	1		72	weight %	1	
1,2,4-Trichlorobenzene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
1,2-Dichlorobenzene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
1,3-Dichlorobenzene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
1,4-Dichlorobenzene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2,4,5-Trichlorophenol	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
2,4,6-Trichlorophenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2,4-Dichlorophenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2,4-Dimethylphenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2,4-Dinitrophenol	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
2,4-Dinitrotoluene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2,6-Dinitrotoluene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2-Chloronaphthalene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2-Chlorophenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2-Methylnaphthalene	210	ug/kg	210	U	130	ug/kg	190	F	94	ug/kg	230	F
2-Methylphenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
2-Nitroaniline	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
2-Nitrophenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
3,3'-Dichlorobenzidine	420	ug/kg	420	U	380	ug/kg	380	U	460	ug/kg	460	U
3-Methylphenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
3-Nitroaniline	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
4,6-Dinitro-2-methylphenol	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
4-Bromophenyl-phenylether	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
4-Chloro-3-methylphenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
4-Chloroaniline	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
4-Chlorophenyl-phenyl ether	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
4-Methylphenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
4-Nitroaniline	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
4-Nitrophenol	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
Acenaphthene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Acenaphthylene	210	ug/kg	210	R, U	190	ug/kg	190	R, U	230	ug/kg	230	R, U
Anthracene	210	ug/kg	210	MU	190	ug/kg	190	MU	230	ug/kg	230	MU
Benzo(a)anthracene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Benzo(a)pyrene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Benzo(b)fluoranthene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Benzo(g,h,i)Perylene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Benzo(k)fluoranthene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Benzoic acid	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
Benzyl alcohol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Bis(2-Chloroethoxy)Methane	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Bis(2-Chloroethyl)ether	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Butylbenzylphthalate	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Chrysene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Di-N-Butylphthalate	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Di-n-octylphthalate	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Dibenzo(a,h)Anthracene	210	ug/kg	210	R, U	190	ug/kg	190	R, U	230	ug/kg	230	R, U
Dibenzofuran	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Diethylphthalate	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Dimethylphthalate	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Fluoranthene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Fluorene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Hexachlorobenzene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Hexachlorobutadiene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Hexachlorocyclopentadiene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Hexachloroethane	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Indeno(1,2,3-cd)pyrene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Isophorone	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
N-Nitrosodiphenylamine	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
N-Nitrosodipropylamine	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Naphthalene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Nitrobenzene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Pentachlorophenol	1000	ug/kg	1000	U	960	ug/kg	960	U	1100	ug/kg	1100	U
Phenanthrene	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Phenol	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
Pyrene	73	ug/kg	210	M, F	190	ug/kg	190	U	230	ug/kg	230	U
bis(2-Chloroisopropyl)ether	210	ug/kg	210	U	190	ug/kg	190	U	230	ug/kg	230	U
bis(2-Ethylhexyl)phthalate	69	ug/kg	210	F	190	ug/kg	190	U	230	ug/kg	230	U

Analytical Results for Semivolatiles
by SW 846 Method 8270C

Field Sample ID	SS-13-06				SS-13-07				SS-13-08			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	74	weight %	1		67	weight %	1		84	weight %	1	
1,2,4-Trichlorobenzene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
1,2-Dichlorobenzene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
1,3-Dichlorobenzene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
1,4-Dichlorobenzene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2,4,5-Trichlorophenol	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
2,4,6-Trichlorophenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2,4-Dichlorophenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2,4-Dimethylphenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2,4-Dinitrophenol	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
2,4-Dinitrotoluene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2,6-Dinitrotoluene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2-Chloronaphthalene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2-Chlorophenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2-Methylnaphthalene	220	ug/kg	220	U	430	ug/kg	250		170	ug/kg	200	F
2-Methylphenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
2-Nitroaniline	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
2-Nitrophenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
3,3'-Dichlorobenzidine	450	ug/kg	450	U	490	ug/kg	490	U	390	ug/kg	390	U
3-Methylphenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
3-Nitroaniline	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
4,6-Dinitro-2-methylphenol	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
4-Bromophenyl-phenylether	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
4-Chloro-3-methylphenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
4-Chloroaniline	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
4-Chlorophenyl-phenyl ether	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
4-Methylphenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
4-Nitroaniline	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
4-Nitrophenol	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
Acenaphthene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Acenaphthylene	220	ug/kg	220	R, U	250	ug/kg	250	R, U	200	ug/kg	200	R, U
Anthracene	220	ug/kg	220	MU	250	ug/kg	250	MU	200	ug/kg	200	MU
Benzo(a)anthracene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Benzo(a)pyrene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Benzo(b)fluoranthene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Benzo(g,h,i)Perylene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Benzo(k)fluoranthene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Benzoic acid	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
Benzyl alcohol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Bis(2-Chloroethoxy)Methane	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Bis(2-Chloroethyl)ether	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Butylbenzylphthalate	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Chrysene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Di-N-Butylphthalate	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Di-n-octylphthalate	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Dibenzo(a,h)Anthracene	220	ug/kg	220	R, U	250	ug/kg	250	R, U	200	ug/kg	200	R, U
Dibenzofuran	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Diethylphthalate	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Dimethylphthalate	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Fluoranthene	46	ug/kg	220	F	250	ug/kg	250	U	66	ug/kg	200	F
Fluorene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Hexachlorobenzene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Hexachlorobutadiene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Hexachlorocyclopentadiene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Hexachloroethane	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Indeno(1,2,3-cd)pyrene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Isophorone	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
N-Nitrosodiphenylamine	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
N-Nitrosodipropylamine	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Naphthalene	220	ug/kg	220	U	110	ug/kg	250	F	200	ug/kg	200	U
Nitrobenzene	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Pentachlorophenol	1100	ug/kg	1100	U	1200	ug/kg	1200	U	980	ug/kg	980	U
Phenanthrene	220	ug/kg	220	U	370	ug/kg	250		160	ug/kg	200	
Phenol	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
Pyrene	220	ug/kg	220	U	66	ug/kg	250	M, F	110	ug/kg	200	M, F
bis(2-Chloroisopropyl)ether	220	ug/kg	220	U	250	ug/kg	250	U	200	ug/kg	200	U
bis(2-Ethylhexyl)phthalate	220	ug/kg	220	U	250	ug/kg	250	U	100	ug/kg	200	F

Analytical Results for Semivolatiles
by SW 846 Method 8270C

Field Sample ID	SS-13-10				SS-13-11				SS-13-12			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	81	weight %	1		81	weight %	1		76	weight %	1	
1,2,4-Trichlorobenzene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
1,2-Dichlorobenzene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
1,3-Dichlorobenzene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
1,4-Dichlorobenzene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2,4,5-Trichlorophenol	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
2,4,6-Trichlorophenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2,4-Dichlorophenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2,4-Dimethylphenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2,4-Dinitrophenol	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
2,4-Dinitrotoluene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2,6-Dinitrotoluene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2-Chloronaphthalene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2-Chlorophenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2-Methylnaphthalene	200	ug/kg	200	U	1100	ug/kg	220		220	ug/kg	220	U
2-Methylphenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
2-Nitroaniline	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
2-Nitrophenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
3,3'-Dichlorobenzidine	410	ug/kg	410	U	430	ug/kg	430	U	430	ug/kg	430	U
3-Methylphenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
3-Nitroaniline	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
4,6-Dinitro-2-methylphenol	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
4-Bromophenyl-phenylether	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
4-Chloro-3-methylphenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
4-Chloroaniline	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
4-Chlorophenyl-phenyl ether	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
4-Methylphenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
4-Nitroaniline	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
4-Nitrophenol	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
Acenaphthene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Acenaphthylene	200	ug/kg	200	R, U	220	ug/kg	220	R, U	220	ug/kg	220	R, U
Anthracene	200	ug/kg	200	MU	220	ug/kg	220	MU	220	ug/kg	220	MU
Benzo(a)anthracene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Benzo(a)pyrene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Benzo(b)fluoranthene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Benzo(g,h,i)Perylene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Benzo(k)fluoranthene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Benzoic acid	1000	ug/kg	1000	U	1100	ug/kg	1100	U	290	ug/kg	1100	U
Benzyl alcohol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Bis(2-Chloroethoxy)Methane	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Bis(2-Chloroethyl)ether	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Butylbenzylphthalate	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Chrysene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Di-N-Butylphthalate	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Di-n-octylphthalate	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Dibenzo(a,h)Anthracene	200	ug/kg	200	R, U	220	ug/kg	220	R, U	220	ug/kg	220	R, U
Dibenzofuran	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Diethylphthalate	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Dimethylphthalate	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Fluoranthene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Fluorene	200	ug/kg	200	U	68	ug/kg	220	F	220	ug/kg	220	U
Hexachlorobenzene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Hexachlorobutadiene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Hexachlorocyclopentadiene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Hexachloroethane	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Indeno(1,2,3-cd)pyrene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Isophorone	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
N-Nitrosodiphenylamine	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
N-Nitrosodipropylamine	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Naphthalene	200	ug/kg	200	U	350	ug/kg	220		220	ug/kg	220	U
Nitrobenzene	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Pentachlorophenol	1000	ug/kg	1000	U	1100	ug/kg	1100	U	1100	ug/kg	1100	U
Phenanthrene	3500	ug/kg	2000		85	ug/kg	220	F	220	ug/kg	220	U
Phenol	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
Pyrene	920	ug/kg	200	M	220	ug/kg	220	U	220	ug/kg	220	U
bis(2-Chloroisopropyl)ether	200	ug/kg	200	U	220	ug/kg	220	U	220	ug/kg	220	U
bis(2-Ethylhexyl)phthalate	12000	ug/kg	2000		100	ug/kg	220	F	71	ug/kg	220	F

Analytical Results for Semivolatiles
by SW 846 Method 8270C

Field Sample ID	SS-13-13				SS-13-14				SS-13-15			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	76	weight %	1		81	weight %	1		83	weight %	1	
1,2,4-Trichlorobenzene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
1,2-Dichlorobenzene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
1,3-Dichlorobenzene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
1,4-Dichlorobenzene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2,4,5-Trichlorophenol	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
2,4,6-Trichlorophenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2,4-Dichlorophenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2,4-Dimethylphenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2,4-Dinitrophenol	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
2,4-Dinitrotoluene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2,6-Dinitrotoluene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2-Chloronaphthalene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2-Chlorophenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2-Methylnaphthalene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2-Methylphenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
2-Nitroaniline	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
2-Nitrophenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
3,3'-Dichlorobenzidine	410	ug/kg	410	U	400	ug/kg	400	U	350	ug/kg	350	U
3-Methylphenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
3-Nitroaniline	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
4,6-Dinitro-2-methylphenol	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
4-Bromophenyl-phenylether	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
4-Chloro-3-methylphenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
4-Chloroaniline	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
4-Chlorophenyl-phenyl ether	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
4-Methylphenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
4-Nitroaniline	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
4-Nitrophenol	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
Acenaphthene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Acenaphthylene	200	ug/kg	200	R, U	200	ug/kg	200	R, U	180	ug/kg	180	R, U
Anthracene	200	ug/kg	200	MU	200	ug/kg	200	MU	180	ug/kg	180	MU
Benzo(a)anthracene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Benzo(a)pyrene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Benzo(b)fluoranthene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Benzo(g,h,i)Perylene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Benzo(k)fluoranthene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Benzoic acid	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
Benzyl alcohol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Bis(2-Chloroethoxy)Methane	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Bis(2-Chloroethyl)ether	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Butylbenzylphthalate	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Chrysene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Di-N-Butylphthalate	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Di-n-octylphthalate	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Dibenzo(a,h)Anthracene	200	ug/kg	200	R, U	200	ug/kg	200	R, U	180	ug/kg	180	R, U
Dibenzofuran	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Diethylphthalate	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Dimethylphthalate	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Fluoranthene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Fluorene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Hexachlorobenzene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Hexachlorobutadiene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Hexachlorocyclopentadiene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Hexachloroethane	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Indeno(1,2,3-cd)pyrene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Isophorone	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
N-Nitrosodiphenylamine	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
N-Nitrosodipropylamine	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Naphthalene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Nitrobenzene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Pentachlorophenol	1000	ug/kg	1000	U	990	ug/kg	990	U	890	ug/kg	890	U
Phenanthrene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Phenol	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
Pyrene	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
bis(2-Chloroisopropyl)ether	200	ug/kg	200	U	200	ug/kg	200	U	180	ug/kg	180	U
bis(2-Ethylhexyl)phthalate	81	ug/kg	200	F	200	ug/kg	200	U	180	ug/kg	180	U

Analytical Results for Semivolatiles
by SW 846 Method 8270C

Field Sample ID	SS-13-16				SS-13-17				SS-13-18			
Collection Date	8/21/00				8/21/00				8/21/00			
COMPOUND	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL	Result	UNITS	Detection Limit	QUAL
Percent Solids	93	weight %	1		85	weight %	1		82	weight %	1	
1,2,4-Trichlorobenzene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
1,2-Dichlorobenzene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
1,3-Dichlorobenzene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
1,4-Dichlorobenzene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2,4,5-Trichlorophenol	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
2,4,6-Trichlorophenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2,4-Dichlorophenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2,4-Dimethylphenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2,4-Dinitrophenol	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
2,4-Dinitrotoluene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2,6-Dinitrotoluene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2-Chloronaphthalene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2-Chlorophenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2-Methylnaphthalene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2-Methylphenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
2-Nitroaniline	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
2-Nitrophenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
3,3'-Dichlorobenzidine	390	ug/kg	390	U	400	ug/kg	400	U	400	ug/kg	400	U
3-Methylphenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
3-Nitroaniline	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
4,6-Dinitro-2-methylphenol	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
4-Bromophenyl-phenylether	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
4-Chloro-3-methylphenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
4-Chloroaniline	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
4-Chlorophenyl-phenyl ether	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
4-Methylphenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
4-Nitroaniline	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
4-Nitrophenol	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
Acenaphthene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Acenaphthylene	190	ug/kg	190	R, U	200	ug/kg	200	R, U	200	ug/kg	200	R, U
Anthracene	190	ug/kg	190	MU	200	ug/kg	200	MU	200	ug/kg	200	MU
Benzo(a)anthracene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Benzo(a)pyrene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Benzo(b)fluoranthene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Benzo(g,h,i)Perylene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Benzo(k)fluoranthene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Benzoic acid	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
Benzyl alcohol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Bis(2-Chloroethoxy)Methane	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Bis(2-Chloroethyl)ether	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Butylbenzylphthalate	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Chrysene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Di-N-Butylphthalate	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Di-n-octylphthalate	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Dibenzo(a,h)Anthracene	190	ug/kg	190	R, U	200	ug/kg	200	R, U	200	ug/kg	200	R, U
Dibenzofuran	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Diethylphthalate	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Dimethylphthalate	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Fluoranthene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Fluorene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Hexachlorobenzene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Hexachlorobutadiene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Hexachlorocyclopentadiene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Hexachloroethane	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Indeno(1,2,3-cd)pyrene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Isophorone	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
N-Nitrosodiphenylamine	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
N-Nitrosodipropylamine	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Naphthalene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Nitrobenzene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Pentachlorophenol	970	ug/kg	970	U	1000	ug/kg	1000	U	1000	ug/kg	1000	U
Phenanthrene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Phenol	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
Pyrene	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
bis(2-Chloroisopropyl)ether	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U
bis(2-Ethylhexyl)phthalate	190	ug/kg	190	U	200	ug/kg	200	U	200	ug/kg	200	U

Revised March 22, 2001

MEMORANDUM

TO: Rich Habrukowich, Versar, Bristol, PA

FROM: Donna Oswald, Versar, Lombard, IL

DATE: February 7, 2001

RE: **Data Validation/Usability Report for Plattsburg AFB**
SS-013, West of Weapons Storage Area, North of Building 3569
Post-excavaton Confirmation Soil Samples

1.0 INTRODUCTION

On December 11, 2000, eleven (11) post-excavation confirmation soil samples collected at Plattsburg AFB SS-013 (Weapons Storage Area) north of Building 3569 along with two field blanks and sent to Kemron Environmental Services (Kemron), located in Marietta, Ohio, for testing. Analyses were preformed in accordance with Air Force Center for Environmental Excellence (AFCEE) Quality Assurance Project Plan (QAPP) Version 3.0 (March 1998) with the exception of several laboratory variances for EPA Method SW260B volatile organics(VOCs) and EPA Method SW8270C semivolatile organics (SVOCs). Several compounds that are not part of the AFCEE target analyte list for methods 8260B and 8270C were also included in order to meet NYDEC requirements. The additional compounds are the VOCs acetone and 2-butanone and the SVOC benzo(k)fluoranthene by EPA Method SW8270C. As these compounds are not included in the AFCEE QAPP, laboratory historical statistical limits were used to evaluate the analytical results. The analytical results are presented in Tables 1 and 2. The approved laboratory variances from the AFCEE QAPP, case narratives and chain-of-custody forms are included as attachments to this memorandum.

The data were qualified in accordance with the validation protocols in the AFCEE QAPP, Version 3.0 (March 1998) and the laboratory specific control limits supplied by Kemron. The laboratory performed the initial review of the data package, and qualified the data in accordance with the AFCEE QAPP. Final qualification of the data was made by the Versar project chemist based on the results of the data validation. The following items were reviewed during the data validation process: chain of custody, sample condition upon receipt, extraction/analysis holding times, method detection/reporting limits, internal standards, surrogates, matrix spike/ matrix spike duplicate (MS/MSD) analysis results, laboratory control sample (LCS) recoveries, initial and continuing calibrations, second source calibration verification standards, laboratory method and field QC blank contamination, instrument tuning, and report completeness.

The hierarchy of AFCEE qualifiers from most to least severe are as follows; "R" (rejected), "M" (matrix effect present), "F" (results above method detection limit, but below reporting limit), "J" (estimated value), "B" (blank contamination) and "U" (not detected).

The samples were received by Kemron intact and under proper chain-of-custody. The temperature of the sample cooler upon receipt at the laboratory was 2°C. The chain-of-custody forms are included as an attachment.

2.0 VALIDATION

Volatile Data (Method 8260B)

All project specific QC criteria were met, except as indicated below.

Naphthalene and 1,2,3-Trichlorobenzene were detected at a trace level (> MDL, but < RL) and 1,2,4-Trichlorobenzene and Hexachlorobutadiene were detected above the RL in the laboratory preparation blank associated with the aqueous field samples. These compounds were not detected in either of the associated field blanks. No qualification was necessary. No target analytes were detected above the reporting limit (RL) in the laboratory method blanks associated with the soil samples. Trace levels (> MDL, but < RL) of 1,2,4-Trimethylbenzene, was detected in the soil laboratory method blank. This compound was also detected at a similar trace level in all associated field samples. Per the AFCEE QAPP, qualification is only required when blank contamination above the RL is observed. Positive results for these compounds in the associated field samples while not qualified "B" are likely either artifacts not representative of actual field conditions or biased high as a result of the observed laboratory contamination.

Trace levels (> MDL, but < RL) of the volatile compound Toluene (a common lab artifact) was detected in the Trip Blank. Toluene was not detected above the MDL in the aqueous laboratory preparation blank nor in any of the associated field samples, therefore data quality was not impacted. Per the AFCEE QAPP, qualification is only required when blank contamination above the RL is observed.

In the initial calibration for aqueous samples, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (Methyl tert butyl ether, 1,1,2,2-Tetrachloroethane and 1,2-Dibromo-3-chlororpropane), or a quadratic 2nd order curve (Vinyl Chloride) than by using an average response factor. In the initial calibration for the soil samples, the laboratory reported that Methyl-tert-butyl-ether, Vinyl acetate, 1,1-Dichloropropene, and cis-1,3-Dichloropropene were more accurately quantitated using a linear regression than by using an average response factor. Correlation coefficient (linear) or coefficient of determination (quadratic) acceptance criteria as specified in Table 7.2.9-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.9-3 of the AFCEE QAPP were met for all other compounds.

In the Second Source Calibration Verifications (SSCV) for aqueous samples, the compounds Dichlorodifluoromethane (%D = 55%) and 1,1-Dichloropropene (%D = 28.6%) did not meet the acceptance criteria (%D $\leq$ 25%) set forth in the AFCEE QAPP. Excessive variations in the results for the second source standard may indicate problems with the initial calibration for that compound. Both of these compounds exhibited high bias, although 1,1-Dichloropropene barely exceeded criteria. These compounds were not detected in the associated field blanks. Non-detects (reporting limits) for both compounds are qualified "R" per the QAPP. Minor exceedence of daily SSC criteria has no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. As SSC criteria was only marginally exceeded, the non-detect results for 1,1-Dichloropropene should be acceptable for use.

In the Second Source Calibration Verifications (SSCV) for soil samples, the compound Dichlorodifluoromethane (%D = 25.6%) did not meet SSCV acceptance criteria (%D $\leq$ 25%) set forth in the AFCEE QAPP. This compound was not detected in the associated field samples. Non-detects (reporting limits) are qualified "R" per the QAPP. Minor exceedence of daily SSC criteria has no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. As SSC criteria was only marginally exceeded, the non-detect results for Dichlorodifluoromethane should be acceptable for use.

In the daily continuing calibration run on 12/15/00 for soil samples, the compounds Chloromethane (%D = -22.6) and 1,2-Dibromo-3-chloropropane (%D = -21.9%) exceeded the percent difference control limits (%D $\leq$ 20%). Neither of these compounds were detected in the associated field samples. Non-detects (reporting limits) for these compounds are qualified "R" per the QAPP. Variability in instrument response may cause bias in positive results but does not affect the laboratory's ability to detect these compounds providing that sensitivity is acceptable. These results indicate that sensitivity was enhanced on the date in question. The non-detect results for these analytes should be acceptable for use.

The LCS run on HPMS-2 associated with aqueous samples had a % recovery for Dichlorofluoromethane that exceeded the control limits. This result indicates the possibility of high bias, and as the compound was not reported in any of the associated samples, no qualification is required. The LCS run on HPMS-11 associated with the soil samples had a % recovery for Dichlorofluoromethane, Chloromethane, Vinyl chloride and 1,1,1,2-tetrachloroethane that exceeded the upper control limits. Chloromethane was also biased high in the associated daily continuing calibration. These results indicate the possibility of high bias, and as the compounds were not reported in any of the associated samples, no qualification is required.

In the MS/MSD analyses (performed on sample SS-13B-001), low bias was observed for 1,2,4-Trichlorobenzene, Naphthalene, and 1,2,3-Trichlorobenzene. The associated LCS results were acceptable, indicating a matrix effect is likely responsible for the observed low recoveries. High bias was observed for Dichlorodifluoromethane, Chloromethane, Vinyl chloride and Chloroethane. The associated LCS results for the first three compounds were

also high, indicating the possibility of analytical bias as opposed to a matrix effect. These compounds were not detected in the designated matrix spike sample nor in any of the other field samples. Reporting limits in the spiked sample have been qualified with a "M" per the QAPP. The low bias should not preclude the use of these results to demonstrate compliance with action levels.

Several target analytes were detected below the RL but above the MDL. They are considered to be trace levels and were qualified "F" in accordance with the QAPP. These results are qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

Semivolatile Data (Method 8270C)

All project specific QC criteria were met, except as indicated below.

In the initial calibration, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (2,4,6-Tribromophenol) or a quadratic 2nd order curve (2,4-Dinitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol) than by using an average response factor. In the initial calibration associated with the 5 fold dilution of SS-13B-001, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (Benzoic Acid, Hexachlorocyclopentadiene, and 4,6-Dinitro-2-methylphenol) or a quadratic 2nd order curve (2,4-Dinitrophenol, 2,4,6-Tribromophenol and Pentachlorophenol) Correlation coefficient (linear) or coefficient of determination (quadratic) acceptance criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for all other compounds.

The second source calibration (SSC) standard results run on 12/16/00 for 4-Chloroanaline exceeded the QC acceptance limits for % difference relative to the initial calibration. In the SSC run on 12/21/00 benzoic acid and di-n-octyl phthalate exceeded the QC acceptance limits. Results for Benzoic acid and Di-n-octyl phthalate were not reported from the 12/21/00 analysis, therefore qualification was not required. In accordance with the AFCEE QAPP, the associated results for 4-Chloroaniline in samples quantitated against the 12/16/00 initial calibration are qualified "R". Minor exceedence of SSC criteria has no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. The non-detect results for these analytes should be acceptable for use.

During the continuing calibrations, the % difference for the compounds benzoic acid (%D = 20.5%) and 3,3'-Dichlorobenzidine(%D = 27.2%) exceeded the quality control limits (%D $\leq$ 20%) on 12/21/00. On 12/22/00, the %Difference for 4-Nitroanaline exceeded the quality control limits (22%). 4-Nitroaniline was not reported from the 12/22/00 analysis, therefore qualification is not required. In accordance with the AFCEE QAPP, the results for the non-compliant compounds in samples the associated with the 12/21/00 analysis are qualified "R". None of these compounds were detected in any of the associated samples. Minor exceedence of daily calibration drift criteria has

no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. The non-detect results for these analytes should be acceptable for use.

Sample PAFB-SS013-002 was submitted for MS/MSD analysis. All %recoveries and RPDs were acceptable.

Several target analytes were detected below the RL but above the MDL. They are considered to be trace levels and were qualified "F" in accordance with the QAPP. These results are qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection. Several target analytes in PAFB-SS013-001 exceeded the upper end of the calibration range during the initial analysis of this sample. The sample was additionally analyzed at a 5-fold dilution. Analytes quantitated from this dilution are qualified with a "D" in Table 2. These results are fully acceptable for use.

3.0 COMPLETENESS

The AFCEE QAPP goal for completeness is 90% for soil matrixes. Percent completeness is defined as the number of valid results divided by the total number of individual target compound results. Valid results are those that have not been rejected (qualified "R"). The percent completeness for each method and matrix is as follows:

Method	Matrix	Percent Completeness
Volatiles (SW8260B)	Soil	95%
	Field QC (Aqueous)	97%
Semivolatiles (SW8270C)	Soil	96%
	Field QC (Aqueous)	N/A

The completeness goal of 90% was met for the soil and field QC samples.

ATTACHMENTS

CASE NARRATIVES

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE

L0012251

CHAIN OF CUSTODY:

The chains of custody numbers were 103168 and 103166.

SHIPMENT CONDITIONS:

The chain of custodies were received sealed in coolers. The cooler temperatures were 2° C.

SAMPLE MANAGEMENT:

All samples were received intact.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

REVIEWED: Angela B. Wigal DATE: 12-15-00

REPORT NARRATIVE
GC/MS VOLATILE ORGANICS

KEMRON Login No: L0012251

METHOD

Preparation: SW- 846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The alternate souce analyzed on HPMS-2 yielded %D's for dichlorodifluoromethane and 1,1-dichloropropene that exceeded the criteria of less than +/- 25 %D.

The alternate source analyzed on HPMS-11 yielded a %D for dichlorodifluoromethane that exceeded the criteria of less than +/- 25 %D. All other acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on 12/15/00 on HPMS-11 yielded %D's for chloromethane and 1,2-dibromo-3-chloropropane that exceeded the criteria of less than +/- 20 %D. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Samples: The LCS analyzed on 12/15/00 on HPMS-2 yielded a % recovery for dichlorodifluoromethane that was above the upper advisory limit.

The LCS analyzed on 12/15/00 on HPMS-11 yielded % recoveries for dichlorodifluoromethane, chloromethane and vinyl chloride that were above the upper advisory limits. None of these LCS outliers were detected in any of the associated samples above the reporting limits. All other acceptance criteria were met.

Matrix Spikes: Sample fraction 01 was chosen internally for MS/MSD analyses.

SAMPLES

Internal Standards: All acceptance criteria were met.
Surrogates: All acceptance criteria were met.
Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: CMS REVIEWED: Stephanie L Sepe DATE: 12/21/00

Rev. 7/14/00

REPORT NARRATIVE
GC/MS SEMIVOLATILE ORGANICS

KEMRON Report No.: L0012251

METHOD

Preparation: SW- 846 3550B(Soils) 3510C(Waters)
Analysis: SW-846 8270C

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The alternate source standard analyzed on 12/16/00 on HPMS-7 yielded a %D for 4-chloroaniline that exceeded the criteria of +/-25%. The alternate source standard analyzed on 12/21/00 on HPMS-5 yielded a %D for benzoic acid and di-n-octyl phthalate that exceeded the criteria of +/-25%. All other acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on 12/21/00 on HPMS-7 yielded a %D for benzoic acid and 3,3'-dichlorobenzidine that exceeded the criteria of +/-20%. The CCV analyzed on 12/22/00 on HPMS-5 yielded a %D for 4-nitroaniline that exceeded the criteria of +/-20%. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.
Laboratory Control Samples: All acceptance criteria were met.
Matrix Spikes: All acceptance criteria were met.

SAMPLES

Internal Standards: All acceptance criteria were met.
Surrogates: All acceptance criteria were met.
Samples: Sample 01 required dilution analyses.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: CLK

REVIEWED: _____ DATE: 12/27/00

Rev. 6/00

CHAIN OF CUSTODIES

COC No. 103166

109 Starlite Park
Marietta, OH 45750

Phone: 740-373-40
Fax: 740-373-4835

Kemron ENVIRONMENTAL SERVICES

CHAIN-OF-CUSTODY RECORD

Company Name: VERSAR

Project Contact: STANDARD | Contact Phone #: 215 788 7844

Turn Around Requirements: STANDARD | Location: PLATTSBURGH, NY

Project #: 4521.441 | Project Name: 5513 3564

Sampler (print): BRYAN FOLEY | Signature: [signature]

Program: ☐ NPDES ☐ AFCEE (circled) ☐ RCRA ☐ USACE ☐ Other

Mail Report To: Rich Kabrukowitz, 1900 Frost Rd Suite 110, Bristol PA 19007

ERPIMS REQUIRED FIELDS

Sample I.D. No / Location I.D.	SBD	SED	Date	Time	Comp*	Grab	NUMBER of CONTAINERS	VOA	PAH		Comments	SACODE	COOLER ID	ABLOT	EBLOT	TBLOT
TRIP BLANK			12/11/00				1	X	~~X~~							
FIELD BLANK			12/11/00				1	X	~~X~~							

PAH column struck through: bfg 12/12/00

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	12/11/00	17:30					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Cooler Temp in °C	Remarks:
			Brenda Gregory	12/12/00	1004	2	C/C sealed, Sb intact.

* Homogenize all composite samples prior to analysis

Page ____ of ____

COC No: 103168

109 Starlite Park
Marietta, OH 45750

EMRON
ENVIRONMENTAL SERVICES
CHAIN-OF-CUSTODY RECORD

Phone: 740-373-40[illegible]
Fax: 740-373-4835

Company Name: VERSAR

Project Contact: BRYAN FOLEY
Contact Phone #: (215) 913 1132
Turn Around Requirements: STANDARD
Location: PLATTSBURGH, NY. AFB
Project #: 4521.441
Project Name: SS13 - 3569 SOIL
Sampler (print): BRYAN FOLEY
Signature:

Program: ☐ NPDES ☐ AFCEE ☐ RCRA ☐ USACE ☐ Other

Mail Report To: RICH HARNUKOWICH
1900 FROST RD. SUITE 110
BRISTOL, PA - 19007

ERPIMS REQUIRED FIELDS

Sample I.D. No	Location I.D.	SBD	SED	Date	Time	Comp*	Grab	NUMBER of CONTAINERS	VOA	OAH	Comments	SACODE	COOLER ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
PAFB-SS13 B-001				12/11/00	10:59		X	2	X	X		X				
PAFB-SS13 B-002					11:15		X	2	X	X						
PAFB-SS13 B-003					11:20		X	2	X	X						
PAFB-SS13 B-004					11:25		X	2	X	X						
PAFB-SS13 B-005					11:30		X	2	X	X						
PAFB-SS13 B-006					11:40		X	2	X	X						
PAFB-SS13 B-007					11:50		X	2	X	X						
PAFB-SS13 B-008					12:15		X	2	X	X						
PAFB-SS13 B-009					12:20		X	2	X	X						
PAFB-SS13 B-010					12:25		X	2	X	X						
PAFB-SS13 B-011					12:30	X	X	2	X	X						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
	12/11/00	13:45					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Cooler Temp in °C	Remarks:
			Brenda Gregory	12/12/00	1004	2	QC Related Subcontract Lab

* Homogenize all composite samples prior to analysis

LABORATORY VARIANCES

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
ENVIRONMENTAL RESTORATION SERVICES
BROOKS AFB, TX 78235

29 Nov 00

MEMORANDUM FOR HQ AFCEE/ERB
ATTENTION: Roy Willis/RTC/Plattsburg AFB

FROM: Burt Harrison
Environmental Chemistry Consultant
AFCEE/ERC
3207 North Road
Brooks AFB, Tx 78235

SUBJECT: Environmental Chemistry Review of the Kemron Laboratory QAPP Variances Prepared by Versar for the Plattsburg AFB Project.

References: (a) Handbook for the Installation Restoration Program (IRP) - Remedial Investigation/Feasability Studies (RI/FS), AFCEE, Sept. 1993. (b) U.S. EPA Test Methods for Evaluating Solid Wastes (SW 846), third edition, July 1992. (c) HQ AFCEE Quality Assurance Project Plan, March 1998.

A review of the Quality Assurance Project Plan variances for the Plattsburg AFB, NY project prepared by Versar are acceptable with the following exceptions. Recommend sample results be reported on a dry weight basis except for SW5035 samples where it is not possible. Concur with all Reporting Limit variances if approved by the New York State RPM and the USEPA RPM. Do not concur with calibration variances. Do not concur with recovery limits lower than 20% for any analyte for any analytical procedure. Concur with the MDL variance request after a survey of a number of AFCEE laboratories concerning this MDL issue requirement.

If you have any questions regarding this review or these comments, please contact me at (210) 536-5226.

Burt Harrison
Environmental Chemistry Consultant
Consultant Operations Division
AFCEE/ERC

KEMRON Environmental Services, Inc.
Variance Request AFCEE QAPP Version 3.0, March 1998
Versar – Plattsburgh, NY
Revised 11/20/00

QAPP Section 4.3.1- MDL Spike Levels

AFCEE REQUIREMENT:

Item (6) of Section 4.3.1 states "If the spike level in step 2 is more than five times the calculated MDL, repeat the process using a smaller spiking level."

VARIANCE REQUEST:

The laboratory requests a variance to change "five times" to read "ten times".

JUSTIFICATION:

The analytes that fail the "five times" criteria are on those instruments or methods that are very precise and have low relative standard deviations. Any procedure with a relative standard deviation less than 6.67% (at the spiked level) will produce MDLs that do not meet the 'fives times" criteria. Furthermore, this process tends to underestimate the MDL, so repeating the process at a lower spiking level may not produce meaningful data, particularly, if the spike level is below the quantitation limit (lowest calibration standard).

If so desired, the MDLs for those few analytes that fail the "five times" criteria MDL could be assigned a value equal to one-tenth the spike level, or one-half the project required RL, whichever is higher. This will assure that all project DQOs related to the MDLs and RLs will be met.

KEMRON meets the EPA criteria that the spike concentration should not exceed ten times the estimated MDL and AFCEE has accepted this interpretation on previous projects.

QAPP Section 8.2 – Wet Weight vs. Dry Weight

AFCEE REQUIREMENT:

Section 8.2 of the AFCEE QAPP V3.0 requires that "A wet weight aliquot of sample equivalent to the method specified dry weight aliquot of sample shall be taken for analysis."

KEMRON VARIANCE REQUEST:

The laboratory requests a variance to allow the method prescribed sample weights to be determined on the "as-received" basis, as specified in SW846.

JUSTIFICATION:

1) Increasing the amount of wet weight changes the sample/solvent ratios, which may significantly reduce the recovery of analytes from the matrix, resulting in poor surrogate recovery and more R flagged data. Altering the sample/solvent reagent ratios is a direct violation of the SW-846 methods.2) Organic extraction methods such as 3540, 3545 and 3550 have a limit on the quantity of sample they can effectively process. 3) The QAPP procedure cannot be applied to samples collected by method 5035 for volatile organic analysis.

QAPP Section 7.2.9-1 SW8260 Reporting Limits

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes:

Analyte	AFCEE RL (ug/L)	Proposed RL (ug/L)
1,1,2,2 Tetrachloroethane	0.4	0.8
1,1-Dichloroethane	0.4	0.5
1,2,3-Trichlorobenzene	0.3	1
1,2,4-Trichlorobenzene	0.4	2
1,2-Dichlorobenzene	0.3	1
1,2-Dichloropropane	0.4	0.5
1,3-Dichloropropane	0.4	0.5
1-Chlorohexane	0.5	1
1,4-Dichlorobenzene	0.3	1

2-Chlorotoluene	0.4	1
Benzene	0.4	0.5
Bromobenzene	0.3	1
Bromochloromethane	0.4	0.5
Bromodichloromethane	0.8	1
Chlorobenzene	0.4	0.5
Chloroform	0.3	0.5
Ethylbenzene	0.6	1
Methylene Chloride	0.3	2
n-propylbenzene	0.4	1
Naphthalene	0.4	1
Styrene	0.4	1
Trichlorofluoromethane	0.8	1
Dibromochloromethane	0.5	0.6
1,2-Dichloroethane	0.6	0.7
m,p-Xylene		1

JUSTIFICATION:

The laboratory low calibration standard is not at the AFCEE RL. The proposed RL will meet the project requirements.

AFCEE REQUIREMENT:

Table 7.2.9-1 lists m-Xylene and p-Xylene as separate analytes.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to report m-Xylene and p-Xylene as one analyte, since the compounds co-elute.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests that method 5035 soil preservation be limited to freezing and that the holding time be accepted as 14 days.

JUSTIFICATION:

This variance is needed to prevent the degradation of performance of several (8260) target analytes and the failure of these analytes to meet the QAPP 3.0 quality control requirements for the second source verification and continuing calibration verification (CCV). The analytes most affected by affected by the sodium bisulfate are clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane. These compounds have a high probability of failing ICV/CCV criteria, resulting in R flags on all samples. Using the freezing option will eliminate these problems. The freezing option and 14-day hold time is being accepted by some states and selected US-EPA regions.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests a variance to change the second source initial calibration verification (ICV) and continuing calibration verification (CCV) criteria from +/- 25 % to +/- 40% for clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane.

JUSTIFICATION:

These compounds are very prone to ICV/CCV failure when sodium bisulfate is used as a preservative. Without the variance these compounds will probably have to be R-flagged.

QAPP Section 7.2.10 SW8270 Surrogate Control Limit

AFCEE REQUIREMENT:

Table 7.2.10-2 lists the acceptance limit for phenol-D5 as 25-125 % recovery in water.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to use 10 - 125 % recovery as the acceptance limit in water

JUSTIFICATION:

Phenol recovery above 10% is not achievable routinely due to poor extraction efficiency. Industry-wide statistics do not support the 25 – 125 % recovery limit.

QAPP Section 7.2.10 SW8270 LCS Control Limits

AFCEE REQUIREMENT: see table below

VARIANCE REQUEST:

LCS Control Limit variances for 8270 compounds in water:

Compound	AFCEE LCS LIMITS	PROPOSED LCS LIMITS
Phenol	25-125	20-125
2-Chloronaphthalene	60-125	49-120
Hexachlorocyclopentadiene	Delete as a target analyte	
Benzoic Acid	25-162	20-125
3,3'-Dichlorobenzidine	29-175	20-125
Phenol-d5 (surrogate)	25-125	20-125

JUSTIFICATION:

These compounds are industry-wide poor performers and consistently give recoveries below the AFCEE lower control limits. Hexachlorocyclopentadiene has been proposed for deletion as an analyte from the AFCEE 3.1 QAPP. The proposed limits are taken from the AFCEE 3.1 QAPP.

QAPP Section 7.2.15.1 SW6010B ICP

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes in water:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Zinc	0.01	0.02

JUSTIFICATION:

The proposed RL will meet the project requirements.

QAPP Section 7.2.17-27 SW7000 Method Variance - Water

AFCEE REQUIREMENT:

AFCEE projects often specify that arsenic, antimony, chromium, cadmium, lead, selenium, thallium and vanadium shall be performed by their respective 7000 – GFAA methods:

Metal	Method	AFCEE RL (mg/L)
Arsenic	7060A	0.005
Chromium	7191	0.005
Cadmium	7131A	0.001
Lead	7421	0.005
Vanadium	7911	0.004
Antimony	7041	0.005
Selenium	7740	0.005
Thallium	7841	0.001

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. Analyzing these metals by ICP-AES or ICP-MS will not elevate the reporting limits, but will eliminate the inherent errors of GFAA methods:

Metal	Method	Proposed RL (mg/L)
Arsenic	6010B/6020A	0.005
Chromium	6010B	0.005
Cadmium	6010B	0.001
Lead	6010B/6020A	0.005
Vanadium	6010B	0.004
Antimony	6020A	0.005
Selenium	6020A	0.005
Thallium	6020A	0.001

JUSTIFICATION:

The proposed RLs are equal to the 7000 method RLs and meet the project DQOs.

QAPP Section 7.2.17.27 SW7000 Method Variance - Soil

AFCEE REQUIREMENT:

AFCEE DQOs often specifies that arsenic, antimony, selenium, thallium, chromium, cadmium, lead and vanadium be performed by their respective 7000 – GFAA methods:

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. KEMRON will use a method that will meet the project action limits, either by ICP-AES or ICP-MS. The following RLs are proposed:

	AFCEE 7000 RL (mg/kg)	Proposed 6010 RL (mg/kg)	Proposed 6020A RL (mg/kg)
Antimony	0.5	1	0.2
Arsenic	0.5	1	0.5
Lead	0.5	1	0.5
Selenium	0.5	1	0.5
Vanadium	0.4	0.5	N/A
Chromium	0.5	0.5	N/A
Cadmium	0.1	0.1	N/A
Thallium	0.1	2	0.1

JUSTIFICATION:

Project DQOs will not be affected, and the inherent errors of GFAA methods will be eliminated.

QAPP Section 7.2.17.27 SW7000 Reporting Limits - Soil

KEMRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/kg)	Proposed RL (mg/kg)
Thallium	0.1	0.25

JUSTIFICATION:

The laboratory MDL does not support the AFCEE RL. This variance is needed if 7000 methods are required.

QAPP Section 22.17.27 SW7000 Reporting Limits - Water

KEMRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Thallium	0.001	0.005
Antimony	0.005	0.006

JUSTIFICATION:

The laboratory MDLs for the 7000 methods do not support the AFCEE RL. This variance is needed if 7000 methods are required.

TABLES

Table 1
Analytical Results for
Volatiles by Method 8260B

3/28/01

ysis Date	PAFB-SS13B-001 12/15/00				PAFB-SS13B-002 12/15/00				PAFB-SS13B-003 12/15/00				PAFB-SS13B-004 12/15/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	93	weight %	1		97	weight %	1		92	weight %	1		85	weight %	1	
1,1,1,2-Tetrachloroethane		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
1,1,1-Trichloroethane		mg/kg	0.0043	U		mg/kg	0.0041	U		mg/kg	0.0043	U		mg/kg	0.0047	U
1,1,2,2-Tetrachloroethane		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,1,2-Trichloroethane		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
1,1-Dichloroethane		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,1-Dichloroethene		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0065	U		mg/kg	0.0071	U
1,1-Dichloropropene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
1,2,3-Trichlorobenzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,2,3-Trichloropropane		mg/kg	0.022	U		mg/kg	0.021	U		mg/kg	0.022	U		mg/kg	0.024	U
1,2,4-Trichlorobenzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,2,4-Trimethylbenzene	0.00028	mg/kg	0.0075	F	0.000423	mg/kg	0.0072	F	0.00038	mg/kg	0.0076	F	0.000365	mg/kg	0.0082	F
1,2-Dibromo-3-chloropropane		mg/kg	0.011	**R**		mg/kg	0.01	**R**		mg/kg	0.011	**R**		mg/kg	0.012	**R**
1,2-Dibromoethane		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
1,2-Dichlorobenzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,2-Dichloroethane		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
1,2-Dichloropropane		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,3,5-Trimethylbenzene		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
1,3-Dichlorobenzene		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0065	U		mg/kg	0.0071	U
1,3-Dichloropropane		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1,4-Dichlorobenzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
1-Chlorohexane		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
2,2-Dichloropropane		mg/kg	0.022	U		mg/kg	0.021	U		mg/kg	0.022	U		mg/kg	0.024	U
2-Chlorotoluene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
4-Chlorotoluene		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
Benzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Bromobenzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Bromochloromethane		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Bromodichloromethane		mg/kg	0.0043	U		mg/kg	0.0041	U		mg/kg	0.0043	U		mg/kg	0.0047	U
Bromoform		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0065	U		mg/kg	0.0071	U
Bromomethane		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
Carbon tetrachloride		mg/kg	0.011	U		mg/kg	0.01	U		mg/kg	0.011	U		mg/kg	0.012	U
[illegible]benzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
[illegible]ethane		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
Chloroform		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Chloromethane		mg/kg	0.0075	**R**		mg/kg	0.0072	**R**		mg/kg	0.0076	**R**		mg/kg	0.0082	**R**
Dibromochloromethane		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
Dibromomethane		mg/kg	0.011	U		mg/kg	0.01	U		mg/kg	0.011	U		mg/kg	0.012	U
Dichlorodifluoromethane		mg/kg	0.0054	**R**		mg/kg	0.0052	**R**		mg/kg	0.0054	**R**		mg/kg	0.0059	**R**
Ethylbenzene		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
Hexachlorobutadiene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
Isopropylbenzene		mg/kg	0.0086	U		mg/kg	0.0082	U		mg/kg	0.0087	U		mg/kg	0.0094	U
Methylene chloride		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Naphthalene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Styrene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
Tetrachloroethene		mg/kg	0.0075	U		mg/kg	0.0072	U		mg/kg	0.0076	U		mg/kg	0.0082	U
Toluene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
Trichloroethene		mg/kg	0.011	U		mg/kg	0.01	U		mg/kg	0.011	U		mg/kg	0.012	U
Trichlorofluoromethane		mg/kg	0.0043	U		mg/kg	0.0041	U		mg/kg	0.0043	U		mg/kg	0.0047	U
Vinyl chloride		mg/kg	0.0097	U		mg/kg	0.0093	U		mg/kg	0.0098	U		mg/kg	0.011	U
cis-1,2-Dichloroethene		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0065	U		mg/kg	0.0071	U
cis-1,3-Dichloropropene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
m-,p-Xylene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
n-Butylbenzene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
n-Propylbenzene		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0024	U
o-Xylene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
p-Isopropyltoluene		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0065	U		mg/kg	0.0071	U
sec-Butylbenzene		mg/kg	0.0075	U		mg/kg	0.0072	U		mg/kg	0.0076	U		mg/kg	0.0082	U
tert-Butylbenzene		mg/kg	0.0075	U		mg/kg	0.0072	U		mg/kg	0.0076	U		mg/kg	0.0082	U
trans-1,2-Dichloroethene		mg/kg	0.0032	U		mg/kg	0.0031	U		mg/kg	0.0033	U		mg/kg	0.0035	U
trans-1,3-Dichloropropene		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0054	U		mg/kg	0.0059	U
Acetone		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U
2-Butanone		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U

Table 1
Analytical Results for
Volatiles by Method 8260B

ction Date	PAFB-SS13B-005 12/15/00				PAFB-SS13B-006 12/15/00				PAFB-SS13B-007 12/15/00				PAFB-SS13B-008 12/15/00			
COMPOUND	**Results**	**UNITS**	**RL**	**QUAL**	**Results**	**UNITS**	**RL**	**QUAL**	**Results**	**UNITS**	**RL**	**QUAL**	**Results**	**UNITS**	**RL**	**QUAL**
Percent Solids	83	weight %	1		92	weight %	1		97	weight %	1		95	weight %	1	
1,1,1,2-Tetrachloroethane		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
1,1,1-Trichloroethane		mg/kg	0.0048	U		mg/kg	0.0043	U		mg/kg	0.0041	U		mg/kg	0.0042	U
1,1,2,2-Tetrachloroethane		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,1,2-Trichloroethane		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
1,1-Dichloroethane		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,1-Dichloroethene		mg/kg	0.0072	U		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0063	U
1,1-Dichloropropene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
1,2,3-Trichlorobenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,2,3-Trichloropropane		mg/kg	0.024	U		mg/kg	0.022	U		mg/kg	0.021	U		mg/kg	0.021	U
1,2,4-Trichlorobenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,2,4-Trimethylbenzene	0.000349	mg/kg	0.0084	F	0.000326	mg/kg	0.0076	F	0.000309	mg/kg	0.0072	F	0.000305	mg/kg	0.0074	F
1,2-Dibromo-3-chloropropane		mg/kg	0.012	**R**		mg/kg	0.011	**R**		mg/kg	0.01	**R**		mg/kg	0.011	**R**
1,2-Dibromoethane		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
1,2-Dichlorobenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,2-Dichloroethane		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
1,2-Dichloropropane		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,3,5-Trimethylbenzene		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
1,3-Dichlorobenzene		mg/kg	0.0072	U		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0063	U
1,3-Dichloropropane		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,4-Dichlorobenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1-Chlorohexane		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
2,2-Dichloropropane		mg/kg	0.024	U		mg/kg	0.022	U		mg/kg	0.021	U		mg/kg	0.021	U
2-Chlorotoluene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
4-Chlorotoluene		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
Benzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Bromobenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Bromochloromethane		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Bromodichloromethane		mg/kg	0.0048	U		mg/kg	0.0043	U		mg/kg	0.0041	U		mg/kg	0.0042	U
Bromoform		mg/kg	0.0072	U		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0063	U
Bromomethane		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
Carbon tetrachloride		mg/kg	0.012	U		mg/kg	0.011	U		mg/kg	0.01	U		mg/kg	0.011	U
[illegible]obenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
[illegible]ethane		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
[illegible]oroform		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Chloromethane		mg/kg	0.0084	**R**		mg/kg	0.0076	**R**		mg/kg	0.0072	**R**		mg/kg	0.0074	**R**
Dibromochloromethane		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
Dibromomethane		mg/kg	0.012	U		mg/kg	0.011	U		mg/kg	0.01	U		mg/kg	0.011	U
Dichlorodifluoromethane		mg/kg	0.006	**R**		mg/kg	0.0054	**R**		mg/kg	0.0052	**R**		mg/kg	0.0053	**R**
Ethylbenzene		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
Hexachlorobutadiene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
Isopropylbenzene		mg/kg	0.0096	U		mg/kg	0.0087	U		mg/kg	0.0082	U		mg/kg	0.0084	U
Methylene chloride		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Naphthalene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Styrene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Tetrachloroethene		mg/kg	0.0084	U		mg/kg	0.0076	U		mg/kg	0.0072	U		mg/kg	0.0074	U
Toluene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
Trichloroethene		mg/kg	0.012	U		mg/kg	0.011	U		mg/kg	0.01	U		mg/kg	0.011	U
Trichlorofluoromethane		mg/kg	0.0048	U		mg/kg	0.0043	U		mg/kg	0.0041	U		mg/kg	0.0042	U
Vinyl chloride		mg/kg	0.011	U		mg/kg	0.0098	U		mg/kg	0.0093	U		mg/kg	0.0095	U
cis-1,2-Dichloroethene		mg/kg	0.0072	U		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0063	U
cis-1,3-Dichloropropene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
m-,p-Xylene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
n-Butylbenzene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
n-Propylbenzene		mg/kg	0.0024	U		mg/kg	0.0022	U		mg/kg	0.0021	U		mg/kg	0.0021	U
o-Xylene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
p-Isopropyltoluene		mg/kg	0.0072	U		mg/kg	0.0065	U		mg/kg	0.0062	U		mg/kg	0.0063	U
sec-Butylbenzene		mg/kg	0.0084	U		mg/kg	0.0076	U		mg/kg	0.0072	U		mg/kg	0.0074	U
tert-Butylbenzene		mg/kg	0.0084	U		mg/kg	0.0076	U		mg/kg	0.0072	U		mg/kg	0.0074	U
trans-1,2-Dichloroethene		mg/kg	0.0036	U		mg/kg	0.0033	U		mg/kg	0.0031	U		mg/kg	0.0032	U
trans-1,3-Dichloropropene		mg/kg	0.006	U		mg/kg	0.0054	U		mg/kg	0.0052	U		mg/kg	0.0053	U
Acetone		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U
2-Butanone		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U

Table 1
Analytical Results for
Volatiles by Method 8260B

ection Date	PAFB-SS13B-009 12/15/00				PAFB-SS13B-010 12/15/00				PAFB-SS13B-011 12/15/00			
COMPOUND	**Results**	**UNITS**	**RL**	**QUAL**	**Results**	**UNITS**	**RL**	**QUAL**	**Results**	**UNITS**	**RL**	**QUAL**
Percent Solids	95	weight %	1		89	weight %	1		87	weight %	1	
1,1,1,2-Tetrachloroethane		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
1,1,1-Trichloroethane		mg/kg	0.0042	U		mg/kg	0.0045	U		mg/kg	0.0046	U
1,1,2,2-Tetrachloroethane		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,1,2-Trichloroethane		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
1,1-Dichloroethane		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,1-Dichloroethene		mg/kg	0.0063	U		mg/kg	0.0067	U		mg/kg	0.0069	U
1,1-Dichloropropene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
1,2,3-Trichlorobenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,2,3-Trichloropropane		mg/kg	0.021	U		mg/kg	0.022	U		mg/kg	0.023	U
1,2,4-Trichlorobenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,2,4-Trimethylbenzene	0.000358	mg/kg	0.0074	F	0.000404	mg/kg	0.0079	F	0.000299	mg/kg	0.008	F
1,2-Dibromo-3-chloropropane		mg/kg	0.011	**R**		mg/kg	0.011	**R**		mg/kg	0.011	**R**
1,2-Dibromoethane		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
1,2-Dichlorobenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,2-Dichloroethane		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
1,2-Dichloropropane		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,3,5-Trimethylbenzene		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
1,3-Dichlorobenzene		mg/kg	0.0063	U		mg/kg	0.0067	U		mg/kg	0.0069	U
1,3-Dichloropropane		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1,4-Dichlorobenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
1-Chlorohexane		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
2,2-Dichloropropane		mg/kg	0.021	U		mg/kg	0.022	U		mg/kg	0.023	U
2-Chlorotoluene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
4-Chlorotoluene		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
Benzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Bromobenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Bromochloromethane		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Bromodichloromethane		mg/kg	0.0042	U		mg/kg	0.0045	U		mg/kg	0.0046	U
Bromoform		mg/kg	0.0063	U		mg/kg	0.0067	U		mg/kg	0.0069	U
Bromomethane		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
Carbon tetrachloride		mg/kg	0.011	U		mg/kg	0.011	U		mg/kg	0.011	U
ɔbenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
ɔethane		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
Chloroform		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Chloromethane		mg/kg	0.0074	**R**		mg/kg	0.0079	**R**		mg/kg	0.008	**R**
Dibromochloromethane		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
Dibromomethane		mg/kg	0.011	U		mg/kg	0.011	U		mg/kg	0.011	U
Dichlorodifluoromethane		mg/kg	0.0053	**R**		mg/kg	0.0056	**R**		mg/kg	0.0057	**R**
Ethylbenzene		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
Hexachlorobutadiene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
Isopropylbenzene		mg/kg	0.0084	U		mg/kg	0.009	U		mg/kg	0.0092	U
Methylene chloride		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Naphthalene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Styrene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
Tetrachloroethene		mg/kg	0.0074	U		mg/kg	0.0079	U		mg/kg	0.008	U
Toluene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
Trichloroethene		mg/kg	0.011	U		mg/kg	0.011	U		mg/kg	0.011	U
Trichlorofluoromethane		mg/kg	0.0042	U		mg/kg	0.0045	U		mg/kg	0.0046	U
Vinyl chloride		mg/kg	0.0095	U		mg/kg	0.01	U		mg/kg	0.01	U
cis-1,2-Dichloroethene		mg/kg	0.0063	U		mg/kg	0.0067	U		mg/kg	0.0069	U
cis-1,3-Dichloropropene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
m-,p-Xylene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
n-Butylbenzene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
n-Propylbenzene		mg/kg	0.0021	U		mg/kg	0.0022	U		mg/kg	0.0023	U
o-Xylene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
p-Isopropyltoluene		mg/kg	0.0063	U		mg/kg	0.0067	U		mg/kg	0.0069	U
sec-Butylbenzene		mg/kg	0.0074	U		mg/kg	0.0079	U		mg/kg	0.008	U
tert-Butylbenzene		mg/kg	0.0074	U		mg/kg	0.0079	U		mg/kg	0.008	U
trans-1,2-Dichloroethene		mg/kg	0.0032	U		mg/kg	0.0034	U		mg/kg	0.0034	U
trans-1,3-Dichloropropene		mg/kg	0.0053	U		mg/kg	0.0056	U		mg/kg	0.0057	U
Acetone		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U
2-Butanone		mg/kg	0.01	U		mg/kg	0.01	U		mg/kg	0.01	U

Table 1
Analytical Results for
Volatiles by Method 8260B

ection Date	FIELD BLANK 12/11/00				TRIP BLANK 12/11/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids								
1,1,1,2-Tetrachloroethane		ug/L	0.5	U		ug/L	0.5	U
1,1,1-Trichloroethane		ug/L	0.8	U		ug/L	0.8	U
1,1,2,2-Tetrachloroethane		ug/L	0.8	U		ug/L	0.8	U
1,1,2-Trichloroethane		ug/L	1	U		ug/L	1	U
1,1-Dichloroethane		ug/L	0.5	U		ug/L	0.5	U
1,1-Dichloroethene		ug/L	1.2	U		ug/L	1.2	U
1,1-Dichloropropene		ug/L	1	R		ug/L	1	R
1,2,3-Trichlorobenzene		ug/L	1	U		ug/L	1	U
1,2,3-Trichloropropane		ug/L	3.2	U		ug/L	3.2	U
1,2,4-Trichlorobenzene		ug/L	2	U		ug/L	2	U
1,2,4-Trimethylbenzene		ug/L	1.3	U		ug/L	1.3	U
1,2-Dibromo-3-chloropropane		ug/L	2.6	U		ug/L	2.6	U
1,2-Dibromoethane		ug/L	0.6	U		ug/L	0.6	U
1,2-Dichlorobenzene		ug/L	1	U		ug/L	1	U
1,2-Dichloroethane		ug/L	0.7	U		ug/L	0.7	U
1,2-Dichloropropane		ug/L	0.5	U		ug/L	0.5	U
1,3,5-Trimethylbenzene		ug/L	0.5	U		ug/L	0.5	U
1,3-Dichlorobenzene		ug/L	1.2	U		ug/L	1.2	U
1,3-Dichloropropane		ug/L	0.5	U		ug/L	0.5	U
1,4-Dichlorobenzene		ug/L	1	U		ug/L	1	U
1-Chlorohexane		ug/L	1	U		ug/L	1	U
2,2-Dichloropropane		ug/L	3.5	U		ug/L	3.5	U
2-Chlorotoluene		ug/L	1	U		ug/L	1	U
4-Chlorotoluene		ug/L	0.6	U		ug/L	0.6	U
Benzene		ug/L	0.5	U		ug/L	0.5	U
Bromobenzene		ug/L	1	U		ug/L	1	U
Bromochloromethane		ug/L	0.5	U		ug/L	0.5	U
Bromodichloromethane		ug/L	1	U		ug/L	1	U
Bromoform		ug/L	1.2	U		ug/L	1.2	U
Bromomethane		ug/L	1.1	U		ug/L	1.1	U
Carbon tetrachloride		ug/L	2.1	U		ug/L	2.1	U
[illegible]obenzene		ug/L	0.5	U		ug/L	0.5	U
[illegible]ethane		ug/L	1	U		ug/L	1	U
[illegible]oform		ug/L	0.5	U		ug/L	0.5	U
Chloromethane		ug/L	1.3	U		ug/L	1.3	U
Dibromochloromethane		ug/L	0.6	U		ug/L	0.6	U
Dibromomethane		ug/L	2.4	U		ug/L	2.4	U
Dichlorodifluoromethane		ug/L	1	R		ug/L	1	R
Ethylbenzene		ug/L	1	U		ug/L	1	U
Hexachlorobutadiene		ug/L	1.1	U		ug/L	1.1	U
Isopropylbenzene		ug/L	0.5	U		ug/L	0.5	U
Methylene chloride		ug/L	2	U		ug/L	2	U
Naphthalene		ug/L	1	U		ug/L	1	U
Styrene		ug/L	1	U		ug/L	1	U
Tetrachloroethene		ug/L	1.4	U		ug/L	1.4	U
Toluene		ug/L	1.1	U	0.27	ug/L	1.1	F
Trichloroethene		ug/L	1	U		ug/L	1	U
Trichlorofluoromethane		ug/L	1	U		ug/L	1	U
Vinyl chloride		ug/L	1.1	U		ug/L	1.1	U
cis-1,2-Dichloroethene		ug/L	1.2	U		ug/L	1.2	U
cis-1,3-Dichloropropene		ug/L	1	U		ug/L	1	U
m-,p-Xylene		ug/L	1	U		ug/L	1	U
n-Butylbenzene		ug/L	1.1	U		ug/L	1.1	U
n-Propylbenzene		ug/L	1	U		ug/L	1	U
o-Xylene		ug/L	1.1	U		ug/L	1.1	U
p-Isopropyltoluene		ug/L	1.2	U		ug/L	1.2	U
sec-Butylbenzene		ug/L	1.3	U		ug/L	1.3	U
tert-Butylbenzene		ug/L	1.4	U		ug/L	1.4	U
trans-1,2-Dichloroethene		ug/L	0.6	U		ug/L	0.6	U
trans-1,3-Dichloropropene		ug/L	1	U		ug/L	1	U
Acetone		ug/L	10	U		ug/L	10	U
2-Butanone		ug/L	10	U		ug/L	10	U

KEY:
(1) U: compound was analyzed for but not detected above the MDL
F: Compound was detected above the MDL but below the RL and is considered estimated due to poor precision near the limit of detection
R: Compound was analyzed for but failed to meet a QC requirement and may not be acceptable for use.

Table 1
FOOTNOTES

revised 3/28/01

J -	Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable but quantitatively unreliable.
UJ -	The reported quantitation limit is estimated because associated quality control criteria were not met.
B -	Results are estimated because the compound was detected in an associated blank.
R-	Reported value or quantitation limit is rejected. Resampling or reanalysis may be necessary to verify the presence or absence of the compound.
M-	A matrix interference was present. Reported value or quantitation limit may be an estimate.
F -	Results are qualitatively acceptable but quantitatively unreliable due to uncertainity in precision near the limit of detection.

Table 2
Analytical Results for
Semivolatiles by Method 8270C

Collection Date	PAFB-SS13B-001 12/21/00 & 12/22/00				PAFB-SS13B-002 12/21/00				PAFB-SS13B-005 12/21/00				PAFB-SS13B-007 12/21/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	87	weight %	1		93	weight %	1		97	weight %	1		92	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,2-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,3-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,4-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2,4,5-Trichlorophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2,4,6-Trichlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dichlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dimethylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dinitrophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2,4-Dinitrotoluene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2,6-Dinitrotoluene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Chloronaphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Chlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2-Methylnaphthalene	0.133	mg/kg	0.7	F		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Methylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2-Nitrophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
3,3'-Dichlorobenzidine		mg/kg	6.5	U, D		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R
3-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
4,6-Dinitro-2-methylphenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
4-Bromophenyl-phenylether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
4-Chloro-3-methylphenol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U
4-Chloroaniline		mg/kg	6.5	U, D		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R
4-Chlorophenyl-phenyl ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
4-Methylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
4-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
Acenaphthene	1.2	mg/kg	0.7			mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Acenaphthylene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Anthracene	2.69	mg/kg	0.7			mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(a)anthracene	5.32	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(a)pyrene	4.44	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(b)fluoranthene	4.67	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(g,h,i)Perylene	1.51	mg/kg	0.7			mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(k)fluoranthene	3.34	mg/kg	3.5	F, D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzoic acid		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.6	R
Benzyl alcohol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Bis(2-Chloroethyl)ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Butylbenzylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Chrysene	5.29	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Di-N-Butylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Di-n-octylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dibenzo(a,h)Anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dibenzofuran	0.821	mg/kg	0.7			mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Diethylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dimethylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Fluoranthene	17.4	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Fluorene	1.66	mg/kg	0.7			mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachlorobutadiene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachloroethane		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Indeno(1,2,3-cd)pyrene	1.46	mg/kg	0.7			mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Isophorone		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
N-Nitroso-di-n-propylamine		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
N-Nitrosodiphenylamine		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Naphthalene	0.28	mg/kg	0.7	F		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Nitrobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Pentachlorophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
Phenanthrene	16.5	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Phenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
Pyrene	12.7	mg/kg	3.5	D		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
bis(2-Chloroisopropyl)ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
bis(2-Ethylhexyl)phthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
p-Nitrophenol		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.6	U

Table 2
Analytical Results for
Semivolatiles by Method 8270C

Collection Date	PAFB-SS13B-006 12/21/00				PAFB-SS13B-004 12/21/00				PAFB-SS13B-003 12/21/00				PAFB-SS13B-008 12/21/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	85	weight %	1		83	weight %	1		92	weight %	1		97	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,2-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,3-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,4-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2,4,5-Trichlorophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2,4,6-Trichlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dichlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dimethylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dinitrophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2,4-Dinitrotoluene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2,6-Dinitrotoluene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Chloronaphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Chlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2-Methylnaphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Methylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2-Nitrophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
3,3'-Dichlorobenzidine		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R
3-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
4,6-Dinitro-2-methylphenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
4-Bromophenyl-phenylether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
4-Chloro-3-methylphenol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U
4-Chloroaniline		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R
4-Chlorophenyl-phenyl ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
4-Methylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
4-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
Acenaphthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Acenaphthylene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(a)anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U	0.049	mg/kg	0.7	F
Benzo(a)pyrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(b)fluoranthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(g,h,i)Perylene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(k)fluoranthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzoic acid		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.6	R
Benzyl alcohol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Bis(2-Chloroethyl)ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Butylbenzylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Chrysene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U	0.0481	mg/kg	0.7	F
Di-N-Butylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Di-n-octylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dibenzo(a,h)Anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dibenzofuran		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Diethylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dimethylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Fluoranthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U	0.103	mg/kg	0.7	F
Fluorene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachlorobutadiene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachloroethane		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Isophorone		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
N-Nitroso-di-n-propylamine		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
N-Nitrosodiphenylamine		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Naphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Nitrobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Pentachlorophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
Phenanthrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U	0.0682	mg/kg	0.7	F
Phenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
Pyrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U	0.0789	mg/kg	0.7	F
bis(2-Chloroisopropyl)ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
bis(2-Ethylhexyl)phthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
p-Nitrophenol		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.6	U

Table 2
Analytical Results for
Semivolatiles by Method 8270C

Collection Date	PAFB-SS13B-009 12/21/00				PAFB-SS13B-010 12/21/00				PAFB-SS13B-011 12/21/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	95	weight %	1		95	weight %	1		89	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,2-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,3-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
1,4-Dichlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2,4,5-Trichlorophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2,4,6-Trichlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dichlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dimethylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2,4-Dinitrophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2,4-Dinitrotoluene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2,6-Dinitrotoluene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Chloronaphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Chlorophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2-Methylnaphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
2-Methylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
2-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
2-Nitrophenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
3,3'-Dichlorobenzidine		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R
3-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
4,6-Dinitro-2-methylphenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
4-Bromophenyl-phenylether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
4-Chloro-3-methylphenol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U
4-Chloroaniline		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.3	R
4-Chlorophenyl-phenyl ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
4-Methylphenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
4-Nitroaniline		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
Acenaphthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Acenaphthylene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(a)anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(a)pyrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(b)fluoranthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(g,h,i)Perylene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzo(k)fluoranthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Benzoic acid		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.6	R
Benzyl alcohol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.3	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Bis(2-Chloroethyl)ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Butylbenzylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Chrysene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Di-N-Butylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Di-n-octylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dibenzo(a,h)Anthracene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dibenzofuran		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Diethylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Dimethylphthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Fluoranthene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Fluorene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachlorobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachlorobutadiene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Hexachloroethane		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Isophorone		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
N-Nitroso-di-n-propylamine		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
N-Nitrosodiphenylamine		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Naphthalene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Nitrobenzene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Pentachlorophenol		mg/kg	3.3	U		mg/kg	3.3	U		mg/kg	3.3	U
Phenanthrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
Phenol		mg/kg	0.3	U		mg/kg	0.3	U		mg/kg	0.3	U
Pyrene		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
bis(2-Chloroisopropyl)ether		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
bis(2-Ethylhexyl)phthalate		mg/kg	0.7	U		mg/kg	0.7	U		mg/kg	0.7	U
p-Nitrophenol		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.6	U

KEY:
U: compound was analyzed for but not detected above the MDL
F: Compound was detected above the MDL but below the RL and is considered estimated due to poor precision near the limit of detection
R: Compound was analyzed for but failed to meet a QC requirement and may not be acceptable for use.
D: Results from a subsequent dilution of the sample to bring target analytes within the established calibraton range.

Table 2
FOOTNOTES

revised 3/28/01

J -	Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable but quantitatively unreliable.
UJ -	The reported quantitation limit is estimated because associated quality control criteria were not met.
B -	Results are estimated because the compound was detected in an associated blank.
R-	Reported value or quantitation limit is rejected. Resampling or reanalysis may be necessary to verify the presence or absence of the compound.
M-	A matrix interference was present. Reported value or quantitation limit may be an estimate.
F -	Results are qualitatively acceptable but quantitatively unreliable due to uncertainity in precision near the limit of detection.

Versar INC.

MEMORANDUM

TO: Rich Habrukowich, Versar, Bristol, PA

FROM: Donna Oswald, Versar, Lombard, IL DAO

DATE: February 7, 2001

RE: **Data Validation/Usability Report for Plattsburg AFB**
SS-013, West of Weapons Storage Area, Former UST Area
Post-excavation Confirmation Soil Sample at Sample Location No. 16

1.0 INTRODUCTION

On December 12, 2000, one post-excavation soil sample, one Trip Blank and one Field Blank were collected at Plattsburg AFB SS-013 (Weapons Storage Area) at Sample Location No. 16 and sent to Kemron Environmental Services (Kemron), located in Marietta, Ohio, for testing. Analyses were preformed in accordance with Air Force Center for Environmental Excellence (AFCEE) Quality Assurance Project Plan (QAPP) Version 3.0 (March 1998) with the exception of several laboratory variances for EPA Method SW260B volatile organics and EPA Method SW8270C semivolatile organics. The analytical results are presented in Tables 1 and 2. The approved laboratory variances from the AFCEE QAPP, case narratives and chain-of-custody forms are included as attachments to this memorandum.

The data were qualified in accordance with the validation protocols in the AFCEE QAPP, Version 3.0 (March 1998). The laboratory performed the initial review of the data package, and qualified the data in accordance with AFCEE QAPP. Final qualification of the data was made by the Versar project chemist based on the results of the data validation. The following items were reviewed during the data validation process: chain of custody, sample condition upon receipt, extraction/analysis holding times, method detection/reporting limits, internal standards, surrogates, matrix spike/ matrix spike duplicate (MS/MSD) analysis results, laboratory control sample (LCS) recoveries, initial and continuing calibrations, second source calibration verification standards, laboratory method and field QC blank contamination, instrument tuning, and report completeness.

The hierarchy of AFCEE qualifiers from most to least severe are as follows; "R" (rejected), "M" (matrix effect present), "F" (results above method detection limit, but below reporting limit), "J" (estimated value), "B" (blank contamination) and "U" (not detected).

The samples were received by Kemron intact and under proper chain-of-custody. The temperature of the sample cooler upon receipt at the laboratory was 1°C. This was outside the normal recommended range of 4 $\pm$ 2°C but should not impact the samples. Laboratory sample receipt records indicate that the sample cooler contained ice upon receipt. The chain-of-custody forms are included as an attachment.

2.0 VALIDATION

Volatile Data (Method 8260B)

All project specific QC criteria were met, except as indicated below.

No target analytes were detected above the reporting limit (RL) in the laboratory method blanks. Trace levels (> MDL but < RL) of 1,2,4-Trimethylbenzene was detected in one method blank. Positive results for these compounds in the associated field samples are likely either artifacts not representative of actual field conditions or biased high as a result of the observed laboratory contamination.

Trace levels of the volatile compound toluene were detected in both the trip blank and field blank. This compound was detected in the aqueous laboratory preparation blank associated with the trip and field blanks. This compound was not detected in any of the associated field samples. Per the AFCEE QAPP, qualification is only required when blank contamination above the RL is observed. The concentrations in the trip blank and field blank are most likely artifacts.

In the initial calibration, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (Methyl tert butyl ether, 1,1,2,2-Tetrachloroethane and 1,2-Dibromo-3-chlororpropane), or a quadratic 2nd order curve (Vinyl Chloride) than by using an average response factor. Correlation coefficient (linear) or coefficient of determination (quadratic) acceptance criteria as specified in Table 7.2.9-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.9-3 of the AFCEE QAPP were met for all other compounds.

The second source calibration verification run on 12/18/00 produced percent difference results for Dichlorodifluoromethane and 1,1-Dichloropropene that exceeded the control limits established in the AFCEE QAPP. Excessive variations in the results for the second source standard may indicate problems with the initial calibration for that compound. Both results and non-detects (reporting limits) for Dichlorodifluoromethane and 1,1-Dichloropropene are qualified "R" (rejected) and should not be used for any decision making purposes.

In the daily continuing calibrations, the compounds Chloromethane and 1,2-Dibromo-3-chloropropane exceeded the percent difference control limits. Standards of these compounds are known for their instability. Minor variability in instrument response may cause bias in positive results but does not affect the laboratory's ability to detect these compounds. Non-detect results for Chloromethane and 1,2-Dibromo-3-chloropropane should be fully acceptable for use.

The laboratory LCS % recovery for Dichlorodifluoromethane, Chloromethane, Vinyl Chloride and 1,1,1,2-Tetrachlrooethane exceeded the control limits. This result indicates the possibility of high bias. The compound were not reported in any of the associated samples, therefore no qualification was required.

Several target analytes were detected below the RL but above the MDL. They are considered to be trace levels and were qualified "F" in accordance with the QAPP. These are considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

Semivolatile Data (Method 8270C)

All project specific QC criteria were met, except as indicated below.

In the initial calibration, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (2,4,6-Tribromophenol) or a quadratic 2nd order curve (2,4-Dinitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol, and Pentachlorophenol) than by using an average response factor. Correlation coefficient (linear) or coefficient of determination (quadratic) acceptance criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for all other compounds.

The second source calibration (SSC) standard results for 4-Chloroanaline exceeded the QC acceptance limits for % difference relative to the initial calibration. In accordance with the AFCEE QAPP, the associated results for these two compounds in all samples are qualified "R". During the continuing calibration, the % difference for the compounds Benzoic Acid and 3,3'-Dichlorobenzidine exceeded the quality control limits on one analysis date. Calibration results indicate that instrument sensitivity for these compounds was higher on the date in question. In accordance with the AFCEE QAPP, the results for these these compounds in the associated sample (SS13-028B) are qualified "R". None of these compounds were detected in the associated sample. Minor exceedence of daily calibration drift or SSC criteria has no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. The non-detect results for these analytes should be acceptable for use.

Bis(2-ethylhexyl)phthalate was detected in the field sample. This compound while not detected in the associated laboratory preparation blank is a pervasive contaminant. It is used as a plasticizer in many of the items used in the laboratory and the field. The field result is believed to be an artifact and not representative of actual field conditions.

One target analyte was detected below the RL but above the MDL. This result is considered to be a trace level and was qualified "F" in accordance with the QAPP. It is considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

3.0 COMPLETENESS

The AFCEE QAPP goal for completeness is 90% for soil matrixes. Percent completeness is defined as the number of valid results divided by the total number of individual target compound results. Valid results are those that have not been rejected (qualified "R"). The percent completeness for each method and matrix is as follows:

Method	Matrix	Percent Completeness
Volatiles (SW8260B)	Soil	95%
	Field QC (Aqueous)	97%
Semivolatiles (SW8270C)	Soil	95%
	Field QC (Aqueous)	N/A

The completeness goal of 90% was met for the soil and field QC samples.

ATTACHMENTS

CASE NARRATIVES

REPORT NARRATIVE
GC/MS VOLATILE ORGANICS

KEMRON Login No: L0012290

METHOD

Preparation: SW- 846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The alternate source analyzed on HPMS-2 on 12/18/00 yielded %D's for dichlorodifluoromethane and 1,1-dichloropropene that exceeded the criteria of less than +/- 25 %.

The alternate source analyzed on 12/12/00 on HPMS-11 yielded a % D for dichlorodifluoromethane that exceeded the criteria of less that +/- 25 %. All other acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on 12/15/00 on HPMS11 yielded %D's for chloromethane and 1,2-dibromo-3-chloropropane that exceeded the criteria of less than +/- 20 %. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Samples: The soil LCS analyzed on 12/15/00 on HPMS11 yielded % recoveries for dichlorodifluoromethane, chloromethane, vinyl chloride, and 1,1,1,2-tetrachloroethane that were above the upper advisory limits.

The water LCS analyzed on 12/16/00 on HPMS2 yielded % recoveries for dichlorodifluoromethane, chloromethane, vinyl chloride, trichlorofluoromethane, and 1,1-dichloropropene that were above the upper advisory limits. These LCS outliers were not detected above reporting limits in any of the associated samples. All other acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Internal Standards: All acceptance criteria were met.
Surrogates: All acceptance criteria were met.
Samples: Results qualified in accordance with AFCEE 98 QAPP, version 3.0.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: CMS REVIEWED: Stephanie J. Sipe DATE: 1/3/01

Rev. 7/14/00

REPORT NARRATIVE
GC/MS SEMIVOLATILE ORGANICS

KEMRON Report No.: L0012290

METHOD

Preparation: SW- 846 3550B(Soils) 3510C(Waters)
Analysis: SW-846 8270C

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The alternate source standard analyzed on 12/16/00 on HPMS-7 yielded a %D for 4-choloraniline that exceeded the criteria of +/-25%. All other acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on 12/21/00 pm on HPMS-7 yielded %D's for benzoic acid and 3,3'-dichlorobenzidine that exceeded the criteria of less than +/-20%. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.
Laboratory Control Samples: All acceptance criteria were met.
Matrix Spikes: The MS/MSD results were not associated with this sample delivery group..

SAMPLES

Internal Standards: All acceptance criteria were met.
Surrogates: All acceptance criteria were met.
Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: CLK REVIEWED: Stephanie Repe DATE: 1/3/01

Rev. 6/00

CHAIN OF CUSTODIES

COC No. B 103167

109 Starlite Park
Marietta, OH 45750

KEMRON
ENVIRONMENTAL SERVICES
CHAIN-OF-CUSTODY RECORD

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Project Contact: BRYAN FOLEY
Contact Phone #: 215 913 1132
Turn Around Requirements: STANDARD
Location: PLATTSBURGH, NY
Project #: 4512.441
Project Name: SS13 # 3578
Sampler (print): BRYAN FOLEY
Signature:

Program: ☐ NPDES ☐ AFCEE ☐ RCRA ☐ USACE ☐ Other

Mail Report To: RICH HARBUCKICK
1900 FROST RD. SUITE 10
BRISTOL, PA 19007

ERPIMS REQUIRED FIELDS

Sample I.D. No / Location I.D.	SBD	SED	Date	Time	Comp*	Grab	NUMBER of CONTAINERS	VOA	PAH				SACODE	COOLER ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT	Comments
AFB-SS13-028B			12/12/00	10:30		X	2	X	X									
TRIP BLANK			12/12/00	↓			1	X	X	ND		12/13						
FIELD BLANK			12/12/00				1	X	X									

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
	12/12/00	13:15					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Cooler Temp in °C	Remarks
			Valerie Booth	12/13/00	12:06	1	C/C Sealed Samples Intact

* Homogenize all composite samples prior to analysis

Page ____ of ____

LABORATORY VARIANCES

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
ENVIRONMENTAL RESTORATION SERVICES
BROOKS AFB, TX 78235

29 Nov 00

MEMORANDUM FOR HQ AFCEE/ERB
ATTENTION: Roy Willis/RTC/Plattsburg AFB

FROM: Burt Harrison
Environmental Chemistry Consultant
AFCEE/ERC
3207 North Road
Brooks AFB, Tx 78235

SUBJECT: Environmental Chemistry Review of the Kemron Laboratory QAPP Variances Prepared by Versar for the Plattsburg AFB Project.

References: (a) Handbook for the Installation Restoration Program (IRP) - Remedial Investigation/Feasability Studies (RI/FS), AFCEE, Sept. 1993. (b) U.S. EPA Test Methods for Evaluating Solid Wastes (SW 846), third edition, July 1992. (c) HQ AFCEE Quality Assurance Project Plan, March 1998.

A review of the Quality Assurance Project Plan variances for the Plattsburg AFB, NY project prepared by Versar are acceptable with the following exceptions. Recommend sample results be reported on a dry weight basis except for SW5035 samples where it is not possible. Concur with all Reporting Limit variances if approved by the New York State RPM and the USEPA RPM. Do not concur with calibration variances. Do not concur with recovery limits lower than 20% for any analyte for any analytical procedure. Concur with the MDL variance request after a survey of a number of AFCEE laboratories concerning this MDL issue requirement.

If you have any questions regarding this review or these comments, please contact me at (210) 536-5226.

Burt Harrison
Environmental Chemistry Consultant
Consultant Operations Division
AFCEE/ERC

KEMRON Environmental Services, Inc.
Variance Request AFCEE QAPP Version 3.0, March 1998
Versar – Plattsburgh, NY
Revised 11/20/00

QAPP Section 4.3.1- MDL Spike Levels

AFCEE REQUIREMENT:

Item (6) of Section 4.3.1 states "If the spike level in step 2 is more than five times the calculated MDL, repeat the process using a smaller spiking level."

VARIANCE REQUEST:

The laboratory requests a variance to change "five times" to read "ten times".

JUSTIFICATION:

The analytes that fail the "five times" criteria are on those instruments or methods that are very precise and have low relative standard deviations. Any procedure with a relative standard deviation less than 6.67% (at the spiked level) will produce MDLs that do not meet the "fives times" criteria. Furthermore, this process tends to underestimate the MDL, so repeating the process at a lower spiking level may not produce meaningful data, particularly, if the spike level is below the quantitation limit (lowest calibration standard).

If so desired, the MDLs for those few analytes that fail the "five times" criteria MDL could be assigned a value equal to one-tenth the spike level, or one-half the project required RL, whichever is higher. This will assure that all project DQOs related to the MDLs and RLs will be met.

KEMRON meets the EPA criteria that the spike concentration should not exceed ten times the estimated MDL and AFCEE has accepted this interpretation on previous projects.

QAPP Section 8.2 – Wet Weight vs. Dry Weight

AFCEE REQUIREMENT:

Section 8.2 of the AFCEE QAPP V3.0 requires that "A wet weight aliquot of sample equivalent to the method specified dry weight aliquot of sample shall be taken for analysis."

KEMRON VARIANCE REQUEST:

The laboratory requests a variance to allow the method prescribed sample weights to be determined on the "as-received" basis, as specified in SW846.

JUSTIFICATION:

1) Increasing the amount of wet weight changes the sample/solvent ratios, which may significantly reduce the recovery of analytes from the matrix, resulting in poor surrogate recovery and more R flagged data. Altering the sample/solvent reagent ratios is a direct violation of the SW-846 methods.2) Organic extraction methods such as 3540, 3545 and 3550 have a limit on the quantity of sample they can effectively process. 3) The QAPP procedure cannot be applied to samples collected by method 5035 for volatile organic analysis.

QAPP Section 7.2.9-1 SW8260 Reporting Limits

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes:

Analyte	AFCEE RL (ug/L)	Proposed RL (ug/L)
1,1,2,2 Tetrachloroethane	0.4	0.8
1,1-Dichloroethane	0.4	0.5
1,2,3-Trichlorobenzene	0.3	1
1,2,4-Trichlorobenzene	0.4	2
1,2-Dichlorobenzene	0.3	1
1,2-Dichloropropane	0.4	0.5
1,3-Dichloropropane	0.4	0.5
1-Chlorohexane	0.5	1
1,4-Dichlorobenzene	0.3	1

2-Chlorotoluene	0.4	1
Benzene	0.4	0.5
Bromobenzene	0.3	1
Bromochloromethane	0.4	0.5
Bromodichloromethane	0.8	1
Chlorobenzene	0.4	0.5
Chloroform	0.3	0.5
Ethylbenzene	0.6	1
Methylene Chloride	0.3	2
n-propylbenzene	0.4	1
Naphthalene	0.4	1
Styrene	0.4	1
Trichlorofluoromethane	0.8	1
Dibromochloromethane	0.5	0.6
1,2-Dichloroethane	0.6	0.7
m,p-Xylene		1

JUSTIFICATION:

The laboratory low calibration standard is not at the AFCEE RL. The proposed RL will meet the project requirements.

AFCEE REQUIREMENT:

Table 7.2.9-1 lists m-Xylene and p-Xylene as separate analytes.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to report m-Xylene and p-Xylene as one analyte, since the compounds co-elute.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests that method 5035 soil preservation be limited to freezing and that the holding time be accepted as 14 days.

JUSTIFICATION:

This variance is needed to prevent the degradation of performance of several (8260) target analytes and the failure of these analytes to meet the QAPP 3.0 quality control requirements for the second source verification and continuing calibration verification (CCV). The analytes most affected by affected by the sodium bisulfate are clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane. These compounds have a high probability of failing ICV/CCV criteria, resulting in R flags on all samples. Using the freezing option will eliminate these problems. The freezing option and 14-day hold time is being accepted by some states and selected US-EPA regions.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests a variance to change the second source initial calibration verification (ICV) and continuing calibration verification (CCV) criteria from +/- 25 % to +/- 40% for clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane.

JUSTIFICATION:

These compounds are very prone to ICV/CCV failure when sodium bisulfate is used as a preservative. Without the variance these compounds will probably have to be R-flagged.

QAPP Section 7.2.10 SW8270 Surrogate Control Limit

AFCEE REQUIREMENT:

Table 7.2.10-2 lists the acceptance limit for phenol-D5 as 25-125 % recovery in water.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to use 10 – 125 % recovery as the acceptance limit in water

JUSTIFICATION:

Phenol recovery above 10% is not achievable routinely due to poor extraction efficiency. Industry-wide statistics do not support the 25 – 125 % recovery limit.

QAPP Section 7.2.10 SW8270 LCS Control Limits

AFCEE REQUIREMENT: see table below

VARIANCE REQUEST:

LCS Control Limit variances for 8270 compounds in water:

Compound	AFCEE LCS LIMITS	PROPOSED LCS LIMITS
Phenol	25-125	20-125
2-Chloronaphthalene	60-125	49-120
Hexachlorocyclopentadiene	Delete as a target analyte	
Benzoic Acid	25-162	20-125
3,3'-Dichlorobenzidine	29-175	20-125
Phenol-d5 (surrogate)	25-125	20-125

JUSTIFICATION:

These compounds are industry-wide poor performers and consistentiy give recoveries below the AFCEE lower control limits. Hexachlorocyclopentadiene has been proposed for deletion as an analyte from the AFCEE 3.1 QAPP. The proposed limits are taken from the AFCEE 3.1 QAPP.

QAPP Section 7.2.15-1 SW6010B ICP

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes in water:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Zinc	0.01	0.02

JUSTIFICATION:

The proposed RL will meet the project requirements.

QAPP Section 7.2.17-27 SW7000 Method Variance - Water

AFCEE REQUIREMENT:

AFCEE projects often specify that arsenic, antimony, chromium, cadmium, lead, selenium, thallium and vanadium shall be performed by their respective 7000 – GFAA methods:

Metal	Method	AFCEE RL (mg/L)
Arsenic	7060A	0.005
Chromium	7191	0.005
Cadmium	7131A	0.001
Lead	7421	0.005
Vanadium	7911	0.004
Antimony	7041	0.005
Selenium	7740	0.005
Thallium	7841	0.001

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. Analyzing these metals by ICP-AES or ICP-MS will not elevate the reporting limits, but will eliminate the inherent errors of GFAA methods:

Metal	Method	Proposed RL (mg/L)
Arsenic	6010B/6020A	0.005
Chromium	6010B	0.005
Cadmium	6010B	0.001
Lead	6010B/6020A	0.005
Vanadium	6010B	0.004
Antimony	6020A	0.005
Selenium	6020A	0.005
Thallium	6020A	0.001

JUSTIFICATION:

The proposed RLs are equal to the 7000 method RLs and meet the project DQOs.

QAPP Section 7.2.17-27 SW7000 Method Variance - Soil

AFCEE REQUIREMENT:

AFCEE DQOs often specifies that arsenic, antimony, selenium, thallium, chromium, cadmium, lead and vanadium be performed by their respective 7000 – GFAA methods:

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. KEMRON will use a method that will meet the project action limits, either by ICP-AES or ICP-MS. The following RLs are proposed:

	AFCEE 7000 RL (mg/kg)	Proposed 6010 RL (mg/kg)	Proposed 6020A RL (mg/kg)
Antimony	0.5	1	0.2
Arsenic	0.5	1	0.5
Lead	0.5	1	0.5
Selenium	0.5	1	0.5
Vanadium	0.4	0.5	N/A
Chromium	0.5	0.5	N/A
Cadmium	0.1	0.1	N/A
Thallium	0.1	2	0.1

JUSTIFICATION:

Project DQOs will not be affected, and the inherent errors of GFAA methods will be eliminated.

QAPP Section 7.2.17-27 SW7000 Reporting Limits - Soil

KEMRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/kg)	Proposed RL (mg/kg)
Thallium	0.1	0.25

JUSTIFICATION:

The laboratory MDL does not support the AFCEE RL. This variance is needed if 7000 methods are required.

KEMRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Thallium	0.001	0.005
Antimony	0.005	0.006

JUSTIFICATION:

The laboratory MDLs for the 7000 methods do not support the AFCEE RL.This variance is needed if 7000 methods are required.

TABLES

Table 1
Analytical Results for
Volatiles by SW846 8260B

Sample ID	PAFB-SS13-028B				TRIP BLANK				FIELD BLANK			
Collection Date	12/12/00				12/12/00				12/12/00			
COMPOUND	Results	UNITS	RL	Qualifier[1]	Results	UNITS	RL	Qualifier[1]	Results	UNITS	RL	Qualifier[1]
Percent Solids	86	weight %	1		NA				NA			
1,1,1,2-Tetrachloroethane		mg/kg	0.0035	U		ug/L	0.5	U		ug/L	0.5	U
1,1,1-Trichloroethane		mg/kg	0.0047	U		ug/L	0.8	U		ug/L	0.8	U
1,1,2,2-Tetrachloroethane		mg/kg	0.0023	U		ug/L	0.8	U		ug/L	0.8	U
1,1,2-Trichloroethane		mg/kg	0.0058	U		ug/L	1	U		ug/L	1	U
1,1-Dichloroethane		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
1,1-Dichloroethene		mg/kg	0.007	U		ug/L	1.2	U		ug/L	1.2	U
1,1-Dichloropropene		mg/kg	0.0058	R		ug/L	1	R		ug/L	1	R
1,2,3-Trichlorobenzene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
1,2,3-Trichloropropane		mg/kg	0.023	U		ug/L	3.2	U		ug/L	3.2	U
1,2,4-Trichlorobenzene		mg/kg	0.0023	U		ug/L	2	U		ug/L	2	U
1,2,4-Trimethylbenzene	0.000802	mg/kg	0.0081	F		ug/L	1.3	U		ug/L	1.3	U
1,2-Dibromo-3-chloropropane		mg/kg	0.012	R		ug/L	2.6	U		ug/L	2.6	U
1,2-Dibromoethane		mg/kg	0.0035	U		ug/L	0.6	U		ug/L	0.6	U
1,2-Dichlorobenzene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
1,2-Dichloroethane		mg/kg	0.0035	U		ug/L	0.7	U		ug/L	0.7	U
1,2-Dichloropropane		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
1,3,5-Trimethylbenzene	0.0005	mg/kg	0.0035	F		ug/L	0.5	U		ug/L	0.5	U
1,3-Dichlorobenzene		mg/kg	0.007	U		ug/L	1.2	U		ug/L	1.2	U
1,3-Dichloropropane		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
1,4-Dichlorobenzene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
1-Chlorohexane		mg/kg	0.0035	U		ug/L	1	U		ug/L	1	U
2,2-Dichloropropane		mg/kg	0.023	U		ug/L	3.5	U		ug/L	3.5	U
2-Chlorotoluene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
4-Chlorotoluene		mg/kg	0.0035	U		ug/L	0.6	U		ug/L	0.6	U
Benzene		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
Bromobenzene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
Bromochloromethane		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
Bromodichloromethane		mg/kg	0.0047	U		ug/L	1	U		ug/L	1	U
Bromoform		mg/kg	0.007	U		ug/L	1.2	U		ug/L	1.2	U
Bromomethane		mg/kg	0.0058	U		ug/L	1.1	U		ug/L	1.1	U
Carbon tetrachloride		mg/kg	0.012	U		ug/L	2.1	U		ug/L	2.1	U
Chlorobenzene		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
Chloroethane		mg/kg	0.0058	U		ug/L	1	U		ug/L	1	U
Chloroform		mg/kg	0.0023	U		ug/L	0.5	U		ug/L	0.5	U
Chloromethane		mg/kg	0.0081	R		ug/L	1.3	U		ug/L	1.3	U
Dibromochloromethane		mg/kg	0.0035	U		ug/L	0.6	U		ug/L	0.6	U
Dibromomethane		mg/kg	0.012	U		ug/L	2.4	U		ug/L	2.4	U
Dichlorodifluoromethane		mg/kg	0.0058	R		ug/L	1	R		ug/L	1	R
Ethylbenzene		mg/kg	0.0035	U		ug/L	1	U		ug/L	1	U
Hexachlorobutadiene		mg/kg	0.0058	U		ug/L	1.1	U		ug/L	1.1	U
Isopropylbenzene		mg/kg	0.0093	U		ug/L	0.5	U		ug/L	0.5	U
Methylene chloride		mg/kg	0.0023	U		ug/L	2	U		ug/L	2	U
Naphthalene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
Styrene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
Tetrachloroethene		mg/kg	0.0081	U		ug/L	1.4	U		ug/L	1.4	U
Toluene		mg/kg	0.0058	U	0.27	ug/L	1.1	F	0.26	ug/L	1.1	F
Trichloroethene		mg/kg	0.012	U		ug/L	1	U		ug/L	1	U
Trichlorofluoromethane		mg/kg	0.0047	U		ug/L	1	U		ug/L	1	U
Vinyl chloride		mg/kg	0.01	U		ug/L	1.1	U		ug/L	1.1	U
cis-1,2-Dichloroethene		mg/kg	0.007	U		ug/L	1.2	U		ug/L	1.2	U
cis-1,3-Dichloropropene		mg/kg	0.0058	U		ug/L	1	U		ug/L	1	U
m-,p-Xylene		mg/kg	0.0058	U		ug/L	1	U		ug/L	1	U
n-Butylbenzene	0.000395	mg/kg	0.0058	F		ug/L	1.1	U		ug/L	1.1	U
n-Propylbenzene		mg/kg	0.0023	U		ug/L	1	U		ug/L	1	U
o-Xylene		mg/kg	0.0058	U		ug/L	1.1	U		ug/L	1.1	U
p-Isopropyltoluene	0.000314	mg/kg	0.007	F		ug/L	1.2	U		ug/L	1.2	U
sec-Butylbenzene		mg/kg	0.0081	U		ug/L	1.3	U		ug/L	1.3	U
tert-Butylbenzene		mg/kg	0.0081	U		ug/L	1.4	U		ug/L	1.4	U
trans-1,2-Dichloroethene		mg/kg	0.0035	U		ug/L	0.6	U		ug/L	0.6	U
trans-1,3-Dichloropropene		mg/kg	0.0058	U		ug/L	1	U		ug/L	1	U

KEY:
(1) U: compound was analyzed for but not detected above the MDL
F: Compound was detected above the MDL but below the RL and is considered estimated due to poor precision near the limit of detection
R: Compound was analyzed for but failed to meet a QC requirement and may not be acceptable for use.

Table 2
Analytical Results for
Semivolatiles by SW846 8270C

Sample ID	PAFB-SS13-028B			
Collection Date	12/12/00			
COMPOUND	Results	UNITS	RL	Qualifier
Percent Solids	86	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.71	U
1,2-Dichlorobenzene		mg/kg	0.71	U
1,3-Dichlorobenzene		mg/kg	0.71	U
1,4-Dichlorobenzene		mg/kg	0.71	U
2,4,5-Trichlorophenol		mg/kg	3.3	U
2,4,6-Trichlorophenol		mg/kg	0.3	U
2,4-Dichlorophenol		mg/kg	0.3	U
2,4-Dimethylphenol		mg/kg	0.3	U
2,4-Dinitrophenol		mg/kg	3.3	U
2,4-Dinitrotoluene		mg/kg	0.71	U
2,6-Dinitrotoluene		mg/kg	0.71	U
2-Chloronaphthalene		mg/kg	0.71	U
2-Chlorophenol		mg/kg	0.3	U
2-Methylnaphthalene		mg/kg	0.71	U
2-Methylphenol		mg/kg	0.3	U
2-Nitroaniline		mg/kg	3.3	U
2-Nitrophenol		mg/kg	0.3	U
3,3'-Dichlorobenzidine		mg/kg	1.3	R
3-Nitroaniline		mg/kg	3.3	U
4,6-Dinitro-2-methylphenol		mg/kg	3.3	U
4-Bromophenyl-phenylether		mg/kg	0.71	U
4-Chloro-3-methylphenol		mg/kg	1.3	U
4-Chloroaniline		mg/kg	1.3	R
4-Chlorophenyl-phenyl ether		mg/kg	0.71	U
4-Methylphenol		mg/kg	0.3	U
4-Nitroaniline		mg/kg	3.3	U
Acenaphthene		mg/kg	0.71	U
Acenaphthylene		mg/kg	0.71	U
Anthracene		mg/kg	0.71	U
Benzo(a)anthracene		mg/kg	0.71	U
Benzo(a)pyrene		mg/kg	0.71	U
Benzo(b)fluoranthene		mg/kg	0.71	U
Benzo(g,h,i)Perylene		mg/kg	0.71	U
Benzo(k)fluoranthene		mg/kg	0.71	U
Benzoic acid		mg/kg	1.6	R
Benzyl alcohol		mg/kg	1.3	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.71	U
Bis(2-Chloroethyl)ether		mg/kg	0.71	U
Butylbenzylphthalate		mg/kg	0.71	U
Chrysene		mg/kg	0.71	U
Di-N-Butylphthalate		mg/kg	0.71	U
Di-n-octylphthalate		mg/kg	0.71	U
Dibenzo(a,h)Anthracene		mg/kg	0.71	U
Dibenzofuran		mg/kg	0.71	U
Diethylphthalate		mg/kg	0.71	U
Dimethylphthalate		mg/kg	0.71	U
Fluoranthene		mg/kg	0.71	U
Fluorene		mg/kg	0.71	U
Hexachlorobenzene		mg/kg	0.71	U
Hexachlorobutadiene		mg/kg	0.71	U
Hexachlorocyclopentadiene		mg/kg	0.71	U
Hexachloroethane		mg/kg	0.71	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.71	U
Isophorone		mg/kg	0.71	U
N-Nitroso-di-n-propylamine		mg/kg	0.71	U
N-Nitrosodiphenylamine		mg/kg	0.71	U
Naphthalene		mg/kg	0.71	U
Nitrobenzene		mg/kg	0.71	U
Pentachlorophenol		mg/kg	3.3	U
Phenanthrene		mg/kg	0.71	U
Phenol		mg/kg	0.3	U
Pyrene		mg/kg	0.71	U
bis(2-Chloroisopropyl)ether		mg/kg	0.71	U
bis(2-Ethylhexyl)phthalate	0.0468	mg/kg	0.71	F
p-Nitrophenol		mg/kg	1.6	U

KEY:

(1) U: compound was analyzed for but not detected above the MDL
F: Compound was detected above the MDL but below the RL and is considered estimated due to poor precision near the limit of detection
R: Compound was analyzed for but failed to meet a QC requirement and may not be acceptable for use.

Versar INC.

MEMORANDUM

TO: Rich Habrukowich, Versar, Bristol, PA

FROM: Donna Oswald, Versar, Lombard, IL

DATE: January 18, 2001

RE: **Data Validation/Usability Report for Plattsburgh AFB**
SS-013, Weapons Storage Area,
Building 3578 UST Area Samples

1.0 INTRODUCTION

On November 20 and 21, 2000, twenty four soil samples, and two matrix spike/matrix spike duplicate pairs (MS/MSD) were collected at Plattsburgh AFB SS-013 (Weapons Storage Area) from the limits of excavation of the former UST area and stockpiled soil that was removed from the excavation. The samples were sent to Kemron Environmental Services (Kemron), located in Marietta, Ohio, for testing. Analyses were preformed in accordance with Air Force Center for Environmental Excellence (AFCEE) Quality Assurance Project Plan (QAPP) Version 3.0 (March 1998) with the exception of several laboratory variances for EPA Method SW260B volatile organics and EPA Method SW8270C semivolatile organics. The analytical results are presented in Table 1. The laboratory variations from the AFCEE QAPP and case narratives are included as attachments to this memorandum.

The data were qualified in accordance with the validation protocols in the AFCEE QAPP, Version 3.0 (March 1998). The laboratory performed the initial review of the data package, and qualified the data in accordance with the AFCEE QAPP requirements. Final qualification of the data was made by the Versar project chemist based on the results of the data validation. The following items were reviewed during the data validation process: chain of custody, sample condition upon receipt, extraction/analysis holding times, method detection/reporting limits, internal standards, surrogates, matrix spike/matrix spike duplicate (MS/MSD) analysis results, laboratory control sample (LCS) recoveries, initial and continuing calibrations, second source calibration verification standards, laboratory method and field QC blank contamination, instrument tuning, and report completeness.

The hierarchy of AFCEE qualifiers from most to least severe are as follows; "R" (rejected), "M" (matrix effect present), "F" (results above method detection limit, but below reporting limit), "J" (estimated value), "B" (blank contamination), "U" (not detected) and "D" (sample analyzed at a dilution).

The samples were received by Kemron intact and under proper chain-of-custody. The temperature of the sample cooler upon receipt at the laboratory was 1°C.

2558 PEARL BUCK ROAD • SUITE 1 • BRISTOL, PENNSYLVANIA 19007-6894 • TELEPHONE (215) 788-7844 • FAX (215) 788-8680

2.0 VALIDATION

Volatile Data (Method 8260B)

All project specific QC criteria were met, except as indicated below:

No target analytes were detected above the reporting limit (RL) in the laboratory method blanks. Trace levels (> MDL, but < RL) of several target analytes were detected. Acetone, Trichloroethene, and 1,2,4-Trimethylbenzene were detected in one method blank, while 1,2,4-Trimethylbenzene and p-Isopropyltoluene were detected in the other laboratory method blanks. Positive results for these compounds in the associated field samples are likely either artifacts and therefore not representative of actual field conditions or biased high as a result of the observed laboratory contamination.

In the Volatile Second Source Calibration standard (SSC), the results for the compound 1,1-Dichloropropene exceeded the control limits specified by the AFCEE QAPP. Excessive variations in the results for the second source standard may indicate problems with the initial calibration for that compound. Both results and non-detects (reporting limits) for 1,1-Dichloropropene are qualified "R" (rejected) and should not be used for any decision making purposes.

In the Continuing Calibration Verification (CCV) run on 12/2/00, the results for the compounds Chloroethane, Trichlorofluoromethane and Naphthalene exceeded the %D limits specified in the AFCEE QAPP. In the CCV run on 12/3/00 the results for the compound Dichlorodifluoromethane exceeded the control limits specified by the AFCEE QAPP. Positive results for these compounds in the associated samples are qualified "R" (rejected) and should not be used for any decision making purposes.

In the Volatile Laboratory Control Sample (LCS) analyzed on 12/2/00, the results for the compounds Dichlorodifluoromethane, Vinyl Chloride, Bromomethane, Chloromethane, 1,1,2,2-Tetrachloroethane and Chloroethane were greater than the control limits in the AFCEE QAPP. The LCS analyzed on 12/3/00 yielded results for Dichlorodifluoromethane, Chloromethane, Chloroethane, Trichlorofluoromethane, and 1,1,2,2-Tetrachloroethane that were all above the control limits specified in the AFCEE QAPP. These results indicate the possibility of high bias; none of these compounds were reported in any of the associated samples, therefore no qualification is required.

The Volatile Surrogate Recovery for 4-Bromofluorobenzene exceeded the upper control limit specified in the AFCEE QAPP in samples SS13-028, SS13-039, SS13-043, and SS13-044. The laboratory indicated that the problem was due to hydrocarbon interference with the late eluting compounds. All positive results in the associated samples are qualified "J" (estimated value) due to possible high bias.

The sample chromatograms indicate that numerous samples exhibited a high hydrocarbon background associated with the later eluting (heavier) compounds. These samples were subsequently analyzed at a 5-fold dilution to either quantitate higher levels of target analytes an/or reduce the observed hydrocarbon background levels. The dilution resulted in a corresponding 5-fold increase in reporting limits.

In the MS/MSD analyses (performed on samples SS-13-34 and SS-13-39), high and low bias was observed for a number of Volatile compounds. The associated LCS results were acceptable (except for Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Chloroethane, and Trichlorofluoromethane) indicating a matrix effect is responsible for the other observed out of control recoveries. Associated results in all samples have been qualified with a "M". Trace amounts of many of these compounds were detected in one or more of the associated field samples. The bias should not preclude the use of these results to demonstrate compliance with action levels.

Several target analytes were detected below the RL but above the MDL. They are considered to be trace levels and were qualified "F" in accordance with the QAPP. These are considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

Semivolatile Data (Method 8270C)

All project specific QC criteria were met, except as indicated below.

In the initial calibration, the laboratory reported that several target compounds were more accurately quantitated using a linear regression (hexachlorocyclopentadiene, 2,4,6-tribromophenol and di-n-octyl phthalate), or a quadratic 2nd order curve (benzoic acid, 24-dinitrophenol, 4,6-dinitro-2-methyl phenol and pentachlorophenol) than by using an average response factor. Linearity acceptance criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for these compounds. Minimum response factor and % relative standard deviation criteria as specified in Table 7.2.10-3 of the AFCEE QAPP were met for all other compounds.

The second source calibration (SSC) standard results for 4-chloroaniline, 2-nitrophenol and 3-nitroaniline exceeded the QC acceptance limits for % difference relative to the initial calibration. In accordance with the AFCEE QAPP, the associated results for these three compounds are qualified "R" in all samples.

In the Continuing Calibration Verification (CCV) analyses, the % difference for 3,3'-dichlorobenzidine exceeded the quality control limits for the 12/2/00 calibration, bis(2-chloroisopropyl) ether exceeded calibration quality control criteria on 12/4/00 and 2,4-dinitrophenol exceeded criteria on 12/5/00. Calibration results indicate that instrument sensitivity for these compounds was marginally lower on the dates in question. In accordance with the AFCEE QAPP, the results for these these compounds in the associated samples are qualified "R". None of these compounds were detected in any of the associated samples. Minor exceedences of daily calibration drift or SSC criteria typically

have no impact on the laboratory's ability to detect a compound providing that sensitivity is acceptable. The non-detect results for these analytes should be acceptable for use.

Many of the samples exhibited evidence of mild to severe hydrocarbon backgrounds. This resulted in the elevation of surrogate recoveries and supression of internal standard areas. In some cases a dilution of the sample was made and surrogate recoveries and internal standard areas met criteria as the matirx interferent was diluted sufficiently out and allowed for accurate quantitation of target analytes. The samples exhibiting potential matrix effect due to high hydrocarbon levels included:

PAFB-SS13-025 (one acid surrogate biased high)
PAFB-SS13-027 (one acid surrogate biased high, one internal standard biased low, both outliers confirmed upon reanalysis)
PAFB-SS13-028 (one acid surrogate biased high)
PAFB-SS13-036 (one base-neutral surrogate biased high)
PAFB-SS13-043 (one base-neutral surrogate biased high)
PAFB-SS13-044 (one base-neutral surrogate biased high, 2 internal standards biased low, non-compliance confirmed upon re-analysis, surrogates and internal standards acceptable in subsequent 5-fold dilution)

Positive results associated with high surrogate recoveries are qualified "J" if they are reported from the non-compliant analysis. Non-detects are not impacted. All results (positive and non-detect) associated with non-compliant internal standard areas are qualified "R" and should not be used for decision making purposes. For PAFB-SS013-044 the results from the 5-fold dilution should be used for reporting purposes as surrogate and internal standard criteria were met for all compounds. The results for 2-Methylnaphthalene and Benzo(a)anthracene from the initial analysis are acceptable for use as they are not associated with either the non-compliant internal standards or surrogate. The non-detect result from the 5-fold dilution is reported in the tables of results. The result for Fluoranthene from the original analysis is rejected and qualified "R" as it is associated with a non-compliant internal standard. The results from the 5-fold dilution are combined with the two acceptable positive detects from the original analysis in the attached tables of results.

Samples PAFB-SS013-039 and PAFB-SS013-034 were submitted for MS/MSD analysis. Significant matrix effects resulting in high bias and/or poor precision was observed for many compounds in sample PAFB-SS013-039. None of these compounds were detected in the sample; therefore, no qualification was necessary. Low bias was observed for one compound (2,4-dinitrotoluene), which was qualified "M" in the unspiked sample. All of these compounds were acceptable in the daily calibration check and the laboratory control samples; therefore, the observed biases are attributable to a matrix effect. Low bias was observed for 3 compounds (hexachlorocyclopentadiene, fluorene and 2-chloronaphthalene) in the MS/MSD analysis associated with sampling location PAFB-SS013-034. These compounds were acceptable in the daily calibration check and the laboratory control samples therefore the observed biases are

attributable to a matrix effect. These compounds were not detected in this sample, reporting limits are qualified with a "M".

The sample chromatograms indicate that numerous samples exhibited a high hydrocarbon background, which eluted during the mid-point of the analytical run. The same pattern was observed in the analysis of the volatile fraction. Many of these samples were re-analyzed and confirmed this matrix effect. Some of these samples were subsequently analyzed at a 5-fold dilution to either quantitate higher levels of target analytes and/or reduce the observed hydrocarbon background levels. The dilution resulted in a corresponding 5-fold increase in reporting limits.

Several target analytes were detected below the RL but above the MDL. They are considered to be trace levels and were qualified "F" in accordance with the QAPP. These are considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

3.0 COMPLETENESS

The AFCEE QAPP goal for completeness is 90% for soil matrixes. Percent completeness is defined as the number of valid results divided by the total number of individual target compound results. Valid results are those that have not been rejected (qualified "R"). The percent completeness for each method and matrix is as follows:

Method	Matrix	Percent Completeness
Volatiles (SW8260B)	Soil	98%
Semivolatiles (SW8270C)	Soil	93%

The completeness goal of 90% was met for the soil samples.

ATTACHMENTS

VARIANCES

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
ENVIRONMENTAL RESTORATION SERVICES
BROOKS AFB, TX 78235

29 Nov 00

MEMORANDUM FOR HQ AFCEE/ERB
ATTENTION: Roy Willis/RTC/Plattsburg AFB

FROM: Burt Harrison
Environmental Chemistry Consultant
AFCEE/ERC
3207 North Road
Brooks AFB, Tx 78235

SUBJECT: Environmental Chemistry Review of the Kemron Laboratory QAPP Variances Prepared by Versar for the Plattsburg AFB Project.

References: (a) Handbook for the Installation Restoration Program (IRP) - Remedial Investigation/Feasability Studies (RI/FS), AFCEE, Sept. 1993. (b) U.S. EPA Test Methods for Evaluating Solid Wastes (SW 846), third edition, July 1992. (c) HQ AFCEE Quality Assurance Project Plan, March 1998.

A review of the Quality Assurance Project Plan variances for the Plattsburg AFB, NY project prepared by Versar are acceptable with the following exceptions. Recommend sample results be reported on a dry weight basis except for SW5035 samples where it is not possible. Concur with all Reporting Limit variances if approved by the New York State RPM and the USEPA RPM. Do not concur with calibration variances. Do not concur with recovery limits lower than 20% for any analyte for any analytical procedure. Concur with the MDL variance request after a survey of a number of AFCEE laboratories concerning this MDL issue requirement.

If you have any questions regarding this review or these comments, please contact me at (210) 536-5226.

Burt Harrison
Environmental Chemistry Consultant
Consultant Operations Division
AFCEE/ERC

KEMRON Environmental Services, Inc.
Variance Request AFCEE QAPP Version 3.0, March 1998
Versar – Plattsburgh, NY
Revised 11/20/00

QAPP Section 4.3.1- MDL Spike Levels

AFCEE REQUIREMENT:

Item (6) of Section 4.3.1 states "If the spike level in step 2 is more than five times the calculated MDL, repeat the process using a smaller spiking level."

VARIANCE REQUEST:

The laboratory requests a variance to change "five times" to read "ten times".

JUSTIFICATION:

The analytes that fail the "five times" criteria are on those instruments or methods that are very precise and have low relative standard deviations. Any procedure with a relative standard deviation less than 6.67% (at the spiked level) will produce MDLs that do not meet the 'fives times" criteria. Furthermore, this process tends to underestimate the MDL, so repeating the process at a lower spiking level may not produce meaningful data, particularly, if the spike level is below the quantitation limit (lowest calibration standard).

If so desired, the MDLs for those few analytes that fail the "five times" criteria MDL could be assigned a value equal to one-tenth the spike level, or one-half the project required RL, whichever is higher. This will assure that all project DQOs related to the MDLs and RLs will be met.

KEMRON meets the EPA criteria that the spike concentration should not exceed ten times the estimated MDL and AFCEE has accepted this interpretation on previous projects.

QAPP Section 8.2 – Wet Weight vs. Dry Weight

AFCEE REQUIREMENT:

Section 8.2 of the AFCEE QAPP V3.0 requires that "A wet weight aliquot of sample equivalent to the method specified dry weight aliquot of sample shall be taken for analysis."

KEMRON VARIANCE REQUEST:

The laboratory requests a variance to allow the method prescribed sample weights to be determined on the "as-received" basis, as specified in SW846.

JUSTIFICATION:

1) Increasing the amount of wet weight changes the sample/solvent ratios, which may significantly reduce the recovery of analytes from the matrix, resulting in poor surrogate recovery and more R flagged data. Altering the sample/solvent reagent ratios is a direct violation of the SW-846 methods.2) Organic extraction methods such as 3540, 3545 and 3550 have a limit on the quantity of sample they can effectively process. 3) The QAPP procedure cannot be applied to samples collected by method 5035 for volatile organic analysis.

QAPP Section 7.2.9-1 SW8260 Reporting Limits

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes:

Analyte	AFCEE RL (ug/L)	Proposed RL (ug/L)
1,1,2,2 Tetrachloroethane	0.4	0.8
1,1-Dichloroethane	0.4	0.5
1,2,3-Trichlorobenzene	0.3	1
1,2,4-Trichlorobenzene	0.4	2
1,2-Dichlorobenzene	0.3	1
1,2-Dichloropropane	0.4	0.5
1,3-Dichloropropane	0.4	0.5
1-Chlorohexane	0.5	1
1,4-Dichlorobenzene	0.3	1

2-Chlorotoluene	0.4	1
Benzene	0.4	0.5
Bromobenzene	0.3	1
Bromochloromethane	0.4	0.5
Bromodichloromethane	0.8	1
Chlorobenzene	0.4	0.5
Chloroform	0.3	0.5
Ethylbenzene	0.6	1
Methylene Chloride	0.3	2
n-propylbenzene	0.4	1
Naphthalene	0.4	1
Styrene	0.4	1
Trichlorofluoromethane	0.8	1
Dibromochloromethane	0.5	0.6
1,2-Dichloroethane	0.6	0.7
m,p-Xylene		1

JUSTIFICATION:

The laboratory low calibration standard is not at the AFCEE RL. The proposed RL will meet the project requirements.

AFCEE REQUIREMENT:

Table 7.2.9-1 lists m-Xylene and p-Xylene as separate analytes.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to report m-Xylene and p-Xylene as one analyte, since the compounds co-elute.

QAPP Section 7.2.9 SW5035 Preservation

VARIANCE REQUEST:

KEMRON requests that method 5035 soil preservation be limited to freezing and that the holding time be accepted as 14 days.

JUSTIFICATION:

This variance is needed to prevent the degradation of performance of several (8260) target analytes and the failure of these analytes to meet the QAPP 3.0 quality control requirements for the second source verification and continuing calibration verification (CCV). The analytes most affected by affected by the sodium bisulfate are clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane. These compounds have a high probability of failing ICV/CCV criteria, resulting in R flags on all samples. Using the freezing option will eliminate these problems. The freezing option and 14-day hold time is being accepted by some states and selected US-EPA regions.

QAPP Section 7.2.9 SW8260 Calibration

VARIANCE REQUEST:

KEMRON requests a variance to change the second source initial calibration verification (ICV) and continuing calibration verification (CCV) criteria from +/- 25 % to +/- 40% for clorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, and trichlorofluromethane.

JUSTIFICATION:

These compounds are very prone to ICV/CCV failure when sodium bisulfate is used as a preservative. Without the variance these compounds will probably have to be R-flagged.

QAPP Section 7.2.10 SW8270 Surrogate Control Limit

AFCEE REQUIREMENT:

Table 7.2.10-2 lists the acceptance limit for phenol-D5 as 25-125 % recovery in water.

KEMRON VARIANCE REQUEST:

KEMRON requests a variance to use 10 – 125 % recovery as the acceptance limit in water

JUSTIFICATION:

Phenol recovery above 10% is not achievable routinely due to poor extraction efficiency. Industry-wide statistics do not support the 25 – 125 % recovery limit.

APP Section 7.2.10 SW8270 LCS Control Limits

AFCEE REQUIREMENT: see table below

VARIANCE REQUEST:

LCS Control Limit variances for 8270 compounds in water:

Compound	AFCEE LCS LIMITS	PROPOSED LCS LIMITS
Phenol	25-125	20-125
2-Chloronaphthalene	60-125	49-120
Hexachlorocyclopentadiene	Delete as a target analyte	
Benzoic Acid	25-162	20-125
3,3'-Dichlorobenzidine	29-175	20-125
Phenol-d5 (surrogate)	25-125	20-125

JUSTIFICATION:

These compounds are industry-wide poor performers and consistently give recoveries below the AFCEE lower control limits. Hexachlorocyclopentadiene has been proposed for deletion as an analyte from the AFCEE 3.1 QAPP. The proposed limits are taken from the AFCEE 3.1 QAPP.

QAPP Section 7.2.15-1 SW6010B ICP

KEMRON VARIANCE REQUEST:

Reporting limit (RL) variances for the following analytes in water:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Zinc	0.01	0.02

JUSTIFICATION:

The proposed RL will meet the project requirements.

QAPP Section 7.2.17-27 SW7000 Method Variance - Water

AFCEE REQUIREMENT:

AFCEE projects often specify that arsenic, antimony, chromium, cadmium, lead, selenium, thallium and vanadium shall be performed by their respective 7000 – GFAA methods:

Metal	Method	AFCEE RL (mg/L)
Arsenic	7060A	0.005
Chromium	7191	0.005
Cadmium	7131A	0.001
Lead	7421	0.005
Vanadium	7911	0.004
Antimony	7041	0.005
Selenium	7740	0.005
Thallium	7841	0.001

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. Analyzing these metals by ICP-AES or ICP-MS will not elevate the reporting limits, but will eliminate the inherent errors of GFAA methods:

Metal	Method	Proposed RL (mg/L)
Arsenic	6010B/6020A	0.005
Chromium	6010B	0.005
Cadmium	6010B	0.001
Lead	6010B/6020A	0.005
Vanadium	6010B	0.004
Antimony	6020A	0.005
Selenium	6020A	0.005
Thallium	6020A	0.001

JUSTIFICATION:

The proposed RLs are equal to the 7000 method RLs and meet the project DQOs.

QAPP Section 7.2.17-27 SW7000 Method Variance - Soil

AFCEE REQUIREMENT:

AFCEE DQOs often specifies that arsenic, antimony, selenium, thallium, chromium, cadmium, lead and vanadium be performed by their respective 7000 – GFAA methods:

KEMRON VARIANCE REQUEST:

Method Variance:
KEMRON requests a variance to use Method 6010B or 6020A in lieu of the GFAA methods. KEMRON will use a method that will meet the project action limits, either by ICP-AES or ICP-MS. The following RLs are proposed:

	AFCEE 7000 RL (mg/kg)	Proposed 6010 RL (mg/kg)	Proposed 6020A RL (mg/kg)
Antimony	0.5	1	0.2
Arsenic	0.5	1	0.5
Lead	0.5	1	0.5
Selenium	0.5	1	0.5
Vanadium	0.4	0.5	N/A
Chromium	0.5	0.5	N/A
Cadmium	0.1	0.1	N/A
Thallium	0.1	2	0.1

JUSTIFICATION:

Project DQOs will not be affected, and the inherent errors of GFAA methods will be eliminated.

QAPP Section 7.2.17-27 SW7000 Reporting Limits - Soil

KEMRON VARIANCE REQUEST:

Reporting limit variance for the following analyte:

Analyte	AFCEE RL (mg/kg)	Proposed RL (mg/kg)
Thallium	0.1	0.25

JUSTIFICATION:

laboratory MDL does not support the AFCEE RL.This variance is needed if 7000 methods are required.

KEMRON VARIANCE REQUEST:

orting limit variance for the following analyte:

Analyte	AFCEE RL (mg/L)	Proposed RL (mg/L)
Thallium	0.001	0.005
Antimony	0.005	0.006

JUSTIFICATION:

The laboratory MDLs for the 7000 methods do not support the AFCEE RL.This variance is needed if 7000 methods are required.

CASE NARRATIVES

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE

L0011491

CHAIN OF CUSTODY:

The chain of custody numbers were 21466 and 21467.

SHIPMENT CONDITIONS:

The chain of custodies were received sealed in a cooler. The cooler temperature was 1° C.

SAMPLE MANAGEMENT:

All samples were received intact.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

REVIEWED: Angela B Wright DATE: 12-01-05

REPORT NARRATIVE
GC/MS VOLATILE ORGANICS

KEMRON Login No: L0011491

METHOD

Preparation: SW- 846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The alternate source analyzed on HPMS-11 yielded a %D for 1,1-dichloropropene that exceeded the criteria of less than +/- 25%. All other acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on 12/2/00 yielded %D's for chloroethane, trichlorofluoromethane and naphthalene that exceeded the criteria of less than +/- 20%.

The CCV analyzed on 12/3/00 yielded a %D for dichlorodifluoromethane that exceeded the criteria of less than +/- 20%. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Samples: The LCS analyzed on 12/2/00 yielded % recoveries for dichlorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane and 1,1,1,2-tetrachloroethane that were above the upper advisory limits.

The LCS analyzed on 12/3/00 yielded % recoveries for dichlorodifluoromethane, chloromethane, chloroethane, trichlorofluoromethane and 1,1,1,2-tetrachloroethane that were above the upper advisory limits. None of these LCS outliers were detected in any of the associated samples above the reporting limits. All other acceptance criteria were met.

Matrix Spikes: The MS/MSD results associated with this sample delivery group yielded % recoveries and % RPD's for multiple compounds that were outside of the advisory limits.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: Sample fractions 08, 21, 27 and 28 yielded % recoveries for 4-BFB that exceeded the upper surrogate limit due to hydrocarbon interference with this late eluting surrogate. All results which were deemed associated with this surrogate were "J" qualified. All other acceptance criteria were met.

Samples: Sample fractions 14,15,16,17,18,20,21,22,23,24,25,27 and 28 were analyzed at dilutions due to the presence of hydrocarbon in the samples. All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: RSS REVIEWED Stephanie Klepe DATE: 12/12/00

Rev. 7/14/00

REPORT NARRATIVE
GC/MS SEMIVOLATILE ORGANICS

KEMRON Report No.: L0011491

METHOD

Preparation: SW- 846 3550B(Soils) 3510C(Waters)
Analysis: SW-846 8270C

HOLDING TIMES

Sample Preparation: All holding times were met.
Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial calibrations: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The alternate source standard analyzed on 12/1/00 on HPMS-4 yielded a %D for 2-nitrophenol, 4-chloroaniline, and 3-nitroaniline that exceeded the AFCEE criteria of +/-25%. All other acceptance criteria were met.

Continuing Calibration and Tune: The CCV analyzed on 12/2/00 on HPMS-4 yielded a %D for 3,3'-dichlorobenzidine that exceeded the AFCEE criteria of +/-20%.

The CCV analyzed on 12/4/00 on HPMS-4 yielded a %D for bis (2-chloroisopropyl)ether that exceeded the AFCEE criteria of +/-20%.

The CCV analyzed on 12/5/00 on HPMS-4 yielded a %D for 2,4-dinitrophenol that exceeded the AFCEE criteria of +/-20%. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Samples: All acceptance criteria were met.

Matrix Spikes: Sample fractions 14 and 21 were chosen by the client for MS/MSD analyses. The MS/MSD associated with sample 14 yielded % recoveries for several compounds that were outside of the AFCEE advisory limits.

The MS/MSD associated with sample 21 yielded % recoveries for hexachlorocyclopentadiene, 2-chloronaphthalene and fluorene that were outside of the advisory limits. All other acceptance criteria were met.

SAMPLES

Internal Standards: Sample 07 yielded an internal area of recovery for phenanthrene-d10 that was below the acceptance limit. The sample was re-analyzed with similar results confirming sample matrix interference. Sample 28 yielded internal area of recoveries for acenaphthene-d10 and phenanthrene-d10 that were below the acceptance limits. The sample was re-analyzed at a 5X dilution with acceptable internal areas of recovery confirming sample matrix interference. All other acceptance criteria were met.

Surrogates: Sample 07 yielded a % recovery for 2,4,6-tribromophenol that was above the AFCEE upper control limit. Samples 18, 27, and 28 yielded a % recovery for nitrobenzene-d5 that was above the AFCEE upper control limit. All other acceptance criteria were met.

Samples: Samples 21and 28 required dilution analyses. All other acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: CLK

REVIEWED: Stephanie L Lepe DATE: 12/13/00

Rev. 6/00

TEST [illegible]TIFICATE
KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (740) 373-4071

Versar, Inc. Division 35
1900 Frost Road
Suite 110
Bristol, PA 19007
Attention: Rich Habrukowich

Login #: L0011491
Report Date: 12/18/00
Work ID: 4512.541/PLATTSBURG EXC.
Date Received: 11/22/00

PO Number: 001008
Account Number: VERSAR-PA-318
Invoice Number: 550018

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L0011491-01	PAFB-SS13-021	L0011491-02	PAFB-SS13-022
L0011491-03	PAFB-SS13-023	L0011491-04	PAFB-SS13-024
L0011491-05	PAFB-SS13-025	L0011491-06	PAFB-SS13-026
L0011491-07	PAFB-SS13-027	L0011491-08	PAFB-SS13-028
L0011491-09	PAFB-SS13-029	L0011491-10	PAFB-SS13-030
L0011491-11	PAFB-SS13-031	L0011491-12	PAFB-SS13-032
L0011491-13	PAFB-SS13-033	L0011491-14	PAFB-SS13-034
L0011491-15	PAFB-SS13-034/MS	L0011491-16	PAFB-SS13-034/MSD
L0011491-17	PAFB-SS13-035	L0011491-18	PAFB-SS13-036
L0011491-19	PAFB-SS13-037	L0011491-20	PAFB-SS13-038
L0011491-21	PAFB-SS13-039	L0011491-22	PAFB-SS13-039/MS
L0011491-23	PAFB-SS13-039/MSD	L0011491-24	PAFB-SS13-040
L0011491-25	PAFB-SS13-041	L0011491-26	PAFB-SS13-042
L0011491-27	PAFB-SS13-043	L0011491-28	PAFB-SS13-044

*****REVISED REPORT*****

KEMRON ENVIRONMENTAL SERVICES

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the written approval of KEMRON.

NYSDOH ELAP ID: 10861

David L. Bumgarner

Certified By
David L. Bumgarner

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

TABLES

Analytical Results for Volatiles
by Method
SW846 8260B

Collection Date	PAFB-SS13-027 11/20/00				PAFB-SS13-044 11/21/00				PAFB-SS13-024 11/20/00				PAFB-SS13-038 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	98	weight %			93	weight %			95	weight %			75	weight %		
1,1,1,2-Tetrachloroethane		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
1,1,1-Trichloroethane		mg/kg	0.0041	U		mg/kg	0.022	U		mg/kg	0.0042	U		mg/kg	0.027	U
1,1,2,2-Tetrachloroethane		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,1,2-Trichloroethane		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	U
1,1-Dichloroethane		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,1-Dichloroethene		mg/kg	0.0061	U		mg/kg	0.032	U		mg/kg	0.0063	U		mg/kg	0.04	U
1,1-Dichloropropene		mg/kg	0.0051	R		mg/kg	0.027	R		mg/kg	0.0053	R		mg/kg	0.033	R
1,2,3-Trichlorobenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,2,3-Trichloropropane		mg/kg	0.02	U		mg/kg	0.11	U		mg/kg	0.021	U		mg/kg	0.13	U
1,2,4-Trichlorobenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,2,4-Trimethylbenzene		mg/kg	0.0071	U	0.0266	mg/kg	0.038	F	0.000263	mg/kg	0.0074	F	0.11	mg/kg	0.047	
1,2-Dibromo-3-chloropropane		mg/kg	0.01	U		mg/kg	0.054	U		mg/kg	0.011	U		mg/kg	0.067	U
1,2-Dibromoethane		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
1,2-Dichlorobenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,2-Dichloroethane		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
1,2-Dichloropropane		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,3,5-Trimethylbenzene		mg/kg	0.0031	U	0.639	mg/kg	0.016	J		mg/kg	0.0032	U	0.2	mg/kg	0.02	
1,3-Dichlorobenzene		mg/kg	0.0061	U		mg/kg	0.032	U		mg/kg	0.0063	U		mg/kg	0.04	U
1,3-Dichloropropane		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1,4-Dichlorobenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
1-Chlorohexane		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
2,2-Dichloropropane		mg/kg	0.02	U		mg/kg	0.11	U		mg/kg	0.021	U		mg/kg	0.13	U
2-Chlorotoluene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
4-Chlorotoluene		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
Benzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Bromobenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Bromochloromethane		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Bromodichloromethane		mg/kg	0.0041	U		mg/kg	0.022	U		mg/kg	0.0042	U		mg/kg	0.027	U
Bromoform		mg/kg	0.0061	U		mg/kg	0.032	U		mg/kg	0.0063	U		mg/kg	0.04	U
Bromomethane		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	U
Carbon tetrachloride		mg/kg	0.01	U		mg/kg	0.054	U		mg/kg	0.011	U		mg/kg	0.067	U
Chlorobenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Chloroethane		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	R
Chloroform		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Chloromethane		mg/kg	0.0071	U		mg/kg	0.038	U		mg/kg	0.0074	U		mg/kg	0.047	U
Dibromochloromethane		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
Dibromomethane		mg/kg	0.01	U		mg/kg	0.054	U		mg/kg	0.011	U		mg/kg	0.067	U
Dichlorodifluoromethane		mg/kg	0.0051	R		mg/kg	0.027	R		mg/kg	0.0053	R		mg/kg	0.033	U
Ethylbenzene		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U	0.014	mg/kg	0.02	F
Hexachlorobutadiene		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	U
Isopropylbenzene		mg/kg	0.0082	U		mg/kg	0.043	U		mg/kg	0.0084	U	0.00597	mg/kg	0.053	F
Methylene chloride		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Naphthalene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	R
Styrene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U		mg/kg	0.013	U
Tetrachloroethene		mg/kg	0.0071	U		mg/kg	0.038	U		mg/kg	0.0074	U		mg/kg	0.047	U
Toluene		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	U
Trichloroethene		mg/kg	0.01	U		mg/kg	0.054	U		mg/kg	0.011	U		mg/kg	0.067	U
Trichlorofluoromethane		mg/kg	0.0041	U		mg/kg	0.022	U		mg/kg	0.0042	U		mg/kg	0.027	R
Vinyl chloride		mg/kg	0.0092	U		mg/kg	0.048	U		mg/kg	0.0095	U		mg/kg	0.06	U
cis-1,2-Dichloroethene		mg/kg	0.0061	U		mg/kg	0.032	U		mg/kg	0.0063	U		mg/kg	0.04	U
cis-1,3-Dichloropropene		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	U
m-,p-Xylene		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U	0.057	mg/kg	0.033	
n-Butylbenzene		mg/kg	0.0051	U	0.278	mg/kg	0.027	J		mg/kg	0.0053	U	0.0953	mg/kg	0.033	
n-Propylbenzene		mg/kg	0.002	U		mg/kg	0.011	U		mg/kg	0.0021	U	0.0116	mg/kg	0.013	F
o-Xylene		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U	0.00355	mg/kg	0.033	F
p-Isopropyltoluene		mg/kg	0.0061	U	0.16	mg/kg	0.032	J		mg/kg	0.0063	U	0.0476	mg/kg	0.04	
sec-Butylbenzene		mg/kg	0.0071	U	0.0185	mg/kg	0.038	F		mg/kg	0.0074	U	0.0119	mg/kg	0.047	F
tert-Butylbenzene		mg/kg	0.0071	U		mg/kg	0.038	U		mg/kg	0.0074	U		mg/kg	0.047	U
trans-1,2-Dichloroethene		mg/kg	0.0031	U		mg/kg	0.016	U		mg/kg	0.0032	U		mg/kg	0.02	U
trans-1,3-Dichloropropene		mg/kg	0.0051	U		mg/kg	0.027	U		mg/kg	0.0053	U		mg/kg	0.033	U

Analytical Results for Volatiles
by Method
SW846 8260B

Collection Date	PAFB-SS13-036 11/20/00				PAFB-SS13-034 11/20/00				PAFB-SS13-033 11/20/00				PAFB-SS13-031 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids		weight %				weight %				weight %				weight %		
1,1,1,2-Tetrachloroethane		mg/kg	0.016	U		mg/kg	0.019	M		mg/kg	0.0031	U		mg/kg	0.0031	U
1,1,1-Trichloroethane		mg/kg	0.022	U		mg/kg	0.025	M		mg/kg	0.0041	U		mg/kg	0.0042	U
1,1,2,2-Tetrachloroethane		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,1,2-Trichloroethane		mg/kg	0.027	U		mg/kg	0.031	U		mg/kg	0.0052	U		mg/kg	0.0052	U
1,1-Dichloroethane		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,1-Dichloroethene		mg/kg	0.033	U		mg/kg	0.037	M		mg/kg	0.0062	U		mg/kg	0.0063	U
1,1-Dichloropropene		mg/kg	0.027	R		mg/kg	0.031	R		mg/kg	0.0052	R		mg/kg	0.0052	R
1,2,3-Trichlorobenzene		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,2,3-Trichloropropane		mg/kg	0.11	U		mg/kg	0.12	M		mg/kg	0.021	U		mg/kg	0.021	U
1,2,4-Trichlorobenzene		mg/kg	0.011	U		mg/kg	0.012	M		mg/kg	0.0021	U		mg/kg	0.0021	U
1,2,4-Trimethylbenzene	0.0455	mg/kg	0.038		0.00896	mg/kg	0.043	M		mg/kg	0.0072	U	0.000479	mg/kg	0.0073	F
1,2-Dibromo-3-chloropropane		mg/kg	0.054	U		mg/kg	0.062	U		mg/kg	0.01	U		mg/kg	0.01	U
1,2-Dibromoethane		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
1,2-Dichlorobenzene		mg/kg	0.011	U		mg/kg	0.012	M		mg/kg	0.0021	U		mg/kg	0.0021	U
1,2-Dichloroethane		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
1,2-Dichloropropane		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,3,5-Trimethylbenzene	0.283	mg/kg	0.016		0.0304	mg/kg	0.019	M		mg/kg	0.0031	U		mg/kg	0.0031	U
1,3-Dichlorobenzene		mg/kg	0.033	U		mg/kg	0.037	U		mg/kg	0.0062	U		mg/kg	0.0063	U
1,3-Dichloropropane		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1,4-Dichlorobenzene		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
1-Chlorohexane		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
2,2-Dichloropropane		mg/kg	0.11	U		mg/kg	0.12	M		mg/kg	0.021	U		mg/kg	0.021	U
2-Chlorotoluene		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
4-Chlorotoluene		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
Benzene		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Bromobenzene		mg/kg	0.011	U		mg/kg	0.012	M		mg/kg	0.0021	U		mg/kg	0.0021	U
Bromochloromethane		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Bromodichloromethane		mg/kg	0.022	U		mg/kg	0.025	M		mg/kg	0.0041	U		mg/kg	0.0042	U
Bromoform		mg/kg	0.033	U		mg/kg	0.037	U		mg/kg	0.0062	U		mg/kg	0.0063	U
Bromomethane		mg/kg	0.027	U		mg/kg	0.031	U		mg/kg	0.0052	U		mg/kg	0.0052	U
Carbon tetrachloride		mg/kg	0.054	U		mg/kg	0.062	M		mg/kg	0.01	U		mg/kg	0.01	U
Chlorobenzene		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Chloroethane		mg/kg	0.027	R		mg/kg	0.031	R		mg/kg	0.0052	R		mg/kg	0.0052	R
Chloroform		mg/kg	0.011	U		mg/kg	0.012	M		mg/kg	0.0021	U		mg/kg	0.0021	U
Chloromethane		mg/kg	0.038	U		mg/kg	0.043	M		mg/kg	0.0072	U		mg/kg	0.0073	U
Dibromochloromethane		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
Dibromomethane		mg/kg	0.054	U		mg/kg	0.062	U		mg/kg	0.01	U		mg/kg	0.01	U
Dichlorodifluoromethane		mg/kg	0.027	U		mg/kg	0.031	M		mg/kg	0.0052	U		mg/kg	0.0052	U
Ethylbenzene		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
Hexachlorobutadiene		mg/kg	0.027	U		mg/kg	0.031	M		mg/kg	0.0052	U		mg/kg	0.0052	U
Isopropylbenzene		mg/kg	0.043	U		mg/kg	0.049	M		mg/kg	0.0082	U		mg/kg	0.0083	U
Methylene chloride		mg/kg	0.011	U		mg/kg	0.012	U		mg/kg	0.0021	U		mg/kg	0.0021	U
Naphthalene		mg/kg	0.011	R		mg/kg	0.012	R		mg/kg	0.0021	R		mg/kg	0.0021	R
Styrene		mg/kg	0.011	U		mg/kg	0.012	M		mg/kg	0.0021	U		mg/kg	0.0021	U
Tetrachloroethene		mg/kg	0.038	U		mg/kg	0.043	U		mg/kg	0.0072	U		mg/kg	0.0073	U
Toluene		mg/kg	0.027	U		mg/kg	0.031	U		mg/kg	0.0052	U		mg/kg	0.0052	U
Trichloroethene		mg/kg	0.054	U		mg/kg	0.062	M		mg/kg	0.01	U		mg/kg	0.01	U
Trichlorofluoromethane		mg/kg	0.022	R		mg/kg	0.025	R		mg/kg	0.0041	R		mg/kg	0.0042	R
Vinyl chloride		mg/kg	0.049	U		mg/kg	0.056	M		mg/kg	0.0093	U		mg/kg	0.0094	U
cis-1,2-Dichloroethene		mg/kg	0.033	U		mg/kg	0.037	U		mg/kg	0.0062	U		mg/kg	0.0063	U
cis-1,3-Dichloropropene		mg/kg	0.027	U		mg/kg	0.031	U		mg/kg	0.0052	U		mg/kg	0.0052	U
m-,p-Xylene		mg/kg	0.027	U		mg/kg	0.031	M		mg/kg	0.0052	U		mg/kg	0.0052	U
n-Butylbenzene	0.107	mg/kg	0.027		0.0232	mg/kg	0.031	F		mg/kg	0.0052	U		mg/kg	0.0052	U
n-Propylbenzene		mg/kg	0.011	U		mg/kg	0.012	M		mg/kg	0.0021	U		mg/kg	0.0021	U
o-Xylene		mg/kg	0.027	U		mg/kg	0.031	U		mg/kg	0.0052	U		mg/kg	0.0052	U
p-Isopropyltoluene	0.0429	mg/kg	0.033		0.00869	mg/kg	0.037	F		mg/kg	0.0062	U		mg/kg	0.0063	U
sec-Butylbenzene		mg/kg	0.038	U		mg/kg	0.043	M		mg/kg	0.0072	U		mg/kg	0.0073	U
tert-Butylbenzene		mg/kg	0.038	U		mg/kg	0.043	U		mg/kg	0.0072	U		mg/kg	0.0073	U
trans-1,2-Dichloroethene		mg/kg	0.016	U		mg/kg	0.019	U		mg/kg	0.0031	U		mg/kg	0.0031	U
trans-1,3-Dichloropropene		mg/kg	0.027	U		mg/kg	0.031	U		mg/kg	0.0052	U		mg/kg	0.0052	U

Analytical Results for Semivolatiles
by Method
SW846 8270C

Collection Date	PAFB-SS13-029 11/20/00				PAFB-SS13-034 11/20/00				PAFB-SS13-035 11/20/00				PAFB-SS13-039 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	97	weight %	1		81	weight %	1		81	weight %	1		88	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
1,2-Dichlorobenzene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
1,3-Dichlorobenzene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
1,4-Dichlorobenzene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
2,4,5-Trichlorophenol		mg/kg	3.4	U		mg/kg	4.1	U		mg/kg	4.1	U		mg/kg	3.8	U
2,4,6-Trichlorophenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
2,4-Dichlorophenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
2,4-Dimethylphenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
2,4-Dinitrophenol		mg/kg	3.4	U		mg/kg	4.1	U		mg/kg	4.1	U		mg/kg	3.8	U
2,4-Dinitrotoluene		mg/kg	0.72	U		mg/kg	0.86	M		mg/kg	0.86	U		mg/kg	0.8	U
2,6-Dinitrotoluene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
2-Chloronaphthalene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	M
2-Chlorophenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
2-Methylnaphthalene		mg/kg	0.72	U	0.906	mg/kg	0.86		0.841	mg/kg	0.86	F	6.45	mg/kg	0.8	D
2-Methylphenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
2-Nitroaniline		mg/kg	3.4	U		mg/kg	4.1	U		mg/kg	4.1	U		mg/kg	3.8	U
2-Nitrophenol		mg/kg	0.31	R		mg/kg	0.37	R		mg/kg	0.37	R		mg/kg	0.34	R
3,3'-Dichlorobenzidine		mg/kg	1.3	R		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.5	U
3-Nitroaniline		mg/kg	3.4	R		mg/kg	4.1	R		mg/kg	4.1	R		mg/kg	3.8	R
4,6-Dinitro-2-methylphenol		mg/kg	3.4	U		mg/kg	4.1	U		mg/kg	4.1	U		mg/kg	3.8	U
4-Bromophenyl-phenylether		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
4-Chloro-3-methylphenol		mg/kg	1.3	U		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.5	U
4-Chloroaniline		mg/kg	1.3	R		mg/kg	1.6	R		mg/kg	1.6	R		mg/kg	1.5	R
4-Chlorophenyl-phenyl ether		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
4-Methylphenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
4-Nitroaniline		mg/kg	3.4	U		mg/kg	4.1	U		mg/kg	4.1	U		mg/kg	3.8	U
Acenaphthene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Acenaphthylene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Anthracene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Benzo(a)anthracene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Benzo(a)pyrene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Benzo(b)fluoranthene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Benzo(g,h,i)Perylene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Benzo(k)fluoranthene		mg/kg	0.722	U		mg/kg	0.864	U		mg/kg	0.864	U		mg/kg	0.795	U
Benzoic acid		mg/kg	1.6	U		mg/kg	2	U		mg/kg	2	U		mg/kg	1.8	U
Benzyl alcohol		mg/kg	1.3	U		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.5	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Bis(2-Chloroethyl)ether		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Butylbenzylphthalate		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Chrysene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Di-N-Butylphthalate		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Di-n-octylphthalate		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Dibenzo(a,h)Anthracene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Dibenzofuran		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Diethylphthalate		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Dimethylphthalate		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Fluoranthene		mg/kg	0.72	U	0.261	mg/kg	0.86	F	0.138	mg/kg	0.86	F		mg/kg	0.8	U
Fluorene		mg/kg	0.72	U	0.867	mg/kg	0.86		0.474	mg/kg	0.86	F	0.699	mg/kg	0.8	M
Hexachlorobenzene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Hexachlorobutadiene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Hexachlorocyclopentadiene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	M
Hexachloroethane		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Isophorone		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
N-Nitroso-di-n-propylamine		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
N-Nitrosodiphenylamine		mg/kg	0.72	U	1.79	mg/kg	0.86	F		mg/kg	0.86	U		mg/kg	0.8	U
Naphthalene		mg/kg	0.72	U		mg/kg	0.86	U	0.22	mg/kg	0.86	F	0.969	mg/kg	0.8	
Nitrobenzene		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
Pentachlorophenol		mg/kg	3.4	U		mg/kg	4.1	U		mg/kg	4.1	U		mg/kg	3.8	U
Phenanthrene		mg/kg	0.72	U	1.68	mg/kg	0.86	F M	0.834	mg/kg	0.86	F	1.61	mg/kg	0.8	
Phenol		mg/kg	0.31	U		mg/kg	0.37	U		mg/kg	0.37	U		mg/kg	0.34	U
Pyrene		mg/kg	0.72	U	0.408	mg/kg	0.86	F	0.184	mg/kg	0.86	F	0.155	mg/kg	0.8	F
bis(2-Chloroisopropyl)ether		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	R
bis(2-Ethylhexyl)phthalate		mg/kg	0.72	U		mg/kg	0.86	U		mg/kg	0.86	U		mg/kg	0.8	U
p-Nitrophenol		mg/kg	1.6	U		mg/kg	2	U		mg/kg	2	U		mg/kg	1.8	U

Analytical Results for Semivolatiles
by Method
SW846 8270C

Collection Date	PAFB-SS13-041 11/21/00				PAFB-SS13-042 11/21/00				PAFB-SS13-022 11/20/00				PAFB-SS13-025 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	94	weight %	1		92	weight %	1		97	weight %	1		97	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
1,2-Dichlorobenzene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
1,3-Dichlorobenzene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
1,4-Dichlorobenzene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
2,4,5-Trichlorophenol		mg/kg	3.5	U		mg/kg	3.6	U		mg/kg	3.4	U		mg/kg	3.4	U
2,4,6-Trichlorophenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
2,4-Dichlorophenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
2,4-Dimethylphenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
2,4-Dinitrophenol		mg/kg	3.5	U		mg/kg	3.6	U		mg/kg	3.4	R		mg/kg	3.4	R
2,4-Dinitrotoluene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
2,6-Dinitrotoluene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
2-Chloronaphthalene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
2-Chlorophenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
2-Methylnaphthalene	1.08	mg/kg	0.74		0.072	mg/kg	0.76	F		mg/kg	0.72	U		mg/kg	0.72	U
2-Methylphenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
2-Nitroaniline		mg/kg	3.5	U		mg/kg	3.6	U		mg/kg	3.4	U		mg/kg	3.4	U
2-Nitrophenol		mg/kg	0.32	R		mg/kg	0.33	R		mg/kg	0.31	R		mg/kg	0.31	R
3,3'-Dichlorobenzidine		mg/kg	1.4	U		mg/kg	1.4	U		mg/kg	1.3	U		mg/kg	1.3	U
3-Nitroaniline		mg/kg	3.5	R		mg/kg	3.6	R		mg/kg	3.4	R		mg/kg	3.4	R
4,6-Dinitro-2-methylphenol		mg/kg	3.5	U		mg/kg	3.6	U		mg/kg	3.4	U		mg/kg	3.4	U
4-Bromophenyl-phenylether		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
4-Chloro-3-methylphenol		mg/kg	1.4	U		mg/kg	1.4	U		mg/kg	1.3	U		mg/kg	1.3	U
4-Chloroaniline		mg/kg	1.4	R		mg/kg	1.4	R		mg/kg	1.3	R		mg/kg	1.3	R
4-Chlorophenyl-phenyl ether		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
4-Methylphenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
4-Nitroaniline		mg/kg	3.5	U		mg/kg	3.6	U		mg/kg	3.4	U		mg/kg	3.4	U
Acenaphthene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Acenaphthylene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Anthracene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Benzo(a)anthracene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Benzo(a)pyrene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Benzo(b)fluoranthene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Benzo(g,h,i)Perylene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Benzo(k)fluoranthene		mg/kg	0.745	U		mg/kg	0.761	U		mg/kg	0.722	U		mg/kg	0.722	U
Benzoic acid		mg/kg	1.7	U		mg/kg	1.7	U		mg/kg	1.6	U		mg/kg	1.6	U
Benzyl alcohol		mg/kg	1.4	U		mg/kg	1.4	U		mg/kg	1.3	U		mg/kg	1.3	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Bis(2-Chloroethyl)ether		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Butylbenzylphthalate		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Chrysene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Di-N-Butylphthalate		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Di-n-octylphthalate		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Dibenzo(a,h)Anthracene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Dibenzofuran		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Diethylphthalate		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Dimethylphthalate		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Fluoranthene	0.18	mg/kg	0.74	F		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Fluorene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Hexachlorobenzene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Hexachlorobutadiene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Hexachlorocyclopentadiene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Hexachloroethane		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Isophorone		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
N-Nitroso-di-n-propylamine		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
N-Nitrosodiphenylamine		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Naphthalene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Nitrobenzene		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
Pentachlorophenol		mg/kg	3.5	U		mg/kg	3.6	U		mg/kg	3.4	U		mg/kg	3.4	U
Phenanthrene	0.77	mg/kg	0.74		0.105	mg/kg	0.76	F		mg/kg	0.72	U		mg/kg	0.72	U
Phenol		mg/kg	0.32	U		mg/kg	0.33	U		mg/kg	0.31	U		mg/kg	0.31	U
Pyrene	0.232	mg/kg	0.74	F	0.0563	mg/kg	0.76	F		mg/kg	0.72	U		mg/kg	0.72	U
bis(2-Chloroisopropyl)ether		mg/kg	0.74	R		mg/kg	0.76	R		mg/kg	0.72	U		mg/kg	0.72	U
bis(2-Ethylhexyl)phthalate		mg/kg	0.74	U		mg/kg	0.76	U		mg/kg	0.72	U		mg/kg	0.72	U
p-Nitrophenol		mg/kg	1.7	U		mg/kg	1.7	U		mg/kg	1.6	U		mg/kg	1.6	U

Analytical Results for Semivolatiles
by Method
SW846 8270C

Collection Date	PAFB-SS13-021 11/20/00				PAFB-SS13-044 11/21/00				PAFB-SS13-023 11/20/00				PAFB-SS13-026 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	95	weight %	1		93	weight %	1		96	weight %	1		98	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
1,2-Dichlorobenzene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
1,3-Dichlorobenzene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
1,4-Dichlorobenzene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
2,4,5-Trichlorophenol		mg/kg	3.5	U		mg/kg	17	U D		mg/kg	3.4	U		mg/kg	3.4	U
2,4,6-Trichlorophenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
2,4-Dichlorophenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
2,4-Dimethylphenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
2,4-Dinitrophenol		mg/kg	3.5	U		mg/kg	17	R D		mg/kg	3.4	U		mg/kg	3.4	U
2,4-Dinitrotoluene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
2,6-Dinitrotoluene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
2-Chloronaphthalene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
2-Chlorophenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
2-Methylnaphthalene		mg/kg	0.74	U	2.14	mg/kg	0.7			mg/kg	0.73	U	1.99	mg/kg	0.71	F
2-Methylphenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
2-Nitroaniline		mg/kg	3.5	U		mg/kg	17	U D		mg/kg	3.4	U		mg/kg	3.4	U
2-Nitrophenol		mg/kg	0.32	R		mg/kg	1.5	R D		mg/kg	0.31	R		mg/kg	0.31	R
3,3'-Dichlorobenzidine		mg/kg	1.4	R		mg/kg	6.5	U D		mg/kg	1.4	R		mg/kg	1.3	R
3-Nitroaniline		mg/kg	3.5	R		mg/kg	17	R D		mg/kg	3.4	R		mg/kg	3.4	R
4,6-Dinitro-2-methylphenol		mg/kg	3.5	U		mg/kg	17	U D		mg/kg	3.4	U		mg/kg	3.4	U
4-Bromophenyl-phenylether		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
4-Chloro-3-methylphenol		mg/kg	1.4	U		mg/kg	6.5	U D		mg/kg	1.4	U		mg/kg	1.3	U
4-Chloroaniline		mg/kg	1.4	R		mg/kg	6.5	R D		mg/kg	1.4	R		mg/kg	1.3	R
4-Chlorophenyl-phenyl ether		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
4-Methylphenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
4-Nitroaniline		mg/kg	3.5	U		mg/kg	17	U D		mg/kg	3.4	U		mg/kg	3.4	U
Acenaphthene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Acenaphthylene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Anthracene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Benzo(a)anthracene		mg/kg	0.74	U	0.032	mg/kg	0.7	F		mg/kg	0.73	U		mg/kg	0.71	U
Benzo(a)pyrene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Benzo(b)fluoranthene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Benzo(g,h,i)Perylene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Benzo(k)fluoranthene		mg/kg	0.737	U		mg/kg	3.5	U D		mg/kg	0.729	U		mg/kg	0.714	U
Benzoic acid		mg/kg	1.7	U		mg/kg	8	U D		mg/kg	1.7	U		mg/kg	1.6	U
Benzyl alcohol		mg/kg	1.4	U		mg/kg	6.5	U D		mg/kg	1.4	U		mg/kg	1.3	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Bis(2-Chloroethyl)ether		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Butylbenzylphthalate		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Chrysene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Di-N-Butylphthalate		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Di-n-octylphthalate		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Dibenzo(a,h)Anthracene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Dibenzofuran		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Diethylphthalate		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Dimethylphthalate		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Fluoranthene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Fluorene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U	0.323	mg/kg	0.71	F
Hexachlorobenzene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Hexachlorobutadiene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Hexachlorocyclopentadiene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Hexachloroethane		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Isophorone		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
N-Nitroso-di-n-propylamine		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
N-Nitrosodiphenylamine		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Naphthalene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U	0.0865	mg/kg	0.71	F
Nitrobenzene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
Pentachlorophenol		mg/kg	3.5	U		mg/kg	17	U D		mg/kg	3.4	U		mg/kg	3.4	U
Phenanthrene		mg/kg	0.74	U	5.38	mg/kg	3.5	D		mg/kg	0.73	U	0.688	mg/kg	0.71	F
Phenol		mg/kg	0.32	U		mg/kg	1.5	U D		mg/kg	0.31	U		mg/kg	0.31	U
Pyrene		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U	0.0436	mg/kg	0.71	F
bis(2-Chloroisopropyl)ether		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
bis(2-Ethylhexyl)phthalate		mg/kg	0.74	U		mg/kg	3.5	U D		mg/kg	0.73	U		mg/kg	0.71	U
p-Nitrophenol		mg/kg	1.7	U		mg/kg	8	U D		mg/kg	1.7	U		mg/kg	1.6	U

Analytical Results for Semivolatiles
by Method
SW846 8270C

Collection Date	PAFB-SS13-040 11/21/00				PAFB-SS13-028 11/20/00				PAFB-SS13-043 11/21/00				PAFB-SS13-038 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	94	weight %	1		96	weight %	1		87	weight %	1		75	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
1,2-Dichlorobenzene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
1,3-Dichlorobenzene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
1,4-Dichlorobenzene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
2,4,5-Trichlorophenol		mg/kg	3.5	U		mg/kg	3.4	U		mg/kg	3.8	U		mg/kg	4.4	U
2,4,6-Trichlorophenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
2,4-Dichlorophenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
2,4-Dimethylphenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
2,4-Dinitrophenol		mg/kg	3.5	U		mg/kg	3.4	R		mg/kg	3.8	U		mg/kg	4.4	U
2,4-Dinitrotoluene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
2,6-Dinitrotoluene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
2-Chloronaphthalene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
2-Chlorophenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
2-Methylnaphthalene		mg/kg	0.74	U	1.07	mg/kg	0.73		0.39	mg/kg	0.8	F	3.01	mg/kg	0.93	
2-Methylphenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
2-Nitroaniline		mg/kg	3.5	U		mg/kg	3.4	U		mg/kg	3.8	U		mg/kg	4.4	U
2-Nitrophenol		mg/kg	0.32	R		mg/kg	0.31	R		mg/kg	0.34	R		mg/kg	0.4	R
3,3'-Dichlorobenzidine		mg/kg	1.4	U		mg/kg	1.4	U		mg/kg	1.5	U		mg/kg	1.7	U
3-Nitroaniline		mg/kg	3.5	R		mg/kg	3.4	R		mg/kg	3.8	R		mg/kg	4.4	R
4,6-Dinitro-2-methylphenol		mg/kg	3.5	U		mg/kg	3.4	U		mg/kg	3.8	U		mg/kg	4.4	U
4-Bromophenyl-phenylether		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
4-Chloro-3-methylphenol		mg/kg	1.4	U		mg/kg	1.4	U		mg/kg	1.5	U		mg/kg	1.7	U
4-Chloroaniline		mg/kg	1.4	R		mg/kg	1.4	R		mg/kg	1.5	R		mg/kg	1.7	R
4-Chlorophenyl-phenyl ether		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
4-Methylphenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
4-Nitroaniline		mg/kg	3.5	U		mg/kg	3.4	U		mg/kg	3.8	U		mg/kg	4.4	U
Acenaphthene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Acenaphthylene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Anthracene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Benzo(a)anthracene		mg/kg	0.74	U	0.699	mg/kg	0.73	F	0.0514	mg/kg	0.8	F		mg/kg	0.93	U
Benzo(a)pyrene		mg/kg	0.74	U	0.584	mg/kg	0.73	F		mg/kg	0.8	U		mg/kg	0.93	U
Benzo(b)fluoranthene	0.0323	mg/kg	0.74	F	0.626	mg/kg	0.73	F	0.0337	mg/kg	0.8	F		mg/kg	0.93	U
Benzo(g,h,i)Perylene		mg/kg	0.74	U	0.216	mg/kg	0.73	F		mg/kg	0.8	U		mg/kg	0.93	U
Benzo(k)fluoranthene		mg/kg	0.745	U	0.419	mg/kg	0.729	F		mg/kg	0.805	U		mg/kg	0.933	U
Benzoic acid		mg/kg	1.7	U		mg/kg	1.7	U		mg/kg	1.8	U		mg/kg	2.1	U
Benzyl alcohol		mg/kg	1.4	U		mg/kg	1.4	U		mg/kg	1.5	U		mg/kg	1.7	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Bis(2-Chloroethyl)ether		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Butylbenzylphthalate		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Chrysene		mg/kg	0.74	U	0.649	mg/kg	0.73	F	0.0534	mg/kg	0.8	F		mg/kg	0.93	U
Di-N-Butylphthalate		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Di-n-octylphthalate		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Dibenzo(a,h)Anthracene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Dibenzofuran		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Diethylphthalate		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Dimethylphthalate		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Fluoranthene	0.274	mg/kg	0.74	F	2.83	mg/kg	0.73		0.586	mg/kg	0.8	F J	0.0504	mg/kg	0.93	F
Fluorene		mg/kg	0.74	U		mg/kg	0.73	U	1.18	mg/kg	0.8		0.302	mg/kg	0.93	F
Hexachlorobenzene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Hexachlorobutadiene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Hexachlorocyclopentadiene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Hexachloroethane		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.74	U	0.198	mg/kg	0.73	F		mg/kg	0.8	U		mg/kg	0.93	U
Isophorone		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
N-Nitroso-di-n-propylamine		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
N-Nitrosodiphenylamine		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Naphthalene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U	0.686	mg/kg	0.93	F
Nitrobenzene		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
Pentachlorophenol		mg/kg	3.5	U		mg/kg	3.4	U		mg/kg	3.8	U		mg/kg	4.4	U
Phenanthrene		mg/kg	0.74	U	2.82	mg/kg	0.73		1.48	mg/kg	0.8	J	0.62	mg/kg	0.93	F
Phenol		mg/kg	0.32	U		mg/kg	0.31	U		mg/kg	0.34	U		mg/kg	0.4	U
Pyrene	0.266	mg/kg	0.74	F		mg/kg	0.73	U	0.384	mg/kg	0.8	F	0.0767	mg/kg	0.93	F
bis(2-Chloroisopropyl)ether		mg/kg	0.74	R		mg/kg	0.73	U		mg/kg	0.8	R		mg/kg	0.93	R
bis(2-Ethylhexyl)phthalate		mg/kg	0.74	U		mg/kg	0.73	U		mg/kg	0.8	U		mg/kg	0.93	U
p-Nitrophenol		mg/kg	1.7	U		mg/kg	1.7	U		mg/kg	1.8	U		mg/kg	2.1	U

Analytical Results for Semivolatiles
by Method
SW846 8270C

Collection Date	PAFB-SS13-031 11/20/00				PAFB-SS13-033 11/20/00				PAFB-SS13-036 11/20/00				PAFB-SS13-037 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	96	weight %	1		97	weight %	1		92	weight %	1		82	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
1,2-Dichlorobenzene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
1,3-Dichlorobenzene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
1,4-Dichlorobenzene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
2,4,5-Trichlorophenol		mg/kg	3.4	U		mg/kg	3.4	U		mg/kg	3.6	U		mg/kg	4	U
2,4,6-Trichlorophenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
2,4-Dichlorophenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
2,4-Dimethylphenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
2,4-Dinitrophenol		mg/kg	3.4	U		mg/kg	3.4	U		mg/kg	3.6	U		mg/kg	4	U
2,4-Dinitrotoluene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
2,6-Dinitrotoluene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
2-Chloronaphthalene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
2-Chlorophenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
2-Methylnaphthalene		mg/kg	0.73	U		mg/kg	0.72	U	3.32	mg/kg	0.76			mg/kg	0.85	U
2-Methylphenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
2-Nitroaniline		mg/kg	3.4	U		mg/kg	3.4	U		mg/kg	3.6	U		mg/kg	4	U
2-Nitrophenol		mg/kg	0.31	R		mg/kg	0.31	R		mg/kg	0.33	R		mg/kg	0.37	R
3,3'-Dichlorobenzidine		mg/kg	1.4	U		mg/kg	1.3	U		mg/kg	1.4	U		mg/kg	1.6	U
3-Nitroaniline		mg/kg	3.4	R		mg/kg	3.4	R		mg/kg	3.6	R		mg/kg	4	R
4,6-Dinitro-2-methylphenol		mg/kg	3.4	U		mg/kg	3.4	U		mg/kg	3.6	U		mg/kg	4	U
4-Bromophenyl-phenylether		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
4-Chloro-3-methylphenol		mg/kg	1.4	U		mg/kg	1.3	U		mg/kg	1.4	U		mg/kg	1.6	U
4-Chloroaniline		mg/kg	1.4	R		mg/kg	1.3	R		mg/kg	1.4	R		mg/kg	1.6	R
4-Chlorophenyl-phenyl ether		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
4-Methylphenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
4-Nitroaniline		mg/kg	3.4	U		mg/kg	3.4	U		mg/kg	3.6	U		mg/kg	4	U
Acenaphthene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Acenaphthylene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Anthracene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Benzo(a)anthracene		mg/kg	0.73	U		mg/kg	0.72	U	0.037	mg/kg	0.76	F		mg/kg	0.85	U
Benzo(a)pyrene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Benzo(b)fluoranthene		mg/kg	0.73	U		mg/kg	0.72	U	0.0337	mg/kg	0.76	F		mg/kg	0.85	U
Benzo(g,h,i)Perylene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Benzo(k)fluoranthene		mg/kg	0.729	U		mg/kg	0.722	U		mg/kg	0.761	U		mg/kg	0.854	U
Benzoic acid		mg/kg	1.7	U		mg/kg	1.6	U		mg/kg	1.7	U		mg/kg	2	U
Benzyl alcohol		mg/kg	1.4	U		mg/kg	1.3	U		mg/kg	1.4	U		mg/kg	1.6	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Bis(2-Chloroethyl)ether		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Butylbenzylphthalate		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Chrysene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Di-N-Butylphthalate		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Di-n-octylphthalate		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Dibenzo(a,h)Anthracene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Dibenzofuran		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Diethylphthalate		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Dimethylphthalate		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Fluoranthene		mg/kg	0.73	U		mg/kg	0.72	U	0.403	mg/kg	0.76	F J		mg/kg	0.85	U
Fluorene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Hexachlorobenzene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Hexachlorobutadiene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Hexachlorocyclopentadiene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Hexachloroethane		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Isophorone		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
N-Nitroso-di-n-propylamine		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
N-Nitrosodiphenylamine		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Naphthalene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Nitrobenzene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
Pentachlorophenol		mg/kg	3.4	U		mg/kg	3.4	U		mg/kg	3.6	U		mg/kg	4	U
Phenanthrene		mg/kg	0.73	U		mg/kg	0.72	U	3	mg/kg	0.76	J		mg/kg	0.85	U
Phenol		mg/kg	0.31	U		mg/kg	0.31	U		mg/kg	0.33	U		mg/kg	0.37	U
Pyrene		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
bis(2-Chloroisopropyl)ether		mg/kg	0.73	R		mg/kg	0.72	R		mg/kg	0.76	R		mg/kg	0.85	R
bis(2-Ethylhexyl)phthalate		mg/kg	0.73	U		mg/kg	0.72	U		mg/kg	0.76	U		mg/kg	0.85	U
p-Nitrophenol		mg/kg	1.7	U		mg/kg	1.6	U		mg/kg	1.7	U		mg/kg	2	U

Analytical Results for Semivolatiles
by Method
SW846 8270C

Collection Date	PAFB-SS13-027 11/20/00				PAFB-SS13-032 11/20/00				PAFB-SS13-024 11/20/00				PAFB-SS13-030 11/20/00			
COMPOUND	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL	Results	UNITS	RL	QUAL
Percent Solids	98	weight %	1		97	weight %	1		95	weight %	1		95	weight %	1	
1,2,4-Trichlorobenzene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
1,2-Dichlorobenzene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
1,3-Dichlorobenzene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
1,4-Dichlorobenzene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
2,4,5-Trichlorophenol		mg/kg	3.4	U		mg/kg	3.3	U		mg/kg	3.5	U		mg/kg	3.5	U
2,4,6-Trichlorophenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
2,4-Dichlorophenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
2,4-Dimethylphenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
2,4-Dinitrophenol		mg/kg	3.4	R		mg/kg	3.3	R		mg/kg	3.5	U		mg/kg	3.5	U
2,4-Dinitrotoluene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
2,6-Dinitrotoluene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
2-Chloronaphthalene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
2-Chlorophenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
2-Methylnaphthalene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
2-Methylphenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
2-Nitroaniline		mg/kg	3.4	U		mg/kg	3.3	U		mg/kg	3.5	U		mg/kg	3.5	U
2-Nitrophenol		mg/kg	0.31	R		mg/kg	0.3	R		mg/kg	0.32	R		mg/kg	0.32	R
3,3'-Dichlorobenzidine		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.4	U		mg/kg	1.4	U
3-Nitroaniline		mg/kg	3.4	R		mg/kg	3.3	R		mg/kg	3.5	R		mg/kg	3.5	R
4,6-Dinitro-2-methylphenol		mg/kg	3.4	R		mg/kg	3.3	U		mg/kg	3.5	U		mg/kg	3.5	U
4-Bromophenyl-phenylether		mg/kg	0.71	R		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
4-Chloro-3-methylphenol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.4	U		mg/kg	1.4	U
4-Chloroaniline		mg/kg	1.3	R		mg/kg	1.3	R		mg/kg	1.4	R		mg/kg	1.4	R
4-Chlorophenyl-phenyl ether		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
4-Methylphenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
4-Nitroaniline		mg/kg	3.4	U		mg/kg	3.3	U		mg/kg	3.5	U		mg/kg	3.5	U
Acenaphthene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Acenaphthylene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Anthracene		mg/kg	0.71	R		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Benzo(a)anthracene		mg/kg	0.71	U		mg/kg	0.7	U	0.185	mg/kg	0.74	F		mg/kg	0.74	U
Benzo(a)pyrene		mg/kg	0.71	U		mg/kg	0.7	U	0.194	mg/kg	0.74	F		mg/kg	0.74	U
Benzo(b)fluoranthene		mg/kg	0.71	U		mg/kg	0.7	U	0.204	mg/kg	0.74	F		mg/kg	0.74	U
Benzo(g,h,i)Perylene		mg/kg	0.71	U	0.0688	mg/kg	0.7	F	0.107	mg/kg	0.74	F		mg/kg	0.74	U
Benzo(k)fluoranthene		mg/kg	0.714	U		mg/kg	0.722	U	0.136	mg/kg	0.737	F		mg/kg	0.737	U
Benzoic acid		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.7	U		mg/kg	1.7	U
Benzyl alcohol		mg/kg	1.3	U		mg/kg	1.3	U		mg/kg	1.4	U		mg/kg	1.4	U
Bis(2-Chloroethoxy)Methane		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Bis(2-Chloroethyl)ether		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Butylbenzylphthalate		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Chrysene		mg/kg	0.71	U		mg/kg	0.7	U	0.186	mg/kg	0.74	F		mg/kg	0.74	U
Di-N-Butylphthalate		mg/kg	0.71	R		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Di-n-octylphthalate		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Dibenzo(a,h)Anthracene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Dibenzofuran		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Diethylphthalate		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Dimethylphthalate		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Fluoranthene		mg/kg	0.71	R		mg/kg	0.7	U	0.353	mg/kg	0.74	F	0.0678	mg/kg	0.74	F
Fluorene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Hexachlorobenzene		mg/kg	0.71	R		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Hexachlorobutadiene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Hexachlorocyclopentadiene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Hexachloroethane		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Indeno(1,2,3-cd)pyrene		mg/kg	0.71	U	0.0532	mg/kg	0.7	F	0.0935	mg/kg	0.74	F		mg/kg	0.74	U
Isophorone		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
N-Nitroso-di-n-propylamine		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
N-Nitrosodiphenylamine		mg/kg	0.71	R		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Naphthalene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Nitrobenzene		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
Pentachlorophenol		mg/kg	3.4	R		mg/kg	3.3	U		mg/kg	3.5	U		mg/kg	3.5	U
Phenanthrene		mg/kg	0.71	R		mg/kg	0.7	U	0.0918	mg/kg	0.74	F	0.0526	mg/kg	0.74	F
Phenol		mg/kg	0.31	U		mg/kg	0.3	U		mg/kg	0.32	U		mg/kg	0.32	U
Pyrene		mg/kg	0.71	U		mg/kg	0.7	U	0.314	mg/kg	0.74	F	0.0613	mg/kg	0.74	F
bis(2-Chloroisopropyl)ether		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	R		mg/kg	0.74	R
bis(2-Ethylhexyl)phthalate		mg/kg	0.71	U		mg/kg	0.7	U		mg/kg	0.74	U		mg/kg	0.74	U
p-Nitrophenol		mg/kg	1.6	U		mg/kg	1.6	U		mg/kg	1.7	U		mg/kg	1.7	U

Selenium - Background Concentrations
Consider "UJ" to be detected, "R" Non-Detect

Sample ID	Result	Qualifier	ln(Result)
SS-BKD-001-0	4.00E-01	R	-9.16E-01
SS-BKD-001-0 DUP	4.00E-01	R	-9.16E-01
SS-BKD-002-0	4.10E-01	R	-8.92E-01
SS-BKD-003-0	3.80E-01	R	-9.68E-01
SS-BKD-004-0	3.80E-01	R	-9.68E-01
SS-BKD-005-0	3.90E-01	R	-9.42E-01
SS-BKD-006-0	3.90E-01	R	-9.42E-01
SS-BKD-007-0	3.90E-01	R	-9.42E-01
SS-BKD-008-0	3.70E-01	R	-9.94E-01
SS-BKD-009-0	3.80E-01	R	-9.68E-01
SS-BKD-0010-0	4.30E-01	R	-8.44E-01
SS-BKD-0011-0	**4.00E-01**	UJ	-9.16E-01
SS-BKD-0012-0	**3.90E-01**	UJ	-9.42E-01
SS-BKD-0013-0	**3.90E-01**	UJ	-9.42E-01
SS-BKD-0014-0	**3.80E-01**	UJ	-9.68E-01
SS-BKD-0015-0	**3.70E-01**	UJ	-9.94E-01
SS-BKD-0016-0 DUP	**4.40E-01**	UJ	-8.21E-01
SS-BKD-0016-0	**4.40E-01**	UJ	-8.21E-01
SS-BKD-0017-0	**3.70E-01**	UJ	-9.94E-01
SS-BKD-0018-0	**3.70E-01**	UJ	-9.94E-01
SS-BKD-0019-0	**3.80E-01**	UJ	-9.68E-01
SS-BKD-0020-0	**4.20E-01**	UJ	-8.68E-01
SS-BKD-0021-0	**3.90E-01**	UJ	-9.42E-01
SS-BKD-0022-0	**3.80E-01**	UJ	-9.68E-01
Number of Analyses	24		
Degree of Censoring [c]	46%		
Is c>50%	No		
Skewness	1.087487		
Normally Distributed?	No		
k			2.523
Arithmetic Mean			-9.34E-01
Standard Deviation			0.061052
Parametric 95% UTL			4.59E-01
Maximum Detection	4.40E-01		
Final 95% UTL:	4.40E-01		

Selenium - Background Concentrations
Consider Everything to be detected

Sample ID	Result	Qualifier	ln(Result)
SS-BKD-001-0	**4.00E-01**	R	-9.16E-01
SS-BKD-001-0 DUP	**4.00E-01**	R	-9.16E-01
SS-BKD-002-0	**4.10E-01**	R	-8.92E-01
SS-BKD-003-0	**3.80E-01**	R	-9.68E-01
SS-BKD-004-0	**3.80E-01**	R	-9.68E-01
SS-BKD-005-0	**3.90E-01**	R	-9.42E-01
SS-BKD-006-0	**3.90E-01**	R	-9.42E-01
SS-BKD-007-0	**3.90E-01**	R	-9.42E-01
SS-BKD-008-0	**3.70E-01**	R	-9.94E-01
SS-BKD-009-0	**3.80E-01**	R	-9.68E-01
SS-BKD-0010-0	**4.30E-01**	R	-8.44E-01
SS-BKD-0011-0	**4.00E-01**	UJ	-9.16E-01
SS-BKD-0012-0	**3.90E-01**	UJ	-9.42E-01
SS-BKD-0013-0	**3.90E-01**	UJ	-9.42E-01
SS-BKD-0014-0	**3.80E-01**	UJ	-9.68E-01
SS-BKD-0015-0	**3.70E-01**	UJ	-9.94E-01
SS-BKD-0016-0 DUP	**4.40E-01**	UJ	-8.21E-01
SS-BKD-0016-0	**4.40E-01**	UJ	-8.21E-01
SS-BKD-0017-0	**3.70E-01**	UJ	-9.94E-01
SS-BKD-0018-0	**3.70E-01**	UJ	-9.94E-01
SS-BKD-0019-0	**3.80E-01**	UJ	-9.68E-01
SS-BKD-0020-0	**4.20E-01**	UJ	-8.68E-01
SS-BKD-0021-0	**3.90E-01**	UJ	-9.42E-01
SS-BKD-0022-0	**3.80E-01**	UJ	-9.68E-01
Number of Analyses	24		
Degree of Censoring [c]	0%		
Is c>50%	No		
Skewness	1.086186		0.998361
Normally Distributed?	No		
k			2.523
Arithmetic Mean			-9.34E-01
Standard Deviation			0.052106
Parametric 95% UTL			4.48E-01
Maximum Detection	4.40E-01		
Final 95% UTL:	4.40E-01		

POST-EXCAVATION CONFIRMATION SAMPLING SS-013
BUILDINGS 3569 AND 3578

RESPONSE TO USEPA COMMENTS

1. ***Table 1, Post-Excavation Results for Building 3569.*** *This table indicates that results exceeding NYSDEC TAGM values are shaded. However, sample SS013B-001 has several concentrations that exceed NYSDEC TAGM values, but are not shaded. Please revise the table accordingly.*

Response: Concur -- Table 1, Post-Excavation Results for Building 3569, has been revised to show NYSDEC TAGM exceedences in bold print and shaded. It will be included in the final report.

2. ***Table 2, Post-Excavation Results for Building 3569.*** *1,2,4-Trimethylbenzene was detected in all samples at similar concentrations less than the reporting limit. All results were appropriately flagged with an "F" qualifier indicating that the results are less than the reporting limit. However, detections in every sample at similar concentrations are suspect and possible laboratory contamination should be verified. 1,2,4-Trimethylbenzen was not detected in either the Field Blank or the Trip Blank. The results of the Laboratory Method Blank have not been reported, but the validation report indicated that "trace levels" of 1,2,4-Trimethylbenzene were detected in the soil laboratory method blank. The validation report concludes that concentrations of 1,2,4-Trimethylbenzene in the associated samples are either artifacts not representative of field conditions or laboratory contamination. This conclusion seems likely and reasonable.*

Response: Concur.

3. ***Attachments, Post-Excavation Results for Building 3578, Sample Locations 1-15.*** *Chain of Custody forms have not been included in the attachments for this package. The Chain of Custody forms would be useful for verifying which samples are associated with Building 3578. For example, Tables 1 and 2 of the report include only samples SS013-025 through SS013-039. However, laboratory and data validation information also include samples SS013-021 through -024 and -040 through -044. The relevance of these additional samples is not clear.*

Response: Concur – The chain-of-custody forms were inadvertently omitted and will be included in the final report. Samples SS013-21 through SS013044 are associated with Building 3578. The sample set includes both confirmation and characterization samples. The AFCEE chemist requested that all samples in this set undergo data validation; consequently, the validation package presents both confirmation and characterization samples. The sample set should be separated as follows:

Characterization Samples (soil stockpiles)

- SS013-021 through SS013-024: Soil stockpiles No. 1 through 4
- SS013-040 through SS013-044: Soil stockpiles No. 7 through 11

  Note: Stockpiles No. 5 and 6 were sampled on an earlier date.

Confirmation Samples (excavation area)

- SS013-025 through SS013-039: Sideswalls and bottom of excavation

The revisions will be included in the final report.

4. ***Attachments, Post-Excavation Results for Building 3578, Sample Locations 1-15.*** *The data validation reports indicate that several samples required five-fold dilutions for both volatile and semivolatile analyses. The specific samples requiring dilution for volatile analysis is not provided. The data usability report should verify that these dilutions did result in reporting limits that were greater than the benchmarks for comparison.*

Response: The volatile samples requiring dilution were PAFB-SS013-026, -034, -035, -036, -038, -039, -040, -041, -043, and –044. All RDLs were elevated by a factor of 5 as a result of the dilution. All elevated RDLs still meet TAGMs levels used for comparison purposes. The samples requiring dilution have further been identified as such in the summary tables included in the data usability report. Additionally, the informational qualifier "D" has been added to results/reporting limits that are from a dilution analysis in the summary tables of results in the data usability report.

In addition, a spot check of the semivolatile samples that required dilution revealed that reporting limits for several semivolatile compounds have been elevated above the benchmarks for comparison. Since this area is being recommended for no further excavation, please describe how compliance with NYSDEC TAGM Cleanup Objectives has been achieved for these compounds.

Response: There are several compounds whose MDLs are above the TAGMs levels for the dilution analyses and two which are above TAGMS in the original analysis. The impacted compounds are summarized below, where MDLs exceeding the TAGMs level are bolded.

Compound	TAGMS (mg/kg)	MDL (orig. analysis) (mg/kg)	MDL (5X dilution) (mg/kg)
2,4,5-Trichlorophenol	0.1	0.051	**0.253**
2,4-Dinitrophenol	0.2 or MDL	0.114	**0.569**
2-Methylphenol	0.1 or MDL	0.068	**0.339**
4-Chloro-3-methylphenol	0.24 or MDL	0.49	**0.247**
4-Chloroaniline	0.22 or MDL	0.057	**0.285**
Benzo(a)anthracene	0.244 or MDL	0.156	**0.779**
Benzo(a)pyrene	0.061 or MDL	0.028	**0.14**
4-Nitrophenol	0.1 or MDL	0.061	**0.307**
Dibenz(a,h)anthracene	0.014 or MDL	**0.049**	**0.247**
Phenol	0.03 or MDL	**0.042**	**0.210**

TAGMs recognizes that the calculated cleanup objectives for these compounds may be below concentrations achievable by method SW846 8270C, therefore compliance is demonstrated by reporting non-detects at the MDL level. Re-examination of the raw data indicates that the results for these compounds can be reported from the original analyses because they are not associated with the non-compliant surrogate or the low internal standards. Upon additional review of the data package, it has been determined that the laboratory originally qualified results based on criteria more conservative than that required by the QAPP. Comparison of internal standard area counts in the samples to the QAPP criteria (vs. midpoint standard from the initial calibration) indicates that criteria were met and the sample results were acceptable for use from the original analyses. The 5x dilution is required to accurately quantify phenanthrene, which exceeds the linear range in the original analyses. Only dibenz(a,h)anthracene and phenol require cleanup objectives to be set at their MDL from the initial analysis.

The summary tables of results in the data validation/usability reports will be revised to include the original analyses and to clarify which samples were analyzed at a dilution.

5. ***Table 2, Post-Excavation Results for Building 3578, Sample Location 16.*** *1,2,4-Trimethylbenzene was detected in the field sample and was appropriately flagged with and "F" qualifier indicating that the results are less than the reporting limit. The validation report indicated that "trace levels" of 1,2,4-trimethylbenzene were detected in the soil laboratory method blank. The validation report concludes that concentrations of 1,2,4-Trimethylbenzene in the associated samples are either artifacts not representative of field conditions or laboratory contamination. The conclusion seems likely and reasonable.*

Response: Concur.

APPENDIX D

WASTE DISPOSAL CHARACTERIZATION SAMPLE RESULTS

SS-013

ENVIRONMENTAL SOIL MANAGEMENT of New York
Generator Waste Profile

ESMI Customer: Versar, Inc agent for Plattsburgh AFB

Customer Address: 2558 Pearl Buck Road Suite 1 City: Bristol State: PA Zip: 19007

Contact: Richard Habrylewich Tel: (215) 788-7844 x228 Fax: (215) 788-8680

Site Contact: Steve Gagnier Tel/Cell: (518) 563-2871 x14 FAX Pager: (518) 563-3025

Site Name: Plattsburgh AFB Property Owner's Phone: (518) 563-2871 x14

Site Address: 22 US Oval Suite 2200 City: Plattsburgh State: NY Zip: 12903

History of Site Use: ☐Residential ☐Commercial ☐Industrial ☒Other Air Force
If commercial or industrial, please describe history of site: Leaking UST

Event/process generating waste: ☒Leaking UST ☐Leaking AST ☐Surface Spill ☐other (*describe*):

Waste Material Description: ***Soil/media is contaminated with:*** (check all that apply)

X NON-HAZARDOUS, ***VIRGIN PETROLEUM*** CONTAMINATED SOIL
☐#2, #4, or #6 Fuel Oil ☐Diesel Fuel ☐Gasoline ☐ Motor oil ☐Hydraulic Oil ☐Mixed Fuels (gas/fuel)

___ NON-HAZARDOUS, ***NON-VIRGIN PETROLEUM*** CONTAMINATED SOIL
☐Used Motor Oil ☐Waste Oil ☐Metal Cutting/Cooling Oils ☐Hydraulic Oil ☐Urban Fill ☐Virgin Solvent
☐Electric Oil ☐Used Solvent ☐Grease ☐Wax ☐Animal/Vegetable Oil

___ NON-HAZARDOUS, ***COAL TAR/PCB's*** CONTAMINATED SOIL
☐Coal Tar ☐PCB's (< 1 PPM)

Are there any known or suspected releases of contaminants other than those listed above? NO X YES ___
If YES, Specify

Approximate Tonnage: 350-450 tons

Physical Characteristics: %Clay < 2 %H20 < 5 %Debris < 1 Describe Debris (small) chips of concrete

I hereby certify, to the best of my knowledge, (a) I am a responsible official of the generator, (b) that the sampling protocol, as outlined, has been adhered to, (c) that the information provided in the profile is correct and complete, (d) that the transport, treatment and recycling of the contaminated materials do not violate any laws or regulations of the state of origin.

Signature: Steve Gagnier Date: October 16, 2001

Typed/Printed Name: Steve Gagnier Company: Plattsburgh AFB

Check One: Owner___ Generator X Contractor___ Consultant___ Other (explain)___

Acceptance of this material is based on review and approval of this profile and required analytical results.

304 Towpath Road, Fort Edward, New York 12828 (518) 747-5500 fax (518) 747-1181
28 Main Street, Suite 204, E. Hartford, Connecticut, 06118 (860) 568-5800 fax (860) 568-5551

633-7884

ENVIRONMENTAL SOIL MANAGEMENT of New York
Generator Waste Profile

ESMI Customer: Verson, Inc - agents for Plattsburgh AFB

Customer Address: 2558 Pearl Buck Road City: Bristol State: PA Zip: 19007

Contact: Richard Habrylowich Telephone: (215) 788-7844 x228 Fax: (215) 788-8680

Site Contact: Steven Gagnier Telephone/Cell: (518) 563-2871 x14 FAX Pager: (518) 563-3025

Loading Contractor (optional) Verson, Inc - Bryan Folley (Field Phone: (215) 913-1132 (cell)

Site Name: Plattsburgh AFB Property Owner(s)Phone: (518) 563-2871 x14

Site Address: 22 US Oval Suite 2200 City: Plattsburgh State: NY Zip. 12903

History of Site Use: ☐Residential ☐Commercial ☐Industrial ☐ Other Air Force
If commercial ,Industrial or other, please describe history of site: leaking UST

Event/process generating waste: ☒Leaking UST ☐Leaking AST ☐Surface Spill ☐other(*describe*):

Waste Material Description: ***Soil/Media contaminated with:*** the below described material is (initial one)

NON-HAZARDOUS **VIRGIN** PETROLEUM CONTAMINATED SOIL
☐#2,☐ #4, ☒#6 Fuel oil ☐Diesel Fuel ☐Gas/Jet Fuel ☐ Animal/vegetable/tall oils ☐White oil ☐Kerosene
☐Mixed Fuels (gas/fuel oil) ☐Petroleum Solvent

__NON-HAZARDOUS **NON-VIRGIN** PETROLEUM CONTAMINATED SOIL
☐Used oils ☐Grease/Lubes ☐ Used Animal/Vegetable/tall oils ☐Waxes ☐Petrolatum ☐Lubricating oils
☐ Metal Working oils ☐ Industrial oils ☐Used Petroleum Solvent

___NON-HAZARDOUS COAL TAR/ PCB's CONTAMINATED SOIL / URBAN FILL
☐ Coal Tar ☐PCB's <1 ppm ☐Electrical oil ☐Transformer oil (non-pcb) ☐Urban Fill

Approximate Tonnage: 350 - 450 ton

Physical Characteristics % Gravel 1 % Sand 91 % Clay/Silt 2 % H20 5 % Debris <1 % = (100%)
Describe Debris concrete chips (small)

Are there any known or suspected past releases of contaminants other than the above listed ? NO X YES____
If YES, Specify

I hereby certify, to the best of my knowledge,
a) I am a responsible official of the generator of the material being disposed of and, b.) That the transport, treatment and recycling of the contaminated materials do not violate any laws or regulations of the state of origin and, c.)That the information within is complete and accurate.

Signature: [signature] Date: October 16, 2001

Typed/Printed Name: Steve Gagnier Company: Plattsburgh AFB

Check One: Owner___ Generator X Contractor___ Consultant___ Other (explain)_____

Acceptance of all projects are predicated on the review of this form and the analytical results of the material to be received.

304 Towpath Road, Fort Edward, New York 12828 (518) 747-5500 fax (518) 747-1181
122A Naubuc Ave, Glastonbury, Connecticut, 06033 (860) 633-7872 fax (860) 633-7884

Post-it® Fax Note 7671
To Jo: Rich
Co./Dept. Versar
Phone #
Fax # 215-788-8680

Environmental Soil Management of New Yo
CUSTOMER WORK ORDER

ESMI Customer: Versar, Inc

Customer Address: 3558 Pearl Buck Road City: Bristol State: PA Zip: 19007

Contact: Richard Habrykowich Telephone: (215) 788-7844 x228 Fax: (215) 788-7844

Site Contact: Steve Gagnier Telephone/Cell: (518) 563-2871 x14 Pager: (518) 563-3025

Loading Contractor (optional) Versar Inc. Bryan Folley (Field) Phone: (215) 913-1132 cell

Site Name: Plattsburgh AFB Property Owner(s)Phone: (518) 563-2871 x14

Site Address: 22 US Oval Suite 2200 City: Plattsburgh State: NY Zip: 12903

CUSTOMER CONTACTING OWN TRUCKING (CHECK HERE) ☐Yes ☒No

Approximate Tonnage: 350 - 450 tons

PROJECT SCHEDULE DATE: ____/____/2001 Oct - Nov 2001

Please complete the below information if ESMI is providing transportation:

TRUCK TYPE: ☐DUMP TRAILER ☐ TRIAXLE ☐ TRIAXLE W/ PUP

NO. OF TRUCKS: _____

START TIME: Oct - Nov 2001

DIRECTIONS TO SITE: I-87 North to Plattsburgh
Take Exit 36 - Route 22 North
Plattsburgh AFB 1 mile on Right

Versar will meet trucks at Gate - need to be escorted

(attached pages if needed)

Work Order Authorization

Signature: [signature] Date: 10/15/01

Typed/Printed Name: Richard Habrykowich Company: Versar, Inc

Acceptance of all projects are predicated on the review of this form and the analytical results of the material to be received.

Versar INC.

Bristol, Pennsylvania 19007

Fax

To: David Costanza/Todd Calder From: Rich Habrukowich

Fax: Rich Habrukowich Fax: 215-788-8680 Ext 228

Phone: 860-633-7884 Date: Pages incl. cover sheet:

Re: Phone: 215-788-7844

Urgent ☐ For Review ☐ Please Comment Please Reply ☐ Please Recycle

* 2 Samples
  TPH
  VOC
  PAHs/SVOCs
  } Analytical Data

* 3 samples - TPH only

Site History - Spill Area / Tank Removal

Clean Sand ⇒ other than petroleum hydrocarbon smell

* Waste Profile Sheets

Est ~~350~~ - ~~450~~ tons

Plattsburgh AFB

* P.O. & Quote Enclosed Also *

Versar INC.
6850 VERSAR CENTER
SPRINGFIELD, VIRGINIA 22151
(703) 750-3000

Purchase Order: 001420

Date Printed: 10/11/2000

PURCHASE ORDER

Order To: ESMI OF NEW YORK
304 TOWPATH ROAD
FORT EDWARD, NY 12828

VESMNE

Ship To: Bristol
Versar, Inc.
1900 Frost Road
Suite 110
Bristol, PA 19007

Contact: DAVID S. CONSTANZO Ph: 518-747-5500 Fax: 518-747-1181

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO
10/11/00	DAVID PYZIK	NET 45			BEST WAY	RICHARD HABRUKOWICH

LINE	ITEM / DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	ORDER QUANTITY	NET UNIT COST	EXTENDED COST
	This is a rated order certified for national defense use, and the Contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700).							
	**********							
	THE SUBCONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY TO PERFORM THE TIME AND MATERIAL SERVICES IN ACCORDANCE WITH THE FOLLOWING SCHEDULES WHICH ARE ATTACHED AND ARE INCORPORATED HEREIN BY REFERENCE: SCHEDULE A - STATEMENT OF WORK SCHEDULE B - TERMS AND CONDITIONS SCHEDULE C - RATE SCHEDULE THE SUBCONTRACTOR ACCEPTS THIS PURCHASE ORDER BY SIGNING BOTH COPIES AND RETURNING ONE TO VERSAR'S SPRINGFIELD, VA LOCATION TO THE ATTENTION OF THE BUYER SHOWN ABOVE. ACCEPTANCE:_____ TITLE:_____ DATE:_____							
	**********							
1	TRANS TRANSPORT PETROLEUM CONTAMINATED SOIL AT PLATTSBURGH AFB Req: 000403	0	EA	12/31/00	12/31/00	1.0000	20,675.0000	$20,675.00
	Prime Contract #: F41624-97-D-8011 Priority: C2 AOP: 5600-001 1.01.301.35 104500.4521.441							
	Bill To: SPRINGFIELD 6850 VERSAR CENTER SPRINGFIELD, VA 22151						PO Total Amt:	$20,675.00

Versar Inc.

SCHEDULE C

May 26, 2000

Dave Costanzo/Todd Calder
ESMI
304 Toepath Road
Fort Edward, NY 12828

VIA FAX: (860) 568-5551

RE: Request for Proposal for transportation and disposal of petroleum contaminated soils at Plattsburgh Air Force Base (AFB) in Plattsburgh, New York.

Dear Mr. Costanzo:

The Northeast Regional Office of Versar, Inc., located at 1900 Frost Road, Suite 110 in Bristol, Pennsylvania, is soliciting proposals from contractors to provide transportation and disposal services for approximately 500 tons of petroleum contaminated soils at Plattsburgh AFB. Work could begin as early as August but may be delayed to as late as early November 2000. However, the total soil quantity will be removed from the site over a few days depending on the availability of your trucks and the amount of material the disposal facility can received in a given day. Versar personnel and equipment will load the trucks. Versar will also perform all the necessary analytical testing required by the disposal facility.

Your proposal should specifically address the following services. Please provide unit cost and extended costs in the following table (assume an open schedule as the soil could be removed as early as August, but could move as late as November).

Quantity	Unit Cost		Extended Cost
First 500 tons	$41.35	Per Ton	
Unit price for quantities over 500 tons	$40.35	Per Ton	----
Standby time	$65.00*	Per Hour	----

*After 1 Hour loading demurrage rate applies.

These items represent your base bid, and the unit costs for all labor, equipment, and materials associated with each of them should be clearly reflected in your proposal. All vehicles must have current registration, tags and insurance to haul the aforementioned contaminated material.

If you are interested in providing these soil services to Versar, please provide a copy of your proposal by no later than 5:00 PM on Wednesday, May 31, 2000 to:

Mr. Rich Habrukowich
Versar, Inc.
1900 Frost Road, Suite 110
Bristol, PA 19007
FAX: (215) 788-8680

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (740) 373-4071

Versar, Inc. Division 35
1900 Frost Road
Suite 110
Bristol, PA 19007
Attention: Rich Habrukowich

PO Number:
Account Number: VERSAR-PA-318

Login #: L0008479
Report Date: 09/05/00
Work ID: PLATTSBURG AFB
Date Received: 08/23/00

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L0008479-01	SS-13-019	L0008479-02	SS-13-020
L0008479-03	PAFB-002	L0008479-04	PAFB-001

NYSDOH ELAP ID: 10861

David L. Bumgarner

Certified By
David L. Bumgarner

KEMRON
ENVIRONMENTAL SERVICES

Lab Sample ID: L0008479-01 Matrix: Soil % Solid: 81
Client Sample ID: SS-13-019 Collected: 08/22/00 13:00 COC Info: 18692/
Site/Work ID: PLATTSBURG AFB

Analyte	Units	Result	Qualifiers	RL	Dil	Type	Analyst	Analysis Date	Time	Method
Percent Solids.....	weight %	81		1.0	1	N/A	TMM	08/28/00	11:20	D2216-90

Product: DRO - Diesel Range Organics (GC)

Lab Sample ID: L0008479-01 Dil. Type: N/A Sample Weight: N/A
Client Sample ID: SS-13-019 COC Info: 18692/ Extract Volume: N/A
Site/Work ID: PLATTSBURG AFB
Matrix: Soil Date Collected: 08/22/00 % Solid: 81

TCLP Extract Date: N/A Instrument: HP2 Method: 8015\3550
Extract Date: 08/30/00 Analyst: HV Run ID: R100281
Analysis Date: 08/31/00 Time: 13:19 Lab File ID: 2G07676 Batch : WG83454

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
68334-30-5	Diesel Range Organics.....	ug/kg	260000		4900	1
	SURROGATES- In Percent Recovery:					
	o-Terphenyl.....		58.0	(47 - 142%)		
	Octacosane.....		64.6	(25 - 162%)		

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: 8270 - Semivolatile Compounds

Lab Sample ID: L0008479-01
Client Sample ID: SS-13-019
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 81

TCLP Extract Date: N/A
Extract Date: 08/24/00
Analysis Date: 08/31/00 Time: 14:18

Instrument: HPMS4
Analyst: MDC
Lab File ID: 4M5048

Method: 8270C\3550B
Run ID: R100332
Batch : WG83581

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
108-95-2	Phenol	ug/kg		ND	200	1
111-44-4	Bis(2-Chloroethyl)ether	ug/kg		ND	200	1
95-57-8	2-Chlorophenol	ug/kg		ND	200	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	200	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	200	1
100-51-6	Benzyl alcohol	ug/kg		ND	200	1
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	200	1
95-48-7	2-Methylphenol	ug/kg		ND	200	1
108-39-4	3-Methylphenol	ug/kg		ND	200	1
108-60-1	bis(2-Chloroisopropyl)ether	ug/kg		ND	200	1
106-44-5	4-Methylphenol	ug/kg		ND	200	1
621-64-7	N-Nitrosodipropylamine	ug/kg		ND	200	1
67-72-1	Hexachloroethane	ug/kg		ND	200	1
98-95-3	Nitrobenzene	ug/kg		ND	200	1
78-59-1	Isophorone	ug/kg		ND	200	1
88-75-5	2-Nitrophenol	ug/kg		ND	200	1
105-67-9	2,4-Dimethylphenol	ug/kg		ND	200	1
65-85-0	Benzoic acid	ug/kg		ND	1000	1
111-91-1	Bis(2-Chloroethoxy)Methane	ug/kg		ND	200	1
120-83-2	2,4-Dichlorophenol	ug/kg		ND	200	1
120-82-1	1,2,4-Trichlorobenzene	ug/kg		ND	200	1
91-20-3	Naphthalene	ug/kg		ND	200	1
106-47-8	4-Chloroaniline	ug/kg		ND	200	1
87-68-3	Hexachlorobutadiene	ug/kg		ND	200	1
59-50-7	4-Chloro-3-methylphenol	ug/kg		ND	200	1
91-57-6	2-Methylnaphthalene	ug/kg		ND	200	1
77-47-4	Hexachlorocyclopentadiene	ug/kg		ND	200	1
88-06-2	2,4,6-Trichlorophenol	ug/kg		ND	200	1
95-95-4	2,4,5-Trichlorophenol	ug/kg		ND	1000	1
91-58-7	2-Chloronaphthalene	ug/kg		ND	200	1
88-74-4	2-Nitroaniline	ug/kg		ND	1000	1
131-11-3	Dimethylphthalate	ug/kg		ND	200	1
208-96-8	Acenaphthylene	ug/kg		ND	200	1
606-20-2	2,6-Dinitrotoluene	ug/kg		ND	200	1
99-09-2	3-Nitroaniline	ug/kg		ND	1000	1
83-32-9	Acenaphthene	ug/kg		ND	200	1
51-28-5	2,4-Dinitrophenol	ug/kg		ND	1000	1
100-02-7	4-Nitrophenol	ug/kg		ND	1000	1
132-64-9	Dibenzofuran	ug/kg		ND	200	1

RL = Reporting Limit

Product: 8270 - Semivolatile Compounds

Lab Sample ID: L0008479-01
Client Sample ID: SS-13-019
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 08/22/00

% Solid: 81

TCLP Extract Date: N/A
Extract Date: 08/24/00
Analysis Date: 08/31/00 Time: 14:18

Instrument: HPMS4
Analyst: MDC
Lab File ID: 4M5048

Method: 8270C\3550B
Run ID: R100332
Batch : WG83581

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
121-14-2	2,4-Dinitrotoluene	ug/kg		ND	200	1
84-66-2	Diethylphthalate	ug/kg		ND	200	1
7005-72-3	4-Chlorophenyl-phenyl ether	ug/kg		ND	200	1
86-73-7	Fluorene	ug/kg		ND	200	1
100-01-6	4-Nitroaniline	ug/kg		ND	1000	1
534-52-1	4,6-Dinitro-2-methylphenol	ug/kg		ND	1000	1
86-30-6	N-Nitrosodiphenylamine	ug/kg		ND	200	1
101-55-3	4-Bromophenyl-phenylether	ug/kg		ND	200	1
118-74-1	Hexachlorobenzene	ug/kg		ND	200	1
87-86-5	Pentachlorophenol	ug/kg		ND	1000	1
85-01-8	Phenanthrene	ug/kg	99	J	200	1
120-12-7	Anthracene	ug/kg		ND	200	1
84-74-2	Di-N-Butylphthalate	ug/kg		ND	200	1
206-44-0	Fluoranthene	ug/kg		ND	200	1
129-00-0	Pyrene	ug/kg	49	J	200	1
85-68-7	Butylbenzylphthalate	ug/kg		ND	200	1
91-94-1	3,3'-Dichlorobenzidine	ug/kg		ND	410	1
56-55-3	Benzo(a)anthracene	ug/kg		ND	200	1
218-01-9	Chrysene	ug/kg		ND	200	1
117-81-7	bis(2-Ethylhexyl)phthalate	ug/kg		ND	200	1
117-84-0	Di-n-octylphthalate	ug/kg		ND	200	1
205-99-2	Benzo(b)fluoranthene	ug/kg		ND	200	1
207-08-9	Benzo(k)fluoranthene	ug/kg		ND	200	1
50-32-8	Benzo(a)pyrene	ug/kg		ND	200	1
193-39-5	Indeno(1,2,3-cd)pyrene	ug/kg		ND	200	1
53-70-3	Dibenzo(a,h)Anthracene	ug/kg		ND	200	1
191-24-2	Benzo(g,h,i)Perylene	ug/kg		ND	200	1

SURROGATES- In Percent Recovery:

2-Fluorophenol	49.1	(25 - 121%)
Phenol-d5	59.4	(24 - 113%)
Nitrobenzene-d5	67.1	(23 - 120%)
2-Fluorobiphenyl	77.3	(30 - 115%)
2,4,6-Tribromophenol	102	(19 - 122%)
p-Terphenyl-d14	117	(18 - 137%)

RL = Reporting Limit

Product: GRO - Gasoline Range Organics

Lab Sample ID: L0008479-01
Client Sample ID: SS-13-019
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 81

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/29/00 Time: 10:34

Instrument: HP3
Analyst: MFB
Lab File ID: 3G04447

Method: 8015\5035
Run ID: R100322
Batch : WG83314

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
8006-61-9	Gasoline Range Organics	ug/kg	2000		620	5
	SURROGATES- In Percent Recovery:					
	Chlorobenzene	135		(64 - 148%)		

Product: 8260 - Volatile Organics

Lab Sample ID: L0008479-01
Client Sample ID: SS-13-019
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 81

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/30/00 Time: 11:33

Instrument: HPMS6
Analyst: CMS
Lab File ID: 6M21928

Method: 8260B\5030
Run ID: R100195
Batch : WG83377

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
67-64-1	Acetone	ug/kg	28	J	620	5
71-43-2	Benzene	ug/kg		ND	31	5
108-86-1	Bromobenzene	ug/kg		ND	31	5
74-97-5	Bromochloromethane	ug/kg		ND	31	5
75-27-4	Bromodichloromethane	ug/kg		ND	31	5
75-25-2	Bromoform	ug/kg		ND	31	5
74-83-9	Bromomethane	ug/kg		ND	62	5
78-93-3	2-Butanone	ug/kg		ND	620	5
104-51-8	n-Butylbenzene	ug/kg		ND	31	5
135-98-8	sec-Butylbenzene	ug/kg		ND	31	5
98-06-6	tert-Butylbenzene	ug/kg		ND	31	5
75-15-0	Carbon disulfide	ug/kg		ND	31	5
56-23-5	Carbon tetrachloride	ug/kg		ND	31	5
108-90-7	Chlorobenzene	ug/kg		ND	31	5

RL = Reporting Limit

Login #L0008479
September 5, 2000 04:36 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 8260 - Volatile Organics

Lab Sample ID: L0008479-01
Client Sample ID: SS-13-019
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 81

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/30/00 Time: 11:33

Instrument: HPMS6
Analyst: CMS
Lab File ID: 6M21928

Method: 8260B\5030
Run ID: R100195
Batch : WG83377

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
124-48-1	Chlorodibromomethane	ug/kg		ND	31	5
75-00-3	Chloroethane	ug/kg		ND	62	5
110-75-8	2-Chloroethyl vinyl ether	ug/kg		ND	62	5
67-66-3	Chloroform	ug/kg		ND	31	5
74-87-3	Chloromethane	ug/kg		ND	62	5
95-49-8	2-Chlorotoluene	ug/kg		ND	31	5
106-43-4	4-Chlorotoluene	ug/kg		ND	31	5
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	31	5
106-93-4	1,2-Dibromoethane	ug/kg		ND	31	5
74-95-3	Dibromomethane	ug/kg		ND	31	5
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	31	5
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	31	5
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	31	5
75-71-8	Dichlorodifluoromethane	ug/kg		ND	62	5
75-34-3	1,1-Dichloroethane	ug/kg		ND	31	5
107-06-2	1,2-Dichloroethane	ug/kg		ND	31	5
75-35-4	1,1-Dichloroethene	ug/kg		ND	31	5
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	31	5
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	31	5
78-87-5	1,2-Dichloropropane	ug/kg		ND	31	5
142-28-9	1,3-Dichloropropane	ug/kg		ND	31	5
594-20-7	2,2-Dichloropropane	ug/kg		ND	31	5
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	31	5
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	31	5
563-58-6	1,1-Dichloropropene	ug/kg		ND	31	5
100-41-4	Ethylbenzene	ug/kg		ND	31	5
591-78-6	2-Hexanone	ug/kg		ND	62	5
87-68-3	Hexachlorobutadiene	ug/kg		ND	31	5
98-82-8	Isopropylbenzene	ug/kg		ND	31	5
99-87-6	p-Isopropyltoluene	ug/kg		ND	31	5
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	62	5
75-09-2	Methylene chloride	ug/kg		ND	31	5
91-20-3	Naphthalene	ug/kg	26	J	62	5
103-65-1	n-Propylbenzene	ug/kg		ND	31	5
100-42-5	Styrene	ug/kg		ND	31	5
630-20-6	1,1,1,2-Tetrachloroethane	ug/kg		ND	31	5
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	31	5
127-18-4	Tetrachloroethene	ug/kg		ND	31	5
108-88-3	Toluene	ug/kg		ND	31	5

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: 8260 - Volatile Organics

Lab Sample ID: L0008479-01
Client Sample ID: SS-13-019
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 81

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/30/00 Time: 11:33

Instrument: HPMS6
Analyst: CMS
Lab File ID: 6M21928

Method: 8260B\5030
Run ID: R100195
Batch : WG83377

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
87-61-6	1,2,3-Trichlorobenzene	ug/kg		ND	31	5
120-82-1	1,2,4-Trichlorobenzene	ug/kg		ND	31	5
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	31	5
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	31	5
79-01-6	Trichloroethene	ug/kg		ND	31	5
75-69-4	Trichlorofluoromethane	ug/kg		ND	62	5
96-18-4	1,2,3-Trichloropropane	ug/kg		ND	31	5
95-63-6	1,2,4-Trimethylbenzene	ug/kg	2.1	J	31	5
108-67-8	1,3,5-Trimethylbenzene	ug/kg		ND	31	5
108-05-4	Vinyl acetate	ug/kg		ND	62	5
75-01-4	Vinyl chloride	ug/kg		ND	62	5
95-47-6	o-Xylene	ug/kg		ND	31	5
108-38-3	m-Xylene	ug/kg		ND	31	5
106-42-3	p-Xylene	ug/kg		ND	31	5

SURROGATES- In Percent Recovery:

Dibromofluoromethane	105	(80 - 120%)
1,2-Dichloroethane-d4	98.5	(80 - 120%)
Toluene-d8	107	(81 - 117%)
4-Bromofluorobenzene	117	(74 - 121%)

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB

Matrix: Soil
Collected: 08/22/00 13:20

% Solid: 82
COC Info: 18692/

Analyte	Units	Result	Qualifiers	RL	Dil	Type	Analyst	Analysis Date	Time	Method
Percent Solids	weight %	82		1.0	1	N/A	TMM	08/28/00	11:20	D2216-90

RL = Reporting Limit

Product: DRO - Diesel Range Organics (GC)

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: 08/30/00
Analysis Date: 08/31/00 Time: 13:27

Instrument: HP2
Analyst: HV
Lab File ID: 2G07677

Method: 8015\3550
Run ID: R100281
Batch : WG83454

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
68334-30-5	Diesel Range Organics.....	ug/kg	350000		4900	1
	SURROGATES- In Percent Recovery:					
	o-Terphenyl.....		53.0	(47 - 142%)		
	Octacosane.....		72.3	(25 - 162%)		

Product: 8270 - Semivolatile Compounds

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: 08/24/00
Analysis Date: 08/31/00 Time: 16:41

Instrument: HPMS4
Analyst: MDC
Lab File ID: 4M5052

Method: 8270C\3550B
Run ID: R100334
Batch : WG83581

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
108-95-2	Phenol.....	ug/kg		ND	200	1
111-44-4	Bis(2-Chloroethyl)ether.....	ug/kg		ND	200	1
95-57-8	2-Chlorophenol.....	ug/kg		ND	200	1
541-73-1	1,3-Dichlorobenzene.....	ug/kg		ND	200	1
106-46-7	1,4-Dichlorobenzene.....	ug/kg		ND	200	1
100-51-6	Benzyl alcohol.....	ug/kg		ND	200	1
95-50-1	1,2-Dichlorobenzene.....	ug/kg		ND	200	1
95-48-7	2-Methylphenol.....	ug/kg		ND	200	1
108-39-4	3-Methylphenol.....	ug/kg		ND	200	1
108-60-1	bis(2-Chloroisopropyl)ether.....	ug/kg		ND	200	1
106-44-5	4-Methylphenol.....	ug/kg		ND	200	1
621-64-7	N-Nitrosodipropylamine.....	ug/kg		ND	200	1
67-72-1	Hexachloroethane.....	ug/kg		ND	200	1

RL = Reporting Limit

Login #L0008479
September 5, 2000 04:36 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 8270 - Semivolatile Compounds

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: 08/24/00
Analysis Date: 08/31/00 Time: 16:41

Instrument: HPMS4
Analyst: MDC
Lab File ID: 4M5052

Method: 8270C\3550B
Run ID: R100334
Batch : WG83581

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
98-95-3	Nitrobenzene	ug/kg		ND	200	1
78-59-1	Isophorone	ug/kg		ND	200	1
88-75-5	2-Nitrophenol	ug/kg		ND	200	1
105-67-9	2,4-Dimethylphenol	ug/kg		ND	200	1
65-85-0	Benzoic acid	ug/kg		ND	1000	1
111-91-1	Bis(2-Chloroethoxy)Methane	ug/kg		ND	200	1
120-83-2	2,4-Dichlorophenol	ug/kg		ND	200	1
120-82-1	1,2,4-Trichlorobenzene	ug/kg		ND	200	1
91-20-3	Naphthalene	ug/kg		ND	200	1
106-47-8	4-Chloroaniline	ug/kg		ND	200	1
87-68-3	Hexachlorobutadiene	ug/kg		ND	200	1
59-50-7	4-Chloro-3-methylphenol	ug/kg		ND	200	1
91-57-6	2-Methylnaphthalene	ug/kg		ND	200	1
77-47-4	Hexachlorocyclopentadiene	ug/kg		ND	200	1
88-06-2	2,4,6-Trichlorophenol	ug/kg	44	J	200	1
95-95-4	2,4,5-Trichlorophenol	ug/kg		ND	1000	1
91-58-7	2-Chloronaphthalene	ug/kg		ND	200	1
88-74-4	2-Nitroaniline	ug/kg		ND	1000	1
131-11-3	Dimethylphthalate	ug/kg		ND	200	1
208-96-8	Acenaphthylene	ug/kg		ND	200	1
606-20-2	2,6-Dinitrotoluene	ug/kg		ND	200	1
99-09-2	3-Nitroaniline	ug/kg		ND	1000	1
83-32-9	Acenaphthene	ug/kg		ND	200	1
51-28-5	2,4-Dinitrophenol	ug/kg		ND	1000	1
100-02-7	4-Nitrophenol	ug/kg		ND	1000	1
132-64-9	Dibenzofuran	ug/kg		ND	200	1
121-14-2	2,4-Dinitrotoluene	ug/kg		ND	200	1
84-66-2	Diethylphthalate	ug/kg		ND	200	1
7005-72-3	4-Chlorophenyl-phenyl ether	ug/kg		ND	200	1
86-73-7	Fluorene	ug/kg	49	J	200	1
100-01-6	4-Nitroaniline	ug/kg		ND	1000	1
534-52-1	4,6-Dinitro-2-methylphenol	ug/kg		ND	1000	1
86-30-6	N-Nitrosodiphenylamine	ug/kg	230		200	1
101-55-3	4-Bromophenyl-phenylether	ug/kg		ND	200	1
118-74-1	Hexachlorobenzene	ug/kg		ND	200	1
87-86-5	Pentachlorophenol	ug/kg		ND	1000	1
85-01-8	Phenanthrene	ug/kg	100	J	200	1
120-12-7	Anthracene	ug/kg		ND	200	1
84-74-2	Di-N-Butylphthalate	ug/kg		ND	200	1

RL = Reporting Limit

Login #L0008479
September 5, 2000 04:36 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 8270 - Semivolatile Compounds

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: 08/24/00
Analysis Date: 08/31/00 Time: 16:41

Instrument: HPMS4
Analyst: MDC
Lab File ID: 4M5052

Method: 8270C\3550B
Run ID: R100334
Batch : WG83581

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
206-44-0	Fluoranthene	ug/kg	150	J	200	1
129-00-0	Pyrene	ug/kg	150	J	200	1
85-68-7	Butylbenzylphthalate	ug/kg		ND	200	1
91-94-1	3,3'-Dichlorobenzidine	ug/kg		ND	400	1
56-55-3	Benzo(a)anthracene	ug/kg	64		200	1
218-01-9	Chrysene	ug/kg	65		200	1
117-81-7	bis(2-Ethylhexyl)phthalate	ug/kg	44		200	1
117-84-0	Di-n-octylphthalate	ug/kg		ND	200	1
205-99-2	Benzo(b)fluoranthene	ug/kg	75		200	1
207-08-9	Benzo(k)fluoranthene	ug/kg	43		200	1
50-32-8	Benzo(a)pyrene	ug/kg	60		200	1
193-39-5	Indeno(1,2,3-cd)pyrene	ug/kg		ND	200	1
53-70-3	Dibenzo(a,h)Anthracene	ug/kg		ND	200	1
191-24-2	Benzo(g,h,i)Perylene	ug/kg		ND	200	1

***SURROGATES*- In Percent Recovery:**

2-Fluorophenol	30.4	(25 - 121%)
Phenol-d5	36.8	(24 - 113%)
Nitrobenzene-d5	36.9	(23 - 120%)
2-Fluorobiphenyl	58.4	(30 - 115%)
2,4,6-Tribromophenol	101	(19 - 122%)
p-Terphenyl-d14	104	(18 - 137%)

RL = Reporting Limit

Product: GRO - Gasoline Range Organics

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/29/00 Time: 12:28

Instrument: HP3
Analyst: MFB
Lab File ID: 3G04450

Method: 8015\5035
Run ID: R100322
Batch : WG83314

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
8006-61-9	Gasoline Range Organics.....	ug/kg	2900		610	5
	SURROGATES- In Percent Recovery:					
	Chlorobenzene.....	121		(64 - 148%)		

Product: 8260 - Volatile Organics

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/30/00 Time: 12:06

Instrument: HPMS6
Analyst: CMS
Lab File ID: 6M21929

Method: 8260B\5030
Run ID: R100195
Batch : WG83377

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
67-64-1	Acetone.....	ug/kg	42	J	610	5
71-43-2	Benzene.....	ug/kg		ND	30	5
108-86-1	Bromobenzene.....	ug/kg		ND	30	5
74-97-5	Bromochloromethane.....	ug/kg		ND	30	5
75-27-4	Bromodichloromethane.....	ug/kg		ND	30	5
75-25-2	Bromoform.....	ug/kg		ND	30	5
74-83-9	Bromomethane.....	ug/kg		ND	61	5
78-93-3	2-Butanone.....	ug/kg		ND	610	5
104-51-8	n-Butylbenzene.....	ug/kg	32		30	5
135-98-8	sec-Butylbenzene.....	ug/kg	9.8	J	30	5
98-06-6	tert-Butylbenzene.....	ug/kg		ND	30	5
75-15-0	Carbon disulfide.....	ug/kg		ND	30	5
56-23-5	Carbon tetrachloride.....	ug/kg		ND	30	5
108-90-7	Chlorobenzene.....	ug/kg		ND	30	5

RL = Reporting Limit

Product: 8260 - Volatile Organics

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/30/00 Time: 12:06

Instrument: HPMS6
Analyst: CMS
Lab File ID: 6M21929

Method: 8260B\5030
Run ID: R100195
Batch : WG83377

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
124-48-1	Chlorodibromomethane	ug/kg		ND	30	5
75-00-3	Chloroethane	ug/kg		ND	61	5
110-75-8	2-Chloroethyl vinyl ether	ug/kg		ND	61	5
67-66-3	Chloroform	ug/kg		ND	30	5
74-87-3	Chloromethane	ug/kg		ND	61	5
95-49-8	2-Chlorotoluene	ug/kg		ND	30	5
106-43-4	4-Chlorotoluene	ug/kg		ND	30	5
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	30	5
106-93-4	1,2-Dibromoethane	ug/kg		ND	30	5
74-95-3	Dibromomethane	ug/kg		ND	30	5
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	30	5
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	30	5
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	30	5
75-71-8	Dichlorodifluoromethane	ug/kg		ND	61	5
75-34-3	1,1-Dichloroethane	ug/kg		ND	30	5
107-06-2	1,2-Dichloroethane	ug/kg		ND	30	5
75-35-4	1,1-Dichloroethene	ug/kg		ND	30	5
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	30	5
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	30	5
78-87-5	1,2-Dichloropropane	ug/kg		ND	30	5
142-28-9	1,3-Dichloropropane	ug/kg		ND	30	5
594-20-7	2,2-Dichloropropane	ug/kg		ND	30	5
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	30	5
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	30	5
563-58-6	1,1-Dichloropropene	ug/kg		ND	30	5
100-41-4	Ethylbenzene	ug/kg		ND	30	5
591-78-6	2-Hexanone	ug/kg		ND	61	5
87-68-3	Hexachlorobutadiene	ug/kg		ND	30	5
98-82-8	Isopropylbenzene	ug/kg		ND	30	5
99-87-6	p-Isopropyltoluene	ug/kg	17	J	30	5
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	61	5
75-09-2	Methylene chloride	ug/kg		ND	30	5
91-20-3	Naphthalene	ug/kg		ND	61	5
103-65-1	n-Propylbenzene	ug/kg		ND	30	5
100-42-5	Styrene	ug/kg		ND	30	5
630-20-6	1,1,1,2-Tetrachloroethane	ug/kg		ND	30	5
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	30	5
127-18-4	Tetrachloroethene	ug/kg		ND	30	5
108-88-3	Toluene	ug/kg		ND	30	5

RL = Reporting Limit

Product: 8260 - Volatile Organics

Lab Sample ID: L0008479-02
Client Sample ID: SS-13-020
Site/Work ID: PLATTSBURG AFB
Matrix: Soil

Dil. Type: N/A
COC Info: 18692/
Date Collected: 08/22/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 82

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 08/30/00 Time: 12:06

Instrument: HPMS6
Analyst: CMS
Lab File ID: 6M21929

Method: 8260B\5030
Run ID: R100195
Batch : WG83377

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
87-61-6	1,2,3-Trichlorobenzene	ug/kg		ND	30	5
120-82-1	1,2,4-Trichlorobenzene	ug/kg		ND	30	5
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	30	5
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	30	5
79-01-6	Trichloroethene	ug/kg		ND	30	5
75-69-4	Trichlorofluoromethane	ug/kg		ND	61	5
96-18-4	1,2,3-Trichloropropane	ug/kg		ND	30	5
95-63-6	1,2,4-Trimethylbenzene	ug/kg	12	J	30	5
108-67-8	1,3,5-Trimethylbenzene	ug/kg	18	J	30	5
108-05-4	Vinyl acetate	ug/kg		ND	61	5
75-01-4	Vinyl chloride	ug/kg		ND	61	5
95-47-6	o-Xylene	ug/kg		ND	30	5
108-38-3	m-Xylene	ug/kg		ND	30	5
106-42-3	p-Xylene	ug/kg		ND	30	5

SURROGATES- In Percent Recovery:

Dibromofluoromethane	102		(80 - 120%)
1,2-Dichloroethane-d4	95.8		(80 - 120%)
Toluene-d8	107		(81 - 117%)
4-Bromofluorobenzene	125	*	(74 - 121%)

RL = Reporting Limit

TEST CERTIFICATE
KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (740) 373-4071

Versar, Inc. Division 35
1900 Frost Road
Suite 110
Bristol, PA 19007
Attention: Rich Habrukowich

PO Number:
Account Number: VERSAR-PA-318

Login #: L0011531
Report Date: 11/29/00
Work ID: SS-13 DIG/PLATTS, AFB
Date Received: 11/28/00

SAMPLE IDENTIFICATION

Sample Number	Sample Description
L0011531-01	PAFB-SS13-045
L0011531-03	PAFB-SS13-047

Sample Number	Sample Description
L0011531-02	PAFB-SS13-046

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the written approval of KEMRON.

NYSDOH ELAP ID: 10861

David L. Bumgarner

Certified By
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES

COC No. A 21476

109 Starlite Park
Marietta, OH 45750

KEMRON
ENVIRONMENTAL SERVICES

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: VERSAR

Project Contact: BRYAN FOLEY | Contact Phone #: (215) 913 1132

Turn Around Requirements: STANDARD | Location: PLATTSBURGH, NY

Project #: SS-13 DIG | Project Name: PLANS, AFB

Sampler (print): BRYAN FOLEY | Signature: Bryan

Program: ☐ NPDES ☑ AFCEE ☐ RCRA ☐ USAGE ☐ Other

ADDITIONAL REQUIREMENTS: TPH - GRO & DRO per client 11-27-00

Sample I.D. No.	Comp*	Grab	Date	Time	Protocol CWA	Protocol SW846	NUMBER OF CONTAINERS	Hold	TPH - GRO & DRO per client 11-27-00
PAFB-SS13-045		X	11/27/00	09:45			1		X
PAFB-SS13-046		X		09:50			1		X
PAFB-SS13-047		X		09:54			1		X
			Rejas 11-28-00						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Bryan	11/27/00	11:00					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Cooler Temp in °C	Remarks:
			Brenda Gregory	11/28/00	1007	3	C/C dated Sp intact tag

*Homogenize all composite samples prior to analysis

Lab Sample ID: L0011531-01 Matrix: Soil % Solid: 84
Client Sample ID: PAFB-SS13-045 Collected: 11/27/00 09:45 COC Info: 21476/
Site/Work ID: SS-13 DIG/PLATTS, AFB

Analyte	Units	Result	Qualifiers	RL	Dil	Type	Analyst	Analysis Date	Time	Method
Percent Solids.....	weight %	84		1.0	1	N/A	TMM	11/28/00	13:20	D2216-90

Product: DRO - Diesel Range Organics (GC)

Lab Sample ID: L0011531-01 Dil. Type: 00 Sample Weight: N/A
Client Sample ID: PAFB-SS13-045 COC Info: 21476/ Extract Volume: N/A
Site/Work ID: SS-13 DIG/PLATTS, AFB
Matrix: Soil Date Collected: 11/27/00 % Solid: 84

TCLP Extract Date: N/A Instrument: HP2 Method: 8015\3550
Extract Date: 11/30/00 Analyst: HV Run ID: R107785
Analysis Date: 11/30/00 Time: 16:44 Lab File ID: 2G08653 Batch : WG88012

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
68334-30-5	Diesel Range Organics.....	ug/kg	2300000		24000	5
	SURROGATES- In Percent Recovery:					
	o-Terphenyl.....		498	*	(47 - 142%)	
	Octacosane.....		64.7		(25 - 162%)	

Lab Sample ID: L0011531-02 Matrix: Soil % Solid: 88
Client Sample ID: PAFB-SS13-046 Collected: 11/27/00 09:50 COC Info: 21476/
Site/Work ID: SS-13 DIG/PLATTS, AFB

Analyte	Units	Result	Qualifiers	RL	Dil	Type	Analyst	Analysis Date	Time	Method
Percent Solids.....	weight %	88		1.0	1	N/A	TMM	11/28/00	13:20	D2216-90

RL = Reporting Limit

Product: DRO - Diesel Range Organics (GC)

Lab Sample ID: L0011531-02
Client Sample ID: PAFB-SS13-046
Site/Work ID: SS-13 DIG/PLATTS, AFB
Matrix: Soil

Dil. Type: 00
COC Info: 21476/
Date Collected: 11/27/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 88

TCLP Extract Date: N/A
Extract Date: 11/30/00
Analysis Date: 12/01/00 Time: 10:09

Instrument: HP2
Analyst: HV
Lab File ID: 2G08664

Method: 8015\3550
Run ID: R107791
Batch : WG88012

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
68334-30-5	Diesel Range Organics.....	ug/kg	5600000		91000	20

SURROGATES- In Percent Recovery:

o-Terphenyl.....	DL	(47 - 142%)
Octacosane.....	DL	(25 - 162%)

Lab Sample ID: L0011531-03
Client Sample ID: PAFB-SS13-047
Site/Work ID: SS-13 DIG/PLATTS, AFB

Matrix: Soil
Collected: 11/27/00 09:54

% Solid: 84
COC Info: 21476/

Analyte	Units	Result	Qualifiers	RL	Dil	Type	Analyst	Analysis Date	Time	Method
Percent Solids.....	weight %	84		1.0	1	N/A	TMM	11/28/00	13:20	D2216-90

RL = Reporting Limit

KEMRON ENVIRONMENTAL SERVICES

Product: DRO - Diesel Range Organics (GC)

Lab Sample ID: L0011531-03
Client Sample ID: PAFB-SS13-047
Site/Work ID: SS-13 DIG/PLATTS, AFB
Matrix: Soil

Dil. Type: 00
COC Info: 21476/
Date Collected: 11/27/00

Sample Weight: N/A
Extract Volume: N/A
% Solid: 84

TCLP Extract Date: N/A
Extract Date: 11/30/00
Analysis Date: 11/30/00 Time: 17:31

Instrument: HP2
Analyst: HV
Lab File ID: 2G08658

Method: 8015\3550
Run ID: R107785
Batch : WG88012

CAS #	Compound	Units	Result	Qualifiers	RL	Dilution
68334-30-5	Diesel Range Organics.....	ug/kg	4200000		48000	10

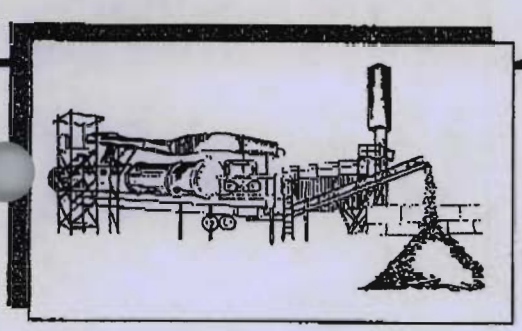
SURROGATES- In Percent Recovery:

o-Terphenyl.....	DL	(47 - 142%)	
Octacosane.....	DL	(25 - 162%)	

RL = Reporting Limit

APPENDIX E

WASTE DISPOSAL WEIGHT TICKETS



ESMI of NEW YORK

304 Towpath Road
Fort Edward, NY 12828
800-511-ESMI
518-747-5500
518-747-1181Fax

122A Naubuc Ave
Glastonbury, CT 06033
(860) 633-7872
(860) 633-7884 Fax

11/12/2001 ***SHORT FORM CONTRACT***

CUSTOMER Versar, Inc.
2558 Pearl Buck Road
Bristol PA 19007
Richard Halbrukowich FAX (215) 788-8680

Site Information ***Plattsburgh AFB***
22 US Oval Suite 2200
Plattsburgh ***NY***

Services: The following Services shall be provided at the following rates:

Transportation,Thermal Treatment and Recycling

$46.00 *per processed ton of* ***#6 Oil*** *contaminated soils* ***500*** *tons.*

$65.00 per hour for time on site in excess of dock time allowance of 60 minutes. A minimum load charge per truck applies as follows: (22 ton min. load -triaxle) (27 ton min. load - dump trailer). ESMI is not responsible for transporter delays or demurrage charges at project site and/or off-loading at ESMI's facility. This contract price is for clay and moisture content to be less than 15% each.

Other Services: *Schedule 250 tons each day on 11/20 & 11/21*

HANDLING OF NON-CONFORMING WASTE MATERIALS:
Soils with clay and moisture contents that are in excess of 15% will be subject to additional charges accordingly. ESMI of NY reserves the right to reject deliveries containing excessive clay and moisture.

7% NY State Sales Tax is not included in the above pricing and will be added to the customer's Invoice, unless a properly executed Tax Exempt form is issued to ESMI of NY.

Disposition of Treated Materials. ESMI shall manage the treated materials as
****** Materials will become the property of ESMI of NY *****

PAYMENT TERMS: Customer shall pay ESMI of NY for services provided:
Within 30 Days following delivery of Waste Materials to ESMI of

A 2% Service Charge will be added to all past due accounts. I , being a responsible representative of , do hereby understand and accept the payment terms noted above, and the attached Terms and Conditions. _____ ***(Initial)***

Acceptance of this Contract includes acceptance of the terms above, attached Terms and Conditions, and all documents incorporated by reference therein.

Signature: _____
Print Name: Richard Halbrukowich
Title: Project Manager

ESMI of New York
Todd J. Calder- VP Sales & Marketing NY

Thermal Treatment...
the Only Proven Technology for the Permanent Destruction of Hydrocarbons

Equal Opportunity Employer

Post-it® Fax Note 7671
To Jo: Rich
Co./Dept. Versar
Phone #
Fax # 215-788-8680

Environmental Soil Management of New Yo
CUSTOMER WORK ORDER

ESMI Customer: Versar, Inc

Customer Address: 3558 Pearl Buck Road City: Bristol State: PA Zip: 19007

Contact: Richard Habrykowich Telephone: (215) 788-7844 x228 Fax: (215) 788-7844

Site Contact: Steve Gagnier Telephone/Cell: (518) 563-2871 x14 Pager: (518) 569-3025

Loading Contractor (optional) Versar, Inc. Bryan Folley (Field) Phone: (215) 913-1132 cell

Site Name: Plattsburgh AFB Property Owner(s) Phone: (518) 563-2871 x14

Site Address: 22 US Oval Suite 2200 City: Plattsburgh State: NY Zip: 12903

CUSTOMER CONTACTING OWN TRUCKING (CHECK HERE) ☐ Yes ☒ No

Approximate Tonnage: 350 - 450 tons

PROJECT SCHEDULE DATE: ___/___/2001 Oct - Nov 2001

Please complete the below information if ESMI is providing transportation:

TRUCK TYPE: ☐ DUMP TRAILER ☐ TRIAXLE ☐ TRIAXLE W/ PUP

NO. OF TRUCKS: _____

START TIME: Oct - Nov 2001

DIRECTIONS TO SITE: I-87 North to Plattsburgh
Take Exit 36 - Route 22 North
Plattsburgh AFB 1 mile on Right

Versar will meet trucks at Gate - need to be escorted

(attached pages if needed)

Work Order Authorization

Signature: [signature] Date: 10/15/01

Typed/Printed Name: Richard Habrykowich Company: Versar, Inc

Acceptance of all projects are predicated on the review of this form and the analytical results of the material to be received.

JOB REPORT REPORT OF

Job No. : : 5389

Reporting FROM : 11-20-01 00:00 TO : 11-21-01 23:59

DATE : 11-21-01
TIME : 16:15:28

Date	Trans-action #	Truck No.	Site	Site Address	Description	Net Tons
11-20-01	036697	BG-4	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	35.78
11-20-01	036698	BG-3	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	35.05
11-20-01	036699	BG-1	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	38.14
11-20-01	036727	BG-4	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	36.50
11-20-01	036728	BG-3	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	35.33
11-20-01	036730	BG-1	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	35.91
11-21-01	036776	BG-4	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	34.08
11-21-01	036777	BG-3	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	33.40
11-21-01	036802	BG-4	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	32.06
11-21-01	036803	BG-3	PLATTSBURG AFB	PLATTSBURG,NY	VIRGIN PCS	15.92
TOTALS :						332.17

ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036697 Time In Time Out 09:52 Date 11-20-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 106400 lb KEY
Tare : 34840 lb STO
==========
Net : 71560 lb

Truck No. : BG-4
Hauler : BOB GEISEL

Net Tons : 35.78

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Notes:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Weigh Master : K. Matthews

Driver : Earl Wyatt

Weigh Master #: 330029

Weight This Ticket: 35.78

Cum Job Weight 35.78

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11/20/01

Transporter Name: Sane Vehicle License No. 800 9 4 R

Address: Sane

Phone No.: Driver Signature:

GENERATOR

Generator Name: Veteran Dnc. Platts burg Air Base Generating Location: Sane

Address: US 22 Suite 2200 Address: Sane

Platts burg N.Y.

Phone No. Phone No.

Description

Agents Signature X

Oil Soaked Dirt ✓

Gas Soaked Dirt

Other

Quantity 35.78 Tons

DESTINATION

Site Name: ESMI of New York Phone No. 518- 747-5500

Address: 304 Haw gath Rd.

Fort Edward N.Y. Signature:

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ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036698 Time In Time Out 10:17 Date 11-20-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 104860 lb KEY
Tare : 34760 lb STO
==========
Net : 70100 lb

Truck No. : BG-3
Hauler : BOB GEISEL

Net Tons : 35.05

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Notes:

Weigh Master : [signature]

Driver : [signature]

Weigh Master #: 530022

Weight This Ticket: 35.05

Cum Job Weight 70.83

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11-20-01

Transporter Name: _____ Vehicle License No. 7722-8-R

Address: SAME NY

Phone No.: _____ Driver Signature: [signature]

GENERATOR

Generator Name: Plattsburgh AFB Generating Location: _____

Address: 32 U.S. Oval Suite 2200 Address: SAME
Plattsburgh NY

Phone No. _____ Phone No. _____

Description

Agents Signature X [signature]

Oil Soaked Dirt XXXX

Gas Soaked Dirt _____

Other _____

Quantity 35.05 Tons

DESTINATION

Site Name: ESME. Phone No. 518-747-5500

Address: 304 Tow Path Rd.
Ft. Edward NY

Signature: [signature]

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Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11-20-01

Transporter Name: S Vehicle License No. 22420F-N.Y.

Address: A BGZ

M

Phone No.: E Driver Signature:

GENERATOR

Generator Name: PLATTSBURGH AFB Generating Location: S

Address: 22 U.S. OWL SUITE 2200 Address: A

M

Phone No. Phone No. E

Description

Agents Signature X

Oil Soaked Dirt X

Gas Soaked Dirt

Other

Quantity 38.14 tons

DESTINATION

Site Name: ESMI of N.Y. Phone No. 518-747-5500

Address: 304 TOWPATH Rd

FORT EDWARD N.Y. Signature:

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ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036727 Time In Time Out 15:46 Date 11-20-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 107840 lb KEY
Tare : 34840 lb STO
==========
Net : 73000 lb

Truck No. : BG-4
Hauler : BOB GEISEL

Net Tons : 36.50

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Notes:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Weigh Master : _____ Driver : _____

Weigh Master #: 530022

Weight This Ticket: 36.50

Cum Job Weight 145.47

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11/20/01

Transporter Name: [illegible] Vehicle License No. 8dd 94R

Address: [illegible]

Phone No.: Driver Signature: Earl Douglas

GENERATOR

Generator Name: Upson Inc Plattsburg AFB Generating Location: [illegible]

Address: Plattsburg N.Y. 22 US Oval suite 2200 Address: [illegible]

Phone No. Phone No.

Description

Agents Signature X [illegible]

Oil Soaked Dirt

Gas Soaked Dirt ✓

Other

Quantity 36.50 Tons

DESTINATION

Site Name: ESMI of New York Phone No. 518-747-5500

Address: 304 Bowpath Rd Fort Edward N.Y. Signature: [illegible]

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ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036728 Time In Time Out 15:48 Date 11-20-01

Customer Name:VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 105420 lb KEY
Tare : 34760 lb STO
==========
Net : 70660 lb

Truck No. : BG-3
Hauler : BOB GEISEL

Net Tons : 35.33

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Notes:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

We[illegible]aster [signature] Driver : [signature]

Weigh Master #: 53022

Weight This Ticket: 35.33

Cum Job Weight 180.80

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11-20-01

Transporter Name: _____ Vehicle License No. 7722-8-R.

Address: SAME NY

Phone No.: _____ Driver Signature: Randy Swift

GENERATOR

Generator Name: Plattsburgh AFB Generating Location: _____

Address: 2245 OOAL 2200 Suite Address: SAME

Plattsburgh NY

Phone No. _____ Phone No. _____

Description

Agents Signature X

Oil Soaked Dirt XXXX

Gas Soaked Dirt _____

Other _____

Quantity 35330 Tons

DESTINATION

Site Name: ESMF Phone No. 518-747-5500

Address: 304 Tow Path Rd

FT Edward NY Signature:

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ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036730 Time In Time Out 15:50 Date 11-20-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 108760 lb KEY
Tare : 36940 lb STO
==========
Net : 71820 lb

Truck No. : BG-1
Hauler : BOB GEISEL

Net Tons : 35.91

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Notes:

Weigh Master : K. Matteson Driver : [signature]

Weigh Master #: 53022

Weight This Ticket: 35.91

Cum Job Weight 216.71

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11-20-01

Transporter Name: S Vehicle License No. 72420F-NY

Address: A BGL

M

Phone No.: E Driver Signature: Arthur L. Mann

GENERATOR

Generator Name: PLATTSBURGH AFB. Generating Location: S

Address: 22 US OUAL SUITE 1100 Address: A

PLATTSBURGH N.Y. M

Phone No. Phone No. E

Description

Agents Signature X Bob

Oil Soaked Dirt X

Gas Soaked Dirt

Other

Quantity 35.91 TONS

DESTINATION

Site Name: ESMI of N.Y. Phone No. 518-747-5500

Address: 304 TOWPATH Rd

FORT EDWARD N.Y. Signature: K Mattson

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ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036776 Time In Time Out 09:53 Date 11-21-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 103000 lb KEY
Tare : 34840 lb STO
==========
Net : 68160 lb

Truck No. : BG-4
Hauler : BOB GEISEL

Net Tons : 34.08

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Notes:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Weigh Master : Rick Matteson

Weigh Master #: 53002

Driver : Earl Daigle

Weight This Ticket: 34.08

Cum Job Weight 250.79

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11/21/01

Transporter Name: [illegible] Vehicle License No. 80094R

Address: [illegible]

Phone No.: [illegible] Driver Signature: Earl Douglas

GENERATOR

Generator Name: Vernon Env. Plattsburg AFB Generating Location: [illegible]

Address: 22 US Oval Suite 2200 Address: [illegible]
Plattsburg N.Y. 12903

Phone No. Phone No.

Description

Agents Signature X

Oil Soaked Dirt

Gas Soaked Dirt ✓

Other

Quantity 34.08 TONS

DESTINATION

Site Name: ESMI of New York Phone No. 578-747-5300

Address: 304 Towpath Rd
Fort Edward N.Y.

Signature:

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ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036777 Time In Time Out 09:54 Date 11-21-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 101560 lb KEY
Tare : 34760 lb STO
==========
Net : 66800 lb

Truck No. : BG-3
Hauler : BOB GEISEL

Net Tons : 33.40

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Notes:

Weigh Master : [signature]
Weigh Master #: 530022

Driver : [signature]

Weight This Ticket: 33.40

Cum Job Weight 284.19

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11-21-0

Transporter Name: _____ Vehicle License No. 7722-SR

Address: SAME NY

Phone No.: _____ Driver Signature: Randy Hunt

GENERATOR

Generator Name: Plattsburgh AFB Generating Location: _____

Address: 22 US Dual Suite 2200 Address: SAME

Plattsburgh NY

Phone No. _____ Phone No. _____

Description

Agents Signature X

Oil Soaked Dirt XXXX

Gas Soaked Dirt _____

Other _____

Quantity 33.40 TONS

DESTINATION

Site Name: ESMF Phone No. 518-942-5500

Address: 304 Tow Path Rd

Ft. Edward. NY Signature:

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Yellow

Page 3 - Generator Copy
Pink

ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036802 Time In Time Out 14:48 Date 11-21-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 98960 lb KEY
Tare : 34840 lb STO
==========
Net : 64120 lb

Truck No. : BG-4
Hauler : BOB GEISEL

Net Tons : 32.06

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Notes:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Weigh Master : K Matteson

Driver : Earl Douglas

Weigh Master #: S30072

Weight This Ticket: 32.06

Cum Job Weight 316.25

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11/21/01

Transporter Name: S Vehicle License No. 8099YK

Address:

Phone No.: Driver Signature: Earl Douglas

GENERATOR

Generator Name: Yes can Inc. Plattsburg AFB Generating Location: S

Address: 22 05 Oval Suite 2200 Address:
Plattsburg N.Y. 12903

Phone No. Phone No.

Description

Agents Signature X

Oil Soaked Dirt

Gas Soaked Dirt ✓

Other

Quantity 32.06 Tons

DESTINATION

Site Name: ESMI of New York Phone No. 518-747-5500

Address: 304 Town Path Rd
Fort Edward N.Y. Signature: K. Matteson

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White

Page 2 - Destination Copy
Yellow

Page 3 - Generator Copy
Pink

ESMI OF NEW YORK
304 Towpath Rd.
Fort Edward NY 12828
(518) 747 - 5500

Transaction No. 036803 Time In Time Out 14:49 Date 11-21-01

Customer Name: VERSAR,INC.
2558 PEARL BUCK RD
BRISTOL ,PA

Gross: 66600 lb KEY
Tare : 34760 lb STO
==========
Net : 31840 lb

Truck No. : BG-3
Hauler : BOB GEISEL

Net Tons : 15.92

Product No. : 10
Description : VIRGIN PCS
Metals/NonMetals:

Job No. : 5389
Job Site : PLATTSBURG AFB
Job Address: 22 US OVAL SUITE2200
Job City : PLATTSBURG,NY
Job State : NY

Notes: 27 min

Weigh Master : [signature] Driver : [signature]

Weigh Master #: 530022

Weight This Ticket: 15.92

Cum Job Weight 332.17

TPH 0.000

Est. Total Job 1500.00

Robert Geisel
Putts Pond Road
Ticonderoga, NY 12883
(518) 585-9872

NON - HAZARDOUS WASTE MANIFEST

TRANSPORTER

N.Y.S. D.E.C. Permit # 5A - 181 Date of Shipment: 11-21-01

Transporter Name: _____ Vehicle License No. 7722-8-R

Address: S NY
AME

Phone No.: _____ Driver Signature: Randy Reid

GENERATOR

Generator Name: Plattsburgh AFB Generating Location: _____

Address: 2245 OOA1 Suite 2200 Address: SAME
Plattsburgh NY

Phone No. _____ Phone No. _____

Description

Agents Signature X

Oil Soaked Dirt XXXX

Gas Soaked Dirt _____

Other _____

Quantity 15.92 tons
22 Ton

DESTINATION

Site Name: ESMI. Phone No. 518 · 747-5500

Address: 304 Tow Path Rd.
FT Edward NY Signature:

Page 1 - Transporter Copy
White

Page 2 - Destination Copy
Yellow

Page 3 - Generator Copy
Pink

APPENDIX F

PHOTOGRAPHIC LOG

Building 3578, Backhoe removing top layer of asphalt; asphalt pile (background)

Building 3578, Backhoe continuing excavation.

Building 3578, Soil containment area along West side of building

Building 3578, Backhoe with hoe-ram breaking concrete.

Building 3578, Backhoe continuing excavation and staging of soil.

Building 3578, Excavation, concrete and asphalt piles (background)

Building 3578, Excavator continuing excavation

Building 3578, Soil containment area along Northeast side of building.

Building 3578, Loading out concrete and asphalt

Building 3578, Truck delivering clean fill

Building 3578, Loader filling excavation

Building 3578, Loader moving contaminated soil

Building 3578, Removed pipe (foreground) and loader filling and compacting excavation pit

Building 3578, Backhoe consolidating stockpiles of contaminated soil in one containment area

Building 3578, Completed site, with repaired well.

Building 3569

Building 3569, excavation and stockpiles adjacent to excavation

Building 3569, Backfilling and grading operation

Building 3569, Backfilling operation (from Leach field)