

**SITE INVESTIGATION REPORT**

**BUILDINGS 103, 103D, 103E  
ST. LOUIS FEDERAL CENTER  
4300 GOODFELLOW  
ST. LOUIS, MISSOURI**

**Prepared for:**

U.S. General Services Administration  
1500 E. Bannister Road  
Room 2101  
Kansas City, Missouri 64131-3088

**Prepared by:**

SCS Engineers  
10401 Holmes Road, Suite 400  
Kansas City, Missouri, 64131  
(816) 941-7510

June 4, 2004  
02200070.27

## CONTENTS

<u>Section</u>		<u>Page</u>
1	Introduction.....	1-1
	Preliminary Assessment.....	1-1
	Site Investigation Purpose.....	1-1
	Site Description and Historical Use.....	1-2
2	Subsurface Soil Sampling.....	2-1
	Subsurface Soil Drilling and Sampling.....	2-1
	Logging of Subsurface Materials.....	2-1
	Analytical Sample Collection.....	2-2
	Chemical Analyses.....	2-2
3	Crawl Space Soil Sampling.....	3-1
	Logging of Sample Parameters.....	3-1
	Analytical Sample Collection.....	3-1
	Chemical Analyses.....	3-1
4	Wipe Sampling.....	4-1
	Logging of Sample Parameters.....	4-1
	Wipe Sample Collection.....	4-1
	Chemical Analyses.....	4-1
5	Air Monitoring.....	5-1
	Analytical Sample Collection.....	5-1
	Chemical Analyses.....	5-1
6	Missouri Risk Based Cleanup Standards (CALM).....	6-1
7	Conclusions and Recommendations.....	7-1
	Conclusions.....	7-1
	Recommendations.....	7-1

## **CONTENTS (Continued)**

### **Figures and Tables**

- 1 Summary of Analytical Results
- 2 Summary of Analytical Results

### **Appendices**

- A NPN Mercury Monitoring Report

## SECTION 1

### INTRODUCTION

At the request of the U.S. General Services Administration (GSA), SCS Engineers initiated the performance of a Preliminary Assessment (PA)/Site Investigation (SI) of the St. Louis Federal Center located at 4300 Goodfellow, St. Louis, Missouri (Property). This report summarizes the results of the SI conducted by SCS on the Property. Our findings based on these results can be relied upon by GSA as to the conditions that currently exist, but are not intended for use by others at a later date.

### PRELIMINARY ASSESSMENT

In 2002, SCS Engineers initiated a Preliminary Assessment (PA) of the facility including a detailed site inspection of Building 103. Specific attention to Recognized Environmental Concerns associated with possible future occupancy of Building 103 was emphasized. The PA process performed at the site identified the need for a facility SI. The PA determined, based on the sites former use, in combination with the future occupancy of the buildings by federal office workers, the SI started with Building 105. A separate PA Report has been prepared by SCS which documents the findings of the PA. The PA identified the need for a removal action associated with the shooting range in the basement of Building 105. Concerns regarding the presence of lead associated with the firing range and the potential for human exposure or a release to the environment necessitated the removal action. The Shooting Range Remediation project was completed by SCS and has been documented in a Removal Action Report.

Other suspect environmental concerns were identified during the PA and subsequent data review process. These suspect environmental concerns are associated with the former use of the Federal Center as a munitions manufacturing facility and include potential environmental impacts to the Property by hazardous chemicals. The PA/SI process, as designed by EPA, will address these potential concerns. This would include a detailed assessment of former and current activities at the Property and would include intrusive sampling of all identified concerns. During the performance of a PA/SI, potential environmental concerns are identified and assessed. The typical PA/SI Scope of Work would include conducting a file review, performance of a thorough site inspection, development of a sampling plan, execution of the data acquisition and analysis, and the interpretation and reporting of the results. The goals of the PA/SI process are to determine if a release of hazardous substances has occurred, if the hazardous substances are of sufficient toxicity and quantity to represent a risk to human health and the environment, and determine if human or environmental targets have the potential to be exposed to the hazardous substances at the site. The performance of a PA/SI at the Property would provide a thorough understanding of the environmental conditions at the Federal Center.

### SITE INVESTIGATION PURPOSE

The purpose of this investigation was to screen the Property for potential environmental impacts from on-site activities, past Property use, and/or surrounding properties. The protocol for the

investigation is based on the "Guidance For Performing Site Investigations Under CERCLA, EPA540-R-92-021, September 1992." A Site Investigation is intended to:

- Eliminate from consideration those sites that pose no threat to public health and environment.
- Determine the need for a removal action.
- Set priorities for future investigations.
- Gather existing or additional data to facilitate later components of the site assessment process.

A scope of work was developed to assist SCS in collecting defensible data to make informed decisions as to whether the site poses a threat to public health and environment. The scope of work performed by SCS included the collection of wipe samples of interior surfaces, collection of crawl space soil samples, collection of water samples from interior sumps, and the collection of subsurface soil samples using direct-push technology. Sample locations were selected as a part of a detailed sampling strategy designed to eliminate concern over occupation of the building by Federal office workers.

## **SITE DESCRIPTION AND HISTORICAL USE**

The 4300 Goodfellow Federal Center is located on a portion of the former St. Louis Ordnance Plant in St. Louis, Missouri. In January, 1941, construction of the St. Louis Ordnance Plant began and was completed in May 1942. The Ordnance Plant was the largest small-arms ammunition installation in the world and embodied three operating divisions. The facility, a Government-Owned/Contractor Operated (GOCO) plant, produced small arms ammunition (.30 caliber and .50 caliber) and components for the 105-mm shells. Plant No. 1 was located on the east side of Goodfellow Boulevard. During World War II buildings 102, 103, 104, and 105 of Plant No. 1 were operated for the production of small arms ammunition. Buildings 102 and 103 housed the production of .30 caliber ammunition, while Buildings 104 and 105 housed the production of .50 caliber ammunition.

During small arms ammunition manufacturing at Plant No. 1, Building 103 served as one of two .30 caliber production locations. The small arms ammunition production at Building 103 consisted of brass cartridge annealing and shaping, powder and primer packing, lead core insertion, and sorting, packaging, and shipping. Powder and primer were stored in a munitions bunker which sat south of Building 103. The bunker was removed and was replaced with a parking lot. Powder was moved from the bunker and brought into Building 103D for loading. Primer was brought into Building 103E for packing. Cartridge annealing and shaping took place in Building 103, as did sorting, packaging, and shipping of the completed cartridges. Cartridge manufacturing ended at Plant No. 1 at the close of World War II.

The Department of Defense converted the Property in the 1960's and 1970's to a Federal Office Complex under the management of GSA. The Department of Defense reportedly spent in excess of \$50 million dollars in demolition, grading, disposal, and remodeling costs. The four primary munitions manufacturing buildings (102, 103, 104, and 105) were decommissioned and converted into office and warehouse space. The grounds surrounding the buildings were graded and converted into parking and greenspace. The Federal Center has been utilized for over 20 years as a Federal Office Center whose primary tenants have included GSA, USDA, and the Department of Defense (Army).

## SECTION 2

### SUBSURFACE SOIL SAMPLING

#### SUBSURFACE SOIL DRILLING AND SAMPLING

On December 16-17, 2003, twelve (12) soil borings were advanced in locations surrounding Building 103, 103D, and 103E. Two of the borings (SB10 and SB11) were advanced in the parking lot where the former powder/primer bunker was located. Borings SB31 and SB32 were placed west and southwest of Building 103D, Boring SB33 was placed west of Building 103E, Borings SB18, SB19, and SB 20 were placed north and northeast of Building 103, and Borings SB28, SB29, SB30, and SB 34 were placed south and southeast of Building 103. Probe refusal was encountered during the drilling activity at Boring SB11 at a depth of 3 feet below ground surface (bgs) and at Boring SB33 at a depth of 12 feet bgs. All other borings were terminated at their proposed depths, with the maximum boring depth of 20-ft bgs.

Probing was performed by BGS of Lawrence, Kansas, with a truck-mounted Geoprobe unit equipped with a pneumatic hammer and hollow, 2-inch diameter probe rods. At each probe location, soil was continuously sampled by driving two-ft sample barrels equipped with acetate liners into subsurface soils until refusal was encountered.

Soil was extracted from the acetate liners and screened with a photo-ionization detector (PID). No groundwater samples were collected. The results of field screening for VOCs are presented on the drilling logs.

#### LOGGING OF SUBSURFACE MATERIALS

The materials encountered in the borings were classified in the field and a log was prepared for each boring by the SCS Geologist. The classification procedure included texture descriptions of soils according to the Unified Soil Classification System (USCS). Included in the descriptions are principal and minor soil constituents, moisture content, soil color, plasticity of cohesive soils, gradation of non-cohesive soils, consistency, and other visible features. Color was defined using the Munsell Color System.

In general, soils consisted of damp, silty lean clay, and clayey silts with trace to moderate plasticity. Shale was identified in Boring SB33 at a depth of 12 feet bgs, which resulted in probe refusal. A concrete slab was intersected in Boring SB 11 at a depth of 4 feet bgs which also resulted in probe refusal. No groundwater was encountered during the probing effort. Soil discoloration and odor was identified in Borings SB19, SB20, and SB34 and were noted in the field logs. Samples of the affected soil were collected and field screened with a PID. Readings ranged from 1.2 parts per million (ppm) to 10.6 ppm.

## **ANALYTICAL SAMPLE COLLECTION**

Each soil sample was extracted from the acetate liner with a stainless steel sampling tool. Upon extraction from the acetate liners, soil samples were immediately stored in clean, laboratory-supplied jars for analysis. Each sample consisted of a discrete portion of soil obtained directly from the continuous soil sampler with a decontaminated stainless steel spatula. Once capped and sealed with a Teflon-lined lid, sample jars were placed on ice in a cooler, and held until the end of the day of field investigation. One soil sample from each boring was submitted for laboratory analysis. Samples were placed on ice and submitted under a chain-of-custody to Severn-Trent Laboratories in University Park, Illinois.

## **CHEMICAL ANALYSES**

Soil samples were analyzed by Severn-Trent for Volatile Organic Compounds (VOCs), Total Metals, and Explosives using USEPA Methods 8260B, 6010B/7471A (Mercury), and 8330, respectively. A summary of analytical results from the collected soil samples are presented in Table 1.

1,1,2,2-tetrachloroethane and acetone were the only VOC compounds detected in the soil samples using a reported detection limit of 6.3 micrograms per kilogram (ug/kg). Acetone was identified in two soil samples at concentrations ranging from 9.8 ug/kg to 130 ug/kg. Acetone at this concentration is believed to be a laboratory contaminant and is not anticipated to pose a concern. One soil sample contained detectible concentrations ranging of 1,1,2,2-tetrachloroethane at 41 ug/kg. However, this concentration is below the established STARC Exposure Scenario A for 1,1,2,2-tetrachloroethane of 2 mg/kg.

Of the 23 heavy metals for which the samples were analyzed, a total of 20 were detected at or above reporting limits. Aluminum, silver, and thallium were not detected in any of the soil samples analyzed. Of the 20 detected total metals, beryllium was found at levels exceeding STARCs for Exposure Scenario A. Beryllium was detected at concentrations ranging from 0.051 mg/kg to 2.0 mg/kg and is believed to be typical of background levels for soil in the state of Missouri. Consult Section 6 of this report for additional discussion.

No Explosives compounds or PCBs were detected in the subsurface samples.



## SECTION 3

### CRAWL SPACE SOIL SAMPLING

Crawl space soil samples were collected from the basement level of Building 103 (Areas A, B, & C), Building 103D, and Building 103E. Eight soil samples were collected from the crawl space level for laboratory analysis. Crawl space sample locations were selected at random within each defined area. Locations were selected based on proximity to potential hazard exposure, changes in surface color or texture, proximity to process areas, or spatial considerations. Samples were collected from an average depth of 4 - 6 "bgs.

#### LOGGING OF SAMPLE PARAMETERS

The color, texture, and moisture content of materials sampled were classified in the field log for each sample location. The classification procedure included texture descriptions of soils according to the Unified Soil Classification System (USCS). Included in the descriptions are principal and minor soil constituents, moisture content, soil color, and other visible features. Color was defined using the Munsell Color System. No unusual odors or other indicators of potential contamination were noted in the field logs.

#### ANALYTICAL SAMPLE COLLECTION

Each sample was collected from a predetermined depth by removing the cover material to expose the layer to be sampled. Crawl space soil samples were collected with a stainless steel sampling tool. VOC samples were collected using USEPA Method 5035. Three discreet 5 gram soil samples were collected in En Core sample containers using an En Core T-handle sampler. The 5035 Method requires the three sample containers to be placed in sealed bags and shipped overnight to the laboratory for preservation and analysis. Upon collection, crawl space soil samples were immediately stored in clean, laboratory-supplied jars for analysis. Once capped and sealed with a Teflon-lined lid, sample jars were placed on ice in a cooler, and held until the end of the day of field investigation. One soil sample from each sample location was submitted for laboratory analysis. Samples were placed on ice and submitted under a chain-of-custody to Severn-Trent Laboratories in University Park, Illinois.

#### CHEMICAL ANALYSES

The crawl space soil samples were analyzed for VOCs by USEPA Method 8260B, for SVOCs by USEPA Method 8270C, for Total Metals by USEPA Method 6010B and 7471A, for Cyanide by USEPA Method 9014/9010B, for Phosphorous by USEPA Method 4500PE, for PCBs by USEPA Method 8082, and for Explosives by USEPA Method 8330. A summary of analytical results from the collected soil samples are presented in Table 2.

Trichloroflouromethane and acetone were the only VOC compounds detected in the crawl space soil samples using a reported detection limit of 6.3 ug/kg. Acetone was identified at concentrations ranging from 31 ug/kg to 52 ug/kg in two crawl space soil samples. Acetone at

this concentration is believed to be a laboratory contaminant and is not anticipated to pose a concern. Four crawl space soil samples contained detectible concentrations of trichlorofluoromethane ranging from 6.5 ug/kg to 41 ug/kg. However, these concentrations are well below the established STARC Exposure Scenario A for trichlorofluoromethane of 770 mg/kg.

SVOCs were detected in crawl space soil samples exceeding reported detection limits ranging from 2.4 to 1300 ug/kg. Detected compounds included naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, 2,4-dinitrotoluene, dibenzofuran, flourene, n-nitrosodiphenylamine, phenanthrene, anthracene, carbazole, di-n-butyl-phthalate, flouranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)flouranthene, benzo(k)flouranthene, benzo(a)pyrene, ideno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(ghi)perylene. With exception of benzo(a)pyrene, all SVOC compounds were detected at levels below STARCs for Scenario A. Benzo(a)pyrene was identified in sample 103CSSOIL1 at a concentration of 380 ug/kg. STARCs Exposure Scenario A for benzo(a)pyrene is 0.2 mg/kg.

Of the 23 heavy metals for which the crawl space soil samples were analyzed, a total of 21 were detected at or above reporting limits. Antimony and silver were not detected. Of the 21 detected total metals, beryllium and mercury were the only metals found at levels exceeding STARCs for Exposure Scenario A. Beryllium was detected at concentrations ranging from 0.47 mg/kg to 1.3 mg/kg and is believed to be typical of background levels for soil in the area. Consult Section 6 of this report for additional discussion. Mercury was identified in one crawl space soil sample at a concentration of 0.84 mg/kg. STARCs Exposure Scenario A for mercury is 0.6 mg/kg.

Cyanide was detected in three crawl space soil sample at a concentration ranging from 0.18 mg/kg to 0.28 mg/kg. These concentrations are well below the established STARC Exposure Scenario A level of 5480 mg/kg.

Phosphorous was detected in the crawl space soil samples exceeding reported detection limits. Concentrations of detected phosphorous ranged from 1.5 mg/kg to 290 mg/kg. The MDNR CALM Guidance does not identify a Soil Target Concentration for phosphorous.

PCB Aroclors were not detected above method detection limits.

## SECTION 4

### WIPE SAMPLING

Main floor and crawl space wipe samples were collected from the basement and main floor level of Building 103 (Areas A, B, & C), Building 103D, and Building 103E. A total of twelve (12) wipe samples were collected for laboratory analysis. Crawl space and main floor wipe sample locations were selected at random within each defined area. Each area was selected based on proximity to potential hazard exposure, proximity to process areas, or spatial considerations. Wipe samples were collected using ASTM, OSHA, and HUD protocols. All wipe samples were collected from an area 100 cm<sup>2</sup> using cut gauze pads containing appropriate solvent/preservatives (Explosives-acetonitrile, PCBs-hexane, metals-solvent).

### LOGGING OF SAMPLE PARAMETERS

All sample locations were documented in the field log and pictures of the sample locations were taken.

### WIPE SAMPLE COLLECTION

Each wipe sample was collected from a predetermined location on the main floor and basement levels. Basement level wipe samples were collected from the sides of concrete pillars or walls and were collected from a height of three (3) feet above ground surface. Explosives, PCBs, and metals wipe samples were collected from the same sample locations at the same elevation. Main floor wipe samples were collected from exposed walls, concrete floors, and from exposed steel ceiling girders depending on sample location. All wipe samples were collected by removing the pre-soaked gauze pad from the sample container and wiping an area of approximately 100 cm<sup>2</sup>. Explosives, PCBs, and metals wipe samples were collected from the same sample locations, i.e. walls, floors, ceilings. Upon collection, wipe samples were immediately stored in the same laboratory-supplied jars for analysis. Once capped and sealed with a Teflon-lined lid, sample jars were placed on ice in a cooler, and held until the end of the day of field investigation. Samples were placed on ice and submitted under a chain-of-custody to Severn-Trent Laboratories in University Park, Illinois.

### CHEMICAL ANALYSES

The basement and main floor wipe samples were analyzed for Explosives by USEPA Method 8330, for Total Metals by USEPA Method 6010B and 7471A, and for PCBs by USEPA Method 8082. The laboratory analytical reports are located in Appendix C. A summary of analytical results from the collected wipe samples are presented in Table 3.

Three explosive compounds were detected in crawl space wipe samples with concentrations ranging from 2.0 ug/wipe to 240 ug/wipe. 1,3,5-trinitrobenzene, 2-amino-4,6-dinitrotoluene, and 4-amino-2,6-dinitrotoluene were detected with maximum concentrations of 240 ug/wipe, 8.6 ug/wipe, and 2.0 ug/wipe, respectively. EPA and MDNR do not have established MCLs or

Target Concentrations for compounds detected by wipe sampling. However, representatives from MDNR use the Soil Target Concentration, Scenario A as a benchmark standard for comparison. The detected explosive compounds were identified at a concentration below the STARCs for Exposure Scenario A. The MDNR established STARC Exposure Scenario A for 1,3,5-trinitrobenzene is 2100 mg/kg. The MDNR CALM Guidance does not identify a Soil Target Concentration for 2-amino-4,6-dinitrotoluene, or 4-amino-2,6-dinitrotoluene.

Of the 23 heavy metals for which the wipe samples were analyzed, a total of 21 were detected at or above reporting limits. Beryllium and thallium were not detected. With exception of mercury, all metals concentrations were below MDNR, EPA, and HUD Target Concentrations. Mercury was detected at concentrations ranging from 14 ug/wipe to 9100 ug/wipe. A total of 5 wipe samples contained concentrations exceeding the MDNR established STARC Exposure Scenario A for mercury is 0.6 mg/kg.

PCB Aroclor 1260 was detected above method detection limits in crawl space and main floor wipe samples 103CSWS1, 103CSWS2, 103CSWS3, 103CSWS4, 103CWS1, and 103CWS2. Concentrations detected in the main floor wipe samples ranged from 2.4 ug/wipe to 46 ug/wipe. Federal TSCA regulations define acceptable levels of PCB Aroclors are 10 ug/cm<sup>2</sup> for high density human occupation to 100 ug/cm<sup>2</sup> for low density human occupation. PCB concentrations identified did not exceed the high density Standard in any of crawl space or main floor wipe samples.

## SECTION 5

### AIR MONITORING

Based on elevated concentrations of mercury, air monitoring was completed in Buildings 103 and 103D. Mercury concentrations identified in soil, and wipe samples were found in excess of STARCs for Scenario A. NPN Environmental was subcontracted by SCS Engineers to complete passive vapor air monitoring and particulate air monitoring in the impacted areas. Analysis for passive vapor ambient air monitoring was completed in accordance with OSHA Method 140. Analysis for particulate mercury was in accordance with OSHA Method 125 and OSHA Method 145, respectively.

### ANALYTICAL SAMPLE COLLECTION

Passive vapor air samples for mercury vapor were collected at specific areas within Buildings 103 and 103D. Samples were collected on ChemDisk™ gold film media badges over a sampling interval. Following collection all samples were shipped to AT Labs for analysis. Particulate air monitoring samples were collected at specific areas within Buildings 103 and 103D. Samples were collected with calibrated sampling pumps on closed-face 37 mm MCE filter cassettes over a sampling interval. Following sample collection all samples were shipped to AT Labs for analysis.

### CHEMICAL ANALYSES

Three passive ambient air samples were analyzed for mercury vapor. Two of the samples analyzed contained detectible concentrations of mercury vapor. Sample 103D was collected from a second floor air handling room in Building 103D and contained 0.0050 mg/m<sup>3</sup> mercury. Sample 103T, collected from a utility tunnel under Building 103, contained 0.0045 mg/m<sup>3</sup> mercury. Both sample concentrations are below the OSHA Permissible Exposure Limit (PEL) of 0.05 mg/m<sup>3</sup> for an 8-hour time weighted average. None of the ambient air monitoring samples contained levels of particulate mercury above laboratory detection limits.

## SECTION 6

### MISSOURI RISK BASED CLEANUP STANDARDS (CALM)

The Missouri Department of Natural Resources CALM guidance document outlines a process for determining cleanup goals at sites with known or suspected hazardous substance contamination. The CALM document was developed to service the Missouri Voluntary Cleanup Program law (10CAR 25-15.010). According to the introductory section of the CALM document, "CALM may be used only for setting cleanup goals for sites undergoing cleanup in the department's Voluntary Cleanup Program." While it was not the goal of this investigation to establish an appropriate regulatory jurisdiction for the Property, CALM protocols provide a reasonable, widely-referenced initial standard upon which detected compounds can be assessed.

Appendix B of the CALM document contains a table of Soil and Groundwater Target Concentrations (STARC and GTARC) divided into three Exposure Scenarios. All analytical results were compared to an Exposure Scenario A. Exposure Scenario A applies to sites where no land-use restriction covenants are to be used and are the most restrictive in terms of cleanup goals.

As indicated in Tables 1 and 2, beryllium exceeded maximum concentrations set forth in CALM (Scenario A – 0.05mg/kg) in all soil samples analyzed. These Exposure Scenario's are inclusive of a "Direct Exposure" pathway (ingestion/dermal/inhalation). The "Leaching to Groundwater" maximum concentration of 130 mg/kg is far above the levels detected in the soils at the subject site.

Background concentrations of beryllium in the subsurface soils of Missouri have been identified at levels ranging from 0.1 mg/kg to 40 mg/kg (Tidball, 1984). USEPA has published a "Fact Sheet" on *Metal Concentrations in Natural Soils, USEPA, Office of Solid Waste and Emergency Response (April, 1983)* which has defined an average concentration of beryllium in soils at 6 mg/kg. The Tier 2 process within the CALM Guidance allows for a Tier 2 Background assessment to determine background levels of identified contaminants at sites in Missouri. A Tier 2 Background Assessment would establish a background level for beryllium at the subject site and would most likely "risk away" any concerns regarding beryllium levels at the subject site.

A Background Assessment was performed by SCS in December of 2003. Four surface/near surface samples were collected from undisturbed locations within a 2-mile radius of the Federal Facility. Samples were collected from St. Vincent Park, Sverdrup Army Reserve Center across Goodfellow from the Federal Facility, Schnucks Plaza at Natural Bridge and Union Street, and from a vacant lot at the intersection of Clara Street and Ashland Avenue. Average detected beryllium concentrations were approximately 0.27 mg/kg, or many orders of magnitude higher than the MDNR STARC for Scenario A of 0.05 mg/kg.

## SECTION 7

### CONCLUSIONS AND RECOMMENDATIONS

#### CONCLUSIONS

Based on the results of the work performed under the current scope-of-work, SCS concludes the following:

- As indicated in Table 1 and 2, beryllium exceeded maximum concentrations set forth in CALM (Scenario A – 0.05mg/kg) in all soil samples analyzed. These Exposure Scenario's are inclusive of a "Direct Exposure" pathway (ingestion/dermal/inhalation). The "Leaching to Groundwater" maximum concentration of 130 mg/kg is far above the levels detected in the soils at the subject site. A Background Assessment performed in the area established background levels of at least 0.27 mg/kg. Beryllium levels up to 40 mg/kg are not uncommon in the state of Missouri.
- Explosives were detected in wipe sample analysis but are below the Benchmark Standard established by MDNR.
- Metals, including lead, were detected in the samples collected but at concentrations below the MDNR CALM Guidance and HUD regulations.
- PCBs were detected in wipe sample analysis from several locations in building crawl space and main floor areas, however, concentrations did not exceeding the most stringent TSCA Standard of 10 ug/cm<sup>2</sup> for high density human occupancy areas.
- Mercury was detected in wipe sample analysis at concentrations ranging from 14 ug/wipe to 9100 ug/wipe. A total of 5 wipe samples contained concentrations exceeding the MDNR established STARC Exposure Scenario A for mercury is 0.6 mg/kg.
- Air monitoring for mercury vapor identified detectible concentrations, however, sample concentrations were below the OSHA Permissible Exposure Limit (PEL) of 0.05 mg/m<sup>3</sup> for an 8-hour time weighted average. None of the ambient air monitoring samples contained levels of particulate mercury above laboratory detection limits.

#### RECOMMENDATIONS

- Analytical results of the limited sampling performed to date by SCS associated with Building 103, 103 D, and 103 E would indicate that there are no environmental concerns regarding the occupancy of the respective buildings. Exposure pathways have been examined and no risks to human health have been identified.

## TABLES



TABLE 1 - RESULTS OF SAMPLING ANALYSIS FOR SOIL BORINGS

SAMPLE NUMBER		SB10	SB11	SB18	SB19	SB20	SB28	STCs
SAMPLE DATE		12/16/2003	12/16/2003	12/17/2003	12/17/2003	12/17/2003	12/17/2003	EXPOSURE
LAB ID NUMBER		223146-6	223146-7	223218-1	223218-2	223218-3	223218-11	SCENARIO A
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1221	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1232	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1242	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1248	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1254	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1260	ug/Kg	NA	NA	ND	ND	ND	ND	0.6 mg/Kg
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Kg	ND	ND	ND	ND	NA	ND	3500 mg/Kg
RDX	ug/Kg	ND	ND	ND	ND	NA	ND	15 mg/Kg
1,3,5-Trinitrobenzene	ug/Kg	ND	ND	ND	ND	NA	ND	2100 mg/Kg
1,3-Dinitrobenzene	ug/Kg	ND	ND	ND	ND	NA	ND	7 mg/Kg
Nitrobenzene	ug/Kg	ND	ND	ND	ND	NA	ND	12 mg/Kg
2,4,6-TNT	ug/Kg	ND	ND	ND	ND	NA	ND	35 mg/Kg
Tetryl	ug/Kg	ND	ND	ND	ND	NA	ND	NT
2,4-Dinitrotolulene	ug/Kg	ND	ND	ND	ND	NA	ND	2 mg/Kg
2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	NA	ND	2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	NA	ND	NT
4-Amino-2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	NA	ND	NT
2-Nitrotoluene	ug/Kg	ND	ND	ND	ND	NA	ND	NT
4-Nitrotoluene	ug/Kg	ND	ND	ND	ND	NA	ND	NT
3-Nitrotoluene	ug/Kg	ND	ND	ND	ND	NA	ND	NT
<b>MERCURY (7471A)</b>								
Mercury	mg/Kg	0.024	0.0047	0.032	0.035	0.035	0.025	0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Kg	11000	6400	14000	15000	14000	4800	NT
Antimony	mg/Kg	ND	ND	ND	ND	ND	ND	85 mg/Kg
Arsenic	mg/Kg	3.8	3.7	5.5	4.4	9.2	3.4	11 mg/Kg
Barium	mg/Kg	44	59	100	240	170	58	14000 mg/Kg
Beryllium	mg/Kg	0.67	0.53	0.86	0.71	0.97	0.42	0.05 mg/Kg
Cadmium	mg/Kg	ND	ND	ND	ND	ND	ND	110 mg/Kg
Calcium	mg/Kg	2200	23000	1800	2600	7900	17000	NT
Chromium	mg/Kg	16	18	21	24	19	9.7	2100 mg/Kg
Cobalt	mg/Kg	4.1	4	5.1	7.4	8.5	4.3	NT
Copper	mg/Kg	9.5	8.4	12	15	18	9.1	1100 mg/Kg
Iron	mg/Kg	12000	9100	17000	18000	21000	8700	NT
Lead	mg/Kg	7	19	7.3	8	13	14	260 mg/Kg
Magnesium	mg/Kg	1700	1700	2500	3100	3200	3800	NT
Manganese	mg/Kg	170	210	260	1100	760	240	3700 mg/Kg
Nickel	mg/Kg	9.3	9.1	14	21	23	11	4800 mg/Kg
Potassium	mg/Kg	390	550	800	1300	1200	510	NT
Selenium	mg/Kg	ND	ND	ND	ND	0.48	ND	300 mg/Kg
Silver	mg/Kg	ND	ND	ND	ND	ND	ND	140 mg/Kg
Sodium	mg/Kg	120	390	220	430	690	260	NT
Thallium	mg/Kg	ND	ND	ND	ND	ND	ND	17 mg/Kg
Vanadium	mg/Kg	26	17	32	27	37	13	1500 mg/Kg
Zinc	mg/Kg	24	30	34	52	54	30	38000 mg/Kg

TABLE 1 - RESULTS OF SAMPLING ANALYSIS FOR SOIL BORINGS (CONTINUED)

SAMPLE NUMBER		SB10	SB11	SB18	SB19	SB20	SB28	STCs
SAMPLE DATE		12/16/2003	12/16/2003	12/17/2003	12/17/2003	12/17/2003	12/17/2003	EXPOSURE
LAB.ID NUMBER		223146-6	223146-7	223218-1	223218-2	223218-3	223218-11	SCENARIO A
PARAMETER	UNITS							
<b>VOCs (8260B)</b>								
Dichlorodifluoromethane	ug/Kg					ND		NT
Chloromethane	ug/Kg					ND		NT
Vinyl chloride	ug/Kg					ND		0.3 mg/Kg
Bromomethane	ug/Kg					ND		NT
Chloroethane	ug/Kg					ND		NT
Trichlorofluoromethane	ug/Kg					ND		770 mg/Kg
1,1-Dichloroethene	ug/Kg					ND		NT
Carbon disulfide	ug/Kg					ND		630 mg/Kg
Acetone	ug/Kg					130		2700 mg/Kg
Methylene chloride	ug/Kg					ND		51 mg/Kg
trans-1,2-Dichloroethene	ug/Kg					ND		NT
Methyl-tert-butyl-ether	ug/Kg					ND		8760 mg/Kg
1,1-Dichloroethane	ug/Kg					ND		NT
2,2-Dichloropropane	ug/Kg					ND		NT
cis-1,2-Dichloroethene	ug/Kg					ND		NT
2-Butanone	ug/Kg					ND		NT
Bromochloromethane	ug/Kg					ND		11 mg/Kg
Chloroform	ug/Kg					ND		0.8 mg/Kg
1,1,1-Trichloroethane	ug/Kg					ND		1200 mg/Kg
1,1-Dichloropropene	ug/Kg					ND		NT
Carbon Tetrachloride	ug/Kg					ND		2 mg/Kg
Benzene	ug/Kg					ND		6 mg/Kg
1,2-Dichloroethane	ug/Kg					ND		2 mg/Kg
Trichloroethene	ug/Kg					ND		NT
1,2-Dichloropropane	ug/Kg					ND		10 mg/Kg
Dibromomethane	ug/Kg					ND		NT
Bromodichloromethane	ug/Kg					ND		11 mg/Kg
cis-1,3-Dichloropropene	ug/Kg					ND		NT
4-Methyl-2-pentanone	ug/Kg					ND		NT
Toluene	ug/Kg					ND		650 mg/Kg
trans-1,3-Dichloropropene	ug/Kg					ND		NT
1,1,2-Trichloroethane	ug/Kg					ND		5 mg/Kg
Tetrachloroethene	ug/Kg					ND		NT
1,3-Dichloropropane	ug/Kg					ND		NT
2-Hexanone	ug/Kg					ND		NT
Dibromochloromethane	ug/Kg					ND		20 mg/Kg
1,2-Dibromoethane	ug/Kg					ND		NT
Chlorobenzene	ug/Kg					ND		66 mg/Kg
1,1,1,2-Tetrachloroethane	ug/Kg					ND		10 mg/Kg
Ethylbenzene	ug/Kg					ND		400 mg/Kg
m&p Xylenes	ug/Kg					ND		NT
o-xylene	ug/Kg					ND		NT
Styrene	ug/Kg					ND		1500 mg/Kg
Bromoform	ug/Kg					ND		140 mg/Kg
Isopropylbenzene	ug/Kg					ND		210 mg/Kg
Bromobenzene	ug/Kg					ND		NT
1,1,2,2-Tetrachloroethane	ug/Kg					41		2 mg/Kg

TABLE 1 - RESULTS OF SAMPLING ANALYSIS FOR SOIL BORINGS (CONTINUED)

SAMPLE NUMBER SAMPLE DATE LAB ID NUMBER		SB10 12/16/2003 223146-6	SB11 12/16/2003 223146-7	SB18 12/17/2003 223218-1	SB19 12/17/2003 223218-2	SB20 12/17/2003 223218-3	SB28 12/17/2003 223218-11	STCs EXPOSURE SCENARIO A
PARAMETER	UNITS							
<b>VOCs (8260B)</b>								
1,2,3-Trichloropropane	ug/Kg					ND		0.09 mg/Kg
n-Propylbenzene	ug/Kg					ND		28 mg/Kg
2-Chlorotoluene	ug/Kg					ND		NT
1,3,5-Trimethylbenzene	ug/Kg					ND		42 mg/Kg
4-Chlorotoluene	ug/Kg					ND		NT
tert-Butylbenzene	ug/Kg					ND		NT
1,2,4-Trimethylbenzene	ug/Kg					ND		100 mg/Kg
sec-Butylbenzene	ug/Kg					ND		NT
p-Isopropyltoluene	ug/Kg					ND		NT
n-Butylbenzene	ug/Kg					ND		NT
1,2-Dibromo-3-chloropropane	ug/Kg					ND		1 mg/Kg
1,2,3-Trichlorobenzene	ug/Kg					ND		NT

TABLE 1 - RESULTS OF SAMPLING ANALYSIS FOR SOIL BORINGS (CONTINUED)

SAMPLE NUMBER		SB29	SB30	SB31	SB32	SB33	SB34	STCs
SAMPLE DATE		12/17/2003	12/17/2003	12/17/2003	12/17/2003	12/17/2003	12/17/2003	EXPOSURE
LAB.ID.NUMBER		223218-12	223218-13	223218-14	223218-15	223218-16	223218-17	SCENARIO A
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1221	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1232	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1242	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1248	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1254	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
Aroclor 1260	ug/Kg	ND	ND	ND	ND	ND	ND	0.6 mg/Kg
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Kg	ND	ND	ND	ND	ND	ND	3500 mg/Kg
RDX	ug/Kg	ND	ND	ND	ND	ND	ND	15 mg/Kg
1,3,5-Trinitrobenzene	ug/Kg	ND	ND	ND	ND	ND	ND	2100 mg/Kg
1,3-Dinitrobenzene	ug/Kg	ND	ND	ND	ND	ND	ND	7 mg/Kg
Nitrobenzene	ug/Kg	ND	ND	ND	ND	ND	ND	12 mg/Kg
2,4,6-TNT	ug/Kg	ND	ND	ND	ND	ND	ND	35 mg/Kg
Tetryl	ug/Kg	ND	ND	ND	ND	ND	ND	NT
2,4-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	2 mg/Kg
2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	NT
4-Amino-2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	NT
2-Nitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	NT
4-Nitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	NT
3-Nitrotoluene	ug/Kg	ND	ND	ND	ND	ND	ND	NT
<b>MERCURY (7471A)</b>								
Mercury	mg/Kg	0.038	0.029	0.033	0.0068	0.011	0.024	0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Kg	19000	15000	12000	17000	14000	11000	NT
Antimony	mg/Kg	ND	ND	ND	ND	ND	ND	85 mg/Kg
Arsenic	mg/Kg	3.1	7.1	4.3	2.9	5.7	7.2	11 mg/Kg
Barium	mg/Kg	74	62	57	110	140	150	14000 mg/Kg
Beryllium	mg/Kg	0.91	0.88	0.66	0.77	2	0.88	0.05 mg/Kg
Cadmium	mg/Kg	ND	ND	ND	ND	0.23	0.18	110 mg/Kg
Calcium	mg/Kg	3300	2600	1600	2700	2400	8300	NT
Chromium	mg/Kg	23	21	16	17	26	19	2100 mg/Kg
Cobalt	mg/Kg	4	2.5	4.1	20	53	7.6	NT
Copper	mg/Kg	9.8	11	8.6	12	74	33	1100 mg/Kg
Iron	mg/Kg	15000	20000	15000	13000	65000	17000	NT
Lead	mg/Kg	8.3	7.3	13	10	8.5	110	260 mg/Kg
Magnesium	mg/Kg	2700	2200	1300	1900	4300	3400	NT
Manganese	mg/Kg	61	57	100	650	330	900	3700 mg/Kg
Nickel	mg/Kg	17	14	7.9	9.4	88	19	4800 mg/Kg
Potassium	mg/Kg	700	560	470	700	1300	1200	NT
Selenium	mg/Kg	ND	ND	ND	ND	ND	ND	300 mg/Kg
Silver	mg/Kg	ND	ND	ND	ND	ND	ND	140 mg/Kg
Sodium	mg/Kg	150	180	150	230	ND	210	NT
Thallium	mg/Kg	ND	ND	ND	ND	ND	ND	17 mg/Kg
Vanadium	mg/Kg	24	34	34	26	48	32	1500 mg/Kg
Zinc	mg/Kg	27	27	17	23	150	73	38000 mg/Kg

TABLE 1 - RESULTS OF SAMPLING ANALYSIS FOR SOIL BORINGS (CONTINUED)

SAMPLE NUMBER		SB29	SB30	SB31	SB32	SB33	SB34	STCs
SAMPLE DATE		12/17/2003	12/17/2003	12/17/2003	12/17/2003	12/17/2003	12/17/2003	EXPOSURE
LAB ID NUMBER		223218-12	223218-13	223218-14	223218-15	223218-16	223218-17	SCENARIO A
PARAMETER	UNITS							
<b>VOCs (8260B)</b>								
Dichlorodifluoromethane	ug/Kg						ND	NT
Chloromethane	ug/Kg						ND	NT
Vinyl chloride	ug/Kg						ND	0.3 mg/Kg
Bromomethane	ug/Kg						ND	NT
Chloroethane	ug/Kg						ND	NT
Trichlorofluoromethane	ug/Kg						ND	770 mg/Kg
1,1-Dichloroethene	ug/Kg						ND	NT
Carbon disulfide	ug/Kg						ND	630 mg/Kg
Acetone	ug/Kg						9.8	2700 mg/Kg
Methylene chloride	ug/Kg						ND	51 mg/Kg
trans-1,2-Dichloroethene	ug/Kg						ND	NT
Methyl-tert-butyl-ether	ug/Kg						ND	8760 mg/Kg
1,1-Dichloroethane	ug/Kg						ND	NT
2,2-Dichloropropane	ug/Kg						ND	NT
cis-1,2-Dichloroethene	ug/Kg						ND	NT
2-Butanone	ug/Kg						ND	NT
Bromochloromethane	ug/Kg						ND	11 mg/Kg
Chloroform	ug/Kg						ND	0.8 mg/Kg
1,1,1-Trichloroethane	ug/Kg						ND	1200 mg/Kg
1,1-Dichloropropene	ug/Kg						ND	NT
Carbon Tetrachloride	ug/Kg						ND	2 mg/Kg
Benzene	ug/Kg						ND	6 mg/Kg
1,2-Dichloroethane	ug/Kg						ND	2 mg/Kg
Trichloroethene	ug/Kg						ND	NT
1,2-Dichloropropane	ug/Kg						ND	10 mg/Kg
Dibromomethane	ug/Kg						ND	NT
Bromodichloromethane	ug/Kg						ND	11 mg/Kg
cis-1,3-Dichloropropene	ug/Kg						ND	NT
4-Methyl-2-pentanone	ug/Kg						ND	NT
Toluene	ug/Kg						ND	650 mg/Kg
trans-1,3-Dichloropropene	ug/Kg						ND	NT
1,1,2-Trichloroethane	ug/Kg						ND	5 mg/Kg
Tetrachloroethene	ug/Kg						ND	NT
1,3-Dichloropropane	ug/Kg						ND	NT
2-Hexanone	ug/Kg						ND	NT
Dibromochloromethane	ug/Kg						ND	20 mg/Kg
1,2-Dibromoethane	ug/Kg						ND	NT
Chlorobenzene	ug/Kg						ND	66 mg/Kg
1,1,1,2-Tetrachloroethane	ug/Kg						ND	10 mg/Kg
Ethylbenzene	ug/Kg						ND	400 mg/Kg
m&p Xylenes	ug/Kg						ND	NT
o-xylene	ug/Kg						ND	NT
Styrene	ug/Kg						ND	1500 mg/Kg
Bromoform	ug/Kg						ND	140 mg/Kg
Isopropylbenzene	ug/Kg						ND	210 mg/Kg
Bromobenzene	ug/Kg						ND	NT
1,1,2,2-Tetrachloroethane	ug/Kg						ND	2 mg/Kg



TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103

SAMPLE NUMBER		103CSSOIL1	103CSSOIL2	103CSSOIL3	103CSSOIL4			STCs
SAMPLE DATE		7/23/2003	7/23/2003	7/23/2003	7/23/2003			EXPOSURE
LAB.ID NUMBER		219204-6	219204-7	219204-9	21904-12			SCENARIO A
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
Aroclor 1221	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
Aroclor 1232	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
Aroclor 1242	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
Aroclor 1248	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
Aroclor 1254	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
Aroclor 1260	ug/Kg	ND	ND	ND	ND			0.6 mg/Kg
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Kg	ND	ND	ND	ND			3500 mg/Kg
RDX	ug/Kg	ND	ND	ND	ND			15 mg/Kg
1,3,5-Trinitrobenzene	ug/Kg	ND	ND	ND	ND			2100 mg/Kg
1,3-Dinitrobenzene	ug/Kg	ND	ND	ND	ND			7 mg/Kg
Nitrobenzene	ug/Kg	ND	ND	ND	ND			12 mg/Kg
2,4,6-TNT	ug/Kg	ND	ND	ND	ND			35 mg/Kg
Tetryl	ug/Kg	ND	ND	ND	ND			NT
2,4-Dinitrotolulene	ug/Kg	ND	ND	ND	ND			2 mg/Kg
2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND			2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND			NT
4-Amino-2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND			NT
2-Nitrotoluene	ug/Kg	ND	ND	ND	ND			NT
4-Nitrotoluene	ug/Kg	ND	ND	ND	ND			NT
3-Nitrotoluene	ug/Kg	ND	ND	ND	ND			NT
<b>MERCURY (7471A)</b>								
Mercury	mg/Kg	0.12	0.37	0.067	0.071			0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Kg	17000	18000	14000	15000			NT
Antimony	mg/Kg	ND	ND	ND	ND			85 mg/Kg
Arsenic	mg/Kg	5.8	5.7	5.9	4.6			11 mg/Kg
Barium	mg/Kg	160	160	160	170			14000 mg/Kg
Beryllium	mg/Kg	1.2	1.3	0.47	1.1			0.05 mg/Kg
Cadmium	mg/Kg	0.43	0.43	0.25	0.47			110 mg/Kg
Calcium	mg/Kg	5200	5000	3300	8000			NT
Chromium	mg/Kg	27	31	20	29			2100 mg/Kg
Cobalt	mg/Kg	10	9.9	7	18			NT
Copper	mg/Kg	87	36	20	14			1100 mg/Kg
Iron	mg/Kg	21000	21000	18000	37000			NT
Lead	mg/Kg	21	34	31	32			260 mg/Kg
Magnesium	mg/Kg	3100	2900	3100	3700			NT
Manganese	mg/Kg	630	580	500	660			3700 mg/Kg
Nickel	mg/Kg	34	33	15	39			4800 mg/Kg
Potassium	mg/Kg	1300	1700	1200	1400			NT
Selenium	mg/Kg	0.48	ND	ND	ND			300 mg/Kg
Silver	mg/Kg	ND	ND	ND	ND			140 mg/Kg
Sodium	mg/Kg	180	500	210	690			NT
Thallium	mg/Kg	1.2	0.82	1.4	1.3			17 mg/Kg
Vanadium	mg/Kg	35	35	33	38			1500 mg/Kg
Zinc	mg/Kg	120	57	50	68			38000 mg/Kg

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103 (CONTINUED)

SAMPLE NUMBER		103CSSOIL1	103CSSOIL2	103CSSOIL3	103CSSOIL4			STCs
SAMPLE DATE		7/23/2003	7/23/2003	7/23/2003	7/23/2003			EXPOSURE
LAB ID NUMBER		219204-6	219204-7	219204-9	21904-12			SCENARIO A
PARAMETER	UNITS							
<b>CYANIDE (9014/9010B)</b>								
Total Cyanide	mg/Kg	0.28	ND	ND	ND			5480 mg/Kg
<b>PHOSPHOROUS (4500PE)</b>								
Total Phosphorous	mg/Kg	25	130	32	250			NT
<b>SVOCs (8270C)</b>								
Phenol	ug/Kg	ND	ND	ND	ND			5200 mg/Kg
Bis (2-chloroethyl) ether	ug/Kg	ND	ND	ND	ND			0.5 mg/Kg
1,3-Dichlorobenzene	ug/Kg	ND	ND	ND	ND			NT
1,4-Dichlorobenzene	ug/Kg	ND	ND	ND	ND			17 mg/Kg
1,2-Dichlorobenzene	ug/Kg	ND	ND	ND	ND			600 mg/Kg
Benzyl alcohol	ug/Kg	ND	ND	ND	ND			NT
2-Methylphenol (o-cresol)	ug/Kg	ND	ND	ND	ND			3500 mg/Kg
2,2-oxybis (1-chloropropane)	ug/Kg	ND	ND	ND	ND			NT
n-Nitroso-di-n-propylamine	ug/Kg	ND	ND	ND	ND			NT
Hexachloroethane	ug/Kg	ND	ND	ND	ND			70 mg/Kg
4-Methylphenol	ug/Kg	ND	ND	ND	ND			250 mg/Kg
2-Chlorophenol	ug/Kg	ND	ND	ND	ND			140 mg/Kg
Nitrobenzene	ug/Kg	ND	ND	ND	ND			12 mg/Kg
Bis (2-chloroethoxy) methane	ug/Kg	ND	ND	ND	ND			NT
1,2,4-Trichlorobenzene	ug/Kg	ND	ND	ND	ND			270 mg/Kg
Benzoic acid	ug/Kg	ND	ND	ND	ND			280000 mg/Kg
Isophorone	ug/Kg	ND	ND	ND	ND			1700 mg/Kg
2,4-Dimethylphenol	ug/Kg	ND	ND	ND	ND			1400 mg/Kg
Hexachlorobutadiene	ug/Kg	ND	ND	ND	ND			14 mg/Kg
Napthalene	ug/Kg	24	ND	ND	ND			120 mg/Kg
2,4-Dichlorophenol	ug/Kg	ND	ND	ND	ND			210 mg/Kg
4-Chloroaniline	ug/Kg	ND	ND	ND	ND			NT
2,4,6-Trichlorophenol	ug/Kg	ND	ND	ND	ND			140 mg/Kg
2,4,5-Trichlorophenol	ug/Kg	ND	ND	ND	ND			7000 mg/Kg
Hexachlorocyclopentadiene	ug/Kg	ND	ND	ND	ND			9 mg/Kg
2-Methylnapthalene	ug/Kg	16	2.4	ND	ND			NT
2-Nitroaniline	ug/Kg	ND	ND	ND	ND			NT
2-Chloronapthalene	ug/Kg	ND	ND	ND	ND			NT
4-Chloro-3-methylphenol	ug/Kg	ND	ND	ND	ND			NT
2,6-Dinitrotoluene	ug/Kg	ND	ND	ND	ND			2 mg/Kg
2-Nitrophenol	ug/Kg	ND	ND	ND	ND			NT
3-Nitroaniline	ug/Kg	ND	ND	ND	ND			NT
Dimethyl phthalate	ug/Kg	ND	ND	ND	ND			1360 mg/Kg
2,4-Dinitrophenol	ug/Kg	ND	ND	ND	ND			140 mg/Kg
Acenaphthylene	ug/Kg	5.2	ND	ND	ND			NT
2,4-Dinitrotoluene	ug/Kg	ND	ND	ND	ND			2 mg/Kg
Acanaphthene	ug/Kg	11	11	ND	ND			1700 mg/Kg
Dibenzofuran	ug/Kg	32	6.2	ND	5.2			110 mg/Kg
4-Nitrophenol	ug/Kg	ND	ND	ND	ND			NT
Flourene	ug/Kg	8.7	8.7	ND	ND			1100 mg/Kg
4-Nitroaniline	ug/Kg	ND	ND	ND	ND			NT
4-Bromophenyl Phenyl ether	ug/Kg	ND	ND	ND	ND			150 mg/Kg
Hexachlorobenzene	ug/Kg	ND	ND	ND	ND			0.9 mg/Kg



TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103 (CONTINUED)

SAMPLE NUMBER		103CSSOIL1	103CSSOIL2	103CSSOIL3	103CSSOIL4			STCs
SAMPLE DATE		7/23/2003	7/23/2003	7/23/2003	7/23/2003			EXPOSURE
LAB ID NUMBER		219204-6	219204-7	219204-9	21904-12			SCENARIO A
PARAMETER	UNITS							
<b>SVOCs (8270C)</b>								
Diethyl phthalate	ug/Kg	ND	ND	ND	ND			2000 mg/Kg
4-Chlorophenyl phenyl ether	ug/Kg	ND	ND	ND	ND			NT
Pentachlorophenol	ug/Kg	ND	ND	ND	ND			6 mg/Kg
n-Nitrosodiphenylamine	ug/Kg	ND	ND	ND	ND			330 mg/Kg
4,6-Dinitro-2-methylphenol	ug/Kg	ND	ND	ND	ND			NT
Phenanthrene	ug/Kg	370	130	21	28			NT
Anthracene	ug/Kg	72	31	ND	6.5			8500 mg/Kg
Carbazole	ug/Kg	66	ND	ND	ND			82 mg/Kg
Di-n-butyl-phthalate	ug/Kg	88	110	96	95			NT
Benzidine	ug/Kg	ND	ND	ND	ND			0.01mg/Kg
Flouranthene	ug/Kg	1000	230	70	90			1600 mg/Kg
Pyrene	ug/Kg	650	140	47	59			2100 mg/Kg
Butly benzyl phthalate	ug/Kg	ND	ND	ND	ND			930 mg/Kg
Benzo(a)anthracene	ug/Kg	460	70	20	24			1 mg/Kg
Chrysene	ug/Kg	520	79	40	50			36 mg/Kg
3,3-Dichlorobenzidine	ug/Kg	ND	ND	ND	ND			4 mg/Kg
Bis(2-ethylhexyl) phthalate	ug/Kg	ND	ND	ND	ND			410 mg/Kg
Di-n-octyl phthalate	ug/Kg	ND	ND	ND	ND			0.3 mg/Kg
Benzo(b)flouranthene	ug/Kg	460	83	61	63			0.9 mg/Kg
Benzo(k)flouranthene	ug/Kg	500	38	10	13			8 mg/Kg
Benzo(a)pyrene	ug/Kg	380	61	ND	32			0.2 mg/Kg
Ideno(1,2,3-cd)pyrene	ug/Kg	250	19	ND	ND			3 mg/Kg
Dibenzo(a,h)anthracene	ug/Kg	68	ND	ND	ND			0.2 mg/Kg
Benzo(ghi)perylene	ug/Kg	250	6.4	ND	ND			NT
<b>VOCs (8260B)</b>								
Dichlorodiflouromethane	ug/Kg	ND	ND	ND	ND			NT
Chloromethane	ug/Kg	ND	ND	ND	ND			NT
Vinyl chloride	ug/Kg	ND	ND	ND	ND			0.3 mg/Kg
Bromomethane	ug/Kg	ND	ND	ND	ND			NT
Chloroethane	ug/Kg	ND	ND	ND	ND			NT
Trichloroflouromethane	ug/Kg	4.5	41	ND	6.5			770 mg/Kg
1,1-Dichloroethene	ug/Kg	ND	ND	ND	ND			NT
Carbon disulfide	ug/Kg	ND	ND	ND	ND			630 mg/Kg
Acetone	ug/Kg	ND	ND	ND	ND			2700 mg/Kg
Methylene chloride	ug/Kg	ND	ND	ND	ND			51 mg/Kg
trans-1,2-Dichloroethene	ug/Kg	ND	ND	ND	ND			NT
Methyl-tert-butyl-ether	ug/Kg	ND	ND	ND	ND			8760 mg/Kg
1,1-Dichloroethane	ug/Kg	ND	ND	ND	ND			NT
2,2-Dichloropropane	ug/Kg	ND	ND	ND	ND			NT
cis-1,2-Dichloroethene	ug/Kg	ND	ND	ND	ND			NT
2-Butanone	ug/Kg	ND	ND	ND	ND			NT
Bromochloromethane	ug/Kg	ND	ND	ND	ND			11 mg/Kg
Chloroform	ug/Kg	ND	ND	ND	ND			0.8 mg/Kg
1,1,1-Trichloroethane	ug/Kg	ND	ND	ND	ND			1200 mg/Kg
1,1-Dichloropropene	ug/Kg	ND	ND	ND	ND			NT
Carbon Tetrachloride	ug/Kg	ND	ND	ND	ND			2 mg/Kg
Benzene	ug/Kg	ND	ND	ND	ND			6 mg/Kg



TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103D (CONTINUED)

SAMPLE NUMBER		103DCSSS1	103DCSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-12	219240-14					SCENARIO A
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1221	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1232	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1242	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1248	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1254	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1260	ug/Kg	ND	ND					0.6 mg/Kg
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Kg	ND	ND					3500 mg/Kg
RDX	ug/Kg	ND	ND					15 mg/Kg
1,3,5-Trinitrobenzene	ug/Kg	ND	ND					2100 mg/Kg
1,3-Dinitrobenzene	ug/Kg	ND	ND					7 mg/Kg
Nitrobenzene	ug/Kg	ND	ND					12 mg/Kg
2,4,6-TNT	ug/Kg	ND	ND					35 mg/Kg
Tetryl	ug/Kg	ND	ND					NT
2,4-Dinitrotoluene	ug/Kg	ND	ND					2 mg/Kg
2,6-Dinitrotoluene	ug/Kg	ND	ND					2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Kg	ND	ND					NT
4-Amino-2,6-Dinitrotoluene	ug/Kg	ND	ND					NT
2-Nitrotoluene	ug/Kg	ND	ND					NT
4-Nitrotoluene	ug/Kg	ND	ND					NT
3-Nitrotoluene	ug/Kg	ND	ND					NT
<b>MERCURY (7471A)</b>								
Mercury	mg/Kg	0.056	0.84					0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Kg	9600	9900					NT
Antimony	mg/Kg	ND	ND					85 mg/Kg
Arsenic	mg/Kg	5.9	4.6					11 mg/Kg
Barium	mg/Kg	67	88					14000 mg/Kg
Beryllium	mg/Kg	0.59	0.57					0.05 mg/Kg
Cadmium	mg/Kg	0.26	0.22					110 mg/Kg
Calcium	mg/Kg	3200	3400					NT
Chromium	mg/Kg	17	16					2100 mg/Kg
Cobalt	mg/Kg	7.7	4.7					NT
Copper	mg/Kg	11	13					1100 mg/Kg
Iron	mg/Kg	16000	14000					NT
Lead	mg/Kg	14	35					260 mg/Kg
Magnesium	mg/Kg	2600	2400					NT
Manganese	mg/Kg	620	270					3700 mg/Kg
Nickel	mg/Kg	19	9.9					4800 mg/Kg
Potassium	mg/Kg	540	570					NT
Selenium	mg/Kg	ND	ND					300 mg/Kg
Silver	mg/Kg	ND	ND					140 mg/Kg
Sodium	mg/Kg	600	280					NT
Thallium	mg/Kg	ND	ND					17 mg/Kg
Vanadium	mg/Kg	33	27					1500 mg/Kg
Zinc	mg/Kg	36	50					38000 mg/Kg

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103D (CONTINUED)

SAMPLE NUMBER		103DCSSS1	103DCSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-12	219240-14					SCENARIO A
PARAMETER	UNITS							
<b>CYANIDE (9014/9010B)</b>								
Total Cyanide	mg/Kg	ND	ND					5480 mg/Kg
<b>PHOSPHOROUS (4500PE)</b>								
Total Phosphorous	mg/Kg	250	290					NT
<b>SVOCs (8270C)</b>								
Phenol	ug/Kg	ND	ND					5200 mg/Kg
Bis (2-chloroethyl) ether	ug/Kg	ND	ND					0.5 mg/Kg
1,3-Dichlorobenzene	ug/Kg	ND	ND					NT
1,4-Dichlorobenzene	ug/Kg	ND	ND					17 mg/Kg
1,2-Dichlorobenzene	ug/Kg	ND	ND					600 mg/Kg
Benzyl alcohol	ug/Kg	ND	ND					NT
2-Methylphenol (o-cresol)	ug/Kg	ND	ND					3500 mg/Kg
2,2-oxybis (1-chloropropane)	ug/Kg	ND	ND					NT
n-Nitroso-di-n-propylamine	ug/Kg	ND	ND					NT
Hexachloroethane	ug/Kg	ND	ND					70 mg/Kg
4-Methylphenol	ug/Kg	ND	ND					250 mg/Kg
2-Chlorophenol	ug/Kg	ND	ND					140 mg/Kg
Nitrobenzene	ug/Kg	ND	ND					12 mg/Kg
Bis (2-chloroethoxy) methane	ug/Kg	ND	ND					NT
1,2,4-Trichlorobenzene	ug/Kg	ND	ND					270 mg/Kg
Benzoic acid	ug/Kg	ND	ND					280000 mg/Kg
Isophorone	ug/Kg	ND	ND					1700 mg/Kg
2,4-Dimethylphenol	ug/Kg	ND	ND					1400 mg/Kg
Hexachlorobutadiene	ug/Kg	ND	ND					14 mg/Kg
Napthalene	ug/Kg	2.9	ND					120 mg/Kg
2,4-Dichlorophenol	ug/Kg	ND	ND					210 mg/Kg
4-Chloroaniline	ug/Kg	ND	ND					NT
2,4,6-Trichlorophenol	ug/Kg	ND	ND					140 mg/Kg
2,4,5-Trichlorophenol	ug/Kg	ND	ND					7000 mg/Kg
Hexachlorocyclopentadiene	ug/Kg	ND	ND					9 mg/Kg
2-Methylnapthalene	ug/Kg	2.6	ND					NT
2-Nitroaniline	ug/Kg	ND	ND					NT
2-Chloronapthalene	ug/Kg	ND	ND					NT
4-Chloro-3-methylphenol	ug/Kg	ND	ND					NT
2,6-Dinitrotoluene	ug/Kg	ND	ND					2 mg/Kg
2-Nitrophenol	ug/Kg	ND	ND					NT
3-Nitroaniline	ug/Kg	ND	ND					NT
Dimethyl phthalate	ug/Kg	ND	ND					1360 mg/Kg
2,4-Dinitrophenol	ug/Kg	ND	ND					140 mg/Kg
Acenaphthylene	ug/Kg	ND	ND					NT
2,4-Dinitrotoluene	ug/Kg	95	ND					2 mg/Kg
Acanaphthene	ug/Kg	ND	ND					1700 mg/Kg
Dibenzofuran	ug/Kg	5.1	ND					110 mg/Kg
4-Nitrophenol	ug/Kg	ND	ND					NT
Flourene	ug/Kg	ND	2.7					1100 mg/Kg
4-Nitroaniline	ug/Kg	ND	ND					NT
4-Bromophenyl Phenyl ether	ug/Kg	ND	ND					150 mg/Kg
Hexachlorobenzene	ug/Kg	ND	ND					0.9 mg/Kg

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103D (CONTINUED)

SAMPLE NUMBER		103DCSSS1	103DCSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-12	219240-14					SCENARIO A
PARAMETER	UNITS							
<b>SVOCs (8270C)</b>								
Diethyl phthalate	ug/Kg	ND	ND					2000 mg/Kg
4-Chlorophenyl phenyl ether	ug/Kg	ND	ND					NT
Pentachlorophenol	ug/Kg	ND	ND					6 mg/Kg
n-Nitrosodiphenylamine	ug/Kg	11	100					330 mg/Kg
4,6-Dinitro-2-methylphenol	ug/Kg	ND	ND					NT
Phenanthrene	ug/Kg	15	59					NT
Anthracene	ug/Kg	3.7	12					8500 mg/Kg
Carbazole	ug/Kg	ND	ND					82 mg/Kg
Di-n-butyl-phthalate	ug/Kg	100	1300					NT
Benzidine	ug/Kg	ND	ND					0.01mg/Kg
Flouranthene	ug/Kg	36	150					1600 mg/Kg
Pyrene	ug/Kg	30	100					2100 mg/Kg
Butyl benzyl phthalate	ug/Kg	ND	ND					930 mg/Kg
Benzo(a)anthracene	ug/Kg	12	43					1 mg/Kg
Chrysene	ug/Kg	47	77					36 mg/Kg
3,3-Dichlorobenzidine	ug/Kg	ND	ND					4 mg/Kg
Bis(2-ethylhexyl) phthalate	ug/Kg	15	27					410 mg/Kg
Di-n-octyl phthalate	ug/Kg	ND	ND					0.3 mg/Kg
Benzo(b)flouranthene	ug/Kg	66	81					0.9 mg/Kg
Benzo(k)flouranthene	ug/Kg	ND	56					8 mg/Kg
Benzo(a)pyrene	ug/Kg	17	60					0.2 mg/Kg
Ideno(1,2,3-cd)pyrene	ug/Kg	ND	19					3 mg/Kg
Dibenzo(a,h)anthracene	ug/Kg	ND	ND					0.2 mg/Kg
Benzo(ghi)perylene	ug/Kg	ND	ND					NT
<b>VOCs (8260B)</b>								
Dichlorodifluoromethane	ug/Kg	ND	ND					NT
Chloromethane	ug/Kg	ND	ND					NT
Vinyl chloride	ug/Kg	ND	ND					0.3 mg/Kg
Bromomethane	ug/Kg	ND	ND					NT
Chloroethane	ug/Kg	ND	ND					NT
Trichlorofluoromethane	ug/Kg	ND	ND					770 mg/Kg
1,1-Dichloroethene	ug/Kg	ND	ND					NT
Carbon disulfide	ug/Kg	ND	ND					630 mg/Kg
Acetone	ug/Kg	52	31					2700 mg/Kg
Methylene chloride	ug/Kg	ND	ND					51 mg/Kg
trans-1,2-Dichloroethene	ug/Kg	ND	ND					NT
Methyl-tert-butyl-ether	ug/Kg	ND	ND					8760 mg/Kg
1,1-Dichloroethane	ug/Kg	ND	ND					NT
2,2-Dichloropropane	ug/Kg	ND	ND					NT
cis-1,2-Dichloroethene	ug/Kg	ND	ND					NT
2-Butanone	ug/Kg	ND	ND					NT
Bromochloromethane	ug/Kg	ND	ND					11 mg/Kg
Chloroform	ug/Kg	ND	ND					0.8 mg/Kg
1,1,1-Trichloroethane	ug/Kg	ND	ND					1200 mg/Kg
1,1-Dichloropropene	ug/Kg	ND	ND					NT
Carbon Tetrachloride	ug/Kg	ND	ND					2 mg/Kg
Benzene	ug/Kg	ND	ND					6 mg/Kg

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103D (CONTINUED)

SAMPLE NUMBER		103DCSSS1	103DCSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-12	219240-14					SCENARIO A
PARAMETER	UNITS							
<b>VOCs (8260B)</b>								
1,2-Dichloroethane	ug/Kg	ND	ND					2 mg/Kg
Trichloroethene	ug/Kg	ND	ND					NT
1,2-Dichloropropane	ug/Kg	ND	ND					10 mg/Kg
Dibromomethane	ug/Kg	ND	ND					NT
Bromodichloromethane	ug/Kg	ND	ND					11 mg/Kg
cis-1,3-Dichloropropene	ug/Kg	ND	ND					NT
4-Methyl-2-pentanone	ug/Kg	ND	ND					NT
Toluene	ug/Kg	ND	ND					650 mg/Kg
trans-1,3-Dichloropropene	ug/Kg	ND	ND					NT
1,1,2-Trichloroethane	ug/Kg	ND	ND					5 mg/Kg
Tetrachloroethene	ug/Kg	ND	ND					NT
1,3-Dichloropropane	ug/Kg	ND	ND					NT
2-Hexanone	ug/Kg	ND	ND					NT
Dibromochloromethane	ug/Kg	ND	ND					20 mg/Kg
1,2-Dibromoethane	ug/Kg	ND	ND					NT
Chlorobenzene	ug/Kg	ND	ND					66 mg/Kg
1,1,1,2-Tetrachloroethane	ug/Kg	ND	ND					10 mg/Kg
Ethylbenzene	ug/Kg	ND	ND					400 mg/Kg
m&p Xylenes	ug/Kg	ND	ND					NT
o-xylene	ug/Kg	ND	ND					NT
Styrene	ug/Kg	ND	ND					1500 mg/Kg
Bromoform	ug/Kg	ND	ND					140 mg/Kg
Isopropylbenzene	ug/Kg	ND	ND					210 mg/Kg
Bromobenzene	ug/Kg	ND	ND					NT
1,1,2,2-Tetrachloroethane	ug/Kg	ND	ND					2 mg/Kg
1,2,3-Trichloropropane	ug/Kg	ND	ND					0.09 mg/Kg
n-Propylbenzene	ug/Kg	ND	ND					28 mg/Kg
2-Chlorotoluene	ug/Kg	ND	ND					NT
1,3,5-Trimethylbenzene	ug/Kg	ND	ND					42 mg/Kg
4-Chlorotoluene	ug/Kg	ND	ND					NT
tert-Butylbenzene	ug/Kg	ND	ND					NT
1,2,4-Trimethylbenzene	ug/Kg	ND	ND					100 mg/Kg
sec-Butylbenzene	ug/Kg	ND	ND					NT
p-Isopropyltoluene	ug/Kg	ND	ND					NT
n-Butylbenzene	ug/Kg	ND	ND					NT
1,2-Dibromo-3-chloropropane	ug/Kg	ND	ND					1 mg/Kg
1,2,3-Trichlorobenzene	ug/Kg	ND	ND					NT

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103E (CONTINUED)

SAMPLE NUMBER		103ECSSS1	103ECSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-8	219240-10					SCENARIO A
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1221	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1232	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1242	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1248	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1254	ug/Kg	ND	ND					0.6 mg/Kg
Aroclor 1260	ug/Kg	ND	ND					0.6 mg/Kg
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Kg	ND	ND					3500 mg/Kg
RDX	ug/Kg	ND	ND					15 mg/Kg
1,3,5-Trinitrobenzene	ug/Kg	ND	ND					2100 mg/Kg
1,3-Dinitrobenzene	ug/Kg	ND	ND					7 mg/Kg
Nitrobenzene	ug/Kg	ND	ND					12 mg/Kg
2,4,6-TNT	ug/Kg	ND	ND					35 mg/Kg
Tetryl	ug/Kg	ND	ND					NT
2,4-Dinitrotoluene	ug/Kg	ND	ND					2 mg/Kg
2,6-Dinitrotoluene	ug/Kg	ND	ND					2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Kg	ND	ND					NT
4-Amino-2,6-Dinitrotoluene	ug/Kg	ND	ND					NT
2-Nitrotoluene	ug/Kg	ND	ND					NT
4-Nitrotoluene	ug/Kg	ND	ND					NT
3-Nitrotoluene	ug/Kg	ND	ND					NT
<b>MERCURY (7471A)</b>								
Mercury	mg/Kg	0.07	0.044					0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Kg	7700	10000					NT
Antimony	mg/Kg	ND	ND					85 mg/Kg
Arsenic	mg/Kg	7.2	3.3					11 mg/Kg
Barium	mg/Kg	150	160					14000 mg/Kg
Beryllium	mg/Kg	1	0.88					0.05 mg/Kg
Cadmium	mg/Kg	0.43	0.12					110 mg/Kg
Calcium	mg/Kg	5100	11000					NT
Chromium	mg/Kg	28	21					2100 mg/Kg
Cobalt	mg/Kg	6.3	22					NT
Copper	mg/Kg	20	12					1100 mg/Kg
Iron	mg/Kg	27000	25000					NT
Lead	mg/Kg	59	110					260 mg/Kg
Magnesium	mg/Kg	2600	4900					NT
Manganese	mg/Kg	230	190					3700 mg/Kg
Nickel	mg/Kg	29	25					4800 mg/Kg
Potassium	mg/Kg	830	760					NT
Selenium	mg/Kg	ND	ND					300 mg/Kg
Silver	mg/Kg	ND	ND					140 mg/Kg
Sodium	mg/Kg	ND	750					NT
Thallium	mg/Kg	0.83	ND					17 mg/Kg
Vanadium	mg/Kg	36	30					1500 mg/Kg
Zinc	mg/Kg	55	52					38000 mg/Kg

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103E (CONTINUED)

SAMPLE NUMBER		103ECSSS1	103ECSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB.ID NUMBER		219240-8	219240-10					SCENARIO A
PARAMETER	UNITS							
<b>CYANIDE (9014/9010B)</b>								
Total Cyanide	mg/Kg	0.23	0.18					5480 mg/Kg
<b>PHOSPHOROUS (4500PE)</b>								
Total Phosphorous	mg/Kg	1.5	1.3					NT
<b>SVOCs (8270C)</b>								
Phenol	ug/Kg		ND					5200 mg/Kg
Bis (2-chloroethyl) ether	ug/Kg		ND					0.5 mg/Kg
1,3-Dichlorobenzene	ug/Kg		ND					NT
1,4-Dichlorobenzene	ug/Kg		ND					17 mg/Kg
1,2-Dichlorobenzene	ug/Kg		ND					600 mg/Kg
Benzyl alcohol	ug/Kg		ND					NT
2-Methylphenol (o-cresol)	ug/Kg		ND					3500 mg/Kg
2,2-oxybis (1-chloropropane)	ug/Kg		ND					NT
n-Nitroso-di-n-propylamine	ug/Kg		ND					NT
Hexachloroethane	ug/Kg		ND					70 mg/Kg
4-Methylphenol	ug/Kg		ND					250 mg/Kg
2-Chlorophenol	ug/Kg		ND					140 mg/Kg
Nitrobenzene	ug/Kg		ND					12 mg/Kg
Bis (2-chloroethoxy) methane	ug/Kg		ND					NT
1,2,4-Trichlorobenzene	ug/Kg		ND					270 mg/Kg
Benzoic acid	ug/Kg		ND					280000 mg/Kg
Isophorone	ug/Kg		ND					1700 mg/Kg
2,4-Dimethylphenol	ug/Kg		ND					1400 mg/Kg
Hexachlorobutadiene	ug/Kg		ND					14 mg/Kg
Napthalene	ug/Kg		ND					120 mg/Kg
2,4-Dichlorophenol	ug/Kg		ND					210 mg/Kg
4-Chloroaniline	ug/Kg		ND					NT
2,4,6-Trichlorophenol	ug/Kg		ND					140 mg/Kg
2,4,5-Trichlorophenol	ug/Kg		ND					7000 mg/Kg
Hexachlorocyclopentadiene	ug/Kg		ND					9 mg/Kg
2-Methylnapthalene	ug/Kg		ND					NT
2-Nitroaniline	ug/Kg		ND					NT
2-Chloronapthalene	ug/Kg		ND					NT
4-Chloro-3-methylphenol	ug/Kg		ND					NT
2,6-Dinitrotoluene	ug/Kg		ND					2 mg/Kg
2-Nitrophenol	ug/Kg		ND					NT
3-Nitroaniline	ug/Kg		ND					NT
Dimethyl phthalate	ug/Kg		ND					1360 mg/Kg
2,4-Dinitrophenol	ug/Kg		ND					140 mg/Kg
Acenaphthylene	ug/Kg		ND					NT
2,4-Dinitrotoluene	ug/Kg		ND					2 mg/Kg
Acanaphthene	ug/Kg		ND					1700 mg/Kg
Dibenzofuran	ug/Kg		ND					110 mg/Kg
4-Nitrophenol	ug/Kg		ND					NT
Flourene	ug/Kg		ND					1100 mg/Kg
4-Nitroaniline	ug/Kg		ND					NT
4-Bromophenyl Phenyl ether	ug/Kg		ND					150 mg/Kg
Hexachlorobenzene	ug/Kg		ND					0.9 mg/Kg



TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103E (CONTINUED)

SAMPLE NUMBER		103ECSSS1	103ECSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-8	219240-10					SCENARIO A
PARAMETER	UNITS							
<b>SVOCs (8270C)</b>								
Diethyl phthalate	ug/Kg		ND					2000 mg/Kg
4-Chlorophenyl phenyl ether	ug/Kg		ND					NT
Pentachlorophenol	ug/Kg		ND					6 mg/Kg
n-Nitrosodiphenylamine	ug/Kg		ND					330 mg/Kg
4,6-Dinitro-2-methylphenol	ug/Kg		ND					NT
Phenanthrene	ug/Kg		ND					NT
Anthracene	ug/Kg		ND					8500 mg/Kg
Carbazole	ug/Kg		ND					82 mg/Kg
Di-n-butyl-phthalate	ug/Kg		ND					NT
Benzidine	ug/Kg		ND					0.01mg/Kg
Flouranthene	ug/Kg		36					1600 mg/Kg
Pyrene	ug/Kg		23					2100 mg/Kg
Butly benzyl phthalate	ug/Kg		ND					930 mg/Kg
Benzo(a)anthracene	ug/Kg		ND					1 mg/Kg
Chrysene	ug/Kg		45					36 mg/Kg
3,3-Dichlorobenzidine	ug/Kg		ND					4 mg/Kg
Bis(2-ethylhexyl) phthalate	ug/Kg		ND					410 mg/Kg
Di-n-octyl phthalate	ug/Kg		ND					0.3 mg/Kg
Benzo(b)flouranthene	ug/Kg		ND					0.9 mg/Kg
Benzo(k)flouranthene	ug/Kg		ND					8 mg/Kg
Benzo(a)pyrene	ug/Kg		ND					0.2 mg/Kg
Ideno(1,2,3-cd)pyrene	ug/Kg		ND					3 mg/Kg
Dibenzo(a,h)anthracene	ug/Kg		ND					0.2 mg/Kg
Benzo(ghi)perylene	ug/Kg		ND					NT
<b>VOCs (8260B)</b>								
Dichlorodiflouromethane	ug/Kg	ND	ND					NT
Chloromethane	ug/Kg	ND	ND					NT
Vinyl chloride	ug/Kg	ND	ND					0.3 mg/Kg
Bromomethane	ug/Kg	ND	ND					NT
Chloroethane	ug/Kg	ND	ND					NT
Trichloroflouromethane	ug/Kg	7.6	ND					770 mg/Kg
1,1-Dichloroethene	ug/Kg	ND	ND					NT
Carbon disulfide	ug/Kg	ND	ND					630 mg/Kg
Acetone	ug/Kg	ND	ND					2700 mg/Kg
Methylene chloride	ug/Kg	ND	ND					51 mg/Kg
trans-1,2-Dichloroethene	ug/Kg	ND	ND					NT
Methyl-tert-butyl-ether	ug/Kg	ND	ND					8760 mg/Kg
1,1-Dichloroethane	ug/Kg	ND	ND					NT
2,2-Dichloropropane	ug/Kg	ND	ND					NT
cis-1,2-Dichloroethene	ug/Kg	ND	ND					NT
2-Butanone	ug/Kg	ND	ND					NT
Bromochloromethane	ug/Kg	ND	ND					11 mg/Kg
Chloroform	ug/Kg	ND	ND					0.8 mg/Kg
1,1,1-Trichloroethane	ug/Kg	ND	ND					1200 mg/Kg
1,1-Dichloropropene	ug/Kg	ND	ND					NT
Carbon Tetrachloride	ug/Kg	ND	ND					2 mg/Kg
Benzene	ug/Kg	ND	ND					6 mg/Kg

TABLE 2 - RESULTS OF SOIL AND SEDIMENT SAMPLING ANALYSIS FOR BUILDING 103E (CONTINUED)

SAMPLE NUMBER		103ECSSS1	103ECSSS2					STCs
SAMPLE DATE		7/24/2003	7/24/2003					EXPOSURE
LAB ID NUMBER		219240-8	219240-10					SCENARIO A
PARAMETER	UNITS							
<b>VOCs (8260B)</b>								
1,2-Dichloroethane	ug/Kg	ND	ND					2 mg/Kg
Trichloroethene	ug/Kg	ND	ND					NT
1,2-Dichloropropane	ug/Kg	ND	ND					10 mg/Kg
Dibromomethane	ug/Kg	ND	ND					NT
Bromodichloromethane	ug/Kg	ND	ND					11 mg/Kg
cis-1,3-Dichloropropene	ug/Kg	ND	ND					NT
4-Methyl-2-pentanone	ug/Kg	ND	ND					NT
Toluene	ug/Kg	ND	ND					650 mg/Kg
trans-1,3-Dichloropropene	ug/Kg	ND	ND					NT
1,1,2-Trichloroethane	ug/Kg	ND	ND					5 mg/Kg
Tetrachloroethene	ug/Kg	ND	ND					NT
1,3-Dichloropropane	ug/Kg	ND	ND					NT
2-Hexanone	ug/Kg	ND	ND					NT
Dibromochloromethane	ug/Kg	ND	ND					20 mg/Kg
1,2-Dibromoethane	ug/Kg	ND	ND					NT
Chlorobenzene	ug/Kg	ND	ND					66 mg/Kg
1,1,1,2-Tetrachloroethane	ug/Kg	ND	ND					10 mg/Kg
Ethylbenzene	ug/Kg	ND	ND					400 mg/Kg
m&p Xylenes	ug/Kg	ND	ND					NT
o-xylene	ug/Kg	ND	ND					NT
Styrene	ug/Kg	ND	ND					1500 mg/Kg
Bromoform	ug/Kg	ND	ND					140 mg/Kg
Isopropylbenzene	ug/Kg	ND	ND					210 mg/Kg
Bromobenzene	ug/Kg	ND	ND					NT
1,1,2,2-Tetrachloroethane	ug/Kg	ND	ND					2 mg/Kg
1,2,3-Trichloropropane	ug/Kg	ND	ND					0.09 mg/Kg
n-Propylbenzene	ug/Kg	ND	ND					28 mg/Kg
2-Chlorotoluene	ug/Kg	ND	ND					NT
1,3,5-Trimethylbenzene	ug/Kg	ND	ND					42 mg/Kg
4-Chlorotoluene	ug/Kg	ND	ND					NT
tert-Butylbenzene	ug/Kg	ND	ND					NT
1,2,4-Trimethylbenzene	ug/Kg	ND	ND					100 mg/Kg
sec-Butylbenzene	ug/Kg	ND	ND					NT
p-Isopropyltoluene	ug/Kg	ND	ND					NT
n-Butylbenzene	ug/Kg	ND	ND					NT
1,2-Dibromo-3-chloropropane	ug/Kg	ND	ND					1 mg/Kg
1,2,3-Trichlorobenzene	ug/Kg	ND	ND					NT

TABLE 3 - RESULTS OF WIPE SAMPLING ANALYSIS FOR BUILDING 103

SAMPLE NUMBER		103CWS1	103CWS2	103CWS3	103CWS4	103CWS1	103CWS2	WIPE TARGET
SAMPLE DATE		7/23/2003	7/23/2003	7/23/2003	7/23/2003	7/24/2003	7/24/2003	
LAB ID NUMBER		219204-8	219204-10	219204-11	219204-13	219240-28	219240-29	CONCENTRATION
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Wipe	ND	ND	ND	ND	ND	ND	10 ug/CM <sup>2</sup> *
Aroclor 1221	ug/Wipe	ND	ND	ND	ND	ND	ND	10 ug/CM <sup>2</sup>
Aroclor 1232	ug/Wipe	ND	ND	ND	ND	ND	ND	10 ug/CM <sup>2</sup>
Aroclor 1242	ug/Wipe	ND	ND	ND	ND	ND	ND	10 ug/CM <sup>2</sup>
Aroclor 1248	ug/Wipe	ND	ND	ND	ND	ND	ND	10 ug/CM <sup>2</sup>
Aroclor 1254	ug/Wipe	ND	ND	ND	ND	ND	ND	10 ug/CM <sup>2</sup>
Aroclor 1260	ug/Wipe	4.8	2.4	46	3.4	6.3	ND	10 ug/CM <sup>2</sup>
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Wipe	ND	ND	ND	ND	ND	ND	3500 mg/Kg
RDX	ug/Wipe	ND	ND	ND	ND	ND	ND	15 mg/Kg
1,3,5-Trinitrobenzene	ug/Wipe	ND	240	ND	ND	ND	ND	2100 mg/Kg
1,3-Dinitrobenzene	ug/Wipe	ND	ND	ND	ND	ND	ND	7 mg/Kg
Nitrobenzene	ug/Wipe	ND	ND	ND	ND	ND	ND	12 mg/Kg
2,4,6-TNT	ug/Wipe	ND	ND	ND	ND	ND	ND	35 mg/Kg
Tetryl	ug/Wipe	ND	ND	ND	ND	ND	ND	NT
2,4-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	2 mg/Kg
2,6-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	NT
4-Amino-2,6-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	NT
2-Nitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	NT
4-Nitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	NT
3-Nitrotoluene	ug/Wipe	ND	ND	ND	ND	ND	ND	NT
<b>MERCURY (7471A)</b>								
Mercury	ug/Wipe	2700	400	150	1500	4900	9100	0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Wipe	3	2.9	0.22	5.2	12	4	NT
Antimony	mg/Wipe	0.0045	ND	ND	0.0027	0.0068	0.01	85 mg/Kg
Arsenic	mg/Wipe	0.0029	0.0027	0.0021	0.0049	0.021	0.0097	11 mg/Kg
Barium	mg/Wipe	6.8	0.12	0.077	0.12	1.8	0.79	14000 mg/Kg
Beryllium	mg/Wipe	ND	ND	ND	ND	ND	ND	0.05 mg/Kg
Cadmium	mg/Wipe	0.013	0.0009	0.0006	0.0019	0.016	0.071	110 mg/Kg
Calcium	mg/Wipe	34	42	3.8	43	180	80	NT
Chromium	mg/Wipe	0.35	0.15	0.017	0.018	0.17	0.12	2100 mg/Kg
Cobalt	mg/Wipe	0.057	0.0011	0.017	0.0069	0.13	0.099	NT
Copper	mg/Wipe	0.047	0.38	0.18	22	0.24	0.56	1100 mg/Kg
Iron	mg/Wipe	5.8	3.1	18	16	30	59	NT
Lead	mg/Wipe	6.8	0.9	2	0.18	2.5	1.4	100 ug/CM <sup>2</sup> **
Magnesium	mg/Wipe	2.2	1.2	0.28	2.6	12	4.5	NT
Manganese	mg/Wipe	0.19	0.061	0.088	0.2	0.61	0.39	3700 mg/Kg
Nickel	mg/Wipe	0.0073	0.0031	0.0022	0.019	0.036	0.03	4800 mg/Kg
Potassium	mg/Wipe	1	2.1	0.099	3.4	4.2	6.3	NT
Selenium	mg/Wipe	ND	ND	ND	0.0024	0.0023	ND	300 mg/Kg
Silver	mg/Wipe	0.0008	ND	ND	0.0019	0.0025	0.0021	140 mg/Kg
Sodium	mg/Wipe	5.7	1.4	1.2	5.3	7.4	6.2	NT
Thallium	mg/Wipe	ND	ND	ND	ND	ND	ND	17 mg/Kg
Vanadium	mg/Wipe	0.0075	0.0053	0.0009	0.016	0.035	0.015	1500 mg/Kg
Zinc	mg/Wipe	10	0.28	0.77	9.1	5.3	3	38000 mg/Kg

TABLE 3 - RESULTS OF WIPE SAMPLING ANALYSIS FOR BUILDING 103D (CONTINUED)

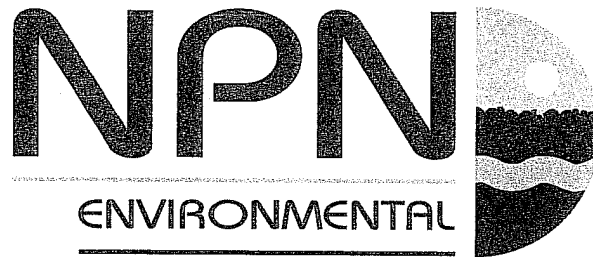
SAMPLE NUMBER SAMPLE DATE LAB ID NUMBER		103DCSWS1 7/24/2003 219240-13	103DCSWS2 7/24/2003 219240-15	103DWS1 7/24/2003 219240-30	103DWS2 7/24/2003 219240-31			WIPE TARGET CONCENTRATION
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup> *
Aroclor 1221	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup>
Aroclor 1232	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup>
Aroclor 1242	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup>
Aroclor 1248	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup>
Aroclor 1254	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup>
Aroclor 1260	ug/Wipe	ND	ND	ND	ND			10 ug/CM <sup>2</sup>
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Wipe	ND	ND	ND	ND			3500 mg/Kg
RDX	ug/Wipe	ND	ND	ND	ND			15 mg/Kg
1,3,5-Trinitrobenzene	ug/Wipe	ND	ND	2.2	ND			2100 mg/Kg
1,3-Dinitrobenzene	ug/Wipe	ND	ND	ND	ND			7 mg/Kg
Nitrobenzene	ug/Wipe	ND	ND	ND	ND			12 mg/Kg
2,4,6-TNT	ug/Wipe	ND	ND	ND	ND			35 mg/Kg
Tetryl	ug/Wipe	ND	ND	ND	ND			NT
2,4-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND			2 mg/Kg
2,6-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND			2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Wipe	ND	3.5	ND	ND			NT
4-Amino-2,6-Dinitrotoluene	ug/Wipe	ND	ND	ND	ND			NT
2-Nitrotoluene	ug/Wipe	ND	ND	ND	ND			NT
4-Nitrotoluene	ug/Wipe	ND	ND	ND	ND			NT
3-Nitrotoluene	ug/Wipe	ND	ND	ND	ND			NT
<b>MERCURY (7471A)</b>								
Mercury	ug/Wipe	96	41	3500	43			0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Wipe	3	2.2	6.3	2.1			NT
Antimony	mg/Wipe	ND	ND	0.0097	ND			85 mg/Kg
Arsenic	mg/Wipe	0.0018	0.0011	0.018	0.0047			11 mg/Kg
Barium	mg/Wipe	2.3	0.23	0.7	0.057			14000 mg/Kg
Beryllium	mg/Wipe	ND	ND	ND	ND			0.05 mg/Kg
Cadmium	mg/Wipe	0.0006	0.0004	0.059	0.0004			110 mg/Kg
Calcium	mg/Wipe	63	16	90	53			NT
Chromium	mg/Wipe	0.018	0.0071	0.19	0.011			2100 mg/Kg
Cobalt	mg/Wipe	0.0028	0.0009	0.042	0.0015			NT
Copper	mg/Wipe	0.0067	0.0053	1	0.0063			1100 mg/Kg
Iron	mg/Wipe	3.9	2.5	63	2.7			NT
Lead	mg/Wipe	13	2.7	2.6	0.039			100 ug/CM <sup>2</sup> **
Magnesium	mg/Wipe	1.7	0.82	11	1.5			NT
Manganese	mg/Wipe	0.12	0.05	1.1	0.089			3700 mg/Kg
Nickel	mg/Wipe	0.0037	0.0022	0.11	0.0035			4800 mg/Kg
Potassium	mg/Wipe	3	1.6	9.2	3.3			NT
Selenium	mg/Wipe	ND	ND	0.0017	ND			300 mg/Kg
Silver	mg/Wipe	ND	ND	0.0044	ND			140 mg/Kg
Sodium	mg/Wipe	1.7	1	12	18			NT
Thallium	mg/Wipe	ND	ND	ND	ND			17 mg/Kg
Vanadium	mg/Wipe	0.018	0.0046	0.027	0.015			1500 mg/Kg
Zinc	mg/Wipe	0.16	0.11	7.8	0.033			38000 mg/Kg

TABLE 3 - RESULTS OF WIPE SAMPLING ANALYSIS FOR BUILDING 103E (CONTINUED)

SAMPLE NUMBER SAMPLE DATE LAB ID NUMBER		103ECSWS1 7/24/2003 219240-9	103ECSWS2 7/24/2003 219240-11					WIPE TARGET CONCENTRATION
PARAMETER	UNITS							
<b>PCBs (8082)</b>								
Aroclor 1016	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup> *
Aroclor 1221	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup>
Aroclor 1232	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup>
Aroclor 1242	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup>
Aroclor 1248	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup>
Aroclor 1254	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup>
Aroclor 1260	ug/Wipe	ND	ND					10 ug/CM <sup>2</sup>
<b>EXPLOSIVES (8330)</b>								
HMX	ug/Wipe	ND	ND					3500 mg/Kg
RDX	ug/Wipe	ND	ND					15 mg/Kg
1,3,5-Trinitrobenzene	ug/Wipe	ND	ND					2100 mg/Kg
1,3-Dinitrobenzene	ug/Wipe	ND	ND					7 mg/Kg
Nitrobenzene	ug/Wipe	ND	ND					12 mg/Kg
2,4,6-TNT	ug/Wipe	ND	ND					35 mg/Kg
Tetryl	ug/Wipe	ND	ND					NT
2,4-Dinitrotoluene	ug/Wipe	ND	ND					2 mg/Kg
2,6-Dinitrotoluene	ug/Wipe	ND	ND					2 mg/Kg
2-Amino-4,6-Dinitrotoluene	ug/Wipe	4.4	8.6					NT
4-Amino-2,6-Dinitrotoluene	ug/Wipe	2	ND					NT
2-Nitrotoluene	ug/Wipe	ND	ND					NT
4-Nitrotoluene	ug/Wipe	ND	ND					NT
3-Nitrotoluene	ug/Wipe	ND	ND					NT
<b>MERCURY (7471A)</b>								
Mercury	ug/Wipe	14	94					0.6 mg/Kg
<b>METALS (6010B)</b>								
Aluminum	mg/Wipe	1.4	2.5					NT
Antimony	mg/Wipe	ND	ND					85 mg/Kg
Arsenic	mg/Wipe	0.0011	0.0011					11 mg/Kg
Barium	mg/Wipe	7.5	0.78					14000 mg/Kg
Beryllium	mg/Wipe	ND	ND					0.05 mg/Kg
Cadmium	mg/Wipe	0.0015	0.0004					110 mg/Kg
Calcium	mg/Wipe	26	31					NT
Chromium	mg/Wipe	0.015	0.12					2100 mg/Kg
Cobalt	mg/Wipe	0.0077	0.0019					NT
Copper	mg/Wipe	0.0066	0.0033					1100 mg/Kg
Iron	mg/Wipe	2	2.5					NT
Lead	mg/Wipe	33	8.1					100 ug/CM <sup>2</sup> **
Magnesium	mg/Wipe	0.99	1.1					NT
Manganese	mg/Wipe	0.072	0.081					3700 mg/Kg
Nickel	mg/Wipe	0.0029	0.0026					4800 mg/Kg
Potassium	mg/Wipe	0.75	1.1					NT
Selenium	mg/Wipe	ND	ND					300 mg/Kg
Silver	mg/Wipe	ND	ND					140 mg/Kg
Sodium	mg/Wipe	0.53	0.65					NT
Thallium	mg/Wipe	ND	ND					17 mg/Kg
Vanadium	mg/Wipe	0.0069	0.0047					1500 mg/Kg
Zinc	mg/Wipe	0.29	0.19					38000 mg/Kg

**APPENDIX A**

**NPN MERCURY MONITORING REPORT**



September 29, 2003  
Contract C-03186

VIA FAX 816-941-8025

Mr. David E. Brewer, P.G.  
SCS Engineers  
10401 Holmes Road  
Suite 400  
Kansas City, MO 64131-34-6

**RE: Mercury Monitoring  
GSA Armory on Goodfellow  
St. Louis, MO**

David:

This letter transmits results of particulate mercury, particulate lead, and mercury vapor sampling performed by NPN Environmental on September 4, 2003 at Buildings 102, 103, 104, and 112 on the above-referenced property. The following sections describe the scope of work performed and findings.

#### **Passive Vapor Air Monitoring**

NPN Environmental collected 8 passive ambient air samples for mercury vapor at locations indicated in the field by SCS Engineers. Samples were collected on ChemDisk™ gold film media badges over the sampling interval. Samples were submitted via overnight express courier to Assay Technology AT Labs in Boardman, Ohio (AIHA Accreditation No. 100903) for analysis by OSHA Method 140.

Two samples contained detectable quantities of mercury vapor. Sample 103D from the second floor air handler room of Building 103D contained 0.0050 mg/m<sup>3</sup> mercury. Sample 103T from the utility tunnel under Building 103 contained 0.0045 mg/m<sup>3</sup> mercury. Both samples are below the OSHA Permissible Exposure Limit (PEL) of 0.05 mg/m<sup>3</sup> (8-hour time weighted average).

Results are presented in **Table 1 – Passive Vapor Ambient Air Monitoring Results**. Included in the table are sample identification number, location, duration and volume of sample, quantity detected, calculated exposure level, and OSHA PEL. The complete analytical report is provided in *Attachment A – Analytical Results*.

Mr. David E. Brewer, P.G.  
September 29, 2003  
Page 2 of 2

### **Particulate Air Monitoring**

NPN Environmental collected 9 ambient air monitoring samples at locations indicated in the field by SCS Engineers. Samples were collected with calibrated sampling pumps on closed-face 37 mm 0.8 micron MCE filter cassettes over the sampling interval. At the request of SCS Engineers, the sample collected from the crawl space under the cafeteria of Building 112 (sample 112C) was analyzed for lead instead of mercury. Two field blanks were prepared for quality assurance/quality control purposes. Samples and field blanks were submitted by overnight express courier to Assay Technology AT Labs. Particulate mercury samples were analyzed by OSHA Method 145 and lead samples by OSHA Method 125.

None of the ambient air monitoring samples contained levels of particulate mercury or lead above laboratory detection limits. Results are presented in **Table 2 – Particulate Ambient Air Monitoring Results**. Included in the table are sample identification number, location, duration and volume of sample, quantity detected, calculated exposure level, and OSHA PEL. The complete analytical report is provided in *Attachment A*.

We appreciate the opportunity to provide our professional environmental engineering services to you and SCS Engineers. If you have any questions or require additional information, please call me at 636-343-1300.

Sincerely,

(b) (6)

Ruth C. Mannebach  
Senior Environmental Scientist

Enclosures    Table 1 – Passive Vapor Ambient Air Monitoring Results  
                  Table 2 – Particulate Ambient Air Monitoring Results  
                  Attachment 1 – Analytical Results



**TABLE 1**  
**Passive Vapor Ambient Air Monitoring Results**

Sample ID	Sample Date	Sample Location	Sample Duration (minutes)	Sample Volume (liters)	Quantity Detected (µg)	Exposure (mg/m <sup>3</sup> )	OSHA PEL (mg/m <sup>3</sup> )
Mercury <sup>1</sup>							
103C	9/4/2003	Bldg. 103C, 2nd floor office area	421	6.27	<0.0100	<0.0016	0.05
102D	9/4/2003	Bldg. 102D, tunnel under dark rooms	363	5.41	<0.0100	<0.0018	0.05
103D	9/4/2003	Bldg. 103D, 2nd floor air handler room	369	5.50	0.0277	0.0050	0.05
104C	9/4/2003	Bldg. 104C, freight elevator	395	5.89	<0.0100	<0.0017	0.05
103T	9/4/2003	Bldg. 103T, utility tunnel	377	5.62	0.0255	0.0045	0.05
104T	9/4/2003	Bldg. 104T, utility tunnel	339	5.05	<0.0100	<0.0020	0.05
104D	9/4/2003	Bldg. 104D, 2nd floor hallway near exit	398	5.93	<0.0100	<0.0017	0.05
102A	9/4/2003	Bldg. 102A, freight elevator	370	5.51	<0.0100	<0.0018	0.05

Notes: Samples collected on Chem-Disk™ Monitor gold film media badges  
<sup>1</sup>OSHA Method 140

**TABLE 2**  
**Particulate Ambient Air Monitoring Results**

Sample ID	Sample Date	Sample Location	Sample Duration (minutes)	Sample Volume (liters)	Quantity Detected (µg)	Exposure (mg/m <sup>3</sup> )	OSHA PEL (mg/m <sup>3</sup> )
<b>Mercury</b>							
103C	9/4/2003	Bldg. 103C, 2nd floor office area	304	608	<0.02	<0.00003	0.01
104D	9/4/2003	Bldg. 104D, 2nd floor hallway near exit	400	800	<0.02	<0.00003	0.01
104C	9/4/2003	Bldg. 104C, freight elevator	394	788	<0.02	<0.00003	0.01
104T	9/4/2003	Bldg. 104T, utility tunnel	130	234	<0.02	<0.00009	0.01
103D	9/4/2003	Bldg. 103D, 2nd floor air handling room	370	740	<0.02	<0.00003	0.01
103T	9/4/2003	Bldg. 103T, utility tunnel	378	756	<0.02	<0.00003	0.01
102A	9/4/2003	Bldg. 102A, freight elevator	371	742	<0.02	<0.00003	0.01
102D	9/4/2003	Bldg. 102D, tunnel under darkrooms	364	728	<0.02	<0.00003	0.01
FB - Hg	9/4/2003	Field Blank	NA	NA	<0.02	NA	NA
<b>Lead<sup>2</sup></b>							
112C	9/4/2003	Bldg. 112C, crawlspace under cafeteria	393	786	<0.5	<0.0006	0.05
FB – Pb	9/4/2003	Field Blank	NA	NA	<0.5	NA	NA

Notes: NA = Not Applicable  
 Samples collected on 37 mm 0.8 um MCE filter cassettes  
<sup>1</sup>OSHA Method 125  
<sup>2</sup>OSHA Method 145

**ATTACHMENT 1**

*Analytical Results*



AT Labs a unit of assay technology

LABORATORY REPORT  
(Air Sampling)

The Innovation & Value Leader  
in Occupational Hygiene Analysis

Batch No: 2003090216

Customer: NPN ENVIRONMENTAL  
Attention: RUTH MANNEBACH  
Address: 927 HORAN DRIVE

Contact No: 43927  
Project No:  
PO No:

City, State: ST LOUIS, MO 63026  
Country:

Date Received: September 8, 2003  
Date Reported: September 11, 2003

Tel No: (636) 343-1300  
Fax No: (636) 343-8192

Date(s) Analyzed: 09/11/03

Exposure results are the average concentration for the period of time monitored. ND = None Detected. The results relate only to the items tested. Unless noted below, samples were received in acceptable condition and all applicable quality control were within method specifications. The molar volume at 22 C (24.1 L/mole) was used to calculate parts per million, ppm. Lab blanks are always subtracted before a result is reported, unless stated otherwise. Air surface concentrations reported are based upon field sampling information provided by the customer. For assistance with the content of this report, please visit the Customer Services section of our web site at <http://www.assaytech.com> or contact Technical Support at 1-800-833-1258.

Lab Sample ID / Lab Code	Date Sampled	Media Code - Client Sample ID	Media Lot / Serial #	Chemical Analyzed	Quantity Found (µg)	Detection Limit (µg)	Sample Volume (L)	Sample Time (min)	Exposure (mg/M <sup>3</sup> )	Detection Limit (ppm)
2003028250 - ATOH	9/4/03	J593 - 103C	11K02 - DU1629	MERCURY (1)	ND	0.01	6.27	421	ND	0.0002
2003028251 - ATOH	9/4/03	J593 - 102D	11K02 - DU1259	MERCURY (1)	ND	0.01	5.41	363	ND	0.0002
2003028252 - ATOH	9/4/03	J593 - 103D	11K02 - DU1296	MERCURY (1)	0.0277	0.01	5.5	369	0.0005	0.0002
2003028253 - ATOH	9/4/03	J593 - 104C	11K02 - DU1402	MERCURY (1)	ND	0.01	5.89	395	ND	0.0002
2003028254 - ATOH	9/4/03	J593 - 103T	11K02 - DU1797	MERCURY (1)	0.0255	0.01	5.62	377	0.0045	0.0002
2003028255 - ATOH	9/4/03	J593 - 104T	11K02 - DU1455	MERCURY (1)	ND	0.01	5.05	339	ND	0.0002
2003028256 - ATOH	9/4/03	J593 - 104D	11K02 - DU1126	MERCURY (1)	ND	0.01	5.93	398	ND	0.0002
2003028257 - ATOH	9/4/03	J593 - 102A	11K02 - DU0922	MERCURY (1)	ND	0.01	5.51	370	ND	0.0002

Messages

Lab Sample ID	Message	Method	Method Name	Analyzed By	Approved By
		1	OSHA 140 (OSHA PEL 0.1 MG/M3)	S. LAUDERBAUC	K. TAYLOR

Results Reviewed by Person Monitored (If Applicable): \_\_\_\_\_  
(Initials/Date)



AT Labs a unit of assay technology

LABORATORY REPORT  
(Air Sampling)

The Innovation & Value Leader  
in Occupational Hygiene Analysis

Batch No: 2003090217

Customer: NPN ENVIRONMENTAL  
Attention: RUTH MANNEBACH  
Address: 927 HORAN DRIVE

Contact No: 43927  
Project No: C-03186  
PO No:

City, State: ST LOUIS, MO 63026  
Country:

Tel No: (636) 343-1300  
Fax No: (636) 343-8192

Date Received: September 8, 2003  
Date Reported: September 11, 2003  
Date(s) Analyzed: 09/11/03

Exposure results are the average concentration for the period of time monitored. ND = None Detected. The results relate only to the items tested. Unless noted below, samples were received in acceptable condition and all applicable quality control were within method specifications. The molar volume at 22 C (24.1 L/mole) was used to calculate parts per million, ppm. Lab blanks are always subtracted before a result is reported, unless stated otherwise. Air surface concentrations reported are based upon field sampling information provided by the customer. For assistance with the content of this report, please visit the Customer Services section of our web site at <http://www.assaytech.com> or contact Technical Support at 1-800-833-1258.

Lab Sample ID / Lab Code	Date Sampled	Media Code - Client Sample ID	Media Lot / Serial #	Chemical Analyzed	Quantity Found (µg)	Detection Limit (µg)	Sample Volume (L)	Sample Time (min)	Exposure (mg/M <sup>3</sup> )	Detection Limit (ppm)
2003028258 - ATOH	9/4/03	CASSETTE - 103C	-	MERCURY (2)	ND	0.02	608	304	ND	0.000004
2003028259 - ATOH	9/4/03	CASSETTE - 104D	-	MERCURY (2)	ND	0.02	800	400	ND	0.000003
2003028260 - ATOH	9/4/03	CASSETTE - 104C	-	MERCURY (2)	ND	0.02	788	394	ND	0.000003
2003028261 - ATOH	9/4/03	CASSETTE - 104T	-	MERCURY (2)	ND	0.02	234	130	ND	0.00001
2003028262 - ATOH	9/4/03	CASSETTE - 112C	-	LEAD (1)	ND	0.5	786	393	ND	0.00007
2003028263 - ATOH	9/4/03	CASSETTE - 103D	-	MERCURY (2)	ND	0.02	740	370	ND	0.000003
2003028264 - ATOH	9/4/03	CASSETTE - 103T	-	MERCURY (2)	ND	0.02	756	378	ND	0.000003
2003028265 - ATOH	9/4/03	CASSETTE - 102A	-	MERCURY (2)	ND	0.02	742	371	ND	0.000003
2003028266 - ATOH	9/4/03	CASSETTE - 102D	-	MERCURY (2)	ND	0.02	728	364	ND	0.000003
2003028267 - ATOH	9/4/03	CASSETTE - FB	-	MERCURY (2)	ND	0.02		N/A	ND	0.000003
2003028268 - ATOH	9/4/03	CASSETTE - BLANK ADDED BY LAB	-	LEAD (1)	ND	0.5		N/A	ND	0.000003

Messages

Lab Sample ID Message

Method 1  
2

Method Name  
OSHA ID 125  
OSHA ID 145

Analyzed By  
S. LAUDERBAUC K. TAYLOR

Approved By

Results Reviewed by Person Monitored (if Applicable): \_\_\_\_\_  
(Initials/Date)



a unit of assay technology

(800) 833-1258

250 DeBartolo Place, Ste. 2525  
Boardman, OH 44512  
(AIHA Lab #9349)  
Fax: (330) 758-1245  
www.assaytech.com  
askassay@assaytech.com

# LAB REQUEST FORM

(CLIENT WORK ORDER & CHAIN OF CUSTODY)

Please fill out form completely—incomplete forms will be returned.

DO NOT WRITE in Shaded Boxes—Lab Use Only

Service Authorized

(IMPORTANT!)...Client Signature Required

- REG (6<sup>th</sup> DAY after receipt for IH samples) 0% Surcharge
- EXP (3<sup>rd</sup> DAY after receipt for IH samples) 50% Surcharge
- ORSH (1<sup>st</sup> DAY after receipt for IH samples) 100% Surcharge

LAB SAMPLE ID No.	CLIENT SAMPLE ID (30 CHARACTERS)	MEDIA CODE (SEE BELOW*)	DATE SAMPLED	COMP FLOW (L/MIN)	GRAB TIME (MIN)	# CONTAINERS VOLUME (L)	ANALYTES or Tests Requested										
							1	2	3	4	5	6	7				
103C		C	9/4/03	2.0	209	602	Mercury	Lead									
104D		C	9/4/03	2.0	400	900											
104C		C	9/4/03	2.0	394	789											
104T		C	9/4/03	1.8	130	234											
112C		C	9/4/03	2.0	393	736											
103D		C	9/4/03	2.0	370	740											
103T		C	9/4/03	2.0	377	756											
102A		C	9/4/03	2.0	371	743											
102D		C	9/4/03	2.0	369	728											
FB		C	9/4/03	NA	NA	NA											

Purchase Order or Credit Card No.		Send Lab Report To:		Send Invoice To:		Chain of Custody		ANALYTES/Test Price Codes	
Project No. (Optional) C-03186		Name/Title/Mail Stop Ruth Mannerbach		Name/Title/Mail Stop Same		Date 9/4/03			
Universal Client No. (UCN)		Company/Organization NPN Environmental		Company/Organization		Date 9/4/03			
Client Phone 636-343-1300		Address 937 Horan Dr		Address		Date 9/4/03			
Sample Batch No. 616-313-8192		City, State, Zip St Louis MO 63026		City, State, Zip		Date 9/4/03			
Please check <input type="checkbox"/> if Samples submitted are... <input type="checkbox"/> Soil <input type="checkbox"/> Water... and use these legends for the columns below:		COMP FLOW (L/MIN)		GRAB TIME (MIN)		DATE SAMPLED			
*Media Codes		Relinquished By (Optional)		Received By (Optional)		Received By LAB			
C = Filter Cassette	OVS = OSHA Versatile Sample	Date		Date		Date			
PUF = PUF	T = Sampling Tube	Date		Date		Date			
W = Surface Wipe	T&C = Tube with Cassette	Date		Date		Date			
Badge = (Enter all Nos. on Badge)	Ppd Media = (Enter all Nos. from label)	Date		Date		Date			

WHITE — LAB COPY YELLOW — ACCOUNTING COPY PINK — CLIENT COPY