Site: Hubert Wheeler State
ID #: MOD000936666
Break: 2.4
Other: 7-22-96

REMOVAL SITE EVALUATION REPORT

HUBERT WHEELER STATE SCHOOL SITE
St. Louis City, Missouri

July 22, 1996

Missouri Department of Natural Resources

Hazardous Waste Program

RECEIVED
JUL 3 1 1996
SUPERFUND DIVISION

Prepared By

Julie B. Kelsey
Environmental
Specialist

Reviewed By

Julie Warren
Chief
Site Evaluation Unit

Approved By

Gary T. Behrns
Chief
Superfund Section

30803332
Superfund

Table of Contents

Section — Page

EXECUTIVE SUMMARY 1-2

1.0 INTRODUCTION 3
- 1.1 Objective of the Removal Site Evaluation 3
- 1.2 Authority for the Work 3

2.0 SITE CONDITIONS AND BACKGROUND 3
- 2.1 Site Location 3-4
- 2.2 Site Characteristics 5
- 2.3 Contaminants of Concern 5
  - 2.3.1 Lead 5
  - 2.3.2 Polycyclic Aromatic Hydrocarbons (PAHs) 6
- 2.4 Current Status of the Site 6

3.0 SITE HISTORY 7
- 3.1 Previous Site Investigations 7
  - 3.1.1 DNR Preliminary Assessment/Site Inspection (PA/SI) 7-8
  - 3.1.2 State of Missouri Investigation 8-9
  - 3.1.3 Extent of Contamination Within School Property Boundaries 9
- 3.2 Data Obtained During the Removal Site Evaluation 9
  - 3.2.1 Community Interviews 9
    - 3.2.1.1 Laclede-Christy Mining Activities 9-10
    - 3.2.1.2 Post-Mining Site Conditions 10
    - 3.2.1.3 Formation of the "Pit" Area and Subsequent Landfilling Operations 10-11
    - 3.2.1.4 Potentially Responsible Parties 11
  - 3.2.2 Removal Site Evaluation Sampling 12
  - 3.2.3 Removal Site Evaluation Findings 12-18

4.0 POTENTIAL THREAT TO PUBLIC HEALTH AND WELFARE 18
- 4.1 Health Consultation 18
- 4.2 Expedited Risk Assessment 19
- 4.3 Preliminary Removal Goals 19-20,21
- 4.4 Applicable, Relevant, and Appropriate Requirements 20

5.0 PROPOSED ACTION 20
- 5.1 Proposed Activities 20,22
- 5.2 Estimated Costs 22

6.0 CONCLUSIONS AND RECOMMENDATIONS 22-23

7.0 REFERENCES 23-24

8.0 LIST OF ATTACHMENTS 24-25

Hubert Wheeler State School Site
Removal Site Evaluation
July 22, 1996

EXECUTIVE SUMMARY

The Hubert Wheeler State School site was reported to the Missouri Department of Natural Resources (DNR) in February of 1993. A black, tar-like substance was reportedly exuding through the asphalt playground used by the students of the school. The Missouri Department of Elementary and Secondary Education (DESE) closed the school on August 12, 1994.

Historical records indicate that this portion of the city of St. Louis was undermined extensively for fire clay. This clay was used in the manufacture of refractory brick, sewer pipe, and other products. The excavated area of the clay mine includes the current day Hubert Wheeler State School property and portions of the surrounding neighborhood. According to area residents and historical records, the excavated area, or pit, was used for waste disposal from the early 1900's through the mid-1960's. Various waste materials were reportedly disposed in the pit, including solid wastes (glass bottles, scrap paper, spoiled food) and hazardous wastes (medical wastes, roofing tar, barrels of tar).

Analytical data from previous soil sampling conducted at the Hubert Wheeler State School site indicate that semi-volatile organic compounds known as polycyclic aromatic hydrocarbons (PAHs) and lead are present in the surface and subsurface soils of the school property. This Removal Site Evaluation (RSE) was performed to determine if the contaminants present in the soils on the school property were also present in the surrounding residential neighborhood. If contamination was found, the next objective was to determine the potential human health risk posed to the residential population.

Sampling and analyses conducted during this RSE indicate that similar PAH compounds and lead are present in the soils in the residential yards. However, there have been no additional reports of free tar. Tar-like materials and/or soil staining were not observed during RSE residential soil sampling.

The analytical data generated from this RSE was provided to the Missouri Department of Health (DOH). The DOH determined that the levels of contamination found in the residential soils are not expected to present an increased risk of non-carcinogenic adverse health effects in humans. The levels of some semi-volatile PAH compounds do pose a slight increased risk of cancer for the residents, assuming lifetime exposure. This risk can be minimized by limiting contact with contaminated soils.

Since the levels of contamination found in the residential yards do not pose an imminent and substantial human health risk, additional removal activities are not recommended for the residential areas.

A public meeting will be held on July 23, 1996, in order to inform the general public about the potential human health risks of lifelong exposure to the contaminated soils. DNR proposes community education to advise the residents of precautions they can take to minimize this possible risk.

Data obtained during the RSE Community Interviews indicates that there may be at least two potential sources of the tar-like material buried on the Hubert Wheeler State School property. Previous geophysical investigations conducted at the school revealed anomalies that would indicate other sources of subsurface contamination.

Additional removal activities are recommended for the school property to locate and remove any source(s) of contamination. The affected substances requiring removal would include any free-product sources, soil, or debris containing hazardous substances in excess of health-based removal goals established for the site.

Hubert Wheeler State School Site
Removal Site Evaluation
July 22, 1996

1.0 INTRODUCTION

This Removal Site Evaluation (RSE) reviews the known contamination issues surrounding the Hubert Wheeler State School property in St. Louis, Missouri, and addresses the potential risk posed to the residential population living near the site. This report was prepared in accordance with 40 CFR 300.410 (Removal Site Evaluation) and additional guidelines provided by the U.S. Environmental Protection Agency (EPA) Region VII.

1.1 Objective of the Removal Site Evaluation

The primary objective of the RSE was to determine whether or not residents living near the Hubert Wheeler State School are at an increased risk of exposure to hazardous substances from the site.

Additional objectives included the following:

- to characterize the hazardous substances within the affected area,
- to determine the source(s) of contamination,
- to delineate site boundaries (both vertical and horizontal),
- to obtain additional information regarding the site history and any potentially responsible parties through community involvement (such as Community Interviews),
- to determine the appropriate action(s) necessary to protect human health and the environment, based upon appropriate health and risk-based criteria.

1.2 Authority for the Work

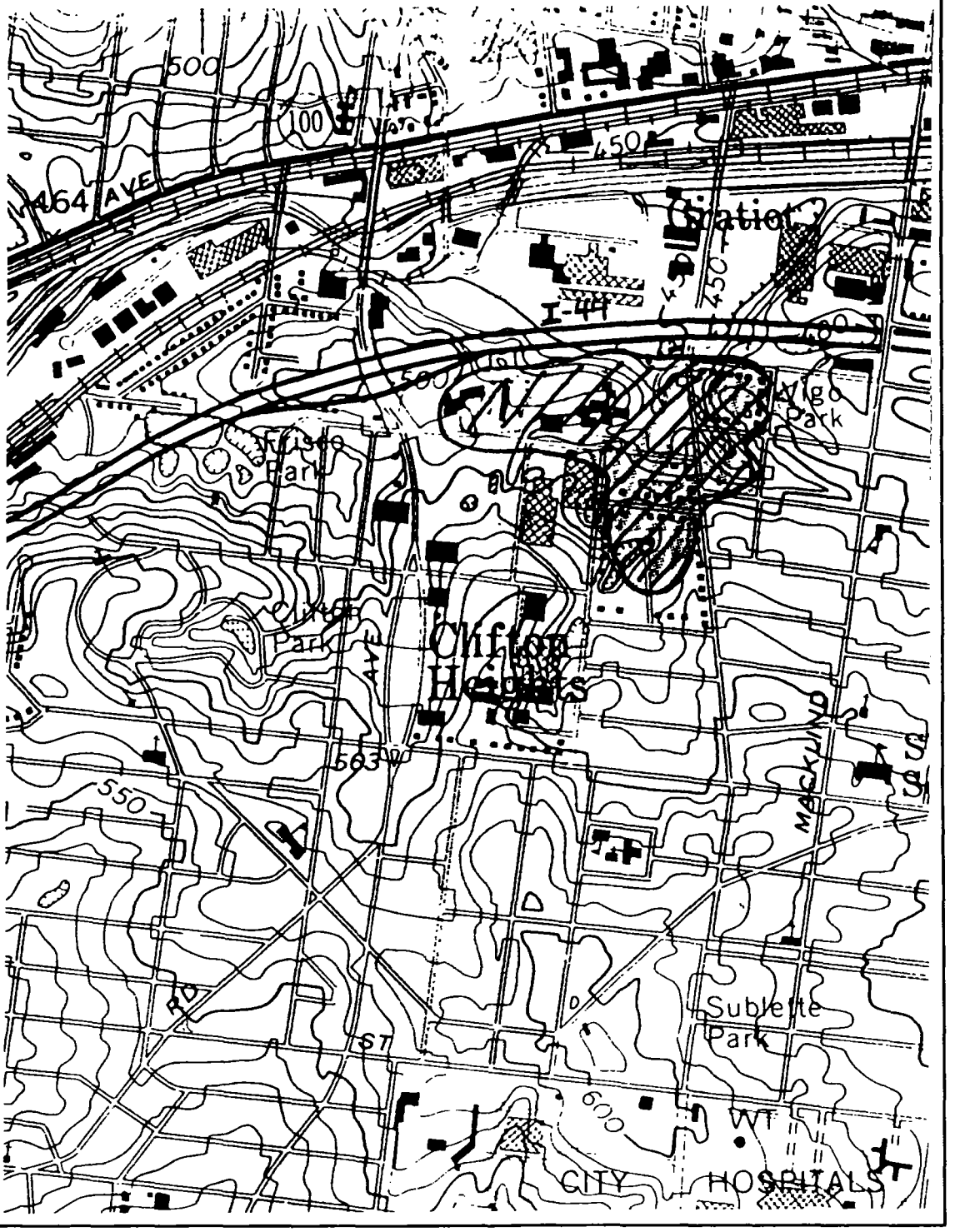
This RSE was performed through a Cooperative Agreement (CA #007587-03) between DNR and EPA Region VII. This report was prepared under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, 42 USC § 9601, et seq.

2.0 SITE CONDITIONS AND BACKGROUND

2.1 Site Location

The Hubert Wheeler State School is located at 5707 Wilson Avenue in St. Louis, Missouri. This location is approximately 10 miles west of downtown St. Louis, in a mixed residential/commercial area about one mile south of Forest Park. If normal survey sections are projected into this area, the location would be in the southern half of section 19, T45N, R7E. The geographic coordinates of the school are 38° 35' 26.76" N latitude and 90° 17' 51.48" W longitude (Figure 1).

Figure 1
Taken from the 1993 Webster Groves 7.5" topographic quadrangle map



2.2 Site Characteristics

The Hubert Wheeler State School was operated by the State of Missouri's Department of Elementary and Secondary Education (DESE) as a state school for severely developmentally disabled students. The school formerly had an enrollment of 110 students and 54 faculty members. Six administrative staff members for the State Schools for the Severely Handicapped also had offices in the building.

The surrounding residential neighborhood is part of a close-knit community, within an area of St. Louis commonly known as "the Hill". Many people within the residential community have lived in this area for their entire lives. Approximately 225 families reside in the surrounding residential neighborhood.

Groundwater in the St. Louis area is highly mineralized and not suitable for drinking water purposes. No drinking water wells are known to be present within four miles of the site. Drainage from the site flows into the River des Peres, a channelized river in the City of St. Louis, and enters the Mississippi River. There are no known drinking water intakes within 15-miles downstream of the school property.

2.3 Contaminants of Concern

The primary contaminants of concern at the Hubert Wheeler State School and surrounding residential properties are lead and several polycyclic aromatic hydrocarbons (PAHs), which are semi-volatile organic compounds. The main semi-volatile compounds found during the PA/SI investigation of the Hubert Wheeler State School property were benzo(a)anthracene, benzo(b)-fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, and chrysene.

Two of the non-PAH semi-volatile compounds detected in the residential soils were 2,4-dinitro-toluene and bis(2-ethylhexyl)phthalate. These compounds are considered by EPA to be probable human carcinogens. Bis(2-ethylhexyl)phthalate is associated with liver tumors; 2,4-dinitrotoluene is associated with kidney tumors. 2,4-Dinitrotoluene is also associated with neurotoxicity.

2.3.1 Lead

Human exposure to lead can have adverse effects on such tissues as the heart, kidneys, lungs and brain. These effects are more striking in children. Nearly all of the lead entering the bloodstream of an adult will move into bones and teeth within a few weeks. About 99% of the lead taken into an adult will leave the body as waste within a couple of weeks. However, in children, 25% of the lead taken into the body remains in the soft tissues and only 32% of the lead leaves the body as waste.

Lead exposure can cause poor growth and decreased mental ability in an unborn child. Similar effects can occur in young children. At high levels of exposure, lead can severely damage the brain and kidneys of both adults and children. Lower levels of lead exposure contribute to slower

reaction time, poor memory, and weakness in the extremities. Some lead compounds may be carcinogenic, but have not been classified as such at this time.

2.3.2 Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are a group of chemicals that are formed during the incomplete burning of coal and other organic substances. There are more than 100 different PAHs. PAHs usually occur naturally, in such compounds as crude oil and coal, but they can also be manufactured as individual compounds for research purposes. A few PAHs are used to prepare medicines, dyes, plastics and pesticides.

Seven of the PAHs detected in the residential soils near the Hubert Wheeler State School are considered by EPA to be probable human carcinogens. These compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) are associated with skin tumors.

Adverse immunologic effects have been reported from PAH exposure in animals. At least five of the PAH compounds detected in the residential soils near the Hubert Wheeler State School are associated with noncarcinogenic toxicity in humans: acenaphthalene (hepatotoxicity), di-n-butylphthalate (increased mortality), fluoranthene (adverse effects to liver), fluorene (adverse effects to blood), and pyrene (adverse effects to kidneys).

2.4 Current Status of the Site

The Hubert Wheeler State School site is listed in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) with a discovery date of February 2, 1993. The CERCLIS completion date for the Preliminary Assessment (PA) is August 5, 1994; the Site Inspection (SI) completion date is listed as September 29, 1994. Both documents are listed as giving the site a "higher priority" designation.

In 1993, DESE hired a contractor, Geotechnology, Inc., to investigate the site. Geotechnology has conducted several extensive investigations of the school property, including soil borings and monitoring well installations and several subsurface investigations, such as an infrared thermography (IR) scan and an electromagnetic radiation survey.

DESE has closed the Hubert Wheeler State School and relocated the former students and teachers to a temporary location. Funding for a new school building was requested from the Missouri General Assembly during the 1996 legislative session.

The Hubert Wheeler State School building is currently vacant. There are signs posted around the perimeter of the property warning that it is a "potentially contaminated area". The former asphalt playground, where the tar seep is located, is surrounded by a chain-link fence.

3.0 SITE HISTORY

Clay mining was conducted in this part of St. Louis City earlier in the 20th century. The Laclede Christy Clay Products Clay Mine was present on both the 1903 and 1926 Sanborn maps near the Hampton/Wilson Avenue intersection. A chain-of-title search was prepared for the Hubert Wheeler State School property by Geotechnology, Inc. The findings of this search indicate that from 1907 to 1959, site ownership included the Laclede Fire Brick Manufacturing Company, the Laclede-Christy Company, and the H.K. Porter Company (which is now the Quaker Rubber Corporation). Building and occupancy permits indicate that from 1950 to 1967, warehouse facilities were used by the St. Louis Coke & Foundry Supply as a storage area. The coke and foundry supply constructed a warehouse in 1960 to store varnish makers' and painters' naphtha (VMP naphtha).

A large area of excavation, most likely from subsurface clay mining activities, existed in the vicinity of the school and neighboring properties. This pit was reportedly operated as a dump, and was used for general landfilling by the neighborhood residents, several local businesses, and a nearby hospital. Once the former pit areas were filled in, the land was apparently divided for development. A portion of the former pit area was purchased by the State of Missouri in 1968. The Hubert Wheeler State School was opened in 1970.

DNR became involved with the Hubert Wheeler School site in February 1993. Geotechnology, Inc., DESE's consultant, notified DNR of a black material "oozing" through the asphalt playground at the school. In December 1993, in concurrence with the Missouri Department of Health (DOH), DNR recommended that access to the playground restricted. DESE subsequently erected a fence around the asphalt playground.

In August 1994, DESE decided to close the school pending further sampling and analyses. Based on the results of an additional site assessment, completed by Geotechnology in September 1995, DESE decided to permanently relocate the Hubert Wheeler students to another facility.

3.1 Previous Site Investigations

3.1.1 DNR Preliminary Assessment/Site Inspection (PA/SI)

DNR completed a Preliminary Assessment (PA) report dated January 7, 1994. Further investigation was recommended. The Site Inspection (SI) report, dated September 20, 1994, concluded that further actions, including an Expanded Site Inspection and/or a removal action, may be warranted at the site.

DNR conducted sampling at the Hubert Wheeler State School site on July 7, 1994, as part of the SI. Six grab samples were collected from the top two feet of soil. Four samples were collected in the vicinity of the asphalt playground on the western side of the school and two were collected from the eastern side of the school. A sample of the tar-like material was also collected.

The sample of tar-like material had high levels (exceeding 1,000 ppm) of 17 PAH compounds. The level of benzo(a)pyrene, a probable human carcinogen, was 32,000 ppm. Detectable levels of benzo(a)anthracene, chrysene, fluoranthene, phenanthrene and pyrene were found in all six soil samples. One of the soil samples, collected nine feet west of the asphalt playground, exceeded three times the background sample. This sample also exceeded the PA/SI health-based site screening standard for benzo(a)pyrene (0.08 ppm).

DNR staff attended two public meetings regarding the Hubert Wheeler State School site during the PA/SI investigation. During the September 21, 1994 meeting, former teachers of the Hubert Wheeler State School reported that both teachers and students had direct contact with the tar-like material. They also said that the tar-like substance would emerge through the cracks in the concrete every spring since the school opened. The tar-like material was chipped off and removed by school staff in the winter.

In 1990, DESE staff used a backhoe to excavate an area next to the asphalt playground, with the purpose of determining the depth and extent of the subsurface material and permanently removing the tar. According to DESE file records, a horizontal vein of coal tar was reportedly observed at a depth of four feet. The material, which was moving parallel to the soil surface, was said to be approximately eight feet wide and nine inches thick. DESE installed a concrete walkway over this area in 1990. At least one 55-gallon drum was unearthed during these activities.

3.1.2 State of Missouri Investigation

Geotechnology completed ten subsurface borings in the Hubert Wheeler State School's asphalt playground area in August 1993. The report of this investigation was completed November 30, 1993. Contamination with semi-volatile organic constituents (like those found in coal-tar) and lead were detected. The source and full extent of contamination were not determined during this investigation.

Surficial soil sampling was conducted by Geotechnology in July 1994, in conjunction with the DNR PA/SI sampling. A total of ten composite soil samples, collected from areas outside of the fenced asphalt playground, were taken from the 0-6 inch depth. The analytical results for the soils were similar to the results reported by DNR.

Geotechnology conducted several non-intrusive site assessment activities including magnetometer, infrared thermographic, and ground penetrating radar surveys. The results of these surveys indicate that anomalies are present beneath the school property. These anomalies may indicate the presence of buried materials.

At DESE's request, an additional site assessment was conducted by Geotechnology in 1995. Field work was completed in July 1995, and the report of this work was dated September 7, 1995. This investigation included surface soil sampling, several additional soil borings and installation of three groundwater monitoring wells across the entire property. Contamination with semi-volatile organic constituents and lead was found to extend across the entire property, up to the property boundaries.

3.1.3 Extent of Contamination Within School Property Boundaries

Contamination has been detected across the Hubert Wheeler State School property at depths exceeding 15 feet. The greatest levels of contamination appear to be associated with non-native soil, most likely fill material from prior landfilling activities. Contamination appears to increase with depth.

3.2 Data Obtained During the Removal Site Evaluation

3.2.1 Community Interviews

On February 28-29, 1996, the Missouri Department of Natural Resources (DNR) and the Missouri Department of Health (DOH) conducted community interviews near the Hubert Wheeler State School site. Thirteen residents, representing eight families, were interviewed. DNR staff also researched the area surrounding the Hubert Wheeler State School site at the St. Louis public library. Copies of historical information, the Community Interview form, and a summary of the data obtained from the Community Interviews are presented within the Phase 1 Work Plan (attached).

Several residents expressed their feelings of loss over the closure of the Hubert Wheeler State School. Some were concerned about the future use of the property, and hoped the building could re-open. The Hill 2000, a civic organization, was described by many as a group that unites the community. This group may be an appropriate point of contact for future public outreach. They also may have important historical information of this area, such as archived photographs, which may aid in future investigations.

3.2.1.1 Laclede-Christy Mining Activities

In the past, the River des Peres ran freely through the Hubert Wheeler School property. During the early 1900's, this river was rechanneled to the north, into its current configuration. Laclede-Christy subsequently operated a clay mine near the current Hubert Wheeler State School property.

Mine shafts are located throughout the area. One resident remembered that Laclede-Christy had a small train which ran from this mine shaft to the southern portion of the clay mine at the intersection of Fyler and Macklind Avenues. Other clay mine shafts are reportedly located near Dempsey Avenue and the intersection of 59th Street and Elizabeth. Some of the clay mine shafts were reportedly 100-200 feet deep.

3.2.1.2 Post-Mining Site Conditions

After Laclede-Christy had mined the area, a gully 10-feet in depth washed materials from the present Hubert Wheeler property north to the River des Peres. A pond, fed by a spring and/or a small tributary of River des Peres, formed near Macklind and Sublette Avenues. The water was said to be deep enough for local children to wade in the water. Reportedly, this lake was filled in when the school was built in 1968 by the Schnurr Construction Company. The Schnurr Construction Company was said to have brought in dirt and placed drains so that standing water on the school property would drain north to River des Peres.

Upon closure of the clay mine, water was reportedly pumped into a mine shaft located less than 0.25 miles west of the Hubert Wheeler State School property (near the Red Roof Inn and Holiday Inn).

3.2.1.3 Formation of the "Pit" Area and Subsequent Landfilling Operations

As a result of the mining activities, which included Laclede-Christy piling clay in 30-40 foot piles, a pit area was formed. The former pit area is known to have been filled in with waste materials. The affected area ranges roughly from Macklind Avenue on the east to Hampton Avenue on the west, and from I-44 on the north to Stephens Court (off Elizabeth Street) on the south. One resident reported dump areas as far south as the intersection of January and Columbia Avenues; another said there was a dump at Fyler and Jasper Park, with fill on the south side of Fyler.

The size and scope of the clay mine pit are supported by two historical documents, an adaptation of a hand-drawn map from 1923 and a newspaper photo from 1949. Based upon this information, using the current topographic map, the clay mined area was approximately 20 to 30 acres in size.

Several residents said that the overall pit area was operated as a dump. Separate portions of this pit area were operated as smaller dumps by different people. One dump was said to have been located near the intersection of Macklind and Daggett Avenues (where Berra Park is today), with the entrance on Macklind, and the other between Sublette and January Avenues, with the entrance on Sublette.

Two residents reported that the dumped wastes in the pit were always smoldering, or that fires burned frequently. The fire department was often called to address the fires, prior to the installation of I-44 (about 1970). Two residents reported that children were burned by the hot ashes. One of these incidents was said to have occurred in the mid-1960's.

Many residents described playing in the dump as children. They were able to recall a variety of waste materials, including the following: cinders, ash, bottles, medical waste (prescription bottles, blue Phillips milk of magnesia bottles, vials, X-rays, casts), bleach bottles, brick, glass, cans, truckloads of dirt, refractory materials, fire brick, pieces of tile, straw, a pile of plastic/wooden heels from a shoe factory, and "anything mis-manufactured".

Twelve to eighteen full 55-gallon drums of tar were reportedly buried on the Hubert Wheeler State School property. The suspected location of burial is east and north of the present school buildings, at a depth of 25 feet. This was thought to have occurred around 1932. One resident said that tar was used to roof the school. During the construction of the school, trucks reportedly dumped materials at the request of the school developer. It is thought that tar may have been buried on-site between 1968 and 1970.

A portion of the pit area was reportedly filled in as part of the construction of the Hubert Wheeler State School. Dirt, waste concrete, and at least 10 feet of fill were introduced to the site on two separate occasions. This fill material was then compacted and more dirt was introduced. This resident described the school as having been placed on "concrete floating footings". The floating footings were used so that if one part of the school were to sink into the fill, the rest of the structure would absorb the impact and sink as well.

It has been estimated, by one resident, that 30-35 feet of fill underlie Wilson Avenue, with 12-15 feet of that as cinders. According to another resident, up to 50 feet of fill may be present beneath the residential area near Stephens Court.

3.2.1.4 Potentially Responsible Parties

Laclede-Christy operated the clay mine and produced fire bricks. Reportedly, no hazardous wastes were generated by Laclede-Christy. After the clay mine ceased operation, several people operated portions of the pit as dumps: Bill Brandhardt (deceased), who handled "Brandhardt's Dump" at Macklind and Daggett Avenues in the 1930s; C. Rallo Construction (also referred to as C. Rallo Contracting), the company that reportedly paved Wilson Avenue; Marnotti's; and Marcelle, a man who reportedly lived on Dempsey Avenue in the 1930's. The dump operators were said to have collected fees from the dump trucks. The dump trucks reportedly paid by the load.

Carondelet Foundry reportedly had a contract with Marnotti's to fill in portions of the pit area with molding sand. The following companies also reportedly deposited wastes in the clay pit: American Stove (porcelain fragments), Pearlite Pre-Castings (sweepings), Blackburn-Post Pipe Company (partially burned coal), and a nearby hospital (medical waste). Other companies that historically operated near the current Hubert Wheeler State School property include Evans & Howard, McQuay-Norris, St. Louis Brick Company, Banner Iron Works, National Lead, and Scullins Steel.

3.2.2 Removal Site Evaluation Sampling

On March 4-5, 1996, DNR staff conducted Removal Site Evaluation sampling in the residential and commercial areas surrounding the Hubert Wheeler State School site. Samples were collected from properties suspected to have the highest levels of contamination, based upon historical and current information about the area. These locations included properties nearest to the Hubert Wheeler State School, and along Wilson Avenue and Berra Court.

Soil composite samples were collected from the 0-6 inch depth from 22 residential properties. The surficial soil samples (22 samples and 2 duplicates) were collected from the following locations: Wilson Avenue (13 homes), Bischoff (4 homes), Daggett (2 homes), Berra Court (2 homes) and Sublette (1 home).

Each composite sample consisted of five separate aliquots collected from both the front and back yards of the residences. The aliquots for the composite samples were collected using either a clean stainless steel spoon or a clean or field decontaminated stainless steel trowel.

Six subsurface soil samples (5 locations and one duplicate) were collected. Three subsurface soil samples (2 samples and 1 duplicate) were collected from two commercial properties. One commercial property is located west of the Hubert Wheeler State School, the other is located south. The remaining three subsurface samples were taken from residential locations south and east of the school. The residential subsurface samples were taken from the following locations: the Berra Court cul-de-sac, Daggett Avenue, and Bischoff Avenue.

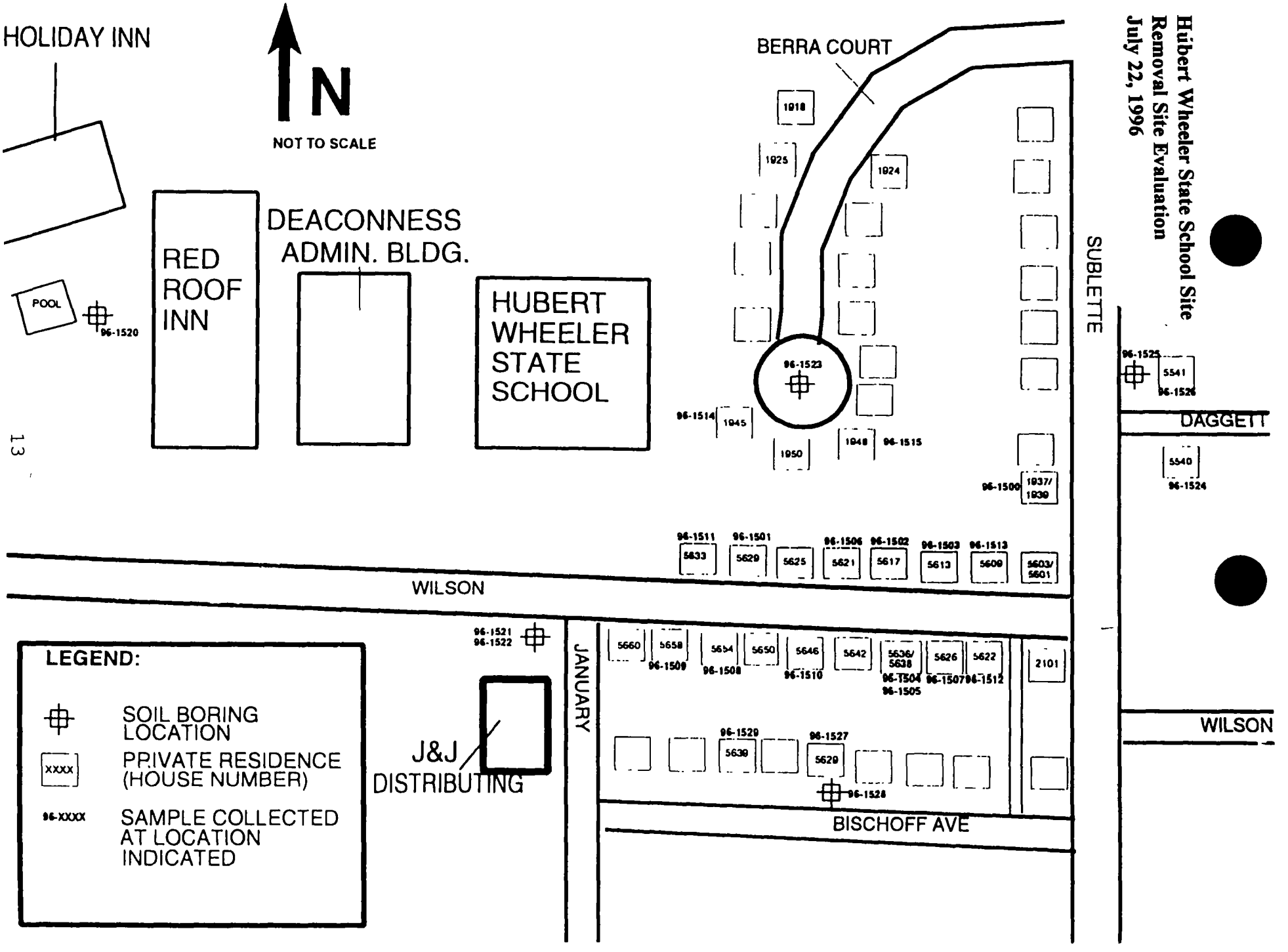
Subsurface soil grab samples were collected from approximately 4-6 feet in depth from two commercial and three residential locations. All subsurface samples were collected with a hydraulic soil probe.

All samples were analyzed for base-neutral (semi-volatile) organic compounds, including PAHs, and lead. Sampling locations are presented in Figure 2.

3.2.3 Removal Site Evaluation Findings

In reviewing all of the sampling data collected for the Removal Site Evaluation, 19 PAH compounds, 2,4-dinitrotoluene, and lead were the analytes detected. Of these substances, lead, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene were detected at levels exceeding the DOH Any-Use Soil Levels. Sampling data are presented in Table 1 (a-c) and Table 2.

Figure 3
Taken from the Phase I Removal Assessment Sampling Report



Hubert Wheeler State School Site
Removal Site Evaluation
July 22, 1996

Table 1a. Hubert Wheeler State School Site
Removal Site Evaluation - Surficial Soil Samples (0-6" depth)
All values in parts per million (ppm)

Parameters	1996 DOH ASL	96-1500 1937-1939 Sublette	96-1501 5629 Wilson	96-1502 5617 Wilson	96-1503 5613 Wilson	96-1504 5636 Wilson	96-1505 5636 Wilson duplicate	96-1506 5621 Wilson	96-1507 5626 Wilson	96-1508 5624 Wilson	96-1509 5658 Wilson
Lead	240	353[A]	223	200	190	215	211	532[A]	392[A]	161	177
Naphthalene	230	<0.1	<0.1	<0.1	<0 1	<0.1	<0.1	0.17	0.13	<0.1	<0.1
Acenaphthylene	N/A	<0.1	<0.1	<0 1	<0 1	<0 1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	3,400	<0.1	<0 1	<0 1	<0 1	<0.1	<0.1	0.13	0.13	<0.1	<0.1
Dibenzofuran	N/A	<0 1	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	0.10	<0.1	<0 1
2,4-Dinitrotoluene	11	<0 1	<0.1	<0 1	<0.1	<0 1	<0.1	0 15	0.13	<0 1	<0.1
Fluorene	2,300	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	0 12	<0.1	<0.1
Phenanthrene	N/A	1.30	0.46	1 10	0.12	0.17	0.15	2.30	2.10	0.62	0.27
Anthrancene	17,000	0.17	<0 1	0 19	<0.1	<0.1	<0.1	0.46	0.41	0.17	<0.1
Di-n-Butylphthalate	N/A	1.40	3 60	2.60	2.10	1.10	2.90	2.20	3.50	1.90	1.50
Fluoranthene	2,300	2.20	0.64	1.10	0.17	0.26	0.27	2.60	1.60	1 40	0 55
Pyrene	1,700	1 50	0.47	1.10	0.12	0 23	0.17	2 20	1.60	2.20	0.61
Benzo(a)anthracene	4.5	0.94	0.27	0 45	<0.1	0.15	0.13	1.30	0.80	1.10	0.38
Chrysene	160	0 91	0.28	0.49	<0.1	0.13	0.12	1.00	0.66	0.96	0.37
Bis(2-ethylhexyl) phthalate	100	0 24	0.20	0.37	0.16	0.18	0.23	0.19	0.17	<0 1	<0 1
Benzo(b)fluoranthene	4.0	1.40	0.39	0 55	0.104	0.30	0.36	1.40	0.94	0.74	0.37
Benzo(k)fluoranthene	34	0.46	0.16	0 24	<0.1	<0.1	<0.1	0.43	0 34	0.28	0.13
Benzo(a)pyrene	0.68	0.79[A]	0.24	0 49	<0.1	0.15	0.16	1.10[A]	0.72[A]	0.58	0.31
Indeno(1,2,3-cd)pyrene	12	0.78	0.26	0.39	<0.1	0.13	0.17	0.82	0.42	0.35	0.26
Dibenz(a,h)anthracene	0.62	0.31	<0.1	<0 1	<0.1	<0.1	<0.1	0.26	0.14	<0.1	<0.1
Benzo(g,h,i)perylene	N/A	0.88	0.30	0.49	<0.1	0.14	0.16	0.92	0.60	0.59	<0.1

Shaded values exceed Missouri Department of Health Any-Use Soil Levels (ASLs). If ASLs are not available, they are listed as N/A.

Table 1b. Hubert Wheeler [redacted] School Site (Continued)
Removal Site Evaluation - Surficial Soil Samples (0-6" depth)
All values in parts per million (ppm)

Parameters	1996 DOH ASL	96-1510 5646 Wilson	96-1511 5633 Wilson	96-1512 5622 Wilson	96-1513 5609 Wilson	96-1514 1945 Berra Court	96-1515 1948 Berra Court	96-1516 5234 Bischoff	96-1517 5234 Bischoff Duplicate	96-1518 5238 Bischoff .	96-1519 5320 Wilson
Lead	240	292[A]	160	234	147	227	41.8	533[A]	265[A]	361[A]	216
Naphthalene	230	<0.1	<0 1	<0.5	0.104	<0.1	<0 1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	N/A	<0 1	<0 1	<0.5	0.103	<0 1	<0.1	<0.1	<0 1	<0.1	<0.1
Acenaphthene	3,400	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0 1	<0.1
Dibenzofuran	N/A	<0 1	<0.1	<0.5	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dinitrotoluene	11	<0.1	<0 1	<0.5	0.15	<0 1	<0.1	<0.1	<0 1	<0.1	<0.1
Fluorene	2,300	<0.1	<0.1	<0.5	0.14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	<0.1	0.68	0.16	<0.5	2.40	0.27	0.60	2.40	1.10	0.24	0 76
Anthrancene	17,000	0 19	<0 1	<0.5	0 53	<0.1	0.14	0.27	0 23	<0.1	0.13
Di-n-Butylphthalate	N/A	1.50	0 72	1.10	0.76	0.76	0.75	2 10	<0.1	<0.1	2.50
Fluoranthene	2,300	1.10	0 36	<0 5	4 00	0.46	1.20	3.10	2.90	0.61	1.50
Pyrene	1,700	1.40	0 42	0 58	5.00	0.60	1.60	0 82	0.69	0.19	0.39
Benzo(a)anthracene	4.5	0.80	0.29	<0.5	3.00	0.42	0 70	1.00	0.88	0.26	0.45
Chrysene	160	0.63	0.25	0.48⊙	2.20	0.32	0.61	0.59	0.57	0.24	0.2[redacted]
Bis(2-ethylhexyl)phthalate	100	0 19	<0 1	<0.5	0.102	0.57	<0.1	<0 1	<0.1	<0.1	<0 1
Benzo(b)fluoranthene	4 0	0.60	0.23	<0 5	2.10	0.28	0 58	0.99	0.90	0 42	0.43
Benzo(k)fluoranthene	34	0.16	0.11	<0.5	0.57	0.14	0.24	0.33	0.24	0.16	0 13
Benzo(a)pyrene	0.68	0.40	0 18	<0 5	1.40[A]	0.25	0.38	0.72[A]	0.67	0.25	0.33
Indeno(1,2,3-cd)pyrene	12	0.39	0 15	<0.5	1.40	<0.1	<0.1	0.86	0.88	0.59	0.49
Dibenz(a,h)anthracene	0.62	0.13	<0.1	<0 5	0.37	<0.1	<0.1	0.28*	0.44*	0.34*	0.24*
Benzo(g,h,i)perylene	N/A	0.44	0.16	<0.5	1.50	<0.1	0.50	1.00*	<0.1	0.67*	0.57*

[A] = Shaded values exceed Missouri Department of Health Any-Use Soil Levels (ASLs). If ASLs are not available, they are listed as N/A;⊙ = below detection limit; * = approximate value

Hubert Wheeler State School Site
Removal Site Evaluation
July 22, 1996

Table 1c. Hubert Wheeler State School Site (Continued)
Removal Site Evaluation - Surficial Soil Samples (0-6" depth)
All values in parts per million (ppm)

Parameters	1996 DOH ASL	96-1524 5540 Daggett	96-1526 5541 Daggett	96-1527 5629 Bischoff	96-1529 5639 Bischoff
Lead	240	348[A]	185	233	252[A]
Naphthalene	230	<0 1	<0 1	<0.1	<0 1
Acenaphthylene	N/A	<0 1	<0 1	<0 1	<0 1
Acenaphthene	3,400	<0 1	<0.1	<0 1	<0.1
Dibenzofuran	N/A	<0.1	<0.1	<0 1	<0 1
2,4-Dinitrotoluene	11	<0.1	<0 1	<0.1	<0.1
Fluorene	2,300	<0 1	<0.1	<0 1	<0 1
Phenanthrene	N/A	1 60	0.14	0.60	0.54
Anthracene	17,000	0.22	<0.1	0.13	0.12
Di-n-Butylphthalate	N/A	1.10	1.60	5.70	2.00
Fluoranthene	2,300	4.60	0.30	1.10	1.20
Pyrene	1,700	1 70	<0 1	0 40	0.46
Benzo(a)anthracene	4.5	1.80	0.11	0.49	0.58
Chrysene	160	1.30	0 13	0.32	0.42
Bis(2-ethylhexyl)phthalate	100	<0.1	<0.1	<0.1	<0 1
Benzo(b)fluoranthene	4.0	1.70	0.12	0.54	0.56
Benzo(k)fluoranthene	34	0 41	<0 1	0 14	0.19
Benzo(a)pyrene	0 68	1.20[A]	0 11	0 38	0 38
Indeno(1,2,3-cd)pyrene	12	1.50	0.14	0 44	0 42
Dibenz(a,h)anthracene	0.62	0.89	<0.1	0.17 *	0.20
Benzo(g,h,i)perylene	N/A	1.60	0 16	0.47 *	0.56

[A] = Shaded values exceed Missouri Department of Health Any-Use Soil Levels (ASLs)
If ASLs are not available, they are listed as N/A; * = approximate value

Table 2. Hubert Wheeler State School Site
Removal Site Evaluation - Subsurface Soil Samples (4-6' depth)
All values in parts per million (ppm)

Parameters	1996 DOH ASL	96-1520 Holiday Inn	96-1521 J & J Distributors	96-1522 J & J Dist. Duplicate	96-1523 Berra Court Cul-de-Sac	96-1525 5541 Daggett	96-1528 5629 Bischoff
Lead	240	173	34.9	40.0	1,060[A]	482[A]	1,130[A]
Naphthalene	230	<0.1	<0.1	<0.1	<0.5	<0.1	<1.0
Acenaphthylene	N/A	<0.1	<0.1	<0.1	<0.5	<0 1	<1.0
Acenaphthene	3,400	<0.1	<0.1	<0.1	<0.5	<0.1	1.60
Dibenzofuran	N/A	<0.1	<0.1	<0.1	<0.5	<0 1	1.10
2,4-Dinitrotoluene	11	<0.1	<0.1	<0.1	<0.5	<0.1	1.80
Fluorene	2,300	<0.1	<0.1	<0.1	<0.5	<0.1	1.60
Phenanthrene	N/A	<0.1	<0.1	<0.1	1.50	0.12	29.00
Anthracene	17,000	<0.1	<0.1	<0 1	<0.5	<0 1	5 10
Di-n-Butylphthalate	N/A	<0.1	<0.1	1.50	2.40	7.80	3.80
Fluoranthene	2,300	<0.1	<0 1	0.102	0.94	0.22	49.00
Pyrene	1,700	<0.1	<0.1	<0.1	<0.5	<0.1	21.00
Benzo(a)anthracene	4.5	<0.1	<0 1	<0 1	0.52	0.11	15.00[A]
Chrysene	160	<0 1	<0 1	<0 1	0 94	<0 1	12 00
Bis(2-ethylhexyl)phthalate	100	<0.1	<0.1	<0.1	<0.5	<0.1	<1.0
Benzo(b)fluoranthene	4.0	<0.1	<0.1	<0 1	1.00	0.16	16.00[A]
Benzo(k)fluoranthene	34	<0.1	<0.1	<0.1	<0.5	<0.1	3.80
Benzo(a)pyrene	0.68	<0.1	<0.1	<0.1	0.52	0.13	12.00[A]
Indeno(1,2,3-cd)pyrene	12	<0 1	<0.1	<0.1	0.88	0.106	14.00[A]
Dibenz(a,h)anthracene	0.62	<0.1	<0.1	<0.1	<0.5	<0.1	3.40[A]
Benzo(g,h,i)perylene	N/A	<0.1	<0.1	<0 1	0.94	0.12	16.00

[A] = Shaded values exceed Missouri Department of Health Any-Use Soil Levels (ASLs).
If ASLs are not available, they are listed as N/A

Of the 24 residential soil samples collected from surficial soils, 10 samples were found to contain hazardous substances at levels exceeding the ASLs for lead (240 parts per million or ppm), benzo(a)pyrene (0.68 ppm), and dibenz(a,h)anthracene (0.62 ppm). Nine samples had elevated lead levels , ranging from 252 ppm to 533 ppm. Six samples had elevated levels of benzo(a)pyrene, ranging from 0.72 ppm to 1.4 ppm. One sample had an elevated level of dibenz(a,h)anthracene (0.89 ppm).

The subsurface samples collected from the commercial properties did not contain any hazardous substances above the ASLs. All three of the subsurface residential samples showed levels of lead elevated above the ASL. The values ranged from 482 ppm to 1,130 ppm. One of these samples also had five PAHs that were elevated above ASLs: benzo(a)anthracene (15 ppm; ASL is 4.5 ppm), benzo(b)fluoranthene (16 ppm, ASL is 4.0 ppm), benzo(a)pyrene (12 ppm, ASL is 0.68 ppm), indeno(1,2,3-cd)pyrene (14 ppm, ASL is 12.0 ppm), and dibenz(a,h)-anthracene (3.4 ppm, ASL is 0.62 ppm).

4.0 POTENTIAL THREAT TO PUBLIC HEALTH AND WELFARE

All of the residents participating in the Community Interviews were aware that their homes were constructed on or near a former waste disposal area. Many residents have found ash, cinders, and glass bottles in the subsurface soil in their yards.

Some of the residents have vegetable gardens. At least one resident, knowing of the fill material, has an elevated garden. Although most residential yards are well-maintained, at least one resident has expressed difficulty in maintaining a healthy grass lawn.

4.1 Health Consultation

DOH, in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), prepared a Health Consultation for the residential areas surrounding the Hubert Wheeler State School. This report concluded that residents may be exposed to low levels of PAHs or lead when they work or play in the contaminated soils. Adverse health effects are not expected to occur, assuming the residents spend a limited amount of time in contact with the soils. Bioaccumulation of PAHs in garden produce is presented as a potential exposure route.

The Health Consultation recommends that residents avoid exposure to contaminated soils by maintaining a layer of topsoil and a healthy vegetative cover (grass). Residents are advised to prevent children (ages 6 months to 6 years) from exposure to contaminated soils, due to lead levels exceeding the DOH ASL for lead. Raised bed gardens, filled with clean top soil, are proposed as a means of limiting potential exposure to PAHs from ingestion of vegetables grown in the contaminated fill material.

4.2 Expedited Risk Assessment

DNR staff requested the DOH prepare an expedited risk assessment. This document was used to assess the potential risk of adverse health effects posed by contaminated residential soils in the vicinity of the Hubert Wheeler State School site. To evaluate the risk posed by hazardous substances, risk evaluators estimate the potential human exposure to the substances over a period of time. Available toxicity data for the hazardous substances is used to assess this risk.

Noncarcinogenic human health effects posed to the residents by exposure to contaminated surficial soils near the site were assessed using a hazard index approach. The highest values detected in the surficial residential soils were used. To prepare the hazard index, a calculated intake of each chemical was developed (for substances that were detected in the residential soils and for which applicable health data is available). The intake value for each chemical is then compared to the reference dose. The final value, the hazard index, is a summation of all of the hazard quotients. A calculated value exceeding 1.0 indicates an increased health risk is likely.

Based upon a 30-year residential exposure, the calculated value for the surficial residential soils near the Hubert Wheeler State School site was 0.00035, which is substantially less than one. Based upon this information, non-carcinogenic adverse health effects from the Hubert Wheeler State School site would not be expected to occur.

Excess lifetime cancer risks were evaluated for individual carcinogenic compounds in the soil. A summation of these risks was then prepared. This calculated value, assuming a 30-year residential exposure to contaminated surficial soils, was 6.9×10^{-6} (or 6.9 potential excess cases of cancer in 1,000,000 people). While this value exceeds the 1×10^{-6} cancer risk (the level at which EPA considers a site to pose negligible risk) it does not exceed the 1×10^{-4} cancer risk at which EPA would require the site to be remediated.

4.3 Preliminary Removal Goals

Preliminary Removal Goals (PRGs) are risk-based values which provide an assessment of the risk to human health and the environment over a reasonable maximum exposure time. PRGs are generally developed during the course of a Removal Action and may be used later as site specific cleanup standards.

The PRGs developed for the Hubert Wheeler State School residential area were prepared by DOH. DNR staff used these values to determine if the concentrations of hazardous substances detected in residential areas warrant a removal action.

PRGs were calculated for the Hubert Wheeler State School at three risk levels: 1×10^{-4}, 1×10^{-5}, and 1×10^{-6}. These values correspond to a potential increased risk of exposure to site related contaminants. In quantitative terms, risk is expressed in values ranging from zero (no possibility of harm) to one (a certainty that harm will occur). For example, a 1×10^{-4} risk level means that

there is a potential increased risk of exposure for one person out of 10,000 people. This risk level is commonly used by EPA to trigger remedial actions at Superfund sites.

The PRGs which were developed for the residential area near the Hubert Wheeler State School are presented in Table 3. The highest concentrations of PAHs and lead detected during Removal Site Evaluation sampling are provided for comparison purposes. Surficial soils (collected from the 0-6 inch depth) and subsurface soils (collected from the 4-6 foot depth) were evaluated separately.

Using the highest values detected for each type of sample collected (surficial or subsurface), four PAH compounds exceeded the 1×10^{-6} risk level for surficial samples. These compounds were benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene. No surficial soil sampling values exceeded the 1×10^{-5} or 1×10^{-4} risk levels. The same PAH compounds were detected at levels exceeding the 1×10^{-6} risk level for subsurface samples. In addition, indeno(1,2,3-cd)pyrene exceeded the 1×10^{-6} risk level and benzo(a)pyrene and dibenz(a,h)-anthracene exceeded the 1×10^{-5} risk level.

Based upon EPA guidance, the soil screening level for lead is 400 ppm. The highest values for lead in residential soils, both surficial (533 ppm) and subsurface (1,130 ppm), exceeded this value.

4.4 Applicable, Relevant, and Appropriate Requirements (ARARs)

Concentrations of hazardous substances in the residential soils were compared to DOH's Any-Use Soil Levels (ASLs). These are the levels which DOH considers to be safe for any use, assuming a lifetime exposure. The DOH ASLs are to be considered when deciding upon removal action levels. However, since they are not promulgated, they are not ARARs. Action-specific, location-specific, and chemical-specific ARARs will need to be developed to address future removal activities at the school property.

5.0 PROPOSED ACTION

5.1 Proposed Activities

The human health risk posed by the contamination within the residential soils near the Hubert Wheeler State School site is considered to be minimal. Community education is proposed as a means to inform the public about the State of Missouri's investigations within the residential community near the Hubert Wheeler State School. Recommendations and suggested actions to minimize exposure to the contaminated soils should be included, so that the public may make informed decisions about ways to limit their potential risk of exposure.

Table 3. Preliminary Removal Goals (PRGs)
for the Residential Yards near the Hubert Wheeler State School
All values in parts per million (ppm).

Contaminants found in residential yards	Highest value in residential soils (top six inches)	Highest value in residential soils (four to six feet)	PRGs at 1 x 10^{-4} risk level - Removal action may be conducted	PRGs at 1 x 10^{-5} risk level - Removal action may be needed	PRGs at 1 x 10^{-6} risk level Removal action may be considered
2,4-Dinitrotoluene	0.15	1.8	180	18	1.8
Acenaphthene	0.13	1.6	31,000	15,000	3,100
Acenaphthylene	0.103	ND	N/A	N/A	N/A
Anthracene	0.53	5.1	150,000	77,000	15,000
Benzo(a)anthracene	3.0[A]	15.0[A]	160	16	1 6
Benzo(a)pyrene	1.4[A]	**12.0**[A,B]	16	1.64	0.16
Benzo(b)fluoranthene	2.1[A]	16[A]	160	16	1.6
Benzo(g,h,i)perylene	1.6	16	N/A	N/A	N/A
Benzo(k)fluoranthene	0 57	3.8	1,600	160	16
Bis(2-ethylhexyl)phthalate	0 57	ND	1,200	750	12
Chrysene	2 2	12.0	16,000	1,600	160
Di-n-butyl phthalate	5.7	7.8	51,000	26,000	5,100
Dibenz(a,h)anthracene	0.89[A]	**3.4**[A,B]	16 0	1.6	0.16
Dibenzofuran	0.13	1.1	N/A	N/A	N/A
Fluoranthene	4.6	49.0	21,000	10,000	2,100
Fluorene	0 14	1.6	21,000	10,000	2,100
Indeno(1,2,3-cd pyrene	1.5	14.0[A]	160	16	1.6
Naphthalene	0.17	ND	21,000	10,000	2,100
Phenanthrene	2.4	29.0	N/A	N/A	N/A
Pyrene	5 0	21.0	15,000	7,700	1,500
Lead	*533*[C]	*1130*[C]	PRG = 400 ppm, based upon an EPA model		

[A]= Shaded values exceed the 1 x 10^{-6} risk level, [B]= Values in bold exceed the 1 x 10^{-5} risk level.
[C]= Italicized values exceed the PRG for lead.

Based upon previous reports of investigation prepared by Geotechnology, Inc., removal activities are recommended for the Hubert Wheeler State School property. Excavation of source materials should be conducted in the following areas: the suspected drum and tar burial areas, near the seep of tar-like material in the asphalt playground, and near any anomalies identified in previous investigations.

5.2 Estimated Costs

The financial cost of informing the public is expected to be limited to the costs incurred by holding a public availability session, providing copies of reports and sampling data to the public, and answering public inquiries. Initial costs of investigating the school property will include sampling and analytical costs, as well as rental fees, operator costs, and decontamination costs for a backhoe. Additional costs are likely to be incurred as the investigation of the school property progresses, depending upon the location, nature and extent of the waste materials.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Surficial soils in the residential areas east and south of the Hubert Wheeler State School property have been found to contain several PAH compounds, 2,4-dinitrotoluene, bis(2-ethylhexyl) phthalate, and lead. Based upon previous and current sampling data from the school and residential properties, the amount of contamination contained within the soils appears to increase with depth. The hazardous substances are thought to be the result of landfilling operations conducted in the area prior to the development of the neighborhood.

No additional action is recommended for the residential yards. Residential exposure to the contaminated soil may lead to an increased risk of cancer over a lifetime, but this risk is expected to be slight. The levels of contamination found in the surficial residential soils were found to be relatively low when compared with the Missouri Department of Health's Any-Use Soil Levels (ASLs), site-specific Preliminary Removal Goals (PRGs), and the findings of the expedited risk assessment. The residential soils are primarily covered by asphalt and grass, limiting unintentional human exposure to subsurface soils.

Community education is proposed to inform the residential community about the investigations within their neighborhood and to discuss the potential risks posed by exposure to subsurface soils. Once informed, residents can minimize their risk of contact with the soils, if they wish, by maintaining a healthy lawn through fertilization, watering, and reseeding as needed, washing their hands after contact with the soil, and growing edible plants in raised bed gardens.

Additional removal activities are recommended for the Hubert Wheeler State School property. Community interviews indicate that drums of tar and free-flowing tar may have been buried on the

Hubert Wheeler State School property. These reports are supported by the presence of a surficial seep of tar-like material in the vicinity of the former school's asphalt playground. This tar-like material was found to contain high levels of PAH compounds. Previous investigations of the school property indicate that there are anomalies in the subsurface which warrant investigation and subsequent removal of any free product sources of contamination.

7.0 REFERENCES

Alizadeh, P.E., Ed. Geotechnology to Gerald Bonnot, State of Missouri. Transmittal letter with draft report, Subsurface Assessment, Playground Site Restoration, Hubert Wheeler State School and other enclosures. Letter dated November 30, 1993; report dated October 4, 1993. 114 pages (total).

Allen, Brian J., Environmental Specialist, Superfund/RCRA Unit, Environmental Services Program, DNR. Phase I Removal Assessment Sampling Report, Hubert Wheeler State School Site. March 4-5, 1996. 75 pages.

Agency for Toxic Substances and Disease Registry, U.S. Department of Health & Human Services. Toxicological Profile for Lead. Update. April 1993. 307 pages.

Agency for Toxic Substances and Disease Registry, U.S. Department of Health & Human Services. Toxicological Profile for Polycyclic Aromatic Hydrocarbons. Update. August 1995. 458 pages.

Baysinger-Daniel, Cherri, Environmental Specialist, Bureau of Environmental Epidemiology, DOH to Mr. Bob Hinkson, Superfund Section, DNR. Letter containing Preliminary Removal Goals for Residential Yards in the Vicinity of the Hubert Wheeler State School. (PRGs calculated at the 10^{-4} and 10^{-6} risk levels). April 15, 1996. 30 pages.

Baysinger-Daniel, Cherri, Environmental Specialist, Bureau of Environmental Epidemiology, DOH to Mr. Gary Behrns, Superfund Section, DNR. Letter containing Expedited Risk Assessment for Exposure to Residential Soils in the Vicinity of the Hubert Wheeler State School and Preliminary Removal Goals for Residential Yards in the Vicinity of the Hubert Wheeler State School (PRGs calculated at the 10^{-5} risk level). July 5, 1996. 55 pages.

Bloss, Julie A., Environmental Specialist, Superfund Section, Hazardous Waste Program, DNR. Availability Session held on September 21, 1994. Memo to file. 2 pages.

Bloss, Julie A., Environmental Specialist, Superfund Section, Hazardous Waste Program, DNR. Site Inspection Report, Hubert Wheeler State School. September 20, 1994. 28 pages.

Bloss, Julie A, Hazardous Waste Program, Division of Environmental Quality, DNR. Possible Sources of Tar Contamination. Memo to file. September 16, 1994. 5 pages.

Busch, Arthur, DOH. DRAFT Health Consultation, Hubert Wheeler State School Site, Private Residential Yards. June 20, 1996. 8 pages.

Kelsey, Julie B., Environmental Specialist, Superfund Section, Hazardous Waste Program, DNR. Removal Assessment Community Interviews. Memo to file. April 17, 1996. 8 pages.

St. Louis Globe-Democrat. "Is This the Site of the Cards' New Park?". Photograph, with caption. 1949.

Starbuck, Edith, Environmental Geology Section, Division of Geology and Land Survey, DNR. Sanborn Maps for Carondolet Coke and Hubert Wheeler sites. Memo. June 15, 1994. 6 pages.

Torretta, Mario. Map of Clay Mines in the Hill, 1923. Adapted copy of Mr. Torretta's map.

U.S. Environmental Protection Agency. Risk & Decision Making. August 1992. 120 pages.

U.S. Environmental Protection Agency, Region VII. Region VII Superfund Cleanup Goals Standard Operating Procedures. 1996. 24 pages.

U.S. Geological Survey. Webster Groves Quadrangle, 7.5-minute topographic quadrangle map of Missouri. 1954, revised 1993.

8.0 LIST OF ATTACHMENTS

8.1 Additional Assessment, Playground Site Restoration, Hubert Wheeler State School.
Prepared for Division of Design and Construction, State of Missouri by Geotechnology, Inc.

8.2 Phase I Removal Assessment Work Plan.
Prepared by Hazardous Waste Program, Division of Environmental Quality, Missouri

8.3 Removal Assessment Community Interviews.
Prepared by Julie B. Kelsey, Environmental Specialist, Superfund Section, Hazardous Waste Program, Missouri Department of Natural Resources.

8.4 Phase I Removal Assessment Sampling Report.
Prepared for Hazardous Waste Program, Division of Environmental Quality, Missouri Department of Natural Resources by Environmental Services Program, Division of Environmental Quality, Missouri .

8.5 Health Consultation, Hubert Wheeler State School Site, Private Residential Yards, City of St. Louis, Missouri. DRAFT
Prepared by the Missouri Department of Health, Bureau of Environmental Epidemiology, in Cooperation with the Agency for Toxic Substances and Disease Registry.

8.6 Preliminary Removal Goals, Hubert Wheeler State School, St. Louis, MO.
Prepared by the Missouri Department of Health, Bureau of Environmental Epidemiology.

8.7 Expedited Risk Assessment for Exposure to Residential Soils in the Vicinity of the Hubert Wheeler State School and **Preliminary Removal Goals for Residential Yards in the Vicinity of the Hubert Wheeler State School.**
Prepared by the Missouri Department of Health, Bureau of Environmental Epidemiology.

SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT

I. SITE NAME AND LOCATION:

NAME: Hubert Wheeler State School Site

ADDRESS OR OTHER LOCATION IDENTIFIER: 5707 Wilson Avenue and nearby residential neighborhood

CITY: St. Louis	STATE: Missouri	ZIP: 63110

DIRECTIONS TO SITE: From the intersection of I-44 and Hampton Avenue in the City of St. Louis, take Hampton Avenue south to Wilson Avenue, then travel east on Wilson Avenue for approximately 2 blocks. The Hubert Wheeler State School is located on the north side of Wilson Avenue. The residential neighborhood to the south and east of the school was addressed as part of the Removal Site Evaluation.

MAP ATTACHED. X

II. PROGRAM CONTACTS:

REQUESTED BY: Julie Warren	DATE OF REQUEST. 1995

AGENCY/OFFICE: Missouri Department of Natural Resources/Hazardous Waste Program/Superfund Section

MAILING ADDRESS: P.O. Box 176

CITY: Jefferson City	STATE: Missouri	ZIP: 65102-0176
TELEPHONE. (573) 751-3176	FAX: (573) 751-7869	

SECONDARY/OTHER CONTACT: Robert Hinkson or Julie B. Kelsey

AGENCY/OFFICE: Missouri Department of Natural Resources/Hazardous Waste Program/Superfund Section

MAILING ADDRESS. P.O. Box 176

CITY: Jefferson City	STATE: Missouri	ZIP. 65102-0176
TELEPHONE: (573) 751-3176	FAX: (573) 751-7869	

III. REMOVAL SITE EVALUATION CRITERIA [40 CFR 300.410(e)]

IS THERE A RELEASE AS DEFINED BY THE NCP: YES X or NO _

EXPLAIN: A small area of tar-like material is visible on the surface of the asphalt playground at the Hubert Wheeler State School. According to teachers of the former school, ever since the school opened in 1970, this tar-like material emerged from the ground during the spring and summer months. In 1990, the State of Missouri's Department of Elementary and Secondary Education (DESE) used a backhoe to excavate an area next to the asphalt playground, with the purpose of removing the tar-like material and determining the depth and extent of the subsurface material. According to DESE records, at a depth of four feet, an eight foot wide by nine inch thick horizontal vein of coal tar reportedly was detected moving parallel to the soil surface. A concrete walkway was installed over this area by DESE in 1990. At least one 55-gallon drum was unearthed during the construction activities

*(A **RELEASE** is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment of barrels, containers, and other closed receptacles containing any hazardous substances or pollutant or contaminant), but excludes: workplace exposures; engine exhaust emissions; nuclear releases otherwise regulated; and the normal application of fertilizer. For purposes of the NCP, release also means threat of release.)*

IS THE SOURCE A FACILITY OR VESSEL AS DEFINED BY THE NCP: YES X or NO _

EXPLAIN: The Hubert Wheeler State School site meets the NCP definition of a facility

*(A **FACILITY** is defined as any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or POTW), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft or any site or area, where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel. A **VESSEL** is defined as any description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel.*

SUPE[redacted]ND REMOVAL SITE EVA[redacted]TION
and
REMOVAL PRELIMINARY ASSESSMENT

[redacted]I. REMOVAL SITE EVALUATION CRITERIA [40 CFR 300.410(e)](continued):

DOES THE RELEASE INVOLVE A HAZARDOUS SUBSTANCE, OR POLLUTANT OR CONTAMINANT AS DEFINED BY THE NCP: YES X or NO _

EXPLAIN: Several polycyclic aromatic hydrocarbons (PAHs) were identified in the tar-like material during analytical sampling conducted by DNR in July 1994. PAHs (at lower levels) and lead have been detected in the soils surrounding the school property and in the residential neighborhood. These samples were collected in March 1996, as part of this Removal Site Evaluation (RSE) conducted by DNR.

*(A **HAZARDOUS SUBSTANCE** means any substance, element, compound, mixture, solution, hazardous waste, toxic pollutant, hazardous air pollutant, or imminently hazardous chemical substance or mixture designated pursuant to the CWA, CERCLA, SDWA, CAA or TSCA. The term does not include petroleum products, natural gas, natural gas liquids, liquified natural gas, synthetic gas or mixtures of natural and synthetic gas. The definition of **POLLUTANT or CONTAMINANT** includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions or physical deformations, in such organisms or their offspring. The term does not include petroleum products, natural gas, natural gas liquids, liquified natural gas, synthetic gas or mixtures of natural and synthetic gas.)*

IS THE RELEASE SUBJECT TO THE LIMITATIONS ON RESPONSE: YES _ or NO X

EXPLAIN: The release is not excluded by 40 CFR Section 300.400 (b) of the NCP.

*(The **LIMITATIONS ON RESPONSE** provisions of the NCP (40 CFR 300.400(B) states that removals shall not be undertaken in response to a release: of a naturally occurring substance in its unaltered or natural form; from products that are a part of the structure of, and result in exposure within, residential buildings or business or community structures, or into public or private drinking water supplies due to deterioration of the system through ordinary use.)*

DOES THE QUANTITY OR CONCENTRATION WARRANT RESPONSE: YES X or NO _

EXPLAIN: The quantity of tar-like material has not been determined at this time. At least one 55-gallon drum of tar has been unearthed [redacted]om the property. Significant geophysical anomalies were identified in the subsurface of the school property during previous site screening [redacted]ctivities. Information obtained from Community Interviews indicates that 12-18 full 55-gallon drums of tar were buried on the Hubert Wheeler State School property in the 1930's, at a depth of 25 feet. The suspected location of burial is east and north of the present school buildings. Additional tar is thought to have been buried on the school property during the construction of the school (1968-1970).

HAS A PRP BEEN IDENTIFIED: YES _ or NO X

EXPLAIN: Several potential PRPs have been identified. Information obtained during the Missouri DNR's PA/SI investigation and subsequent RSE have been forwarded to Ms. Maureen Hunt, of EPA Region VII, for her consideration. EPA Region VII is actively investigating possible PRPs to determine if any are viable

IV. CONDITIONS TO WARRANT REMOVAL [40 CFR 300.415(b)(2)]:

ACTUAL OR POTENTIAL EXPOSURE TO HAZARDOUS SUBSTANCES, OR POLLUTANTS, OR CONTAMINANTS: YES X or NO

EXPLAIN: During the 24 year operation of the school, teachers and students were reportedly directly exposed to the tar-like material seeping from the ground on-site. According to information obtained during Community Interviews, neighborhood children also had contact with tar-like material prior to the construction of the school. The school community and the nearby residents have been exposed to significantly lower levels of PAHs and lead from the contaminated soils in the area.

ACTUAL OR POTENTIAL CONTAMINATION OF DRINKING WATER SUPPLIES: YES _ or NO X

EXPLAIN: Low levels of volatile organic compounds were detected in the shallow groundwater on-site. However, this aquifer is not used [redacted]or drinking water purposes. Groundwater in the St. Louis area tends to be highly mineralized. There are no known drinking water wells nearby.

SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT

IV. CONDITIONS TO WARRANT REMOVAL [40 CFR 300.415(b)(2)] (continued):

HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS IN DRUMS, BARRELS, OR BULK STORAGE CONTAINERS: YES X or NO _

EXPLAIN. At least one 55-gallon drum was unearthed on the school property. Approximately 15 additional drums of tar may be buried on the Hubert Wheeler State School property. Geophysical anomalies detected during previous investigations of the site have not been explored could indicate other instances of buried containers, metal, or hazardous substances

HIGH LEVELS OF HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS IN NEAR-SURFACE SOILS: YES _ or NO _

EXPLAIN: A sample of the tar-like material, collected by Missouri DNR on July 7, 1994, had levels of 17 polycyclic aromatic hydrocarbon (PAH) compounds which exceeded 1,000 parts per million (ppm). The level of benzo(a)pyrene, a carcinogenic PAH, was 32,000 ppm. Significantly lower levels of PAHs and lead have been detected in surficial and subsurface soils across the school property. This low level contamination extends into the residential neighborhood.

CONDITIONS SUSCEPTIBLE TO IMPACT FROM ADVERSE WEATHER CONDITIONS: YES X or NO _

EXPLAIN: The suspected burial area of the tar-like material is a former clay mine which has been filled in with waste materials. The permeability of the fill material is expected to be high, while the surrounding clay is expected to have a low permeability The tar-like material may be susceptible to migration from flooding.

THREAT OF FIRE OR EXPLOSION. YES _ or NO X

EXPLAIN: Not anticipated

POTENTIAL FOR OTHER FEDERAL OR STATE RESPONSE MECHANISMS. YES _ or NO X

EXPLAIN: The State of Missouri is not known to have further investigation or remediation planned for this site at this time.

OTHER SITUATIONS OR FACTORS WHICH POSE A THREAT: YES X or NO _

EXPLAIN: The extent of tar-like contamination has not been determined. Subsurface geophysical surveys indicate that the extent of the tar-like material may be more extensive that what has been encountered at the surface. The tar material may also be migrating.

V. POTENTIAL REMOVAL ACTIONS [40 CFR 300.415(d)]:

(NOTE: The following identifies potential removal actions which may be determined to be appropriate pending further review and study. The proposed actions should be considered preliminary proposals and are subject to change.)

SITE SECURITY. YES _ or NO X

EXPLAIN: The asphalt playground, where the tar-like material has surfaced, is currently fenced. However, the remainder of the Hubert Wheeler State School property is not fenced, and is accessible to the surrounding residential population. Additional site security and access restrictions may be required for future removal activities.

SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT

V. PROPOSED REMOVAL ACTIONS [40 CFR 300.415(d)](continued):

DRAINAGE CONTROL: YES _ or NO X

EXPLAIN: Surficial runoff has not been observed at the site. Site runoff reportedly drains north toward the River des Peres drainage canal.

STABILIZATION OR REMOVAL OF SURFACE IMPOUNDMENTS: YES _ or NO X

EXPLAIN: Not applicable.

CAPPING OF CONTAMINATED SOIL: YES X or NO _

EXPLAIN: This is a possible option, but would not resolve the issues surrounding the potential for a free-product source of tar migrating through the subsurface. Capping after the excavation of the tar-like material may be a viable option.

USE OF CHEMICALS TO CONTROL/RETARD SPREAD OF CONTAMINATION: YES X or NO _

EXPLAIN: This is a possible option for the contaminated soils, if chemicals could be found which could facilitate bioremediation of the PAH compounds. The free-product tar material would probably still require excavation and off-site disposal.

CONTAMINATED SOIL EXCAVATION: YES X or NO _

EXPLAIN This is a recommended option.

REMOVAL OF DRUMS, TANKS, OR BULK STORAGE CONTAINERS: YES X or NO _

EXPLAIN. This is a recommended option.

CONTAINMENT, TREATMENT, OR DISPOSAL OF HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS. YES X or NO _

EXPLAIN: If the source material is found during subsurface investigations of the Hubert Wheeler State School property, appropriate segregation and disposal of this material (according to all applicable laws and regulations) will be warranted.

SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT

V. PROPOSED REMOVAL ACTIONS [40 CFR 300.415(d)](continued):

PROVIDE ALTERNATIVE WATER SUPPLIES· YES _ or NO X

EXPLAIN: Not applicable.

VI. REMOVAL SITE EVALUATION DETERMINATION AND REMOVAL PRELIMINARY ASSESSMENT FINDINGS AND RECOMMENDATIONS:

	REMOVAL NOT WARRANTED - REMOVAL SITE EVALUATION TERMINATED

*(Cite one or more of the criteria from SECTION III. **REMOVAL SITE EVALUATION CRITERIA**, as the basis for the above determination.)*

		NOT A RELEASE			NOT A FACILITY OR VESSEL
		NOT A HAZARDOUS SUBSTANCE OR POLLUTANT OR CONTAMINANT			SUBJECT TO RESPONSE LIMITATIONS
		INSUFFICIENT QUANTITY OR CONCENTRATION			WILLING/CAPABLE PRP IDENTIFIED

COMMENT·

X	REMOVAL RECOMMENDED [_ EMERGENCY _ TIME-CRITICAL X NON-TIME-CRITICAL]

*(Cite one or more of the conditions or factors from Section IV. **CONDITIONS TO WARRANT A REMOVAL ACTION**, as a basis for recommending that a removal action be conducted.)*

	X	EXPOSURE TO HAZARDOUS SUBSTANCES OR POLLUTANTS OR CONTAMINANTS			X	ADVERSE WEATHER IMPACTS
		CONTAMINATED DRINKING WATER		FIRE/EXPLOSION THREAT	X	CONTAMINATED SOIL
	X	DRUMS, BARRELS OR CONTAINERS		NO OTHER RESPONSE MECHANISM		OTHER FACTORS

*(Identify one or more of the removal actions listed in Section V. **REMOVAL ACTIONS WHICH MAY BE APPROPRIATE**, as examples of the types of response actions which are recommended.)*

	X	SITE SECURITY		DRAINAGE CONTROL		IMPOUNDMENT STABILIZATION
	X	REMOVAL OF DRUMS, BARRELS, ETC.	X	SOIL CAPPING	X	SOIL EXCAVATION
	X	CONTAIN/TREAT/DISPOSE OF WASTES	X	CHEMICAL CONTROLS		ALT DRINKING WATER SUPPLIES

COMMENT·

A removal action, with further source characterization, is recommended for the school property. The area beneath the school may require special consideration. Removal of drums, barrels, free-product tar material and affected soils may be needed. Segregation of contaminated materials and free product, with proper treatment and/or disposal, is recommended A cap of the site may be necessary after the source materials have been removed.

At this time, community education is the only action recommended for the nearby residential community. Information should continue to be provided to the community by the agency conducting the site activities.

SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT

VI. REMOVAL SITE EVALUATION DETERMINATION AND REMOVAL PRELIMINARY ASSESSMENT FINDINGS AND RECOMMENDATIONS (continued):

☐ ADDITIONAL REMOVAL SITE EVALUATION RECOMMENDED

*(Cite one or more of the conditions or factors from Section IV. **CONDITIONS TO WARRANT A REMOVAL ACTION**, as a basis for recommending that additional site evaluation be performed.)*

☐	EXPOSURE TO HAZARDOUS SUBSTANCES OR POLLUTANTS OR CONTAMINANTS			☐	ADVERSE WEATHER IMPACTS
☐	CONTAMINATED DRINKING WATER	☐	FIRE/EXPLOSION THREAT	☐	CONTAMINATED SOIL
☐	DRUMS, BARRELS OR CONTAINERS	☐	NO OTHER RESPONSE MECHANISM	☐	OTHER FACTORS

*(Identify one or more of the removal actions listed in Section V. **REMOVAL ACTIONS WHICH MAY BE APPROPRIATE**, as examples of the types of response actions which may be appropriate pending the results of further site evaluation.)*

☐	SITE SECURITY	☐	DRAINAGE CONTROL	☐	IMPOUNDMENT STABILIZATION
☐	REMOVAL OF DRUMS, BARRELS, ETC.	☐	SOIL CAPPING	☐	SOIL EXCAVATION
☐	CONTAIN/TREAT/DISPOSE OF WASTE	☐	CHEMICAL CONTROLS	☐	ALTERNATIVE DRINKING WATER SUPPLIES

COMMENT:

VII. ADDITIONAL INFORMATION OR COMMENTS

VIII. CERTIFICATION

SIGNATURE: _____ _____
DATE

POSITION/TITLE:

OFFICE/AGENCY:

SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT
(Supplemental Waste Inventory Sheet)

IX. HAZARDOUS SUBSTANCES, POLLUTANTS OR CONTAMINANT INFORMATION:

MATERIAL DESCRIPTION	CONTAINER INFORMATION					
TRADE NAME/ACTIVE INGREDIENTS	NUMBER of CONTAINERS	SIZE	TYPE	SOLID or LIQUID	% FULL	CONDITION

Attachment 1

ADDITIONAL ASSESSMENT
PLAYGROUND SITE RESTORATION
HUBERT WHEELER STATE SCHOOL
5707 WILSON AVENUE
ST. LOUIS, MISSOURI
Project No. 05-523-93-0001(A)
Account Nos. 307-74536-1232
and 307-72876-0992

Prepared for:

STATE OF MISSOURI
DIVISION OF DESIGN AND CONSTRUCTION
Jefferson City, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

September 7, 1995

2498.03.4120.07

REPORTE\249803.SLB

printed on recycled paper

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
	1.1 Site Description	1
	1.2 Previous Site Investigations	2
	1.3 Project Description	5
2.0	GEOPHYSICAL SITE SURVEY	6
	2.1 Magnetic Gradient Survey	6
	2.2 Infrared Thermography	7
3.0	DUST SAMPLING	7
	3.1 Collection of Dust Samples	7
	3.2 Dust Sample Analytical Results	8
4.0	SURFACE SOIL SAMPLING	8
	4.1 Soil Sampling Program	8
	4.2 Analytical Results	9
5.0	SUBSURFACE ASSESSMENT	9
	5.1 Drilling Summary	9
	5.2 Field Screening and Soil Sampling Program	10
	5.3 Monitoring Well Installation	11
	5.4 Monitoring Well Development and Sampling	11
	5.5 Slug Testing	12
6.0	SUBSURFACE ASSESSMENT RESULTS	12
	6.1 Site Stratigraphy and Hydrogeology	12
	6.2 Subsurface Soil Analytical Results	14
	6.3 Groundwater Analytical Results	15
7.0	QUALITY ASSURANCE/QUALITY CONTROL	15
	7.1 QA/QC Objectives	15
	7.2 Surface Soil Sampling QA/QC Data	16
	7.3 Subsurface Soil Sampling QA/QC Data	16
	7.4 Laboratory QA/QC Data	17
8.0	CONCLUSIONS	17
9.0	REMEDIAL ALTERNATIVES REVIEW	18
	9.1 Discussion	18
	9.2 Recommended Remedial Approach	19
	9.3 Statement of Probable Cost	20

printed on recycled paper

TABLES

	Table
Analytical Results Summary - Surface Soil Sampling	1
Analytical Results Summary - Subsurface Soil Sampling - Semi-Volatile Organics	2A
Analytical Results Summary - Subsurface Soil Sampling - Total Metals/TCLP Metals	2B
Analytical Results Summary For Groundwater Samples	3
Monitoring Well Data	4
Groundwater Field Data Summary	5
Monitoring Well Gauging Data	6

ILLUSTRATIONS

	Plate
Site Location and Topography	1
Plan of Site and Magnetic Gradient Survey	2
Plan of Site and Infrared Anomalies	3
Plan of Site and Surface Soil Composite Locations	4
Plan of Site, Air Sampling, Boring and Monitoring Well Locations	5
3D Surface Plot of Base of Fill	6
Hydrogeologic Cross Section	7
Plan of Site and Subsurface Soil Total SVOA's and Total Lead Concentrations	8

APPENDICES

	Appendix
Infrared Thermographic Survey Report	A
Air/Dust Monitoring Report	B
Surface Soil Analytical Data Reports	C
Waste Disposal Documents	D
Monitoring Well Certification Records, Registration Record, Boring Logs and Legend	E
Slug Test Results	F
Subsurface Soil Analytical Data Reports	G
Groundwater Analytical Data Report	H
Limitations of Report	I

printed on recycled paper

ADDITIONAL ASSESSMENT
PLAYGROUND SITE RESTORATION
HUBERT WHEELER STATE SCHOOL
5707 WILSON AVENUE
ST. LOUIS, MISSOURI

1.0 INTRODUCTION

1.1 Site Description The Hubert Wheeler State School is located at 5707 Wilson Avenue in St. Louis, Missouri, as shown on Plate 1. The site is located on the north side of Wilson Road just south of Interstate 44, in a mixed commercial and residential area. The Deaconess Hospital Executives Examination Facility is located to the west of the site. Residential areas are located east and south of the site.

During recent years, a black material resembling coal tar has occasionally been observed exuding from the ground surface in the courtyard/playground area located in the northwest portion of the site. Asphalt was paved over the area to attempt to minimize the potential problems associated with the tar-like material. However, the material continues to migrate through the asphalt at several locations. In addition, several years ago school maintenance personnel installed a concrete walkway from the asphalt pavement to the school. During excavation for the walkway, the black material was reportedly "flowing" at a depth of approximately 3 feet. At least one drum was reportedly discovered during the excavation.

A review of historical documents was conducted and included a review of 50-year chain-of-title (property ownership), historical building and occupancy permits, and available aerial photographs taken in 1960, 1964, and 1969.

Information obtained from the historical documents revealed that between 1907 and 1959 the site and surrounding area was controlled by a succession of property owners including Laclede Fire Brick Manufacturing Company, Laclede-Christy Company, and the H. K. Porter Company. The property was sold to Ann S. Dattilo in 1959 who leased the property to H. K. Porter Company and Jablonow-Kom Theaters until the property was sold in 1966 to a consortium of investors for the Hampton Industrial Park. Building and occupancy permits indicate that between 1950 and 1967 office and warehouse facilities were constructed by St. Louis Coke and Foundry Supply and by M. W. Warren Coke Company. In addition, a warehouse facility constructed in 1960 for the St. Louis Coke and Foundry Supply was apparently used for the storage of V.M.P. Naptha.

Review of the 1960 and 1964 aerial photographs indicated that the site was vacant with apparent landfilling operations occurring north and west of the site. Buildings and structures likely associated with the foundry and coke companies were located north of the site. By 1969 the site appeared abandoned; buildings previously located north of the site had been demolished and the landfilling operations appeared to have ceased.

The State of Missouri purchased the property in 1968 and subsequently built Hubert Wheeler State School.

1.2 Previous Site Investigations. A subsurface assessment was conducted within the courtyard area of the Hubert Wheeler State School during August 1993. The Subsurface Assessment[1] included the completion of 10 soil borings to a depth of 10 feet, collecting continuous soil samples from each boring, screening the soil samples in the field for the presence of volatile organics, and submitting one sample from each boring for quantitative analysis of priority pollutant metals, volatile organics, semi-volatile organics, pesticides, PCB's, total cyanide, and total phenol. In addition to the priority pollutant analyses, the soil sample which exhibited the highest level of total lead was analyzed for TCLP lead, and two soil samples obtained from borings placed in the apparent coal tar seeps were screened for the presence of dioxin.

Information obtained from the soil borings within the courtyard/playground area of the site generally indicated a soil stratigraphy of 6 to 8 feet of rubble fill consisting of brown and green silty clays with brick, gravel, sand, and cinders over a stratum of medium stiff to stiff, brown or brown and gray, mottled silty clay which extended to the depth explored. Significant subsurface deposits of tar-like material were not encountered in the borings, although visual evidence of discolored soils and soil staining were observed in the samples obtained from the borings. Groundwater was not encountered to the depths explored.

The analytical results for the soil samples collected from the borings indicated semi-volatile organic contamination typical of residual coal tar contamination. In addition, elevated levels of total lead were detected in near surface soils collected from three of the borings. The remaining parameters tested were either not detected or detected at low levels. The concentrations of lead and of several semi-volatile organics detected at the site exceeded the Missouri Department of Health "Any Use Soil Levels". The location of the borings which exhibited the highest levels of semi-volatile organic contamination, indicated that additional sources of coal tar like wastes may be present at the site and/or the soil contamination detected at the site may have been from the placement of contaminated fill material. In either case, the extent of coal tar and/or lead contamination was not defined by the assessment.

Based on the information obtained from the subsurface assessment, the Missouri Department of Natural Resources (MDNR) and the Missouri Department of Health (MDOH), recommended that access to the site be limited to personnel directly involved in assessment and

[1] "Subsurface Assessment, Playground Site Restoration, Hubert Wheeler State School, 5707 Wilson Avenue, St. Louis, Missouri, Project No. 05-523-93-0001(A), Account Nos. 307-74536-1232 and 307-72876-0992"; Prepared for State of Missouri, Division of Design and Construction, by Geotechnology, Inc., Report Number 2498.01.3120.01, Dated November 30, 1993.

remediation activities, pending additional studies designed to determine the level of surface soil contamination at the site. The MDOH provided a listing of Contaminants identified at the site which had exceeded MDOH's "Any Use Soil Levels" (ASL's), which are defined as the maximum concentration of chemicals that are acceptable in the soil in a residential setting. Following is a listing of the contaminants which were detected during the initial assessment activities and exceed MDOH ASL's, the maximum concentration detected at the site, and the ASL for each.

CONTAMINANTS ABOVE MDOH ANY USE SOIL LEVELS

Chemical	Highest Level Detected (ppm)	MDOH Any Use Soil Level (ASL) (ppm)
Lead	338.0	240.0
Benzo(a)Anthracene	45.0	0.44
Chrysene	54.0	0.44
Benzo(b)Fluoranthene	62.0	0.44
Benzo(k)Fluoranthene	29.0	0.44
Benzo(a)Pyrene	41.0	0.44
Dibenzo(a,h,)Anthracene	6.0	0.44

Based on the information obtained from the Subsurface Assessment activities discussed above, the State of Missouri, Office of Administration, Division of Design and Construction, requested additional assessment activities to attempt to identify suspect drum burial areas and/or sources of suspected coal tar contamination. Geotechnology, Inc., in conjunction with the Division of Design and Construction, identified a scope of services which included three different, complimentary geophysical technologies designed to assist in identifying surface temperature differentials and magnetic anomalies indicative of buried metal, drums, and/or sources of suspected coal tar. These technologies included a magnetic gradient survey, infrared thermography, and ground penetrating radar. In addition, surface soil sampling was requested to determine if the contaminants previously detected in subsurface soils, were present in surface soils at levels which exceeded the MDOH ASL's, for residential areas. Surface soil sampling activities were coordinated with the MDNR Environmental Services Program to facilitate splitting of samples collected by Geotechnology, Inc.

In addition to their recommendation to restrict access to the site, the MDNR, Hazardous Waste Program, in a letter dated March 18, 1994, announced their intention to evaluate the Hubert Wheeler State School site under the federal Preliminary Assessment/Site Inspection process.

On July 7, 1994, the MDNR, Environmental Services Program performed its Site Inspection Sampling[2]. The sampling activities included collecting five soil grab samples, one soil duplicate sample, and one grab sample of tar like material from the apparent coal tar seep. The soil samples ranged in depth from 0 to 2 feet and were collected adjacent to the asphalt courtyard, northwest of the asphalt courtyard, from a playground area on the east side of the building, and at the northeast corner of the gymnasium for the school. The samples were analyzed for total metals, volatile organics, and base neutral/acid extractable organics (semi-volatile organics). The analytical results indicate that base neutral extractable organics were detected in each of the samples collected. The detected concentrations of base neutral extractable organics, exceeded MDOH ASL's at four of the five soil sampling location which included the courtyard area, northwest of the courtyard area, and at the northeast corner of the Hubert Wheeler State School gymnasium. The levels detected in the playground area on the east side of the site, were below MDOH ASL's.

The analytical results for the surface soil samples collected as part of the second assessment at the site, indicate that semi-volatile organic contamination similar to coal tar, is present in each of the 10 sample locations surrounding the asphalt courtyard/playground area. In addition, the concentrations for several of the semi-volatile organic compounds detected in each of the samples exceeded the MDOH "Any Use Soil Levels" (ASL's) for residential areas. The total lead levels detected in the samples were below the MDOH ASL's at each sample location.

Geophysical surveys of the courtyard/playground area resulted in the identification of several anomalies which may be indicative of buried metal, subsurface voids, variations in the density of fill materials, drums, and/or contaminated soil plumes. The apparent sources of the anomalies range in depth from 3 to 6 feet below ground surface. A comparison of the data generated by the magnetic gradient and infrared thermographic surveys does not appear to indicate a correlation of the apparent subsurface anomalies.

The analytical results of the surface soil samples collected at the site indicates that surface soil contamination exceeding the MDOH ASL's is prevalent throughout the courtyard/playground area.

---

[2] "Site Inspection Sampling Report, Hubert Wheeler State School Site, 5707 Wilson Avenue, St. Louis, Missouri, July 7, 1994"; Submitted by Mr. Brian J. Allen, Environmental Specialist, Superfund Unit, Environmental Service Program, Approved by, James H. Long, Director, Environmental Services Program, Dated August 23, 1994.

1.3 Project Description. Based on the information obtained from the previous assessment activities discussed above, the State of Missouri, Office of Administration, Division of Design and Construction, requested additional assessment activities to further characterize the type and extent of contaminants previously detected at the site and to make recommendations for future actions at the site. A detailed Scope of Services is presented in Geotechnology, Inc. proposals P4892.00.4120 (Revised) dated October 26, 1994, and P5152.00.5120 dated March 29, 1995.

Geotechnology, Inc., in conjunction with the Division of Design and Construction, prepared a scope of services which included two different, complimentary geophysical technologies designed to assist in identifying surface temperature differentials and magnetic anomalies indicative of buried metal, drums, and/or sources of suspected coal tar. These technologies included a magnetic gradient survey and infrared thermography. In addition, surface soil composite samples were collected from a 20-foot grid established over the unpaved portions of the project area surrounding Hubert Wheeler State School to determine if the contaminants previously detected in subsurface soils, were present in surface soils at other areas of the site.

Included with the scope of services was a subsurface assessment consisting of the completion of nine shallow soil borings to a depth of 20 feet, auger refusal, or 5 feet below the observed groundwater depth, whichever was less. Additionally, three deeper soil borings were to be completed to a depth of 60 feet, auger refusal, or 10 feet below the observed groundwater depth, whichever was less. Two-inch, PVC monitoring wells were installed in each of the deep soil borings. Groundwater samples were to be collected and submitted to an analytical laboratory for quantitative testing of semi-volatile organics, volatile organics, and total metals. Slug tests were to be performed for each monitoring well to establish the average hydraulic conductivity at the site.

In accordance with USEPA requirements, a Quality Assurance Project Plan (QAPP) was developed for the site prior to the start of field sampling activities. The Missouri Department of Natural Resources has determined that the site assessment project will be conducted in accordance with the Federal Preliminary Assessment/Site Inspection Process. The QAPP was prepared by Geotechnology, Inc. in general accordance with USEPA QAPP guidance documents and submitted to the MDNR for approval on February 3, 1995. MDNR approved the QAPP in their April 12, 1995 correspondence to Mr. Gary Anderson of the Missouri Office of Administrations, Division of Design and Construction. The QAPP details the organization, objectives, functional activities and specific Quality Assurance (QA) and Quality Control (QC) activities associated with the site assessment activities for the Hubert Wheeler State School site. This QAPP describes the specific protocols which were to be followed for sampling, sample handling and storage, chain of custody, laboratory and field analysis.

2.0 GEOPHYSICAL SITE SURVEY

2.1 Magnetic Gradient Survey. A magnetic gradient survey was conducted at the site on March 16 and 17, 1995. The purpose of the magnetic survey was to attempt to delineate buried metallic objects which may be potential drum burial sites.

The magnetic method is a passive geophysical technique where the existing magnetic field of the earth is measured. Metallic features locally affect the magnetic field and produce aberrations, or "anomalies", which are apparent when the measured field is plotted. The magnetic field varies with elevation. The rate of change of the magnetic field with elevation is called the magnetic gradient and is also greatly influenced by both surface and subsurface metallic features. The magnetic field is affected by most types of metal and does not differentiate between them. Therefore, metallic objects other than drums if present above or below ground may be indicated by the data.

For this survey, a GEM GSM-19 magnetometer/gradiometer was used. This instrument utilizes two proton-precession sensors which are mounted on top of a pole and are separated from each other by a distance of 56 centimeters. Both of the sensors are used for measuring the total magnetic field. The magnetic gradient between the sensors is automatically calculated for every reading. The instrument has a built-in data logger which records the total magnetic field of the bottom sensor and the magnetic gradient between the sensors.

A 20-foot grid was established over the site. Readings for the magnetic gradient were taken at 10-foot spacings over the site area around the building and plotted. The typical gradient response for a subsurface metallic feature is a high positive and associated low negative, with the probable location of the buried metal being between the two extreme values. A contour map of the magnetic data is presented on Plate 2. For clarity, the magnetic gradient contours are presented in color. The contour map depicts positive contours in red and negative contours in blue.

Surface metal features observed during the survey include a chain link fence in the courtyard/playground area and near the north boundary of the site, metal pipes in the courtyard/playground area, a metallic storm water grate located north of the courtyard and playground area, metal overhangs on the school building, light poles in the parking lot, playground equipment in the eastern part of the site, various small signs, and electric poles. The aboveground metallic features exhibit strong magnetic anomalies such that subsurface metallic objects at these locations, if present, would be masked.

Possible locations for buried sources of the magnetic anomalies are shown on Plate 2. The locations represent areas to begin exploration for subsurface features. The areas delineated do not represent the locations of all buried metallic objects; rather, they are locations of magnetic

anomalies which may not be related to metallic surface features and which are notable in size and magnitude. Due to the inexact positioning of subsurface features based on magnetic mapping, magnetic anomalies are best explored by completing test pits.

2.2 Infrared Thermography. An Infrared Thermographic (IR) survey was performed within the site boundaries in an attempt to provide additional information regarding potential subsurface sources of coal tar. The IR technology is used to map surface temperature differences caused by the differential absorption of solar energy by surface and subsurface materials. Differences in surface and subsurface materials create an abnormal surface temperature profile making IR a viable technology for identifying subsurface voids, drums, underground storage tanks, and/or contaminated soil plumes. The IR data only represent surface temperature differential and cannot be used to determine the type or depth of a subsurface feature creating the anomaly.

Geotechnology, Inc. subcontracted Electric Power Systems to perform the IR survey. The survey was performed between June 17 and June 30, 1995. The grid system previously established for the magnetic survey was utilized for locating IR anomalies. The Infrared Thermographic Report[3] documenting the IR activities, is attached as Appendix A. The approximate location and size of suspected subsurface anomalies identified in the report are shown on Plate 3.

3.0 DUST SAMPLING

3.1 Collection of Dust Samples. Dust sampling and analysis included three (3) samples collected upwind, downwind, and inside the school building on July 13 and 14, 1995. The samples were collected using high volume vacuum pumps calibrated at the start of sampling and monitored throughout the sampling period. Air/dust sampling activities were performed under the direction of Mr. Douglas N. Nimmo, a Certified Industrial Hygienist with Microscopic Analysis, Inc. Outdoor and indoor air/dust sample locations are shown on Plate 5. The specific outdoor sampling locations were determined just prior to sample collection based on wind direction.

The dust samples were submitted to Data Chem Laboratories of Cincinnati, Ohio, for quantitative analyses of PNA's by EPA Method TO-13 and total lead in accordance with NIOSH Method 7300. Samples for PNA's were collected on Supelco 65 mm x 75 mm Poly Urethane Filters (PUF) at sample flow rates between 25 and 32 standard cubic feet per minute (scfm).

[3] "Infrared Thermographic Survey of the Hubert Wheeler School, For Geotechnology, Inc., St. Louis, Missouri"; Performed by: Electric Power Systems, St. Louis, Missouri.

Total lead samples were collected on matched weight 37 mm PVC filters at approximate flow rates of 20 liters per minute.

3.2 Dust Sample Analytical Results. The analytical results indicated airborne PNA concentrations in the upwind, downwind, and indoor air samples were reportedly 0.414 $\mu g/m^3$, 0.176 $\mu g/m^3$, and 0.098 $\mu g/m^3$, respectively. Total airborne lead concentrations in the upwind, downwind, and indoor air samples were reportedly 0.0217 $\mu g/m^3$, 0.0215 $\mu g/m^3$, and 0.0108 $\mu g/m^3$, respectively. A copy of the air monitoring report[4] is attached as Appendix B.

4.0 SURFACE SOIL SAMPLING

4.1 Soil Sampling Program. Surface soil sampling activities were performed at the site between May 22 and 25, 1995. Prior to performing the surface soil sampling activities, a 20-foot by 20-foot grid was surveyed over the site. The grid was used to subdivide unpaved portions of the site into 40 distinct areas of approximately 2,000 square feet each, as shown on Plate 4. Unpaved portions of the site, adjacent to the asphalted courtyard/playground area, were sampled during previous assessment activities and were not included as a part this surface soil sampling event.

One composite soil sample was collected from each of the 40 individual sample locations. Each composite sample consisted of 5 aliquots of soil removed from a depth of 0 to 6 inches within the sample location. The top layer of surface vegetation including grass, weeds, and roots, was removed prior to collecting each individual aliquot. The soil sample aliquots were collected using a stainless steel bucket auger to remove equal portions of soil, and to place it into a stainless steel pan with other aliquots from the same sample location. The aliquots were homogenized and transferred to the appropriate sample containers using a stainless steel spoon. The samples were labeled and placed on ice to aid in preservation prior to shipment.

Soil sampling equipment was decontaminated after collection of each composite sample using an Alconox wash solution, a potable water rinse, a 10% nitric acid rinse, a deionized distilled water rinse, a methanol rinse, a hexane rinse, and a final rinse with deionized distilled water. Sterile latex and/or nitrile gloves were donned before collecting each soil sample. Decontamination water generated during decontamination of surface soil sampling equipment was collected, containerized and temporarily stored on-site pending permitting and disposal.

[4] "Report of Environmental Monitoring At The Hubert Wheeler State School For The Severely Handicapped, 5715 Wilson Avenue, St. Louis, Missouri, July 13, and 14, 1995"; Prepared for Geotechnology, Inc., St. Louis, Missouri; by Microscopic Analysis, Inc., Maryland Heights, Missouri.

The containerized surface soil samples were submitted to Environmetrics, Inc. in Maryland Heights, Missouri for laboratory analysis of semi-volatile organic compounds by USEPA Method 8270 and total lead by USEPA Method 6010.

4.2 Analytical Results. The laboratory analytical results for the surface soil samples collected at the site, indicate that semi-volatile organic contamination similar to coal tar, was detected at 36 of the 40 surface soil sample locations. Concentrations of semi-volatile organic compounds detected exceed the MDOH "Any Use Soil Levels" (ASL's) for residential areas at 33 of the 40 sample locations. Total lead concentrations detected in the surface soil samples were below the MDOH ASL's for all surface soil samples except the sample collected at location SS-37, where a total lead concentration of 1,620 parts per million (ppm) was detected. Site sections which exhibited semi-volatile organic and/or total lead concentrations above the MDOH ASL's are shown on Plate 4.

Analytical testing results for the surface soil samples are summarized in Table 1. The analytical results sheets are presented in Appendix C.

5.0 SUBSURFACE ASSESSMENT

5.1 Drilling Summary. Drilling activities were conducted between July 7 and 13, 1995. The borings were drilled using a CME 550 drill rig and 3-3/4 or 4-1/4 inch I.D. hollow stem augers. Continuous soil samples were collected with a split-spoon continuous sampler. The drilling and sampling activities were observed by an engineer from Geotechnology. The engineer obtained samples for analytical testing and prepared descriptive logs of the borings.

A high-pressure steam cleaner was utilized to decontaminate the hollow stem augers prior to and after drilling each borehole. Soil sampling equipment was decontaminated after collection of each sample using an Alconox wash solution, a potable water rinse, a 10% nitric acid rinse, a deionized distilled water rinse, a methanol rinse, a hexane rinse, and a final rinse with deionized distilled water. Decontamination water generated during decontamination of drilling and subsurface soil sampling equipment was collected, containerized and temporarily stored on-site pending waste characterization and disposal permitting.

A total of twelve borings were completed at the site, as shown on Plate 5. Nine of the borings (B-1 through B-9) were completed as shallow borings and terminated at a depth of 20 feet, while three borings (MW-1 through MW-3) were terminated at depths ranging from approximately 30 to 50 feet. The three deep borings were subsequently completed as groundwater monitoring wells. Soil cuttings generated from completion of the soil borings were placed in 55-gallon drums and subsequently disposed as special waste at the Browning Ferris Industries Modern Landfill located in Belleville, Illinois. Copies of the BFI waste profile, disposal authorization, and waste manifest are included in Appendix D.

Each soil boring not used for placement of a monitoring well was grouted to the surface using tremie pipe; the grout was a cement-bentonite mixture consisting of 2 to 6 percent bentonite by weight of cement content. A MDNR Registration Record form was completed and submitted to the MDNR Division of Geology and Land Survey (DGLS) in Rolla, Missouri. A copy of MDNR Registration No. 131687 is included with the boring logs, attached as Appendix E.

5.2 Field Screening and Soil Sampling Program. The soil samples were observed for visual staining and were field-screened at approximately one-foot intervals, for the presence of volatile organics using a Photovac Microtip photoionization detector (PID). The PID was calibrated to an isobutylene standard of 100 parts per million (ppm) at the beginning of each day. The one-foot soil interval from the following depths which exhibited the highest PID reading or which exhibited visual discoloration or apparent contamination were submitted for subsequent laboratory analysis:

Shallow borings: 0-5, 5-10, 10-15, and 15-20 feet
Deep borings: 0-5, 5-10, 10-15, 15-20, 20-30, 30-40, and 40-50 feet

If PID readings were non-detect and visual discoloration or apparent contamination was not observed, then the bottom 1-foot interval of the specified 5-foot or 10-foot depth interval was sampled. The PID readings are summarized on the boring logs presented in Appendix E.

Each of the subsurface soil samples retained from the borings were submitted to Environmetrics, Inc. of Maryland Heights, Missouri for quantitative analyses of semi-volatile organics by USEPA Method 8270 and total metals (including lead, arsenic, cadmium, chromium, selenium, barium, mercury, and silver) by USEPA Methods 6010 or 7471. In addition, one soil sample obtained from each boring was submitted for quantitative analysis of volatile organics by USEPA Method 8240. Samples submitted for volatile organics analyses were selected based on PID readings, visual indications of contamination, and/or consideration of depths at which contamination was encountered in other borings. Following receipt of analytical results, ten soil samples were selected for analysis of TCLP Metals by EPA Methods 1311/6010 and 1311/7470. The samples were selected based on total metals concentrations which were in excess of 20 times the TCLP regulatory limit with a maximum of one sample per boring selected for TCLP analysis.

Sterile latex and nitrile gloves were donned before collecting each soil sample. Soil samples for volatile organics analysis were containerized prior to homogenization of the 1-foot interval of soil. . After collection of the volatile organics sample, the 1-foot soil interval was removed from the continuous sampler and placed into a stainless steel bowl for subsequent homogenization. The samples were transferred to the appropriate sample containers, labeled, and placed in a cooler on ice, to aid in preservation of the samples prior to shipment.

5.3 Monitoring Well Installation. Monitoring Wells MW-1, -2 and -3 were installed at the site to depths of 29.9, 50.1, and 40.5 feet, respectively. The approximate locations of the monitoring wells are depicted on Plate 5. The monitoring wells were constructed of 2-inch Schedule 40, flush-threaded, polyvinylchloride (PVC) well screen and casing. A 10-foot length of factory cut 0.010-inch (10-slot) screen was used for each monitoring well.

PVC monitoring well materials were installed inside the hollow stem augers. A filter pack consisting of silica sand was placed from the base of the screen to approximately 2 feet above the top of the screen. A 2-foot thick bentonite pellet seal, hydrated in one foot lifts, was placed above the sand pack. The silica sand and bentonite pellets were added through the augers as the augers were incrementally withdrawn from the borehole. A weighted tape measure was used to verify the placement of the filter pack and that a minimum 2-foot seal had been emplaced. A cement-bentonite grout consisting of 2 to 6 percent bentonite by weight of cement content was placed with a tremie pipe on top of the bentonite seal to the surface. A concrete surface seal was used to cement the steel flush-mount protective well cover into place and to bring the borehole annulus up to just below the top of the riser casing. The well was sealed with a water-tight locking cap to prevent surface runoff infiltration.

The elevation of the top of riser casing for each monitoring well and the adjacent land surface was surveyed on July 14, 1995. The elevations were recorded relative to an arbitrary datum established on a site structure. Monitoring well installation and groundwater elevation data are summarized in Table 4. Well construction logs are presented in Appendix E. Appendix E also includes copies of Monitoring Well Certification Record Nos. 122986, 122987, and 122989, filed under separate cover with the MDNR Division of Geology and Land Survey in Rolla, Missouri.

5.4 Monitoring Well Development and Sampling. The monitoring wells were developed following construction to allow proper settlement of the filter pack, to increase well yield, and to reduce the turbidity of water obtained during subsequent groundwater sampling. Development was accomplished on July 14, 1995 by mechanical surging and purging with a disposable bailer. Prior to removing any water, the water level in each well was measured with a tape indicator, and recorded to the nearest 0.01-foot from the top of casing (TOC). Well development was monitored by testing for temperature, pH, and conductivity. Development continued until 2 consecutive readings of temperature and conductivity stabilized within 10% and the recorded pH measurements were within 0.5 units after removing a minimum of 3 well volumes. The groundwater field data collected during the monitoring well development is presented in Table 5.

Prior to sampling, well purging was accomplished until a minimum of three well volumes had been removed. Disposable bailers were used for purging and sampling of each well. Purging and sampling was conducted by slowly lowering and raising the bailer into and out of

the well to attempt to avoid excessive agitation of groundwater. Water generated during well development and purging was placed in 55-gallon drums, temporarily stored on-site pending permitting with the Metropolitan St. Louis Sewer District. The water was subsequently transported to the MSD Bissel Point Sewage Treatment Plant for disposal on September 1, 1995. Copies of the special discharge permit application, the MSD Special Discharge Permit, and disposal receipts are included in Appendix D.

Groundwater samples were collected from each of the three monitoring wells within 24 hours of purging. The samples were submitted to Environmetrics, Inc. for laboratory analysis of semi-volatile organics by USEPA Method 8270, volatile organics by USEPA Method 8240, and total metals by USEPA Methods 6010 and 7470. The samples were collected in order of analysis beginning with volatile organics, followed by semi-volatile organics, and metals. Samples for volatile organics analysis were placed in containers with zero headspace to prevent volatilization. Unfiltered samples were collected for metals analyses. After collection, the samples were placed in a cooler with ice to aid in preservation of the samples prior to shipment.

5.5 Slug Testing. To determine in-situ hydraulic conductivity, slug testing was conducted on Monitoring Wells MW-1, -2, and -3. In general, the slug tests were conducted using the following procedures:

- Equipment placed in the well was decontaminated with an alconox wash solution, followed by a potable water rinse.
- Groundwater levels were recorded to the nearest 0.01 feet with an electronic indicator tape.
- A PVC bailer attached to a nylon cord was utilized to remove a slug of water from the well.
- The rate of groundwater recovery in the well was monitored with an In-Situ 1000B Hermit data logger.

Data collected from each slug test were downloaded to a personal computer and analyzed using the Bouwer-Rice Method. The slug test analyses were conducted using the computer program AQTESOLV, compiled and distributed by Geraghty and Miller. Data are shown graphically in Appendix F, as time-recovery measurements, with computed hydraulic conductivity and well configuration parameters for each test. Sample calculations of hydraulic conductivity are included.

6.0 SUBSURFACE ASSESSMENT RESULTS

6.1 Site Stratigraphy and Hydrogeology. The shallow subsurface materials encountered at the site are comprised mainly of fill consisting of brown to gray, clay to silty clay with some brick, gravel, and rock. The fill material exhibited a variable moisture content ranging from dry to wet in places. Thin, isolated wet zones were observed within the fill but significant saturated

intervals were not evident. The depth to the base of the fill ranges from approximately 8.5 feet to 23 feet at the locations of SB1 and MW-1, respectively. The depth to the base of the fill was not identified in Soil Borings SB-2,-3, -4, -5, and -6 due to poor sample recovery.

A three-dimensional surface plot of the base of the fill is presented on Plate 6. At boring locations where the base of the fill was not determined because of poor recovery, the actual depths are probably greater. Generally, the fill is thicker in the north and northeast portions of the site.

Soils encountered below the fill included mainly soft to stiff, brown to gray, clays and silty clays. Soils present below the clays and silty clays included shaley clay and silty clay with thin, interbedded, layers of gravel. Bedrock was not observed during drilling. Boring logs and monitoring well diagrams are included in Appendix E. A hydrogeologic cross-section is shown on 7. Groundwater elevation data is presented in Table 6. A summary of the lithologies and saturated zones encountered during drilling of borings for the three monitoring wells follows:

Monitoring Well MW-1: Fill material was present to a depth of approximately 23 feet. The fill appeared to be partially saturated from approximately 20 to 23 feet. Below the fill, a saturated zone within a soft to medium stiff, brown to gray silty clay was observed from approximately 23 to 29 feet. Based on available groundwater elevation data this is an unconfined interval with the groundwater surface near the same depth at which saturated soils were first encountered. A stiff, unsaturated, brown silt with clay was present from approximately 29 to 30 feet.

Monitoring Well MW-2: Fill material was present to a depth of approximately 10 feet. Below the fill, soil types included silty clays, clays, and shaley clays. The soils were unsaturated to a depth of 42.5 feet. A saturated zone was observed from approximately 42.5 feet to 50.1 feet within a stiff, gray and mottled brown shaley clay. This saturated unit is unconfined based on drilling and water elevation data.

Monitoring Well MW-3: The approximate depth to the base of the fill was 10 feet. Beneath the fill, unsaturated, soft to medium stiff, brown and mottled gray silts and silty clays were observed to a depth of approximately 30 feet. A saturated, silty clay with thin layers of gravel was encountered at 30 feet and extended to approximately 40.5 feet. The potentiometric surface within the well is approximately 12 feet above the location of the saturated zone. This suggests that this saturated zone is a confined or semi-confined unit.

Several lithologically different saturated zones are present at different elevations. Based on available data, the site does not appear to contain a single uppermost saturated zone which extends throughout the property. Because the saturated intervals do not represent a continuous unit, it is not possible to determine hydraulic gradients to estimate the groundwater flow direction without additional monitoring wells.

Slug tests were conducted in each of the wells and results are presented in Appendix F. The slug test data indicates significant differences in hydraulic conductivity for each saturated zone. The data are summarized as follows:

Well Identification	Estimated Hydraulic Conductivity (cm/sec)
MW-1	1.2×10^{-5}
MW-2*	$> 1 \times 10^{-3}$
MW-3	2.0×10^{-4}

* Water level equilibrated very rapidly when slug removed. Data insufficient for analyses.

The data are consistent with each type of soil material tested. The different hydraulic conductivity and depth for each of the saturated intervals, supports the interpretation that each saturated zone is a separate unit. Therefore, interpretation of groundwater flow direction or velocity can not be made. Normally, hydraulic conductivity data can be used with conservative estimates of effective porosity and hydraulic gradient data to calculate an estimated average linear groundwater flow velocity within each of the saturated zones. Additional monitoring wells would be required to determine the extent of each water bearing zone and to establish hydraulic gradients.

In summary, the subsurface at the site is comprised of an upper layer of fill material of variable thickness underlain by mainly silty clay and clay with some shaley clay, and silty clay with gravel present at deeper depths. Groundwater was observed in three different soil types including silty clay, shaley clay and silty clay with gravel at different elevations. In our opinion, the saturated zones do not represent one laterally continuous unit but separate distinct saturated zones. Hydraulic connection between the saturated zones was not determined.

6.2 Subsurface Soil Analytical Results. Laboratory analysis of subsurface soil samples detected a wide range of metals concentrations and several semi-volatile organic (SVOA) compounds. Volatile organic compounds were generally not detected in the subsurface soil samples analyzed for volatile organics, except for the samples from SB-1, -6, and -9 where low levels of methylene chloride, acetone, and/or 2-butanone were detected.

Concentration ranges for the individual metals detected in the samples were non-detect to 26.1 parts per million (ppm) arsenic, 12.5 ppm to 521 ppm barium, non-detect to 6.17 ppm cadmium, 2.57 ppm to 48.5 ppm chromium, non-detect to 5,860 ppm lead, non-detect to 37 ppm

mercury, non-detect to 12.6 ppm selenium, and non-detect to 3.49 ppm mercury. The highest total metals concentrations were generally detected in soil samples obtained from fill materials. Metals concentrations detected in soil samples collected from native soils encountered at the base of the fill, were generally lower and could be background for the area. TCLP metals concentrations for the 10 soil samples with the highest total metals concentrations were below regulatory limits for TCLP metals and not characteristically hazardous in accordance with 40 CFR 261.24.

SVOA compounds, similar to coal tar contamination were detected at varying depths in each of the soil borings except Boring SB-8 where SVOA compounds were not detected. The highest total SVOA concentrations were detected in Borings SB-3 and SB-5 where total SVOA concentrations of 180 and 129.3 ppm were detected at depths of 15.5 and 17 feet, respectively.

Analytical testing results for the subsurface soil samples are summarized in Tables 2A and 2B. A site plan depicting total lead and total SVOA concentrations at various depths within each boring is attached as Plate 8. Analytical laboratory reports are presented in Appendix G.

6.3 Groundwater Analytical Results. Laboratory analyses of groundwater samples obtained from Monitoring Wells MW-1, -2, and -3 indicate that SVOA compounds were not detected in the samples. Total metals concentrations for individual metals detected in the groundwater samples ranged from non-detect to 244 parts per billion (ppb) lead, with the highest total metals concentrations detected in the groundwater sample collected from Monitoring Well MW-2. Volatile organic compounds were not detected in the groundwater samples collected from Monitoring Wells MW-1 and -2. However, acetone and 1,1-dichloroethane were detected in the groundwater sample collected from Monitoring Well MW-3 at concentrations of 11 and 6.3 ppb, respectively.

Analytical testing results for the groundwater samples are summarized in Table 3. Analytical laboratory reports are presented in Appendix H.

7.0 QUALITY ASSURANCE/QUALITY CONTROL

7.1 QA/QC Objectives. Equipment blank, trip blank, duplicate, matrix spike (MS), and matrix spike duplicate (MSD) samples were analyzed to assess the quality of the data resulting from the field sampling program. Equipment blank samples were analyzed to check for procedural contamination at the site, which may cause sample contamination. Trip blanks were used to assess contamination of samples during sample shipment and storage. Duplicate samples were analyzed to check for sampling and analytical reproducibility. Matrix spikes and matrix spike duplicates provide information about the effect of the sample matrix on the digestion and measurement methodology.

Equipment blank samples consisted of deionized water used to rinse sampling equipment following decontamination. The trip blanks consisted of deionized water samples prepared by the laboratory. Duplicate samples consisted of samples collected from the same general location as the original sample. The equipment blank, trip blank, and duplicate soil samples were submitted to the analytical laboratories to assess portions of the field sampling program.

7.2 Surface Soil Sampling QA/QC Data. Two equipment blanks and two duplicate samples were collected during surface sampling activities. The equipment blank samples were collected after the 10th and 32nd surface soil composite samples. The equipment blank and duplicate samples were analyzed for semi-volatile organic compounds and total lead. Duplicate samples indicated concentrations similar to the original surface samples. Equipment blanks were non-detect. Lab results for QA/QC samples are summarized in Table 1 and presented in Appendix B.

7.3 Subsurface Soil Sampling QA/QC Data. Two equipment blanks, two trip blanks, and two duplicate samples collected as split samples (replicates) were prepared during subsurface soil sampling activities. The equipment blank samples were collected following the 18th soil sample in the shallow borings and 9th sample in the deep borings. The duplicate and equipment blank samples were submitted for analysis of volatile organics, semi-volatile organics, and total metals. The trip blank samples were submitted for analysis of volatile organics only. Semi-volatile and total metals testing results for QA/QC samples are summarized in Tables 2A and 2B and presented in Appendix G.

Equipment blank samples analyzed for volatiles and semi-volatiles were non-detect except methylene chloride which exhibited concentrations of 0.120 and 0.730 mg/l in Equipment Blank samples SB5-8.5-EB and MW-2-15-EB, respectively. The methylene chloride detected in equipment blank samples appears to have resulted from laboratory contamination. Methylene chloride was not detected in subsurface soil samples which preceded the collection of the equipment blanks nor was it used as a part of the decontamination procedures. Metals, including barium, cadmium, and chromium, were detected in equipment blank samples at concentrations less than 0.13 mg/l.

Two trip blank samples were prepared on July 6, and 11, 1995 and were submitted for laboratory analysis of volatile organics. Laboratory analysis of the two trip blank samples indicated concentrations below the EQL for volatile organics.

Results of laboratory analyses indicate some differences in concentration between the duplicate/split sample and the original sample. An explanation for the concentration difference may include inadequate homogenization of the samples and matrix interferences. It should be noted that homogenization of clay-rich soils and fill materials may be incomplete due to the cohesiveness of the clay and the hardness of some items such as brick fragments. In addition, problems can be compounded in the lab because only a small portion of the sample is used for analysis.

printed on recycled paper

7.4 Laboratory QA/QC Data. Summaries of the laboratory QA/AC data are included with the lab results in Appendices, B, G, and H. In general, the analytical data are within prescribed ranges for surrogate recoveries and matrix spike/matrix spike duplicate (MS/MSD) concentrations. In some cases, however, matrix interferences were observed and are explained in the laboratory QA/QC summaries.

8.0 CONCLUSIONS

The stratigraphy of the site observed during drilling indicates the presence of fill materials consisting of brown to gray, clay to silty clay with some brick, gravel, and rock. The depth to the base of the fill ranges from approximately 8.5 feet to 23 feet at the locations of SB1 and MW-1, respectively. The depth to the base of the fill was not identified in Soil Borings SB-2, -3, -4, -5, and -6. Thus, the depth of fill materials may extend to greater depths at these locations.

Magnetic and infrared thermographic surveys of the site identified several subsurface anomalies which may be indicative of buried metal, subsurface voids, variations in the density of fill materials, drums, and/or contaminated soil plumes. A comparison of the data generated by the magnetic gradient and infrared thermographic surveys, indicates several corresponding subsurface anomalies. Soil borings SB-2, -3, -7, -8, -9 and Monitoring Wells MW-1 and -2 were completed in the vicinity of magnetic and/or infrared anomalies. Significant buried metal or coal tar deposits were not observed during drilling. Areas containing magnetic and/or infrared anomalies may be explored by completing test pits.

The analytical results of surface and subsurface soil samples collected at the site indicate that semi-volatile organic (SVOA) contamination, similar to coal tar, is prevalent throughout the site. SVOA concentrations detected in surface and subsurface soils exceed MDOH ASL's at 33 of the 40 surface soil sampling locations and in 20 of the 51 subsurface soil samples collected. In addition, lead concentrations which exceed MDOH ASL's were detected at surface soil sample location SS-37, and in 7 of the 51 subsurface soil samples. However, based on the TCLP metals analysis completed on 10 subsurface soil samples exhibiting the highest total metal concentrations, soils present at the site would not be classified as characteristically hazardous waste in accordance with 40 CFR 261.24.

In our opinion, the distribution of the contaminated soils detected at the site appears to indicate random placement of contaminated fill materials and the grading of contaminated surface soils. Elevated concentrations of total lead and SVOA's appear to be limited to surface soils and subsurface fill materials and do not appear to have migrated to native soils encountered at the base of the fill. However, the horizontal and vertical extent of soil contamination has not been defined. Soil contamination detected in surface and subsurface soils adjacent to the school

building and at perimeter locations of the site indicate that soil contamination may extend beneath the school building and to off-site areas.

Thin, isolated wet zones were observed within the fill materials. However, significant saturated intervals were not evident. Below the base of the fill, groundwater was observed in three different soil types including silty clay, shaley clay and silty clay with gravel at different elevations. In our opinion, the saturated zones do not appear to represent one laterally continuous unit but separate distinct saturated zones. Hydraulic connection between the saturated zones was not determined. Additional monitoring wells would be required to determine the extent of each water bearing zone and to establish hydraulic gradients. Laboratory analysis of groundwater samples obtained from Monitoring Wells MW-1, -2, and -3 appear to indicate that groundwater has not been impacted by the semi-volatile organic soil contamination detected at the site.

9.0 REMEDIAL ALTERNATIVES REVIEW

9.1 Discussion. Typical remedial alternatives utilized at coal tar contaminated sites have included excavation and off-site disposal, excavation and on-site treatment via thermal desorption, soil washing and/or bioremediation techniques, and in-situ treatment technologies including bioremediation and soil vapor extraction. However, based on the information obtained during previous assessment activities and the assessment conclusions discussed above, it is our opinion that remedial options are limited at this site and that the ultimate goal of remediation should not be one of total removal of all contaminants detected at the site. Our opinions are based on the following:

- Historical aerial photographs indicate that portions of the site and extensive off-site areas north and west of the site were previously used for landfilling purposes. Soil contamination detected at the site appears to be the result of the random placement of contaminated fill materials and grading of contaminated surface soils. While the total extent of contamination has not been defined, it appears that surface and subsurface soil contamination is likely to extend to off-site areas. Based on this information, it appears that the soil contamination detected at the Hubert Wheeler State School represents a portion of a much larger problem.

- In our opinion, the heterogeneity of the contaminated subsurface fill materials detected at the site indicate that in-situ treatment technologies would likely be unsuccessful. In addition, in-situ treatment technologies are generally considered long term processes, include significant costs for engineering design, and require advanced pilot testing to determine if the various techniques would be successful at the site.

- Excavation and on-site treatment technologies generally require large areas to facilitate handling of the contaminated soils. Furthermore, on-site treatment technologies are generally not performed in residential areas due to increased potential for exposure at off-site areas.

We recommend a combination of remedial techniques including partial excavation, waste containment, and the implementation of institutional controls. Our recommendation is based on the nature and extent of contamination detected at the site, risk based "Any Use Soil Levels," established by the Missouri Department of Health, and the physical setting of the site. Following is a brief discussion of the recommended remedial approach and an estimate of probable costs.

9.2 Recommended Remedial Approach. The goals of the recommended remedial approach are to excavate and remove surface soil contamination detected at the site, investigate magnetic and infrared anomalies in an attempt to identify and remove potential source materials such as buried drums and/or coal tar deposits, and reduce the potential for human and environmental exposure at the site.

Excavation activities would be performed to remove contaminated soils from around subsurface utilities and 2 to 3 feet of surface soils at unpaved portions of the site. In addition, test pit excavations would be performed in the vicinity of subsurface magnetic and infrared anomalies to identify and remove potential source materials. Soils excavated during surface soil removal and test pit excavations would be transported off-site for disposal at an approved disposal facility. Waste characterization of contaminated soils indicates the soils would not be considered hazardous and could be disposed as special waste. Buried drums and/or coal tar deposits removed during test pit excavations would require additional characterization and may require disposal as special waste.

Following completion of the excavation activities, a 2-foot compacted clay cap would be installed over the excavated areas. The purpose of the clay cap would be to limit infiltration of rainwater into contaminated subsurface soils in order to reduce the potential for migration of contaminants to underlying native soils and groundwater. A 1-foot vegetative layer would be placed over the clay cap, graded to prevent ponding of water on the surface, and seeded to prevent erosion of the cap. Paved portions of the site impacted by the test pit excavations would be backfilled and repaved to match existing pavement.

Institutional controls to monitor environmental exposure and limit human exposures to contaminated subsurface soils will likely be required. The institutional controls may include development of a site health and safety plan which documents the subsurface contamination remaining at the site and details health and safety procedures required during any subsurface excavations performed at the site. In addition, periodic groundwater monitoring and indoor air sampling may be required to monitor for the occurrence of groundwater contamination at the site and to assist in determining the exposure, if any, to inhabitants of the school building.

9.3 Statement of Probable Cost. A statement of probable cost associated with the recommended remedial approach is presented below. The costs are estimates only and are based on broad assumptions including the volume of soil to be excavated and disposed, the quantity and cost of fill materials, and the potential for encountering hazardous wastes during test pit excavation activities. Costs may increase or decrease significantly as final remedial work plans are developed.

ESTIMATED PROBABLE REMEDIAL COSTS

TASK DESCRIPTION	ESTIMATED COST
Engineering, Cap Design, and Development of Remedial Work Plan	$41,500.00
Excavate, Transport, and Dispose Approximately 11,500 yds^3 Special Waste Soils	434,600.00
Engineering Oversight and Testing	59,900.00
Backfill, Clay Cap Installation, and Resurfacing	285,600.00
Analytical Testing and Waste Characterization	39,900.00
Transportation and Disposal - Hazardous Waste	19,900.00
Preparation of Remediation Report and Site Safety Plan	22,100.00
TOTAL ESTIMATED COST	$903,500.00
15% Contingency	135,500.00
BUDGET ESTIMATE	**$1,039,000.00**

TABLE 1

ANALYTICAL RESULTS SUMMARY (Surface Soil Samples)[1]

PARAMETERS DETECTED	MDOH ASL[2]	COMPOSITE SAMPLE LOCATIONS										
		SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11
total lead	240	91.3	38.5	31.9	18.4	25.3	37.6	55.3	52.5	43.7	22.9	199
Acenaphthene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Flourene	2300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene		1.700	1.800	0.690	ND	0.410	0.820	0.630	0.710	0.470	ND	2.500
Anthracene	17000	0.440	0.540	ND	ND	ND	ND	ND	ND	ND	ND	0.500
Carbazole		ND	0.420	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	2300	2.400	3.600	1.200	0.460	0.670	1.100	0.970	1.070	0.800	ND	3.300
Pyrene	1700	ND	ND	ND	0.450	0.640	1.090	0.950	ND	0.850	ND	3.400
Butylbenzylphthalate	5600	ND	ND	ND	ND	ND	ND	ND	1.080	ND	ND	ND
Benzo(a)anthracene	0.44	1.300	1.700	0.660	ND	ND	0.650	0.490	0.530	0.450	ND	1.600
Chrysene	0.44	1.200	2.000	0.770	ND	ND	0.640	0.480	0.530	ND	ND	1.700
bis(2-Ethylhexyl) phthalate	360	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.44	1.700	2.900	1.070	ND	0.490	0.990	0.650	0.750	0.600	ND	2.100
Benzo(k)Fluoranthene	0.44	0.620	0.860	0.450	ND	ND	0.400	ND	ND	ND	ND	0.610
Benzo(a)Pyrene	0.44	1.200	1.900	0.680	ND	ND	0.600	ND	0.420	ND	ND	1.400
Indeno(1,2,3-cd)pyrene	0.44	0.430	0.800	ND	ND	ND	ND	ND	ND	ND	ND	0.650
Dibenzo(a,h)anthracene	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene		ND	0.610	ND	ND	ND	ND	ND	ND	ND	ND	0.490
Naphthalene	230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - MDOH ASL's listed in September 1, 1992, Missouri Register, Volume 17, Number 17
ND - Parameter not detected above the analytical detection limit
Shaded values indicate levels which exceed MDOH Any Use Soil Levels for residential sites.

TABLE 1
ANALYTICAL RESULTS SUMMARY (Surface Soil Samples)[1]
- continued -

PARAMETERS DETECTED	MDOH ASL[2]	COMPOSITE SAMPLE LOCATIONS										
		SS-12	SS-13	SS-14	SS-15	SS-16	SS-17	SS-#-01[3]	2498:EB:1-S17[4]	SS-18	SS-19	SS-20
total lead	240	97.2	105	36.9	42.1	62.2	40.9	23.2	ND	58.6	61.4	33.0
Acenaphthene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Flourene	2300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene		1.100	2.000	ND	ND	0.700	ND	ND	ND	0.650	1.100	2.600
Anthracene	17000	ND	0.450	ND	ND	ND	ND	ND	ND	ND	ND	0.660
Carbazole		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	2300	1.500	2.500	ND	ND	0.970	ND	ND	ND	0.890	1.500	2.500
Pyrene	1700	1.600	2.500	ND	ND	1.040	ND	ND	ND	0.980	1.400	2.600
Butylbenzylphthalate	5600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.44	0.740	1.300	ND	ND	0.570	ND	ND	ND	0.500	0.750	1.200
Chrysene	0.44	0.750	1.300	ND	ND	0.560	ND	ND	ND	0.480	0.730	1.200
bis(2-Ethylhexyl) phthalate	360	0.460	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.44	1.000	1.600	ND	ND	0.760	ND	ND	ND	0.660	0.980	1.400
Benzo(k)Fluoranthene	0.44	0.430	0.560	ND	ND	ND	ND	ND	ND	ND	0.440	0.450
Benzo(a)Pyrene	0.44	0.660	1.200	ND	ND	0.460	ND	ND	ND	ND	0.690	0.970
Indeno(1,2,3-cd)pyrene	0.44	ND	0.560	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene		ND	0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - MDOH ASL's listed in September 1, 1992, Missouri Register, Volume 17, Number 17
ND - Parameter not detected above the analytical detection limit
Shaded values indicate levels which exceed MDOH Any Use Soil Levels for residential sites.

3 - Surface Sample SS-#-01 is a duplicate sample taken from Surface Sample SS-17.
4 - Sample 2498:EB:1-S17 is an equipment blank sample.

TABLE 1
ANALYTICAL RESULTS SUMMARY (Surface Soil Samples)[1]
- continued -

PARAMETERS DETECTED	MDOH ASL[2]	COMPOSITE SAMPLE LOCATIONS										
		SS-21	SS-22	SS-23	SS-24	SS-25	SS-26	SS-27	SS-28	SS-29	SS-30	SS-31
total lead	240	38.3	42.0	104	65.6	90.0	72.7	88.3	67.8	135	116	63.8
Acenaphthene		ND	ND	ND	ND	ND	0.410	ND	ND	ND	ND	ND
Dibenzofuran		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Flourene	2300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene		0.430	2.400	3.100	0.690	1.060	5.200	0.820	0.450	1.050	1.400	2.200
Anthracene	17000	ND	0.510	0.690	ND	ND	0.800	ND	ND	ND	ND	0.460
Carbazole		ND	ND	ND	ND	ND	0.730	ND	ND	ND	ND	ND
Fluoranthene	2300	0.540	ND	3.900	0.930	1.500	4.400	1.600	0.610	1.400	1.900	2.800
Pyrene	1700	0.470	3.400	3.600	0.940	1.400	3.900	1.600	0.580	ND	1.700	2.600
Butylbenzylphthalate	5600	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.960	ND
Benzo(a)anthracene	0.44	ND	1.300	1.700	0.490	0.700	1.500	1.000	ND	0.680	0.930	1.300
Chrysene	0.44	ND	1.300	1.700	0.430	0.730	1.700	1.000	ND	0.680	0.960	1.300
bis(2-Ethylhexyl) phthalate	360	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.100	ND
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.770	ND
Benzo(b)Fluoranthene	0.44	ND	1.400	2.000	0.570	0.880	2.000	1.300	0.470	0.840	1.100	1.500
Benzo(k)Fluoranthene	0.44	ND	0.440	0.680	ND	ND	0.580	0.530	ND	ND	0.500	0.520
Benzo(a)Pyrene	0.44	ND	1.080	1.600	ND	0.560	1.400	0.920	ND	0.540	0.790	1.100
Indeno(1,2,3-cd)pyrene	0.44	ND	0.430	0.800	ND	ND	0.420	ND	ND	ND	ND	0.530
Dibenzo(a,h)anthracene	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene		ND	0.440	0.620	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	230	ND	ND	ND	ND	ND	0.690	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - MDOH ASL's listed in September 1, 1992, Missouri Register, Volume 17, Number 17
ND - Parameter not detected above the analytical detection limit
Shaded values indicate levels which exceed MDOH Any Use Soil Levels for residential sites.

TABLE 1
ANALYTICAL RESULTS SUMMARY (Surface Soil Samples)[1]
- continued -

PARAMETERS DETECTED	MDOH ASL[2]	COMPOSITE SAMPLE LOCATIONS										
		SS-32	SS-33	SS-#-2[3]	2498:EB:2-S33[4]	SS-34	SS-35	SS-36	SS-37	SS-38	SS-39	SS-40
total lead	240	71.1	52.9	54.0	ND	128	63.0	41.8	1,620	48.5	74.9	234
Acenaphthene		ND	ND	ND	ND	ND	ND	0.690	ND	1.080	ND	ND
Dibenzofuran		ND	ND	ND	ND	ND	ND	ND	ND	0.540	ND	ND
Flourene	2300	ND	ND	ND	ND	ND	ND	0.770	ND	1.300	ND	ND
Phenanthrene		1.900	0.620	0.650	ND	1.700	1.900	10.000	2.100	16.000	2.000	ND
Anthracene	17000	0.520	ND	ND	ND	0.470	0.500	2.800	0.510	4.500	0.500	ND
Carbazole		ND	ND	ND	ND	ND	ND	1.400	ND	2.600	ND	ND
Fluoranthene	2300	ND	0.830	0.920	ND	2.100	2.800	12.000	2.800	23.000	2.300	ND
Pyrene	1700	2.700	ND	0.910	ND	ND	ND	9.700	ND	16.000	2.300	0.430
Butylbenzylphthalate	5600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.44	1.300	0.460	0.500	ND	1.010	1.300	5.000	1.300	8.600	1.090	ND
Chrysene	0.44	1.200	0.450	0.480	ND	0.960	1.300	4.700	1.400	6.600	1.010	ND
bis(2-Ethylhexyl) phthalate	360	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.44	1.400	0.640	0.680	ND	1.300	1.700	5.900	1.700	16.000	1.400	ND
Benzo(k)Fluoranthene	0.44	0.540	ND	ND	ND	0.560	0.680	1.900	0.610	2.500	0.550	ND
Benzo(a)Pyrene	0.44	1.100	ND	ND	ND	0.900	1.300	4.400	1.200	9.900	0.940	ND
Indeno(1,2,3-cd)pyrene	0.44	ND	ND	ND	ND	ND	0.410	1.900	0.420	3.800	ND	ND
Dibenzo(a,h)anthracene	0.44	ND	ND	ND	ND	ND	ND	0.450	ND	0.940	ND	ND
Benzo(g,h,i)perylene		ND	ND	ND	ND	ND	ND	1.500	ND	3.000	ND	ND
Naphthalene	230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - MDOH ASL's listed in September 1, 1992, Missouri Register, Volume 17, Number 17
ND - Parameter not detected above the analytical detection limit
Shaded values indicate levels which exceed MDOH Any Use Soil Levels for residential sites.

3 - Surface Sample SS-#-2 is a duplicate sample taken from Surface Sample SS-33.
4 - Sample 2498:EB:2-S33 is an equipment blank sample.

TABLE 2A

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS						
	SB1-2	SB1-7	SB1-13.5	SB1-18.5	SB2-2	SB2-6	SB2-12
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND
Acenaphythylene	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	1.200	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	1.200	ND
Phenanthrene	1.500	ND	ND	ND	0.860	11.000	ND
Anthracene	0.390	ND	ND	ND	ND	3.400	ND
Carbazole	ND	ND	ND	ND	ND	1.600	ND
Di-n-butylphthalate	ND	ND	ND	0.500	ND	ND	0.480
Fluoranthene	2.500	ND	ND	ND	1.400	19.000	ND
Pyrene	1.700	ND	ND	ND	1.060	14.000	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.920	ND	ND	ND	0.510	7.900	ND
Chrysene	1.000	ND	ND	ND	0.660	6.200	ND
bis(2-Ethylhexyl) phthalate	0.430	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	1.100	ND	ND	ND	0.730	9.200	ND
Benzo(k)Fluoranthene	0.810	ND	ND	ND	0.800	2.800	ND
Benzo(a)Pyrene	0.860	ND	ND	ND	0.460	7.000	ND
Indeno(1,2,3-cd)pyrene	0.430	ND	ND	ND	ND	2.200	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	0.520	ND	ND	ND	ND	2.100	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the analytical detection limit

TABLE 2A

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]
- continued -

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS						
	SB3-5	SB3-8	SB3-11.5	SB3-15.5	SB4-5	SB4-13	SB4-18.5
2-Methylnaphthalene	ND	ND	0.740	3.700	ND	ND	ND
Acenaphthylene	ND	ND	0.420	1.500	ND	ND	ND
Acenaphthene	ND	ND	0.930	3.600	ND	ND	ND
Dibenzofuran	ND	ND	0.600	3.900	ND	ND	ND
Fluorene	ND	ND	1.100	4.800	ND	ND	ND
Phenanthrene	ND	ND	13.000	33.000	5.700	0.810	ND
Anthracene	ND	ND	2.900	9.100	ND	ND	ND
Carbazole	ND	ND	1.300	5.500	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	15.000	30.000	6.400	0.870	ND
Pyrene	ND	ND	13.000	23.000	6.600	0.840	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	6.100	11.000	2.500	0.380	ND
Chrysene	ND	ND	4.900	10.500	2.800	0.580	ND
bis(2-Ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	6.600	11.000	3.300	0.510	ND
Benzo(k)Fluoranthene	ND	ND	1.010	2.800	ND	0.780	ND
Benzo(a)Pyrene	ND	ND	5.500	9.800	2.300	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	1.700	3.800	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	0.530	1.100	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	1.700	3.700	ND	ND	ND
Naphthalene	ND	ND	0.920	8.200	ND	ND	ND

1 - Analytical Results presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the laboratory detection limit

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]
- continued -

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS									
	SB5-5	SB5-8.5	SB20-8.5-D1[3]	SB5-8.5-EB[2]	SB5-13	SB5-17	SB6-3	SB6-9	SB6-12	SB6-20
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	0.460	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	1.200	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	0.760	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	1.090	ND	ND	ND	ND
Phenanthrene	ND	2.700	5.800	ND	22.000	17.000	ND	ND	0.510	ND
Anthracene	ND	0.550	1.020	ND	5.200	4.500	ND	ND	ND	ND
Carbazole	ND	ND	ND	ND	2.300	2.900	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	4.500	7.500	ND	28.000	29.000	ND	ND	0.480	ND
Pyrene	ND	3.100	6.700	ND	19.000	20.000	ND	ND	0.590	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	1.700	3.600	ND	9.500	9.800	ND	ND	ND	ND
Chrysene	ND	1.700	3.500	ND	9.200	10.500	ND	ND	0.470	ND
bis(2-Ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	ND	2.200	4.300	ND	11.000	12.000	ND	ND	ND	ND
Benzo(k)Fluoranthene	ND	0.870	1.100	ND	4.100	2.100	ND	ND	ND	ND
Benzo(a)Pyrene	ND	1.600	3.500	ND	8.500	8.500	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	0.760	1.400	ND	3.900	4.000	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	0.420	ND	ND	1.100	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	0.810	1.500	ND	4.100	3.900	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	0.450	ND	ND	ND	ND

1 - Analytical I are g d as Parts Per Million (mg/kg)
2 - Subsurface le SB20-8.5-D1 is a duplicate sample taken from Subsurface Sample SB5-8.5.
3 - Sample SB5-8.5-EB is an equipment sample.
ND - Parameter not detected above the analytical detection

TABLE 2A

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]
- continued -

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS						
	SB7-5	SB7-9	SB7-11	SB7-18	SB8-3	SB8-16	SB8-20
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	0.610	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND	ND
Carbazole	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	0.710	ND	ND	ND
Fluoranthene	ND	ND	ND	0.750	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND	0.500	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	0.420	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Pyrene	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per M on (mg/kg)
ND - Parameter detected above the analytical detection limit

TABLE 2A

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]
- continued -

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS								
	SB9-3	SB9-7	SB9-15	SB9-20	MW-1:2	MW-1:7	MW-1:13	MW-1:18	MW-1:26
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	.480	ND	ND	2.100	15.000	0.640	ND	ND
Anthracene	ND	ND	ND	ND	0.500	3.400	ND	ND	ND
Carbazole	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	2.000	18.000	1.200	ND	ND
Pyrene	ND	ND	ND	ND	1.500	12.000	1.050	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND	ND	0.760	6.000	0.660	ND	ND
Chrysene	ND	0.450	ND	ND	0.780	6.000	0.870	ND	ND
bis(2-Ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	ND	ND	0.810	6.500	1.300	ND	ND
Benzo(k)Fluoranthene	ND	ND	ND	ND	0.820	4.000	0.870	ND	ND
Benzo(a)Pyrene	ND	ND	ND	ND	0.600	5.200	0.750	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	2.300	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	2.900	0.540	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the analytical detection limit

TABLE 2A

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]
- continued -

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS								
	MW-2:4	MW-2:10	MW-2:15	SB22-15-D2[2]	MW-2-15-EB[3]	MW-2:20	MW-2:30	MW-2:40	MW-2:50
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphythylene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	9.000	1.600	ND	ND	ND	ND	ND	ND	ND
Anthracene	2.400	0.420	ND	ND	ND	ND	ND	ND	ND
Carbazole	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	15.000	2.400	ND	ND	ND	ND	ND	ND	ND
Pyrene	12.000	1.800	ND	ND	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	6.200	0.860	ND	ND	ND	ND	ND	ND	ND
Chrysene	6.000	0.870	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	7.500	0.940	ND	ND	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	4.300	0.860	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Pyrene	6.100	0.730	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.700	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	3.300	0.460	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - Analytical l s are presented as Parts Per Million (mg/kg).
2 - Subsurface Sample SB22-15-D2 is a duplicate sample taken from Subsurface Sample MW-2:15.
3 - Sample MW-2-15-EB is an equipment blank sample.
ND - Parameter not detected above the analytical detection l

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]
- continued -

SEMI-VOLATILE ORGANICS DETECTED	SUBSURFACE SAMPLE LOCATIONS					
	MW-3:3	MW-3:7	MW-3:15	MW-3:20	MW-3:30	MW-3:39
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND
Acenaphythylene	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND
Phenanthrene	0.900	4.400	ND	ND	ND	ND
Anthracene	ND	1.300	ND	ND	ND	ND
Carbazole	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND	ND
Fluoranthene	1.400	9.100	ND	ND	ND	ND
Pyrene	0.980	7.100	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.540	3.700	ND	ND	ND	ND
Chrysene	0.690	3.300	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.820	4.500	ND	ND	ND	ND
Benzo(k)Fluoranthene	0.820	0.880	ND	ND	ND	ND
Benzo(a)Pyrene	0.520	3.400	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	1.400	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	1.400	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND

1 - Analytical Results are presented as Parts Per Million (mg/kg).

ND - Parameter not detected above the analytical detection limit.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS						
	SB1-2	SB1-7	SB1-13.5	SB1-18.5	SB2-2	SB2-6	SB2-12
TOTAL METALS							
Arsenic	ND	ND	17.5	ND	ND	ND	ND
Barium	188	155	159	101	119	240	85.0
Cadmium	ND	ND	ND	ND	0.291	0.761	0.508
Chromium	9.26	6.04	14.3	14.6	11.8	9.49	12.9
Lead	35.6	97.3	9.50	8.41	37.6	756	44.1
Mercury	0.120	ND	ND	ND	0.130	2.07	0.500
Selenium	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	0.6440	ND
TCLP METALS							
Arsenic	NS	ND	NS	NS	NS	ND	NS
Barium	NS	1.04	NS	NS	NS	0.267	NS
Cadmium	NS	ND	NS	NS	NS	0.00600	NS
Chromium	NS	ND	NS	NS	NS	ND	NS
Lead	NS	ND	NS	NS	NS	0.875	NS
Mercury	NS	0.001000	NS	NS	NS	0.0003000	NS
Selenium	NS	ND	NS	NS	NS	ND	NS
Silver	NS	ND	NS	NS	NS	ND	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the analytical detection limit.
NS - Sample not submitted for TCLP Metals analyses.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS						
	SB3-5	SB3-8	SB3-11.5	SB3-15.5	SB4-5	SB4-13	SB4-18.5
TOTAL METALS							
Arsenic	ND	ND	ND	ND	ND	ND	ND
Barium	116	67.3	132	207	165	18.4	45.5
Cadmium	1.83	1.23	1.51	1.39	1.43	0.502	5.57
Chromium	15.2	9.38	11.6	12.4	12.2	2.57	9.92
Lead	39.8	13.8	140	80.9	115	64.1	33.6
Mercury	0.270	0.260	0.570	0.590	0.270	0.190	0.160
Selenium	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND
TCLP METALS							
Arsenic	NS	NS	ND	NS	ND	NS	NS
Barium	NS	NS	0.698	NS	1.32	NS	NS
Cadmium	NS	NS	0.00600	NS	0.00700	NS	NS
Chromium	NS	NS	ND	NS	ND	NS	NS
Lead	NS	NS	2.27	NS	ND	NS	NS
Mercury	NS	NS	0.0004000	NS	0.0006000	NS	NS
Selenium	NS	NS	ND	NS	ND	NS	NS
Silver	NS	NS	ND	NS	ND	NS	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the analytical detection limit.
NS - Sample not submitted for TCLP Metals analyses.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS									
	SB5-5	SB5-8.5	SB20-8.5-D1[2]	SB5-8.5-EB[3]	SB5-13	SB5-17	SB6-3	SB6-9	SB6-12	SB6-20
TOTAL METALS										
Arsenic	ND	ND	ND	ND	ND	12.0	ND	ND	15.0	ND
Barium	77.7	105	128	0.0440	136	257	39.2	66.5	151	122
Cadmium	2.27	1.28	1.09	0.00800	1.34	3.30	0.537	0.746	1.49	1.25
Chromium	19.7	9.11	9.05	0.130	7.94	14.0	5.10	5.45	14.6	15.4
Lead	22.1	51.5	100	ND	143	70.7	9.40	42.3	157	7.78
Mercury	0.190	1.03	1.30	ND	37.0	25.3	1.80	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TCLP METALS										
Arsenic	NS	NS	NS	NS	ND	NS	NS	NS	ND	NS
Barium	NS	NS	NS	NS	0.398	NS	NS	NS	1.09	NS
Cadmium	NS	NS	NS	NS	0.0160	NS	NS	NS	0.00800	NS
Chromium	NS	NS	NS	NS	0.0100	NS	NS	NS	ND	NS
Lead	NS	NS	NS	NS	ND	NS	NS	NS	0.157	NS
Mercury	NS	NS	NS	NS	0.0004000	NS	NS	NS	0.001600	NS
Selenium	NS	NS	NS	NS	ND	NS	NS	NS	ND	NS
Silver	NS	NS	NS	NS	ND	NS	NS	NS	ND	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - Subsurface Sample SB20-8.5-D1 is a duplicate sample taken from Subsurface Sample SB5-8.5.
3 - Sample SB5-8.5-EB is an equipment blank sample.
ND - Parameter not detected above the analytical detection limit
NS - Sample not submitted for TCLP Metals analyses.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS						
	SB7-5	SB7-9	SB7-11	SB7-18	SB8-3	SB8-16	SB8-20
TOTAL METALS							
Arsenic	ND	ND	ND	ND	ND	ND	ND
Barium	190	14.5	21.0	ND	16.2	102	92.9
Cadmium	6.17	1.07	ND	0.476	ND	0.805	1.56
Chromium	27.2	5.24	3.11	7.02	6.55	13.6	19.0
Lead	13.2	17.4	19.2	14.2	45.1	8.85	11.0
Mercury	ND	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND
TCLP METALS							
Arsenic	NS	NS	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS
Chromium	NS	NS	NS	NS	NS	NS	NS
Lead	NS	NS	NS	NS	NS	NS	NS
Mercury	NS	NS	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS	NS	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the analytical detection limit
NS - Sample not submitted for TCLP Metals analyses.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS								
	SB9-3	SB9-7	SB9-15	SB9-20	MW-1:2	MW-1:7	MW-1:13	MW-1:18	MW-1:26
TOTAL METALS									
Arsenic	ND	14.1	ND	ND	ND	ND	26.1	ND	ND
Barium	138	331	175	65.4	91.1	194	521	136	174
Cadmium	1.32	3.87	0.757	0.549	1.26	1.50	5.26	2.89	1.99
Chromium	8.59	15.4	13.5	15.3	13.2	11.9	26.8	23.1	15.0
Lead	126	5,860	12.1	9.90	51.4	227	510	505	314
Mercury	0.200	2.51	ND	ND	ND	1.03	1.07	ND	ND
Selenium	ND	ND	ND	ND	12.0	ND	ND	ND	ND
Silver	0.6270	0.8740	ND	ND	ND	ND	3.490	0.6010	ND
TCLP METALS									
Arsenic	NS	ND	NS	NS	NS	NS	ND	NS	NS
Barium	NS	0.402	NS	NS	NS	NS	0.496	NS	NS
Cadmium	NS	0.0120	NS	NS	NS	NS	0.0190	NS	NS
Chromium	NS	ND	NS	NS	NS	NS	ND	NS	NS
Lead	NS	0.100	NS	NS	NS	NS	0.290	NS	NS
Mercury	NS	0.0004000	NS	NS	NS	NS	0.003400	NS	NS
Selenium	NS	ND	NS	NS	NS	NS	ND	NS	NS
Silver	NS	ND	NS	NS	NS	NS	ND	NS	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
ND - Parameter not detected above the analytical detection limit
NS - Sample not submitted for TCLP Metals analyses.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS								
	MW-2:4	MW-2:10	MW-2:15	SB22-15-D2[2]	MW-2-15-EB[3]	MW-2:20	MW-2:30	MW-2:40	MW-2:50
TOTAL METALS									
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	255	136	117	137	0.0550	77.3	12.5	24.5	18.7
Cadmium	2.21	1.58	1.12	1.00	ND	0.806	2.29	3.36	3.47
Chromium	22.4	14.0	14.7	16.5	ND	9.95	20.7	27.3	29.0
Lead	464	15.1	8.43	8.94	ND	8.19	ND	ND	15.7
Mercury	0.530	ND	ND	ND	ND	0.130	ND	0.210	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND
TCLP METALS									
Arsenic	ND	NS	NS	NS	NS	NS	NS	NS	NS
Barium	1.59	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	0.0120	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	ND	NS	NS	NS	NS	NS	NS	NS	NS
Lead	0.364	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	ND	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	ND	NS	NS	NS	NS	NS	NS	NS	NS
Silver	ND	NS	NS	NS	NS	NS	NS	NS	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - Subsurface Sample SB22-15-D2 is a duplicate sample of Subsurface Sample MW-2:15.
3 - Sample MW-2-15-EB is an equipment blank sample.
ND - Parameter not detected above the analytical detection limit
NS - Sample not submitted for TCLP Metals analyses.

TABLE 2B

ANALYTICAL RESULTS SUMMARY (Subsurface Soil Samples)[1]

ANALYTE	SUBSURFACE SAMPLE LOCATIONS					
	MW-3:3	MW-3:7	MW-3:15	MW-3:20	MW-3:30	MW-3:39
TOTAL METALS						
Arsenic	ND	ND	ND	ND	ND	ND
Barium	159	385	106	207	126	50.8
Cadmium	1.85	5.22	1.40	3.11	1.79	1.36
Chromium	27.8	26.9	21.0	48.5	16.1	26.0
Lead	94.2	535	10.0	17.3	13.4	13.1
Mercury	0.140	0.550	ND	ND	0.120	ND
Selenium	ND	ND	ND	ND	ND	ND
Silver	ND	0.7460	ND	ND	ND	ND
TCLP METALS						
Arsenic	NS	ND	NS	NS	NS	NS
Barium	NS	1.87	NS	NS	NS	NS
Cadmium	NS	0.0130	NS	NS	NS	NS
Chromium	NS	ND	NS	NS	NS	NS
Lead	NS	0.168	NS	NS	NS	NS
Mercury	NS	0.0002000	NS	NS	NS	NS
Selenium	NS	ND	NS	NS	NS	NS
Silver	NS	ND	NS	NS	NS	NS

1 - Analytical Results are presented as Parts Per Million (mg/kg)
2 - MDOH ASL's listed in September 1, 1992, Missouri Register, Volume 17, Number 17
ND - Parameter not detected above the analytical detection limit
NS - Sample not submitted for TCLP Metals analyses.

TABLE 3

Analytical Results Summary for Groundwater Samples[1]

Well ID	Date	Total Metals								Volatile Organics Detected	Semi-Volatile Organics Detected
		Total Arsenic	Total Barium	Total Cadmium	Total Chromium	Total Lead	Total Mercury	Total Selenium	Total Silver		
MW-1	7/19/95	ND	0.111	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	7/19/95	0.217	0.180	0.00900	0.216	0.244	0.0003	ND	ND	ND	ND
MW-3	7/19/95	ND	0.053	ND	0.0170	ND	ND	ND	ND	Acetone (0.011) 1,1-Dichloroethane (0.0063)	ND

[1] Analytical results are presented in Parts Per Million (mg/L).
ND - Parameter not detected above the analytical detection limit.

TABLE 4

Monitoring Well Data

Monitoring Well Number[1]	Well Construction Data							Summary of Well Gauging Data			
	Date Installed	Total Depth of Boring		Screen Elevation		Top of Well Casing Elevation	Ground Elevation	Date Measured	Depth, Ft.[4]	Elevation	Product Thickness (Ft.)
		Depth, Ft.[2]	Elevation[3]	From	To						
MW-1	7/11/95	30.0	71.2	71.8	81.8	101.1	101.2	7/18/95	23.14	78.0	0.00
MW-2	7/12/95	50.1	51.1	51.6	61.6	101.2	101.2	7/18/95	41.82	59.4	0.00
MW-3	7/13/95	40.5	60.5	61.0	71.0	100.8	101.0	7/18/95	17.95	82.9	0.00

[1] See Plate 5 for well locations.
[2] Depths are measured in feet below land surface.
[3] Elevations are referenced to site datum.
[4] Depths are measured in feet below top of casing.

REPORTE/249803.TBL

TABLE 5

GROUNDWATER FIELD DATA SUMMARY

Monitoring Well	Volume Removed (gallons)	Temperature (°F)	Specific Conductivity (μmohs/cm)	pH -Log [H+]
MW-1	0.5	70.2	2,810	7.53
	1.0	70.2	2,880	7.17
	2.0	70.2	2,900	7.13
	3.0	70.4	2,880	7.16
MW-2	1.0	73.7	2,230	5.98
	2.0	73.1	2,070	5.92
	3.0	71.5	2,060	5.90
	4.0	72.0	2,060	5.88
MW-3	2.0	85.6	1,250	6.76
	4.0	76.1	1,180	7.58
	6.0	74.2	1,290	7.40
	8.0	73.9	1,260	7.35
	10.0	73.5	1,250	7.32
	12.0	73.2	1,240	7.35

TABLE 6

Monitoring Well Gauging Data

Monitoring Well Number[1]	Summary of Well Gauging Data			
	Date Measured	Depth Ft.[3]	Elevation[2]	Well Gauging Event
MW-1	07/12/95	26.7	74.4	Subsequent to Monitoring Well Installation
	07/14/95	23.76	77.3	Prior to Monitoring Well Development
	07/18/95	23.14	78.0	Prior to Monitoring Well Purging
	09/01/95	22.89	78.2	Subsequent to Monitoring Well Sampling
MW-2	07/12/95	42.0	59.2	Subsequent to Monitoring Well Installation
	07/14/95	42.06	59.1	Prior to Monitoring Well Development
	07/18/95	41.82	59.4	Prior to Monitoring Well Purging
	09/01/95	41.75	59.5	Subsequent to Monitoring Well Sampling
MW-3	07/14/95	17.01	83.8	Prior to Monitoring Well Development
	07/18/95	17.95	82.9	Prior to Monitoring Well Purging
	09/01/95	17.92	82.9	Subsequent to Monitoring Well Sampling

[1] See Plate 5 for monitoring well locations.
[2] Elevations are referenced to site datum.
[3] Depths are measured in feet below top of casing.

NOTE

Plan adapted from 7.5 Minute U.S.G.S. Maps for Webster Groves and Clayton, Missouri Quadrangles last revised 1974.

0 2000 4000

SCALE IN FEET

N

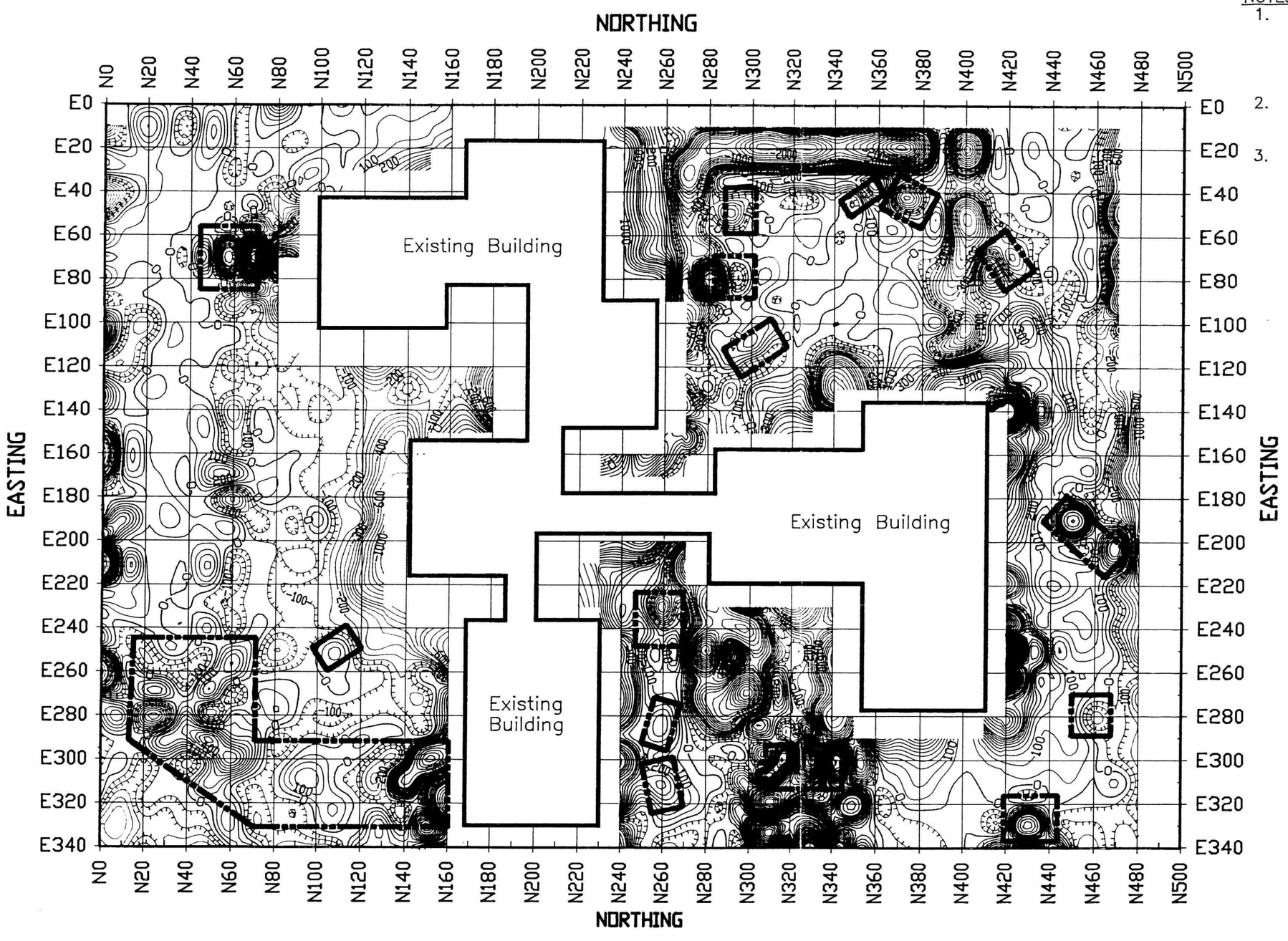
Drawn By: WAH	Ck'd By: SLR	App'vd By: EOA
Date 9-13-94	Date 9/16/94	Date 9/16/94

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

SITE LOCATION AND TOPOGRAPHY

Project Number	PLATE 1
2498.01.3120.05	



NOTES

1. Contour interval: 0 – ±500 is 50 gammas/meter, ±500 – ±1000 is 100 gammas/meter, ±1000 – ±6000 is 200 gammas/meter.
2. The survey grid was established in the field by BAX Engineering Co., Inc.
3. Areas not contoured are excluded due to the presence of the school building and related metalic features.

LEGEND

Positive Magnetic Gradient

Negative Magnetic Gradient

General Area of Potential Buried Metal

0 50 100

SCALE IN FEET

Drawn By: WAH	Ck'D By: SCB	App'vd By: EQA
Date: 8-31-95	Date: 9/6/95	Date: 9/7/95

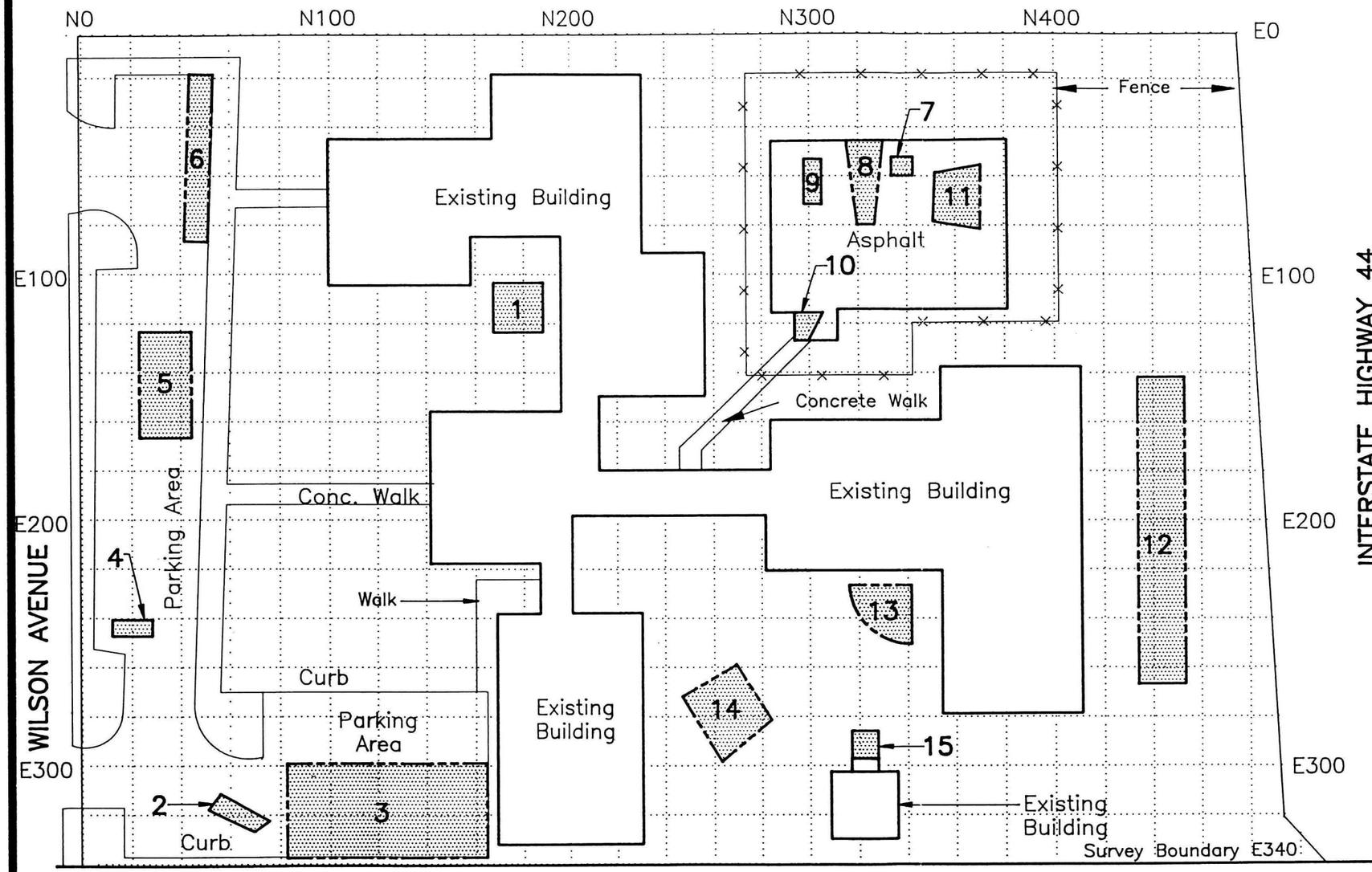
GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

PLAN OF SITE AND MAGNETIC GRADIENT SURVEY

Project Number 2498.03.4120.01

PLATE 2



NOTES

1. Plan adapted from an undated drawing titled "Site Plan", prepared by Murphy Vogt & Stokes, Inc., supplied by the client and modified based on field reconnaissance by a representative of Geotechnology, Inc.
2. Borings and monitoring well were located in the field with reference to existing site features and are shown approximate only.

LEGEND

7 IR Anomaly Location and Identifier

0 50 100

SCALE IN FEET

Drawn By: WAH	Ck'D By: SLB	App'vd By: EDA
Date: 8-31-95	Date: 9/6/95	Date: 9/7/95

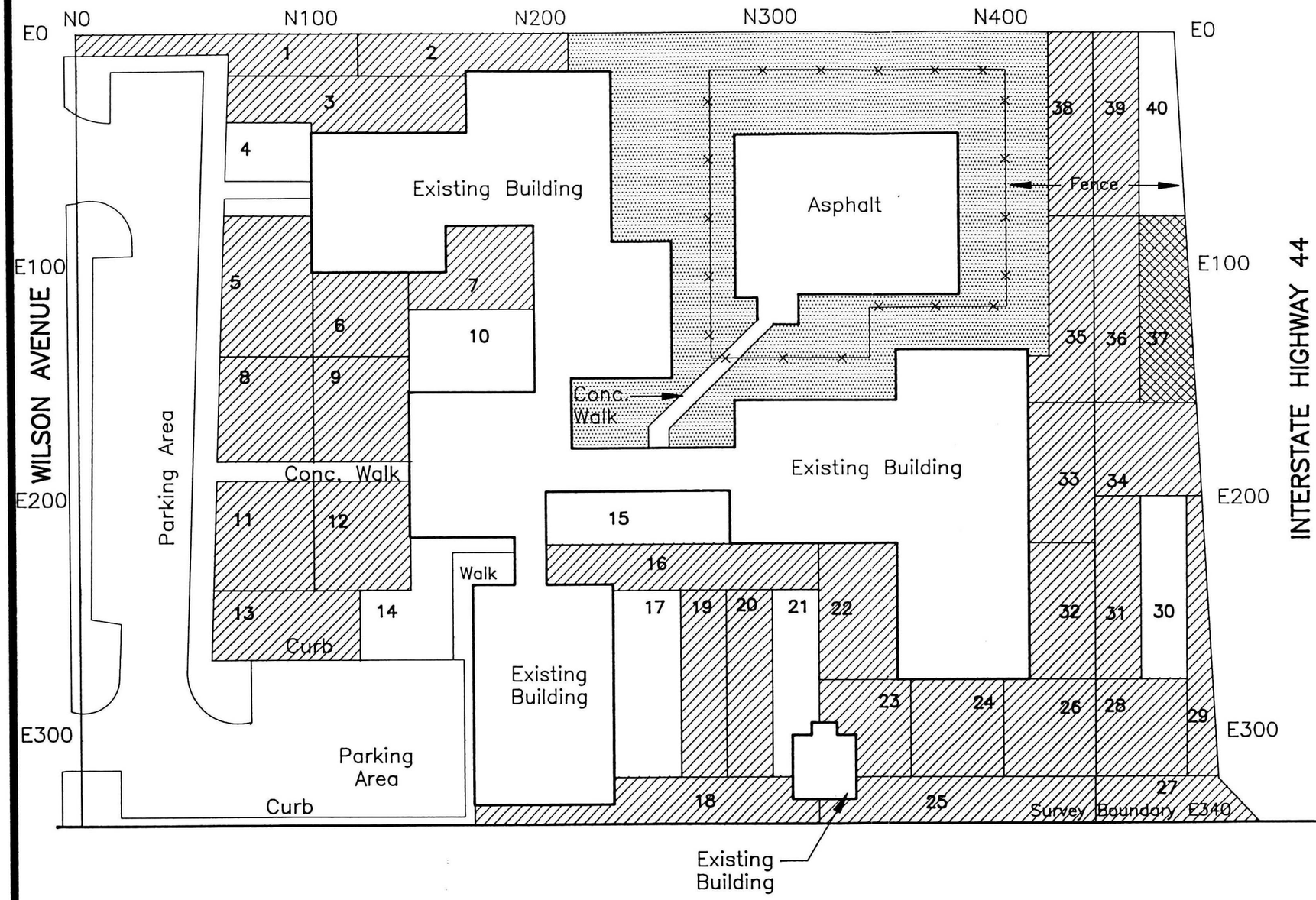
GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

PLAN OF SITE AND INFRARED ANOMALIES

Project Number
2498.03.4120.05

PLATE 3



NOTES

1. Plan adapted from an undated drawing titled "Site Plan", prepared by Murphy Vogt & Stokes, Inc., supplied by the client and modified based on field reconnaissance by a representative of Geotechnology, Inc.
2. Features shown approximate only.

LEGEND

- Semi–Volatile Organics Detected Above MDOH ASL in Surface Soil Composite Samples Collected May 1995
- Semi–Volatile Organics and Total Lead Detected Above MDOH ASL in Surface Soil Composite Samples Collected May 1995
- Semi–Volatile Organics Detected Above MDOH ASL in Surface Soil Composite Samples Collected July 1994

0 50 100
SCALE IN FEET

Drawn By: WAH	Ck'D By: SLB	App'vd By: EOA
Date: 8–31–95	Date: 9/6/95	Date: 9/7/95

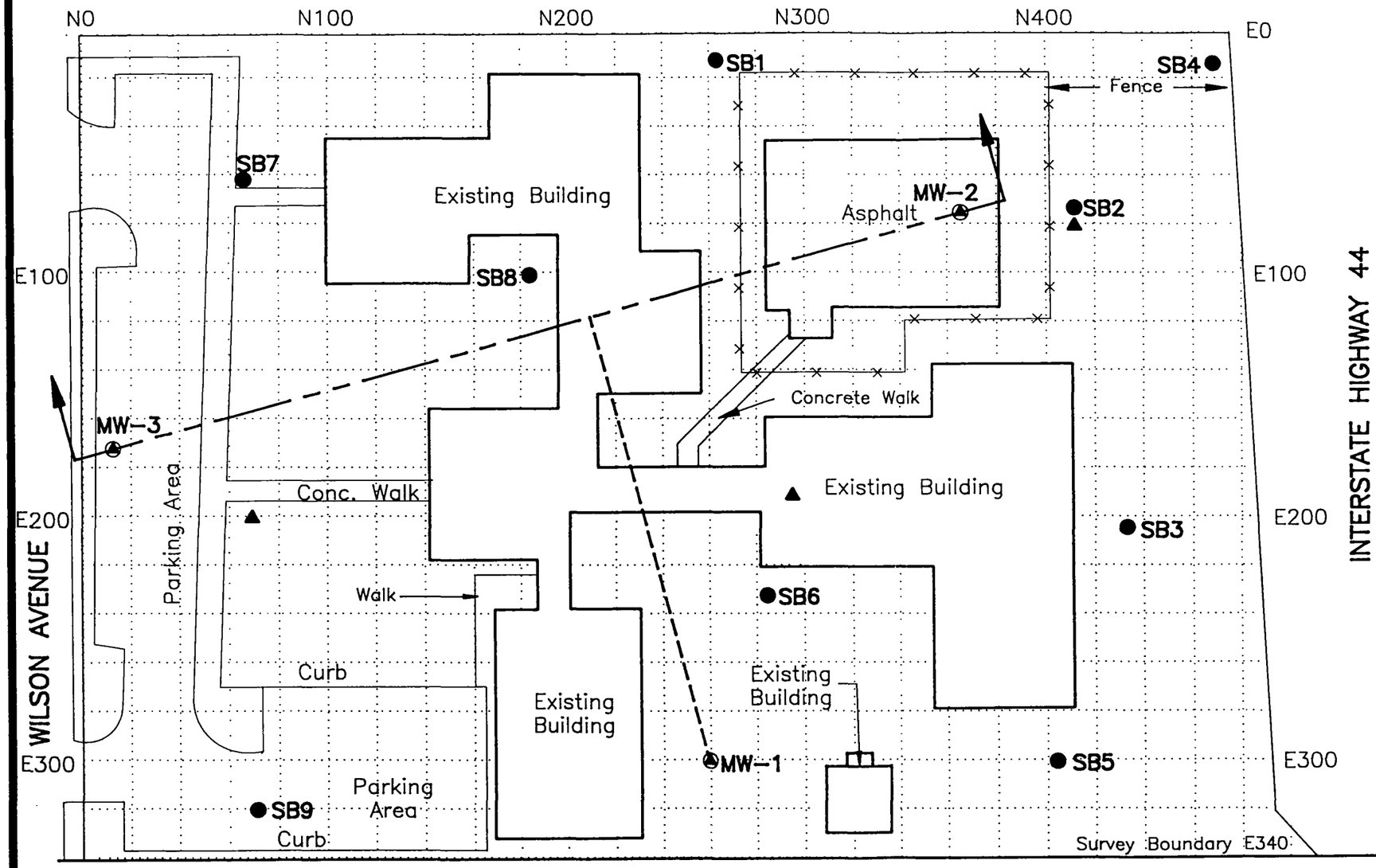
GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

PLAN OF SITE AND SURFACE SOIL COMPOSITE SAMPLE LOCATIONS

Project Number 2498.03.4120.01

PLATE 4



NOTES

1. Plan adapted from an undated drawing titled "Site Plan", prepared by Murphy Vogt & Stokes, Inc., supplied by the client and modified based on field reconnaissance by a representative of Geotechnology, Inc.
2. Borings and monitoring well were located in the field with reference to existing site features and are shown approximate only.

LEGEND

- ● Boring Locations
- ◬ Monitoring Well Locations
- ▲ Air Sampling Locations

0 50 100

SCALE IN FEET

Drawn By: WAH	Ck'D By: SCB	App'vd By: EDA
Date: 8-31-95	Date: 9/6/95	Date: 9/7/95

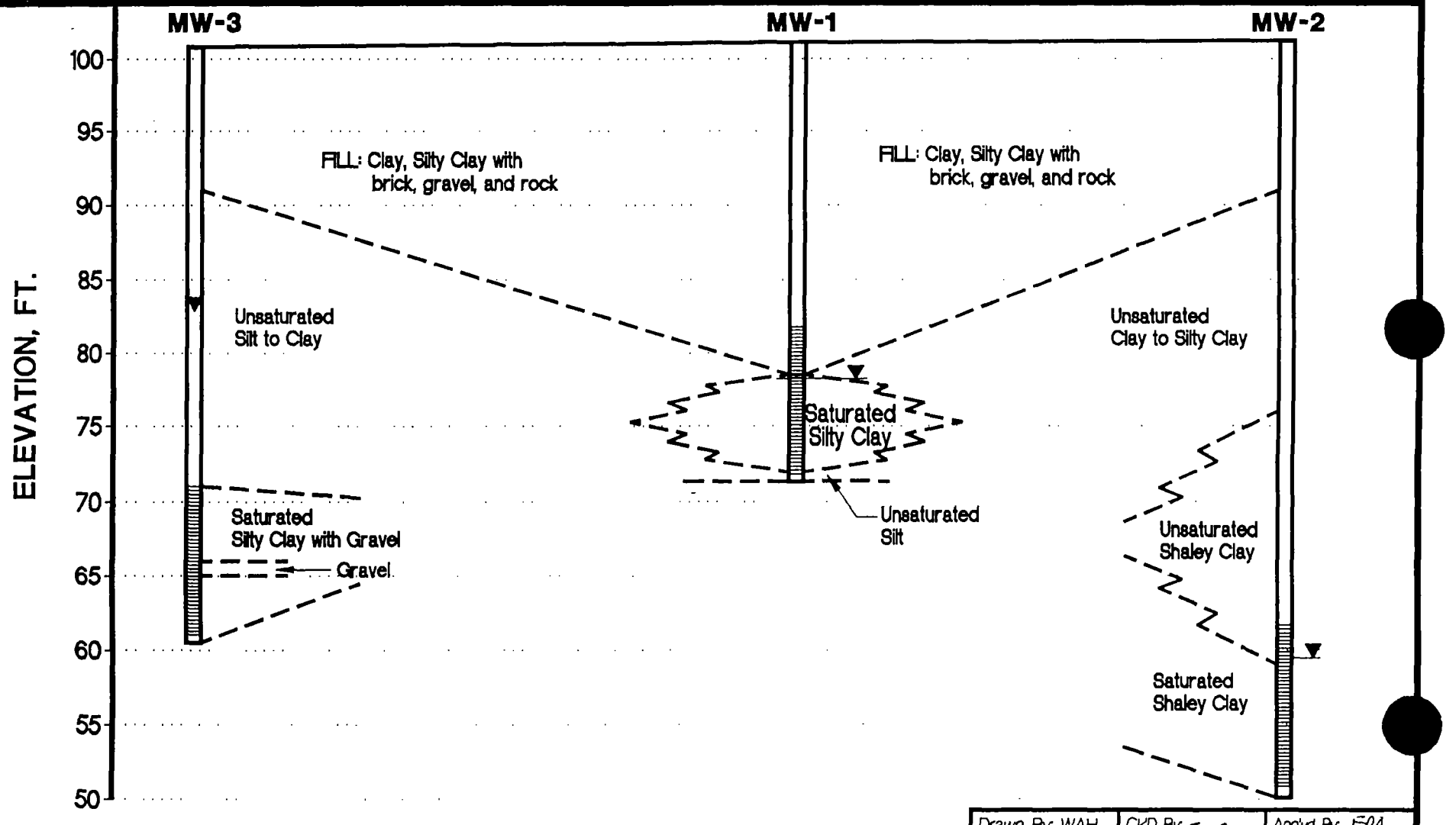
GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

PLAN OF SITE, AIR SAMPLING, BORING, AND MONITORING WELL LOCATIONS

Project Number
2498.03.4120.05

PLATE 5



NOTES

1. Location of Cross Section shown on PLATE 5.

LEGEND

▼ Groundwater Elevation at Well Location on September 1, 1995

0 50 100

HORIZONTAL SCALE IN FEET

HORIZONTAL SCALE 1" = 50'

VERTICAL SCALE 1" = 10'

Drawn By: WAH	Ck'D By: SCO	App'vd By: EMA
Date: 8-28-95	Date: 9/6/95	Date: 9/7/95

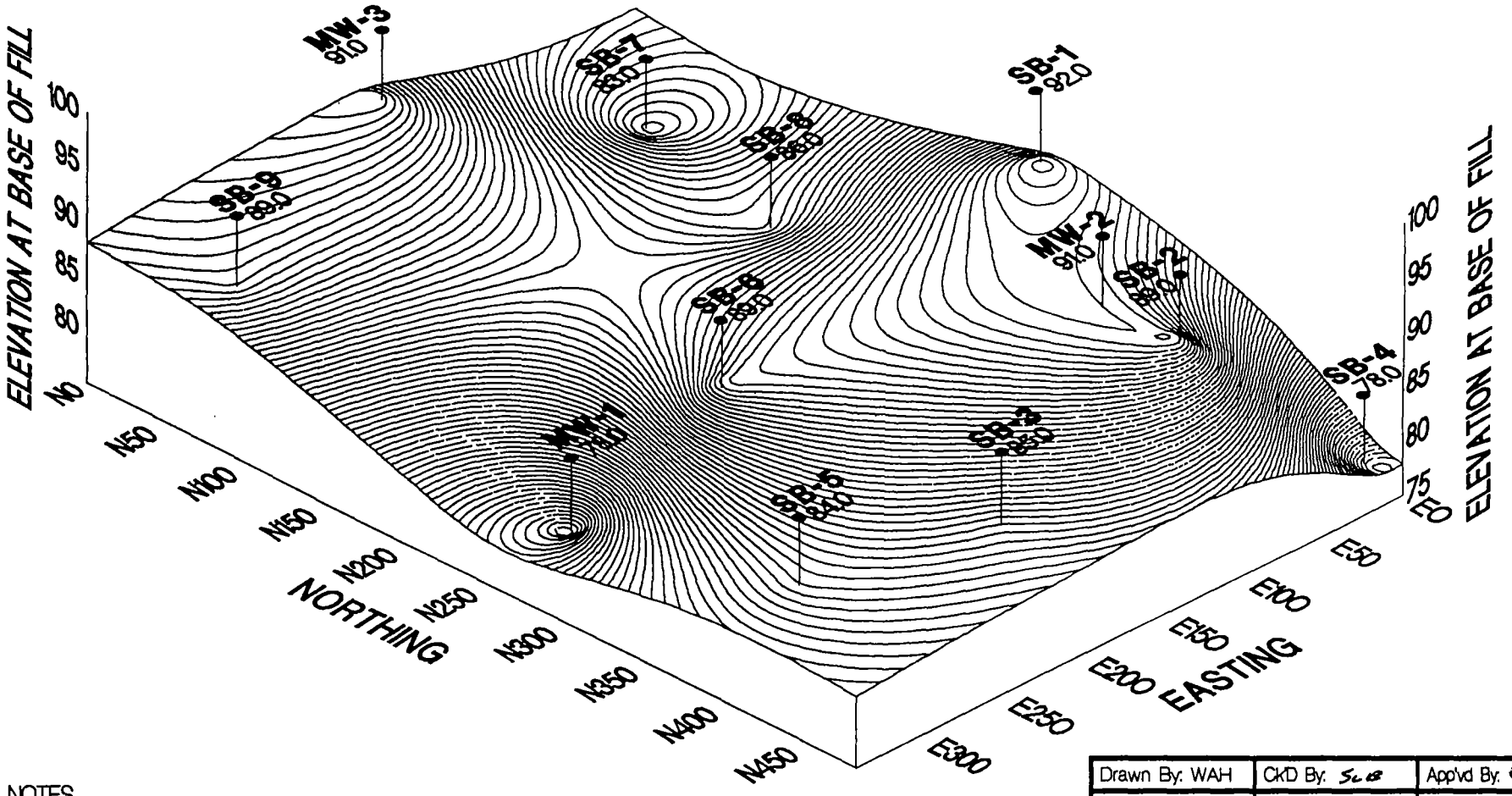
GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY • INDIANAPOLIS

Hubert Wheeler State School
St. Louis, Missouri

HYDROGEOLOGIC CROSS SECTION

Project Number 2498.03.4120.05

PLATE 7



NOTES

1. The base of fill was not identified in Soil Borings SB–2, SB–3, SB–4, SB–5, and SB–6 due to poor sample recovery. Depths shown are minimum values from boring data. Actual depths to base may be greater. View is from the Northeast

2. The site datum was taken as the southwest corner of sewer inlet located north of the asphalt play area and is assumed to be elevation 100.0. Surface elevations of the soil borings are inferred from a drawing titled "Site Plan", prepared by Murphy Vogt & Stokes, Inc, and supplied by the client.

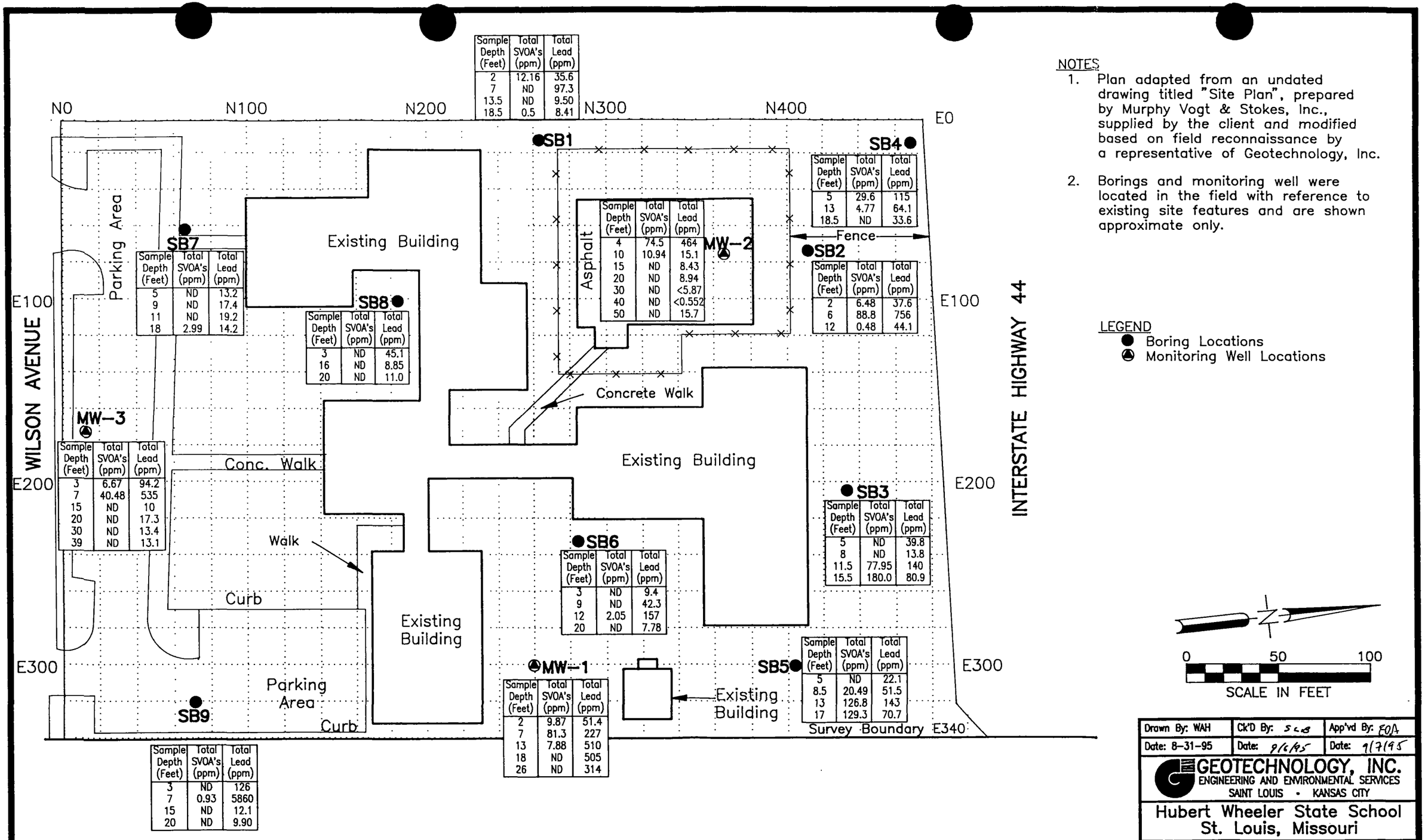
Drawn By: WAH	Ck'd By: SLB	App'vd By: EMA
Date: 8–31–95	Date: 9/6/95	Date: 9/7/95

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

3-D SURFACE PLOT OF BASE OF FILL

Project Number 2498.03.4120.05	PLATE 6



NOTES

1. Plan adapted from an undated drawing titled "Site Plan", prepared by Murphy Vogt & Stokes, Inc., supplied by the client and modified based on field reconnaissance by a representative of Geotechnology, Inc.
2. Borings and monitoring well were located in the field with reference to existing site features and are shown approximate only.

LEGEND

- ● Boring Locations
- ▲ Monitoring Well Locations

0 50 100

SCALE IN FEET

Drawn By: WAH	Ck'D By: SCB	App'vd By: EOA
Date: 8-31-95	Date: 9/6/95	Date: 9/7/95

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY

Hubert Wheeler State School
St. Louis, Missouri

PLAN OF SITE AND SUBSURFACE SOIL TOTAL SVOA'S AND TOTAL LEAD CONCENTRATIONS

Project Number 2498.03.4120.05

PLATE 8

APPENDIX A

INFRARED THERMOGRAPHIC SURVEY REPORT

ELECTRIC POWER SYSTEMS ELECTRICAL TESTING & ENGINEERING

8 Worthington Drive • Maryland Heights, Missouri 63043 • Phone 314/469-6771 • Fax 314/469-0115

INFRARED THERMOGRAPHIC INSPECTION

OF THE

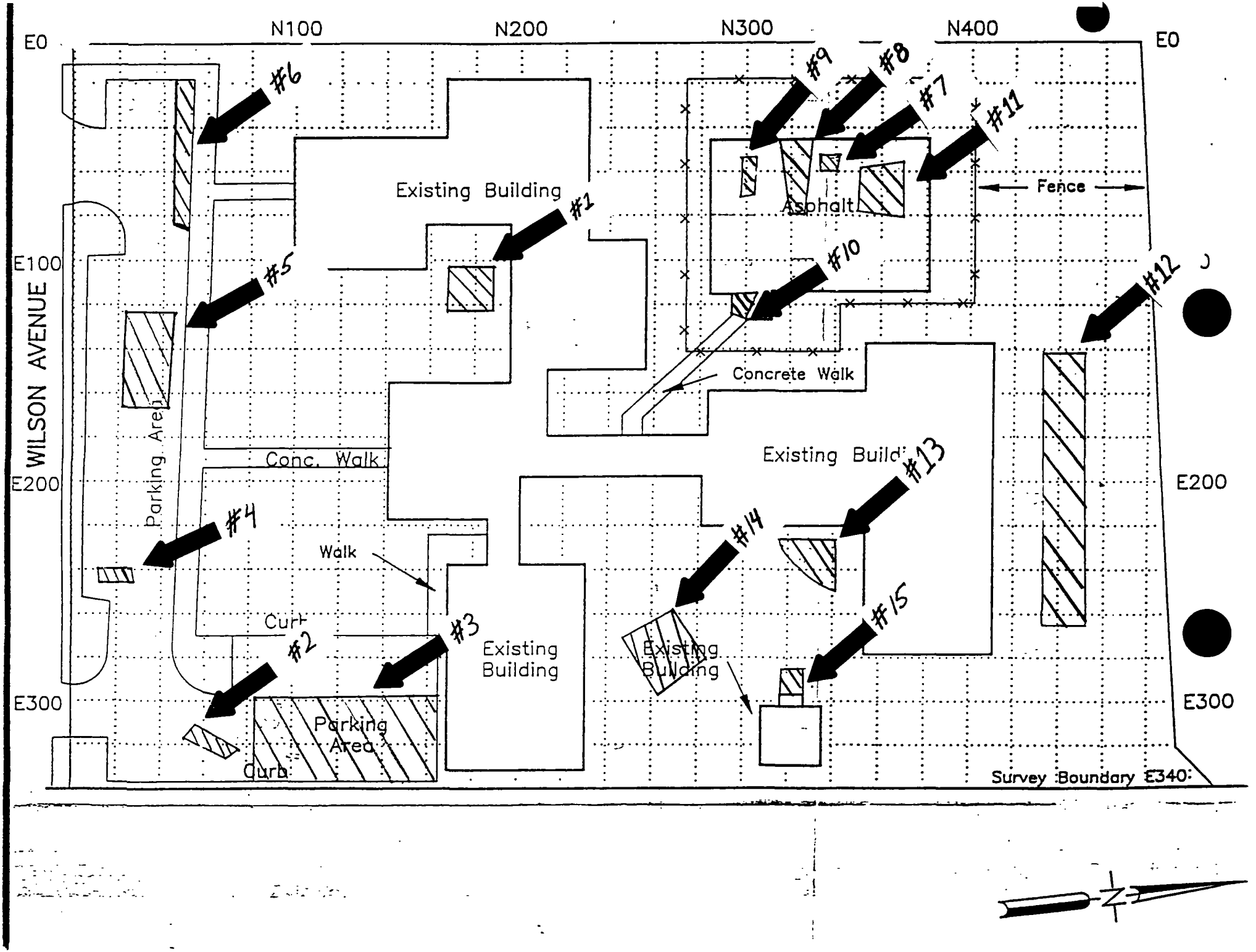
HUBERT WHEELER SCHOOL

FOR

GEOTECHNOLOGY

JUNE 1995

PREPARED BY: ELECTRIC POWER SYSTEM
ST. LOUIS, MISSOURI


N100
N200
N300
N400
E0
E0
E100
E200
E300
E200
E300
WILSON AVENUE
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11
#12
#13
#14
#15
Existing Building
Asphalt
Fence
Concrete Walk
Conc. Walk
Parking Area
Walk
Curb
Existing Building
Existing Building
Existing Build
Parking Area
Curb
Survey Boundary E340

I. SCOPE

Perform a complete Thermographic Inspection to locate sub-surface anomalies located at the Hubert Wheeler School St. Louis, Missouri. The purpose of the inspection was to locate and classify sub-surface anomalies that could include Hydro-carbon contamination, buried drums, voids, poor sub-grade, and/or deteriorating back fill.

II. PROCEDURE

During the period of June 17th - June 30th 1995 Electric Power Systems conducted an Infrared Thermographic investigation to locate sub-surface anomalies located on the property of the Hubert Wheeler School located in St. Louis, Missouri.

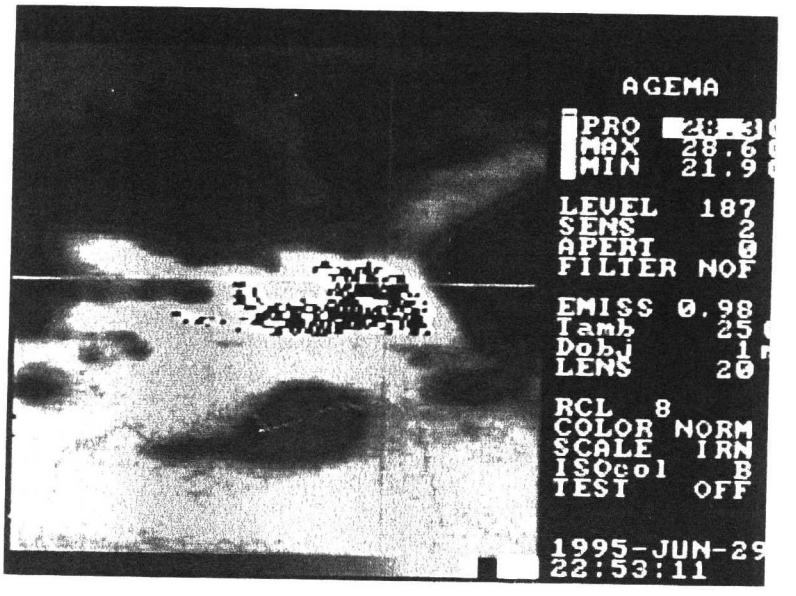
The purpose of the investigation was to locate and classify sub-surface anomalies that could include hydro-carbon contamination, buried drums, voids, poor subgrade, and/or deteriorating back fill.

The Infrared Thermographic Survey was conducted on a fixed site location at various times of the day to determine the optimum scanning time. Scanning originated from two different vehicles Electric Power Systems Infrared Thermographic survey vehicle and a boom truck with a 50' extension to enhance resolution.

All anomalies detected were catalogued and recorded on digital computer disc in color format using the Agema Shot Wave Infrared System. At all times thermal resolution was maintained at a minimum of .1°C. Emmissivity and ambient air temperature were adjusted accordingly during the data collection process.

III. DEFINITIONS

ELECTRIC POWER SYSTEMS - DEFINITION



SAMPLE INSPECTION DATA IMAGE

Electric Power Systems uses a high resolution infrared imaging system that produces quality digital images for a variety of testing and inspection applications. The example infrared digital image display's all necessary information for system calibration and inspection data. Data is exhibited on the right side of the infrared image. The cross-hair on the image depicts the area of concern, the corresponding absolute temperature of the defect is displayed on the top line of the data column (ISO,SPO, or PRO).

Additional information such as minimum/maximum temperature ranges, ambient temperature conditions, sensitivity settings, emmissivity values, color scale, image number, date and time of inspection are also recorded. This provides valuable base data for future inspections. An additional feature is the temperature profile shown on the image. This allows a convenient referencing tool to compare thermal values within the image.

IV. INSPECTION SUMMARY

INSPECTION SUMMARY

OF

THE HUBERT WHEELER SCHOOL

The Infrared Images shown in the **REPORT DATA** section are summarized by the following comments

SECTION I

Anomalies #2,#3,#4,#5,#6 located in the front parking area represent thermal characteristics indicative to the deterioration of the asphalt surface and changes in the soil density beneath the surface. These items are represented by the cooler or darker areas in the picture.

SECTION II

Anomalies #7,#8,#9,#11 located on the asphalt and Anomaly #10 located on the concrete sidewalk in the recreation area on the north west corner of the school grounds represent thermal characteristics indicative of sub- surface disturbances. These abnormal thermal patterns indicate non-homogeneous materials and changes in soil densities. They are represented by the warmer or lighter areas in the picture.

SECTION III

Anomalies #1,#12,#13,#14 located throughout the remaining grounds of the school represent thermal characteristics indicative of sub-surface disturbances. These items are located in areas that consisted of grass covered soil. The abnormal thermal patterns indicated non-homogeneous materials and changes in the soil density. The foliage did not affect the results of the investigation.

SECTION IV

Anomaly #15 located in the eastern area of the playground in front of the maintenance shack exhibited an oily tar like substance on the surface, and an abnormal thermal pattern beneath the surface

V. REPORT DATA

SECTION I

SUMMARY OF ANOMALIES

All problems have a corresponding data page which includes infrared images. All grid#'s represent southern most point.

#1 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #2
AREA: FRONT PARKING AREA
GRID#: E320-N60
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS

#2 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #3
AREA: FRONT PARKING AREA
GRID#: E300-N80
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS

#3 DATA PAGE

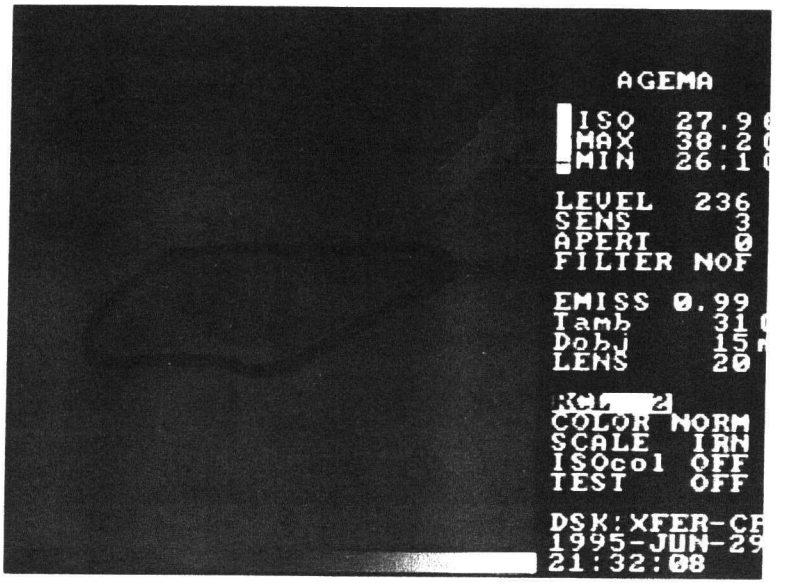
LOCATION: HUBERT WHEELER **ANOMALY** #4
AREA: FRONT PARKING AREA
GRID#: E240-N10
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS

#4 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #5
AREA: FRONT PARKING AREA
GRID#: E170-N10
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS

#5 DATA PAGE

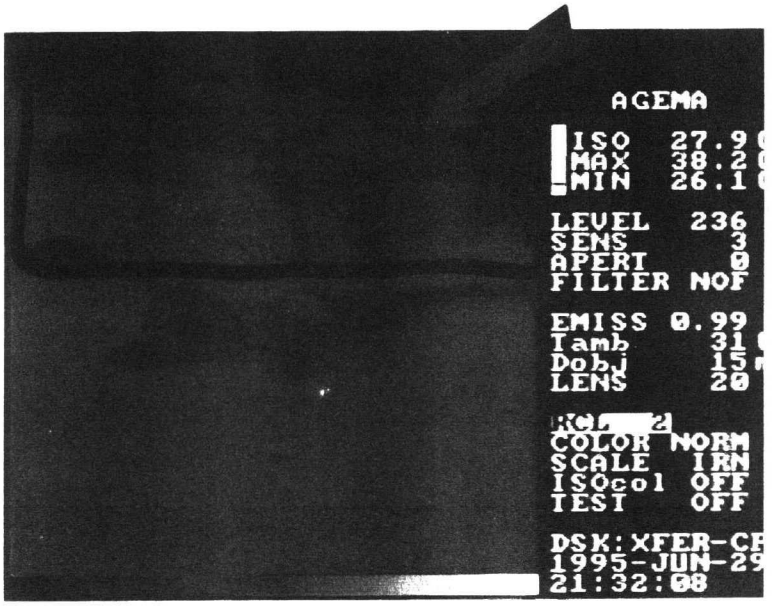
LOCATION: HUBERT WHEELER **ANOMALY** #6
AREA: FRONT PARKING AREA
GRID#: E80-N50
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY



REPORT DATA IMAGE

#1 DATA PAGE

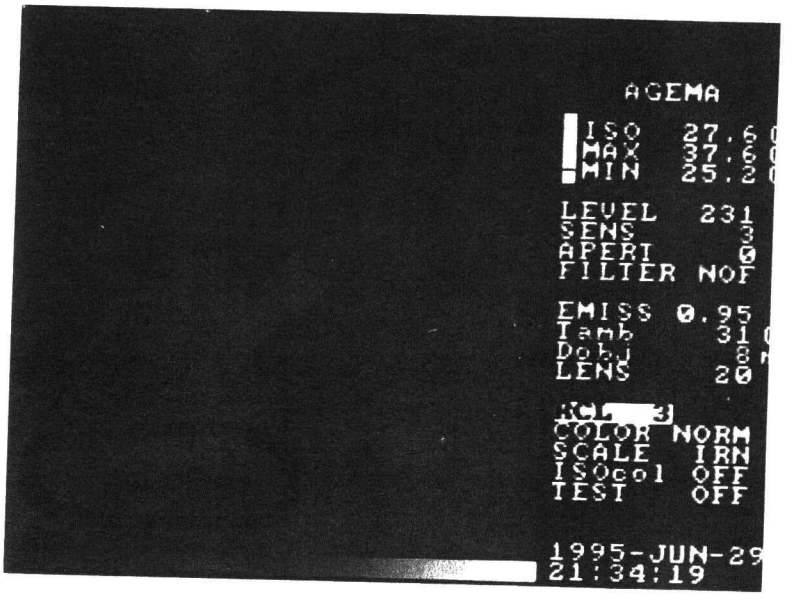
LOCATION: HUBERT WHEELER **ANOMALY** #2
AREA: FRONT PARKING AREA
GRID#: E320-N60
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS



REPORT DATA IMAGE

#2 DATA PAGE

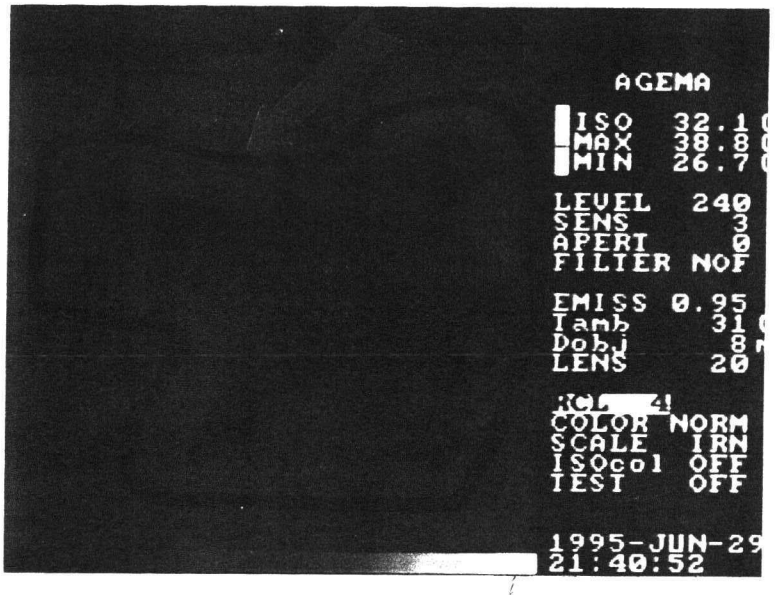
LOCATION: HUBERT WHEELER **ANOMALY** #3
AREA: FRONT PARKING AREA
GRID#: E300-N80
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS



REPORT DATA IMAGE

#3 DATA PAGE

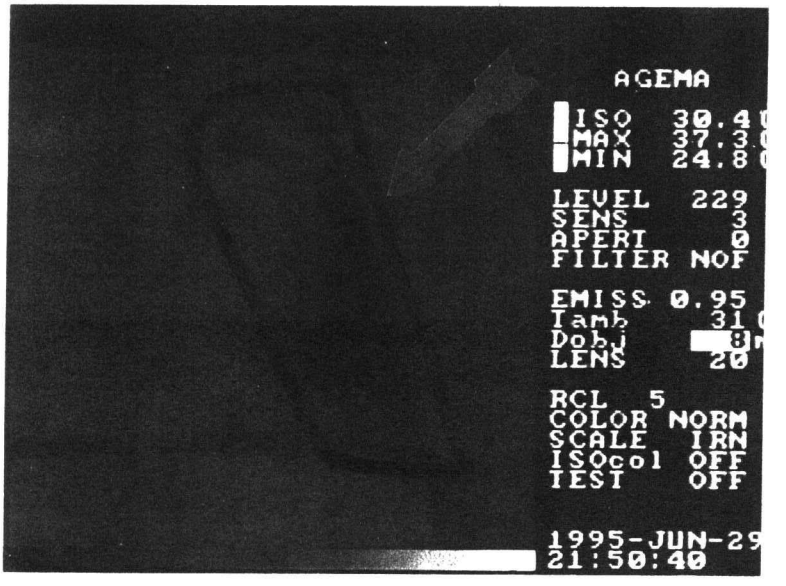
LOCATION: HUBERT WHEELER **ANOMALY** #4
AREA: FRONT PARKING AREA
GRID#: E240-N10
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS



REPORT DATA IMAGE

#4 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #5
AREA: FRONT PARKING AREA
GRID#: E170-N10
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY THESE ITEMS ARE REPRESENTED BY THE COOLER OR DARKER AREAS



REPORT DATA IMAGE

#5 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #6
AREA: FRONT PARKING AREA
GRID#: E80-N50
DESCRIPTION: SURFACE DETERIORATION OF THE ASPHALT / SUB-SURFACE CHANGES IN THE SOIL DENSITY

SUMMARY - SECTION II

SECTION II

SUMMARY OF ANOMALIES

All problems have a corresponding data page which includes infrared images. All grid#'s represent southern most point.

#1 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #7
AREA: ASPHALT RECREATION AREA
GRID#: E60-N335
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE

#2 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #8
AREA: ASPHALT RECREATION AREA
GRID#: E80-N310
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE

#3 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #9
AREA: ASPHALT RECREATION AREA
GRID#: E70-N290
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE

#4 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #10
AREA: ASPHALT RECREATION AREA
GRID#: E110-N290
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE

#5 DATA PAGE

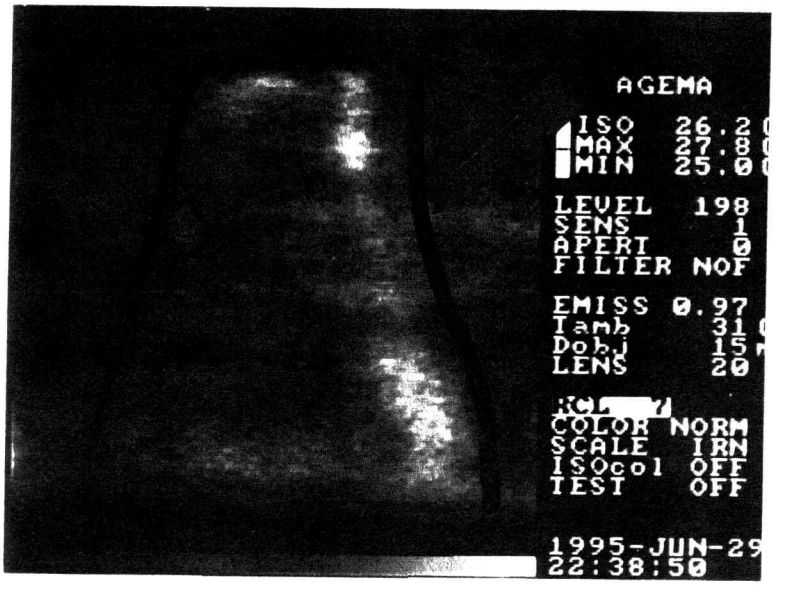
LOCATION: HUBERT WHEELER **ANOMALY** #11
AREA: ASPHALT RECREATION AREA
GRID#: E80-N250
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE

REPORT DATA - SECTION II

REPORT DATA IMAGE

#1 DATA PAGE

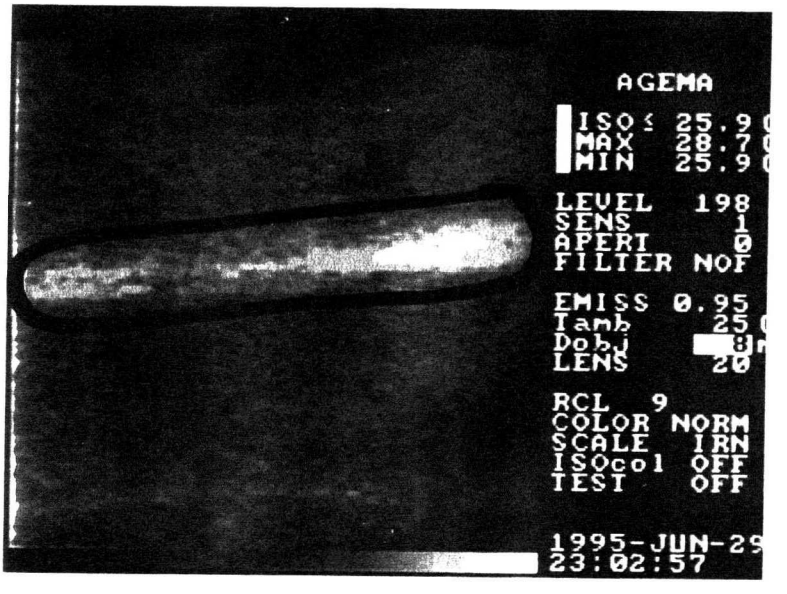
LOCATION: HUBERT WHEELER **ANOMALY** #7
AREA: ASPHALT RECREATION AREA
GRID#: E60-N335
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE



REPORT DATA IMAGE

#2 DATA PAGE

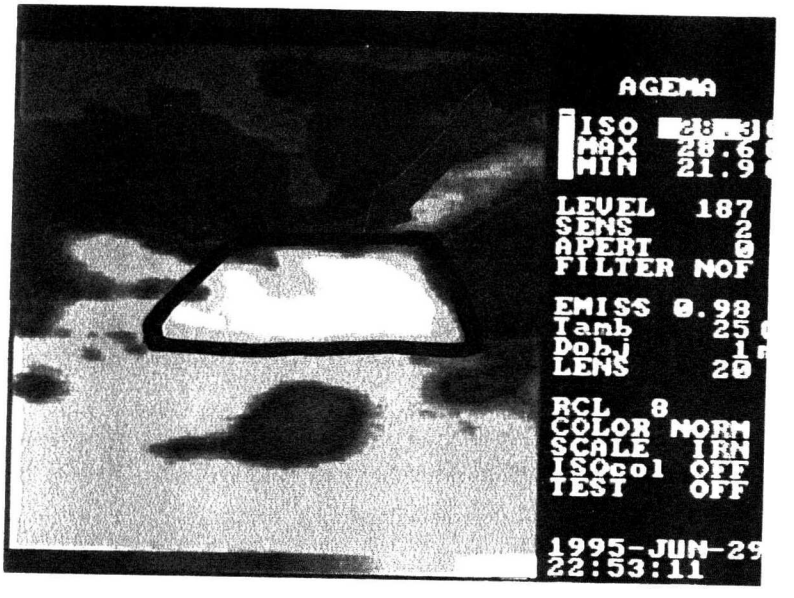
LOCATION: HUBERT WHEELER **ANOMALY** #8
AREA: ASPHALT RECREATION AREA
GRID#: E80-N310
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE



REPORT DATA IMAGE

#3 DATA PAGE

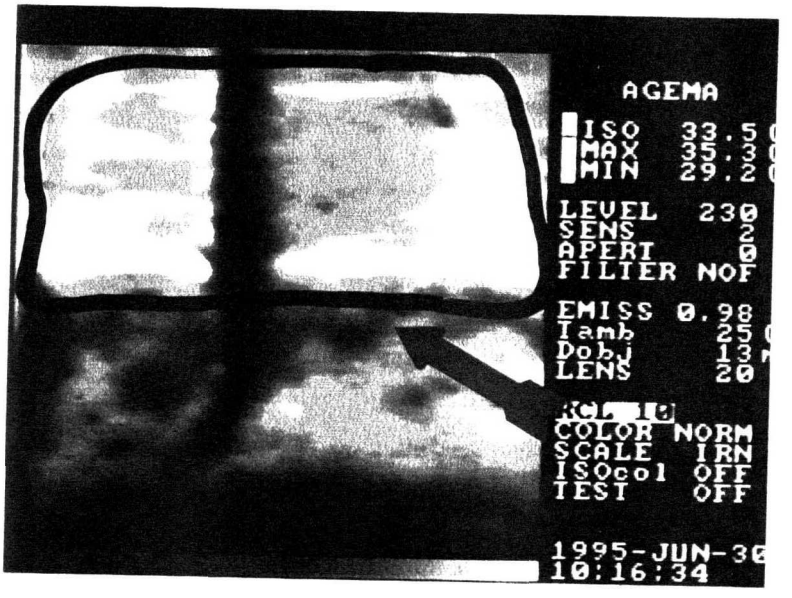
LOCATION: HUBERT WHEELER **ANOMALY** #9
AREA: ASPHALT RECREATION AREA
GRID#: E70-N290
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE



REPORT DATA IMAGE

#4 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #10
AREA: ASPHALT RECREATION AREA
GRID#: E110-N290
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE



REPORT DATA IMAGE

#5 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #11
AREA: ASPHALT RECREATION AREA
GRID#: E80-N250
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES. THEY ARE REPRESENTED BY THE WARMER OR LIGHTER AREAS IN THE PICTURE

SUMMARY - SECTION III

SECTION III

SUMMARY OF ANOMALIES

All problems have a corresponding data page which includes infrared images. All grid#'s represent southern most point.

#1 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #1
AREA: FRONT COURTYARD
GRID#: E110-N170
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES.

#2 DATA PAGE

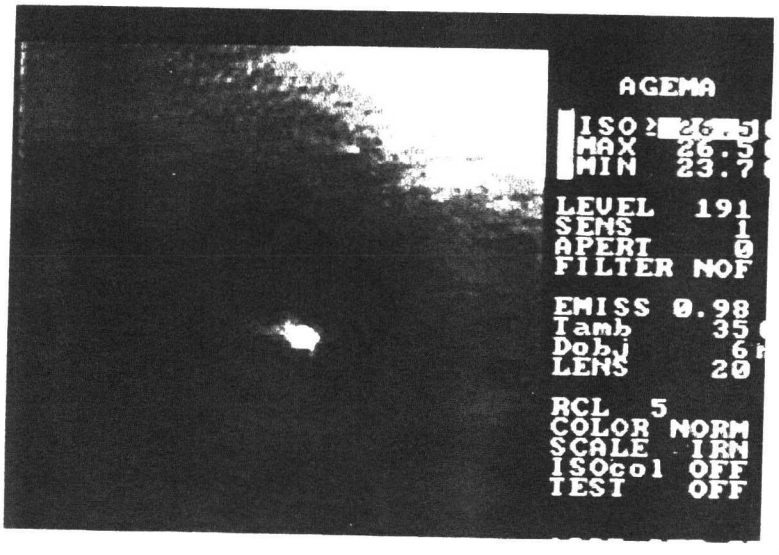
LOCATION: HUBERT WHEELER **ANOMALY** #12
AREA: NORTH-EAST AREA OF SCHOOL GROUNDS
GRID#: E265-N430
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES.

#3 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #13
AREA: NORTH-WEST CORNER OF PLAYGROUND
GRID#: E230-N315
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES.

#4 DATA PAGE

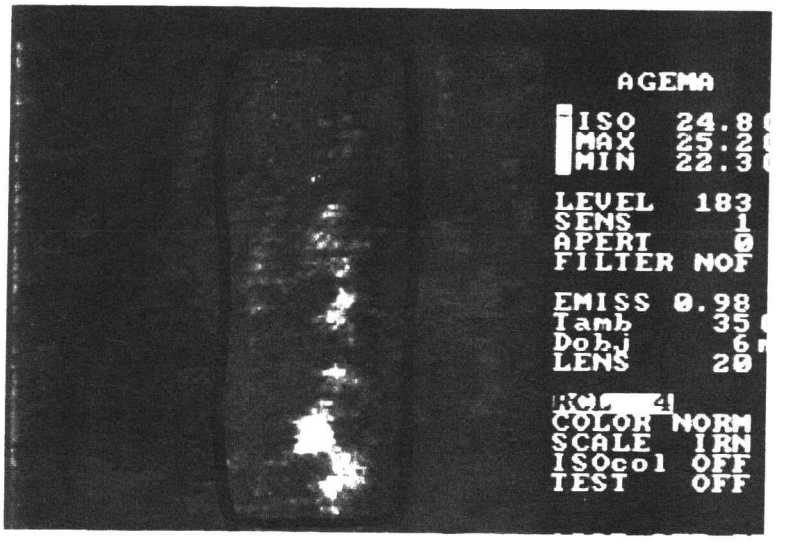
LOCATION: HUBERT WHEELER **ANOMALY** #14
AREA: SOUTH-EAST AREA OF PLAYGROUND
GRID#: E300-N260
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES.



REPORT DATA IMAGE

#1 DATA PAGE

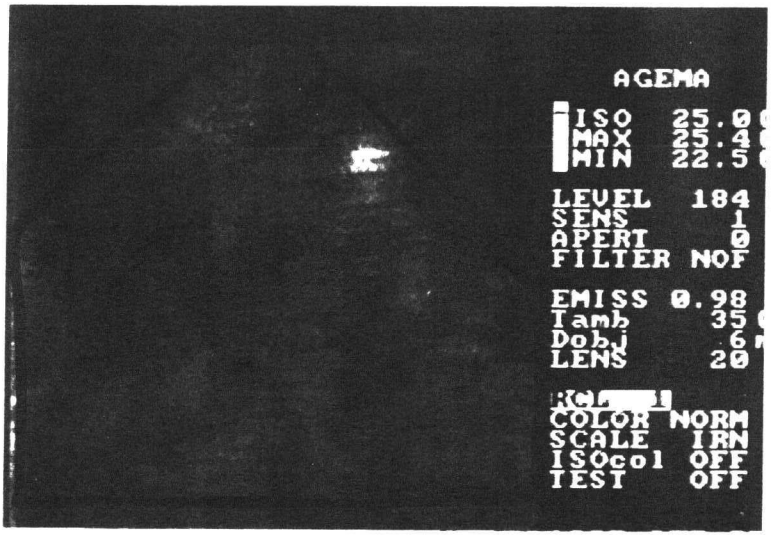
LOCATION: HUBERT WHEELER **ANOMALY** #1
AREA: FRONT COURTYARD
GRID#: E110-N170
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES.



REPORT DATA IMAGE

#2 DATA PAGE

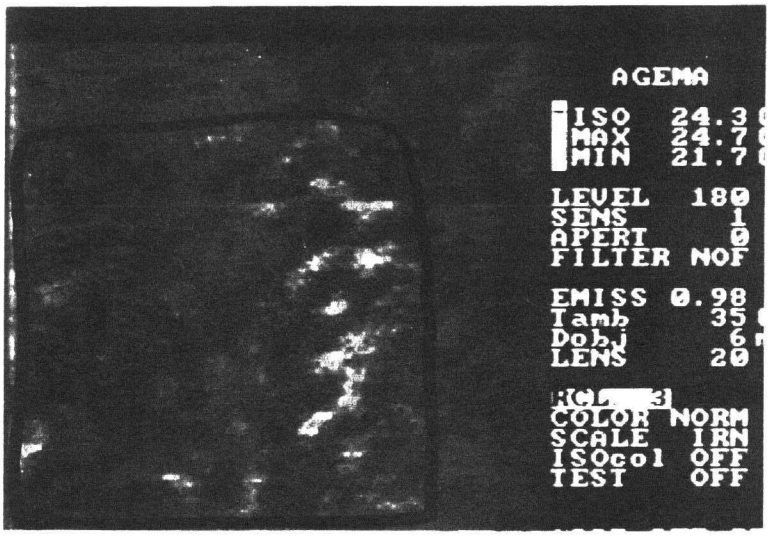
LOCATION: HUBERT WHEELER **ANOMALY** #12
AREA: NORTH-EAST AREA OF SCHOOL GROUNDS
GRID#: E265-N430
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES



REPORT DATA IMAGE

#3 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #13
AREA: NORTH-WEST CORNER OF PLAYGROUND
GRID#: E230-N315
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES.



REPORT DATA IMAGE

#4 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #14
AREA: SOUTH-EAST AREA OF PLAYGROUND
GRID#: E300-N260
DESCRIPTION: THESE ABNORMAL THERMAL PATTERNS INDICATE NON-HOMOGENEOUS MATERIALS AND CHANGES IN SOIL DENSITIES

SUMMARY - SECTION IV

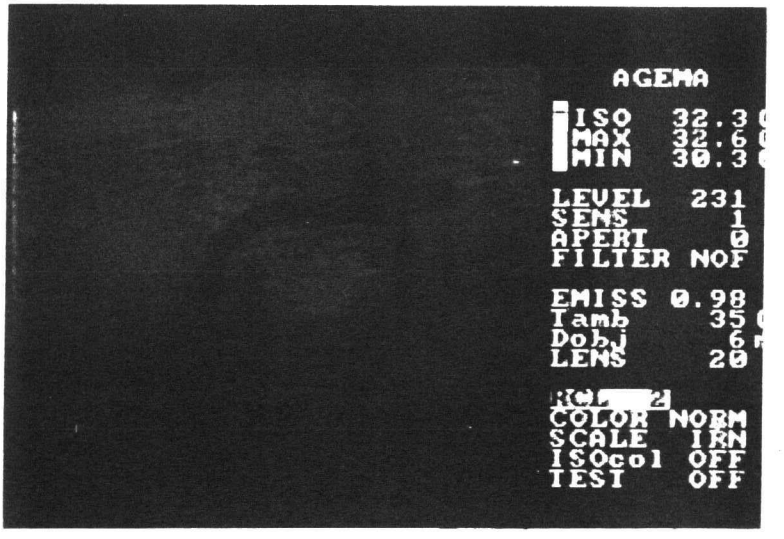
SECTION IV

SUMMARY OF ANOMALIES

All problems have a corresponding data page which includes infrared images. All grid#'s represent southern most point.

#1 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #15
AREA: EAST AREA OF PLAYGROUND
GRID#: E300-N320
DESCRIPTION: DISPLAYED AN OILY TAR LIKE SUBSTANCE ON THE SURFACE AND ABNORMAL THERMAL CHARACTERISTICS INDICATIVE OF SUB-SURFACE DISTURBANCES



REPORT DATA IMAGE

#1 DATA PAGE

LOCATION: HUBERT WHEELER **ANOMALY** #15
AREA: EAST AREA OF PLAYGROUND
GRID#: E300-N320
DESCRIPTION: DISPLAYED AN OILY TAR LIKE SUBSTANCE ON THE SURFACE AND ABNORMAL THERMAL CHARACTERISTICS INDICATIVE OF SUB-SURFACE DISTURBANCES

APPENDIX B

AIR/DUST MONITORING REPORT

Microscopic Analysis, Inc.

941 GARDENVIEW OFFICE PARKWAY
ST. LOUIS, MISSOURI 63141
(314) 993-2212

September 1, 1995

Mr. Sam L. Brenneke
Senior Scientist
Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Missouri 63146-3309

Dear Mr. Brenneke:

Attached is our final report of the environmental monitoring at the State School For The Severely Handicapped located at 5715 Wilson Avenue, St. Louis, Missouri.

Should you have any questions please call.

Sincerely,

Douglas N. Nimmo
Certified Industrial Hygienist

DNN/jn

attachment

REPORT OF ENVIRONMENTAL MONITORING
AT THE HUBERT WHEELER STATE SCHOOL FOR THE SEVERELY HANDICAPPED
5715 WILSON AVENUE, ST. LOUIS, MISSOURI
July 13 and 14, 1995

BACKGROUND

Soil samples collected from the playground area of the Hubert Wheeler School indicate that the soil contains semi-volatile organic compounds (PNA's) that exceed the Missouri Department of Health's Any Use Soil Level for residential sites. Fill soil contaminated with foundry/coke oven waste products was used during the construction of the school. To assess student and staff's potential for exposure to Volatile Organic Compounds (VOC) and PNA's from the fill, bulk and air samples were collected for VOC and PNA analysis. In addition to PNA's, lead was also found in soil samples collected at the site. Initial monitoring conducted September 29 and October 11, 1995, at the school consisted of the collection of dust samples from return air filters in the Heating Ventilation and Air Conditioning (HVAC) systems. An additional dust sample was collected from the carpet in classroom 18. These samples indicated that PNA's and lead were present in the air of the school (See Table I). However, only the qualitative presence of PNA's and lead could be demonstrated with these samples and quantification of historic PNA and lead exposure was not possible. The VOC air sample inside the school indicated that VOC's were less than levels of concern (See Table II).

A second survey was conducted on July 13 and 14, 1995. During this survey high volume air samples were collected inside and outside the building. These samples were collected to determine airborne PNA's, lead, and total dust. The sampling was directed by Douglas N. Nimmo, a Certified Industrial Hygienist.

SURVEY PROTOCOL AND RATIONALE

PNA

Samples for PNA's were collected using Staplex High Volume Air Samplers. The sampling units were calibrated at the start of monitoring and calibration was monitored throughout the sampling period. The sampling media was Supelco 65 mm X 75 mm Poly Urethane Filters (PUF). The sample flow rates were between 25 and 32 standard cubic feet per minute (scfm).

The samples were forwarded to an American Industrial Hygiene Association accredited laboratory for analysis by the EPA method TO-13. The analysis was performed using a high pressure liquid chromatograph equipped with fluorescence and UV absorption detectors. The compounds were separated using a Supelco LC-PAH column that was eluted with an Acetonitrile/water gradient.

LEAD / TOTAL WEIGHT

The lead and total weight samples were collected using Gast High Volume Air Samplers. The pumps were calibrated to a flow rate of approximately 20 liters per minute. Calibration was checked periodically during the sampling period. Sampling media was matched weight 37 mm PVC filters.

Total weight was determined in accordance with the National Institute of Safety and Health (NIOSH) method 0500. Lead samples were prepared and analyzed in accordance with NIOSH method 7300 using a Perkin Elmer 3000XL (CP) purged spectrometer.
The results of laboratory analysis are contained in Appendix I.

SAMPLE LOCATIONS

The outside samples were placed upwind and downwind of the asphalt playground. The rationale for this configuration is that the upwind sample (wind was from the south at 5 - 10 mph) would serve as a control sample. That is, if PNA/Lead laden dust is generated from the playground or school yard then the downwind (north side of the school) sample would show higher PNA/Lead values than the upwind sample. See Exhibit I for sample locations.

The central north south hallway in the school was selected as the inside sampling site because it is centrally located in the school and is in close proximity to playground exits.

RESULTS

All three samples collected for PNA's contained measurable quantities of PNA's. The upwind control sample had a total PNA's level of 0.414 micrograms per cubic meter ($\mu g/M^3$) which was greater than the 0.176 $\mu g/M^3$ found on the downwind sample. The sample collected from inside the school indicated a total PNA level of 0.098 $\mu g/M^3$. The results of air samples for PNA's are contained in Table III.

Lead levels from the outside samples were 0.0217 $\mu g/M^3$ for the upwind sample, 0.0215 $\mu g/M^3$ for the downwind sample, and 0.0108 $\mu g/M^3$ for the inside sample (See Table III). These samples are comparable to the first quarter average air lead levels at the St. Louis County's 77 Hunter Avenue sampling station (0.023 $\mu g/M^3$) and the 5962 South Lindbergh sampling station (0.022 $\mu g/M^3$).

The Total Dust levels were 56.3 $\mu g/M^3$ upwind of the school and 53.8 $\mu g/M^3$ downwind of the school. The inside sample was 25.9 $\mu g/M^3$. Table III contains results of Total Dust monitoring.

DISCUSSION

The sources of PNA's are numerous. However, the primary source of PNA's is incomplete combustion. The significant contributing factors to PNA levels in and around the school are exhaust from vehicular traffic, manufacturing facilities, tobacco usage within the school, and possible airborne dust from the soil around the school. However, since the downwind sample was less than the control (upwind sample) it is unlikely that the school yard makes any significant contribution to the current airborne PNA levels at the school.

The air lead levels are consistent with ambient air lead levels within St. Louis county. In all air samples collected the amount of lead as percentage of total dust was approximately 0.04 %. The dust samples that were collected from the air filters in the school also contained approximately 0.04% lead. The lead content of the total dust samples collected from outside the school and dust samples obtained from the HVAC filters inside the school are essentially the same. For this reason it is reasonable to expect that no exposure to airborne lead above background has occurred while the school was occupied.

No current or historical air monitoring data for ambient PNA levels in the St. Louis metropolitan area is available from the City or County of St. Louis or the State of Missouri. This study indicated that the percentage of PNA's present in the HVAC dust is lower than the outside samples (See Table I and III). Due to the semi-volatile nature of the PNA's, some weight may have been lost due to this volatility and would account for the lower PNA percentage in the inside sample. Lead is very stable and no loss of weight would occur over time. Because the

percentage of lead that is present in air and dust samples is constant, we would expect that PNA levels have been constant as well.

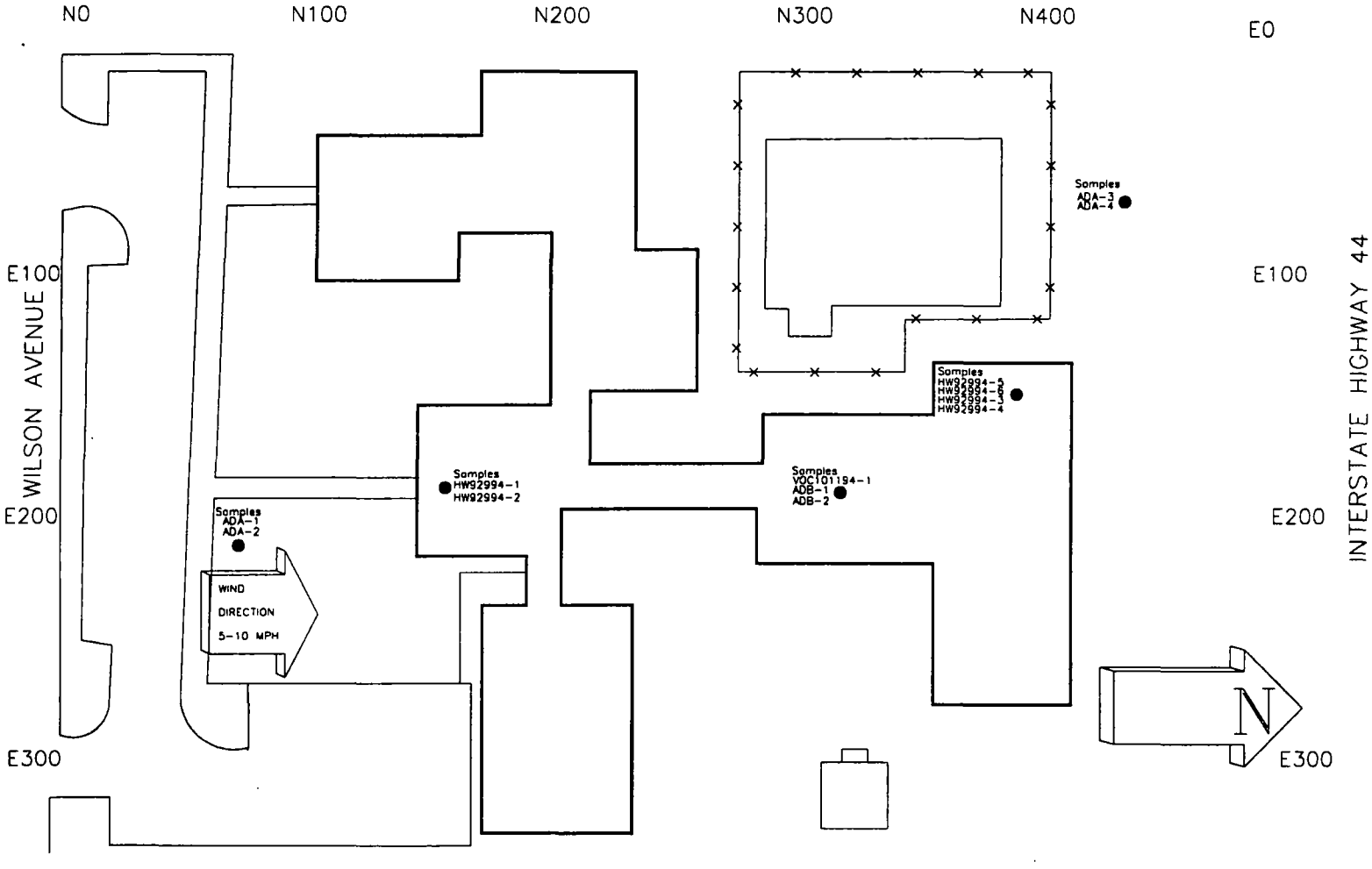
CONCLUSIONS

Considering the limited data collected the following conclusions are drawn. No increase in PNA's was found in the downwind sample indicating that the school yard is not contributing to the airborne PNA levels in the school. Lead levels are constant and at the ambient levels for the St. Louis metropolitan area. Based on these findings, historical airborne exposure to PNA's or lead by the staff or students is estimated to have been at ambient levels.

EXHIBIT I

HUBERT WHEELER SCHOOL

Air Sample Locations



TABLES

TABLE I
RESULTS OF DUST SAMPLES FOR PNA's
FROM HVAC AND CARPET OF HUBERT WHEELER SCHOOL
SEPTEMBER 29, 1994

CONTAMINANT	HW92994-1 PNA HW92994-2 Lead in ppm	HW92994-3 PNA HW92994-4 Lead in ppm	HW92994-5 PNA HW92994-6 Lead in ppm	PQL in µg/sample
Naphthalene	ND	ND	ND	0.2
Acenapthylene	ND	ND	ND	2.0
Acenaphthene	ND	ND	ND	1.0
Fluorene	0.5	0.3	ND	0.04
Phenathrene	2.5	1.6	1.2	0.02
Anthracene	ND	ND	ND	0.02
Fluoranthene	2.7	1.0	0.8	0.004
Pyrene	2.9	1.0	0.8	0.002
Benzo (a) Anthracene	1.5	0.2	0.1	0.002
Chrysene	3.1	0.2	0.1	0.002
Benzo (b) Fluoranthene	2.0	0.5	0.3	0.004
Benzo (k) Fluoranthene	1.5	0.2	0.2	0.002
Benzo (a) Pyrene	1.2	0.3	0.1	0.002
Dibenz (a,h) Anthracene	0.8	ND	ND	0.004
Benzo (g,h,i) Perylene	2.7	1.0	ND	0.004
Indeno (1,2,3-cd) Pyrene	5.8	1.6	0.6	0.002
Σ PNA's	27.2	17	4.5	
Sample Weight (g)	0.0598	0.0191	0.0258	
PNA's as % of Tot.Wt.	0.003	0.002	0.0005	
Lead levels in ppm	440	400	190	
Lead as % of total dust	0.04%	0.04%	0.019	

ND indicated below the Practical Quantitation Limit (PQL)

TABLE II
RESULTS OF AIR SAMPLES FOR VOC's
FROM THE HUBERT WHEELER SCHOOL
OCTOBER 11, 1994

VOC	SAMPLE I.D. VOC101194-1 RESULTS IN PPM
Chloromethane	ND
Bromomethane	ND
Vinyl Chloride	ND
Chloroethane	ND
Methylene Chloride	0.177
Acetone	0.193
Carbon Disulfide	ND
Trichlorofluoromethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
Total 1 , 2-Dichloroethene	ND
Chloroform	ND
1,2-Dichloroethane	ND
Iodomethane	ND
2-Butanone	<0.008
1,1,1-Trichloroethane	<0.035
1,1-Dichloropropene	ND
Carbon Tetrachloride	ND
Bromodichloromethane	ND
1,2-Dichloropropane	ND
c,1,3-Dichloropropene	ND
Trichloroethene	<0.0106
Dibrormochloromethane	ND
1,1,2-Trichloroethane	ND
Benzene	<0.0035
t-1,3-Dichloropropene	ND
Bromoform	ND
Dibromomethane	ND
4--Methyl-2-Pentanone	<0.0014
2-Hexanone	ND
Tetrachloroethene	<0.0027
1,1,2,2-Tetrachloroethane	ND
Toluene	<0.0273
Chlorobenzene	ND
Ethyl Benzene	0.0103
Styrene	ND
Xylene (Total)	<0.0103
1,2,3-Trichloropropane	ND
Ethyl-Methacrylate	ND
Dichlorobenzene (Total)	<0.0225

ND indicates not detected in the sample. < indicates detected below the Practical Quantification Limit (PQL).
Sample collected with a portable battery powered pump calibrated to a flow rate of 120 cubic centimeters per minute.
The sample was analyzed using a modified EPA TO-1 method.

TABLE III
RESULTS OF AIR SAMPLES FOR PNA'S AND LEAD
FROM THE HUBERT WHEELER SCHOOL
July 13 and 14, 1995

RESULTS IN $\mu g/M^3$

CONTAMINANT	ADA-1/PNA's ADA-2/LEAD UPWIND OF SCHOOL	ADA-3/PNA's ADA-4/LEAD DOWNWIND OF SCHOOL	ADB-2/PNA's ADB-1/LEAD INSIDE SCHOOL	BLANK	PQL in µg/sample
Naphthalene	ND	ND	ND	ND	0.2
Acenapthylene	ND	ND	ND	ND	0.3
Acenaphthene	ND	ND	ND	ND	0.2
Fluorene	ND	ND	0.01	ND	0.0007
Phenathrene	0.03	0.02	0.06	ND	0.002
Anthracene	ND	ND	ND	ND	0.003
Fluoranthene	0.25	0.10	0.01	ND	0.0007
Pyrene	0.12	0.05	0.006	ND	0.0003
Benzo (a) Anthracene	0.002	0.0008	ND	ND	0.0003
Chrysene	0.008	0.005	0.01	ND	0.0003
Benzo (b) Fluoranthene	0.002	ND	ND	ND	0.0006
Benzo (k) Fluoranthene	0.0005	ND	ND	ND	0.0003
Benzo (a) Pyrene	0.0003	ND	0.002	ND	0.0003
Dibenz (a,h) Anthracene	ND	ND	ND	ND	0.0006
Benzo (g,h,i) Perylene	0.0007	ND	ND	ND	0.0006
Indeno (1,2,3-cd) Pyrene	ND	ND	ND	ND	0.0003
$\sum$ PNA's	0.414	0.176	.098		
Ambient dust levels in $\mu g/M^3$	56.3	53.8	25.9		
PNA's as % of Tot.Wt.	0.73%	0.33%	0.38%		
Air lead levels in $\mu g/M^3$	0.0217	0.0215	0.0108		
Lead as % of total dust	0.039%	0.04%	0.04%		

ND indicates not detected in sample.

APPENDIX I

94-S-5184

Results
ppm

Client #	DCL #	Pb
HW92994-2	94-30958	440.
HW92994-4	94-30959	400.
HW92994-6	94-30960	190.
LOD		100.

ND indicates the value is below the limit of detection (LOD)

Scott M. Krummen
Analyst

Reviewer

94-M-5185

Data Table (ng/Sample)

Client #	VOC101194-1	VOC101194-2			PQL
DCL #	94-30961	94-30962			
Chloromethane	ND	ND			250
Bromomethane	ND	ND			250
Vinyl Chloride	ND	ND			250
Chloroethane	ND	ND			250
Methylene Chloride	1100	ND			250
Acetone	1200	59 U			250
Carbon Disulfide	ND	ND			250
Trichlorofluoromethane	ND	ND			250
1,1-Dichloroethene	ND	ND			250
1,1-Dichloroethane	ND	ND			250
Total 1,2-Dichloroethene	ND	ND			250
Chloroform	ND	ND			250
1,2-Dichloroethane	ND	ND			250
Iodomethane	ND	ND			250
2-Butanone	50 U	ND			250
1,1,1-Trichloroethane	220 U	ND			250
1,1-Dichloropropene	ND	ND			250
Carbon Tetrachloride	ND	ND			250
Bromodichloromethane	ND	ND			250
1,2-Dichloropropane	ND	ND			250
c-1,3-Dichloropropene	ND	ND			250
Trichloroethene	66 U	ND			250
Dibromochloromethane	ND	ND			250
1,1,2-Trichloroethane	ND	ND			250
Benzene	22 U	ND			250
t-1,3-Dichloropropene	ND	ND			250
Bromoform	ND	ND			250
Dibromomethane	ND	ND			250
4-Methyl-2-Pentanone	9 U	ND			250
2-Hexanone	ND	ND			250
Tetrachloroethene	17 U	ND			250
1,1,2,2-Tetrachloroethane	ND	ND			250
Toluene	170 U	12 U			250
Chlorobenzene	ND	ND			250
Ethyl Benzene	16 U	ND			250
Styrene	ND	ND			250
Xylene (Total)	64 U	ND			500
1,2,3-Trichloropropane	ND	ND			250
Ethyl-Methacrylate	ND	ND			250
Dichlorobenzene (Total)	140 U	ND			250

ND indicates not detected in the sample. U indicates detected below the PQL

94-C-5183

Data Table
ug/g

Client #	HW92994-1	HW92994-3	HW92994-5		PQL
DCL #	94-30955	94-30956	94-30957		ug/sample
Naphthalene	ND	ND	ND		0.2
Acenapthylene	ND	ND	ND		2.
Acenaphthene	ND	ND	ND		1.
Fluorene	0.5	0.3	ND		0.04
Phenanthrene	2.5	1.6	1.2		0.02
Anthracene	ND	ND	ND		0.02
Fluoranthene	2.7	1.0	0.8		0.004
Pyrene	2.9	1.0	0.8		0.002
Benzo(a)Anthracene	1.5	0.2	0.1		0.002
Chrysene	3.1	0.8	0.4		0.002
Benzo(b)Fluoranthene	2.0	0.5	0.3		0.004
Benzo(k)Fluoranthene	1.5	0.2	0.2		0.002
Benzo(a)Pyrene	1.2	0.3	0.1		0.002
Dibenz(a,h)Anthracene	0.8	ND	ND		0.004
Benzo(g,h,i)Perylene	2.7	1.0	ND		0.004
Indeno(1,2,3-cd)Pyrene	5.8	1.6	0.6		0.002
Sample Weight (g)	0.0598	0.0191	0.0258		

ND indicates below the Practical Quantitation Limit (PQL)

Edward J. Slick
Analyst

E. Vinokur

Emilia Vinokur
Data Review

95-S-3360

Results
ug/Filter

Client #	DCL #	Pb
ADA-2	95-19107	0.3
ADA- 4	95-19108	0.3
ADB-1	95-19109	0.3
Blank (Pb)	95-19110	ND
LOD		**0.2**

ND indicates the value is below the limit of detection (LOD)

Scott M. Krummen
Analyst

Reviewer

95-S-3360

Results

Client #	DCL #	Total Dust (mg/Filter)	Total Dust (mg/m^3)
ADA-2	95-19107	0.78	0.056
ADA- 4	95-19108	0.75	0.054
ADB-1	95-19109	0.72	0.026
Blank (Pb)	95-19110	0.03	ND
PQL		**0.05**	**0.002**

ND indicates value is below the practical quantitation limit (PQL)
PQL in mg/m^3 based on a sampling volume of 27.78 m^3

Hai Nguyen
Analyst

Reviewer

95-C-3359

Data Table
ug/m^3

Client #	ADA-1	ADA-3	ADB-2	Blank (PNA)	
DCL #	95-19103	95-19104	95-19105	95-19106	PQL
Naphthalene	ND	ND	ND	ND	.2
Acenapthylene	ND	ND	ND	ND	.3
Acenaphthene	ND	ND	ND	ND	.2
Fluorene	ND	ND	.01	ND	.0007
Phenanthrene	.03	.02	.06	ND	.002
Anthracene	ND	ND	ND	ND	.003
Fluoranthene	.25	.10	.01	ND	.0007
Pyrene	.12	.05	.006	ND	.0003
Benzo(a)Anthracene	.002	.0008	ND	ND	.0003
Chrysene	.008	.005	.01	ND	.0003
Benzo(b)Fluoranthene	.002	ND	ND	ND	.0006
Benzo(k)Fluoranthene	.0005	ND	ND	ND	.0003
Benzo(a)Pyrene	.0003	ND	.002	ND	.0003
Dibenz(a,h)Anthracene	ND	ND	ND	ND	.0006
Benzo(g,h,i)Perylene	.0007	ND	ND	ND	.0006
Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	.0003

ND indicates below the Practical Quantitation Limit (PQL). PQL calculations are based upon a air volume of 580 m^3.
All samples were spiked with Benzo(e)Pyrene as a surrogate prior to extraction. Interferences from the samples prevented quantitation of the surrogate.

Edward J. Slick
Analyst

Emilia Vinokur
Data Review

APPENDIX C

SURFACE SOIL ANALYTICAL DATA REPORTS

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

June 07, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples SS-13, SS-11, SS-8, SS-5.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached. The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SS-13 12:15	9505-335-001	5/22/95	Total Pb, Semi-Volatiles
SS-11 13:30	9505-335-002	5/22/95	Total Pb, Semi-Volatiles
SS-8 14:21	9505-305-003	5/22/95	Total Pb, Semi-Volatiles
SS-5 14:58	9505-305-004	5/22/95	Total Pb, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

ENVI ET CS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis without dilutions.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

ANALYSIS RESULTS

TOTAL LEAD
METHOD SW-846 6010A

LAB ID.	IDENTIFICATION	* RESULTS
9505/355-001	SS-13 12:15	105 mg/kg
9505/355-002	SS-11 13:30	199 mg/kg
9505/355-003	SS-8 14:21	52.5 mg/kg
9505/355-004	SS-5 14:58	25.3 mg/kg

* = RESULTS REPORTED ON A DRY WEIGHT BASIS

DATE COLLECTED: 05/22/95
DATE RECEIVED : 05/22/95 16:35
DATE ANALYZED : 05/26/95 R.D.

MAY 31, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ETS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE ONE

SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6344

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE TWO

SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6344

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 05/24/95
DATE ANALYZED : 05/25/95
ANALYST : D.C.

MAY 31, 1995

W L Cooper

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ETC
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE ONE

SAMPLE ID: SS-13
LAB ID: 9505/355-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE TWO

SAMPLE ID: SS-13
LAB ID: 9505/355-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	390	2,000
120-12-7	Anthracene	390	450
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	2,500
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	2,500
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	1,300
218-01-9	Chrysene	390	1,300
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	1,600
207-08-9	Benzo(k)fluoranthene	390	560
50-32-8	Benzo(a)pyrene	390	1,200
193-39-5	Indeno(1,2,3-cd)pyrene	390	560
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	430

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 05/22/95 12:15
DATE RECEIVED : 05/22/95 16:35
DATE EXTRACTED : 05/24/95
DATE ANALYZED : 05/30/95
ANALYST : D.C.

MAY 31, 1995

WAYNE D. COOPER RS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ETC
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE ONE

SAMPLE ID: SS-11
LAB ID: 9505/355-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE TWO

SAMPLE ID: SS-11
LAB ID: 9505/355-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	2,500
120-12-7	Anthracene	420	500
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	3,300
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	3,400
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	1,600
218-01-9	Chrysene	420	1,700
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	2,100
207-08-9	Benzo(k)fluoranthene	420	610
50-32-8	Benzo(a)pyrene	420	1,400
193-39-5	Indeno(1,2,3-cd)pyrene	420	650
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	490

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 05/22/95 13:30
DATE RECEIVED : 05/22/95 16:35
DATE EXTRACTED : 05/24/95
DATE ANALYZED : 05/30/95
ANALYST : D.C.

MAY 31, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE ONE

SAMPLE ID: SS-8
LAB ID: 9505/355-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE TWO

SAMPLE ID: SS-8
LAB ID: 9505/355-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	710
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	1,070
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	1,080
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	530
218-01-9	Chrysene	400	530
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	750
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	420
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 05/22/95 14:21
DATE RECEIVED : 05/22/95 16:35
DATE EXTRACTED : 05/24/95
DATE ANALYZED : 05/30/95
ANALYST : D.C.

MAY 31, 1995

WAYNE L. COOPER RCJ
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE ONE

SAMPLE ID: SS-5
LAB ID: 9505/355-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1,900	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32157
PO # 9941
PROJECT # 2498.03.4120.03; HUBERT WHEELER

SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270
PAGE TWO

SAMPLE ID: SS-5
LAB ID: 9505/355-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	390	410
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	670
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	640
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	490
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 05/22/95 14:58
DATE RECEIVED : 05/22/95 16:35
DATE EXTRACTED : 05/24/95
DATE ANALYZED : 05/30/95
ANALYST : D.C.

MAY 31, 1995

WAYNE L. COOPER RS
LABORATORY DIRECTOR

SEMIVOLATILE ORG[illegible]S LAB CONTROL SAMPLE

SPIKE BLANK

Lab Name: Environmetrics Contract: GEOTECH.

Lab Code: 8270 Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SASLCS6344

Sample wt/vol: 30 (g/ml) g Lab File ID: >A6991

Level: (low/med) LOW Date Received: 05/22/95

% Moisture: NA decanted: (Y/N) N Date Extracted: 05/24/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/25/95

Injection Volume: 1.0 (uL) Dilution Factor: 33.3

GPC Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	4500	6700	67
2-Chlorophenol	4800	6700	71
1,4-Dichlorobenzene	2300	3300	70
N-Nitroso-Di-nPropylamine	2600	3300	79
1,2,4-Trichlorobenzene	2800	3300	85
4-Chloro-3-Methylphenol	5400	6700	80
Acenaphthene	2400	3300	73
4-Nitrophenol	4300	6700	64
2,4-Dinitrotoluene	2500	3300	76
Pentachlorophenol	5000	6700	76
Pyrene	3000	3300	89

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	SASBLK6344	66	76	80	99	67	67	68	65	0
02	SASLCS6344	77	84	88	113	71	70	73	75	0
03	9505355-1	66	64	82	101	67	63	63	63	0
04	9505355-2	67	66	82	108	62	62	63	66	0
05	9505355-3	61	58	81	106	60	59	59	66	0
06	9505355-4	58	61	81	109	59	58	56	66	0
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S4 (TPH)	= Terphenyl-d14	(18-137)	
S5 (PHL)	= Phenol-d5	(24-113)	
S6 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(25-121)	
S8 (TBP)	= 2,4,6-Tribromophenol	(19-122)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2146
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/22/95
Date Logged: 05/22/95
Status: Normal/LEVEL 5
HUBERT WHEELER

Date Due (PM): 06/01/95
Date Due (Client): 06/06/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9941
Quotation No.:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9505000355-001-01	SS-13	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000355-002-01	SS-11	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000355-003-01	SS-8	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000355-004-01	SS-5	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
4		05/22/95	PM Signature : Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	05/22/95	16:35:03

Karen Coons
Ann

GEOTECHNOLOGY, INC
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2146 P.O. # 9941

Project No. 2498.08.4120.03

Project Name: HUBERT WHEELER

Shipper Name: GEOTECHNOLOGY INC.

Address: 2258 GRISSOM DRIVE

Sampler's Signature: Ronnie Allen Telephone # 997-7440

Contact: SAM BRENNEKE Telephone # SAME

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-13	5/22/95	1215	SOIL	1-16 OZ	SEMI-VOA TOTAL LEAD	10 DAY T.A.
SS-11	5/22/95	1330	↓	↓	↓	↓
SS-8	5/22/95	1421				
SS-5	5/22/95	1458				

Receiver Name: ENVIRONMENTALS INC. MARYLAND HEIGHTS MO. 63043
(Company Name and Address)

Chain of Possession:

From: Ronnie Allen 5/22/95 To: [signature] 5-22-95
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2146
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/22/95
Date Logged: 05/22/95
Status: Normal/LEVEL 5
HUBERT WHEELER

Date Due (PM): 06/01/95
Date Due (Client): 06/06/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9941
Quotation No.:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
		5-22	2:40		5/22/95	2:40	
		5/22	9:30		5/30	9:30	

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

June 01, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration Samples SS-14, SS-12, SS-9, SS-6.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached. The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SS-14 11:55	9505-356-001	5/22/95	Total Pb, Semi-Volatiles
SS-12 13:10	9505-356-002	5/22/95	Total Pb, Semi-Volatiles
SS-9 13:50	9505-356-003	5/22/95	Total Pb, Semi-Volatiles
SS-6 14:30	9505-356-004	5/22/95	Total Pb, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis without dilutions.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32184
PO # 9941
PROJECT # 2498.03.4120.03, HUBERT WHEELER SCHOOL

JUN - 9 1995
GEOTECHNOLOGY

ANALYSIS RESULTS

TOTAL LEAD
METHOD SW-846 6010

LAB NO.	IDENTIFICATION	* RESULTS
9505/356-001	SS-14 11:55	36.9 mg/kg
9505/356-002	SS-12 13:10	97.2 mg/kg
9505/356-003	SS-9 13:50	43.7 mg/kg
9505/356-004	SS-6 14:30	37.6 mg/kg

* = RESULTS ARE REPORTED ON A DRY WEIGHT BASIS

DATE COLLECTED: 5/22/95
DATE RECEIVED : 5/22/95 16:45
DATE ANALYZED : 5/26/95 R.D.

JUNE 1, 1995

WAYNE L. COOPER Ph.D
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMENTRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6344

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6344

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 5/24/95
DATF ANALYZED : 5/25/95
ANALYST : D.C.

JUNE 1, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-14
LAB ID: 9505/356-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-14
LAB ID: 9505/356-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/22/95 11:55
DATE RECEIVED : 5/22/95 16:45
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/30/95
ANALYST : D.C.

JUNE 1, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONETICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-12
LAB ID: 9505/356-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-12
LAB ID: 9505/356-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	1,100
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	1,500
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	1,600
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	740
218-01-9	Chrysene	400	750
117-81-7	bis(2-Ethylhexyl)phthalate	400	460
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	1,000
207-08-9	Benzo(k)fluoranthene	400	430
50-32-8	Benzo(a)pyrene	400	660
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/22/95 13:10
DATE RECEIVED : 5/22/95 16:45
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/30/95
ANALYST : D.C.

JUNE 1, 1995
WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

EMMIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-9
LAB ID: 9505/356-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-9
LAB ID: 9505/356-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	470
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	800
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	850
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	450
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	600
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/22/95 13:50
DATE RECEIVED : 5/22/95 16:45
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/30/95
ANALYST : D.C.

JUNE 1, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-6
LAB ID: 9505/356-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2,000	U

Member of American Council of Independent Laboratories • American Society for Testing and Materials • American Chemical Society • American Industrial Hygiene Association

2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32184 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9941 METHOD SW-846 8270
PROJECT # 2498.03.4120.03 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-6
LAB ID: 9505/356-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	390	820
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	1,100
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	1,090
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	650
218-01-9	Chrysene	390	640
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	990
207-08-9	Benzo(k)fluoranthene	390	400
50-32-8	Benzo(a)pyrene	390	600
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/22/95 14:30
DATE RECEIVED : 5/22/95 16:45
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/30/95
ANALYST : D.C.

JUNE 1, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2145 P.O. # 09941

Project No. 2498.03.4120.03

Project Name: Hubert Wheeler School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St Louis MO

Sampler's Signature: [signature] Telephone # 997-7440

Contact: Sam Brenneke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-14	5/22/95	1155	Soil	1-16oz	Semivolatiles Total Lead	N.T.A.
SS-12	↓	1310	↓	↓	↓ ↓	↓
SS-9	↓	1350	↓	↓	↓ ↓	↓
SS-6	↓	1430	↓	↓	↓ ↓	↓

Receiver Name: Environmetrics, Inc St Louis MO
(Company Name and Address)

Chain of Possession:

From: [signature] 5/22/95 4:09
(Name and Date/Time)

To: [signature] 5-22-95 4:09
(Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER ORD/LABORATORY WORK REQUEST

COC : 2145
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/22/95
Date Logged: 05/22/95
Status: Normal/LEVEL 5
HUBERT WHEELER

Date Due (PM): 06/01/95
Date Due (Client): 06/06/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9941
Quotation No.:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9505000356-001-01	SS-14	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000356-002-01	SS-12	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000356-003-01	SS-9	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000356-004-01	SS-6	SOIL	1-500 ml GLASS	Cold	05/22/95		LEAD, EPA SW-846-SW-846,A, 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

Items Transferred	Relinquished By	Date	PM Signature :	Logged In By	Date	Time
4		05/22/95	Karen Coons Client Services Rep. Karen Coons	Phyllis Woods Login Coordinator	05/22/95	16:45:39

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2145
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/22/95
Date Logged: 05/22/95
Status: Normal/LEVEL 5
HUBERT WHEELER

Date Due (PM): 06/01/95
Date Due (Client): 06/06/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9941
Quotation No.:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
	[illegible]	5/23	240	[illegible]	5/23/95	2:40pm	[illegible]
	[illegible]	5/30	9:3	[illegible]	5/30	9:30	[illegible]

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

June 08, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples SS-7, SS-18, SS-19, SS-21, SS-23, SS-16, SS-10, SS-17, SS-#-01, 2498:EB:1:1-S-17, SS-20, SS-22, SS-15.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached. The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SS-7 10:00	9505-375-001	5/24/95	Total Pb, Semi-Volatiles
SS-18 10:45	9505-375-002	5/24/95	Total Pb, Semi-Volatiles
SS-19 11:25	9505-375-003	5/24/95	Total Pb, Semi-Volatiles
SS-21 12:20	9505-375-004	5/24/95	Total Pb, Semi-Volatiles
SS-23 13:05	9505-375-005	5/24/95	Total Pb, Semi-Volatiles
SS-16 13:50	9505-375-006	5/24/95	Total Pb, Semi-Volatiles
SS-10 10:05	9505-375-007	5/24/95	Total Pb, Semi-Volatiles
SS-17 10:45	9505-375-008	5/24/95	Total Pb, Semi-Volatiles

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

SS-#-01	9505-375-009	5/23/95	Total Pb, Semi-Volatiles
2498:EB:1:1-S17 11:20	9505-375-010	5/23/95	Total Pb, Semi-Volatiles
SS-20 12:00	9505-375-011	5/23/95	Total Pb, Semi-Volatiles
SS-22 12:40	9505-375-012	5/23/95	Total Pb, Semi-Volatiles
SS-22 12:40	9505-375-012	5/23/95	Matrix Spike, Matrix Spike Duplicate Total Pb, Semi-Volatiles
SS-15 132:20	9505-375-013	5/23/95	Total Pb, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis without dilutions.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173
PO # 9942
PROJECT # 2498.03.4120.0003, HUBERT WHEELER SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA

SAMPLE ID: SS-22 5/23/95 12:40
LAB ID: 9505/375-012

ELEMENT	SAMPLE RESULT (mg/kg)	SPIKE LEVEL (mg/kg)	SPIKE RESULT (mg/kg)	% REC.	DUPLICATE RESULT (mg/kg)	% REC.	RPD
LEAD	42.1	123	150.8	88	153.1	91	3

* = RESULTS REPORTED ON A DRY WEIGHT BASIS

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173
PO # 9942
PROJECT # 2498.03.4120.0003, HUBERT WHEELER SCHOOL

ANALYSIS RESULTS

TOTAL LEAD
METHOD SW-846 6010

LAB ID	SAMPLE ID	* RESULTS	
9505/375-001	SS-7 10:00	55.3	mg/kg
9505/375-002	SS-18 10:45	58.6	mg/kg
9505/375-003	SS-19 11:25	61.4	mg/kg
9505/375-004	SS-21 12:20	38.3	mg/kg
9505/375-005	SS-23 13:05	104	mg/kg
9505/375-006	SS-16 13:50	62.2	mg/kg
9505/375-007	SS-10 10:05	22.9	mg/kg
9505/375-008	SS-17 10:45	40.9	mg/kg
9505/375-009	SS-#01 10:50	23.2	mg/kg
9505/375-010	2498:EB:1-S-17 11:20	<0.100	mg/l
9505/375-011	SS-20 12:00	33.0	mg/kg
9505/375-012	SS-22 12:40	42.1	mg/kg
9505/375-013	SS-15 13:20	42.0	mg/kg

* = RESULTS REPORTED ON A DRY WEIGHT BASIS

DATE COLLECTED: 5/23/95
DATE RECEIVED : 5/23/95 15:25
DATE ANALYZED : 5/26/95 R.D.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6346

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6346

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/25/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6347

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6347

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/31/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER RS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-7
LAB ID: 9505/375-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-7
LAB ID: 9505/375-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	630
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	970
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	950
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	490
218-01-9	Chrysene	400	480
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	650
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 10:00
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/31/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-18
LAB ID: 9505/375-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

TCS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-18
LAB ID: 9505/375-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	650
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	890
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	980
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	500
218-01-9	Chrysene	410	480
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	660
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 10:45
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/31/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER TCS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-19
LAB ID: 9505/375-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,200	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-19
LAB ID: 9505/375-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	430	1,100
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	1,500
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	1,400
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	750
218-01-9	Chrysene	430	730
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	980
207-08-9	Benzo(k)fluoranthene	430	440
50-32-8	Benzo(a)pyrene	430	690
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 11:25
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-21
LAB ID: 9505/375-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMENTAL TESTING
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-21
LAB ID: 9505/375-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	430
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	540
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	470
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 12:20
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER PhD.
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-23
LAB ID: 9505/375-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-23
LAB ID: 9505/375-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	3,100
120-12-7	Anthracene	410	690
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	3,900
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	3,600
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,700
218-01-9	Chrysene	410	1,700
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	2,000
207-08-9	Benzo(k)fluoranthene	410	680
50-32-8	Benzo(a)pyrene	410	1,600
193-39-5	Indeno(1,2,3-cd)pyrene	410	800
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	620

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 13:05
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-16
LAB ID: 9505/375-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

TCS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-16
LAB ID: 9505/375-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	700
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	970
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	1,040
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	570
218-01-9	Chrysene	400	560
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	760
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	460
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 13:50
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-10
LAB ID: 9505/375-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

METR CS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-10
LAB ID: 9505/375-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 10:05
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-17
LAB ID: 9505/375-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-17
LAB ID: 9505/375-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 10:45
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-#01
LAB ID: 9505/375-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-#01
LAB ID: 9505/375-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 Ìg/kg	U Ìg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 10:50
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: 2498:EB:1-S-17
LAB ID: 9505/375-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: 2498:EB:1-S-17
LAB ID: 9505/375-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 11:20
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 5/25/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-20
LAB ID: 9505/375-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9942 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-20
LAB ID: 9505/375-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	2,600
120-12-7	Anthracene	410	660
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	2,500
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	2,600
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,200
218-01-9	Chrysene	410	1,200
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	1,400
207-08-9	Benzo(k)fluoranthene	410	450
50-32-8	Benzo(a)pyrene	410	970
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 12:00
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-22
LAB ID: 9505/375-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 ug/kg	U ug/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-22
LAB ID: 9505/375-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 ug/kg	U ug/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	2,400
120-12-7	Anthracene	410	510
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	3,400
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,300
218-01-9	Chrysene	410	1,300
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	1,400
207-08-9	Benzo(k)fluoranthene	410	440
50-32-8	Benzo(a)pyrene	410	1,080
193-39-5	Indeno(1,2,3-cd)pyrene	410	430
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	440

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 13:20
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-15
LAB ID: 9505/375-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 ug/kg	U ug/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32173 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9942 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER SCHOOL
SAMPLE ID: SS-15
LAB ID: 9505/375-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 ug/kg	U ug/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/23/95 12:40
DATE RECEIVED : 5/23/95 15:25
DATE EXTRACTED : 5/24/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 5, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

SOIL SEMIVOLATILE [redacted]SD TRIX SPIKE/MATRIX SPIKE [redacted]LICATE RECOVERY

.b Name: Environmetrics Contract: GEOTECH.

[redacted]code: Case No.: DRY SAS No.: SDG No.:

.trix Spike - EPA Sample No.: 9503370-12 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	8200	0	4700	57	26- 90
2-Chlorophenol	8200	0	4900	60	25-102
1,4-Dichlorobenzene	4100	0	2300	56	28-104
N-Nitroso-Di-nPropylami	4100	0	3100	76	41-126
1,2,4-Trichlorobenzene	4100	0	2900	72	38-107
4-Chloro-3-Methylphenol	8200	0	6100	75	26-103
Acenaphthene	4100	0	2900	72	31-137
4-Nitrophenol	8200	0	4300	53	11-114
2,4-Dinitrotoluene	4100	0	2800	68	28- 89
Pentachlorophenol	8200	0	3000	37	17-109
Pyrene	4100	3400	5400	48	35-142

OMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	8200	5000	62	8	35	26- 90
2-Chlorophenol	8200	5100	63	4	50	25-102
1,4-Dichlorobenzene	4100	2800	69	20	27	28-104
N-Nitroso-Di-nPropylami	4100	3400	84	10	38	41-126
1,2,4-Trichlorobenzene	4100	3500	85	17	23	38-107
4-Chloro-3-Methylphenol	8200	6600	80	7	33	26-103
Acenaphthene	4100	3200	78	8	19	31-137
4-Nitrophenol	8200	4300	53	1	50	11-114
2,4-Dinitrotoluene	4100	2900	70	4	47	28- 89
Pentachlorophenol	8200	2300	28	29	47	17-109
Pyrene	4100	6200	68	35	36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

PD: 0 out of 11 outside limits

pike Recovery: 0 out of 22 outside limits

COMMENTS: _____

_____

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # ~~2556~~ 2147 P.O. # ~~0994~~ 09942

Project No. 2498.03.4120.03

Project Name: Hubert Wheeler School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St Louis MO

Sampler's Signature: Ronnie Allen Telephone # 997 7440

Contact: Sam Brancke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-7	5/23/95	1000	Soil	1-1602	Semi-VOA Total Lead	10 Day T.A.
SS-18	↓	1045	↓	↓	↓	↓
SS-19		1125				
SS-21		1220				
SS-23		1305				
SS-16		1350				

Receiver Name: Environmetrics Inc St Louis MO
(Company Name and Address)

Chain of Possession:

From: Ronnie Allen 5/23/95 To: [signature] -5-23-95 3:06
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2148 P.O. # 9942

Project No. 2498.03.4120.03

Project Name: Hubert Wheeler School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St Louis MO 63146

Sampler's Signature: Dan Dunlap Telephone # 997-7440

Contact: Sam Brenneke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-10	5/23/95	1005	Soil	1-16 oz	Semi Volatile Organics Total Lead	10 DAY T.A.
SS-17		1045				
SS-#-01		1050				
2498:EB:1-5-95	5/23/95	1120	Water	2-1 liter 1-1 liter	Semi Volatile Organics Total Lead	
SS-20		1200	Soil	1-16oz	Semi Volatile Organics Total Lead	
SS-22		1240				
SS-15		1320				

Receiver Name: Environmetrics Inc St Louis MO
(Company Name and Address)

Chain of Possession:

From: Dan Dunlap 5/23/95 To: [signature] 5-23-95
(Name and Date/Time) (Name and Date/Time) 3:10

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2147-8

Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/23/95
Date Logged: 05/23/95
Status: Normal/LEVEL 5

Date Due (PM): 06/05/95
Date Due (Client): 06/07/95
Mode: Mail

Project No.: 2498.03.4120.03 HUBERT
P.O. No.: 09942
Quotation No.:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
14		05/23/95	PM Signature : Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	05/23/95	15:25:36

Karen Coons

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2147-8
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/23/95
Date Logged: 05/23/95
Status: Normal/LEVEL 5

Date Due (PM): 06/05/95
Date Due (Client): 06/07/95
Mode: Mail

Project No.: 2498.03.4120.03 HUBERT
P.O. No.: 09942
Quotation No.:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9505000375-001-01	SS-7	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-002-01	SS-18 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-003-01	SS-19 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-004-01	SS-21 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-005-01	SS-23 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-006-01	SS-16 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-007-01	SS-10 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-008-01	SS-17 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-009-01	SS-#-01 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-010-01	2498:EB:1-S20 Sample Instructions:	GROUND WATER	2-1 LITER GLASS	Cold	05/23/95		SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-010-02	2498:EB:1-S20 Sample Instructions:	GROUND WATER	2-1 LITER PLASTIC	Nitric Acid	05/23/95		LEAD, EPA SW-846-SW-846 6010A
9505000375-011-01	SS-20 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-012-01	SS-22 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000375-013-01	SS-15 Sample Instructions:	SOIL	1-500 ml GLASS	Cold	05/23/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2147-8
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/23/95
Date Logged: 05/23/95
Status: Normal/LEVEL 5

Date Due (PM): 06/05/95
Date Due (Client): 06/07/95
Mode: Mail

Project No.: 2498.03.4120.03 HUB
P.O. No.: 09942
Quotation No.:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
Organics	R Woods	5/24/95	9:40 am	K. Drinnon	5/24/95	910A	PCB
	[illegible]	5/30	9:30	[illegible]	5/30/95	9:33	[illegible]

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

June 08, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

JUN 1 5

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples SS-3, SS-4, SS-38, SS-40, SS-36, SS-#-2, SS-33, SS-32, SS-26, 2498:EB:2-S33, SS-1, SS-2, 22-39, SS-35, SS-37, SS-34, SS-31.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached. The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SS-3 9:30	9505-402-001	5/24/95	Total Pb, Semi-Volatiles
SS-4 10:05	9505-402-002	5/24/95	Total Pb, Semi-Volatiles
SS-38 10:35	9505-402-003	5/24/95	Total Pb, Semi-Volatiles
SS-40 11:20	9505-402-004	5/24/95	Total Pb, Semi-Volatiles
SS-36 11:55	9505-402-005	5/24/95	Total Pb, Semi-Volatiles
SS-#-2 12:40	9505-375-006	5/24/95	Total Pb, Semi-Volatiles
SS-33 12:45	9505-402-007	5/24/95	Total Pb, Semi-Volatiles
SS-32 13:45	9505-402-008	5/24/95	Total Pb, Semi-Volatiles

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

SS-26 14:30	9505-402-009	5/24/95	Total Pb, Semi-Volatiles
2498:EB:2-S33 13:10	9505-402-010	5/24/95	Total Pb, Semi-Volatiles
SS-1 9:30	9505-402-011	5/24/95	Total Pb, Semi-Volatiles
SS-2 10:10	9505-402-012	5/24/95	Total Pb, Semi-Volatiles
SS-39 10:50	9505-402-013	5/24/95	Total Pb, Semi-Volatiles
SS-35 11:30	9505-402-014	5/24/95	Total Pb, Semi-Volatiles
SS-37 12:15	9505-402-015	5/24/95	Total Pb, Semi-Volatiles
SS-34 13:00	9505-402-016	5/24/95	Total Pb, Semi-Volatiles
SS-31 14:00	9505-402-017	5/24/95	Total Pb, Semi-Volatiles
SS-31 14:00	9505-402-017	5/24/95	Matrix Spike, Matrix Spike Duplicate Total Pb, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis without dilutions.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212
PO # 9945
PROJECT # 2498.03.4120.0003, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

TOTAL LEAD
METHOD SW-846 6010

LAB ID	SAMPLE ID	* RESULTS	
9505/402-001	SS-3 9:30	31.9	mg/kg
9505/402-002	SS-4 10:05	18.4	mg/kg
9505/402-003	SS-38 10:35	48.5	mg/kg
9505/402-004	SS-40 11:20	234	mg/kg
9505/402-005	SS-36 11:55	41.8	mg/kg
9505/402-006	SS-#2 12:40	54.0	mg/kg
9505/402-007	SS-33 12:45	52.9	mg/kg
9505/402-008	SS-32 13:45	71.1	mg/kg
9505/402-009	SS-26 14:30	72.7	mg/kg
9505/402-010	2498:EB:2-S-33 13:10	<0.100	mg/l
9505/402-011	SS-1 9:30	91.3	mg/kg
9505/402-012	SS-2 10:10	38.5	mg/kg
9505/402-013	SS-39 10:50	74.9	mg/kg
9505/402-014	SS-35 11:30	63.0	mg/kg
9505/402-015	SS-37 12:15	1,620	mg/kg
9505/402-016	SS-34 13:00	128	mg/kg
9505/402-017	SS-31 14:00	63.8	mg/kg

* = RESULTS REPORTED ON A DRY WEIGHT BASIS
DATE COLLECTED: 5/24/95
DATE RECEIVED : 5/24/95 17:24
DATE ANALYZED : 6/05/95 R.D.

JUNE 6, 1995

WAYNE L. COOPER RS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212
PO # 9945
PROJECT # 2498.03.4120.0003, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA

SAMPLE ID: SS-31 5/24/95 14:00
LAB ID: 9505/402-017

ELEMENT	SAMPLE RESULT (mg/kg)	SPIKE LEVEL (mg/kg)	SPIKE RESULT (mg/kg)	% REC.	DUPLICATE RESULT (mg/kg)	% REC.	RPD
LEAD	63.8	125.8	165.5	81	182.5	94	13

NOTE: RESULTS REPORTED ON A DRY WEIGHT BASIS

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6351

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6351

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 5/31/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6353

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6353

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-3
LAB ID: 9505/402-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-3
LAB ID: 9505/402-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	690
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	1,200
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	660
218-01-9	Chrysene	400	770
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	1,070
207-08-9	Benzo(k)fluoranthene	400	450
50-32-8	Benzo(a)pyrene	400	680
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 9:30
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/01/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER, RS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-4
LAB ID: 9505/402-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-4
LAB ID: 9505/402-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	460
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	450
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 10:05
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-38
LAB ID: 9505/402-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	1,080
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-38
LAB ID: 9505/402-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	540
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	1,300
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	4,000	16,000
120-12-7	Anthracene	400	4,500
84-74-2	Carbazole	400	2,600
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	4,000	23,000
92-87-4	Benzidine	400	U
129-00-0	Pyrene	4,000	16,000
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	4,000	8,600
218-01-9	Chrysene	4,000	6,600
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	4,000	16,000
207-08-9	Benzo(k)fluoranthene	400	2,500
50-32-8	Benzo(a)pyrene	4,000	9,900
193-39-5	Indeno(1,2,3-cd)pyrene	400	3,800
53-70-3	Dibenzo(a,h)anthracene	400	940
191-24-2	Benzo(g,h,i)perylene	400	3,000

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 10:35
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02 & 03/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-40
LAB ID: 9505/402-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-40
LAB ID: 9505/402-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	430
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 11:20
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER PhS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-36
LAB ID: 9505/402-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	690
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-36
LAB ID: 9505/402-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	770
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	2,000	10,000
120-12-7	Anthracene	400	2,800
84-74-2	Carbazole	400	1,400
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	2,000	12,000
92-87-4	Benzidine	400	U
129-00-0	Pyrene	2,000	9,700
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	5,000
218-01-9	Chrysene	400	4,700
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	5,900
207-08-9	Benzo(k)fluoranthene	400	1,900
50-32-8	Benzo(a)pyrene	400	4,400
193-39-5	Indeno(1,2,3-cd)pyrene	400	1,900
53-70-3	Dibenzo(a,h)anthracene	400	450
191-24-2	Benzo(g,h,i)perylene	400	1,500

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 11:55
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-#2
LAB ID: 9505/402-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-#2
LAB ID: 9505/402-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	650
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	920
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	910
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	500
218-01-9	Chrysene	400	480
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	680
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 12:40
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER P.S
LABORATORY DIRECTOR

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-33
LAB ID: 9505/402-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-33
LAB ID: 9505/402-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	620
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	830
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	460
218-01-9	Chrysene	400	450
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	640
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 12:45
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER RS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-32
LAB ID: 9505/402-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-32
LAB ID: 9505/402-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	1,900
120-12-7	Anthracene	410	520
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	2,700
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,300
218-01-9	Chrysene	410	1,200
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	1,400
207-08-9	Benzo(k)fluoranthene	410	540
50-32-8	Benzo(a)pyrene	410	1,100
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 13:45
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-26
LAB ID: 9505/402-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	690
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	410
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-26
LAB ID: 9505/402-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	5,200
120-12-7	Anthracene	410	800
84-74-2	Carbazole	410	730
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	4,400
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	3,900
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,500
218-01-9	Chrysene	410	1,700
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	2,000
207-08-9	Benzo(k)fluoranthene	410	580
50-32-8	Benzo(a)pyrene	410	1,400
193-39-5	Indeno(1,2,3-cd)pyrene	410	420
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 14:30
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: 2498:EB:2-S-33
LAB ID: 9505/402-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	12 µg/l	U µg/l
108-95-2	Phenol	12	U
111-44-4	bis(2-chloroethyl)Ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl Alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	o-Cresol	12	U
39638-32-9	bis-(2-Chloro2propyl)Ether	12	U
106-44-5	m & p-Cresol	12	U
621-64-7	N-Nitroso-Di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	58	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	12	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	58	U
131-11-3	Dimethylphthalate	12	U
103-33-3	Azobenzene	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U
99-09-2	3-Nitroaniline	58	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	58	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: 2498:EB:2-S-33
LAB ID: 9505/402-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	58 µg/l	U µg/l
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenol phenyl ether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	58	U
534-52-1	4,6-Dinitro-2-methylphenol	58	U
86-30-6	N-Nitrosodiphenylamine	12	U
101-55-3	4-Bromophenyl phenyl ether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	58	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Carbazole	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
92-87-4	Benzidine	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	12	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octylphthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenzo(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 13:10
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-1
LAB ID: 9505/402-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-1
LAB ID: 9505/402-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	1,700
120-12-7	Anthracene	400	440
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	2,400
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	1,300
218-01-9	Chrysene	400	1,200
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	1,700
207-08-9	Benzo(k)fluoranthene	400	620
50-32-8	Benzo(a)pyrene	400	1,200
193-39-5	Indeno(1,2,3-cd)pyrene	400	430
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 9:30
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-2
LAB ID: 9505/402-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-2
LAB ID: 9505/402-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	390	1,800
120-12-7	Anthracene	390	540
84-74-2	Carbazole	390	420
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	3,600
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	1,700
218-01-9	Chrysene	390	2,000
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	2,900
207-08-9	Benzo(k)fluoranthene	390	860
50-32-8	Benzo(a)pyrene	390	1,900
193-39-5	Indeno(1,2,3-cd)pyrene	390	800
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	610

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 10:10
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-39
LAB ID: 9505/402-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-39
LAB ID: 9505/402-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	2,000
120-12-7	Anthracene	410	500
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	2,300
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	2,300
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,090
218-01-9	Chrysene	410	1,010
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	1,400
207-08-9	Benzo(k)fluoranthene	410	550
50-32-8	Benzo(a)pyrene	410	940
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 10:50
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-35
LAB ID: 9505/402-014

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-35
LAB ID: 9505/402-014

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	390	1,900
120-12-7	Anthracene	390	500
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	2,800
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	1,300
218-01-9	Chrysene	390	1,300
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	1,700
207-08-9	Benzo(k)fluoranthene	390	680
50-32-8	Benzo(a)pyrene	390	1,300
193-39-5	Indeno(1,2,3-cd)pyrene	390	410
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 11:30
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9945 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-37
LAB ID: 9505/402-015

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-37
LAB ID: 9505/402-015

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	2,100
120-12-7	Anthracene	410	510
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	2,800
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,300
218-01-9	Chrysene	410	1,400
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	1,700
207-08-9	Benzo(k)fluoranthene	410	610
50-32-8	Benzo(a)pyrene	410	1,200
193-39-5	Indeno(1,2,3-cd)pyrene	410	420
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 12:15
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-34
LAB ID: 9505/402-016

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-34
LAB ID: 9505/402-016

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	1,700
120-12-7	Anthracene	410	470
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	2,100
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	1,010
218-01-9	Chrysene	410	960
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	1,300
207-08-9	Benzo(k)fluoranthene	410	560
50-32-8	Benzo(a)pyrene	410	900
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 13:00
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/02/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-31
LAB ID: 9505/402-017

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32212 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9945 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-31
LAB ID: 9505/402-017

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	2,200
120-12-7	Anthracene	420	460
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	2,800
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	2,600
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	1,300
218-01-9	Chrysene	420	1,300
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	1,500
207-08-9	Benzo(k)fluoranthene	420	520
50-32-8	Benzo(a)pyrene	420	1,100
193-39-5	Indeno(1,2,3-cd)pyrene	420	530
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/24/95 14:00
DATE RECEIVED : 5/24/95 17:24
DATE EXTRACTED : 5/25/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 6, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

SOIL SEMIVOLATILE [redacted]RIX SPIKE/MATRIX SPIKE D[redacted]CATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

[redacted] code: Case No.: DRY SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 9505402-17 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	#	QC LIMITS REC.
Phenol	8400	0	5200	62		26- 90
2-Chlorophenol	8400	0	4500	53		25-102
1,4-Dichlorobenzene	4200	0	600	14	*	28-104
N-Nitroso-Di-nPropylami	4200	0	2900	68		41-126
1,2,4-Trichlorobenzene	4200	0	1800	42		38-107
4-Chloro-3-Methylphenol	8400	0	6000	71		26-103
Acenaphthene	4200	0	3300	80		31-137
4-Nitrophenol	8400	0	4800	56		11-114
2,4-Dinitrotoluene	4200	0	3300	79		28- 89
Pentachlorophenol	8400	0	1700	21		17-109
Pyrene	4200	2600	9000	152	*	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	8400	5200	62		1		35	26- 90
2-Chlorophenol	8400	4500	54		2		50	25-102
1,4-Dichlorobenzene	4200	870	21	*	37	*	27	28-104
N-Nitroso-Di-nPropylami	4200	2900	68		0		38	41-126
1,2,4-Trichlorobenzene	4200	2000	48		10		23	38-107
4-Chloro-3-Methylphenol	8400	6300	75		5		33	26-103
Acenaphthene	4200	3100	74		7		19	31-137
4-Nitrophenol	8400	5000	59		5		50	11-114
2,4-Dinitrotoluene	4200	3500	82		4		47	28- 89
Pentachlorophenol	8400	1600	19		6		47	17-109
Pyrene	4200	7800	125		19		36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 3 out of 22 outside limits

COMMENTS: _____

_____

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2150 P.O. # 9945

Project No. 2498.03.4120.03

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology Inc

Address: 2258 Grissom Drive St Louis Mo

Sampler's Signature: [signature] Telephone # 997 7440

Contact: Sam Brennecke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-3	5/24/95	0930	Soil	1-16 oz	Semi Volatile Organics Total Lead	10 DAY T.A.
SS-4		1005				
SS-38		1035				
SS-40		1120				
SS-36		1155				
SS-#-2		1240				
SS-33		1245				
SS-32		1345				
SS-26		1430				
2498:EB:2-~~SS~~-33 KC 5/26/95		1310	Water	2-liter 1-liter	Semi Volatile Organics Total Lead	

Receiver Name: Environmetrics Inc St Louis MO 631
(Company Name and Address)

Chain of Possession:

From: [signature] 5/24/95
(Name and Date/Time)

To: [signature] 5-24-95
(Name and Date/Time) 352

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

GEOTECHNOLOGY, INC
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2149 P.O. # 9945

Project No. 2498.03.4120.03

Project Name: HUBERT WHEELER STATE SCHOOL

Shipper Name: GEOTECHNOLOGY INC.

Address: 2258 GRISSOM DRIVE

Sampler's Signature: Ronnie Allen Telephone # 997-7440

Contact: SAM BRENNEKE Telephone # SAME

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-1	5/24/95	0980	SOIL	1-16 OZ	SEMI-VOA TOTAL LEAD	10 DAY T.A.
SS-2		1010				
SS-39		1050				
SS-35		1130				
SS-37		1215				
SS-34		1800				
★ SS-31	↓	1400	↓	↓	↓	↓
→	★ Analyze MS/MSD (KD 5/24/95					

Receiver Name: ENVIRONMETRICS INC. MARYLAND HEIGHTS MO, 63043
(Company Name and Address)

Chain of Possession:

From: Ronnie Allen 5/24/95 To: [signature] 5-24-95
(Name and Date/Time) (Name and Date/Time)
352

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2149/50
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/24/95
Date Logged: 05/24/95
Status: Normal/LEVEL 4

Date Due (PM): 06/06/95
Date Due (Client): 06/08/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9945
Quotation No.:

S	Le Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9505	402-001-01	SS-3	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-002-01	Sample Instructions: SS-4	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505(	402-003-01	Sample Instructions: SS-38	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-004-01	Sample Instructions: SS-40	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-005-01	Sample Instructions: SS-36	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-006-01	Sample Instructions: SS-#-2	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-007-01	Sample Instructions: SS-33	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-008-01	Sample Instructions: SS-32	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-009-01	Sample Instructions: SS-28	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-010-01	Sample Instructions: 2498:EB:Z-S32	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	05/24/95		LEAD, EPA SW-846-SW-846 6010A
9505000	402-010-02	Sample Instructions: 2498:EB:Z-S32	WASTE WATER	2-1 LITER GLASS	Cold	05/24/95		SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-011-01	Sample Instructions: SS-1	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505	0402-012-01	Sample Instructions: SS-2	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9505000	402-013-01	Sample Instructions: SS-39	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:						

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2149/50
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/24/95
Date Logged: 05/24/95
Status: Normal/LEVEL 4

Date Due (PM): 06/06/95
Date Due (Client): 06/08/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9945
Quotation No.:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
05000402-014-01	SS-35	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
05000402-015-01	SS-37	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
05000402-016-01	SS-34	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
ATRIX SPIKE, M.S.D. 05000402-017-01	SS-31	SOIL	1-500 ml GLASS	Cold	05/24/95		LEAD, EPA SW-846-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
18		05/24/95	PM Signature : Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	05/24/95	17:24:15

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2149/50

Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/24/95
Date Logged: 05/24/95
Status: Normal/LEVEL 4

Date Due (PM): 06/06/95
Date Due (Client): 06/08/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9945
Quotation No.:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
		5/25	8:49		5/25	8:49	
1	PL Woods	5/25/95	9:10 Am		6/2/95	9:10 AM	Prep

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

June 12, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

JUN 14 1995

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration Samples SS-30, SS-29, SS-25, SS-28, SS-27, SS-24.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached. The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SS-30 10:15	9505-418-001	5/25/95	Total Pb, Semi-Volatiles
SS-29 11:15	9505-418-002	5/25/95	Total Pb, Semi-Volatiles
SS-25 12:05	9505-418-003	5/25/95	Total Pb, Semi-Volatiles
SS-28 10:40	9505-418-004	5/25/95	Total Pb, Semi-Volatiles
SS-27 11:40	9505-418-005	5/25/95	Total Pb, Semi-Volatiles
SS-24 12:30	9505-418-006	5/25/95	Total Pb, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis without dilutions.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245
PO # 9956
PROJECT # 2498.03.4120.0003, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

TOTAL LEAD
METHOD SW-846 6010

LAB ID	SAMPLE ID	RESULTS
9505/418-001	SS-30 10:15	116 mg/kg
9505/418-002	SS-29 11:15	135 mg/kg
9505/418-003	SS-25 12:05	90.0 mg/kg
9505/418-004	SS-28 10:40	67.8 mg/kg
9505/418-005	SS-27 11:40	88.3 mg/kg
9505/418-006	SS-24 12:30	65.6 mg/kg

DATE COLLECTED: 5/25/95
DATE RECEIVED : 5/25/95 14:47
DATE ANALYZED : 6/07/95 R.D.

JUNE 7, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6375

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6375

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
`4-74-2	Carbazole	330	U
1-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-30
LAB ID: 9505/418-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	440 µg/kg	U µg/kg
108-95-2	Phenol	440	U
111-44-4	bis(2-chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl Alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	o-Cresol	440	U
39638-32-9	bis-(2-Chloro2propyl)Ether	440	U
106-44-5	m & p-Cresol	440	U
621-64-7	N-Nitroso-Di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	440	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	440	U
103-33-3	Azobenzene	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2,200	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-30
LAB ID: 9505/418-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenol phenyl ether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	440	U
101-55-3	4-Bromophenyl phenyl ether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	440	1,400
120-12-7	Anthracene	440	U
84-74-2	Carbazole	440	U
84-74-2	Di-n-butylphthalate	440	U
206-44-0	Fluoranthene	440	1,900
92-87-4	Benzidine	440	U
129-00-0	Pyrene	440	1,700
85-68-7	Butylbenzylphthalate	440	960
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(a)anthracene	440	930
218-01-9	Chrysene	440	960
117-81-7	bis(2-Ethylhexyl)phthalate	440	1,100
117-84-0	Di-n-octylphthalate	440	770
205-99-2	Benzo(b)fluoranthene	440	1,100
207-08-9	Benzo(k)fluoranthene	440	500
50-32-8	Benzo(a)pyrene	440	790
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/25/95 10:15
DATE RECEIVED : 5/25/95 14:47
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-29
LAB ID: 9505/418-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,200	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-29
LAB ID: 9505/418-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	430	1,050
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	1,400
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	680
218-01-9	Chrysene	430	680
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	840
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	540
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/25/95 11:15
DATE RECEIVED : 5/25/95 14:47
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-25
LAB ID: 9505/418-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-25
LAB ID: 9505/418-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	430	1,060
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	1,500
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	1,400
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	700
218-01-9	Chrysene	430	730
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	880
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	560
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/25/95 12:05
DATE RECEIVED : 5/25/95 14:47
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER RS
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-28
LAB ID: 9505/418-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-28
LAB ID: 9505/418-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	450
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	610
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	580
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	470
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/25/95 10:40
DATE RECEIVED : 5/25/95 14:47
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 9956 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.0003 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-27
LAB ID: 9505/418-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,200	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-27
LAB ID: 9505/418-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	430	820
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	1,600
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	1,600
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	1,000
218-01-9	Chrysene	430	1,000
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	1,300
207-08-9	Benzo(k)fluoranthene	430	530
50-32-8	Benzo(a)pyrene	430	920
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/25/95 11:40
DATE RECEIVED : 5/25/95 14:47
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/03/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-24
LAB ID: 9505/418-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32245 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 9956 METHOD SW-846 8270
PROJECT # 2498.03.4120.0003 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SS-24
LAB ID: 9505/418-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	690
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	930
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	940
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	490
218-01-9	Chrysene	410	430
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	570
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 5/25/95 12:30
DATE RECEIVED : 5/25/95 14:47
DATE EXTRACTED : 6/01/95
DATE ANALYZED : 6/04/95
ANALYST : D.C.

JUNE 7, 1995

WAYNE L. COOPER PhD
LABORATORY DIRECTOR

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2152 P.O. # 9956

Project No. 2498.08.4120.03

Project Name: HUBERT WHEELER STATE SCHOOL

Shipper Name: GEOTECHNOLOGY INC.

Address: 2258 GRISSOM DRIVE

Sampler's Signature: Ronnie Allen Telephone # 997-7440

Contact: SAM BAENNEKE Telephone # SAME

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-30	5/25/95	1015	SOIL	1-16oz	SEMI-VOA TOTAL LEAD	10 DAY T.A.
SS-29	↓	1015	↓	↓	↓	↓
SS-25	↓	1205	↓	↓	↓	↓

Receiver Name: ENVIRONMETRICS INC. MARYLAND HEIGHTS MO. 63043
(Company Name and Address)

Chain of Possession:

From: Ronnie Allen 5/25/95 1:47 To: [signature] 5-25-95 1:47
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2151 P.O. # 9946

Project No. 2498.03.4120.03

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St. Louis MO 63146

Sampler's Signature: Dan Dendorff Telephone # 997-7440

Contact: Sam Brennecke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SS-28	5/25/95	1040	Soil	1-16 oz	Semi Volatiles Organics Total Lead	10 DAY T.A.
SS-27	5/25/95	1140	↓	↓	↓ ↓	↓
SS-24	5/25/95	1230	↓	↓	↓ ↓	↓

Receiver Name: Environmetrics Inc St. Louis MO
(Company Name and Address)

Chain of Possession:

From: Dan Dendorff 5/25/95 (Name and Date/Time) 1:47 To: 5-25-95 (Name and Date/Time) 1:47

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2151/52
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/25/95
Date Logged: 05/25/95
Status: Normal/LEVEL 4

Date Due (PM): 06/07/95
Date Due (Client): 06/09/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9946
Quotation No.:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9505000418-001-01	SS-30	SOIL	1-500 ml GLASS	Cold	05/25/95		LEAD-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000418-002-01	SS-29	SOIL	1-500 ml GLASS	Cold	05/25/95		LEAD-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000418-003-01	SS-25	SOIL	1-500 ml GLASS	Cold	05/25/95		LEAD-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000418-004-01	SS-28	SOIL	1-500 ml GLASS	Cold	05/25/95		LEAD-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000418-005-01	SS-27	SOIL	1-500 ml GLASS	Cold	05/25/95		LEAD-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9505000418-006-01	SS-24	SOIL	1-500 ml GLASS	Cold	05/25/95		LEAD-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

Items Transferred	Relinquished By	Date	PM Signature :	Logged In By	Date	Time
6		05/25/95	Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	05/25/95	14:47:28

Karen Coons

INTERNAL CUSTODY TRANSFE[illegible]CORD/LABORATORY WORK REQUEST

COC : 2 2

Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 05/25/95
Date Logged: 05/25/95
Status: Normal/LEVEL 4

Date Due (PM): 06/07/95
Date Due (Client): 06/09/95
Mode: Mail

Project No.: 2498.03.4120.03
P.O. No.: 9946
Quotation No.:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
	[signature]	6-1	903	[signature]	6-1-95	903	
	[signature]	6-6	830	[signature]	6-6	830	Metals

APPENDIX D

WASTE DISPOSAL DOCUMENTATION

BFI® Waste Systems™

BROWNING-FERRIS INDUSTRIES

WCD No. SB 19231

/ / /

BFI WASTE CODE

WASTE EVALUATION REQUEST

BFI to complete this area.

BFI Initiator: _____

Location: _____

Company Number: _____

Telephone: ( ) _____

Fax: ( ) _____

Date: _____

Action Requested: ☐ New Waste Approval

☐ Up-Date Approval - Previous Number: _____

Disposal Site Requested: _____

Company Number: _____

Disposal Method Requested: ☐ Working Face ☐ Daily Cover

☐ Other _____

WASTE CHARACTERIZATION DATA
Petroleum Contaminated Soils

IMPORTANT: This form is to be used to describe contaminated soils resulting from the release of petroleum products only and is not to be used for hazardous waste or PCB's regulated by a federal or applicable state, provincial, or local authority.

INSTRUCTIONS: A representative of the generator must complete the Waste Characterization Data (WCD) portion of this form. Please be thorough in your answers. The entire form must be completed, answers must be legibly printed in ink or typewritten, and the completed form must be signed and dated. Please attach any additional relevant information such as analytical data that will help to describe the waste and expedite its review. Use the form only one time since this form has a unique WCD number assigned.

1. GENERATOR INFORMATION

a) Generator's Name: Mo. Dept. of Elementary and Secondary Education

b) Generating Facility's Address: 5707 Wilson Ave.

City: St. Louis State: MO Zip: 63110

c) Generator's Representative: Ronald Littich

Title: Director of Facilities

Telephone: (314) 751-8296

Fax: ( ) _____

d) Emergency/Information Contact: Sam Brenneke

Title: Associate

Telephone: (314) 997-7440

e) Customer's Name: Geotechnology, Inc

f) Customer's Mailing Address: 2258 Grissom Drive

City: St. Louis State: MO Zip: 63146

g) Representative: Sam Brenneke

Telephone: (314) 997-7440

Fax: (314) 997-2067

2. GENERAL WASTE STREAM INFORMATION

a) This waste was generated as a result of: 1) ☐ UST Removal 2) ☐ AST Removal 3) ☐ Spill Soil borings

b) Type of facility generating the contaminated soil: Missouri State School

c) Is this waste subject to the UST corrective action regulations under 40 CFR 280? ☐ Yes ☒ No

d) Anticipated Volume: 20 ☒ Cubic Yards ☐ Tons ☐ Gallons ☐ Cubic Meters ☐ Tonnes(metric)

Other _____ Per: ☐ Year ☐ Month ☐ Week ☐ Day ☒ One Time ☐ Other _____

To be transported in: ☒ Bulk ☐ Drums (type/size) _____ ☐ Other _____

e) Is this a "Hazardous Waste" as defined by State, Provincial, or local Regulations? ☐ Yes ☒ No

If yes, enter the Waste Identification Number if one has been assigned: _____

f) Is this a "Special Waste", an "Industrial Process Waste", or a "Pollution Control Waste" as defined by State, Provincial, or local Regulations?

☒ Yes ☐ No If yes, enter Waste Identification Number, if one has been assigned: _____

g) Recommended personal protection equipment and special handling procedures: Wear nitrile protective gloves

h) Has a representative sample of the contaminated soil been provided to BFI? ☐ Yes ☒ No

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SOIL DRUM:COMP AND 1 VOA CONTAINER
LAB ID: 9507000170-009
DATE COLLECTED: 07/13/95 11:45
DATE RECEIVED: 07/13/95 17:46

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	7/24/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.969 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0100 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	<0.100 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.002700 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	
REACTIVE CYANIDE	SW-846 9010	<0.5 mg/Kg	7/24/95 S.H.
	SW-846 9045	8	7/19/95 T.H.
ENOLS	SW-846 9065	<1.0 mg/Kg	7/20/95 S.H.
REACTIVE SULFIDE	SW-846 9030	16.4 mg/Kg	7/24/95 S.H.
IGNITABILITY (CLOSED CUP)	SW-846 1020	>200 °F	7/18/95 R.P.
PAINT FILTER	SW-846 9095	NO FREE LIQUID (PASSED)	7/19/95 T.H.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

METALS

SAMPLE ID: SOIL DRUM: COMP
LAB ID: 9507/170-009
DATE COLLECTED: 7/13/95 11:45
DATE RECEIVED: 7/13/95 17:46

ELEMENT	SAMPLE RESULT MG/L	SPIKE LEVEL MG/L	SPIKE RESULT MG/L	PERCENT RECOVERY
ARSENIC	<0.200	5.0	4.81	96
BARIUM	0.969	5.0	5.43	89
CADMIUM	0.010	1.0	0.881	87
CHROMIUM	<0.010	5.0	4.54	91
LEAD	<0.100	5.0	4.74	95
MERCURY	0.0027	0.002	0.0045	90
SELENIUM	<0.200	1.0	1.04	104
SILVER	<0.040	1.0	0.954	95

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

DUPLICATE

LAB ID	SAMPLE ID	ELEMENT	RESULTS	ANALYST
9507/170 009	SOIL DRUM COMP.	pH	7.92	7/19/95 T.H.
		IGNITABILTIY	>200 °F	7/19/95 T.H.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SAMPLE ID: LABORATORY CONTROL SAMPLE
LAB ID: LCS

ELEMENT	SPIKE ADDED		SAMPLE RECOVERY		PERCENT RECOVERY	ANALYST
REACTIVE SULFIDE	200	mg/l	194	mg/l	97	7/24/95 SH
REACTIVE CYANIDE	0.20	mg/l	0.19	mg/l	95	7/24/95 AC
PHENOL	0.50	mg/l	0.52	mg/l	103	7/20/95 SH

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS REPORT

PCBs IN SOIL

SW-846 8080

LAB NO.	SAMPLE NO.	IDENTIFICATION	TOTAL ppm	TYPE
9507/170-009		MATRIX SPIKE	0.76	1248
			152 %	RECOVERY
9507/170-009		MATRIX SPIKE DUPLICATE	0.75	1248
			150 %	RECOVERY
9507/170-009		SOIL DRUM: SOIL	<3	--

DATE COLLECTED : 7/13/95 11:45
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/17/95
ANALYST : C.D.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: TCLP BLANK
LAB ID: TDBLK1519A

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
75-01-4	Vinyl Chloride	200	100 µg/l	U µg/l
75-35-4	1,1-Dichloroethene	700	50	U
67-66-3	Chloroform	6,000	200	U
107-06-2	1,2-Dichloroethane	500	50	U
78-93-3	2-Butanone	200,000	150	U
56-23-5	Carbon Tetrachloride	500	50	U
79-01-6	Trichloroethene	500	50	U
71-43-2	Benzene	500	50	U
127-18-4	Tetrachloroethene	700	50	U
108-90-7	Chlorobenzene	100,000	50	U
106-46-7	1,4-Dichlorobenzene	7,500	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/21/95 L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE TCLP SPIKE RECOVERY FORM

SAMPLE ID: LCS
LAB ID: TDLCS1519A

COMPOUND	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Vinyl Chloride	500	330	66
1,1-Dichloroethene	500	510	102
Chloroform	500	520	104
1,2-Dichloroethane	500	580	116
2-Butanone	500	550	110
Carbon Tetrachloride	500	520	104
Trichloroethene	500	510	102
Benzene	500	500	100
Tetrachloroethene	1,000	1,000	100
Chlorobenzene	500	510	102
1,4-Dichlorobenzene	500	480	96

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
75-01-4	Vinyl Chloride	200	100 µg/l	U µg/l
75-35-4	1,1-Dichloroethene	700	50	U
67-66-3	Chloroform	6,000	200	U
107-06-2	1,2-Dichloroethane	500	50	U
78-93-3	2-Butanone	200,000	150	U
56-23-5	Carbon Tetrachloride	500	50	U
79-01-6	Trichloroethene	500	50	U
71-43-2	Benzene	500	50	U
127-18-4	Tetrachloroethene	700	50	U
108-90-7	Chlorobenzene	100,000	50	U
106-46-7	1,4-Dichlorobenzene	7,500	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/13/95 11:45
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/21/95 L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE TCLP SPIKE RECOVERY FORM

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Vinyl Chloride	U	500	260	52
1,1-Dichloroethene	U	500	460	92
Chloroform	U	500	500	100
1,2-Dichloroethane	U	500	560	112
2-Butanone	U	500	640	128
Carbon Tetrachloride	U	500	470	94
Trichloroethene	U	500	480	96
Benzene	U	500	480	96
Tetrachloroethene	U	1,000	960	96
Chlorobenzene	U	500	480	96
1,4-Dichlorobenzene	U	500	480	96

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
TDBLK1519A	TCLP BLANK	103	106	106
9507/170-009	SOIL DRUM COMP.	104	106	105

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270

SAMPLE ID: TCLP BLANK
LAB ID: TASBLK6569

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
110-86-1	Pyridine	5,000	500 µg/l	U µg/l
95-48-7	o-Cresol	200,000	100	U
106-44-5	m & p-Cresol	200,000	100	U
67-72-1	Hexachloroethane	3,000	100	U
98-95-3	Nitrobenzene	2,000	100	U
87-68-3	Hexachlorobutadiene	500	100	U
88-06-2	2,4,6-Trichlorophenol	2,000	100	U
95-95-4	2,4,5-Trichlorophenol	400,000	100	U
121-14-2	2,4-Dinitrotoluene	3,000	100	U
118-74-1	Hexachlorobenzene	130	100	U
87-86-5	Pentachlorophenol	100,000	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/22/95 D.C.

SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

TCLP SPIKE

Name: Environmetrics Contract: GEOTECH.

Code: M-8270 Case No.: SAS No.: SDG No.: FLUID #1

Matrix: (soil/water) TCLP Lab Sample ID: TASLCS6569

Sample wt/vol: VOL (g/ml) 100 Lab File ID: >A7732

Level: (low/med) LOW Date Received: 07/13/95

% Moisture: decanted: (Y/N) N Date Extracted: 07/21/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/22/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: 2 & 11

COMPOUND	Conc	Spike	Recovery
PYRIDINE	580	1000	58
2-Methylphenol	2300	2000	116
4-Methylphenol	1700	2000	87
Hexachloroethane	580	1000	58
Nitrobenzene	1800	1000	80
Hexachlorobutadiene	240	500	49
2,4,6-Trichlorophenol	1800	2000	90
2,4,5-Trichlorophenol	2200	2000	110
2,4-Dinitrotoluene	320	500	64
Hexachlorobenzene	380	500	76
Pentachlorophenol	1700	2000	86

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	TASBLK6569	70	49	53	79	59	51	52	73	0
02	TASLCS6569	87	45	53	87	67	67	58	81	0
03	9507170-9	71	38	47	101	54	53	40	76	0
04	9507170-9MS	81	55	59	124	58	52	49	101	0
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S4 (TPH)	= Terphenyl-d14	(33-141)	
S5 (PHL)	= Phenol-d5	(10- 94)	
S6 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(21-100)	
S8 (TBP)	= 2,4,6-Tribromophenol	(10-123)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
110-86-1	Pyridine	5,000	500 µg/l	U µg/l
95-48-7	o-Cresol	200,000	100	U
106-44-5	m & p-Cresol	200,000	100	U
67-72-1	Hexachloroethane	3,000	100	U
98-95-3	Nitrobenzene	2,000	100	U
87-68-3	Hexachlorobutadiene	500	100	U
88-06-2	2,4,6-Trichlorophenol	2,000	100	U
95-95-4	2,4,5-Trichlorophenol	400,000	100	U
121-14-2	2,4-Dinitrotoluene	3,000	100	U
118-74-1	Hexachlorobenzene	130	100	U
87-86-5	Pentachlorophenol	100,000	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/13/95 11:45
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/22/95 D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SEMIVOLATILE TCLP SPIKE RECOVERY FORM

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Pyridine	U	1,000	610	61
o-Cresol	U	2,000	2,200	112
m & p-Cresol	U	2,000	1,800	89
Hexachloroethane	U	1,000	620	62
Nitrobenzene	U	1,000	730	73
Hexachlorobutadiene	U	500	290	58
2,4,6-Trichlorophenol	U	2,000	2,000	102
2,4,5-Trichlorophenol	U	2,000	2,400	122
2,4-Dinitrotoluene	U	500	390	79
Hexachlorobenzene	U	500	500	101
Pentachlorophenol	U	2,000	2,300	113

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP PESTICIDES ANALYSIS
METHOD SW-846 8080

SAMPLE ID: TCLP BLANK
LAB ID: OP6575

CAS NUMBER	PARAMETER	REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
58-89-9	τ-BHC (Lindane)	400	0.40 µg/l	U µg/l
76-44-8	Heptachlor	8	0.30	U
1024-57-3	Heptachlor epoxide	8	0.20	U
72-20-8	Endrin	20	0.60	U
72-43-5	Methoxychlor	10,000	2.00	U
12789-03-6	Chlordane	30	10.00	U
8001-35-2	Toxaphene	500	50.00	U

TCLP HERBICIDES ANALYSIS
METHOD SW-846 8150

SAMPLE ID: TCLP BLANK
LAB ID: OP6576

CAS NUMBER	PARAMETER	REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULT
94-75-7	2,4-D	10,000	24.0 µg/l	U µg/l
93-72-1	2,4,5-TP	1,000	3.40	U

U = UNDETECTED

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/24 & 25/95
J.K.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

LABORATORY CONTROL SAMPLE

PESTICIDES/HERBICIDES

SAMPLE ID: LCS
LAB ID: OP6575

COMPOUND	SPIKE CONC. (µg/l)	CONC.	PERCENT RECOVERY
Lindane	4	2.13	53
Heptachlor	4	2.26	57
Heptachlor epoxide	4	2.70	68
Endrin	4	2.78	70
Methoxychlor	40	35.9	90

COMPOUND	SPIKE LEVEL (µg/l)	CONC.	PERCENT RECOVERY
2,4-D	50	42.21	84
2,4,5-TP	5	3.92	78

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP PESTICIDES ANALYSIS
METHOD SW-846 8080

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

CAS NUMBER	PARAMETER	REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
58-89-9	τ-BHC (Lindane)	400	0.40 µg/l	U µg/l
76-44-8	Heptachlor	8	0.30	U
1024-57-3	Heptachlor epoxide	8	0.20	U
72-20-8	Endrin	20	0.60	U
72-43-5	Methoxychlor	10,000	2.00	U
12789-03-6	Chlordane	30	10.00	U
8001-35-2	Toxaphene	500	50.00	U

TCLP HERBICIDES ANALYSIS
METHOD SW-846 8150

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

LEVEL NUMBER	QUANTITATION PARAMETER	REGULATORY µg/L	PRACTICAL CAS LIMIT	RESULT
94-75-7	2,4-D	10,000	24.0 µg/l	U µg/l
93-72-1	2,4,5-TP	1,000	3.40	U

U = UNDETECTED

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/24 & 25/95
J.K.

OTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ENVIRON-METRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

TCLP SPIKE RECOVERY FORM

PESTICIDES/HERBICIDES

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Lindane	U	4	1.97	49
Heptachlor	U	4	2.29	55
Heptachlor epoxide	U	4	2.72	68
Endrin	U	4	2.80	70
Methoxychlor	U	40	32.4	81

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
2,4-D	U	50	43.75	88
2,4,5-TP	U	5	4.20	79

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
INVENTORY IDENTIFICATION NUMBER APPLICATION

FOR AGENCY USE ONLY

INVENTORY # ISSUED	TRAN CODE	TRAN DATE	INITIALS
9291892986	A	/ /	XXX
1 10	14	15 20	21 23

Please read the instructions on the reverse side of this form before completing. Please exclude punctuations when completing. Limit information to the amount of blanks provided or we will have to abbreviate for you. The information given is exactly how it will appear in the Bureau of Land's computer inventory system.

E.S.D.A. INCIDENT # (if applicable): _____

LOCATION ADDRESS (exact street location where waste is generated)

Card Type 010 11 13

COMPANY NAME: MO Dept of Elem + Sec Ed
24 53

LOCATION (Post Office Box numbers will not be accepted):

020 11 13

5707 Wilson Avenue
24 48

CITY: St. Louis 55 74 STATE: MO 75 76

ZIP: 63110 77 85 COUNTY: _____

TELEPHONE: 314 751 8296
86 89 92 95

CONTACT: Ronald Littlich,
96 120

MAILING ADDRESS (if same as above, leave blank)

030 11 13

STREET: _____
54 78

P O BOX: 480
79 84

CITY: JEFFERSON CITY
85 104

STATE: MO 105 106 ZIP: 65102 107 115

MANIFESTS: You qualify for 20 free Uniform Hazardous Waste Manifests. If you do not need 20 Manifests, please indicate the amount you need. Please check the type you need.

Number of Manifests needed: 20 Snap-Top ✓ Pin-Fed (computer fed) ___

RETURN ADDRESS: INDICATE THE LOCATION TO WHICH THIS FORM SHOULD BE RETURNED.

Company Name: Geotechnology, Inc
Contact Person: Sam Brenneke
Street: 2258 Grissom Drive
City: St. Louis State: MO Zip: 63146

Waste may not be sent to an Illinois facility without an IEPA Supplemental Waste Stream Permit number.

AUTHORIZATION STATEMENT

I authorize this request for assignment of an Illinois Inventory ID number. This company has not previously shipped waste from this location under the Illinois Manifest System. If my waste is a RCRA hazardous waste, I certify this company has or has applied for a USEPA generator ID number.

Signature of Authorized Representative: Lonnie Thompson Date: 11 Aug 1995

IL 532 1473
LPC 228 Rev. Dec-93

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

Corporate Waste Approval Group
Browning-Ferris Industries

WASTE APPROVAL FORM

Date	: 08/21/95
BFI Location	: St. Louis Landfill
BFI Initiator	: Jansen, Dan
Generator	: Missouri Dept of Education
Generator Location	: St Louis , MO
WCD Number	: SB19231
BFI Number	: 235057

MODERN

WASTE DESCRIPTION: Soil , Coal Tar

SAFETY PRECAUTIONS: Avoid Skin and Eye Contact.

RECOMMENDED MANAGEMENT: Direct Burial

Facility... St. Louis
Backridge Landfill

COMMENTS:

Approved for one time only disposal.

The following items were reviewed by the Corporate Waste Approval Group:
a.) Analytical data from Enviromatrics, Inc.

The above is a recommendation of BFI Corporate Waste Approval Group. It must be understood that management of the waste for treatment and/or disposal at the designated facility must be in compliance with the facility's permit and applicable federal, state, and local regulations. The waste approval is based upon a review of the information provided by the generator and is contingent upon the receipt at the treatment and/or disposal facility of a waste material essentially equivalent in chemical composition and physical properties to that as defined above.

This waste stream has been assigned BFI Waste Code: MO/686:1210/960821/235057

Corporate Waste Approval Group

Mark L. Noel

PLEASE TYPE (Form designed for use on [redacted] (12-pitch) typewriter.) EPA Form 8700-22 (Rev[redacted]) Form Approved, OMB No. 2050-0039, Expires 9-30-96

UNIFORM HAZARDOUS [redacted] WASTE MANIFEST

1. Generator's US EPA ID No. | M[redacted] Docu[redacted]

2. Page 1 of

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Mo. Dept of Elementary & Secondary Ed.
P.O. Box 480
Jefferson City, MO 65102

Location if Different
Hubert Wheeler State Sch.
5707 Wilson Ave.
St. Louis, MO

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS"

A. Illinois Manifest Document Number: IL 6888041 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 9 2 9 1 0 9 9 2 8 6

5. Transporter 1 Company Name: Superior Equipment Company

6. US EPA ID Number:

C. Illinois Transporter's ID: 0 8 6 5

7. Transporter 2 Company Name:

8. US EPA ID Number:

D. (314) 644-6000 Transporter's Phone

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
BFI - Modern
Rt. 158 & Minchaul Road
Belleville IL

10. US EPA ID Number:

G. Illinois Facility's ID: 1 6 3 0 1 0 0 0 2 2

H. Facility's Phone: (618) 235-9625

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Coal Tar Contaminated Soil	01	T	6	4	EPA HW Number: XX; Authorization Number: 070260
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above
Class A Profile # 19231

K. Handling Codes for Wastes Listed Above in Item #14.

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby delare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and selected the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Dept. of Elem & Secondary Ronnie Allen for Education (Mo.)
Signature: Dept of Elem. & Secondary Ronnie Allen for Education (Mo)
Date: Month 09 Day 05 Year 95

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Geary Schwyhart
Signature: Geary Schwyhart
Date: Month 09 Day 05 Year 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: Steve Gantner
Signature: Steve Gantner
Date: Month 09 Day 05 Year 95

GENERATOR / TRANSPORTER / FACILITY

The Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1001 and 1021, that this information be submitted to the Agency. Failure to provide information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

Emergency Response at 217/782-7860 and the National Response Center at 800/424-8802 or 202/426-2675.

GEOTECHNOLOGY INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS • KANSAS CITY • INDIANAPOLIS

August 8, 1995

2498.03.4120.05

Mr. Mike Townley
Metropolitan St. Louis Sewer District
Department of Environmental Compliance
10 East Grand Avenue
St. Louis, Missouri 63147-2913

Re: Application for Special Discharge
Hubert Wheeler State School
5707 Wilson Avenue
St. Louis, Missouri

Dear Mr. Townley:

Attached please find an application for approval for special discharge, submitted by Geotechnology, Inc. on behalf of the Missouri Department of Elementary and Secondary Education for the referenced site.

As noted on the application, the water is groundwater monitoring well development/purge water and decontamination water generated during cleaning of drilling and sampling equipment used to sample coal tar contaminated soil. It is our desire to dispose of this water via discharge to a combined sewer located on-site.

I trust this is the information you require. Should you have any questions or comments please feel free to contact me.

Very truly yours,

GEOTECHNOLOGY, INC.

Sam L. Brenneke, C.H.M.M.
Associate

SLB:mls

Attachments: As noted

RECEIVED
AUG 11 1995
Environmental Compliance

CORRESP\249803.APP

printed on recycled paper

APPLICATION FOR APPROVAL FOR SPECIAL DISCHARGE

Application is hereby made for (CHECK ONE):

[X] DISCHARGE TO SANITARY OR COMBINED SEWER ON-SITE:

****

NOTE: NO DISCHARGE TO A SEPARATE STORM SEWER OR WATERCOURSE IS ALLOWED.

****

[ ] TRANSPORT TO MSD TREATMENT PLANT: Name plant: _____

****

NOTE: THE DISTRICT CAN NOT ACCEPT ANY TRANSPORTED WASTE IDENTIFIED AS HAZARDOUS IN 40 CFR PART 261 (RCRA).

****

II. RESPONSIBLE PARTIES:

SOURCE: Site Name Hubert Wheeler State School 4112-4668-00
Street Address 5707 Wilson Avenue City St. Louis State MO Zip 63110
Owner MO Department of Elementary & Secondary Education
Contact person Ronald Littich Title Director of Facilities
Mailing Address P.O. Box 480 City Jefferson City State MO Zip 65102
Telephone (314) 751-8296 Fax _____

SITE CONTRACTOR: Name Geotechnology, Inc.
Street Address 2258 Grissom Drive City St. Louis State MO Zip 63146
Contact Person Sam Brenneke Title Associate
Mailing Address 2258 Grissom Drive City St. Louis State MO Zip 63146
Telephone (314) 997-7440 Fax (314) 997-2067

TRANSPORTER: Name _____ MSD Transporter Identification # _____
Street Address _____ City _____ State _____ Zip _____
Contact person _____ Title _____
Mailing Address _____ City _____ State _____ Zip _____
Telephone _____ Fax _____

III. MATERIAL TO BE DISCHARGED:

1. Fully describe the waste and the nature of the activities requiring its disposal:
The waste to be discharged to the combined sewer on-site consists of groundwater monitoring well development/purge water and water generated during decontamination of drilling and sampling equipment used to sample soil contaminated with coal tar.
   a. Copy of laboratory analyses attached? YES X NO ____
   b. Copies of Material Safety Data Sheets attached? YES ____ NO X
   c. Is waste from a process subject to federal categorical standards? YES ____ NO X If yes, identify the standard: 40 CFR Part ____, Subpart ____.
2. Quantity to be discharged to MSD: ± 900 gallons
3. Proposed rate and/or frequency of discharge: 10-15 gpm
4. If waste is from an underground storage tank, storage tank excavation or is groundwater from a site remediation project:
   a: Identify the substances which were in the tanks or which contaminated the groundwater: _____
   b: How long has the tank or site been out of service? _____
5. Describe any treatment to be provided prior to discharge to MSD: _____
6. Describe proposed point of entry to sewer (if on-site): combined sewer at 5707 Wilson Avenue

RECEIVED
AUG 11 1995
Environmental Compliance

Turn over and complete parts IV through VI

A one gallon sample of [redacted] waste to be discharged must be submitted in a clear container as part of this application. The requirement for [redacted] sample may be waived if an acceptable report containing results of analyses for the parameters specified by the Department of Environmental Compliance has been submitted. The Department may require a sample in addition to any analytical reports. Complete the following for any sample submitted:

1. Sampled by: Name: _____ Company: _____
2. Date sampled: _____ Time: _____ Preservatives: _____
3. Type sample: Grab___ Composite___ How composited: _____

If MSD performs any analyses necessary to determine the acceptability of this waste, the applicant may be billed by invoice for the cost of those analyses. Most wastes considered for acceptance must be analyzed for one of the following two groups of substances.

Group 1: pH, TS, TSS, VSS, COD, Cd, Cr, Cu, Fe, Pb, Ni, Zn and the volatile organic priority pollutants. Group 1 analyses will be invoiced at $275.80.

Group 2: pH, TSS, COD, Pb, benzene, toluene, ethylbenzene and xylene (BTEX). Group 2 analyses will be invoiced at $111.70.

The charges for any additional analyses required will be added to the above amounts. In some cases, fewer analyses may be required. The applicant will be billed only for the analyses actually performed. Analytical charges are listed in Appendix 2 of MSD Sewer Service Charge Ordinance #7450.

Provide your Purchase Order number if you require one for billing: _____

****

V. SIGNATURE AND CERTIFICATION: This application must be signed by the owner of the rce site or a contractor directly responsible for site remediation activities.

I hereby certify that to the best of my knowledge and belief the information in this application is true, complete and accurate. If granted approval to discharge, I agree to abide by the MSD Ordinances, and all applicable federal, state and local regulations. I agree to pay the costs of any pre-approval analyses performed by MSD and to pay any applicable disposal charges for the volume or strength of the wastes discharged.

Applicant name (Printed) Sam L. Brenneke

Applicant signature: Sam L. Brenneke Date: 8/8/95

VI. HAZARDOUS WASTE CERTIFICATION: If you checked the box on page 1 "Transport to MSD Treatment Plant", you must sign the following certification:

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE ABOVE MATERIAL IS NOT CLASSIFIED AS A HAZARDOUS WASTE AS DESCRIBED IN 40 CFR Part 261. (RCRA)

Applicant signature: _____ Date: _____

****

For MSD Department Of Environmental Compliance use only:

Sample Received: Date: _____ Time: _____ Via: _____ By: _____

How labeled: _____

Comments: _____

Receiving STP (If on-site discharge): _____

Transmitted to lab: Date: _____ Time: _____ By: _____ Lab ID: _____

eotechnology, Inc.
2258 Grissom Drive
t. Louis, Mo. 63146

TTN: Sam Brenneke

RO M T ICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

OICE: 33090
: 10181
ROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

AMPLE ID: DECON / DEV:WATER
AB ID: 9507000262-004
ATE COLLECTED: 07/19/95 14:50
ATE RECEIVED: 07/19/95 17:52

EST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL LEAD	SW-846 6010A	0.728 mg/L	7/27/95 R.D.
HEMICAL OXYGEN DEMAND	EPA 410.4	220 mg/L	7/24/95 T.H.
PH	EPA 150.1	7.42	7/21/95 T.H.
TOTAL SUSPENDED SOLIDS	EPA 160.2	2,420 mg/L	7/24/95 T.H.

RECEIVED
AUG 11 1995
Environmental Compliance

E R -- TR CS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: DECON/DEV: WATER
LAB ID: 9507/262-004

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	103
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/19/95 14:50
DATE RECEIVED : 7/19/95 17:53
DATE ANALYZED : 7/24/95 L.C.

RECEIVED
AUG 1 1 1995
Environmental Compliance

ENVIRO METRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10181 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: DECON/DEV: WATER
LAB ID: 9507/262-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	11 µg/l	U µg/l
108-95-2	Phenol	11	U
111-44-4	bis(2-chloroethyl)Ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl Alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	o-Cresol	11	U
39638-32-9	bis-(2-Chloro2propyl)Ether	11	U
106-44-5	m & p-Cresol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic Acid	56	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	11	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	56	U
131-11-3	Dimethylphthalate	11	U
103-33-3	Azobenzene	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	56	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	56	U

RECEIVED
AUG 11 1995
Environmental Compliance

ENVIRO METRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10181 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: DECON/DEV: WATER
LAB ID: 9507/262-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	56 µg/l	U µg/l
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenol phenyl ether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	56	U
534-52-1	4,6-Dinitro-2-methylphenol	56	U
86-30-6	N-Nitrosodiphenylamine	11	U
101-55-3	4-Bromophenyl phenyl ether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	56	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
92-87-4	Benzidine	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/19/95 14:50
DATE RECEIVED : 7/19/95 17:53
DATE EXTRACTED : 7/20/95
DATE ANALYZED : 7/26/95
ANALYST : D.C.

RECEIVED
AUG 11 1995
Environmental Compliance

Metropolitan
St. Louis Sewer
District

Department of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8710
FAX (314) 436-8753

RECEIVED
AUG 28 1995
GEOTECHNOLOGY

August 24, 1995

Sam Brenneke
GEOTECHNOLOGY, INCORPORATED
2258 Grissom Drive
St. Louis, MO 63146

Dear Mr. Brenneke:

We have reviewed your application dated August 8, 1995 requesting approval to discharge 900 gallons of wastewater to the Metropolitan St. Louis Sewer District for treatment. This wastewater is from groundwater monitoring well development and equipment decontamination at a coal tar contamination site at Hubert Wheeler School, 5707 Wilson Avenue, St. Louis, Missouri.

Based on the analytical results, this material meets our criteria for acceptance as a hauled waste and is approved for discharge at the Lemay Treatment Plant or the Bissell Point Treatment Plant. The material may be discharged only by a hauler having a valid MSD identification number. This approval is valid for 30 days from the date of this letter.

This discharge has been approved based upon the information and sample analyses you provided and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect, or if the conditions of this approval are violated. Also, if the discharge causes any operational or maintenance problem within the District's collection or treatment system or results in violations of any conditions of the District's NPDES permit, Missouri Department of Elementary and Secondary Education will be considered responsible for damages.

If you have any questions, please call me at 436-8757.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Michael Townley
Civil Engineer

ldl

pc Bernie Rains
Neil Frankenberg
Jeff Theerman

WASTE HAULER DISCHARGE PERMIT
(TO BE SUPPLIED BY HAULER)
PERMIT NO. № 50250

WASTE HAULER DISCHARGE PERMIT
(TO BE SUPPLIED BY HAULER)
PERMIT NO. № 50251

WASTE HAULER DISCHARGE PERMIT
(TO BE SUPPLIED BY HAULER)
PERMIT NO. № 50252

WASTE HAULER DISCHARGE PERMIT
(TO BE SUPPLIED BY HAULER)
PERMIT NO. № 50253

WASTE HAULER DISCHARGE PERMIT
(TO BE SUPPLIED BY HAULER)
PERMIT NO. № 50254

SUPERIOR EQT.

WASTE HAULER DISCHARGE PERMIT

WASTE SOURCE INFORMATION: (TO BE SUPPLIED BY HAULER)

PERMIT NO. № 50255

NAME OF SOURCE OF WASTE: WHEELER SCHOOL

STREET ADDRESS OF WASTE: 5707 WILSON

HAULER ID: 0020

HEALTH PERMIT NO.: 0380

DISCHARGE DATE: 090195

DISCHARGE TIME: 1019

DISCHARGE LOCATIONS:

- [ ] COLDWATER CREEK PLANT 13798 OLD HALLS FERRY RD.
- [ ] LEMAY PUMP STATION 8520 VIRGINIA AVE.
- [x] BISSELL POINT PLANT 10 E. GRAND AVE.
- [ ] LEMAY PLANT 201 HOFFMEISTER

TYPE WASTE:

- [x] INDUSTRY
- [ ] DOMESTIC

TANK CAPACITY: 3000 GALLONS

- [ ] MO. RIVER PLANT 3455 CREVE COEUR MILL RD.

MSD

500 GALLONS
$25.00 DOLLARS

APPENDIX E

MONITORING WELL CERTIFICATION RECORDS, REGISTRATION RECORD, BORING LOGS AND LEGEND

[redacted]RI DEPARTMENT OF
[redacted]AL RESOURCES
DIVISION OF GEOLOGY AND
LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 12[redacted]6	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: Hubert Wheeler State School		WELL NUMBER: MW-1	
SITE ADDRESS: 5707 Wilson Avenue	CITY: St. Louis	STATE: MO	ZIP CODE: 63110
NAME: State of Missouri - Division of Design and Construction		TELEPHONE: (314) 751-2283	
ADDRESS: P.O. Box 809	CITY: Jefferson City	STATE: Mo	ZIP CODE: 65102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

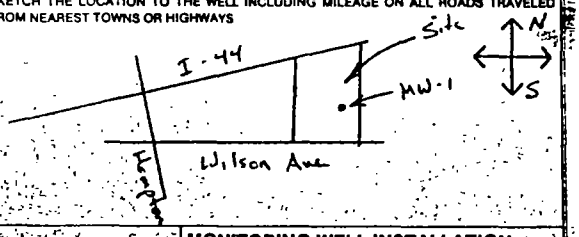
COUNTY: St Louis
ELEVATION: 490 ± msl
AREA NO:

SMALLEST ¼ ___ ¼ ___ ¼ ___ ¼ LARGEST ¼ NE ¼

SEC 25 TWN. 45 N,RNG. 6 (E) OR W

LAT 38 . 37 . 03 . LONG 90 . 17 . 01 .

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
East / Central Section of the site near swingsets

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
Geotechnology, Inc

DRILLING CONTRACTOR'S NAME
Geotechnology, Inc

TYPE OF INSTALLATION
☐ ABOVE GROUND ☒ FLUSH MOUNT

STATIC WATER LEVEL
23.14 FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL
7/18/95

ELEVATION OF MEASURING POINT
489.9 ± m.s.l.

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☐ AIR ROTARY ☒ AUGER TYPE 4 1/4" H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☐ YES, AT
☐ STAINLESS STEEL
☐ OTHER
☒ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
7/11/95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) James T. Clyde
PERMIT NUMBER: 0118SWPM DATE: 7/25/95

SIGNATURE (DRILLING CONTRACTOR) James T. Clyde
PERMIT NUMBER: 0118SWPM DATE: 7/25/95

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 489.9 ± m.s.l

LOCKING CAP (Y) N (Circle one)
CAP VENT (Y) N (Circle one)
PROTECTIVE CASING Type: Steel Flushmount Size: 9-inch Bore Hole Diameter:
WEEP HOLE - Y / (N) (Circle one)

Ground Surface Elevation: 490 ± Ft.

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	1.0	
Depth to Base of Annular Seal:	15.5	
Depth to Base of Bentonite Seal:	17.5	
Depth to Base of Secondary Filter Pack:	NA	
Depth to Top of the Screen:	19.4	
Depth to Bottom of the Screen:	29.4	
Plug Back Total Depth:	29.7	
Original Total Depth:	30.0	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 19.3 feet
Diameter: 2-inch
Type of Material: Sch 40 PVC

BOREHOLE DIAMETER: 8.5 in.

ANNULAR SEAL
Type: ☒ Bentonite Slurry Mixture ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☐ Bentonite Slurry ☒ Non Slurry Bentonite
Length of Seal: 2 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☐ Sand ☐ Manufactured
Grain Size:
Length:

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 10-20
Length: 12.4 feet

WELL SCREEN
Length: 10 feet
Slot Size: 0.010 inch
Type: Sch 40 PVC

SUMP DETAILS
Length: 0.5 Ft.
Diameter: 2 in.
Type: Sch 40 PVC

TYPE OF BACKFILL: Collapse

MO 780-1415 (2-94)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250 ROLLA, MO 65401
ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 12[redacted]7	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
Hubert Wheeler State School	MW-2

SITE ADDRESS	CITY	STATE	ZIP CODE
5707 Wilson Avenue	St. Louis	MO	63110

NAME	TELEPHONE
State of Missouri - Division of Design and Construction	(314) 751-2283

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 809	Jefferson City	MO	65102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL (SHOW LOCATION IN SECTION PLAT)

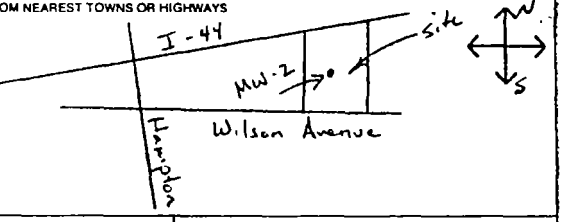
COUNTY St. Louis
ELEVATION 490 ± M.S.L.
AREA NO

SMALLEST ¼ ____ ¼ ____ ¼ LARGEST ¼ NE ¼

SEC 25 TWN 45 N,RNG 6 (E) OR W

LAT. 38 · 37 · 03 · LONG. 90 · 17 · 01 ·

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

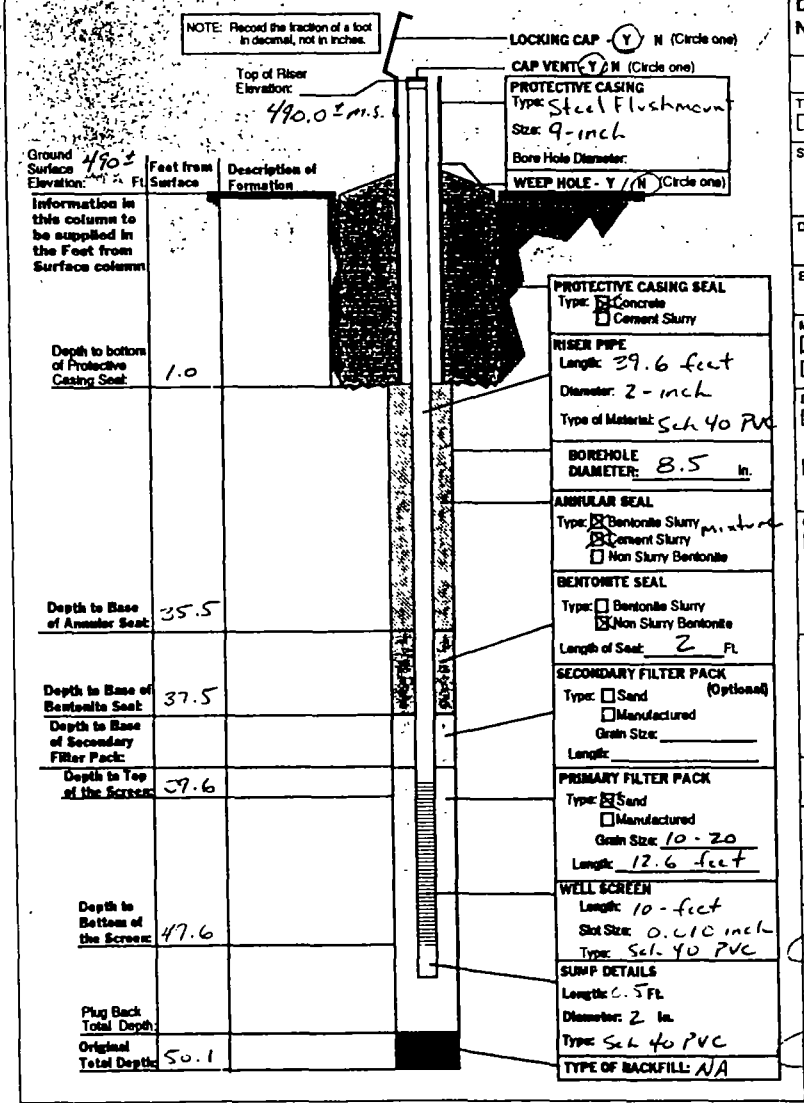
Center of site in asphalt playground area

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 490.0 ± M.S.L.

Ground Surface Elevation: 490 ± Ft.

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	1.0	
Depth to Base of Annular Seal:	35.5	
Depth to Base of Bentonite Seal:	37.5	
Depth to Base of Secondary Filter Pack:		
Depth to Top of the Screen:	39.6	
Depth to Bottom of the Screen:	47.6	
Plug Back Total Depth:		
Original Total Depth:	50.1	



MONITORING WELL INSTALLATION CONTRACTOR'S NAME

Geotechnology, Inc

DRILLING CONTRACTOR'S NAME

Geotechnology, Inc

TYPE OF INSTALLATION
[ ] ABOVE GROUND [X] FLUSH MOUNT

STATIC WATER LEVEL
41.82 FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL
7/18/95

ELEVATION OF MEASURING POINT
490.0 ± M.S.L.

MEASURING POINT IS
[X] TOP OF RISER PIPE
[ ] OTHER

DRILLING EQUIPMENT
[ ] AIR ROTARY [X] AUGER TYPE 4 1/4" H.S.A.
[ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED
[ ] YES, AT
[ ] STAINLESS STEEL
[ ] OTHER
[X] NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
7/12/95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)

PERMIT NUMBER OWRC10PM — DATE 7/25/95

SIGNATURE (DRILLING CONTRACTOR)

PERMIT NUMBER OWRC10PM — DATE 7/25/95

MO 780-1615 (2-94)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65401
ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION

RECYCLED

[redacted] DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 12[redacted]9	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO.
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER		
Hubert Wheeler State School	MW-3		
SITE ADDRESS	CITY	STATE	ZIP CODE
5707 Wilson Avenue	St. Louis	MO	63110
NAME		TELEPHONE	
State of Missouri - Division of Design and Construction		(314) 751-2283	
ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 809	Jefferson City	MO	65102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

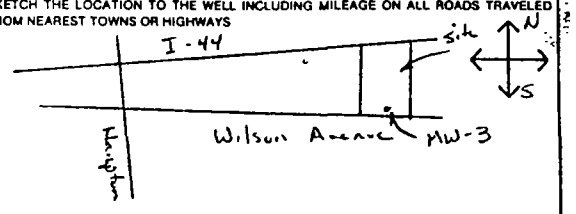
COUNTY St Louis
ELEVATION 490 ± m.s.l.
AREA NO

SMALLEST ¼ LARGEST ¼

SEC 25 TWN 45 N,RNG 6 (E) OR W

LAT 38 . 37 . 03 - LONG 90 . 17 . 01 -

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
South / Center section of site adjacent to Wilson Ave

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
Geotechnology, Inc

DRILLING CONTRACTOR'S NAME
Geotechnology, Inc

TYPE OF INSTALLATION
☐ ABOVE GROUND ☒ FLUSH MOUNT

STATIC WATER LEVEL
17.95 FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL
7/18/95

ELEVATION OF MEASURING POINT
489.8 ± m.s.l.

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☐ AIR ROTARY ☒ AUGER TYPE 4 1/4" H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☐ YES, AT
☐ STAINLESS STEEL
☐ OTHER
☒ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
7/13/95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) [redacted]
PERMIT NUMBER COLLSW2M DATE 7/25/95
SIGNATURE (DRILLING CONTRACTOR) [redacted]
PERMIT NUMBER COLLSW2M DATE 7/25/95

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 489.8 ± m.s.l.

LOCKING CAP - (Y) / N (Circle one)
CAP VENT (Y) / N (Circle one)
PROTECTIVE CASING Type: Steel Flushmount Size: 9-inch Bore Hole Diameter:
WEEP HOLE - Y / (N) (Circle one)

Ground Surface Elevation: 490 ± m.s.l. Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal	1.0	
Depth to Base of Annular Seal	26.0	
Depth to Base of Bentonite Seal	28.0	
Depth to Base of Secondary Filter Pack:		
Depth to Top of the Screen:	30.0	
Depth to Bottom of the Screen:	40.0	
Plug Back Total Depth:		
Original Total Depth:	40.5	

PROTECTIVE CASING SEAL Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE Length: 29.8 feet Diameter: 2-inch Type of Material: Sch 40 PVC

BOREHOLE DIAMETER: 8.5 In.

ANNULAR SEAL Type: ☒ Bentonite Slurry Mixture ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL Type: ☐ Bentonite Slurry ☒ Non Slurry Bentonite Length of Seal: 2 Ft.

SECONDARY FILTER PACK (Optional) Type: ☐ Sand ☐ Manufactured Grain Size: Length:

PRIMARY FILTER PACK Type: ☒ Sand ☐ Manufactured Grain Size: 10-20 Length: 12.5 feet

WELL SCREEN Length: 10 feet Slot Size: 0.010 inch Type: Sch. 40 PVC

SUMP DETAILS Length: 0.5 Ft. Diameter: 2 In. Type: Sch 40 PVC

TYPE OF BACKFILL: NA

MO 780-1415 (2-94)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O BOX 250, ROLLA, MO 65401
ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

REGISTRATION RECORD

OFFICE USE ONLY		DATE RECEIVED	
REF NO 13[redacted]7			
ROUTE		P W S NUMBER	CHECK NUMBER
STATE WELL NUMBER		TRANSMITTAL NO	
CHECKED BY		CROSS REFERENCE NO	
APPROVED BY	DATE	ENTERED Ph 1 Ph 2 Ph 3	

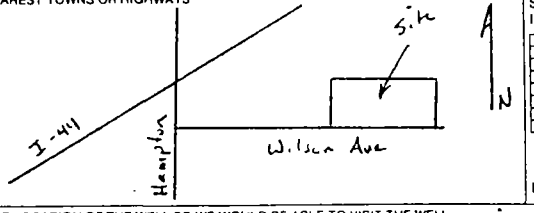
INFORMATION SUPPLIED BY OWNER

NAME		TELEPHONE
State of Missouri - Division of Design and Construction		(314) 751-2262
ADDRESS	CITY	STATE / ZIP CODE
P.O. Box 809	Jefferson City	MO 65102
SITE NAME	WELL NUMBER	ADDRESS OF WELL SITE OR SITE NAME (IF DIFFERENT THAN ABOVE)
Hubert Wheeler State School		5707 Wilson Avenue
OWNER STATUS ☐ BUILDER ☐ PRIVATE HOME OWNER ☐ DEVELOPER ☒ OTHER (SPECIFY) State Agency	CITY St. Louis	STATE MO / ZIP CODE 63110

PURPOSE OF REGISTRATION FORM	VARIANCE ISSUED?	VARIANCE NUMBER	WELL CERTIFICATION NUMBER	DATE ORIGINALLY DRILLED
☐ ABANDONED WELL ☐ MINERAL EXPLORATORY ☐ WELL RECONSTRUCTION ☐ TEST HOLE ☒ OTHER soil boring	☐ YES ☒ NO	SIGNATURE (WELL OWNER)		DATE

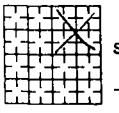
INFORMATION SUPPLIED BY CONTRACTOR

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



LOCATION OF WELL

SHOW LOCATION IN SECTION PLAT



QUAD Webster Groves COUNTY St Louis
ELEV 490 ± msl AREA NO
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼ NE ¼
SEC 25 TWN 45 N,RNG 6 (E) OR W
LAT 38 . 37 . 03 - LONG 90 . 17 . 01 -

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL
7 soil borings located throughout the site

CONTRACTOR'S NAME	PERMIT NUMBER	DRILLERS NAME	PERMIT NUMBER
Geotechnology, Inc.	[redacted]	Geotechnology, Inc	[redacted]

ABANDONMENT OF WELLS

FORMER USE OF WELL
☐ HAND DUG ☒ SOIL BORING 9-20' borings
☐ DOMESTIC (1 TO 3 CONNECTIONS) ☐ PUBLIC WATER SUPPLY
☐ MULTI-FAMILY ☐ MINERAL EXPLORATORY TEST HOLE
☐ HEAT PUMP ☐ MONITORING
☐ IRRIGATION ☐ OTHER

ORIGINAL DRILLER (IF KNOWN)	DATE ORIGINALLY DRILLED
Geotechnology, Inc	7/5&13/1995

DATE PLUGGED	STATIC WATER LEVEL	PUMP REMOVED FROM WELL?
7/5 to 13/95	FT	☐ YES ☐ NO

DEPTH OF THE WELL	LENGTH OF CASING	CASING DIAMETER/WELL DIA.
20'		

GROUT INSTALLATION METHOD	CASING CUT OFF THREE FEET BELOW SURFACE?	TYPE OF CASING
☐ GRAVITY ☒ TREMIE	☐ YES ☐ NO	☐ STEEL ☐ PLASTIC ☐ OTHER

GROUT MATERIAL USED
NEAT CEMENT: ☐ HI-EARLY ☒ PORTLAND TYPE I ☐ OTHER
☐ BENTONITE SLURRY ☐ OTHER
BENTONITE: ☒ POWDER ☐ GRANULAR ☐ CHIPS ☐ PELLETS
NUMBER OF BAGS OF GROUT USED 27
POUNDS OF GROUT PER BAG 100

IF NEAT CEMENT USED, HOW MANY GALLONS OF WATER MIXED PER BAG OF CEMENT

TYPE OF FILL MATERIAL USED

AMOUNT OF FILL MATERIAL USED CU. YDS.

DEPTH TO TOP OF FILL MATERIAL

WELL DISINFECTED BEFORE PLUGGING?	NUMBER USED FOR DISINFECTION
☐ YES ☐ NO	GALLONS OF CHLORINE ____ POUNDS OF CHLORINE ____ TABLETS OF CHLORINE ____

WAS THE WELL ABANDONED BECAUSE OF HOOKING UP TO A PUBLIC OR RURAL WATER SUPPLY DISTRICT? ☐ YES ☐ NO

IF YES, WHAT IS THE NAME OF THE WATER DISTRICT

CHECK THE BOX WHICH APPLIES

☑ I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS ABANDONED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE ABANDONMENT OF WELLS

☐ I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS REPAIRED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE REPAIR OF WELLS

CONTRACTOR'S SIGNATURE [signature] DATE 7/25/95

WELL RECONSTRUCTION

TYPE OF REPAIR
☐ RAISED CASING ☐ LINING OF WELL
☐ DEEPENING OF WELL ☐ OTHER

USE OF WELL
☐ DOMESTIC (1 TO 3 CONNECTIONS) ☐ PUBLIC WATER SUPPLY
☐ MULTI-FAMILY ☐ MONITORING
☐ HEAT PUMP ☐ OTHER
☐ IRRIGATION

DIA. OF WELL CASING	WAS WELL DISINFECTED AFTER RECONSTRUCTION	DATE RECONSTRUCTION COMPLETED
IN.	☐ YES ☐ NO	

RAISED CASING INFORMATION

LENGTH OF CASING ADDED FT.

MATERIAL	METHOD OF ATTACHMENT
☐ STEEL ☐ PLASTIC	☐ THREADED ☐ FUSED ☐ WELDED ☐ GLUED ☐ COUPLED

LINER DETAILS

PURPOSE OF LINER
☐ USED ONLY TO HOLD BACK FORMATION
☐ USED TO SEAL OUT CONTAMINATION OR OTHER CONDITIONS

DIAMETER OF LINER IN.
WEIGHT OR SDR #

DEPTH TO THE TOP OF LINER FROM SURFACE FT.
MATERIAL ☐ PLASTIC ☐ STEEL

AMOUNT OF LINER USED FT.
JOINTS ☐ GLUED ☐ WELDED ☐ OTHER

LINER PACKER DETAILS

TYPE USED ☐ NONE ☐ RUBBER ☐ BOOT
DEPTH(S) SET

LINER GROUT DETAILS

POSITION OF SEAL ☐ FULL LENGTH ☐ BETWEEN PACKERS
MATERIAL CEMENT ☐ PORTLAND TYPE I ☐ HI EARLY BENTONITE ☐ CHIPS ☐ PELLETS ☐ SLURRY ☐ GRANULAR

DEPTH PUMP WAS SET ____ FT GPM ____	DEPTH FROM SURFACE TO TOP OF THE GROUT SEAL FT.	DEPTH FROM SURFACE TO BOTTOM OF THE GROUT SEAL FT

DEEPENING OF WELL INFORMATION

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION	YIELD

MO 780-1414 (1-95) DISTRIBUTION: WHITE/CONTRACTOR CANARY/DIVISION PINK/OWNER
MAIL CANARY COPY TO DEPARTMENT OF NATURAL RESOURCES, P O BOX 250 ROLLA MO 65401 RECORD MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION DATE

Surface Elevation ___

Datum ___

Completion Date: 7-5-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Soft to medium stiff, brown, silty CLAY, dry, with brick, rock, and black inclusions - CL		0	CS
	FILL: Soft, medium brown, silty CLAY, moist, trace black inclusions, trace gray mottling - CL		0	
	FILL: Stiff, medium brown and light gray mottled, silty CLAY, dry - CL		0	
5	soft, moist		0	CS
	FILL: Soft to medium stiff, dark gray and black, mottled SILT, dry - ML		0	
	FILL: Stiff, medium gray and white, silty CLAY, dry, with rock - CL		0	
	with sandstone and calcified limestone rock		0	
10	Stiff, white and gray, CLAY, dry to moist - CL		0	CS
	Soft to medium stiff, medium brown and light gray, mottled, silty CLAY, dry to moist, trace black inclusions - CL		0	
	moist to wet		0	
15	Soft to medium stiff, medium brown, silty CLAY, moist, with gray mottling and trace black inclusions - CL		0	CS
	Soft to medium stiff, medium brown and gray, mottled, silty CLAY, trace black inclusions - CL		0	CS
20	Very stiff, medium brown and gray, mottled, CLAY, dry, with black inclusions - CL		0	
	Boring terminated at 20.0 feet			

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ - BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT ___ FEET

AT ___ AFTER ___ HOURS

AT ___ AFTER ___ HOURS

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: OAD	Ck'd. by: SLB	App'vd. by: SLB
Date: 8/22/95	Date: 8/6/95	Date: 8/6/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB1

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-6-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES	SHEAR STRENGTH, tsf (Δ - UU/2, ○ - QU/2, □ - SV; .5 1 1.5 2 2.5) / STANDARD PENETRATION RESISTANCE (ASTM D 1586) ▲ - BLOWS PER FOOT / WATER CONTENT, % (PL 10 20 30 40 50 LL)
	Grass, then FILL: Stiff, medium brown and red-brown, SILT, with clay, dry, with brick, rock, and black inclusions - ML		0		
	with larger black inclusions		0		
	No recovery at 2-5 feet		--	CS	
5	FILL: Brown, silty SAND, wood, glass, bricks, rock, paper - SP		0		
	No recovery at 8.25 to 10 feet		0		
			--	CS	
10	FILL: Silty SAND, brick and rock, with black inclusions - SP		0		
	FILL: Soft, black, sandy SILT, very wet, with brick and rock - ML		0		
	FILL: Stiff, medium brown, silty CLAY, moist - CL		0		
	No recovery from 12 to 20 feet		--	CS	
15			--		
			--	CS	
20	Boring terminated at 20.0 feet				

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT ___ FEET

AT ___ AFTER ___ HOURS

AT ___ AFTER ___ HOURS

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by	Ck'd. by	App'vd. by
DAO	SLB	SLB
Date: 8/22/95	Date 9/6/95	Date 9/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB2

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-8-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Medium brown, silty CLAY, moist, with black mottling, rock, trace black inclusions -CL		0	
	FILL: Medium brown and light gray, mottled, silty CLAY, trace black inclusions - CL		0	
	FILL: Stiff, red-brown and dark brown, silty CLAY, dry, trace trace light brown mottling - CL		0	CS
			0	
5	FILL: Soft to medium stiff, light and medium brown, silty CLAY, moist, with red-brown mottling, rock and small gravel - CL		0	
	FILL: Soft to medium stiff, medium brown and light brown, silty CLAY, dry to moist, trace black inclusion and small gravel - CL		0	
			0	CS
	FILL: Soft to medium stiff, dark brown and medium brown, mottled, silty CLAY, trace black inclusions, trace small gravel - CL		--	
10	FILL: Soft, medium brown and light brown, silty CLAY, moist, with gravel and trace black inclusions - CL		0	
	No recovery at 8-10 feet		0	
	FILL: Soft, medium brown and light brown, silty CLAY, moist, with gravel and black inclusions - CL		--	CS
	FILL: Sandy GRAVEL, wire, wood, and green stained rocks - GP		--	
15	No recovery at 11.5-15 feet		--	
	FILL: Medium and dark brown, silty CLAY, with brick and large limestone rock with quartz - CL		0	
	No recovery at 15.8-20 feet		--	CS
			--	
20	Boring terminated at 20.0 feet		--	

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ - BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT___FEET

AT___AFTER___HOURS

AT___AFTER___HOURS.

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd. by: SLB	App'vd. by: SLB
Date: 7/12/95	Date: 9/6/95	Date: 9/8/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB3

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-6-95

SHEAR STRENGTH, tsf

△ - UU/2 ○ - QU/2 □ - SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ - BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Soft, medium brown, silty CLAY, moist, with light brown mottling, rock, gravel, brick, and black inclusions - CL		0	
			0	
			0	CS
	large concrete fragments		0	
	FILL: Soft to medium stiff, medium and light brown, mottled, silty CLAY, dry to moist, with concrete, brick, and black inclusions - CL		0	
5			--	
	FILL: Very stiff, black, sandy matrix, with small gravel		--	
	No recovery at 5-10 feet		--	CS
			--	
			--	
10			--	
	FILL: Very stiff, black, sandy matrix, with peagravel		0	
	FILL: Stiff to very stiff, white, silty CLAY, dry to moist, with small gravel and black inclusions - CL		0	
			0	CS
	No recovery at 13-15 feet		--	
			--	
15			--	
	FILL: Asphalt and sandstone		0	
	FILL: Soft, white and orange, silty CLAY matrix of small gravel, rocks, and large black inclusions, stratified with dark brown, silty clay, dry to moist - CL		0	
			0	CS
			0	
	FILL: White, silty CLAY, with orange streaking and brown-red, mottled, silt - CL		--	
			--	
20	No recovery at 18.5-20 feet		--	
	Boring terminated at 20.0 feet			

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT ___ FEET

AT ___ AFTER ___ HOURS

AT ___ AFTER ___ HOURS

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd. by: SCB	App'd. by: SCB
Date: 8/22/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB4

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-7-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Soft to medium stiff, medium brown, silty CLAY, moist, with light brown mottling, rock, gravel, and trace black black inclusions – CL		0	
			0	
	FILL: Soft to medium stiff, medium brown, silty CLAY with light brown, gray, and rust colored mottling, moist, with gravel and brick, trace black inclusions – CL		0	CS
			0	
5	with larger inclusions, dry to moist		0	
			0	
	FILL: Soft, medium brown, silty CLAY, moist, with light brown mottling, trace rock – CL		0	
	concrete		0	CS
	FILL: Medium stiff, medium brown, silty CLAY, moist, with rock and black inclusions – CL		0	
			--	
10	No recovery at 8.5–10 feet			
	FILL: BRICK and ROCK		0	
			0	
	FILL: CONCRETE		0	CS
	FILL: Soft, brown, silty CLAY, moist, with brick and rock, trace black inclusions – CL		--	
	No recovery at 13–15 feet		--	
15				
	FILL: LIMESTONE rock boulder		0	
	FILL: BRICK		0	
	FILL: Soft, brown and black, SILT, moist to wet, with brick, rock, wood and metal – ML		--	CS
	No recovery at 17–20 feet		--	
			--	
20	Boring terminated at 20.0 feet		0	

SHEAR STRENGTH, tsf

Δ – UU/2 O – QU/2 □ – SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ – BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 16 FEET

AT ___ AFTER ___ HOURS

AT ___ AFTER ___ HOURS

X FREE WATER NOT ENCOUNTERED DURING DRILLING

REMARKS:

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd. by: SCA	App'vd. by: SCA
Date: 8/22/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB5

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-7-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Stiff, dark brown, silty CLAY, dry, with light brown mottling and black inclusions - CL		0	
	FILL: Stiff, medium brown, silty CLAY, dry, with light brown mottling, brick, rock, and black inclusions - CL		0	
	FILL: Medium grain, brown, SAND		0	CS
	FILL: Medium brown, silty CLAY		--	
5	No recovery at 3-5 feet		--	
	FILL: Soft to medium stiff, dark brown and black, silty CLAY, moist, with olive green mottling, brick, rock, and black inclusions - CL		0	
	FILL: BRICK		0	
	FILL: Soft, dark brown and black mottled, silty CLAY, wet, with brick, rock, and olive green inclusions - CL		0	CS
	FILL: White and yellow, silty CLAY - CL		--	
10	No recovery at 9-10 feet		0	
	FILL: Medium grain, brown and gray SAND, moist, with brick, rock, and black mottled, silty clay - SP		0	
	FILL: Soft, medium brown and black, silty CLAY, moist, with green mottling, brick, rock, and sand - CL		--	CS
	No recovery at 12-15 feet		--	
15	Soft, medium brown, silty CLAY, moist, with light gray and dark brown mottling, trace black inclusions - CL		0	
			0	
			0	CS
			0	
			0	
20	Boring terminated at 20.0 feet		0	

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ - BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT ___ FEET

AT ___ AFTER ___ HOURS

AT ___ AFTER ___ HOURS

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd. by: SCB	App'vd. by: SCB
Date: 8/22/95	Date: 8/6/95	Date: 8/6/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB6

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-7-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Stiff, medium brown, CLAY, with silt, dry, with light brown mottling and black inclusions - CL		0	
	FILL: White, finely crushed, ROCK		0	
	FILL: Very stiff, medium brown, CLAY, dry, with brown and black mottling - CL		0	CS
	FILL: White powder		0	
5	FILL: Stiff, medium brown, CLAY, with silt, dry, with black mottling - CL		0	
	with black inclusions, no mottling		0	
	FILL: Medium brown, silty CLAY, with light brown and gray mottling, trace olive green inclusions - CL		0	CS
	FILL: White, clayey SILT, moist, with small gravel and rock - ML		0	
10	FILL: Soft, black, clayey SILT, moist to wet, with brick, rock and sand - ML		0	
	No recovery at 9-10 feet		--	
	FILL: Black, clayey SILT		--	CS
	FILL: White, clayey SILT, very wet, with rock, brick and sand - ML		--	
	No recovery at 11-15 feet		--	
15	FILL: Large ROCK, gravel and sand		0	
	FILL: White, clayey SILT, wet, with small gravel and large rocks - ML		0	
			0	CS
	FILL: Soft, brown, silty CLAY, wet, with olive green mottling - CL		--	
	No recovery at 18-20 feet		--	
20	Boring terminated at 20.0 feet			

SHEAR STRENGTH, tsf

Δ - UU/2 O - GU/2 □ - SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ - BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES
APHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

NOTE: STRATIFICATION LINES REPRESE
AND THE TRANSITION MAY BE GRADU

GROUNDWATER DATA

ENCOUNTERED AT 10.2 FEET

AT 15.5 AFTER 1.5 HOURS

AT ___ AFTER ___ HOURS

___ FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd by: SCB	App'vd by: SCB
Date: 8/22/95	Date: 9/6/95	Date 9/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB7

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-10-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Stiff, medium brown, silty CLAY, dry, with rock and gravel - CL		0	
			0	
	FILL: Stiff, white and light gray, SILT, with clay, dry, with medium brown mottling and gravel - ML		0	CS
	FILL: Stiff, black and white, silty CLAY, dry, with brick, rock and gravel - CL		--	
	No recovery at 3-15 feet		--	
5			--	
			--	CS
			--	
10			--	
			--	CS
			--	
15	Soft, medium brown, silty CLAY, moist, trace light gray mottling, trace black inclusions - CL		0	
			0	
			0	CS
			0	
			0	
20	Boring terminated at 20.0 feet		0	

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ - BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT___FEET

AT___AFTER___HOURS

AT___AFTER___HOURS.

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by	Ck'd by	App'vd. by
OAD	SCO	SCO
Date: 8/22/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB8

Project No. 2498.03.4120.05

PLATE

Surface Elevation ___

Datum ___

Completion Date: 7-10-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	ASPHALT pavement		0	
	FILL: Stiff, medium brown, silty CLAY, with light gray and dark brown mottling, gravel and black inclusions – CL		0	
	FILL: Soft, black, silty CLAY, dry, trace gravel – CL		0	CS
	FILL: Soft, dark and medium brown, mottled, SILT, with clay, dry, with gravel and black inclusions – ML		--	
5	No recovery at 3-5 feet		--	
	FILL: Black and medium brown, silty GRAVEL, dry, with brick and rock – GP		0	
	No recovery at 7-10 feet		0	CS
			--	
10	FILL: Black and medium brown, silty GRAVEL, dry, with brick and rock – GP		--	
	Soft, medium brown, SILT, with clay, dry to moist, with rust colored mottling and trace black inclusions – ML		--	
	increased rust colored mottling		0	
			0	CS
15	Soft, medium brown and gray, mottled, SILT, with clay, moist, trace black inclusions – ML		0	
	stiff with less gray mottling		0	
			0	CS
			0	
20	Boring terminated at 20.0 feet		0	

SHEAR STRENGTH, tsf

Δ – UU/2 O – GU/2 □ – SV

.5 1 1.5 2 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ – BLOWS PER FOOT

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT ___ FEET

AT ___ AFTER ___ HOURS

AT ___ AFTER ___ HOURS

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3-3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd. by: SCB	App'vd. by: SCB
Date: 8/23/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC

ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: SB9

Project No. 2498.03.4120.05

PLATE

Surface Elevation 101.2

Datum SITE

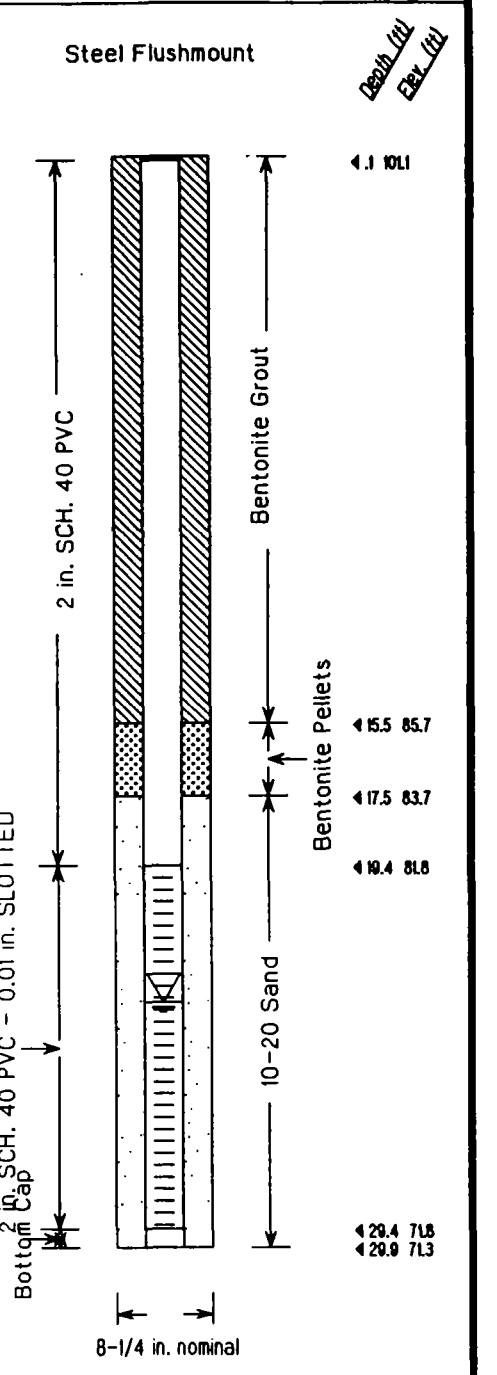
Completion Date: 7-11-95

Development Date: 7-14-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Grass, then FILL: Medium brown, silty CLAY, with light gray mottling, brick, rock, and gravel - CL		0 0	CS
	No recovery at 2.5-5 feet		-- --	
5	FILL: Soft, medium brown, silty CLAY, moist, with light gray mottling and black inclusions - CL		0 0	CS
	FILL: Stiff, medium brown, silty CLAY, dry, with brick, rock, gravel, and black inclusions - CL		-- --	
	with glass and pottery		-- --	
10	No recovery at 7-10 feet		0 0	CS
	FILL: Soft, medium brown, light brown, and black, SILT, moist, with gravel, sand, brick, rock and large black inclusions - CL		0 --	
	No recovery at 13-15 feet		-- --	
15	FILL: Soft, medium brown, light brown and black SILT, moist, with gravel, sand, brick, rock and large black inclusions - CL		0 0	CS
	FILL: White, fine, clayey GRAVEL, wet, with rock, brick, glass, trace black inclusions - CL		0 --	
20	No recovery at 18-20 feet		-- --	
	FILL: Soft, dark brown, silty CLAY, wet, trace gravel and medium brown inclusions - CL		0 0	CS
	No recovery at 23-25 feet		0 --	
25	Soft, dark gray and black, silty CLAY, wet, trace roots - CL		-- --	
	no roots		0 0	CS
	Soft to medium stiff, medium brown and gray, silty CLAY, wet, with black inclusions - CL		0 0	
30	Stiff, medium and light brown, SILT, with clay , dry - ML		0 0	
	Boring terminated at 30.0 feet			

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

WELL DIAGRAM



GROUNDWATER DATA

ENCOUNTERED AT 20 FEET

AT 23.76 AFTER 72 HOURS

AT 23.14 AFTER 168 HOURS

__ FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

__ AUGER 4-1/4" HOLLOW STEM

WASHBORING FROM __ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd by SLB	App'd by: SLB
Date 8/22/95	Date: 8/6/95	Date: 8/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: MW-1

Project No. 2498.03.4120.05

PLATE

Surface Elevation 101.2

Datum SITE

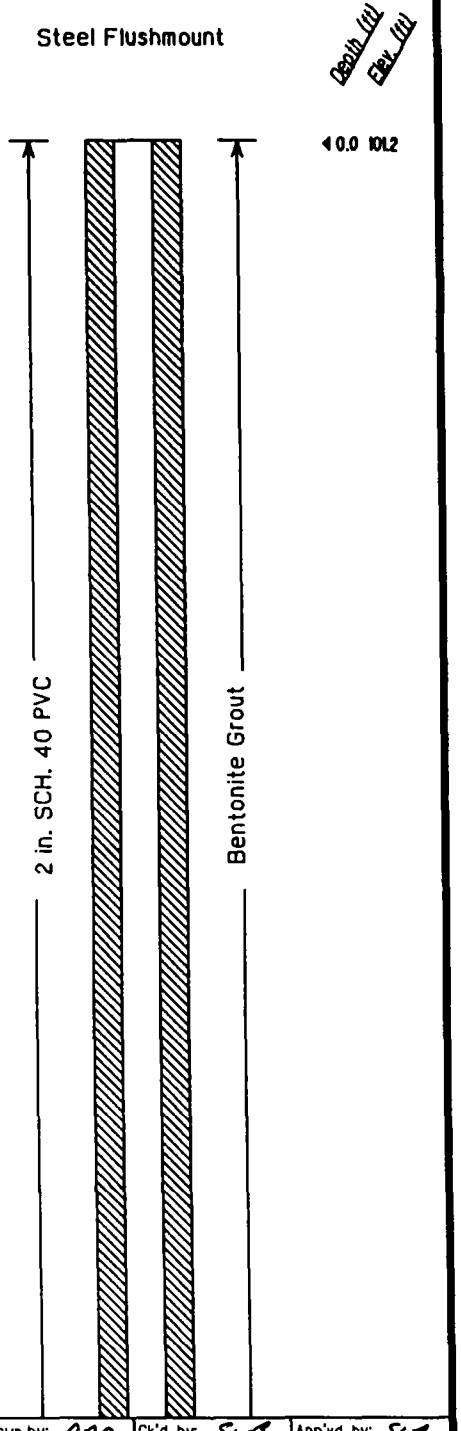
Completion Date: 7-12-95

Development Date: 7-14-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Asphalt covered base course		0	
	FILL: Medium brown and gray, silty CLAY, with olive green mottling, rock, and gravel, trace black inclusions - CL		0	CS
			0	
5	FILL: Medium grained, brown, SAND, with silt, rock, gravel - SP		0	
	FILL: Soft, medium brown and black, silty CLAY, dry to moist, with rock, brick and glass, trace nails - CL		--	CS
	No recovery at 4-5 feet		--	
	Sandy SILT, brick, gravel and rock - ML		0	
10	No recovery at 8-9 feet		0	
	FILL: Medium brown, silty CLAY, with brick, rock, glass, and black inclusions - CL		0	CS
	Soft, medium brown, silty CLAY, moist, with gray mottling and black inclusions - CL		0	
15	less gray mottling, trace black inclusions		0	
	medium stiff		0	CS
	stiff		0	
			0	
	Very stiff, orange and brown CLAY, moist, trace gray mottling, trace black inclusions - CL		0	
20	Stiff, white and brown CLAY, moist		0	
	Soft to medium stiff, medium brown, silty CLAY, dry, with dark brown-red, and black inclusions, dry - CL		0	CS
			0	
25	Stiff, medium brown CLAY, dry to moist, with orange mottling, trace black inclusions - CL		0	
	Stiff, orange-brown and white, shaley CLAY, with silt, dry, trace yellow mottling - CL		0	CS
	changing to white, with orange-brown mottling		0	
	Very stiff, red-brown, shaley CLAY, with silt, dry - CL		0	
30	with olive green, orange, and gray mottling		0	CS

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

WELL DIAGRAM



GROUNDWATER DATA

ENCOUNTERED AT 42 FEET

AT 42.06 AFTER 48 HOURS

AT 41.82 AFTER 144 HOURS

__ FREE WATER NOT ENCOUNTERED DURING DRILLING

REMARKS:

DRILLING DATA

__ AUGER 4 1/4" HOLLOW STEM

WASHBORING FROM __ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

Drawn by: DAD	Ck'd. by: SLB	App'vd. by: SLB
Date: 8/22/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: MW-2

Project No. 2498.03.4120.05

PLATE

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Surface Elevation 101.2

Datum SITE

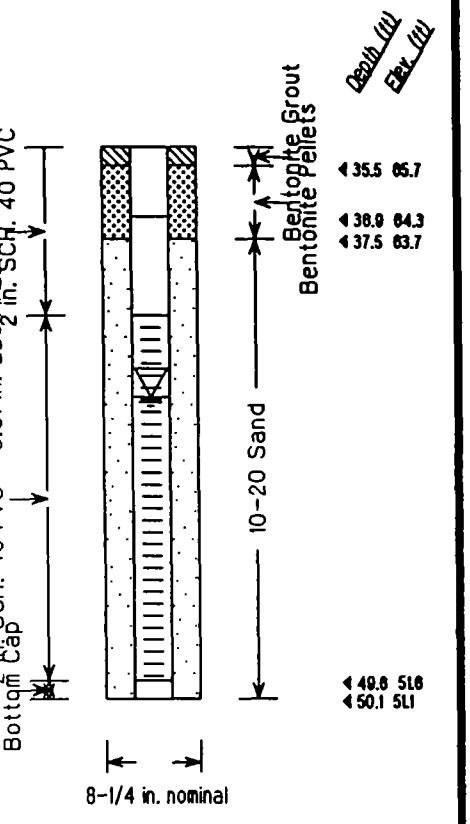
Completion Date: 7-12-95

Development Date: 7-14-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
			0	
	Very stiff, red-brown, shaley CLAY, dry, with red-brown shale, mottled with green, gray and orange - CL		0 0 0 0 0	CS
40	Brown and gray, shaley CLAY, dry to moist, with gray-orange mottling - CL		0 0 0 0 0	CS
	Stiff, medium gray, shaley CLAY, very wet, with medium brown, orange, and dark gray streaking - CL		0 0 0 0 0	CS
45	Stiff, gray, shaley CLAY, moist - CL very stiff, dark gray trace brown and red streaking, wet no brown and red streaking		0 0 0 0 0	
50	Boring terminated at 50.1 feet			
55				
60				
65				

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. LITHOLOGIC LOG FOR ILLUSTRATION PURPOSES ONLY.

WELL DIAGRAM



GROUNDWATER DATA

ENCOUNTERED AT 42 FEET

AT 42.06 AFTER 48 HOURS

AT 41.82 AFTER 144 HOURS

__ FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

__ AUGER 4 1/4" HOLLOW STEM

WASHBORING FROM __ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd. by: SCS	App'vd. by: SCS
Date: 8/22/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

Continuation of BORING: MW-2

Project No. 2498.03.4120.05

PLATE

Surface Elevation 101.0

Datum SITE

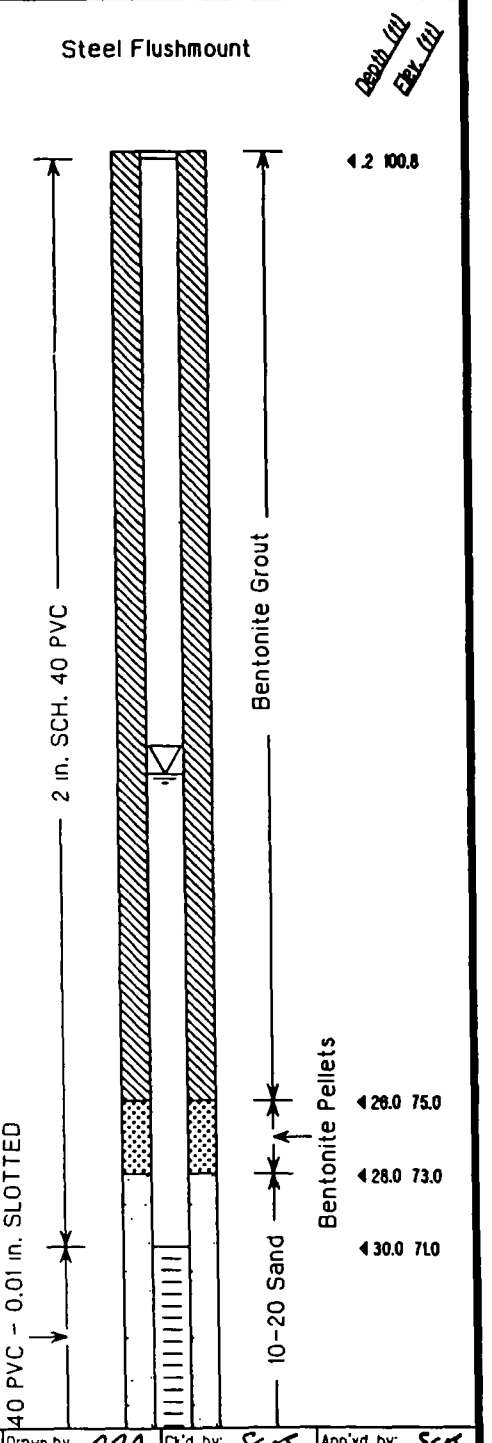
[redacted]etion Date: 7-13-95

Development Date: 7-14-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Asphalt pavement over base course		0	
	FILL: Soft, medium brown, silty CLAY, moist, with brick, rock, and black inclusions - CL		0	CS
	No recovery at 3-5 feet		--	
5	FILL: Soft, medium brown SILT, with clay, moist, with brick, rock, glass, and black inclusions - ML		0	CS
	No recovery at 7-10 feet		--	
10	Soft, medium brown SILT, with clay, moist, trace gray mottling and black inclusions - ML		0	CS
	no black inclusions		0	
15	Soft to medium stiff, medium brown, silty CLAY, moist, trace black inclusions - CL		0	CS
	Medium stiff, medium brown CLAY, with silt, moist, with light brown and gray mottling and black inclusions - CL		0	
20	soft to medium stiff, less clay		0	CS
	Soft, medium brown, silty CLAY, moist, with dark brown and light gray mottling, with black inclusions - CL		0	
	No recovery at 23-25 feet		--	
25	Soft, medium brown, silty CLAY, moist, with dark brown and light gray mottling, with black inclusions - CL		0	CS
30	Soft, medium brown and gray, silty CLAY, wet, with black inclusions - CL		0	CS
	stiff, more clay, very wet		0	
	Soft, medium gray, silty CLAY, very wet, with brown mottling - CL		0	

NOTE: STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

WELL DIAGRAM



GROUNDWATER DATA

ENCOUNTERED AT 30 FEET

AT 17.01 AFTER 24 HOURS

AT 17.05 AFTER 120 HOURS

__ FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

__ AUGER 4-1/4" HOLLOW STEM

WASHBORING FROM __ FEET

PG DRILLER DAD LOGGER

CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by	Ck'd. by	App'vd. by
OAD	SCS	SCS
Date: 8/22/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

LOG OF BORING: MW-3

Project No. 2498.03.4120.05

PLATE

Surface Elevation 101.0

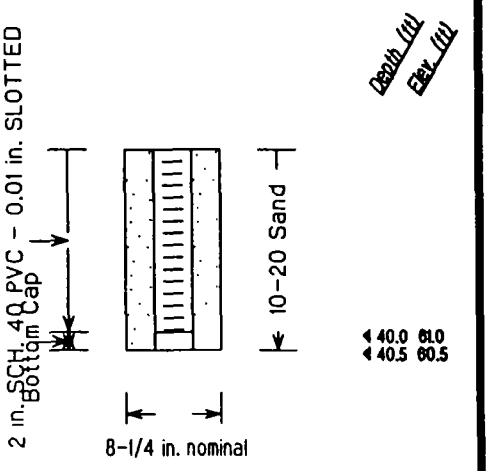
Datum SITE

Completion Date: 7-13-95
Development Date: 7-14-95

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	PID VALUES (ppm)	SAMPLES
	Soft, medium brown, silty CLAY, very wet, with medium grain, angular gravel - CL		0	
	Medium grain, angular, GRAVEL, with silty clay, very wet - GP		0	
40	Soft, medium brown, silty CLAY, very wet, with gravel, trace gray mottling - CL		0	CS
	Medium grain, angular, GRAVEL, very wet, with soft, silty clay, trace gray mottling - GP		--	
	Soft, medium brown, silty CLAY, very wet, with gravel, and dark gray streaks - CL		--	
45	No recovery at 39-40.5 feet			
	Boring terminated at 40.5 feet			
50				
55				
60				
65				

NOTE: STRATIFICATION LINES REPRESE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADU, APHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

WELL DIAGRAM



GROUNDWATER DATA

ENCOUNTERED AT 30 FEET
AT 17.01 AFTER 24 HOURS
AT 17.05 AFTER 120 HOURS
__ FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

__ AUGER 4-1/4" HOLLOW STEM
WASHBORING FROM __ FEET
PG DRILLER DAD LOGGER
CME 550 DRILL RIG

REMARKS:

SEE NOTATION SHEET FOR DESCRIPTION OF ABBREVIATIONS

Drawn by: DAD	Ck'd by: SCO	App'vd by: SCO
Date: 8/29/95	Date: 9/6/95	Date: 9/6/95

GEOTECHNOLOGY, INC
ENGINEERING AND ENVIRONMENTAL SERVICES

HUBERT WHEELER STATE SCHOOL

Continuation of BORING: MW-3

Project No. 2498.03.4120.05

PLATE

BORING LOG: TERMS AND SYMBOLS

GENERAL NOTES

1. *Information on each boring log is a compilation of subsurface conditions based on soil or rock classifications obtained from the field as well as from laboratory testing of samples. The strata lines on the logs may be approximate or the transition between the stata may be gradual rather than distinct. Water level measurements refer only to those observed at the times and places indicated, and may vary with time, geologic condition or construction activity.*
2. *Relative composition and Unified Soil Classification designations are based on visual estimates and are approximate only. If laboratory tests were performed to classify the soil, the unified designation is shown in parenthesis.*
3. *Value given in Unit Dry Weight/SPT Column is either a unit dry weight in pounds per cubic foot, if adjacent to a ST sample designation, or blows per 6-inch increment if adjacent to a SS sample designation.*

ABBREVIATIONS

UU/2	*Shear Strength from Unconsolidated - Undrained Triaxial Test (ASTM D2850)*
QU/2	*Shear Strength from Unconfined Compression Test (ASTM D2166)*
SV	*Shear Strength from Field Vane (ASTM D2573)*
PL	*Plastic Limit (ASTM D4318)*
LL	*Liquid Limit (ASTM D4318)*

LEGEND

CS	Continuous Sampler
GB	Grab Sample Taken From Auger Cuttings Or Wash Water Return
NX 100 42	NX Rock Core with Percent Recovery/R.Q.D. Given in Adjacent Column
PST	Three Inch Diameter Piston Tube Sample
SS	Split Spoon Sample (Standard Penetration Test)
ST	Three Inch Diameter Shelby Tube Sample
*	Sample Not Recovered
SV	Field Vane Test

SPLIT - BARREL SAMPLER DRIVING RECORD

Blow Per Foot (N-Value)	Description
25	*25 blows drove sampler 12 inches after initial 6 inches of seating.*
75/10"	*75 blows drove sampler 10 inches after initial 6 inches of seating.*
50/S3"	*50 blows drove sampler 3 inches during initial 6 inch seating interval.*

NOTES: 1. To avoid damage to sampling tools, driving is limited to 50 blows during any six inch interval.
2. N-Value (Blow Count) is the standard penetration resistance based on the total number of blows, using a 140-lb. hammer with 30-inch free fall, required to drive a split spoon the last two of three, 6 inch drive increments. (Example: 4/7/9, N = 7 + 9 = 16). Values are shown as a summation on grid plot and may be shown as 4/7/9 in Unit Dry Weight -SPT column.

RELATIVE COMPOSITION

Trace	*0-10%*
With/Some	*11-35%*
Soil modifier such as silty, clayey, sandy, etc.	*› 35%*

DENSITY OF GRANULAR SOILS

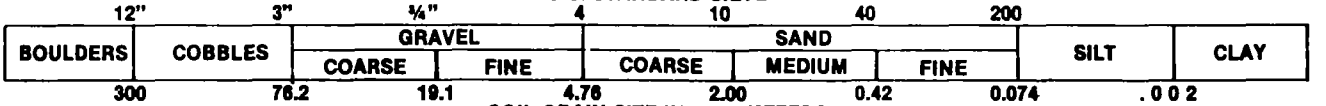
Descriptive Term:	N—Value
Very Loose	*0 - 4*
Loose	*5 - 10*
Medium Dense	*11 - 30*
Dense	*31 - 50*
Very Dense	*› 50*

STRENGTH OF COHESIVE SOILS

Consistency	Undrained Shear Strength Tons Per Sq. Ft.	Field Test	Approximate N-Value Range
Very Soft	*less than 0.12*	*Thumb will penetrate soil more than 1".*	*0 - 1*
Soft	*0.13 to 0.25*	*Thumb will penetrate soil about 1"*	*2 - 4*
Medium Stiff	*0.26 to 0.50*	*Thumb will penetrate soil about ¼"*	*5 - 8*
Stiff	*0.51 to 1.00*	*Thumb hardly indents soil*	*9 - 15*
Very Stiff	*1.01 to 2.00*	*Thumb will not indent soil, but readily indented with thumbnail*	*16 - 30*
Hard	*greater than 2.00*	*Thumbnail will not indent soil*	*› 30*

SOIL GRAIN SIZE

U.S. STANDARD SIEVE



SOIL GRAIN SIZE IN MILLIMETERS

SOIL STRUCTURE

Calcareous *— Having appreciable quantities of carbonate.*

Fissured *— Containing shrinkage or relief cracks, often filled with fine sand or silt; usually more or less vertical.*

Slickensided *— Having planes of weakness that appear slick and glossy. The degree of slickensidedness depends upon the spacing of slickensides and the ease of breaking along these planes.*

Layer *— Inclusion greater than 3 inches thick.*

Seam *— Inclusion 1/8 inch to 3 inches thick extending through the sample.*

Parting *— Inclusion less than 1/8 inch thick.*

Pocket *— Inclusion of material of different texture that is smaller than the diameter of the sample.*

Interlayered *— Soil samples composed of alternating layers of different soil types.*

Intermixed *— Soil samples composed of pockets of different soil types and a layered or laminated structure is not evident.*

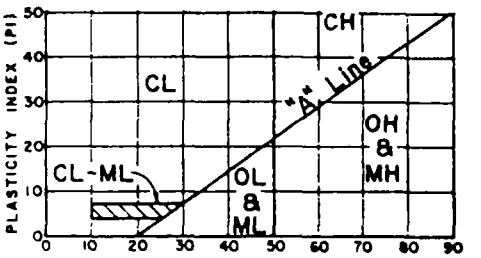
Laminated *— Soil sample composed of alternating partings or seams of different soil type.*

GEOTECHNOLOGY
ENGINEERING AND ENVIRONMENTAL SERVICES
SAINT LOUIS MISSOURI

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOL	DESCRIPTION
Coarse-Grained Soils (more than 50% Larger than No. 200 Sieve Size)	Gravel and Gravelly Soils	Clean Gravels Little or no Fines	GW	Well-Graded Gravel, Gravel-Sand Mixture
			GP	Poorly-Graded Gravel, Gravel-Sand Mixture
		Gravels with Appreciable Fines	GM	Silty Gravel, Gravel-Sand-Silt Mixture
			GC	Clayey-Gravel, Gravel-Sand-Clay Mixture
	Sand and Sandy Soils	Clean Sands Little or no Fines	SW	Well-Graded Sand, Gravelly Sand
			SP	Poorly-Graded Sand, Gravelly Sand
		Sands with Appreciable Fines	SM	Silty Sand, Sand-Silt Mixture
			SC	Clayey Sand, Sand-Clay Mixture
Fine-Grained Soils (more than 50% Smaller than No. 200 Sieve Size)	Silts and Clays	Liquid Limit Less than 50	ML	Silt, Clayey Silt, Silty or Clayey Very Fine Sand, Slight Plasticity
			CL	Clay, Sandy Clay, Silty Clay, Low to Medium Plasticity
			OL	Organic Silts or Silty Clays of Low Plasticity
	Silts and Clays	Liquid Limit More than 50	MH	Silt, Fine Sandy or Silty Soil with High Plasticity
			CH	Clay, High Plasticity
			OH	Organic Clay of Medium to High Plasticity
Highly Organic Soils			PT	Peat, Humus, Swamp Soil

PLASTICITY CHART



RELATIVE PLASTICITY

Nonplastic	Cannot Roll into Ball
Trace Plasticity	Barely Roll into Ball
Medium Plastic	Can be Rolled into Ball
Highly Plastic	No Rupture by Kneading

VISUAL DESCRIPTION CRITERIA*

TABLE 1: CRITERIA FOR DESCRIBING ANGULARITY OF COARSE-GRAINED PARTICLES

Description	Criteria
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges

TABLE 2: CRITERIA FOR DESCRIBING PARTICLE SHAPE

Description	Criteria
Flat	Particles with width/thickness X3
Elongated	Particles with length/width X3
Flat and Elongated	Particles meet criteria for both flat and elongated

TABLE 3: CRITERIA FOR DESCRIBING MOISTURE CONDITION

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

TABLE 4: CRITERIA FOR DESCRIBING REACTION WITH HCL

Description	Criteria
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

TABLE 6: CRITERIA FOR DESCRIBING CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

*NOTES: 1. Tables adapted from ASTM D 2488 "Description and Identification of Soils" (Visual-Manual Procedure)
2. Tables 5, 7 and 11 incorporated into other information on this plate.

TABLE 8: CRITERIA FOR DESCRIBING DRY STRENGTH

Description	Criteria
None	The dry specimen crumbles into powder with mere pressure of handling
Low	The dry specimen crumbles into powder with some finger pressure
Medium	The dry specimen breaks into pieces or crumbles with considerable finger pressure
High	The dry specimen cannot be broken with finger pressure. Specimen will break into pieces between thumb and a hard surface
Very High	The dry specimen cannot be broken between the thumb and a hard surface

TABLE 9: CRITERIA FOR DESCRIBING DILATANCY

Description	Criteria
None	No visible change in the specimen
Slow	Water appears slowly on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing
Rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing

TABLE 10: CRITERIA FOR DESCRIBING TOUGHNESS

Description	Criteria
Low	Only slight pressure is required to roll the thread near the plastic limit. The thread and the lump are weak and soft.
Medium	Medium pressure is required to roll the thread to near the plastic limit. The thread and the lump have medium stiffness
High	Considerable pressure is required to roll the thread to near the plastic limit. The thread and the lump have very high stiffness

TABLE 12: IDENTIFICATION OF INORGANIC FINE-GRAINED SOILS FROM MANUAL TESTS

Soil Symbol	Dry Strength	Dilatancy	Toughness
ML	None to low	Slow to rapid	Low or thread cannot be formed
CL	Medium to high	None to slow	Medium
MH	Low to medium	None to slow	Low to medium
CH	High to very high	None	High

APPENDIX F

SLUG TEST RESULTS

SAMPLE CALCULATION FOR HYDRAULIC CONDUCTIVITY

Hydraulic conductivity is calculated from slug test data using the following equation:

$$K = \frac{r_c^2 \ln(R_e / r_w)}{2L_e} \frac{1}{t} \ln \frac{y_o}{y_t} \quad (1)$$

K	=	hydraulic conductivity (cm/sec)
r_c	=	radius of casing (cm)
R_e	=	effective radial distance over which y is dissipated; determined with an electrical resistance network analog and simplified in table and equation form.
r_w	=	radius of well boring (cm)
L_e	=	length of screened or open section of well (cm)
y_o	=	y at time zero (sec)
y_t	=	y at time t (sec)
H	=	Static height of water in well (cm)

A plot of ln y_t versus t should approximate a straight line on semilog paper. In general, y (drawdown or recovery) and t (time) measurements are collected and [ln (y_o/y_t)]/t is calculated to determine the slope of the best-fitting line through the data points on semilog paper. Subsequently, the data points y_o and y_t can be taken from the semilog plot and inserted into the above equation.

ln R_e/r_w is determined by:

$$\ln R_e/r_w = \left[\frac{1.1}{\ln (H/r_w)} + \frac{C}{L/r_w}\right]^{-1} \quad (2)$$

C is a function of L/r_w and is determined from Bouwer and Rice (1989).

Inserting the slug test variables for MW-1 into equation (2) yields:

$$\ln R_e/r_w = \left[\frac{1.1}{\ln (206\ cm/10.5\ cm)} + \frac{1.7}{29.0\ cm}\right]^{-1} \quad (3)$$

$$\ln R_e/r_w = 2.335 \quad (4)$$

inserting the value for ln R_e/r_w into equation (1) yields:

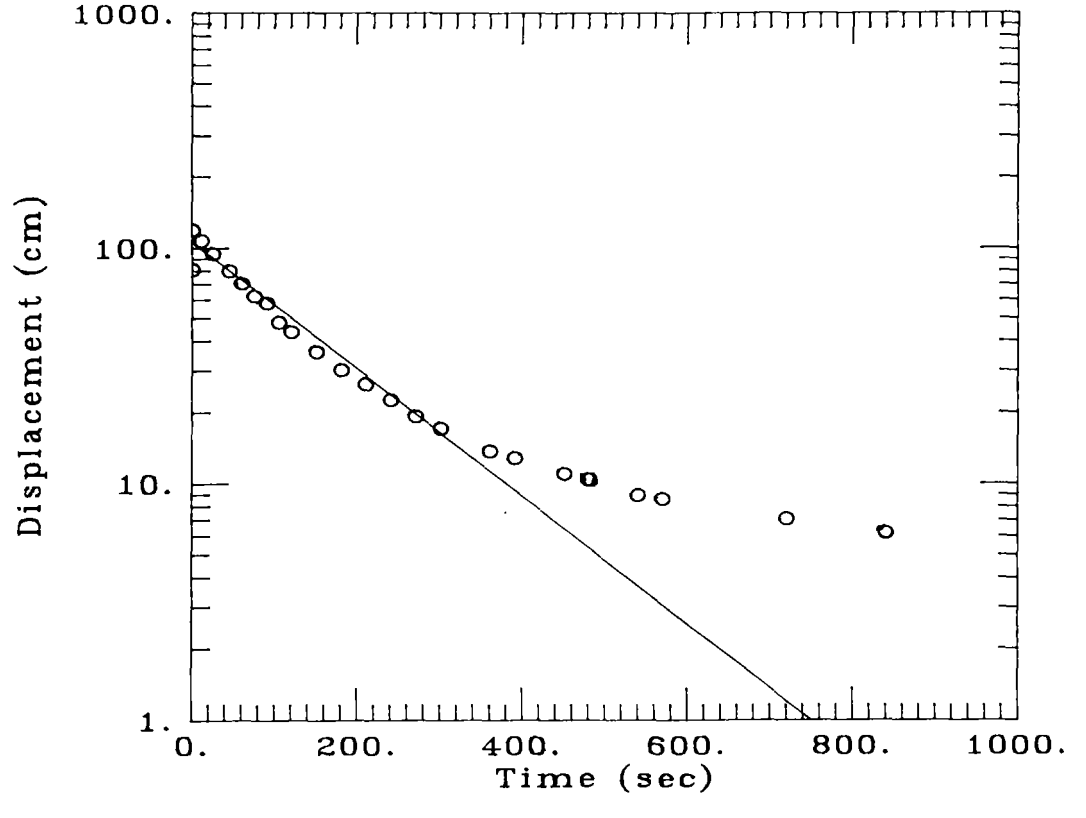
$$K = \frac{(2.54\ cm^2)\ (2.335)}{2\ (304.8\ cm)} \frac{1}{(3400\ sec)} \ln \frac{(20\ cm)}{(4\ cm)} \quad (5)$$

$$K = 1.17 \times 10^{-5} cm/sec \quad (6)$$

The value determined for K is similar to the value determined by AQTESOLV.

State of Missouri	Client: Division of Design and Constr.
Project No.: 2498.03.4120.05	Location: St. Louis, Missouri

MONITORING WELL MW-3 SLUG TEST DATA



DATA SET:
f:\kenny\24mw3.dat
08/29/95

AQUIFER TYPE:
confined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
July 18, 1995

TEST WELL:
NA

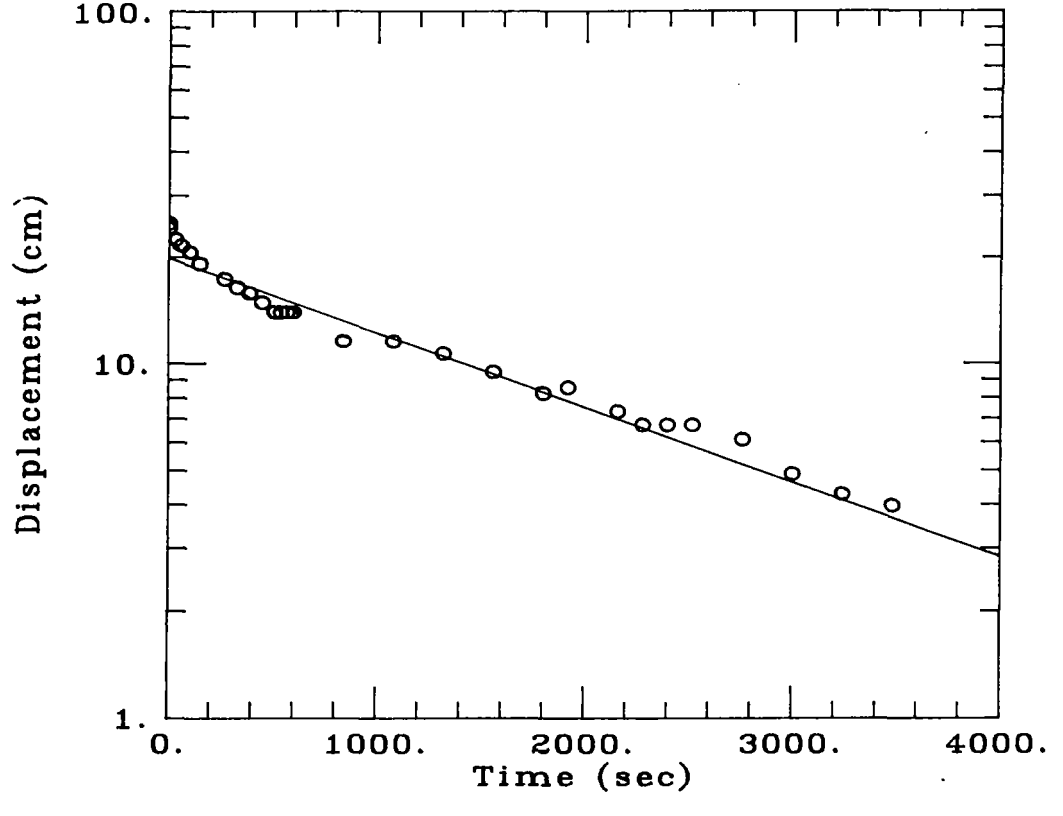
OBS. WELL:
NA

ESTIMATED PARAMETERS:
K = 0.0001995 cm/sec
y0 = 105.2 cm

TEST DATA:
H0 = 81. cm
rc = 2.54 cm
rw = 10.5 cm
L = 304.8 cm
b = 320. cm
H = 687. cm

State of Missouri	Client: Division of Design and Constr.
Project No.: 2498.03.4120.05	Location: St. Louis, Missouri

MONITORING WELL MW-1 SLUG TEST DATA



DATA SET:
F:\KENNY\24MW1.DAT
08/17/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
July 18, 1995
TEST WELL:
NA
OBS. WELL:
NA

ESTIMATED PARAMETERS:
K = 1.1795E-05 cm/sec
y0 = 19.93 cm

TEST DATA:
H0 = 25. cm
rc = 2.54 cm
rw = 10.5 cm
L = 304.8 cm
b = 206. cm
H = 206. cm

APPENDIX G

SUBSURFACE SOIL ANALYTICAL DATA REPORTS

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

July 24, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

JUL 2 6

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples SB1-2, SB1-7, SB1-13.5, SB1-18.5.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 07/06/95

Chain of Custody Form: 009332

Environmetrics Laboratory # 9507/033

Invoice # 32918

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SB1-2 14:10	9507-033-001	7/5/95	Total(8)Metals, Semi-Volatiles
SB1-7 15:00	9507-033-002	7/5/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB1-7 15:00	9507-033-002	7/5/95	Total(8)Metals Matrix Spike/Matrix Spike Duplicate Semi-Volatiles Matrix Spike/ Matrix Spike Duplicate Volatiles Matrix Spike/ Matrix Spike Duplicate
SB1-13.5 15:20	9507-033-003	7/5/95	Total(8)Metals, Semi-Volatiles
SB1-18.5 15:40	9507-033-004	7/5/95	Total(8)Metals, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis without dilutions with the exception of :

Sample ID# SB1-7: Acetone had a positive hit out of the calibration range and a 1:5 Dilution was run.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total(8)Metals are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELEER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP+252-34
PREP. DATE: 7/10/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
LEAD	<0.100
MERCURY	<0.0002
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-197-10
PREP. DATE: 9/01/94

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.88	94
BARIUM	2.00	1.88	93
CADMIUM	0.50	0.440	88
CHROMIUM	0.50	0.489	98
LEAD	0.50	0.490	98
MERCURY	0.002	0.00197	98
SELENIUM	2.00	1.93	96
SILVER	0.50	0.462	92

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

IN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32918
PO: 10107
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

RECEIVED
AUG 10 1995
GEOTECHNOLOGY

ANALYSIS RESULTS

SAMPLE ID: SB1-2 14:10
LAB ID: 9507000033-001
DATE COLLECTED: 07/05/95
DATE RECEIVED: 07/06/95 09:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.8 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	188 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.296 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	9.26 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	35.6 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.120 mg/Kg	7/12/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<11.8 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.590 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32918
PO: 10107
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB1-7 15:00 MS/MSD
LAB ID: 9507000033-002
DATE COLLECTED: 07/05/95
DATE RECEIVED: 07/06/95 09:45

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.7 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	155 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.293 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	6.04 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	97.3 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	<0.1 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<11.7 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.586 mg/Kg	7/11/95 R.D.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELEER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: SB1-7 MS/MSD
LAB ID: 9507/033-002

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<11.7	467	401	86	398	85	1
BARIUM	155	467	524	79	538	82	3
CADMIUM	<0.293	12	9.33	78	9.44	79	1
CHROMIUM	6.04	47	46.8	87	46.8	87	0
LEAD	97.3	117	166	59	174	66	7
MERCURY	<0.1	1.17	1.18	101	1.24	106	5
SELENIUM	<11.7	467	411	88	417	89	1
SILVER	<0.586	12	9.57	80	9.44	79	1

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32918
PO: 10107
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB1-13.5 15:20
LAB ID: 9507000033-003
DATE COLLECTED: 07/05/95
DATE RECEIVED: 07/06/95 09:47

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	17.5 mg/Kg B	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	159 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.315 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	14.3 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	9.50 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	<0.13 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<6.30 mg/Kg	7/11/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32918
PO: 10107
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB1-18.5 15:40
LAB ID: 9507000033-004
DATE COLLECTED: 07/05/95
DATE RECEIVED: 07/06/95 09:47

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.2 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	101 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.305 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	14.6 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	8.41 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	7/14/95 R.D.
TOTAL SELENIUM	SW-846 6010A	<12.2 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.610 mg/Kg	7/11/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918
PO # 10107

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK192A

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/12/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: METHOD BLANK
LAB ID: VDBLK193A

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/12/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-7
LAB ID: 9507/033-002

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	5.9
67-64-1	Acetone	500	670
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	140
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/05/95 15:00
DATE RECEIVED : 7/06/95 9:47
DATE ANALYZED : 7/12/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

SAMPLE ID: SB1-7
LAB ID: 9507/033-002

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONC. (µg/kg)	MS CONC. (µg/kg)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	50	U	28	56	*	59-172
Trichloroethene	50	U	38	76		62-137
Benzene	50	U	47	94		60-133
Toluene	50	U	48	96		59-139
Chlorobenzene	50	U	49	98		66-142

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONC. (µg/kg)	MSD % REC #	% RPD	#	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	50	30	60	4		22	59-172
Trichloroethene	50	43	86	10		24	62-137
Benzene	50	53	106	12		21	60-133
Toluene	50	52	104	8		21	59-139
Chlorobenzene	50	62	124	23	*	21	66-142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 5 outside limits

Spike Recovery: 1 out of 10 outside limits

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
VDLBK192A	METHOD BLANK	108	101	93
VDLBK193A	METHOD BLANK	109	105	96
VDLBK192A	LCS	108	100	98
VDLBK193A	LCS	110	104	94
9507/033-1	SB1-2	128	106	93
9507/033-1	SB1-2 (DILUTION)	108	105	105

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE LABORATORY CONTROL SPIKE

SAMPLE ID: LCS
LAB ID: VDLCS192A

COMPOUND	CONC.	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	54	50	108
Trichloroethene	50	50	100
Benzene	50	50	100
Toluene	48	50	96
Chlorobenzene	50	50	100

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918
PO # 10107
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE LABORATORY CONTROL SPIKE

SAMPLE ID: LCS
LAB ID: VDLCS193A

COMPOUND	CONC.	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	55	50	110
Trichloroethene	51	50	102
Benzene	49	50	98
Toluene	49	50	98
Chlorobenzene	50	50	100

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10107 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6524

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10107 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6524

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10107 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-2
LAB ID: 9507/033-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1,900	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10107 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-2
LAB ID: 9507/033-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	390	1,500
120-12-7	Anthracene	390	390
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	2,500
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	1,700
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	920
218-01-9	Chrysene	390	1,000
117-81-7	bis(2-Ethylhexyl)phthalate	390	430
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	1,100
207-08-9	Benzo(k)fluoranthene	390	810
50-32-8	Benzo(a)pyrene	390	860
193-39-5	Indeno(1,2,3-cd)pyrene	390	430
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	520

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/05/95 14:10
DATE RECEIVED : 7/06/95 9:47
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/18/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10107 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-7
LAB ID: 9507/033-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1,900	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10107 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-7
LAB ID: 9507/033-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/05/95 15:00
DATE RECEIVED : 7/06/95 9:47
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/18/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10107 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-13.5
LAB ID: 9507/033-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10107 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-13.5
LAB ID: 9507/033-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/05/95 15:20
DATE RECEIVED : 7/06/95 9:47
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10107 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-18.5
LAB ID: 9507/033-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32918 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10107 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB1-18.5
LAB ID: 9507/033-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	500
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/05/95 15:40
DATE RECEIVED : 7/06/95 9:47
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

SEMIVOLATILE ORGANICS LAB CONTROL SAMPLE

EPA SAMPLE NO.

SPIKE BLANK

Lab Name: Environmetrics Contract: GEOTECH.

Lab Code: 8270 Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SASLCS6524

Sample wt/vol: 30 (g/ml) g Lab File ID: >A7551

Level: (low/med) LOW Date Received: 07/05/95

% Moisture: NA decanted: (Y/N) N Date Extracted: 07/11/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/13/95

Injection Volume: 1.0 (uL) Dilution Factor: 33.3

GPC Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	5400	6700	82
2-Chlorophenol	4400	6700	66
1,4-Dichlorobenzene	2700	3300	81
N-Nitroso-Di-nPropylamine	4000	3300	120
1,2,4-Trichlorobenzene	3100	3300	94
4-Chloro-3-Methylphenol	6900	6700	103
Acenaphthene	3000	3300	90
4-Nitrophenol	7500	6700	113
2,4-Dinitrotoluene	3000	3300	90
Pentachlorophenol	5300	6700	80
Pyrene	3400	3300	101

SEMIVOLATI 4B
METHOD BLANK SUMMARY

EPA SAMPLE NO.
SB1-7

ab Name: Environmetrics Contract: GEOTECH.

code: Case No.: DRY SAS No.: SDG No.:

ab File ID: >A7550 Lab Sample ID: SASBLK6524

nstrument ID: HP5970 Date Extracted: 07/11/95

latrix: (soil/water) SOIL Date Analyzed: 07/13/95

evel: (low/med) LOW Time Analyzed: 09:28

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	SASLCS6524	SASLCS6524	>A7551	07/13/95
2	9507033-1	9507033-1	>A7650	07/18/95
3	9507033-2	9507033-2	>A7554	07/13/95
4	9507033-2M	9507033-2MS	>A7555	07/13/95
5	9507033-2M	9507033-2MSD	>A7556	07/13/95
6	9507033-3	9507033-3	>A7552	07/13/95
7	9507033-4	9507033-4	>A7553	07/13/95
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS: _____

_____

SOIL SEMIVOLATILE [redacted]TRIX SPIKE/MATRIX SPIKE [redacted]LICATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 9507033-2 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	7800	0	5500	71	26- 90
2-Chlorophenol	7800	0	4400	57	25-102
1,4-Dichlorobenzene	3900	0	2400	62	28-104
N-Nitroso-Di-nPropylami	3900	0	3700	96	41-126
1,2,4-Trichlorobenzene	3900	0	3100	80	38-107
4-Chloro-3-Methylphenol	7800	0	7600	98	26-103
Acenaphthene	3900	0	3300	85	31-137
4-Nitrophenol	7800	0	8700	112	11-114
2,4-Dinitrotoluene	3900	0	3300	86	28- 89
Pentachlorophenol	7800	0	6900	89	17-109
Pyrene	3900	0	3700	96	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	7800	6000	78	10	35	26- 90
2-Chlorophenol	7800	5000	64	12	50	25-102
1,4-Dichlorobenzene	3900	2700	69	11	27	28-104
N-Nitroso-Di-nPropylami	3900	4800	123	24	38	41-126
1,2,4-Trichlorobenzene	3900	3600	93	14	23	38-107
4-Chloro-3-Methylphenol	7800	7400	96	2	33	26-103
Acenaphthene	3900	3400	88	4	19	31-137
4-Nitrophenol	7800	8100	104	8	50	11-114
2,4-Dinitrotoluene	3900	3400	88	2	47	28- 89
Pentachlorophenol	7800	7100	91	3	47	17-109
Pyrene	3900	3600	92	4	36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

C MENTS: _____

_____

2D

SOIL SEMIVO[redacted]LE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

[redacted] code: Case No.: DRY SAS No.: SDG No.:

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	SASBLK6524	66	39	66	87	73	70	66	54	0
02	SASLCS6524	76	52	66	89	51	68	73	55	0
03	9507033-1	91	49	73	93	86	81	78	95	0
04	9507033-2	66	42	62	81	71	68	63	60	0
05	9507033-2MS	64	42	60	80	59	57	59	36	0
06	9507033-2MSD	76	50	64	79	48	68	72	61	0
07	9507033-3	77	40	67	88	78	76	73	60	0
08	9507033-4	75	25	61	75	67	64	68	61	0
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S4 (TPH)	= Terphenyl-d14	(18-137)	
S5 (PHL)	= Phenol-d5	(24-113)	
S6 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(25-121)	
S8 (TBP)	= 2,4,6-Tribromophenol	(19-122)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST LOUIS KANSAS CITY INDIANAPOLIS

CHAIN OF CUSTODY RECORD

COC Record # 2196 P.O. # 10107

Project No. 2498.03.4120.05

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St Louis MO 63146

Sampler's Signature: [signature] Telephone # 997-7440

Contact: Sam Brennecke Telephone # 997-7440

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SB1-2	7/5/95	1410	Soil	~~1-8oz~~ 2-8oz	[redacted] Semi Volatiles, Total Metals	Normal T.A.
SB1-7	↓	1500	↓	2-8oz 1-2oz	Semi Volatiles, Volatiles, Total Metals	↓
SB1-13.5	↓	1520	↓	2-8oz	Semi Volatiles, Total Metals	↓
SB1-18.5	↓	1540	↓	↓	↓ ~~&~~ ↓ ~~&~~ ↓	↓

Receiver Name: Environmetrics, Inc St Louis MO
(Company Name and Address)

Chain of Possession:

From: [signature] 7/5/95 1715 To: P Woods 7/5/95 1715
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFI :CORD/LABORATORY WORK REQUEST

COC : 00553

Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/05/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2493.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10107
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000033-001-01	SB1-2	SOIL	2-250 ml GLASS	Cold	07/05/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
MS/MSD 9507000033-002-01	SB1-7	SOIL	2-250 ml GLASS	Cold	07/05/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
QC DAILY FOR THIS PROJECT 9507000033-002-02	SB1-7	SOIL	1-2 OZ VOA	Cold	07/05/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
	Sample Instructions:						
9507000033-003-01	SB1-13.5	SOIL	2-250 ml GLASS	Cold	07/05/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000033-004-01	SB1-18.5	SOIL	2-250 ml GLASS	Cold	07/05/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009332
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/05/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2493.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10107
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
5		07/05/95	PM Signature : Karen Coons Client Services Rep. Karen Coons for	Phyllis Woods Login Coordinator	07/06/95	09:47:34

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009332
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/05/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2498.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10107
Mode: Mail Quot #:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
1	P Woods	7/6/95	12:10	[illegible]	7/6/95	12:10	VOA
	P Woods	7/6/95	10:30	[illegible]	7-6-95	16:3	B/N A
1-4	P Woods	7-10	8:50	[illegible]	7-10	8:50	Metals
1	[illegible]	7/12/95	1535	[illegible]	7-12	15:35	Return
	[illegible]	7-18	8:22	[illegible]	7-18	8:22	Return

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

July 27, 1995

RECEIVED
AUG - 1 1995
GEOTECHNOLOGY

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples SB8-3, SB8-16, SB8-20, SB9-3, SB9-7, SB9-15, SB9-20.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 7/10/95

Chain of Custody Number: 009354

Environmetrics Laboratory Number: 9507/100

Invoice # 32975

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SB8-3 09:40	9507-100-001	7/10/95	Total(8)Metals, Semi-Volatiles
SB8-16 10:00	9507-100-002	7/10/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB8-16 10:00	9507-100-002	7/10/95	Total(8)Metals Matrix Spike / Matrix Spike Duplicate Semi-Volatiles Matrix Spike/ Matrix Spike Duplicate Volatiles Matrix Spike/ Matrix Spike Duplicate
SB8-20 10:10	9507-100-003	7/10/95	Total(8)Metals, Semi- Volatiles
SB9-3 11:40	9507-100-004	7/10/95	Total(8)Metals, Semi- Volatiles

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

SB9-7 11:50	9507-100-005	7/10/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB9-15 11:55	9507-100-006	7/10/95	Total(8)Metals, Semi-Volatiles
SB9-20 12:00	9507-100-007	7/10/95	Total(8)Metals, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the original analysis without dilutions or reanalyses, with the exception of:

In accordance with SW-846 8240 sample ID# SB9-7 was reanalyzed because of low surrogate recoveries.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB8-3 9:40
LAB ID: 9507000100-001
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:21

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<10.8 mg/Kg	
TOTAL BARIUM	SW-846 6010A	16.2 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	<0.271 mg/Kg	7/18/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	6.55 mg/Kg	
TOTAL LEAD	SW-846 6010A	45.1 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<10.8 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.542 mg/Kg	

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB8-16 10:00 MS / MSD
LAB ID: 9507000100-002
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:22

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.4 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	102 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.805 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	13.6 mg/Kg	
TOTAL LEAD	SW-846 6010A	8.85 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.4 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.619 mg/Kg	

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975
PO # 10110 .
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: SB8-16
LAB ID: 9507/100-002

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<12.4	495	423	85	425	86	1
BARIUM	102	495	535	87	530	86	1
CADMIUM	0.805	12	11.8	92	11.9	92	0
CHROMIUM	13.6	50	57.2	87	56.3	85	2
LEAD	8.85	124	110	82	109	81	1
MERCURY	<0.12	1.24	1.20	97	1.29	104	7
SELENIUM	<12.4	495	421	85	415	84	1
SILVER	<0.619	12	10.6	88	10.9	91	3

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB8-20 10:10
LAB ID: 9507000100-003
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:22

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	92.9 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.56 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	19.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	11.0 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.623 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB9-3 11:40
LAB ID: 9507000100-004
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:23

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	138 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.32 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	8.59 mg/Kg	
TOTAL LEAD	SW-846 6010A	126 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.200 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	0.6270 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB9-7 11:50
LAB ID: 9507000100-005
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:23

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	14.1 mg/Kg B	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	331 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	3.87 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	15.4 mg/Kg	
TOTAL LEAD	SW-846 6010A	5,860 mg/Kg	
TOTAL MERCURY	SW-846 7471A	2.51 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	0.8740 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB9-15 11:55
LAB ID: 9507000100-006
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:24

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.6 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	175 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.757 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	13.5 mg/Kg	
TOTAL LEAD	SW-846 6010A	12.1 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.6 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.631 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32975
PO: 10110
PROJECT NO: 2498.03.4120.05 HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SD9-20 12:00
LAB ID: 9507000100-007
DATE COLLECTED: 07/10/95
DATE RECEIVED: 07/10/95 18:24

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.2 mg/Kg	
TOTAL BARIUM	SW-846 6010A	65.4 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.549 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	15.3 mg/Kg	
TOTAL LEAD	SW-846 6010A	9.90 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.2 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.610 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975
PO # 10110
PROJECT # 2498.034120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK193A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	5.6B
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/12/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975
PO # 10110
PROJECT # 2498.034120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-16
LAB ID: 9507/100-002

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/10/95 10:00
DATE RECEIVED : 7/10/95 18:24
DATE ANALYZED : 7/12/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975
PO # 10110
PROJECT # 2498.034120.05, HUBERT WHEELER STATE SCHOOL

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

SAMPLE ID: SB8-16
LAB ID: 9507/100-002

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONC. (µg/kg)	MS CONC. (µg/kg)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	50	U	27	54	*	59-172
Trichloroethene	50	U	40	80		62-137
Benzene	50	U	40	80		60-133
Toluene	50	U	46	92		59-139
Chlorobenzene	50	U	44	88		66-142

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONC. (µg/kg)	MSD % REC	#	% RPD	#	QC RPD	LIMITS REC
1,1-Dichloroethene	50	27	54	*	0		22	59-172
Trichloroethene	50	46	92		12		24	62-137
Benzene	50	45	90		10		21	60-133
Toluene	50	54	108		16		21	59-139
Chlorobenzene	50	53	106		18		21	66-142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975 — VOLATILE ORGANIC ANALYSIS
PO # 10110 — METHOD SW-846 8240
PROJECT # 2498.034120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-7
LAB ID: 9507/100-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	24B
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/10/95 11:50
DATE RECEIVED : 7/10/95 18:24
DATE ANALYZED : 7/12/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975
PO # 10110 .
PROJECT # 2498.034120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
VDBLK193A	METHOD BLANK	109	105	96
9507/100-002	SB8-16	104	112	105
9507/100-005	SB9-7	180	100	77

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975
PO # 10110
PROJECT # 2498.034120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANICS LAB CONTROL SPIKE

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	55	50	110
Trichloroethene	51	50	102
Benzene	49	50	98
Toluene	49	50	98
Chlorobenzene	50	50	100

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6530

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6530

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/18/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-3
LAB ID: 9507/100-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	360 µg/kg	U µg/kg
108-95-2	Phenol	360	U
111-44-4	bis(2-chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl Alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	o-Cresol	360	U
39638-32-9	bis-(2-Chloro2propyl)Ether	360	U
106-44-5	m & p-Cresol	360	U
621-64-7	N-Nitroso-Di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic Acid	1,800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1,800	U
131-11-3	Dimethylphthalate	360	U
103-33-3	Azobenzene	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	1,800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1,800	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-3
LAB ID: 9507/100-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,800 µg/kg	U µg/kg
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenol phenyl ether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1,800	U
534-52-1	4,6-Dinitro-2-methylphenol	1,800	U
86-30-6	N-Nitrosodiphenylamine	360	U
101-55-3	4-Bromophenyl phenyl ether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1,800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
92-87-4	Benzidine	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 09:40
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/20/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-16
LAB ID: 9507/100-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-16
LAB ID: 9507/100-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 10:00
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/18/95
ANALYST : D.C.

SOIL SEMIVOLATILE [redacted]IX SPIKE/MATRIX SPIKE [redacted]

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

a' Name: Environmetrics Contract: GEOTECH

ab code: Case No.: DRY SAS No.: SDG No.:

atrix Spike - EPA Sample No.: 9507100-2 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	#	QC LIMITS REC.
Phenol	8200	0	7000	85		26- 90
2-Chlorophenol	8200	0	5800	70		25-102
1,4-Dichlorobenzene	4100	0	1400	33		28-104
N-Nitroso-Di-nPropylami	4100	0	5100	123		41-126
1,2,4-Trichlorobenzene	4100	0	2700	65		38-107
4-Chloro-3-Methylphenol	8200	0	7900	96		26-103
Acenaphthene	4100	0	3500	84		31-137
4-Nitrophenol	8200	0	10500	127	*	11-114
2,4-Dinitrotoluene	4100	0	3500	85		28- 89
Pentachlorophenol	8200	0	7300	89		17-109
Pyrene	4100	0	4200	103		35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	8200	6300	77		11		35	26- 90
2-Chlorophenol	8200	5300	65		8		50	25-102
1,4-Dichlorobenzene	4100	1500	36		9		27	28-104
N-Nitroso-Di-nPropylami	4100	4500	108		13		38	41-126
1,2,4-Trichlorobenzene	4100	2700	65		0		23	38-107
4-Chloro-3-Methylphenol	8200	7300	89		7		33	26-103
Acenaphthene	4100	3400	81		3		19	31-137
4-Nitrophenol	8200	9600	116	*	9		50	11-114
2,4-Dinitrotoluene	4100	3400	82		4		47	28- 89
Pentachlorophenol	8200	5300	65		32		47	17-109
Pyrene	4100	4100	99		4		36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 2 out of 22 outside limits

COMMENTS: _____

Member of American Council of Independent Laboratories • American Society for Testing and Materials • American Chemical Society • American Industrial Hygiene Association

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-20
LAB ID: 9507/100-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 . **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB8-20
LAB ID: 9507/100-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 10:10
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/20/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-3
LAB ID: 9507/100-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32975 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10110 . METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-3
LAB ID: 9507/100-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 11:40
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/20/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-7
LAB ID: 9507/100-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	440 µg/kg	U µg/kg
108-95-2	Phenol	440	U
111-44-4	bis(2-chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl Alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	o-Cresol	440	U
39638-32-9	bis-(2-Chloro2propyl)Ether	440	U
106-44-5	m & p-Cresol	440	U
621-64-7	N-Nitroso-Di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	440	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	440	U
103-33-3	Azobenzene	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2,200	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32975 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10110 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-7
LAB ID: 9507/100-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenol phenyl ether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	440	U
101-55-3	4-Bromophenyl phenyl ether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	440	480
120-12-7	Anthracene	440	U
84-74-2	Carbazole	440	U
84-74-2	Di-n-butylphthalate	440	U
206-44-0	Fluoranthene	440	U
92-87-4	Benzidine	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	450
117-81-7	bis(2-Ethylhexyl)phthalate	440	U
117-84-0	Di-n-octylphthalate	440	U
205-99-2	Benzo(b)fluoranthene	440	U
207-08-9	Benzo(k)fluoranthene	440	U
50-32-8	Benzo(a)pyrene	440	U
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 11:50
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10110 . METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-15
LAB ID: 9507/100-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-15
LAB ID: 9507/100-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 11:55
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/20/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32975 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-20
LAB ID: 9507/100-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32375 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10110 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB9-20
LAB ID: 9507/100-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 12:00
DATE RECEIVED : 7/10/95 18:24
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/20/95
ANALYST : D.C.

SEMIVOLATILE ORGA[redacted]S LAB CONTROL SAMPLE

EPA SAMPLE NO.

SPIKE BLANK

b Name: Environmetrics Contract: GEOTECH.

Code: 8270 Case No.: SAS No.: SDG No.:

trix: (soil/water) SOIL Lab Sample ID: SASLCS6530

mple wt/vol: 30 (g/ml) g Lab File ID: >A7648

Level: (low/med) LOW Date Received: 07/10/95

Moisture: NA decanted: (Y/N) N Date Extracted: 07/12/95

ncentrated Extract Volume: 1000 (uL) Date Analyzed: 07/18/95

jection Volume: 1.0 (uL) Dilution Factor: 33.3

C Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	5400	6700	81
2-Chlorophenol	4400	6700	66
1,4-Dichlorobenzene	1500	3300	45
N-Nitroso-Di-nPropylamine	3500	3300	105
1,2,4-Trichlorobenzene	2300	3300	70
4-Chloro-3-Methylphenol	6500	6700	97
Acenaphthene	2700	3300	80
4-Nitrophenol	7600	6700	114
2,4-Dinitrotoluene	2900	3300	87
Pentachlorophenol	5300	6700	80
Pyrene	3000	3300	89

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	SASBLK6530	24	1 *	53	80	83	78	75	89	1
02	SASLCS6530	73	36	59	80	69	74	75	100	0
03	9507100-1	68	50	66	110	69	68	56	66	0
04	9507100-2	75	40	66	99	75	72	68	106	0
05	9507100-2MS	73	23	66	98	79	79	79	109	0
06	9507100-2MSD	78	40	62	93	65	70	70	102	0
07	9507100-3	62	18 *	60	84	73	71	62	84	1
08	9507100-4	49	23	47	86	64	54	48	80	0
09	9507100-5	81	45	65	85	83	75	64	81	0
10	9507100-6	72	21	63	91	80	80	68	88	0
11	9507100-7	60	27	59	83	72	70	57	85	0
12										
13										
14										
15			@ Advisory							
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S4 (TPH)	= Terphenyl-d14	(18-137)	
S5 (PHL)	= Phenol-d5	(24-113)	
S6 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(25-121)	
S8 (TBP)	= 2,4,6-Tribromophenol	(19-122)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009354
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/10/95
Date Logged: 07/10/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/20/95 Proj #: 2498.03.4120.05
Date Due (Client): 07/24/95 P.O. #: 10110
Mode: Mail Quot #:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
		7/10	400		7/10	400	Prep
2		7-11	730		7/11/95	730	VOA
2		7/12/95	1330		7/12	1330	Return
		7-14	1125		7-14	1125	Metals
		7-21	1140		7-21	1140	Return

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # _____ P.O. # 10110

Project No. 2498.08.3.4120.05

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St Louis Mo

Sampler's Signature: Jon Dendorff Telephone # 997-7440

Contact: Sam Brennecke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SBB-3	7/10/95	0940	Soil	2-8oz	Semi-Volatiles, Total Metal	Normal T.A.
SBB-16	"	1000	"	2-8oz 1-2oz	Semi-Volatiles, Total Metals Volatile Organics	"
SBB-20	"	1010	"	2-8oz	Semi-Volatiles, Total Metal	"
SB9-3	"	1140	"	2-8oz	Semi Volatiles, Total Metals	"
SB9-7	"	1150	"	2-8oz 1-2oz	Semi Volatiles, Total Metal Volatile Organics	"
SB9-15	"	1155	"	2-8oz	Semi-Volatiles, Total Metal	"
SB9-20	✓	1200	✓	2-8oz	Semi-Volatiles, Total Metal	✓

Receiver Name: Environmetrics, Inc St Louis Mo
(Company Name and Address)

Chain of Possession:

From: Jon Dendorff 7/10/95 To: P Woods 7/10/95 6:00 pm
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009354
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/10/95
Date Logged: 07/10/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/20/95 Proj #: 2493.03.4120.05
Date Due (Client): 07/24/95 P.O. #: 10110
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000100-001-01	SB8-3	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions: ALL ANALYSIS ON DRIED WT. BASIS						
MS / MSD 9507000100-002-01	SB8-16	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
MS / MSD 9507000100-002-02	SB8-16	SOIL	1-2 OZ VOA	Cold	07/10/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
	Sample Instructions:						
9507000100-003-01	SB8-20	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270;
	Sample Instructions:						
9507000100-004-01	SB9-3	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000100-005-01	SB9-7	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009354
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/10/95
Date Logged: 07/10/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/20/95 Proj #: 2493.03.4120.05
Date Due (Client): 07/24/95 P.O. #: 10110
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000100-005-01	SB9-7	SOIL	2-250 ml GLASS	Cold	07/10/95		TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000100-005-02	SB9-7	SOIL	1-2 OZ VOA	Cold	07/10/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
	Sample Instructions:						
9507000100-006-01	SB9-15	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507 100-007-01	SB9-20	SOIL	2-250 ml GLASS	Cold	07/10/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
9		07/10/95	PM Signature : Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	07/10/95	18:24:59

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

RECEIVED
AUG 16 1995
GEOTECHNOLOGY

August 14, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples - SB1-7, SB2-6, SB3-11.5, SB4-5, SB5-13, SB6-12. SB9-7, MW1-13, MW2-4, MW3-7.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 8/03/95

Chain of Custody Number:009545

Environmetrics Laboratory Number: 9508/040

Invoice # 33272

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SB1-7 Relog 9507-033-002	9508-040-001	8/3/95	TCLP(8) Metals
SB2-6 Relog 9507-052-003	9508-040-002	8/3/95	TCLP (8) Metals
SB3-11.5 Relog 9507-052-007	9508-040-003	8/3/95	TCLP (8) Metals
SB4-5 Relog 9507-052-009	9508-040-004	8/3/95	TCLP (8) Metals
SB5-13 Relog 9507-076-004	9508-040-005	8/3/95	TCLP (8) Metals

SB5-13 Relog 9507-076-004	9508-040-005	8/3/95	TCLP (8) Metals Matriv Spike, Matrix Spike Duplicate
SB6-12 Relog 9507-076-009	9508-040-006	8/3/95	TCLP (8) Metals
SB9-7 Relog 9507-100-005	9508-040-007	8/3/95	TCLP (8) Metals
MW1-13 Relog 9507-130-003	9508-040-008	8/3/95	TCLP (8) Metals
MW2-4 Relog 9507-130-007	9508-040-009	8/3/95	TCLP(8) Metals

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis with out dilutions.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: DON DEARDORFF

INVOICE # 33272
PO # 10253
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-79
PREP. DATE: 8/07/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
LEAD	<0.100
MERCURY	<0.0002
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-79
PREP. DATE: 8/07/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	2.00	100
BARIUM	2.00	2.06	103
CADMIUM	0.50	0.478	96
CHROMIUM	0.50	0.505	101
LEAD	0.50	0.432	86
MERCURY	0.002	0.0020	101
SELENIUM	2.00	2.04	102
SILVER	0.50	0.510	102

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB1-7 / 9507-33-002 RELOG
LAB ID: 9508000040-001
DATE COLLECTED: 07/05/95
DATE RECEIVED: 08/03/95 10:30

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	1.04 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	<0.005 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	<0.100 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.001000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB1-7 / 9507-33-002 RELOG
LAB ID: 9508000040-001
DATE COLLECTED: 07/05/95
DATE RECEIVED: 08/03/95 10:30

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.87	97
TCLP BARIUM	1.04	5.0	5.90	97
TCLP CADMIUM	<0.005	1.0	0.896	90
TCLP CHROMIUM	<0.010	5.0	4.71	94
TCLP LEAD	<0.100	5.0	4.61	92
TCLP MERCURY	0.0010	0.002	0.0032	110
TCLP SELENIUM	<0.200	1.0	0.972	97
TCLP SILVER	<0.040	1.0	0.994	99

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB2-6 / 9507-52-003 RELOG
LAB ID: 9508000040-002
DATE COLLECTED: 07/06/95
DATE RECEIVED: 08/03/95 10:31

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.267 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.00600 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	0.875 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.0003000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

IN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB2-6 / 9507-52-003 RELOG
LAB ID: 9508000040-002
DATE COLLECTED: 07/06/95
DATE RECEIVED: 08/03/95 10:31

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.67	93
TCLP BARIUM	0.267	5.0	4.79	90
TCLP CADMIUM	0.006	1.0	0.833	83
TCLP CHROMIUM	<0.010	5.0	4.36	87
TCLP LEAD	0.875	5.0	5.14	85
TCLP MERCURY	0.0003	0.002	0.0025	110
TCLP SELENIUM	<0.200	1.0	1.04	104
TCLP SILVER	<0.040	1.0	0.971	97

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB3-11.5 / 9507-052-007 RELOG
LAB ID: 9508000040-003
DATE COLLECTED: 07/06/95
DATE RECEIVED: 08/03/95 10:32

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.698 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.00600 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	2.27 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.0004000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
?258 Grissom Drive
It. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB3-11.5 / 9507-052-007 RELOG
LAB ID: 9508000040-003
DATE COLLECTED: 07/06/95
DATE RECEIVED: 08/03/95 10:32

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.72	94
TCLP BARIUM	0.698	5.0	5.35	93
TCLP CADMIUM	0.006	1.0	0.845	84
TCLP CHROMIUM	<0.010	5.0	4.40	88
TCLP LEAD	2.27	5.0	6.64	87
TCLP MERCURY	0.0004	0.002	0.0025	105
TCLP SELENIUM	<0.200	1.0	1.04	104
TCLP SILVER	<0.040	1.0	0.983	98

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB4-5 / 9507-052-009 RELOG
LAB ID: 9508000040-004
DATE COLLECTED: 07/06/95
DATE RECEIVED: 08/03/95 10:32

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	
TCLP BARIUM	SW-846 1311/6010A	1.32 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.00700 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	<0.100 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.0006000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB4-5 / 9507-052-009 RELOG
LAB ID: 9508000040-004
DATE COLLECTED: 07/06/95
DATE RECEIVED: 08/03/95 10:32

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.60	92
TCLP BARIUM	1.32	5.0	5.83	90
TCLP CADMIUM	0.007	1.0	0.823	82
TCLP CHROMIUM	<0.010	5.0	4.34	87
TCLP LEAD	<0.100	5.0	4.28	86
TCLP MERCURY	0.0006	0.002	0.0028	110
TCLP SELENIUM	<0.200	1.0	1.08	108
TCLP SILVER	<0.040	1.0	0.945	95

$$\text{?CENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB5-13 / 9507-076-004 RELOG
LAB ID: 9508000040-005
DATE COLLECTED: 07/07/95
DATE RECEIVED: 08/03/95 10:34

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.398 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0160 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	0.0100 mg/L	
TCLP LEAD	SW-846 1311/6010A	<0.100 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.0004000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB5-13 / 9507-076-004 RELOG
LAB ID: 9508000040-005
DATE COLLECTED: 07/07/95
DATE RECEIVED: 08/03/95 10:34

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.56	91
TCLP BARIUM	0.398	5.0	4.77	87
TCLP CADMIUM	0.016	1.0	0.798	78
TCLP CHROMIUM	0.010	5.0	4.23	84
TCLP LEAD	<0.100	5.0	4.12	82
TCLP MERCURY	0.0004	0.002	0.0025	105
TCLP SELENIUM	<0.200	1.0	1.02	102
TCLP SILVER	<0.040	1.0	0.930	93

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: DON DEARDORFF

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33272
PO # 10253
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: SB5-13
LAB ID: 9508/40-005

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<0.200	5.0	4.56	91	4.57	91	0
BARIUM	0.398	5.0	4.77	87	4.75	87	0
CADMIUM	0.016	1.0	0.798	78	0.798	78	0
CHROMIUM	0.010	5.0	4.23	84	4.24	85	1
LEAD	<0.100	5.0	4.12	82	4.14	83	1
MERCURY	0.0004	0.002	0.0025	106	0.0025	107	<1
SELENIUM	<0.200	1.0	1.02	102	0.980	98	4
SILVER	<0.040	1.0	0.930	93	0.921	92	1

Jeotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB6-12 / 9507-076-009 RELOG
LAB ID: 9508000040-006
DATE COLLECTED: 07/07/95
DATE RECEIVED: 08/03/95 10:35

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	1.09 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.00800 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	0.157 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.001600 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

IN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE:
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB6-12 / 9507-076-009 RELOG
LAB ID: 9508000040-006
DATE COLLECTED: 07/07/95
DATE RECEIVED: 08/03/95 10:35

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.68	94
TCLP BARIUM	1.09	5.0	5.60	90
TCLP CADMIUM	0.008	1.0	0.851	84
TCLP CHROMIUM	<0.010	5.0	4.55	91
TCLP LEAD	0.157	5.0	4.41	85
TCLP MERCURY	0.0016	0.002	0.0039	115
TCLP SELENIUM	<0.200	1.0	0.985	99
TCLP SILVER	<0.040	1.0	0.927	93

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB9-7 / 9507-100-005 RELOG
LAB ID: 9508000040-007
DATE COLLECTED: 07/10/95
DATE RECEIVED: 08/03/95 10:36

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.402 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0120 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	0.100 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.0004000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: SB9-7 / 9507-100-005 RELOG
LAB ID: 9508000040-007
DATE COLLECTED: 07/10/95
DATE RECEIVED: 08/03/95 10:36

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.82	96
TCLP BARIUM	0.402	5.0	5.08	94
TCLP CADMIUM	0.012	1.0	0.825	81
TCLP CHROMIUM	<0.010	5.0	4.41	88
TCLP LEAD	0.100	5.0	4.35	85
TCLP MERCURY	0.0004	0.002	0.0025	105
TCLP SELENIUM	<0.200	1.0	1.10	110
TCLP SILVER	<0.040	1.0	0.927	93

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

EMAIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-1:13/9507-130-002 RELOG
LAB ID: 9508000040-008
DATE COLLECTED: 07/11/95
DATE RECEIVED: 08/03/95 10:37

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.496 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0190 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	0.290 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.003400 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Don Deardorff

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: MW-1:13/9507-130-002 RELOG
LAB ID: 9508000040-008
DATE COLLECTED: 07/11/95
DATE RECEIVED: 08/03/95 10:37

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.66	93
TCLP BARIUM	0.496	5.0	5.12	92
TCLP CADMIUM	0.019	1.0	0.808	79
TCLP CHROMIUM	<0.010	5.0	4.34	87
TCLP LEAD	0.290	5.0	4.73	89
TCLP MERCURY	0.0034	0.002	0.0056	110
TCLP SELENIUM	<0.200	1.0	1.18	118
TCLP SILVER	<0.040	1.0	0.918	92

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2:4/9507-130-007 RELOG
LAB ID: 9508000040-009
DATE COLLECTED: 07/11/95
DATE RECEIVED: 08/03/95 10:38

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	1.59 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0120 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	0.364 mg/L	
TCLP MERCURY	SW-846 1311/7470	<0.0002 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.010 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: MW-2:4/9507-130-007 RELOG
LAB ID: 9508000040-009
DATE COLLECTED: 07/11/95
DATE RECEIVED: 08/03/95 10:38

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.52	90
TCLP BARIUM	1.59	5.0	5.94	87
TCLP CADMIUM	0.012	1.0	0.792	78
TCLP CHROMIUM	<0.010	5.0	4.27	85
TCLP LEAD	0.364	5.0	4.73	87
TCLP MERCURY	<0.0002	0.002	0.0024	120
TCLP SELENIUM	<0.200	1.0	1.11	111
TCLP SILVER	<0.010	1.0	0.897	90

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3:7/9507-170-004 RELOG
LAB ID: 9508000040-010
DATE COLLECTED: 07/13/95
DATE RECEIVED: 08/03/95 10:39

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	8/08/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	1.87 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0130 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	0.168 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.0002000 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Don Deardorff

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33272
PO: 10253
PROJECT NO: 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

SAMPLE ID: MW-3:7/9507-170-004 RELOG
LAB ID: 9508000040-010
DATE COLLECTED: 07/13/95
DATE RECEIVED: 08/03/95 10:39

ELEMENT	SAMPLE RESULT mg/L	SPIKE LEVEL mg/L	SPIKE RESULT mg/L	PERCENT RECOVERY
TCLP ARSENIC	<0.200	5.0	4.56	91
TCLP BARIUM	1.87	5.0	6.27	88
TCLP CADMIUM	0.013	1.0	0.795	78
TCLP CHROMIUM	<0.010	5.0	4.33	87
TCLP LEAD	0.168	5.0	4.73	91
TCLP MERCURY	0.0002	0.002	0.0024	110
TCLP SELENIUM	<0.200	1.0	1.10	110
TCLP SILVER	<0.040	1.0	0.886	89

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT}) \times 100}{\text{SPIKE LEVEL}}$$

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009545
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Don Deardorff

Date Received: 08/03/95
Date Logged: 08/03/95
Status: Normal/LEVEL 4
Hubert Wheeler State School RELOG

Date Due (PM): 08/15/95 Proj #: 2498.03.4120.0005, HUBERT
Date Due (Client): 08/17/95 P.O. #: 10253
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
19628 9508000040-001-01	SB1-7 / 9507-33-002 RELOG	SOIL	1-250 ml GLASS	Cold	07/05/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions: MATRIX SPIKE WITH ALL SAMPLES						
19630 9508000040-002-01	SB2-6 / 9507-52-003 RELOG	SOIL	1-250 ml GLASS	Cold	07/06/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19631 9508000040-003-01	SB3-11.5 / 9507-052-007 RELOG	SOIL	1-250 ml GLASS	Cold	07/06/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19632 9508000040-004-01	SB4-5 / 9507-052-009 RELOG	SOIL	1-250 ml GLASS	Cold	07/06/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19633 9508000040-005-01	SB5-13 / 9507-076-004 RELOG	SOIL	1-250 ml GLASS	Cold	07/07/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19634 9508000040-006-01	SB6-12 / 9507-076-009 RELOG	SOIL	1-250 ml GLASS	Cold	07/07/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009545
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Don Deardorff

Date Received: 08/03/95
Date Logged: 08/03/95
Status: Normal/LEVEL 4
Hubert Wheeler State School RELOG

Date Due (PM): 08/15/95 Proj #: 2498.03.4120.0005, HUBERT
Date Due (Client): 08/17/95 P.O. #: 10253
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9508000040-006-01	SB6-12 /9507-076-009 RELOG	SOIL	1-250 ml GLASS	Cold	07/07/95		TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19635 9508000040-007-01	SB9-7 /9507-100-005 RELOG	SOIL	1-250 ml GLASS	Cold	07/10/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19636 9508000040-008-01	MW-1 13 /9507-130-003 RELOG	SOIL	1-250 ml GLASS	Cold	07/11/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19637 9508000040-009-01	MW-2 4 /9507-130-007 RELOG	SOIL	1-250 ml GLASS	Cold	07/11/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						
19638 9508000040-010-01	MW-3 7 /9507-170-004 RELOG	SOIL	1-250 ml GLASS	Cold	07/13/95		TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A
	Sample Instructions:						

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009545
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Don Deardorff

Date Received: 08/03/95
Date Logged: 08/03/95
Status: Normal/LEVEL 4
Hubert Wheeler State School RELOG

Date Due (PM): 08/15/95 Proj #: 2498.03.4120.0005, HUBERT
Date Due (Client): 08/17/95 P.O. #: 10253
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
10		08/03/95	PM Signature : Karen Coons Client Services Rep	Phyllis Woods Login Coordinator	08/03/95	10:39:02

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

July 27, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples: SB-TB:7-6-95, SB2-2, SB2-6, SB2-12, SB3-5, SB3-8, SB3-11.5, SB3-15.5, SB-4-5, SB4-13, SB4-18.5.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 07/06/95

Chain of Custody Form: 009338

Environmetrics Laboratory # 9507/052

Invoice # 32923

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SB-TB:7-6-95	9507-052-001	7/695	Trip Blank- Volatiles
SB2-2 9:55	9507-052-002	7/695	Total(8)Metals, Semi-Volatiles
SB2-6 10:10	9507-052-003	7/695	Total(8)Metals, Semi-Volatiles
SB2-12 10:30	9507-052-004	7/6/95	Total(8)Metals, Semi-Volatiles,Volatiles
SB3-5 12:10	9507-052-005	7/6/95	Total(8)Metals, Semi-Volatiles
SB3-8 12:25	9507-052-006	7/6/95	Total(8)Metals, Semi-Volatiles
SB3-11.5 12:45	9507-052-007	7/6/95	Total(8)Metals, Semi-Volatiles, Volatiles

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

SB-3-11.5 12:45	9507-052-007	7/6/95	Total(8)Metals Matrix Spike/Matrix Spike Duplicate Semi-Volatiles Matrix Spike/ Matrix Spike Duplicate Volatiles Matrix Spike/ Matrix Spike Duplicate
SB3- 15.5 12:55	9507-052-008	7/6/95	Total(8)Metals, Semi-Volatiles
SB4-5 14:40	9507-052-009	7/6/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB4-13 15:00	9507-052-010	7/6/95	Total(8)Metals, Semi-Volatiles
SB4-18.5 15:15	9507-052-011	7/6/95	Total(8)Metals, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the original analysis without any dilutions or reanalyses, with the exception of:

In accordance with SW-846 8240 sample ID# SB4-5 was reanalyzed because of low surrogate recoveries.

For method SW-846 8270 there were elevated detection limits for samples Id# SB2-6 and SB4 -5 because of matrix interferences. The samples concentrated to 2.0ml and per method samples should concentrate down to 1.0ml. Sample Id# SB4-5 was also diluted 1:2 because of low surrogate recoveries.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total(8)Metals are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-34
PREP. DATE: 7/10/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
MERCURY	<0.0002
LEAD	<0.100
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-34
PREP. DATE: 7/10/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.88	94
BARIUM	2.00	1.88	94
CADMIUM	0.50	0.440	88
CHROMIUM	0.50	0.489	98
MERCURY	0.0020	0.00189	94
LEAD	0.50	0.490	98
SELENIUM	2.00	1.93	96
SILVER	0.50	0.462	92

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB2-2 9:55
LAB ID: 9507C00052-002
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:41

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.6 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	119 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	0.291 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	11.8 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	37.6 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.130 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<11.6 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.582 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Prenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB2-6 10:10
LAB ID: 9507000052-003
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:42

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.7 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	240 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	0.761 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	9.49 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	756 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	2.07 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<11.7 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	0.6440 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB2-12 10:30
LAB ID: 9507000052-004
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:42

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	85.0 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	0.508 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	12.9 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	44.1 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.500 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.634 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB3-5 12:10
LAB ID: 9507000052-005
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	116 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	1.83 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	15.2 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	39.8 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.270 mg/Kg	7/14/995 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.629 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB3-8 12:25
LAB ID: 9507000052-006
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.3 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	67.3 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	1.23 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	9.38 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	13.8 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.260 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.3 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.617 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB3-11.5 12:45 MS / MSD
LAB ID: 9507000052-007
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:44

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.0 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	132 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	1.51 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	11.6 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	140 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.570 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.0 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.602 mg/Kg	7/11/95 R.D.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4120.0005, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: SB3-11.5
LAB ID: 9507/052-007

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<12.0	480	419	87	420	88	1
BARIUM	132	480	561	89	552	88	1
CADMIUM	1.51	12	11.0	79	11.0	79	0
CHROMIUM	11.6	48	50.6	81	51.3	83	2
LEAD	140	120	311	142	340	167	25
MERCURY	0.57	1.2	1.48	76	1.43	72	4
SELENIUM	<12.0	480	431	90	434	90	0
SILVER	<0.602	12	10.8	90	11.2	93	3

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB3-15.5 12:55
LAB ID: 9507000052-008
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:45

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	207 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	1.39 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	12.4 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	80.9 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.590 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.627 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB4-5 14:40
LAB ID: 9507000052-009
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:46

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.8 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	165 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	1.43 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	12.2 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	115 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.270 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<11.8 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.593 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.03.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB4-13 15:00
LAB ID: 9507000052-010
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:47

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.1 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	18.4 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	0.502 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	2.57 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	64.1 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.190 mg/Kg	7/14/95 R.D.
TOTAL SELENIUM	SW-846 6010A	<11.1 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.557 mg/Kg	7/11/95 R.D.

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 32923
PO: 10108
PROJECT NO: 2493.C3.4120.0005, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB4-18.5 15:15
LAB ID: 9507000052-011
DATE COLLECTED: 07/06/95
DATE RECEIVED: 07/06/95 18:48

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL BARIUM	SW-846 6010A	45.5 mg/Kg	7/11/95 R.D.
TOTAL CADMIUM	SW-846 6010A	5.57 mg/Kg	7/12/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	9.92 mg/Kg	7/11/95 R.D.
TOTAL LEAD	SW-846 6010A	33.6 mg/Kg	7/11/95 R.D.
TOTAL MERCURY	SW-846 7471A	0.160 mg/Kg	7/14/95 D.S.
TOTAL SELENIUM	SW-846 6010A	<12.6 mg/Kg	7/11/95 R.D.
TOTAL SILVER	SW-846 6010A	<0.632 mg/Kg	7/11/95 D.S.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: METHOD BLANK
LAB ID: VBBLK191A

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/10/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: METHOD BLANK
LAB ID: VBBLK191A

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/10/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VBBLK192A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE CCLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/11/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB-TB: 7-6-95
LAB ID: 9507/052-001

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/06/95
DATE RECEIVED : 7/06/95 18:48
DATE ANALYZED : 7/11/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-12
LAB ID: 9507/052-004

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/06/95 10:30
DATE RECEIVED : 7/06/95 18:48
DATE ANALYZED : 7/10/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-11.5
LAB ID: 9507/052-007

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/06/95 12:45
DATE RECEIVED : 7/06/95 18:48
DATE ANALYZED : 7/10/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

SAMPLE ID: SB3-11.5
LAB ID: 9507/052-007

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONC. (µg/kg)	MS CONC. (µg/kg)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	50	U	28	56	*	59-172
Trichloroethene	50	U	41	82		62-137
Benzene	50	U	44	88		60-133
Toluene	50	U	46	92		59-139
Chlorobenzene	50	U	44	88		66-142

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONC. (µg/kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	50	26	52	*	4		22	59-172
Trichloroethene	50	37	74		8		24	62-137
Benzene	50	44	88		0		21	60-133
Toluene	50	43	86		6		21	59-139
Chlorobenzene	50	43	86		2		21	66-142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-5
LAB ID: 9507/052-009

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 14:40
DATE RECEIVED : 7/06/95 18:48
DATE ANALYZED : 7/11/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
VBBLK191A	METHOD BLANK	108	100	91
VBBLK192A	METHOD BLANK	108	101	93
9507/052-001	SB-TB:7-6-95	78	102	107
9507/052-004	SB2-12	109	101	86
9507/052-007	SB3-11.5	110	104	90
9507/052-009	SB4-5	118	98	97

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923
PO # 10108
PROJECT # 2498.03.4020.0005, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANICS LAB CONTROL SPIKE

SAMPLE ID: LCS
LAB ID: VDLCS192A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	54	50	108
Trichloroethene	50	50	100
Benzene	50	50	100
Toluene	48	50	96
Chlorobenzene	50	50	100

SAMPLE ID: LCS
LAB ID: VDLCS191A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	51	50	101
Trichloroethene	52	50	104
Benzene	53	50	107
Toluene	52	50	104
Chlorobenzene	67	50	134

SAMPLE ID: LCS
LAB ID: VDLCS191A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	53	50	106
Trichloroethene	51	50	102
Benzene	49	50	98
Toluene	49	50	98
Chlorobenzene	49	50	98

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6527

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6527

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/14/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIR MET CS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-2
LAB ID: 9507/052-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	380 µg/kg	U µg/kg
108-95-2	Phenol	380	U
111-44-4	bis(2-chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	o-Cresol	380	U
39638-32-9	bis-(2-Chloro2propyl)Ether	380	U
106-44-5	m & p-Cresol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	380	U
103-33-3	Azobenzene	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1,900	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-2
LAB ID: 9507/052-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenol phenyl ether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl phenyl ether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	380	860
120-12-7	Anthracene	380	U
84-74-2	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	1,400
92-87-4	Benzidine	380	U
129-00-0	Pyrene	380	1,060
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	510
218-01-9	Chrysene	380	660
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	730
207-08-9	Benzo(k)fluoranthene	380	800
50-32-8	Benzo(a)pyrene	380	460
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 09:55
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/14/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-6
LAB ID: 9507/052-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	770 µg/kg	U µg/kg
108-95-2	Phenol	770	U
111-44-4	bis(2-chloroethyl)Ether	770	U
95-57-8	2-Chlorophenol	770	U
541-73-1	1,3-Dichlorobenzene	770	U
106-46-7	1,4-Dichlorobenzene	770	U
100-51-6	Benzyl Alcohol	770	U
95-50-1	1,2-Dichlorobenzene	770	U
95-48-7	o-Cresol	770	U
39638-32-9	bis-(2-Chloro2propyl)Ether	770	U
106-44-5	m & p-Cresol	770	U
621-64-7	N-Nitroso-Di-n-propylamine	770	U
67-72-1	Hexachloroethane	770	U
98-95-3	Nitrobenzene	770	U
78-59-1	Isophorone	770	U
88-75-5	2-Nitrophenol	770	U
105-67-9	2,4-Dimethylphenol	770	U
65-85-0	Benzoic Acid	3,900	U
111-91-1	bis(2-Chloroethoxy)methane	770	U
120-83-2	2,4-Dichlorophenol	770	U
120-82-1	1,2,4-Trichlorobenzene	770	U
91-20-3	Naphthalene	770	U
106-47-8	4-Chloroaniline	770	U
87-68-3	Hexachlorobutadiene	770	U
59-50-7	4-Chloro-3-methylphenol	770	U
91-57-6	2-Methylnaphthalene	770	U
77-47-4	Hexachlorocyclopentadiene	770	U
88-06-2	2,4,6-Trichlorophenol	770	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	770	U
88-74-4	2-Nitroaniline	3,900	U
131-11-3	Dimethylphthalate	770	U
103-33-3	Azobenzene	770	U
208-96-8	Acenaphthylene	770	U
606-20-2	2,6-Dinitrotoluene	770	U
99-09-2	3-Nitroaniline	3,900	U
83-32-9	Acenaphthene	770	1,200
51-28-5	2,4-Dinitrophenol	3,900	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-6
LAB ID: 9507/052-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	3,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	770	U
121-14-2	2,4-Dinitrotoluene	770	U
84-66-2	Diethylphthalate	770	U
7005-72-3	4-Chlorophenol phenyl ether	770	U
86-73-7	Fluorene	770	1,200
100-01-6	4-Nitroaniline	3,900	U
534-52-1	4,6-Dinitro-2-methylphenol	3,900	U
86-30-6	N-Nitrosodiphenylamine	770	U
101-55-3	4-Bromophenyl phenyl ether	770	U
118-74-1	Hexachlorobenzene	770	U
87-86-5	Pentachlorophenol	3,900	U
85-01-8	Phenanthrene	770	11,000
120-12-7	Anthracene	770	3,400
84-74-2	Carbazole	770	1,600
84-74-2	Di-n-butylphthalate	770	U
206-44-0	Fluoranthene	7,700	19,000
92-87-4	Benzidine	770	U
129-00-0	Pyrene	7,700	14,000
85-68-7	Butylbenzylphthalate	770	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)anthracene	770	7,900
218-01-9	Chrysene	770	6,200
117-81-7	bis(2-Ethylhexyl)phthalate	770	U
117-84-0	Di-n-octylphthalate	770	U
205-99-2	Benzo(b)fluoranthene	770	9,200
207-08-9	Benzo(k)fluoranthene	770	2,800
50-32-8	Benzo(a)pyrene	770	7,000
193-39-5	Indeno(1,2,3-cd)pyrene	770	2,200
53-70-3	Dibenzo(a,h)anthracene	770	U
191-24-2	Benzo(g,h,i)perylene	770	2,100

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 10:10
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/14 & 15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-12
LAB ID: 9507/052-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB2-12
LAB ID: 9507/052-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	480
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 10:30
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-5
LAB ID: 9507/052-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-5
LAB ID: 9507/052-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 12:10
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-8
LAB ID: 9507/052-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-8
LAB ID: 9507/052-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 12:25
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/19/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-11.5
LAB ID: 9507/052-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	920
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	740
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	420
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	930
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-11.5
LAB ID: 9507/052-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	600
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	1,100
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	2,000	13,000
120-12-7	Anthracene	400	2,900
84-74-2	Carbazole	400	1,300
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	2,000	15,000
92-87-4	Benzidine	400	U
129-00-0	Pyrene	2,000	13,000
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	2,000	6,100
218-01-9	Chrysene	400	4,900
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	2,000	6,600
207-08-9	Benzo(k)fluoranthene	400	1,010
50-32-8	Benzo(a)pyrene	400	5,500
193-39-5	Indeno(1,2,3-cd)pyrene	400	1,700
53-70-3	Dibenzo(a,h)anthracene	400	530
191-24-2	Benzo(g,h,i)perylene	400	1,700

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 12:45
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/14 & 15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-15.5
LAB ID: 9507/052-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	4,200	8,200
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	3,700
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	1,500
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	3,600
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

EMPIRICAL NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB3-15.5
LAB ID: 9507/052-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	3,900
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	4,800
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	4,200	33,000
120-12-7	Anthracene	4,200	9,100
84-74-2	Carbazole	420	5,500
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	4,200	30,000
92-87-4	Benzidine	420	U
129-00-0	Pyrene	4,200	23,000
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	4,200	11,000
218-01-9	Chrysene	4,200	10,500
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	4,200	11,000
207-08-9	Benzo(k)fluoranthene	420	2,800
50-32-8	Benzo(a)pyrene	4,200	9,800
193-39-5	Indeno(1,2,3-cd)pyrene	420	3,800
53-70-3	Dibenzo(a,h)anthracene	420	1,100
191-24-2	Benzo(g,h,i)perylene	420	3,700

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 12:55
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/15 & 19/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-5
LAB ID: 9507/052-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	1,600 µg/kg	U µg/kg
108-95-2	Phenol	1,600	U
111-44-4	bis(2-chloroethyl)Ether	1,600	U
95-57-8	2-Chlorophenol	1,600	U
541-73-1	1,3-Dichlorobenzene	1,600	U
106-46-7	1,4-Dichlorobenzene	1,600	U
100-51-6	Benzyl Alcohol	1,600	U
95-50-1	1,2-Dichlorobenzene	1,600	U
95-48-7	o-Cresol	1,600	U
39638-32-9	bis-(2-Chloro2propyl)Ether	1,600	U
106-44-5	m & p-Cresol	1,600	U
621-64-7	N-Nitroso-Di-n-propylamine	1,600	U
67-72-1	Hexachloroethane	1,600	U
98-95-3	Nitrobenzene	1,600	U
78-59-1	Isophorone	1,600	U
88-75-5	2-Nitrophenol	1,600	U
105-67-9	2,4-Dimethylphenol	1,600	U
65-85-0	Benzoic Acid	7,900	U
111-91-1	bis(2-Chloroethoxy)methane	1,600	U
120-83-2	2,4-Dichlorophenol	1,600	U
120-82-1	1,2,4-Trichlorobenzene	1,600	U
91-20-3	Naphthalene	1,600	U
106-47-8	4-Chloroaniline	1,600	U
87-68-3	Hexachlorobutadiene	1,600	U
59-50-7	4-Chloro-3-methylphenol	1,600	U
91-57-6	2-Methylnaphthalene	1,600	U
77-47-4	Hexachlorocyclopentadiene	1,600	U
88-06-2	2,4,6-Trichlorophenol	1,600	U
95-95-4	2,4,5-Trichlorophenol	1,600	U
91-58-7	2-Chloronaphthalene	1,600	U
88-74-4	2-Nitroaniline	7,900	U
131-11-3	Dimethylphthalate	1,600	U
103-33-3	Azobenzene	1,600	U
208-96-8	Acenaphthylene	1,600	U
606-20-2	2,6-Dinitrotoluene	1,600	U
99-09-2	3-Nitroaniline	7,900	U
83-32-9	Acenaphthene	1,600	U
51-28-5	2,4-Dinitrophenol	7,900	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-5
LAB ID: 9507/052-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	7,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	1,600	U
121-14-2	2,4-Dinitrotoluene	1,600	U
84-66-2	Diethylphthalate	1,600	U
7005-72-3	4-Chlorophenol phenyl ether	1,600	U
86-73-7	Fluorene	1,600	U
100-01-6	4-Nitroaniline	7,900	U
534-52-1	4,6-Dinitro-2-methylphenol	7,900	U
86-30-6	N-Nitrosodiphenylamine	1,600	U
101-55-3	4-Bromophenyl phenyl ether	1,600	U
118-74-1	Hexachlorobenzene	1,600	U
87-86-5	Pentachlorophenol	7,900	U
85-01-8	Phenanthrene	1,600	5,700
120-12-7	Anthracene	1,600	U
84-74-2	Carbazole	1,600	U
84-74-2	Di-n-butylphthalate	1,600	U
206-44-0	Fluoranthene	1,600	6,400
92-87-4	Benzidine	1,600	U
129-00-0	Pyrene	1,600	6,600
85-68-7	Butylbenzylphthalate	1,600	U
91-94-1	3,3'-Dichlorobenzidine	1,600	U
56-55-3	Benzo(a)anthracene	1,600	2,500
218-01-9	Chrysene	1,600	2,800
117-81-7	bis(2-Ethylhexyl)phthalate	1,600	U
117-84-0	Di-n-octylphthalate	1,600	U
205-99-2	Benzo(b)fluoranthene	1,600	3,300
207-08-9	Benzo(k)fluoranthene	1,600	U
50-32-8	Benzo(a)pyrene	1,600	2,300
193-39-5	Indeno(1,2,3-cd)pyrene	1,600	U
53-70-3	Dibenzo(a,h)anthracene	1,600	U
191-24-2	Benzo(g,h,i)perylene	1,600	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 14:40
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-13
LAB ID: 9507/052-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	380 µg/kg	U µg/kg
108-95-2	Phenol	380	U
111-44-4	bis(2-chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	o-Cresol	380	U
39638-32-9	bis-(2-Chloro2propyl)Ether	380	U
106-44-5	m & p-Cresol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	380	U
103-33-3	Azobenzene	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1,900	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-13
LAB ID: 9507/052-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenol phenyl ether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl phenyl ether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	380	810
120-12-7	Anthracene	380	U
84-74-2	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	870
92-87-4	Benzidine	380	U
129-00-0	Pyrene	380	840
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	380
218-01-9	Chrysene	380	580
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	510
207-08-9	Benzo(k)fluoranthene	380	780
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 15:00
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-18.5
LAB ID: 9507/052-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 32923 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10108 **METHOD SW-846 8270**
PROJECT # 2498.03.5120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB4-18.5
LAB ID: 9507/052-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/06/95 15:15
DATE RECEIVED : 7/06/95 18:48
DATE EXTRACTED : 7/11/95
DATE ANALYZED : 7/13/95
ANALYST : D.C.

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009338
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/06/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2498.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10108
Mode: Mail Quot #:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
4	PWoode	7/6/95	6pm	[illegible]	7/7/95	945	VOA
	[illegible]	7-7	1130	[illegible]	7-7	1130	metals
	[illegible]	7-11	900	[illegible]	7/11	900AM	Dup
4	[illegible]	7/12/95	1535	[illegible]	7-12	1535	Return
	[illegible]	7-18	820	[illegible]	7-18	820	return

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

CHAIN OF CUSTODY RECORD

COC Record # 2197 P.O. # 10108

Project No. 2493.03.4120.05

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St. Louis MO 63146

Sampler's Signature: [signature] Telephone # 997-7440

Contact: Dan Brenneke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
SB-TB:7-6-95	7/6/95		Water	1-40 ml	Volatile Organics	Normal T.A.
SB2-2		0955	Soil	2-8oz	Semi Volatiles Total Metal	
SB2-6		1010		2-8oz	Semi Volatiles Total Metals	
SB2-12		1030		2-8oz 1-2oz	Semi Volatiles Total Metals Volatile Organics	
SB3-5		1210		2-8oz	Semi Volatiles, Total Metals	
SB3-8		1225		2-8oz	Semi Volatiles, Total Metals	
SB3-11.5		1245		2-8oz 1-2oz	Semi Volatiles, Total Metals Volatiles	
SB3-15.5		1255		2-8oz	Semi Volatiles, Total Metals	
SB4-5		1440		2-8oz 1-2oz	Semi Volatiles, Total Metals Volatiles	
SB4-13		1500		2-8oz	Semi Volatiles, Total Metals	
SB4-18.5	↓	1515	↓	2-8oz	Semi Volatiles, Total Metals	↓

Receiver Name: Environmetrics, Inc St Louis MO
(Company Name and Address)

Chain of Possession:

From: Dan Brenneke 7/6/95 @ 1700 To: [signature] 7/6/95 17:00
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009338
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/06/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2493.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10108
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
TRIP BLANK 9507000052-001-01	SB-TB:7-6-95	WASTE WATER	1-40 ml VOA	Hydrochloric Acid	07/06/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
9507000052-002-01	SB2-2 Sample Instructions:	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9507000052-003-01	SB2-6 Sample Instructions:	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9507000052-004-01	SB2-12 Sample Instructions:	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9507000052-004-02	SB2-12 Sample Instructions:	SOIL	1-2 OZ VOA	Cold	07/06/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
9507000052-005-01	SB3-5 Sample Instructions:	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
9507 052-	SB3-8 Sample Instructions:	SOIL	2-250 m S	Cold	07/06/95		MERCURY-SW-846 7471A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009338
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/06/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2493.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10108
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000052-006-01	SB3-8'	SOIL	2-250 ml GLASS	Cold	07/06/95		PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:					
MS / MSD 9507000052-007-01	SB3-11.5	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:					
MS / MSD 9507000052-007-02	SB3-11.5	SOIL	1-2 OZ VOA	Cold	07/06/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
		Sample Instructions:					
9507000052-008-01	SB3-15.5	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:					
9507000052-009-01	SB4-5	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:					
9507000052-[illegible]	SB4-5	SOIL	1-2 OZ VOA	Cold	07/06/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
		Sample Instructions:	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 009338
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/06/95
Date Logged: 07/06/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/18/95 Proj #: 2493.03.4120.0005
Date Due (Client): 07/20/95 P.O. #: 10108
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000052-010-01	SB4-13	SOIL	2-250 ml GLASS	Cold	07/06/95		PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000052-011-01	SB4-18.5	SOIL	2-250 ml GLASS	Cold	07/06/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						

Items Transferred	Relinquished By	Date	PM Signature :	Logged In By	Date	Time
14		07/06/95	Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	07/06/95	18:48:06

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

August 01, 1995

RECEIVED
AUG 2 8 19
GEOTECH

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples SB-8.5-EB, SB5-5, SB5-8.5, SB5-13, SB5-17, SB20-8.2-D1, SB6-3, SB6-9, SB6-12, SB6-20, SB7-5, SB7-9, SB7-11,SB7-18.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 7/07/95

Chain of Custody Number: 2198

Environmetrics Laboratory Number: 9507/076

Invoice # 33001

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
SB5-8.5-EB 10:06	9507-076-001	7/07/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB5-5 9:20	9507-076-002	7/07/95	Total(8)Metals, Semi-Volatiles
SB5-8.5 9:40	9507-076-003	7/07/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB5-8.5 9:40	9507-076-003	7/07/95	Total(8)Metals Matrix Spike/Matrix Spike Duplicate Semi-Volatiles Matrix Spike/Matrix Spike Duplicate Volatiles Matrix Spike/ Matrix Spike Duplicate
SB5-13 9:55	9507-076-004	7/07/95	Total(8)Metals, Semi- Volatiles

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

SB5-17 10:10	9507-076-005	7/07/95	Total(8)Metals, Semi-Volatiles
SB20-8.5-D1 9:40	9507-076-006	7/07/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB6-3 12:45	9507-076-007	7/07/95	Total(8)Metals, Semi-Volatiles
SB6-9 13:00	9507-076-008	7/07/95	Total(8)Metals, Semi-Volatiles
SB6-12 13:05	9507-076-009	7/07/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB6-20 13:15	9507-076-010	7/07/95	Total(8)Metals, Semi-Volatiles
SB7-5 15:10	9507-076-011	7/07/95	Total(8)Metals, Semi-Volatiles
SB7-9 15:20	9507-076-012	7/07/95	Total(8)Metals, Semi-Volatiles, Volatiles
SB7-11 15:25	9507-076-013	7/07/95	Total(8)Metals, Semi-Volatiles
SB7-18 15:30	9507-076-014	7/07/95	Total(8)Metals, Semi-Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis with out dilutions with the exception of:

For method SW-846 8270 there were elevated detection limits for samples Id.# SB5-13 and SB7-9 because of positive hits out of calibration range and matrix interferences.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications, with the exception of:

Due to a laboratory error Sample ID# SB5-8.5 EB was extracted for SW-846 method 8270 out of holding time.

Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-37
PREP. DATE: 7/10/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
MERCURY	<0.0002
LEAD	<0.100
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-37
PREP. DATE: 7/10/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.90	95
BARIUM	2.00	1.92	96
CADMIUM	0.50	0.459	92
CHROMIUM	0.50	0.482	96
LEAD	0.50	0.456	91
MERCURY	0.0020	0.00177	88
SELENIUM	2.00	1.94	97
SILVER	0.50	0.495	99

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB5-8.5-EB
LAB ID: 9507000076-001
DATE COLLECTED: 07/07/95 10:06
DATE RECEIVED: 07/07/95 19:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<0.200 mg/L	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	0.0440 mg/L	
TOTAL CADMIUM	SW-846 6010A	0.00800 mg/L	
TOTAL CHROMIUM	SW-846 6010A	0.0130 mg/L	
TOTAL LEAD	SW-846 6010A	<0.100 mg/L	
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	
TOTAL SELENIUM	SW-846 6010A	<0.200 mg/L	
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB5-5
LAB ID: 9507000076-002
DATE COLLECTED: 07/07/95 09:20
DATE RECEIVED: 07/07/95 19:46

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.9 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	77.7 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	2.27 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	19.7 mg/Kg	
TOTAL LEAD	SW-846 6010A	22.1 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.190 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.9 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.647 mg/Kg	

Geotechnology, Inc.
1258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB5-8.5
LAB ID: 9507000076-003
DATE COLLECTED: 07/07/95 09:40
DATE RECEIVED: 07/07/95 19:46

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.1 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	105 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.28 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	9.11 mg/Kg	
TOTAL LEAD	SW-846 6010A	51.5 mg/Kg	
TOTAL MERCURY	SW-846 7471A	1.03 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.1 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.607 mg/Kg	

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: SB5-8.5
LAB ID: 9507/076-003

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<12.1	483	416	86	422	87	1
BARIUM	105	483	544	91	546	91	0
CADMIUM	1.28	12	10.4	76	10.6	78	2
CHROMIUM	9.11	48	48.6	82	48.7	82	0
LEAD	51.5	121	181	107	170	98	9
MERCURY	1.03	1.2	2.29	105	2.29	105	0
SELENIUM	<12.1	483	394	82	395	82	0
SILVER	<0.607	12	10.7	89	10.9	91	2

Geotechnology, Inc.
:258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB5-13
LAB ID: 9507000076-004
DATE COLLECTED: 07/07/95 09:55
DATE RECEIVED: 07/07/95 19:47

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.7 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	136 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.34 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	7.94 mg/Kg	
TOTAL LEAD	SW-846 6010A	143 mg/Kg	
TOTAL MERCURY	SW-846 7471A	37.0 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.583 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB5-17
LAB ID: 9507000076-005
DATE COLLECTED: 07/07/95 10:10
DATE RECEIVED: 07/07/95 19:47

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	12.0 mg/Kg B	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	257 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	3.30 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	14.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	70.7 mg/Kg	
TOTAL MERCURY	SW-846 7471A	25.3 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.8 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.590 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
258 Grissom Drive
t. Louis, Mo. 63146

TN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

AMPLE ID: S320-8.5-D1
AB ID: 9507000076-006
ATE COLLECTED: 07/07/95 09:40
DATE RECEIVED: 07/07/95 19:48

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.0 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	128 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.09 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	9.05 mg/Kg	
TOTAL LEAD	SW-846 6010A	100 mg/Kg	
TOTAL MERCURY	SW-846 7471A	1.30 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.0 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.603 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB6-3
LAB ID: 9507000076-007
DATE COLLECTED: 07/07/95 12:45
DATE RECEIVED: 07/07/95 19:49

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<10.7 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	39.2 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.537 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	5.10 mg/Kg	
TOTAL LEAD	SW-846 6010A	9.40 mg/Kg	
TOTAL MERCURY	SW-846 7471A	1.80 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<10.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.537 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
258 Grissom Drive
t. Louis, Mo. 63146

TN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB6-9
LAB ID: 9507000076-008
DATE COLLECTED: 07/07/95 13:00
DATE RECEIVED: 07/07/95 19:49

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.5 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	66.5 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.746 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	5.45 mg/Kg	
TOTAL LEAD	SW-846 6010A	42.3 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.574 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB6-12
LAB ID: 9507000076-009
DATE COLLECTED: 07/07/95 13:05
DATE RECEIVED: 07/07/95 19:50

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	15.0 mg/Kg B	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	151 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.49 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	14.6 mg/Kg	
TOTAL LEAD	SW-846 6010A	157 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.14 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.4 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.621 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
:258 Grissom Drive
:t. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB6-20
LAB ID: 9507000076-010
DATE COLLECTED: 07/07/95 13:15
DATE RECEIVED: 07/07/95 19:51

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	122 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.25 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	15.4 mg/Kg	
TOTAL LEAD	SW-846 6010A	7.78 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.13 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.623 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

...TN: Sam Brenneke

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB7-5
LAB ID: 9507000076-011
DATE COLLECTED: 07/07/95 15:10
DATE RECEIVED: 07/07/95 19:51

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.7 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	190 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	6.17 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	27.2 mg/Kg	
TOTAL LEAD	SW-846 6010A	13.2 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.13 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.636 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB7-9
LAB ID: 9507000076-012
DATE COLLECTED: 07/07/95 15:20
DATE RECEIVED: 07/07/95 19:52

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.3 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	14.5 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.07 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	5.24 mg/Kg	
TOTAL LEAD	SW-846 6010A	17.4 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.3 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.563 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB7-11
LAB ID: 9507000076-013
DATE COLLECTED: 07/07/95 15:25
DATE RECEIVED: 07/07/95 19:53

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.7 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	21.0 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	<0.294 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	3.11 mg/Kg	
TOTAL LEAD	SW-846 6010A	19.2 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.587 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

Geotechnology, Inc.
:258 Grissom Drive
;t. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33001
PO: 10109
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB7-18
LAB ID: 9507000076-014
DATE COLLECTED: 07/07/95 15:30
DATE RECEIVED: 07/07/95 19:53

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.9 mg/Kg	7/12/95 R.D.
TOTAL BARIUM	SW-846 6010A	<60.0 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.476 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	7.02 mg/Kg	
TOTAL LEAD	SW-846 6010A	14.2 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.13 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.9 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.595 mg/Kg	

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK192A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/11/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VBBLK193A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/12/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-8.5-EB
LAB ID: 9507/076-001

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	120
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/07/95 10:06
DATE RECEIVED : 7/07/95 19:53
DATE ANALYZED : 7/12/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **VOLATILE ORGANIC ANALYSIS**
PO # 10109 **METHOD SW-846 8240**
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-8.5
LAB ID: 9507/076-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/07/95 09:40
DATE RECEIVED : 7/07/95 19:53
DATE ANALYZED : 7/11/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

SAMPLE ID: SB5-8.5
LAB ID: 9507/052-003

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONC. (µg/kg)	MS CONC. (µg/kg)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	50	U	27	54	*	59-172
Trichloroethene	50	U	41	82		62-137
Benzene	50	U	46	92		60-133
Toluene	50	U	48	96		59-139
Chlorobenzene	50	U	48	96		66-142

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONC. (µg/kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	50	29	58	*	4		22	59-172
Trichloroethene	50	43	86		4		24	62-137
Benzene	50	48	96		4		21	60-133
Toluene	50	54	108		12		21	59-139
Chlorobenzene	50	50	100		4		21	66-142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB20-8.5-D1
LAB ID: 9507/076-006

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/07/95 09:40
DATE RECEIVED : 7/07/95 19:53
DATE ANALYZED : 7/11/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-12
LAB ID: 9507/076-009

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	140
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/07/95 13:05
DATE RECEIVED : 7/07/95 19:53
DATE ANALYZED : 7/11/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-9
LAB ID: 9507/076-012

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/07/95 15:20
DATE RECEIVED : 7/07/95 19:53
DATE ANALYZED : 7/11/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
VBBLK192A	METHOD BLANK	108	101	93
VBBLK193A	METHOD BLANK	87	109	101
9507/076-001	SB5-8.5-EB	96	101	97
9507/076-003	SB5-8.5	108	101	96
9507/076-006	SB20-8.5-D1	114	108	97
9507/076-009	SB6-12	119	104	74
9507/076-012	SB7-9	121	86	99

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001
PO # 10109
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANICS LAB CONTROL SPIKE

SAMPLE ID: LCS
LAB ID: VDLCS192A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	54	50	108
Benzene	50	50	100
Trichloroethene	50	50	100
Toluene	48	50	96
Chlorobenzene	50	50	100

SAMPLE ID: LCS
LAB ID: VBLCS193A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	53	50	105
Benzene	55	50	111
Trichloroethene	50	50	100
Toluene	50	50	100
Chlorobenzene	65	50	131

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6583

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10109 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6583

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/24/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6529

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6529

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/15/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-8.5-EB
LAB ID: 9507/076-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-8.5-EB
LAB ID: 9507/076-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 10:06
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/24/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

MET CS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-5
LAB ID: 9507/076-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,200	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ETCS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-5
LAB ID: 9507/076-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	430	U
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	U
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	U
218-01-9	Chrysene	430	U
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	U
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 09:20
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-8.5
LAB ID: 9507/076-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10109 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-8.5
LAB ID: 9507/076-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	2,700
120-12-7	Anthracene	400	550
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	4,500
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	3,100
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	1,700
218-01-9	Chrysene	400	1,700
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	2,200
207-08-9	Benzo(k)fluoranthene	400	870
50-32-8	Benzo(a)pyrene	400	1,600
193-39-5	Indeno(1,2,3-cd)pyrene	400	760
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	810

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 09:40
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/17/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-13
LAB ID: 9507/076-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	1,900 µg/kg	U µg/kg
108-95-2	Phenol	1,900	U
111-44-4	bis(2-chloroethyl)Ether	1,900	U
95-57-8	2-Chlorophenol	1,900	U
541-73-1	1,3-Dichlorobenzene	1,900	U
106-46-7	1,4-Dichlorobenzene	1,900	U
100-51-6	Benzyl Alcohol	1,900	U
95-50-1	1,2-Dichlorobenzene	1,900	U
95-48-7	o-Cresol	1,900	U
39638-32-9	bis-(2-Chloro2propyl)Ether	1,900	U
106-44-5	m & p-Cresol	1,900	U
621-64-7	N-Nitroso-Di-n-propylamine	1,900	U
67-72-1	Hexachloroethane	1,900	U
98-95-3	Nitrobenzene	1,900	U
78-59-1	Isophorone	1,900	U
88-75-5	2-Nitrophenol	1,900	U
105-67-9	2,4-Dimethylphenol	1,900	U
65-85-0	Benzoic Acid	9,600	U
111-91-1	bis(2-Chloroethoxy)methane	1,900	U
120-83-2	2,4-Dichlorophenol	1,900	U
120-82-1	1,2,4-Trichlorobenzene	1,900	U
91-20-3	Naphthalene	1,900	U
106-47-8	4-Chloroaniline	1,900	U
87-68-3	Hexachlorobutadiene	1,900	U
59-50-7	4-Chloro-3-methylphenol	1,900	U
91-57-6	2-Methylnaphthalene	1,900	U
77-47-4	Hexachlorocyclopentadiene	1,900	U
88-06-2	2,4,6-Trichlorophenol	1,900	U
95-95-4	2,4,5-Trichlorophenol	1,900	U
91-58-7	2-Chloronaphthalene	1,900	U
88-74-4	2-Nitroaniline	9,600	U
131-11-3	Dimethylphthalate	1,900	U
103-33-3	Azobenzene	1,900	U
208-96-8	Acenaphthylene	1,900	U
606-20-2	2,6-Dinitrotoluene	1,900	U
99-09-2	3-Nitroaniline	9,600	U
83-32-9	Acenaphthene	1,900	U
51-28-5	2,4-Dinitrophenol	9,600	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10109 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-13
LAB ID: 9507/076-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	9,600 µg/kg	U µg/kg
132-64-9	Dibenzofuran	1,900	U
121-14-2	2,4-Dinitrotoluene	1,900	U
84-66-2	Diethylphthalate	1,900	U
7005-72-3	4-Chlorophenol phenyl ether	1,900	U
86-73-7	Fluorene	1,900	U
100-01-6	4-Nitroaniline	9,600	U
534-52-1	4,6-Dinitro-2-methylphenol	9,600	U
86-30-6	N-Nitrosodiphenylamine	1,900	U
101-55-3	4-Bromophenyl phenyl ether	1,900	U
118-74-1	Hexachlorobenzene	1,900	U
87-86-5	Pentachlorophenol	9,600	U
85-01-8	Phenanthrene	1,900	22,000
120-12-7	Anthracene	1,900	5,200
84-74-2	Carbazole	1,900	2,300
84-74-2	Di-n-butylphthalate	1,900	U
206-44-0	Fluoranthene	1,900	28,000
92-87-4	Benzidine	1,900	U
129-00-0	Pyrene	1,900	19,000
85-68-7	Butylbenzylphthalate	1,900	U
91-94-1	3,3'-Dichlorobenzidine	1,900	U
56-55-3	Benzo(a)anthracene	1,900	9,500
218-01-9	Chrysene	1,900	9,200
117-81-7	bis(2-Ethylhexyl)phthalate	1,900	U
117-84-0	Di-n-octylphthalate	1,900	U
205-99-2	Benzo(b)fluoranthene	1,900	11,000
207-08-9	Benzo(k)fluoranthene	1,900	4,100
50-32-8	Benzo(a)pyrene	1,900	8,500
193-39-5	Indeno(1,2,3-cd)pyrene	1,900	3,900
53-70-3	Dibenzo(a,h)anthracene	1,900	U
191-24-2	Benzo(g,h,i)perylene	1,900	4,100

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 09:55
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/18/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-17
LAB ID: 9507/076-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	450
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	460
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	390	1,200
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB5-17
LAB ID: 9507/076-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	760
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	1,090
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	3,900	17,000
120-12-7	Anthracene	390	4,500
84-74-2	Carbazole	390	2,900
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	3,900	29,000
92-87-4	Benzidine	390	U
129-00-0	Pyrene	3,900	20,000
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	3,900	9,800
218-01-9	Chrysene	3,900	10,500
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	3,900	12,000
207-08-9	Benzo(k)fluoranthene	390	2,100
50-32-8	Benzo(a)pyrene	3,900	8,500
193-39-5	Indeno(1,2,3-cd)pyrene	390	4,000
53-70-3	Dibenzo(a,h)anthracene	390	1,100
191-24-2	Benzo(g,h,i)perylene	390	3,900

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 10:10
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/18 & 19/95
ANALYST : D.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10109 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB20-8.5-D1
LAB ID: 9507/076-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB20-8.5-D1
LAB ID: 9507/076-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	5,800
120-12-7	Anthracene	400	1,020
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	4,000	7,500
92-87-4	Benzidine	400	U
129-00-0	Pyrene	4,000	6,700
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	3,600
218-01-9	Chrysene	400	3,500
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	4,300
207-08-9	Benzo(k)fluoranthene	400	1,100
50-32-8	Benzo(a)pyrene	400	3,500
193-39-5	Indeno(1,2,3-cd)pyrene	400	1,400
53-70-3	Dibenzo(a,h)anthracene	400	420
191-24-2	Benzo(g,h,i)perylene	400	1,500

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 09:40
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/18 & 19/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-3
LAB ID: 9507/076-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	360 µg/kg	U µg/kg
108-95-2	Phenol	360	U
111-44-4	bis(2-chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl Alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	o-Cresol	360	U
39638-32-9	bis-(2-Chloro2propyl)Ether	360	U
106-44-5	m & p-Cresol	360	U
621-64-7	N-Nitroso-Di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic Acid	1,800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1,800	U
131-11-3	Dimethylphthalate	360	U
103-33-3	Azobenzene	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	1,800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1,800	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-3
LAB ID: 9507/076-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,800 µg/kg	U µg/kg
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenol phenyl ether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1,800	U
534-52-1	4,6-Dinitro-2-methylphenol	1,800	U
86-30-6	N-Nitrosodiphenylamine	360	U
101-55-3	4-Bromophenyl phenyl ether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1,800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
92-87-4	Benzidine	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 12:45
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/16/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-9
LAB ID: 9507/076-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	380 µg/kg	U µg/kg
108-95-2	Phenol	380	U
111-44-4	bis(2-chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	o-Cresol	380	U
39638-32-9	bis-(2-Chloro2propyl)Ether	380	U
106-44-5	m & p-Cresol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	380	U
103-33-3	Azobenzene	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1,900	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10109 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-9
LAB ID: 9507/076-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenol phenyl ether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl phenyl ether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
92-87-4	Benzidine	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 13:00
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-12
LAB ID: 9507/076-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-12
LAB ID: 9507/076-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	510
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	480
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	590
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	470
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 13:05
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/16/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

EMIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-20
LAB ID: 9507/076-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB6-20
LAB ID: 9507/076-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 13:15
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-5
LAB ID: 9507/076-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-5
LAB ID: 9507/076-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	430	U
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	U
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	U
218-01-9	Chrysene	430	U
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	U
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 15:10
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/15/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-9
LAB ID: 9507/076-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	3,700 µg/kg	U µg/kg
108-95-2	Phenol	3,700	U
111-44-4	bis(2-chloroethyl)Ether	3,700	U
95-57-8	2-Chlorophenol	3,700	U
541-73-1	1,3-Dichlorobenzene	3,700	U
106-46-7	1,4-Dichlorobenzene	3,700	U
100-51-6	Benzyl Alcohol	3,700	U
95-50-1	1,2-Dichlorobenzene	3,700	U
95-48-7	o-Cresol	3,700	U
39638-32-9	bis-(2-Chloro2propyl)Ether	3,700	U
106-44-5	m & p-Cresol	3,700	U
621-64-7	N-Nitroso-Di-n-propylamine	3,700	U
67-72-1	Hexachloroethane	3,700	U
98-95-3	Nitrobenzene	3,700	U
78-59-1	Isophorone	3,700	U
88-75-5	2-Nitrophenol	3,700	U
105-67-9	2,4-Dimethylphenol	3,700	U
65-85-0	Benzoic Acid	19,000	U
111-91-1	bis(2-Chloroethoxy)methane	3,700	U
120-83-2	2,4-Dichlorophenol	3,700	U
120-82-1	1,2,4-Trichlorobenzene	3,700	U
91-20-3	Naphthalene	3,700	U
106-47-8	4-Chloroaniline	3,700	U
87-68-3	Hexachlorobutadiene	3,700	U
59-50-7	4-Chloro-3-methylphenol	3,700	U
91-57-6	2-Methylnaphthalene	3,700	U
77-47-4	Hexachlorocyclopentadiene	3,700	U
88-06-2	2,4,6-Trichlorophenol	3,700	U
95-95-4	2,4,5-Trichlorophenol	3,700	U
91-58-7	2-Chloronaphthalene	3,700	U
88-74-4	2-Nitroaniline	19,000	U
131-11-3	Dimethylphthalate	3,700	U
103-33-3	Azobenzene	3,700	U
208-96-8	Acenaphthylene	3,700	U
606-20-2	2,6-Dinitrotoluene	3,700	U
99-09-2	3-Nitroaniline	19,000	U
83-32-9	Acenaphthene	3,700	U
51-28-5	2,4-Dinitrophenol	19,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33001 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10109 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-9
LAB ID: 9507/076-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	19,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	3,700	U
121-14-2	2,4-Dinitrotoluene	3,700	U
84-66-2	Diethylphthalate	3,700	U
7005-72-3	4-Chlorophenol phenyl ether	3,700	U
86-73-7	Fluorene	3,700	U
100-01-6	4-Nitroaniline	19,000	U
534-52-1	4,6-Dinitro-2-methylphenol	19,000	U
86-30-6	N-Nitrosodiphenylamine	3,700	U
101-55-3	4-Bromophenyl phenyl ether	3,700	U
118-74-1	Hexachlorobenzene	3,700	U
87-86-5	Pentachlorophenol	19,000	U
85-01-8	Phenanthrene	3,700	U
120-12-7	Anthracene	3,700	U
84-74-2	Carbazole	3,700	U
84-74-2	Di-n-butylphthalate	3,700	U
206-44-0	Fluoranthene	3,700	U
92-87-4	Benzidine	3,700	U
129-00-0	Pyrene	3,700	U
85-68-7	Butylbenzylphthalate	3,700	U
91-94-1	3,3'-Dichlorobenzidine	3,700	U
56-55-3	Benzo(a)anthracene	3,700	U
218-01-9	Chrysene	3,700	U
117-81-7	bis(2-Ethylhexyl)phthalate	3,700	U
117-84-0	Di-n-octylphthalate	3,700	U
205-99-2	Benzo(b)fluoranthene	3,700	U
207-08-9	Benzo(k)fluoranthene	3,700	U
50-32-8	Benzo(a)pyrene	3,700	U
193-39-5	Indeno(1,2,3-cd)pyrene	3,700	U
53-70-3	Dibenzo(a,h)anthracene	3,700	U
191-24-2	Benzo(g,h,i)perylene	3,700	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 15:20
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/18/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-11
LAB ID: 9507/076-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1,900	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-11
LAB ID: 9507/076-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 15:25
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/16/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

TCS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-18
LAB ID: 9507/076-014

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33001 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10109 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB7-18
LAB ID: 9507/076-014

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	610
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	710
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	750
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	500
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	420
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/07/95 15:30
DATE RECEIVED : 7/07/95 19:53
DATE EXTRACTED : 7/12/95
DATE ANALYZED : 7/16/95
ANALYST : D.C.

SOIL SEMIVOLATILE [redacted]RIX SPIKE/MATRIX SPIKE D[redacted]CATE RECOVERY

b Name: Environmetrics Contract: GEOTECH.

La[redacted] code: Case No.: DRY SAS No.: SDG No.:

trix Spike - EPA Sample No.: 9507076-3 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	8000	0	6700	83	26- 90
2-Chlorophenol	8000	0	5200	64	25-102
1,4-Dichlorobenzene	4000	0	1700	42	28-104
N-Nitroso-Di-nPropylami	4000	0	4700	117	41-126
1,2,4-Trichlorobenzene	4000	0	3100	77	38-107
4-Chloro-3-Methylphenol	8000	0	8500	106 *	26-103
Acenaphthene	4000	0	3900	96	31-137
4-Nitrophenol	8000	0	9700	120 *	11-114
2,4-Dinitrotoluene	4000	0	3700	91 *	28- 89
Pentachlorophenol	8000	0	3100	39	17-109
Pyrene	4000	3100	8800	141	35-142

OMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	8000	7000	87	5	35	26- 90
2-Chlorophenol	8000	5500	69	6	50	25-102
1,4-Dichlorobenzene	4000	2100	51	19	27	28-104
N-Nitroso-Di-nPropylami	4000	5100	126 *	8	38	41-126
1,2,4-Trichlorobenzene	4000	3200	80	4	23	38-107
4-Chloro-3-Methylphenol	8000	8100	100	6	33	26-103
Acenaphthene	4000	4100	103	7	19	31-137
4-Nitrophenol	8000	9000	112	7	50	11-114
2,4-Dinitrotoluene	4000	3700	91 *	0	47	28- 89
Pentachlorophenol	8000	2000	24	45	47	17-109
Pyrene	4000	13000	252 *	56 *	36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

PD: 1 out of 11 outside limits

pike Recovery: 6 out of 22 outside limits

MENTS: _____

_____

SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

WATER SPIKE

Lab Name: Environmetrics Contract: GEOTECH.

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: WASLCS6583

Sample wt/vol: 1000 (g/ml) ml Lab File ID: >A7753

Level: (low/med) LOW Date Received: 07/07/95

% Moisture: decanted: (Y/N) N Date Extracted: 07/24/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	130	200	67
2-Chlorophenol	160	200	80
1,4-Dichlorobenzene	61	100	61
N-Nitroso-Di-nPropylamine	137	150	81
1,2,4-Trichlorobenzene	75	100	75
4-Chloro-3-Methylphenol	220	200	110
Acenaphthene	92	100	91
4-Nitrophenol	210	200	104
2,4-Dinitrotoluene	99	100	99
Pentachlorophenol	220	200	113
Pyrene	110	100	109

SEMIVOLATILE ORGA[redacted]B LAB CONTROL SAMPLE [redacted]

EPA SAMPLE NO.

SPIKE BLANK

[redacted] Name: Environmetrics Contract: GEOTECH.

Lab Code: 8270 Case No.: SAS No.: SDG No.:

[redacted]trix: (soil/water) SOIL Lab Sample ID: SASLCS6529

[redacted]mple wt/vol: 30 (g/ml) g Lab File ID: >A7571

[redacted]vel: (low/med) LOW Date Received: 07/07/95

Moisture: NA decanted: (Y/N) N Date Extracted: 07/12/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/14/95

[redacted]jection Volume: 1.0 (uL) Dilution Factor: 33.3

[redacted]C Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	4100	6700	61
2-Chlorophenol	3200	6700	48
1,4-Dichlorobenzene	1800	3300	53
N-Nitroso-Di-nPropylamine	3400	3300	103
1,2,4-Trichlorobenzene	2600	3300	79
4-Chloro-3-Methylphenol	5800	6700	88
Acenaphthene	2700	3300	82
4-Nitrophenol	6000	6700	90
2,4-Dinitrotoluene	2800	3300	86
Pentachlorophenol	4800	6700	71
Pyrene	3400	3300	101

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	SASBLK6529	73	42	71	95	72	72	68	20	0
02	SASLCS6529	63	43	58	83	49	64	69	19	0
03	9507076-2	69	27	65	93	69	65	60	19	0
04	9507076-3	76	43	67	93	82	75	67	28	0
05	9507076-3MS	78	40	65	102	59	72	69	33	0
06	9507076-3MSD	70	31	63	105	65	80	78	32	0
07	9507076-4	81	46	70	107	78	72	70	51	0
08	9507076-5	86	47	72	113	84	81	72	69	0
09	9507076-5DL	58	42	60	106	67	63	47	50	0
10	9507076-6	86	51	71	109	82	75	67	77	0
11	9507076-6DL	58	43	60	107	60	57	43	58	0
12	9507076-7	70	40	63	101	73	70	65	137	0
13	9507076-8	54	18 *	58	97	75	73	68	23	1
14	9507076-9	76	50	66	107	78	78	74	54	0
15	9507076-10	73	43	65	102	72	71	67	39	0
16	9507076-11	65	18 *	64	100	77	74	70	57	1
17	9507076-12	65	52	59	108	66	66	53	80	0
18	9507076-13	82	58	76	119	87	88	77	60	0
19	9507076-14	57	23	56	97	67	65	61	32	0
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S4 (TPH)	= Terphenyl-d14	(18-137)	
S5 (PHL)	= Phenol-d5	(24-113)	
S6 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(25-121)	
S8 (TBP)	= 2,4,6-Tribromophenol	(19-122)	

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2C

WATER SEMIVOL E SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	WASBLK6583	94	63	73	132	62	64	55	97	0
02	WASLCS6583	89	56	67	117	59	64	55	104	0
03	9507076-1	97	60	73	124	42	64	43	97	0
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S4 (TPH)	= Terphenyl-d14	(33-141)	
S5 (PHL)	= Phenol-d5	(10- 94)	
S6 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(21-100)	
S8 (TBP)	= 2,4,6-Tribromophenol	(10-123)	

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

August 01, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples MW-1:2, MW-1:7, MW-1:13, MW-1:18, MW-1:26, SB-TB-7-11-95, MW-2-4, MW-2-10, MW-2-15, MW-2-20, MW-2-30, SB22-15-D2, MW-2-15-EB.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 7/10/95

Chain of Custody Number: 2200

Environmetrics Laboratory Number: 9507/130

Invoice # 33002

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
MW-1:2 15:50	9507-130-001	7/10/95	Total(8)Metals, Semi-Volatiles
MW-1:7 16:00	9507-130-002	7/10/95	Total(8)Metals, Semi-Volatiles, Volatiles
MW-1:13 16:15	9507-130-003	7/10/95	Total(8)Metals, Semi-Volatiles
MW-1:18 16:30	9507-130-004	7/10/95	Total(8)Metals, Semi-Volatiles
MW-1:26 9:10	9507-130-005	7/10/95	Total(8)Metals, Semi- Volatiles

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

SB-TB-7-11-95	9507-130-006	7/10/95	Volatiles
MW-2-4 15:00	9507-130-007	7/10/95	Total(8)Metals, Semi-Volatiles
MW-2-10 15:15	9507-130-008	7/10/95	Total(8)Metals, Semi-Volatiles
MW-2-15 15:30	9507-130-009	7/10/95	Total(8)Metals, Semi-Volatiles, Volatiles
MW-2-15 15:30	9507-130-009	7/10/95	Total(8)Metals Matrix Spike/ Matrix Spike Duplicate Semi-Volatiles Matrix Spike/ Matrix Spike Duplicate Volatiles Matrix Spike/ Matrix Spike Duplicate
MW-2-20 15:45	9507-130-010	7/10/95	Total(8)Metals, Semi-Volatiles
MW-2-30 16:30	9507-130-011	7/10/95	Total(8)Metals, Semi-Volatiles
SB22-15-D2 15:30	9507-130-012	7/10/95	Total(8)Metals, Semi-Volatiles, Volatiles
MW-2-15-EB 16:00	9507-130-013	7/10/95	Total(8)Metals, Semi-Volatiles, Volatiles

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis with out dilutions with the exception of:

Sample ID#'s MW-1:7 and MW-2-4 were diluted because of matrix interferences, resulting in elevated detection limits.

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Karen J. Coons

Project Manager

Attachments

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33C02
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-53
PREP. DATE: 7/17/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
MERCURY	<0.0002
LEAD	<0.100
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-53
PREP. DATE: 7/17/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.84	92
BARIUM	2.00	1.83	92
CADMIUM	0.50	0.489	98
CHROMIUM	0.50	0.477	95
LEAD	0.50	0.464	93
MERCURY	0.0020	0.00194	97
SELENIUM	2.00	1.81	90
SILVER	0.50	0.482	96

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-1:2
LAB ID: 9507000130-001
DATE COLLECTED: 07/10/95 15:50
DATE RECEIVED: 07/12/95 09:14

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.0 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	91.1 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.26 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	13.2 mg/Kg	
TOTAL LEAD	SW-846 6010A	51.4 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.18 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	12.0 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.599 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-1:7
LAB ID: 9507000130-002
DATE COLLECTED: 07/10/95 16:00
DATE RECEIVED: 07/12/95 09:15

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.5 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	194 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.50 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	11.9 mg/Kg	
TOTAL LEAD	SW-846 6010A	227 mg/Kg	
TOTAL MERCURY	SW-846 7471A	1.03 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.582 mg/Kg	

Geotechnology, Inc.
:258 Grissom Drive
3t. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-1:13
LAB ID: 9507000130-003
DATE COLLECTED: 07/10/95 16:15
DATE RECEIVED: 07/12/95 09:17

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	26.1 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	521 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	5.26 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	26.8 mg/Kg	
TOTAL LEAD	SW-846 6010A	510 mg/Kg	
TOTAL MERCURY	SW-846 7471A	1.07 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	3.490 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-1:18
LAB ID: 9507000130-004
DATE COLLECTED: 07/10/95 16:30
DATE RECEIVED: 07/12/95 09:18

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.0 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	136 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	2.89 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	23.1 mg/Kg	
TOTAL LEAD	SW-846 6010A	505 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.0 mg/Kg	
TOTAL SILVER	SW-846 6010A	0.6010 mg/Kg	

Geotechnology, Inc.
258 Grissom Drive
t. Louis, Mo. 63146

TN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

NVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

AMPLE ID: MW-1:26
AB ID: 9507000130-005
ATE COLLECTED: 07/11/95 09:10
DATE RECEIVED: 07/12/95 09:19

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<13.3 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	174 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.99 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	15.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	314 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.17 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<13.3 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.665 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

...TN: Sam Brenneke

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2-4
LAB ID: 9507000130-007
DATE COLLECTED: 07/11/95 15:00
DATE RECEIVED: 07/12/95 09:21

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.3 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	255 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	2.21 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	22.4 mg/Kg	
TOTAL LEAD	SW-846 6010A	464 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.530 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.3 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.614 mg/Kg	

Geotechnology, Inc.
258 Grissom Drive
t. Louis, Mo. 63146

TN: Sam Brenneke

NVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: MW-2-10
LAB ID: 9507000130-008
DATE COLLECTED: 07/11/95 15:15
DATE RECEIVED: 07/12/95 09:21

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	136 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.58 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	14.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	15.1 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.13 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.628 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2-15 RUN MS/MSD ON SAMPLE RUN MS/MSD ON SAMPLE
LAB ID: 9507000130-009
DATE COLLECTED: 07/11/95 15:30
DATE RECEIVED: 07/12/95 09:22

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	117 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.12 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	14.7 mg/Kg	
TOTAL LEAD	SW-846 6010A	8.43 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.625 mg/Kg	

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: MW-2-15
LAB ID: 9507/130-009

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<12.5	502	426	85	426	85	0
BARIUM	117	502	523	81	544	85	4
CADMIUM	1.12	12	12.2	92	12.5	95	3
CHROMIUM	14.7	50	58.9	88	58.1	87	1
LEAD	8.43	125	113	84	111	82	2
MERCURY	<0.12	1.19	1.26	106	1.14	96	10
SELENIUM	<12.5	502	418	83	419	83	0
SILVER	<0.625	12	11.2	93	11.3	94	1

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2-20
LAB ID: 9507000130-010
DATE COLLECTED: 07/11/95 15:45
DATE RECEIVED: 07/12/95 09:23

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<13.4 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	77.3 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	0.806 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	9.95 mg/Kg	
TOTAL LEAD	SW-846 6010A	8.19 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.130 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<13.4 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.672 mg/Kg	

Geotechnology, Inc.
1258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: MW-2-30
LAB ID: 9507000130-011
DATE COLLECTED: 07/11/95 16:30
DATE RECEIVED: 07/12/95 09:24

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.7 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	12.5 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	2.29 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	20.7 mg/Kg	
TOTAL LEAD	SW-846 6010A	<5.87 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.587 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SB22-15-D2
LAB ID: 9507000130-012
DATE COLLECTED: 07/11/95 15:30
DATE RECEIVED: 07/12/95 09:24

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.5 mg/Kg	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	137 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.00 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	16.5 mg/Kg	
TOTAL LEAD	SW-846 6010A	8.94 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.13 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.5 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.625 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33002
PO: 10111
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2-15-EB
LAB ID: 9507000130-013
DATE COLLECTED: 07/11/95 16:00
DATE RECEIVED: 07/12/95 09:29

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<0.200 mg/L	7/18/95 R.D.
TOTAL BARIUM	SW-846 6010A	0.0550 mg/L	
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	
TOTAL LEAD	SW-846 6010A	<0.100 mg/L	
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	
TOTAL SELENIUM	SW-846 6010A	<0.200 mg/L	
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK197A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/17/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK200A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/19/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK201A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/20/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 7
LAB ID: 9507/130-002

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/10/95 15:50
DATE RECEIVED : 7/12/95 9:30
DATE ANALYZED : 7/17/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB-TB-7-11-95
LAB ID: 9507/130-006

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/03/95
DATE RECEIVED : 7/12/95 9:30
DATE ANALYZED : 7/19/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-15
LAB ID: 9507/130-009

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 15:30
DATE RECEIVED : 7/12/95 9:30
DATE ANALYZED : 7/17/95
ANALYST : L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

EN IR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-055

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

SAMPLE ID: MW-2-15
LAB ID: 9507/130-009

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONC. (µg/kg)	MS CONC. (µg/kg)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	50	U	30	60		59-172
Trichloroethene	50	U	48	96		62-137
Benzene	50	U	46	92		60-133
Toluene	50	U	54	108		59-139
Chlorobenzene	50	U	52	104		66-142

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONC. (µg/kg)	MSD % REC #	% RPD	#	QC RPD	LIMIT: REC
1,1-Dichloroethene	50	28	56 *	7		22	59-172
Trichloroethene	50	43	86	11		24	62-137
Benzene	50	44	88	4		21	60-133
Toluene	50	50	100	8		21	59-139
Chlorobenzene	50	48	96	8		21	66-142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 1 out of 10 outside limits

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

E[illegible]IR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33002 **VOLATILE ORGANIC ANALYSIS**
PO # 10111 **METHOD SW-846 8240**
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB22-15-D2
LAB ID: 9507/130-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/11/95 15:30
DATE RECEIVED : 7/12/95 9:30
DATE ANALYZED : 7/17/95
ANALYST : L.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-15-EB
LAB ID: 9507/130-013

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	50	730
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/11/95 16:00
DATE RECEIVED : 7/12/95 9:30
DATE ANALYZED : 7/20/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
VDBLK197A	METHOD BLANK	112	101	95
VDBLK200A	METHOD BLANK	95	104	102
VDBLK201A	METHOD BLANK	95	99	102
9507/130-001	MW-1: 7	121	108	93
9507/130-006	SB-TB-7-11-95	106	110	108
9507/130-009	MW-2-15	101	109	105
9507/130-012	SB22-15-D2	100	114	104
9507/130-013	MW-2-15-EB	97	105	102
9507/130-013 (DILUTION)	MW-2-15-EB	96	108	104

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002
PO # 10111
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANICS LAB CONTROL SPIKE

SAMPLE ID: LCS
LAB ID: VDLCS197A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	56	50	112
Trichloroethene	48	50	96
Benzene	50	50	100
Toluene	47	50	94
Chlorobenzene	49	50	98

SAMPLE ID: LCS
LAB ID: VDLCS200A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	52	50	104
Trichloroethene	51	50	102
Benzene	52	50	104
Toluene	51	50	102
Chlorobenzene	50	50	100

SAMPLE ID: LCS
LAB ID: VDLCS201A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	49	50	98
Trichloroethene	48	50	96
Benzene	52	50	104
Toluene	51	50	102
Chlorobenzene	46	50	92

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6541

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6541

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/19/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6541

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6541

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/17/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 2
LAB ID: 9507/130-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33002 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10111 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 2
LAB ID: 9507/130-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	2,100
120-12-7	Anthracene	400	500
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	2,000
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	1,500
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	760
218-01-9	Chrysene	400	780
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	810
207-08-9	Benzo(k)fluoranthene	400	820
50-32-8	Benzo(a)pyrene	400	600
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 15:50
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/17/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 7
LAB ID: 9507/130-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	1,900 µg/kg	U µg/kg
108-95-2	Phenol	1,900	U
111-44-4	bis(2-chloroethyl)Ether	1,900	U
95-57-8	2-Chlorophenol	1,900	U
541-73-1	1,3-Dichlorobenzene	1,900	U
106-46-7	1,4-Dichlorobenzene	1,900	U
100-51-6	Benzyl Alcohol	1,900	U
95-50-1	1,2-Dichlorobenzene	1,900	U
95-48-7	o-Cresol	1,900	U
39638-32-9	bis-(2-Chloro2propyl)Ether	1,900	U
106-44-5	m & p-Cresol	1,900	U
621-64-7	N-Nitroso-Di-n-propylamine	1,900	U
67-72-1	Hexachloroethane	1,900	U
98-95-3	Nitrobenzene	1,900	U
78-59-1	Isophorone	1,900	U
88-75-5	2-Nitrophenol	1,900	U
105-67-9	2,4-Dimethylphenol	1,900	U
65-85-0	Benzoic Acid	9,600	U
111-91-1	bis(2-Chloroethoxy)methane	1,900	U
120-83-2	2,4-Dichlorophenol	1,900	U
120-82-1	1,2,4-Trichlorobenzene	1,900	U
91-20-3	Naphthalene	1,900	U
106-47-8	4-Chloroaniline	1,900	U
87-68-3	Hexachlorobutadiene	1,900	U
59-50-7	4-Chloro-3-methylphenol	1,900	U
91-57-6	2-Methylnaphthalene	1,900	U
77-47-4	Hexachlorocyclopentadiene	1,900	U
88-06-2	2,4,6-Trichlorophenol	1,900	U
95-95-4	2,4,5-Trichlorophenol	1,900	U
91-58-7	2-Chloronaphthalene	1,900	U
88-74-4	2-Nitroaniline	9,600	U
131-11-3	Dimethylphthalate	1,900	U
103-33-3	Azobenzene	1,900	U
208-96-8	Acenaphthylene	1,900	U
606-20-2	2,6-Dinitrotoluene	1,900	U
99-09-2	3-Nitroaniline	9,600	U
83-32-9	Acenaphthene	1,900	U
51-28-5	2,4-Dinitrophenol	9,600	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 7
LAB ID: 9507/130-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	9,600 µg/kg	U µg/kg
132-64-9	Dibenzofuran	1,900	U
121-14-2	2,4-Dinitrotoluene	1,900	U
84-66-2	Diethylphthalate	1,900	U
7005-72-3	4-Chlorophenol phenyl ether	1,900	U
86-73-7	Fluorene	1,900	U
100-01-6	4-Nitroaniline	9,600	U
534-52-1	4,6-Dinitro-2-methylphenol	9,600	U
86-30-6	N-Nitrosodiphenylamine	1,900	U
101-55-3	4-Bromophenyl phenyl ether	1,900	U
118-74-1	Hexachlorobenzene	1,900	U
87-86-5	Pentachlorophenol	9,600	U
85-01-8	Phenanthrene	1,900	15,000
120-12-7	Anthracene	1,900	3,400
84-74-2	Carbazole	1,900	U
84-74-2	Di-n-butylphthalate	1,900	U
206-44-0	Fluoranthene	1,900	18,000
92-87-4	Benzidine	1,900	U
129-00-0	Pyrene	1,900	12,000
85-68-7	Butylbenzylphthalate	1,900	U
91-94-1	3,3'-Dichlorobenzidine	1,900	U
56-55-3	Benzo(a)anthracene	1,900	6,000
218-01-9	Chrysene	1,900	6,000
117-81-7	bis(2-Ethylhexyl)phthalate	1,900	U
117-84-0	Di-n-octylphthalate	1,900	U
205-99-2	Benzo(b)fluoranthene	1,900	6,500
207-08-9	Benzo(k)fluoranthene	1,900	4,000
50-32-8	Benzo(a)pyrene	1,900	5,200
193-39-5	Indeno(1,2,3-cd)pyrene	1,900	2,300
53-70-3	Dibenzo(a,h)anthracene	1,900	U
191-24-2	Benzo(g,h,i)perylene	1,900	2,900

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 16:00
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/22/95
ANALYST : D.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 13
LAB ID: 9507/130-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10111 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 13
LAB ID: 9507/130-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	640
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	1,200
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	1,050
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	660
218-01-9	Chrysene	420	870
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	1,300
207-08-9	Benzo(k)fluoranthene	420	870
50-32-8	Benzo(a)pyrene	420	750
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	540

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 16:15
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 18
LAB ID: 9507/130-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 18
LAB ID: 9507/130-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/10/95 16:30
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10111 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 26
LAB ID: 9507/130-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	450 µg/kg	U µg/kg
108-95-2	Phenol	450	U
111-44-4	bis(2-chloroethyl)Ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
100-51-6	Benzyl Alcohol	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	o-Cresol	450	U
39638-32-9	bis-(2-Chloro2propyl)Ether	450	U
106-44-5	m & p-Cresol	450	U
621-64-7	N-Nitroso-Di-n-propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	450	U
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	450	U
59-50-7	4-Chloro-3-methylphenol	450	U
91-57-6	2-Methylnaphthalene	450	U
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	450	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	450	U
103-33-3	Azobenzene	450	U
208-96-8	Acenaphthylene	450	U
606-20-2	2,6-Dinitrotoluene	450	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	450	U
51-28-5	2,4-Dinitrophenol	2,200	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1: 26
LAB ID: 9507/130-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenol phenyl ether	450	U
86-73-7	Fluorene	450	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	450	U
101-55-3	4-Bromophenyl phenyl ether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	450	U
120-12-7	Anthracene	450	U
84-74-2	Carbazole	450	U
84-74-2	Di-n-butylphthalate	450	U
206-44-0	Fluoranthene	450	U
92-87-4	Benzidine	450	U
129-00-0	Pyrene	450	U
85-68-7	Butylbenzylphthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	450	U
56-55-3	Benzo(a)anthracene	450	U
218-01-9	Chrysene	450	U
117-81-7	bis(2-Ethylhexyl)phthalate	450	U
117-84-0	Di-n-octylphthalate	450	U
205-99-2	Benzo(b)fluoranthene	450	U
207-08-9	Benzo(k)fluoranthene	450	U
50-32-8	Benzo(a)pyrene	450	U
193-39-5	Indeno(1,2,3-cd)pyrene	450	U
53-70-3	Dibenzo(a,h)anthracene	450	U
191-24-2	Benzo(g,h,i)perylene	450	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 09:10
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-4
LAB ID: 9507/130-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	2,100 µg/kg	U µg/kg
108-95-2	Phenol	2,100	U
111-44-4	bis(2-chloroethyl)Ether	2,100	U
95-57-8	2-Chlorophenol	2,100	U
541-73-1	1,3-Dichlorobenzene	2,100	U
106-46-7	1,4-Dichlorobenzene	2,100	U
100-51-6	Benzyl Alcohol	2,100	U
95-50-1	1,2-Dichlorobenzene	2,100	U
95-48-7	o-Cresol	2,100	U
39638-32-9	bis-(2-Chloro2propyl)Ether	2,100	U
106-44-5	m & p-Cresol	2,100	U
621-64-7	N-Nitroso-Di-n-propylamine	2,100	U
67-72-1	Hexachloroethane	2,100	U
98-95-3	Nitrobenzene	2,100	U
78-59-1	Isophorone	2,100	U
88-75-5	2-Nitrophenol	2,100	U
105-67-9	2,4-Dimethylphenol	2,100	U
65-85-0	Benzoic Acid	10,300	U
111-91-1	bis(2-Chloroethoxy)methane	2,100	U
120-83-2	2,4-Dichlorophenol	2,100	U
120-82-1	1,2,4-Trichlorobenzene	2,100	U
91-20-3	Naphthalene	2,100	U
106-47-8	4-Chloroaniline	2,100	U
87-68-3	Hexachlorobutadiene	2,100	U
59-50-7	4-Chloro-3-methylphenol	2,100	U
91-57-6	2-Methylnaphthalene	2,100	U
77-47-4	Hexachlorocyclopentadiene	2,100	U
88-06-2	2,4,6-Trichlorophenol	2,100	U
95-95-4	2,4,5-Trichlorophenol	2,100	U
91-58-7	2-Chloronaphthalene	2,100	U
88-74-4	2-Nitroaniline	10,300	U
131-11-3	Dimethylphthalate	2,100	U
103-33-3	Azobenzene	2,100	U
208-96-8	Acenaphthylene	2,100	U
606-20-2	2,6-Dinitrotoluene	2,100	U
99-09-2	3-Nitroaniline	10,300	U
83-32-9	Acenaphthene	2,100	U
51-28-5	2,4-Dinitrophenol	10,300	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-4
LAB ID: 9507/130-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	10,300 µg/kg	U µg/kg
132-64-9	Dibenzofuran	2,100	U
121-14-2	2,4-Dinitrotoluene	2,100	U
84-66-2	Diethylphthalate	2,100	U
7005-72-3	4-Chlorophenol phenyl ether	2,100	U
86-73-7	Fluorene	2,100	U
100-01-6	4-Nitroaniline	10,300	U
534-52-1	4,6-Dinitro-2-methylphenol	10,300	U
86-30-6	N-Nitrosodiphenylamine	2,100	U
101-55-3	4-Bromophenyl phenyl ether	2,100	U
118-74-1	Hexachlorobenzene	2,100	U
87-86-5	Pentachlorophenol	10,300	U
85-01-8	Phenanthrene	2,100	9,000
120-12-7	Anthracene	2,100	2,400
84-74-2	Carbazole	2,100	U
84-74-2	Di-n-butylphthalate	2,100	U
206-44-0	Fluoranthene	2,100	15,000
92-87-4	Benzidine	2,100	U
129-00-0	Pyrene	2,100	12,000
85-68-7	Butylbenzylphthalate	2,100	U
91-94-1	3,3'-Dichlorobenzidine	2,100	U
56-55-3	Benzo(a)anthracene	2,100	6,200
218-01-9	Chrysene	2,100	6,000
117-81-7	bis(2-Ethylhexyl)phthalate	2,100	U
117-84-0	Di-n-octylphthalate	2,100	U
205-99-2	Benzo(b)fluoranthene	2,100	7,500
207-08-9	Benzo(k)fluoranthene	2,100	4,300
50-32-8	Benzo(a)pyrene	2,100	6,100
193-39-5	Indeno(1,2,3-cd)pyrene	2,100	2,700
53-70-3	Dibenzo(a,h)anthracene	2,100	U
191-24-2	Benzo(g,h,i)perylene	2,100	3,300

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 15:00
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/22/95
ANALYST : D.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-10
LAB ID: 9507/130-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-10
LAB ID: 9507/130-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	1,600
120-12-7	Anthracene	420	420
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	2,400
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	1,800
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	860
218-01-9	Chrysene	420	870
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	940
207-08-9	Benzo(k)fluoranthene	420	860
50-32-8	Benzo(a)pyrene	420	730
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	460

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 15:15
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10111 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-15
LAB ID: 9507/130-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-15
LAB ID: 9507/130-009

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 15:30
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10111 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-20
LAB ID: 9507/130-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	440 µg/kg	U µg/kg
108-95-2	Phenol	440	U
111-44-4	bis(2-chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl Alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	o-Cresol	440	U
39638-32-9	bis-(2-Chloro2propyl)Ether	440	U
106-44-5	m & p-Cresol	440	U
621-64-7	N-Nitroso-Di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic Acid	2,200	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	440	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2,200	U
131-11-3	Dimethylphthalate	440	U
103-33-3	Azobenzene	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U
99-09-2	3-Nitroaniline	2,200	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2,200	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-20
LAB ID: 9507/130-010

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,200 µg/kg	U µg/kg
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenol phenyl ether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	2,200	U
534-52-1	4,6-Dinitro-2-methylphenol	2,200	U
86-30-6	N-Nitrosodiphenylamine	440	U
101-55-3	4-Bromophenyl phenyl ether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2,200	U
85-01-8	Phenanthrene	440	U
120-12-7	Anthracene	440	U
84-74-2	Carbazole	440	U
84-74-2	Di-n-butylphthalate	440	U
206-44-0	Fluoranthene	440	U
92-87-4	Benzidine	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)phthalate	440	U
117-84-0	Di-n-octylphthalate	440	U
205-99-2	Benzo(b)fluoranthene	440	U
207-08-9	Benzo(k)fluoranthene	440	U
50-32-8	Benzo(a)pyrene	440	U
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 15:45
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10111 METHOD SW-846 8270
PROJECT # 2498.03.4120.05 PAGE ONE
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-30
LAB ID: 9507/130-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	390 µg/kg	U µg/kg
108-95-2	Phenol	390	U
111-44-4	bis(2-chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	o-Cresol	390	U
39638-32-9	bis-(2-Chloro2propyl)Ether	390	U
106-44-5	m & p-Cresol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	390	U
103-33-3	Azobenzene	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1,900	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-30
LAB ID: 9507/130-011

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenol phenyl ether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl phenyl ether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
92-87-4	Benzidine	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 16:30
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB22-15-D2
LAB ID: 9507/130-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: SB22-15-D2
LAB ID: 9507/130-012

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 15:30
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-15-EB
LAB ID: 9507/130-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	52	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	52	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	52	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33002 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10111 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05 **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2-15-EB
LAB ID: 9507/130-013

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	52 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	52	U
534-52-1	4,6-Dinitro-2-methylphenol	52	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	52	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/11/95 16:00
DATE RECEIVED : 7/12/95 9:30
DATE EXTRACTED : 7/13/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

1B

SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

WATER SPIKE

Name: Environmetrics Contract: GEOTECH.

Code: Case No.: SAS No.: SDG No.:

trix: (soil/water) WATER Lab Sample ID: WASLCS6541

mple wt/vol: 1000 (g/ml) ml Lab File ID: >A7622

vel: (low/med) LOW Date Received: 07/12/95

Moisture: decanted: (Y/N) N Date Extracted: 07/13/95

ncentrated Extract Volume: 1000 (uL) Date Analyzed: 07/17/95

jection Volume: 1.0 (uL) Dilution Factor: 1.00

C Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	160	200	79
2-Chlorophenol	130	200	67
1,4-Dichlorobenzene	66	100	66
N-Nitroso-Di-nPropylamine	137	150	67
1,2,4-Trichlorobenzene	79	100	79
4-Chloro-3-Methylphenol	180	200	89
Acenaphthene	81	100	81
4-Nitrophenol	220	200	109
2,4-Dinitrotoluene	87	100	87
Pentachlorophenol	150	200	77
Pyrene	86	100	86

SOIL SEMIVOLATILE [redacted]D
[redacted]RIX SPIKE/MATRIX SPIKE D[redacted]ICATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 9507130-9 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	8400	0	7100	85	26- 90
2-Chlorophenol	8400	0	6100	73	25-102
1,4-Dichlorobenzene	4200	0	2300	55	28-104
N-Nitroso-Di-nPropylami	4200	0	4900	117	41-126
1,2,4-Trichlorobenzene	4200	0	3300	79	38-107
4-Chloro-3-Methylphenol	8400	0	8400	101	26-103
Acenaphthene	4200	0	3600	87	31-137
4-Nitrophenol	8400	0	10000	119 *	11-114
2,4-Dinitrotoluene	4200	0	3600	86	28- 89
Pentachlorophenol	8400	0	7200	87	17-109
Pyrene	4200	0	4100	98	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	8400	7500	90 *	6	35	26- 90
2-Chlorophenol	8400	6300	75	3	50	25-102
1,4-Dichlorobenzene	4200	2300	55	0	27	28-104
N-Nitroso-Di-nPropylami	4200	4700	113	4	38	41-126
1,2,4-Trichlorobenzene	4200	3100	75	5	23	38-107
4-Chloro-3-Methylphenol	8400	8200	98	3	33	26-103
Acenaphthene	4200	3500	84	4	19	31-137
4-Nitrophenol	8400	10400	124 *	4	50	11-114
2,4-Dinitrotoluene	4200	3500	84	2	47	28- 89
Pentachlorophenol	8400	7300	88	1	47	17-109
Pyrene	4200	3900	94	3	36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 3 out of 22 outside limits

COMMENTS: _____

_____

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	SASBLK6541	82	36	73	102	85	79	72	58	0
02	SASLCS6541	98	67	78	105	70	81	81	41	0
03	9507130-1	72	32	60	84	79	66	61	71	0
04	9507130-2	76	51	61	87	77	70	60	51	0
05	9507130-3	91	58	72	90	87	81	72	83	0
06	9507130-4	80	29	52	107	80	69	61	74	0
07	9507130-5	72	30	58	82	77	66	56	104	0
08	9507130-7	79	30	69	94	84	74	76	68	0
09	9507130-8	77	25	61	84	83	70	65	70	0
10	9507130-9	72	12 (*)	60	87	72	60	58	80	1
11	9507130-9MS	86	38	66	91	83	74	71	106	0
12	9507130-9MSD	87	42	66	92	84	74	71	106	0
13	9507130-10	87	24	70	95	83	74	70	97	0
14	9507130-11	93	36	70	95	89	80	74	100	0
15	9507130-12	81	17 (*)	64	94	80	64	61	95	1
16										
17										
18										
19			(*) Advisory							
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S4 (TPH)	= Terphenyl-d14	(18-137)	
S5 (PHL)	= Phenol-d5	(24-113)	
S6 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(25-121)	
S8 (TBP)	= 2,4,6-Tribromophenol	(19-122)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Job Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	WASBLK6541	73	36	76	101	84	80	68	97	0
02	WASLCS6541	90	46	57	84	73	73	70	61	0
03	9507130-13	93	56	64	83	71	73	58	89	0
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S4 (TPH)	= Terphenyl-d14	(33-141)	
S5 (PHL)	= Phenol-d5	(10- 94)	
S6 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(21-100)	
S8 (TBP)	= 2,4,6-Tribromophenol	(10-123)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

SEMIVOLATILE ORG[illegible]B[illegible]S LAB CONTROL SAMPLE

EPA SAMPLE NO.

SPIKE BLANK

[illegible] Name: Environmetrics Contract: GEOTECH.

[illegible]Code: 8270 Case No.: SAS No.: SDG No.:

[illegible]trix: (soil/water) SOIL Lab Sample ID: SASLCS6541

[illegible]mple wt/vol: 30 (g/ml) g Lab File ID: >A7624

[illegible]evel: (low/med) LOW Date Received: 07/12/95

Moisture: NA decanted: (Y/N) N Date Extracted: 07/13/95

[illegible]ncentrated Extract Volume: 1000 (uL) Date Analyzed: 07/17/95

[illegible]jection Volume: 1.0 (uL) Dilution Factor: 33.3

C Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	5900	6700	89
2-Chlorophenol	4800	6700	72
1,4-Dichlorobenzene	2700	3300	80
N-Nitroso-Di-nPropylamine	4700	5300	88
1,2,4-Trichlorobenzene	3200	3300	97
4-Chloro-3-Methylphenol	6700	6700	100
Acenapnthene	3000	3300	91
4-Nitrophenol	7400	6700	111
2,4-Dinitrotoluene	3200	3300	96
Pentachlorophenol	5900	6700	88
Pyrene	3200	3300	96

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

RECEIVED
AUG - 4 1995
GEOTECHNOLOGY

August 02, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration
Samples MW-3:3, MW-3:7, MW-3:15, MW-3:20, MW-3:30, MW-3:39, Soil Drum Composite, MW-2:40, MW-2:50.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 7/13/95

Chain of Custody Number: 2201-202

Environmetrics Laboratory Number: 9507/170

Invoice # 33035

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
MW-2:40 9:30	9507-170-001	7/12/95	Total(8)Metals, Semi-Volatiles
MW-2:50 10:00	9507-170-002	7/12/95	Total(8)Metals, Semi-Volatiles
MW-3:3 9:15	9507-170-003	7/13/95	Total(8)Metals, Semi-Volatiles
MW-3:7 9:30	9507-100-004	7/13/95	Total(8)Metals, Semi- Volatiles,Volatiles
MW-3:7 9:30	9507-100-004	7/13/95	Total(8)Metals Matrix Spike, Matrix Spike Duplicate Semi-Volatiles Matrix Spike, Matrix Spike Duplicate Volatiles Matrix Spike, Matrix Spike Duplicate

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

MW-3:15 9:50	9507-170-005	7/13/95	Total(8)Metals, Semi-Volatiles
MW-3:20 13:10	9507-170-006	7/13/95	Total(8)Metals, Semi-Volatiles
MW-3:30 13:50	9507-100-007	7/13/95	Total(8)Metals, Semi-Volatiles
MW-3:39 15:00	9507-170-008	7/13/95	Total(8)Metals, Semi-Volatiles
Soil Drum: Comp 11:45	9507-170-009	7/13/95	TCLP (8) Metals ,TCLP Volatiles, TCLP Semi-Volatiles, TCLP Pesticides, TCLP Herbicides, PCB, Reactive Cyanide, Reactive Sulfide, Phenol, pH, Flashpoint, Paintfilter

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the original analysis without dilutions or reanalyses, with the exception of:

Sample ID# MW-3:7 was diluted because of positive hits of Fluoranthene and Pyrene that were out of the calibration range.

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications. Please note that the Total Pb results are reported on a dry weight basis.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Project Manager

Attachments

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-54
PREP. DATE: 7/18/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
LEAD	<0.100
MERCURY	<0.0002
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-54
PREP. DATE: 7/18/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.87	94
BARIUM	2.00	1.89	94
CADMIUM	0.50	0.512	102
CHROMIUM	0.50	0.485	97
LEAD	0.50	0.447	89
MERCURY	0.002	0.00194	97
SELENIUM	2.00	1.88	94
SILVER	0.50	0.484	97

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-64
PREP. DATE: 7/21/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
LEAD	<0.100
MERCURY	<0.0002
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-64
PREP. DATE: 7/21/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.92	96
BARIUM	2.00	1.91	96
CADMIUM	0.50	0.475	95
CHROMIUM	0.50	0.488	98
LEAD	0.50	0.480	96
MERCURY	0.002	0.00194	97
SELENIUM	2.00	1.89	94
SILVER	0.50	0.480	96

Geotechnology, Inc.
1258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33035
PO: 10120
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2:40
LAB ID: 9507000170-001
DATE COLLECTED: 07/12/95 09:30
DATE RECEIVED: 07/13/95 17:38

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.0 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	24.5 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	3.36 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	27.3 mg/Kg	
TOTAL LEAD	SW-846 6010A	<0.552 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.210 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.0 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.552 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

AIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10120
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2:50
LAB ID: 9507000170-002
DATE COLLECTED: 07/12/95 10:00
DATE RECEIVED: 07/13/95 17:39

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.2 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	18.7 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	3.47 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	29.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	15.7 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.11 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.2 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.562 mg/Kg	

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3:3
LAB ID: 9507000170-003
DATE COLLECTED: 07/13/95 09:15
DATE RECEIVED: 07/13/95 17:39

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<11.9 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	159 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.85 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	27.8 mg/Kg	
TOTAL LEAD	SW-846 6010A	94.2 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.140 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<11.9 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.596 mg/Kg	

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

E IR N ETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: MW-3:7
LAB ID: 9507/170-004

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	<12.4	498	427	86	415	83	3
BARIUM	385	498	765	76	812	86	10
CADMIUM	5.22	12	16.2	92	15.5	86	6
CHROMIUM	26.9	50	65.9	78	67.2	81	3
LEAD	535	124	690	125	665	105	20
MERCURY	0.55	1.24	2.10	125	0.96	33	92
SELENIUM	<12.4	498	427	86	423	85	1
SILVER	0.746	12	11.6	90	11.0	85	5

Geotechnology, Inc.
:258 Grissom Drive
It. Louis, Mo. 63146

IN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

NVOICE: 33035
PO: 10120
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

AMPLE ID: MW-3:7 MS / MSD
AB ID: 9507000170-004
ATE COLLECTED: 07/13/95 09:30
DATE RECEIVED: 07/13/95 17:40

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.4 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	385 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	5.22 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	26.9 mg/Kg	
TOTAL LEAD	SW-846 6010A	535 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.550 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.4 mg/Kg	
TOTAL SILVER	SW-846 6010A	0.7460 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3:15
LAB ID: 9507000170-005
DATE COLLECTED: 07/13/95 09:50
DATE RECEIVED: 07/13/95 17:42

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.8 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	106 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.40 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	21.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	10.0 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.8 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.641 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3:20
LAB ID: 9507000170-006
DATE COLLECTED: 07/13/95 13:10
DATE RECEIVED: 07/13/95 17:42

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.2 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	207 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	3.11 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	48.5 mg/Kg	
TOTAL LEAD	SW-846 6010A	17.3 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.12 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.2 mg/Kg	
TOTAL SILVER	SW-846 6010A	<6.10 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

IN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3:30
LAB ID: 9507000170-007
DATE COLLECTED: 07/13/95 13:50
DATE RECEIVED: 07/13/95 17:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.7 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	126 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.79 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	16.1 mg/Kg	
TOTAL LEAD	SW-846 6010A	13.4 mg/Kg	
TOTAL MERCURY	SW-846 7471A	0.120 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.7 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.637 mg/Kg	

Geotechnology, Inc.
?258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3:39
LAB ID: 9507000170-008
DATE COLLECTED: 07/13/95 15:00
DATE RECEIVED: 07/13/95 17:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<12.4 mg/Kg	7/19/95 R.D.
TOTAL BARIUM	SW-846 6010A	50.8 mg/Kg	
TOTAL CADMIUM	SW-846 6010A	1.36 mg/Kg	
TOTAL CHROMIUM	SW-846 6010A	26.0 mg/Kg	
TOTAL LEAD	SW-846 6010A	13.1 mg/Kg	
TOTAL MERCURY	SW-846 7471A	<0.10 mg/Kg	
TOTAL SELENIUM	SW-846 6010A	<12.4 mg/Kg	
TOTAL SILVER	SW-846 6010A	<0.618 mg/Kg	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

TN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33035
PO: 10125
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: SOIL DRUM:COMP AND 1 VOA CONTAINER
LAB ID: 9507000170-009
DATE COLLECTED: 07/13/95 11:45
DATE RECEIVED: 07/13/95 17:46

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TCLP ARSENIC	SW-846 1311/6010A	<0.200 mg/L	7/24/95 R.D.
TCLP BARIUM	SW-846 1311/6010A	0.969 mg/L	
TCLP CADMIUM	SW-846 1311/6010A	0.0100 mg/L	
TCLP CHROMIUM	SW-846 1311/6010A	<0.010 mg/L	
TCLP LEAD	SW-846 1311/6010A	<0.100 mg/L	
TCLP MERCURY	SW-846 1311/7470	0.002700 mg/L	
TCLP SELENIUM	SW-846 1311/6010A	<0.200 mg/L	
TCLP SILVER	SW-846 1311/6010A	<0.040 mg/L	
REACTIVE CYANIDE	SW-846 9010	<0.5 mg/Kg	7/24/95 S.H.
	SW-846 9045	8	7/19/95 T.H.
PHENOLS	SW-846 9065	<1.0 mg/Kg	7/20/95 S.H.
REACTIVE SULFIDE	SW-846 9030	16.4 mg/Kg	7/24/95 S.H.
IGNITABILITY (CLOSED CUP)	SW-846 1020	>200 °F	7/18/95 R.P.
PAINT FILTER	SW-846 9095	NO FREE LIQUID (PASSED)	7/19/95 T.H.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

METALS

SAMPLE ID: SOIL DRUM: COMP
LAB ID: 9507/170-009
DATE COLLECTED: 7/13/95 11:45
DATE RECEIVED: 7/13/95 17:46

ELEMENT	SAMPLE RESULT MG/L	SPIKE LEVEL MG/L	SPIKE RESULT MG/L	PERCENT RECOVERY
ARSENIC	<0.200	5.0	4.81	96
BARIUM	0.969	5.0	5.43	89
CADMIUM	0.010	1.0	0.881	87
CHROMIUM	<0.010	5.0	4.54	91
LEAD	<0.100	5.0	4.74	95
MERCURY	0.0027	0.002	0.0045	90
SELENIUM	<0.200	1.0	1.04	104
SILVER	<0.040	1.0	0.954	95

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

DUPLICATE

LAB ID	SAMPLE ID	ELEMENT	RESULTS		ANALYST
9507/170 009	SOIL DRUM COMP.	pH	7.92		7/19/95 T.H.
		IGNITABILTIY	>200	°F	7/19/95 T.H.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SAMPLE ID: LABORATORY CONTROL SAMPLE
LAB ID: LCS

ELEMENT	SPIKE ADDED		SAMPLE RECOVERY		PERCENT RECOVERY	ANALYST
REACTIVE SULFIDE	200	mg/l	194	mg/l	97	7/24/95 SH
REACTIVE CYANIDE	0.20	mg/l	0.19	mg/l	95	7/24/95 AC
PHENOL	0.50	mg/l	0.52	mg/l	103	7/20/95 SH

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS REPORT

PCBs IN SOIL

SW-846 8080

LAB NO.	SAMPLE NO.	IDENTIFICATION	TOTAL ppm	TYPE
9507/170-009		MATRIX SPIKE	0.76	1248
			152 %	RECOVERY
9507/170-009		MATRIX SPIKE DUPLICATE	0.75	1248
			150 %	RECOVERY
9507/170-009		SOIL DRUM: SOIL	<3	--

DATE COLLECTED : 7/13/95 11:45
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/17/95
ANALYST : C.D.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: TCLP BLANK
LAB ID: TDBLK1519A

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
75-01-4	Vinyl Chloride	200	100 µg/l	U µg/l
75-35-4	1,1-Dichloroethene	700	50	U
67-66-3	Chloroform	6,000	200	U
107-06-2	1,2-Dichloroethane	500	50	U
78-93-3	2-Butanone	200,000	150	U
56-23-5	Carbon Tetrachloride	500	50	U
79-01-6	Trichloroethene	500	50	U
71-43-2	Benzene	500	50	U
127-18-4	Tetrachloroethene	700	50	U
108-90-7	Chlorobenzene	100,000	50	U
106-46-7	1,4-Dichlorobenzene	7,500	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/21/95 L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE TCLP SPIKE RECOVERY FORM

SAMPLE ID: LCS
LAB ID: TDLCS1519A

COMPOUND	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Vinyl Chloride	500	330	66
1,1-Dichloroethene	500	510	102
Chloroform	500	520	104
1,2-Dichloroethane	500	580	116
2-Butanone	500	550	110
Carbon Tetrachloride	500	520	104
Trichloroethene	500	510	102
Benzene	500	500	100
Tetrachloroethene	1,000	1,000	100
Chlorobenzene	500	510	102
1,4-Dichlorobenzene	500	480	96

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
75-01-4	Vinyl Chloride	200	100 µg/l	U µg/l
75-35-4	1,1-Dichloroethene	700	50	U
67-66-3	Chloroform	6,000	200	U
107-06-2	1,2-Dichloroethane	500	50	U
78-93-3	2-Butanone	200,000	150	U
56-23-5	Carbon Tetrachloride	500	50	U
79-01-6	Trichloroethene	500	50	U
71-43-2	Benzene	500	50	U
127-18-4	Tetrachloroethene	700	50	U
108-90-7	Chlorobenzene	100,000	50	U
106-46-7	1,4-Dichlorobenzene	7,500	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/13/95 11:45
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/21/95 L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE TCLP SPIKE RECOVERY FORM

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Vinyl Chloride	U	500	260	52
1,1-Dichloroethene	U	500	460	92
Chloroform	U	500	500	100
1,2-Dichloroethane	U	500	560	112
2-Butanone	U	500	640	128
Carbon Tetrachloride	U	500	470	94
Trichloroethene	U	500	480	96
Benzene	U	500	480	96
Tetrachloroethene	U	1,000	960	96
Chlorobenzene	U	500	480	96
1,4-Dichlorobenzene	U	500	480	96

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
TDBLK1519A	TCLP BLANK	103	106	106
9507/170-009	SOIL DRUM COMP.	104	106	105

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270

SAMPLE ID: TCLP BLANK
LAB ID: TASBLK6569

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
110-86-1	Pyridine	5,000	500 µg/l	U µg/l
95-48-7	o-Cresol	200,000	100	U
106-44-5	m & p-Cresol	200,000	100	U
67-72-1	Hexachloroethane	3,000	100	U
98-95-3	Nitrobenzene	2,000	100	U
87-68-3	Hexachlorobutadiene	500	100	U
88-06-2	2,4,6-Trichlorophenol	2,000	100	U
95-95-4	2,4,5-Trichlorophenol	400,000	100	U
121-14-2	2,4-Dinitrotoluene	3,000	100	U
118-74-1	Hexachlorobenzene	130	100	U
87-86-5	Pentachlorophenol	100,000	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/22/95 D.C.

B

SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

TCLP SPIKE

Name: Environmetrics Contract: GEOTECH.

Code: M-8270 Case No.: SAS No.: SDG No.: FLUID #1

Matrix: (soil/water) TCLP Lab Sample ID: TASLCS6569

mple wt/vol: VOL (g/ml) 100 Lab File ID: >A7732

vel: (low/med) LOW Date Received: 07/13/95

Moisture: decanted: (Y/N) N Date Extracted: 07/21/95

ncentrated Extract Volume: 1000 (uL) Date Analyzed: 07/22/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

C Cleanup: (Y/N) N pH: 2 & 11

COMPOUND	Conc	Spike	Recovery
PYRIDINE	580	1000	58
2-Methylphenol	2300	2000	116
4-Methylphenol	1700	2000	87
Hexachloroethane	580	1000	58
Nitrobenzene	1800	1000	80
Hexachlorobutadiene	240	500	49
2,4,6-Trichlorophenol	1800	2000	90
2,4,5-Trichlorophenol	2200	2000	110
2,4-Dinitrotoluene	320	500	64
Hexachlorobenzene	380	500	76
Pentachlorophenol	1700	2000	86

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	TASBLK6569	70	49	53	79	59	51	52	73	0
02	TASLCS6569	87	45	53	87	67	67	58	81	0
03	9507170-9	71	38	47	101	54	53	40	76	0
04	9507170-9MS	81	55	59	124	58	52	49	101	0
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S4 (TPH)	= Terphenyl-d14	(33-141)	
S5 (PHL)	= Phenol-d5	(10- 94)	
S6 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(21-100)	
S8 (TBP)	= 2,4,6-Tribromophenol	(10-123)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SEMIVOLATILE ORGANIC COMPOUNDS
METHOD SW-846 8270

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

CAS NUMBER		REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
110-86-1	Pyridine	5,000	500 µg/l	U µg/l
95-48-7	o-Cresol	200,000	100	U
106-44-5	m & p-Cresol	200,000	100	U
67-72-1	Hexachloroethane	3,000	100	U
98-95-3	Nitrobenzene	2,000	100	U
87-68-3	Hexachlorobutadiene	500	100	U
88-06-2	2,4,6-Trichlorophenol	2,000	100	U
95-95-4	2,4,5-Trichlorophenol	400,000	100	U
121-14-2	2,4-Dinitrotoluene	3,000	100	U
118-74-1	Hexachlorobenzene	130	100	U
87-86-5	Pentachlorophenol	100,000	100	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/13/95 11:45
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/22/95 D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SEMIVOLATILE TCLP SPIKE RECOVERY FORM

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Pyridine	U	1,000	610	61
o-Cresol	U	2,000	2,200	112
m & p-Cresol	U	2,000	1,800	89
Hexachloroethane	U	1,000	620	62
Nitrobenzene	U	1,000	730	73
Hexachlorobutadiene	U	500	290	58
2,4,6-Trichlorophenol	U	2,000	2,000	102
2,4,5-Trichlorophenol	U	2,000	2,400	122
2,4-Dinitrotoluene	U	500	390	79
Hexachlorobenzene	U	500	500	101
Pentachlorophenol	U	2,000	2,300	113

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP PESTICIDES ANALYSIS
METHOD SW-846 8080

SAMPLE ID: TCLP BLANK
LAB ID: OP6575

CAS NUMBER	PARAMETER	REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
58-89-9	τ-BHC (Lindane)	400	0.40 µg/l	U µg/l
76-44-8	Heptachlor	8	0.30	U
1024-57-3	Heptachlor epoxide	8	0.20	U
72-20-8	Endrin	20	0.60	U
72-43-5	Methoxychlor	10,000	2.00	U
12789-03-6	Chlordane	30	10.00	U
8001-35-2	Toxaphene	500	50.00	U

TCLP HERBICIDES ANALYSIS
METHOD SW-846 8150

SAMPLE ID: TCLP BLANK
LAB ID: OP6576

CAS NUMBER	PARAMETER	REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULT
94-75-7	2,4-D	10,000	24.0 µg/l	U µg/l
93-72-1	2,4,5-TP	1,000	3.40	U

U = UNDETECTED

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/24 & 25/95
J.K.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

LABORATORY CONTROL SAMPLE

PESTICIDES/HERBICIDES

SAMPLE ID: LCS
LAB ID: OP6575

COMPOUND	SPIKE CONC. (µg/l)	CONC.	PERCENT RECOVERY
Lindane	4	2.13	53
Heptachlor	4	2.26	57
Heptachlor epoxide	4	2.70	68
Endrin	4	2.78	70
Methoxychlor	40	35.9	90

COMPOUND	SPIKE LEVEL (µg/l)	CONC.	PERCENT RECOVERY
2,4-D	50	42.21	84
2,4,5-TP	5	3.92	78

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP PESTICIDES ANALYSIS
METHOD SW-846 8080

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

CAS NUMBER	PARAMETER	REGULATORY LEVEL µg/L	PRACTICAL QUANTITATION LIMIT	RESULTS
58-89-9	γ-BHC (Lindane)	400	0.40 µg/l	U µg/l
76-44-8	Heptachlor	8	0.30	U
1024-57-3	Heptachlor epoxide	8	0.20	U
72-20-8	Endrin	20	0.60	U
72-43-5	Methoxychlor	10,000	2.00	U
12789-03-6	Chlordane	30	10.00	U
8001-35-2	Toxaphene	500	50.00	U

TCLP HERBICIDES ANALYSIS
METHOD SW-846 8150

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

LEVEL NUMBER	QUANTITATION PARAMETER	REGULATORY µg/L	PRACTICAL CAS LIMIT	RESULT
94-75-7	2,4-D	10,000	24.0 µg/l	U µg/l
93-72-1	2,4,5-TP	1,000	3.40	U

U = UNDETECTED

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/24 & 25/95
J.K.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

OTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

TCLP SPIKE RECOVERY FORM

PESTICIDES/HERBICIDES

SAMPLE ID: SOIL DRUM: COMP.
LAB ID: 9507/170-009

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
Lindane	U	4	1.97	49
Heptachlor	U	4	2.29	55
Heptachlor epoxide	U	4	2.72	68
Endrin	U	4	2.80	70
Methoxychlor	U	40	32.4	81

COMPOUND	SAMPLE RESULT (µg/l)	SPIKE LEVEL (µg/l)	SPIKE RESULT (µg/l)	PERCENT RECOVERY
2,4-D	U	50	43.75	88
2,4,5-TP	U	5	4.20	79

CALCULATIONS:

$$\text{PERCENT RECOVERY} = \frac{(\text{SPIKE RESULT} - \text{SAMPLE RESULT})}{\text{SPIKE LEVEL}} \times 100$$

U = UNDETECTED

ENVIRONMETRIC
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: VDBLK202A

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/21/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:7
LAB ID: 9507/170-004

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/kg	U µg/kg
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/13/95 09:30
DATE RECEIVED : 7/13/95 17:46
DATE ANALYZED : 7/21/95
ANALYST : L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

SAMPLE ID: MW-3:7
LAB ID: 9507/170-004

COMPOUND	SPIKE ADDED (µg/kg)	SAMPLE CONC. (µg/kg)	MS CONC. (µg/kg)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	50	U	30	60		59-172
Trichloroethene	50	U	42	84		62-137
Benzene	50	U	57	114		60-133
Toluene	50	U	54	108		59-139
Chlorobenzene	50	U	53	106		66-142

COMPOUND	SPIKE ADDED (µg/kg)	MSD CONC. (µg/kg)	MSD % REC #	% RPD	#	QC RPD	LIMITS REC
1,1-Dichloroethene	50	32	64	4		22	59-172
Trichloroethene	50	43	86	2		24	62-137
Benzene	50	53	106	7		21	60-133
Toluene	50	53	106	2		21	59-139
Chlorobenzene	50	52	104	2		21	66-142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10120/10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC SURROGATE RECOVERY FORM

LAB_ID	SAMPLE_IDENTIFICATION	S1 1,2-DCA-d4	S2 TOL-d8	S3 BFB
VDBLK202A	METHOD BLANK	105	100	97
9507/170-004	MS-3:7	139	105	94

S1 - 1,2-DICHORORETHANE-d4

S2 - TOLUENE-d8

S3 - BROMOFLUOROBENZENE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035
PO # 10125
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANICS LAB CONTROL SPIKE

SAMPLE ID: LCS
LAB ID: VDLCS202A

COMPOUND	CONC	SPIKE	PERCENT RECOVERY
1,1-Dichloroethene	49	50	98
Trichloroethene	48	50	96
Benzene	49	50	98
Toluene	48	50	96
Chlorobenzene	47	50	94

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10120/10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6556

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	330 µg/kg	U µg/kg
108-95-2	Phenol	330	U
111-44-4	bis(2-chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	o-Cresol	330	U
39638-32-9	bis-(2-Chloro2propyl)Ether	330	U
106-44-5	m & p-Cresol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1,700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	330	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1,700	U
131-11-3	Dimethylphthalate	330	U
103-33-3	Azobenzene	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1,700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1,700	U

SEMIVOLATILE ORGA[redacted]S LAB CONTROL SAMPLE

EPA SAMPLE NO.

SPIKE BLANK

Name: Environmetrics Contract: GEOTECH.

[redacted]ode: 8270 Case No.: SAS No.: SDG No.:

atrix: (soil/water) SOIL Lab Sample ID: SASLCS6556

ple wt/vol: 30 (g/ml) g Lab File ID: >A7780

evel: (low/med) LOW Date Received: 07/13/95

loisture: NA decanted: (Y/N) N Date Extracted: 07/17/95

icentrated Extract Volume: 1000 (uL) Date Analyzed: 07/25/95

njection Volume: 1.0 (uL) Dilution Factor: 33.3

Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	4400	6700	61
2-Chlorophenol	5400	6700	80
1,4-Dichlorobenzene	2000	3300	61
N-Nitroso-Di-nPropylamine	4000	5300	74
1,2,4-Trichlorobenzene	2400	3300	72
4-Chloro-3-Methylphenol	6900	6700	104
Acenaphthene	3200	3300	95
4-Nitrophenol	6100	6700	91
2,4-Dinitrotoluene	3200	3300	96
Pentachlorophenol	7500	6700	113
Pyrene	3500	3300	105

SOIL SEMIVOLATILE SURROGATE RECOVERY

2D

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	SASBLK6556	88	58	76	109	95	84	74	107	0
02	SASLCS6556	84	57	70	117	57	64	54	99	0
03	9507170-1	97	58	83	109	94	86	76	106	0
04	9507170-2	89	66	78	98	90	87	74	78	0
05	9507170-3	90	55	80	105	92	86	74	91	0
06	9507170-4	91	64	81	118	92	87	74	51	0
07	9507170-4DL	97	64	82	109	102	90	81	53	0
08	9507170-4MS	98	78	82	122	94	91	80	73	0
09	9507170-4MSD	90	68	80	122	93	91	79	73	0
10	9507170-5	93	53	76	112	88	78	70	116	0
11	9507170-6	95	54	81	114	93	82	70	102	0
12	9507170-7	92	51	82	114	89	83	72	109	0
13	9507170-8	94	57	85	104	95	86	74	100	0
14										
15										
16										
17										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S4 (TPH)	= Terphenyl-d14	(18-137)	
S5 (PHL)	= Phenol-d5	(24-113)	
S6 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(25-121)	
S8 (TBP)	= 2,4,6-Tribromophenol	(19-122)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10120/10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: SASBLK6556

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,700 µg/kg	U µg/kg
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenol phenyl ether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1,700	U
534-52-1	4,6-Dinitro-2-methylphenol	1,700	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl phenyl ether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1,700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
92-87-4	Benzidine	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10120 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-2:40
LAB ID: 9507/170-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	370 µg/kg	U µg/kg
108-95-2	Phenol	370	U
111-44-4	bis(2-chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl Alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	o-Cresol	370	U
39638-32-9	bis-(2-Chloro2propyl)Ether	370	U
106-44-5	m & p-Cresol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic Acid	1,800	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	370	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1,800	U
131-11-3	Dimethylphthalate	370	U
103-33-3	Azobenzene	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	1,800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1,800	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10120 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2:40
LAB ID: 9507/170-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,800 µg/kg	U µg/kg
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenol phenyl ether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1,800	U
534-52-1	4,6-Dinitro-2-methylphenol	1,800	U
86-30-6	N-Nitrosodiphenylamine	370	U
101-55-3	4-Bromophenyl phenyl ether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1,800	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
92-87-4	Benzidine	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/12/95 09:30
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10120 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-2:50
LAB ID: 9507/170-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	380 µg/kg	U µg/kg
108-95-2	Phenol	380	U
111-44-4	bis(2-chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	o-Cresol	380	U
39638-32-9	bis-(2-Chloro2propyl)Ether	380	U
106-44-5	m & p-Cresol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1,900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1,900	U
131-11-3	Dimethylphthalate	380	U
103-33-3	Azobenzene	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	1,900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1,900	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10120 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2:50
LAB ID: 9507/170-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	1,900 µg/kg	U µg/kg
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenol phenyl ether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1,900	U
534-52-1	4,6-Dinitro-2-methylphenol	1,900	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl phenyl ether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1,900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
92-87-4	Benzidine	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/12/95 10:00
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/25/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-3:3
LAB ID: 9507/170-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	400 µg/kg	U µg/kg
108-95-2	Phenol	400	U
111-44-4	bis(2-chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	o-Cresol	400	U
39638-32-9	bis-(2-Chloro2propyl)Ether	400	U
106-44-5	m & p-Cresol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	400	U
103-33-3	Azobenzene	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:3
LAB ID: 9507/170-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenol phenyl ether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl phenyl ether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	400	900
120-12-7	Anthracene	400	U
84-74-2	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	1,400
92-87-4	Benzidine	400	U
129-00-0	Pyrene	400	980
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	540
218-01-9	Chrysene	400	690
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	820
207-08-9	Benzo(k)fluoranthene	400	820
50-32-8	Benzo(a)pyrene	400	520
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/13/95 09:15
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/25/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10125 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-3:7
LAB ID: 9507/170-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10125 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:7
LAB ID: 9507/170-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	4,400
120-12-7	Anthracene	410	1,300
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	830	9,100
92-87-4	Benzidine	410	U
129-00-0	Pyrene	830	7,100
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	3,700
218-01-9	Chrysene	410	3,300
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	4,500
207-08-9	Benzo(k)fluoranthene	410	880
50-32-8	Benzo(a)pyrene	410	3,400
193-39-5	Indeno(1,2,3-cd)pyrene	410	1,400
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	1,400

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/13/95 09:30
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/25 & 26/95
ANALYST : D.C.

SOIL SEMIVOLATILE [redacted]RIX SPIKE/MATRIX SPIKE D[redacted]CATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: DRY SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 9507170-4 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	#	QC LIMITS REC.
Phenol	8300	0	8600	104	*	26- 90
2-Chlorophenol	8300	0	7400	90		25-102
1,4-Dichlorobenzene	4100	0	3100	76		28-104
N-Nitroso-Di-nPropylami	4100	0	5000	120		41-126
1,2,4-Trichlorobenzene	4100	0	3700	89		38-107
4-Chloro-3-Methylphenol	8300	0	9500	115	*	26-103
Acenaphthene	4100	0	3900	94		31-137
4-Nitrophenol	8300	0	8600	103		11-114
2,4-Dinitrotoluene	4100	0	3600	86		28- 89
Pentachlorophenol	8300	0	1300	16	*	17-109
Pyrene	4100	7000	7300	8	*	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	8300	8700	105	*	1		35	26- 90
2-Chlorophenol	8300	7600	92		3		50	25-102
1,4-Dichlorobenzene	4100	3100	74		1		27	28-104
N-Nitroso-Di-nPropylami	4100	5100	123		2		38	41-126
1,2,4-Trichlorobenzene	4100	3600	88		2		23	38-107
4-Chloro-3-Methylphenol	8300	9500	115	*	0		33	26-103
Acenaphthene	4100	4000	98		4		19	31-137
4-Nitrophenol	8300	8300	101		2		50	11-114
2,4-Dinitrotoluene	4100	3500	84		2		47	28- 89
Pentachlorophenol	8300	970	12	*	28		47	17-109
Pyrene	4100	10400	82		164	*	36	35-142

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 7 out of 22 outside limits

COMMENTS: _____

_____

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-3:15
LAB ID: 9507/170-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	430 µg/kg	U µg/kg
108-95-2	Phenol	430	U
111-44-4	bis(2-chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	o-Cresol	430	U
39638-32-9	bis-(2-Chloro2propyl)Ether	430	U
106-44-5	m & p-Cresol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	430	U
103-33-3	Azobenzene	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2,100	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:15
LAB ID: 9507/170-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenol phenyl ether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	430	U
101-55-3	4-Bromophenyl phenyl ether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	430	U
120-12-7	Anthracene	430	U
84-74-2	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	U
92-87-4	Benzidine	430	U
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	U
218-01-9	Chrysene	430	U
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	U
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/13/95 09:50
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10125 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE ONE
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-3:20
LAB ID: 9507/170-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,000	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,000	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:20
LAB ID: 9507/170-006

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,000 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,000	U
534-52-1	4,6-Dinitro-2-methylphenol	2,000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/13/95 13:10
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-3:30
LAB ID: 9507/170-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	420 µg/kg	U µg/kg
108-95-2	Phenol	420	U
111-44-4	bis(2-chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	o-Cresol	420	U
39638-32-9	bis-(2-Chloro2propyl)Ether	420	U
106-44-5	m & p-Cresol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	420	U
103-33-3	Azobenzene	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:30
LAB ID: 9507/170-007

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenol phenyl ether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	420	U
101-55-3	4-Bromophenyl phenyl ether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
92-87-4	Benzidine	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/13/95 13:50
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER SCHOOL
SAMPLE ID: MW-3:39
LAB ID: 9507/170-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	410 µg/kg	U µg/kg
108-95-2	Phenol	410	U
111-44-4	bis(2-chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	o-Cresol	410	U
39638-32-9	bis-(2-Chloro2propyl)Ether	410	U
106-44-5	m & p-Cresol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2,100	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2,100	U
131-11-3	Dimethylphthalate	410	U
103-33-3	Azobenzene	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	2,100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2,100	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33035 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10125 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3:39
LAB ID: 9507/170-008

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	2,100 µg/kg	U µg/kg
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenol phenyl ether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2,100	U
534-52-1	4,6-Dinitro-2-methylphenol	2,100	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl phenyl ether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2,100	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
92-87-4	Benzidine	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/13/95 15:00
DATE RECEIVED : 7/13/95 17:46
DATE EXTRACTED : 7/17/95
DATE ANALYZED : 7/21/95
ANALYST : D.C.

GEOTECHNOLOGY, INC
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2202 P.O. # 10125

Project No. 2498.03.4120.05

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St Louis MO 63146

Sampler's Signature: [signature] Telephone # 997-7440

Contact: _____ Telephone # _____

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
MW-3:3	7/13/95	0915	Soil	2-8oz	Total Metal, Semi-Volatiles	Normal T.A.
MW-3:7		0930		2-8oz 1-2oz	Total Metal, Semi-Volatiles Volatile Organics	
MW-3:15		0950		2-8oz	Total Metal, Semi-Volatiles	
MW-3:20		1310		2-8oz	↓	
MW-3:30		1350		2-8oz	↓	
MW-3:39		1500		2-8oz	↓	
Soil Drum: Comp		1145		4-8oz 1-2oz	TCLP Metals TCLP Volatiles	
					TCLP Semi Volatiles	
					TCLP Pesticides TCLP Herbicides	
					Total PCBs	
					Reactive Cyanides Reactive Sulfides	
					Total Phenols	
					pH, flashpoint	
					paint filter	↓

Receiver Name: Environmetrics, Inc St Louis MO 6
(Company Name and Address)

Chain of Possession:

From: [signature] 7/13/95 5:15 To: [signature] 7/13/95 5:15
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2201 P.O. # 10120

Project No. 2498.03.4120.05

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St. Louis, Mo

Sampler's Signature: Dan Druckenmiller Telephone # 997-7440

Contact: Sam Brenneke Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
MW-2:40	7/12/95	0930	Soil	2-8oz	Semi-Volatiles, Total Metal	Normal T.A.
MW-2:50	7/12/95	1000	↓	2-8oz	Semi-Volatiles, Total Metal	↓

Receiver Name: Environmetrics, Inc St Louis Mo
(Company Name and Address)

Chain of Possession:

From: Dan Druckenmiller 7/12/95 1540 To: [signature] 7-12-95 15:40
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2201-202
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/13/95
Date Logged: 07/13/95
Status: Normal/LEVEL 4
Metals on dried weight basis.

Date Due (PM): 07/25/95 Proj #: 2498.03.4120.05
Date Due (Client): 07/27/95 P.O. #: 10120 / 10125
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000170-001-01	MW-2:40	SOIL	2-250 ml GLASS	Cold	07/12/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000170-002-01	MW-2:50	SOIL	2-250 ml GLASS	Cold	07/12/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000170-003-01	MW-3:3	SOIL	2-250 ml GLASS	Cold	07/13/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
MS / MSD 9507000170-004-01	MW-3:7	SOIL	2-250 ml GLASS	Cold	07/13/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
MS / MSD 9507000170-004-02	MW-3:7	SOIL	1-2 OZ VOA	Cold	07/13/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
	Sample Instructions:						
9507000170-005-01	MW-3:15	SOIL	2-250 ml GLASS	Cold	07/13/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2201-202
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/13/95
Date Logged: 07/13/95
Status: Normal/LEVEL 4
Metals on dried weight basis.

Date Due (PM): 07/25/95 Proj #: 2498.03.4120.05
Date Due (Client): 07/27/95 P.O. #: 10120 / 10125
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000170-005-01	MW-3:15	SOIL	2-250 ml GLASS	Cold	07/13/95		TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000170-006-01	MW-3:20	SOIL	2-250 ml GLASS	Cold	07/13/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000170-007-01	MW-3:30	SOIL	2-250 ml GLASS	Cold	07/13/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
9507000170-008-01	MW-3:39	SOIL	2-250 ml GLASS	Cold	07/13/95		MERCURY-SW-846 7471A PREPARATION, (Soil/Solids)-SW-846 3050A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
AND 1 VOA CONTAINER 9507000170-009-01	SOIL DRUM:COMP	SOIL	4-250 ml GLASS	Cold	07/13/95		PHENOLS,(SPECTROPHOTOMETRIC)-SW-846 9065 C pH, SOIL & WASTE <20% WATER-SW-846 9045 PAINT FILTER LIQUIDS TEST-SW-846 9095 IGNITABILITY,(SETAFLASH CLOSED CUP)-SW-846 1020 PREPARATION,WATER, (Total)-SW-846 3010A REACTIVE CYANIDE-SW-846 9010

INTERNAL CUSTODY TRANSFE. .CORD/LABORATORY WORK REQUEST

COC : 2201-202
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/13/95
Date Logged: 07/13/95
Status: Normal/LEVEL 4
Metals on dried weight basis.

Date Due (PM): 07/25/95 Proj #: 2498.03.4120.05
Date Due (Client): 07/27/95 P.O. #: 10120 / 10125
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
9507000170-009-01	SOIL DRUM:COMP	SOIL	4-250 ml GLASS	Cold	07/13/95		REACTIVE SULFIDE-SW-846 9030 TCLP ARSENIC-SW-846 1311/6010A TCLP BARIUM-SW-846 1311/6010A TCLP CADMIUM-SW-846 1311/6010A TCLP CHROMIUM-SW-846 1311/6010A TCLP LEAD-SW-846 1311/6010A TCLP MERCURY-SW-846 1311/7470 TCLP SELENIUM-SW-846 1311/6010A TCLP SILVER-SW-846 1311/6010A TCLP Volatile Organic Compounds-SW-846 1311/8240 TCLP Semivolatile Organic Compounds-SW-846 1311/8270 TCLP Pesticides-SW-846 1311/8080 TCLP Herbicides-SW-846 8150 MODIFIED PCB-SW 846 8080m TCLP PREP-SW-846 1311 TCLP ZHE PREP-SW-846 1311

Sample Instructions:

Items Transferred	Relinquished By	Date		Logged In By	Date	Time
10		07/13/95	PM Signature : Karen Coons Client Services Rep.	Phyllis Woods Login Coordinator	07/13/95	17:46:31

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

coc : 2201-202
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/13/95
Date Logged: 07/13/95
Status: Normal/LEVEL 4
Metals on dried weight basis.

Date Due (PM): 07/25/95 Proj #: 2498.03.4120.05
Date Due (Client): 07/27/95 P.O. #: 10120 / 10125
Mode: Mail Quot #:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Tranafer
1	P Woods	7/13/95	6:30 pm	[illegible]	7/14/95	7:40	VOA
#9	[illegible]	7-18	7:30	D McGhee	7/14	7:50	PLB / Soil
8	P Woods	7/17/95	11:45	[illegible]	7/17/95	11:45	Bag
170-9	P Woods	7/18/95	12:30	[illegible]	7/18/95	12:30	
	[illegible]	7-21	11:40	[illegible]	7-21	11:40	Return
1	[illegible]	7/24	6:20	[illegible]	7-24	6:20	Return
	[illegible]	7/24	4:05	[illegible]	7-24	4:05	Return

APPENDIX H

GROUNDWATER ANALYTICAL DATA REPORTS

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

August 07, 1995

Sam Brenneke
Geotechnology, Inc.
2258 Grissom Drive
ST. Louis, MO 63146

Subject: Project Summary for the Hubert Wheeler State School Playground Site Restoration Samples MW-2, MW-3, MW-1, Decon/Dev:Water, MW-TB.

Dear Mr. Brenneke:

Please find the analytical reports for the reference project attached.

Date Received 7/19/95

Chain of Custody Number: 2203

Environmetrics Laboratory Number: 9507/262

Invoice # 33090

The summary of the project is as follows:

PROJECT IDENTIFICATION:

The following samples were received and analyzed:

Description	Lab #	Received	Analyses
MW-1 14:30	9507-262-001	7/19/95	Total(8)Metals, Semi-Volatiles,Volatiles
MW-2 13:30	9507-262-002	7/19/95	Total(8)Metals, Semi-Volatiles, Volatiles
MW-2 13:30	9507-262-002	7/19/95	Total(8)Metals Matrix Spike, Matrix Spike Duplicate Semi-Volatiles Matrix Spike, Matrix Spike Duplicate Volatiles Matrix Spike, Matrix Spike Duplicate
MW-3 14:10	9507-262-003	7/19/95	Total(8)Metals, Semi-Volatiles,Volatiles
Decon/Dev:Water 14:50	9507-262-004	7/19/95	pH, TSS, Total Pb, COD, Semi-Volatiles, Volatiles
MW-TB 14:50	9507-262-005	7/19/95	Volatiles-Trip Blank

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

Specific methods, extraction, preparation dates, and detection limits are noted on the individual reports attached.

REANALYSES, DILUTIONS, ETC.

The analytical data reflects the result of the initial analysis with out dilutions or reanalyses with the exception of:

In Accordance with SW-846 method 8240 the following samples were reanalyzed because of both high and low surrogate recoveries: Sample ID# MW-1, MW-3, Decon/Dev:Water, and MW-TB

QUALITY ASSURANCE SUMMARY:

All Quality Assurance parameters (temperature upon receipt, holding times, spike recoveries, etc.) were within method specifications.

If you have any questions regarding this report please do not hesitate to call: (314) 427-0550. Thank you for your business.

Sincerely,

Karen J. Coons

Karen J. Coons

Project Manager

Attachments

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-68
PREP. DATE: 7/27/95

ELEMENT	BLANK RESULT
ARSENIC	<0.200
BARIUM	<0.040
CADMIUM	<0.005
CHROMIUM	<0.010
LEAD	<0.100
MERCURY	<0.0002
SELENIUM	<0.200
SILVER	<0.010

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-68
PREP. DATE: 7/27/95

ELEMENT	VALUE	RESULT	PERCENT RECOVERY
ARSENIC	2.00	1.78	89
BARIUM	2.00	1.80	90
CADMIUM	0.50	0.436	87
CHROMIUM	0.50	0.466	93
LEAD	0.50	0.421	84
MERCURY	0.002	0.00203	102
SELENIUM	2.00	1.82	91
SILVER	0.50	0.477	95

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33090
PO: 10181
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-1
LAB ID: 9507000262-001
DATE COLLECTED: 07/19/95 14:30
DATE RECEIVED: 07/19/95 17:43

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<0.200 mg/L	7/27/95 R.D.
TOTAL BARIUM	SW-846 6010A	0.111 mg/L	
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	
TOTAL LEAD	SW-846 6010A	<0.100 mg/L	
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	
TOTAL SELENIUM	SW-846 6010A	<0.200 mg/L	
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: Sam Brenneke

INVOICE: 33090
PO: 10181
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-2 MS / MSD
LAB ID: 9507000262-002
DATE COLLECTED: 07/19/95 13:30
DATE RECEIVED: 07/19/95 17:46

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	0.217 mg/L	7/27/95 R.D.
TOTAL BARIUM	SW-846 6010A	0.180 mg/L	
TOTAL CADMIUM	SW-846 6010A	0.00900 mg/L	
TOTAL CHROMIUM	SW-846 6010A	0.216 mg/L	
TOTAL LEAD	SW-846 6010A	0.244 mg/L	
TOTAL MERCURY	SW-846 7470A	0.0003 mg/L	
TOTAL SELENIUM	SW-846 6010A	<0.200 mg/L	
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA WATER

SAMPLE ID: MW-2
LAB ID: 9507/262-001

ELEMENT	SAMPLE RESULT (mg/l)	SPIKE LEVEL (mg/l)	SPIKE RESULT (mg/l)	% REC.	DUPLICATE RESULT (mg/l)	% REC.	RPD
ARSENIC	0.217	4.000	3.57	84	3.67	86	2
BARIUM	0.180	4.000	3.42	81	3.47	82	1
CADMIUM	0.009	0.100	0.090	81	0.091	82	1
CHROMIUM	0.216	0.400	0.554	84	0.545	82	2
LEAD	0.244	1.000	1.07	83	1.12	88	5
MERCURY	0.0003	0.0020	0.0020	89	0.0020	89	0
SELENIUM	<0.200	4.000	3.48	87	3.63	91	4
SILVER	<0.010	0.100	0.093	93	0.096	96	3

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33090
PO: 10181
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: MW-3
LAB ID: 9507000262-003
DATE COLLECTED: 07/19/95 14:10
DATE RECEIVED: 07/19/95 17:49

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL ARSENIC	SW-846 6010A	<0.200 mg/L	7/27/95 R.D.
TOTAL BARIUM	SW-846 6010A	0.053 mg/L	
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	
TOTAL CHROMIUM	SW-846 6010A	0.0170 mg/L	
TOTAL LEAD	SW-846 6010A	<0.100 mg/L	
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	
TOTAL SELENIUM	SW-846 6010A	<0.200 mg/L	
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	

Geotechnology, Inc.
2258 Grissom Drive
St. Louis, Mo. 63146

ATTN: Sam Brenneke

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE: 33090
PO: 10181
PROJECT NO: 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

ANALYSIS RESULTS

SAMPLE ID: DECON / DEV:WATER
LAB ID: 9507000262-004
DATE COLLECTED: 07/19/95 14:50
DATE RECEIVED: 07/19/95 17:52

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
TOTAL LEAD	SW-846 6010A	0.728 mg/L	7/27/95 R.D.
CHEMICAL OXYGEN DEMAND	EPA 410.4	220 mg/L	7/24/95 T.H.
PH	EPA 150.1	7.42	7/21/95 T.H.
TOTAL SUSPENDED SOLIDS	EPA 160.2	2,420 mg/L	7/24/95 T.H.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05, HUBERT WHEELER STATE SCHOOL

SAMPLE ID: LABORATORY CONTROL SAMPLE
LAB ID: LCS

ELEMENT	SPIKE ADDED	SAMPLE RECOVERY	PERCENT RECOVERY	ANALYST
pH	7.00	7.01	100	7/21/95 TH
CHEMICAL OXYEN DEMAND	500 mg/l	500 mg/l	100	7/21/95 TH

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: METHOD BLANK
LAB ID: VBBLK205A

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE ANALYZED : 7/24/95 L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: MW-1
LAB ID: 9507/262-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95 14:30
DATE RECEIVED : 7/19/95 17:53
DATE ANALYZED : 7/24/95 L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: MW-2
LAB ID: 9507/262-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/19/95 13:30
DATE RECEIVED : 7/19/95 17:53
DATE ANALYZED : 7/24/95 L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3
LAB ID: 9507/262-003

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	11
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	6.3
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95 14:10
DATE RECEIVED : 7/19/95 17:53
DATE ANALYZED : 7/24/95 L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: DECON/DEV: WATER
LAB ID: 9507/262-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	103
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT

DATE COLLECTED : 7/19/95 14:50
DATE RECEIVED : 7/19/95 17:53
DATE ANALYZED : 7/24/95 L.C.

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

INVOICE # 33090
PO # 10181
PROJECT # 2498.03.4120.05,
HUBERT WHEELER STATE SCHOOL

VOLATILE ORGANIC ANALYSIS
METHOD SW-846 8240

SAMPLE ID: MW-TB
LAB ID: 9507/262-005

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
74-87-3	Chloromethane	10 µg/l	U µg/l
74-83-9	Bromomethane	10	U
85-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.0	U
67-64-1	Acetone	100	U
107-02-8	Acrolein	100	U
75-15-0	Carbon Disulfide	100	U
107-13-1	Acrylonitrile	100	U
75-69-04	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (Total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylene (Total)	5.0	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95
DATE RECEIVED : 7/19/95 17:53
DATE ANALYZED : 7/24/95 L.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6572

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: METHOD BLANK
LAB ID: WASBLK6572

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : ---
DATE RECEIVED : ---
DATE EXTRACTED : 7/20/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1
LAB ID: 9507/262-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	11 µg/l	U µg/l
108-95-2	Phenol	11	U
111-44-4	bis(2-chloroethyl)Ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl Alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	o-Cresol	11	U
39638-32-9	bis-(2-Chloro2propyl)Ether	11	U
106-44-5	m & p-Cresol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic Acid	52	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	11	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	11	U
103-33-3	Azobenzene	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	52	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	52	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-1
LAB ID: 9507/262-001

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	52 µg/l	U µg/l
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenol phenyl ether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	52	U
534-52-1	4,6-Dinitro-2-methylphenol	52	U
86-30-6	N-Nitrosodiphenylamine	11	U
101-55-3	4-Bromophenyl phenyl ether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	52	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
92-87-4	Benzidine	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95 14:30
DATE RECEIVED : 7/19/95 17:53
DATE EXTRACTED : 7/20/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2
LAB ID: 9507/262-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	10 µg/l	U µg/l
108-95-2	Phenol	10	U
111-44-4	bis(2-chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	o-Cresol	10	U
39638-32-9	bis-(2-Chloro2propyl)Ether	10	U
106-44-5	m & p-Cresol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
103-33-3	Azobenzene	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 SEMIVOLATILE ORGANIC COMPOUNDS
PO # 10181 METHOD SW-846 8270
PROJECT # 2498.03.4120.05, PAGE TWO
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-2
LAB ID: 9507/262-002

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	50 µg/l	U µg/l
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenol phenyl ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl phenyl ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
92-87-4	Benzidine	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95 13:30
DATE RECEIVED : 7/19/95 17:53
DATE EXTRACTED : 7/20/95
DATE ANALYZED : 7/25/95
ANALYST : D.C.

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3
LAB ID: 9507/262-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	11 µg/l	U µg/l
108-95-2	Phenol	11	U
111-44-4	bis(2-chloroethyl)Ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl Alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	o-Cresol	11	U
39638-32-9	bis-(2-Chloro2propyl)Ether	11	U
106-44-5	m & p-Cresol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic Acid	56	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	11	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	56	U
131-11-3	Dimethylphthalate	11	U
103-33-3	Azobenzene	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	56	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	56	U

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: MW-3
LAB ID: 9507/262-003

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	56 µg/l	U µg/l
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenol phenyl ether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	56	U
534-52-1	4,6-Dinitro-2-methylphenol	56	U
86-30-6	N-Nitrosodiphenylamine	11	U
101-55-3	4-Bromophenyl phenyl ether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	56	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
92-87-4	Benzidine	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95 14:10
DATE RECEIVED : 7/19/95 17:53
DATE EXTRACTED : 7/20/95
DATE ANALYZED : 7/24/95
ANALYST : D.C.

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE ONE**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: DECON/DEV: WATER
LAB ID: 9507/262-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
62-75-9	N-Nitrosodimethylamine	11 µg/l	U µg/l
108-95-2	Phenol	11	U
111-44-4	bis(2-chloroethyl)Ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl Alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	o-Cresol	11	U
39638-32-9	bis-(2-Chloro2propyl)Ether	11	U
106-44-5	m & p-Cresol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic Acid	56	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	11	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	56	U
131-11-3	Dimethylphthalate	11	U
103-33-3	Azobenzene	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	56	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	56	U

ENVIR NMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

GEOTECHNOLOGY, INC.
2258 GRISSOM DRIVE
ST. LOUIS, MO 63146

ATTN: SAM BRENNEKE

INVOICE # 33090 **SEMIVOLATILE ORGANIC COMPOUNDS**
PO # 10181 **METHOD SW-846 8270**
PROJECT # 2498.03.4120.05, **PAGE TWO**
HUBERT WHEELER STATE SCHOOL
SAMPLE ID: DECON/DEV: WATER
LAB ID: 9507/262-004

CAS NUMBER		PRACTICAL QUANTITATION LIMIT	RESULTS
100-02-7	4-Nitrophenol	56 µg/l	U µg/l
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenol phenyl ether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	56	U
534-52-1	4,6-Dinitro-2-methylphenol	56	U
86-30-6	N-Nitrosodiphenylamine	11	U
101-55-3	4-Bromophenyl phenyl ether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	56	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
92-87-4	Benzidine	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

U = UNDETECTED
B = PRESENT IN BLANK
J = DETECTED, BUT BELOW PRACTICAL QUANTITATION LIMIT
DATE COLLECTED : 7/19/95 14:50
DATE RECEIVED : 7/19/95 17:53
DATE EXTRACTED : 7/20/95
DATE ANALYZED : 7/26/95
ANALYST : D.C.

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ENVIRONMETRICS Contract: GEOTECHOLOGY

Method code: 8240 Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MW-2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0	53	105	61-145
Trichloroethene	50	0	55	111	71-120
Benzene	50	0	56	112	75-130
Toluene	50	0	54	107	76-125
Chlorobenzene	50	0	57	114	76-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	50	99	6	14	61-145
Trichloroethene	50	52	103	7	14	71-120
Benzene	50	53	106	6	11	75-130
Toluene	50	50	101	6	13	76-125
Chlorobenzene	50	53	106	7	13	76-127

* column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

11A

VOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

LCS

Lab Name: ENVIRONMETRICS Contract: GEOTECHOLOGY

Lab Code: 8240 Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VBLCS205A

Sample wt/vol: 5.0 (g/ml) Lab File ID: >B7985

Level: (low/med) LOW Date Received: 07/19/95

% Moisture: not dec. Date Analyzed: 07/24/95

GC Column: DB 624 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

COMPOUND	Conc	Spike	Recovery
1,1-Dichloroethene	51	50	103
Benzene	53	50	107
Trichloroethene	53	50	106
Toluene	54	50	108
Chlorobenzene	53	50	106

11A

VOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

LCS

Lab Name: ENVIRONMETRICS Contract: GEOTECHNOLOG

Lab Code: 8240 Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: VBLCS206A

Sample wt/vol: 5.0 (g/ml) Lab File ID: >B8002

Level: (low/med) LOW Date Received: 07/19/95

% Moisture: not dec. Date Analyzed: 07/25/95

GC Column: DB 624 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

COMPOUND	Conc	Spike	Recovery
1,1-Dichloroethene	51	50	101
Benzene	53	50	105
Trichloroethene	53	50	107
Toluene	55	50	110
Chlorobenzene	54	50	108

11A

VOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

LCS

Lab Name: ENVIRONMETRICS **Contract:** GEOTECHNOLOG

Lab Code: 8240 **Case No.:** **SAS No.:** **SDG No.:**

Matrix: (soil/water) WATER **Lab Sample ID:** VBLCS207A

Sample wt/vol: 5.0 (g/ml) **Lab File ID:** >B8008

Level: (low/med) LOW **Date Received:** 07/19/95

% Moisture: not dec. **Date Analyzed:** 07/26/95

GC Column: DB 624 **ID:** .53 (mm) **Dilution Factor:** 1.0

Soil Extract Volume: (uL) **Soil Aliquot Volume:** (uL)

COMPOUND	Conc	Spike	Recovery
1,1-Dichloroethene	48	50	95
Benzene	47	50	94
Trichloroethene	53	50	105
Toluene	51	50	101
Chlorobenzene	48	50	96

WATER VOLATILE SY[redacted] MONITORING COMPOUND RE[redacted]RY

Lab Name: ENVIRONMETRICS Contract: GEOTECHNOLOGY

[redacted] code: 8240 Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	S4 ( )#	TOT OUT
01	VBBLK206A	106	101	105		0
02	VBLCS206A	113	102	107		0
03	MW-1 RE	117 *	96	92		1
04	MW-3 RE	116 *	102	109		1
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS	
S1 (DCE)	= 1,2-Dichloroethane-d4	(76-114)	
S2 (TOL)	= Toluene-D8	(88-110)	
S3 (BFB)	= Bromofluorobenzene	(86-115)	(advisory)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ENVIRONMETRICS Contract: GEOTECHNOLOGY

Lab code: 8240 Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	S4 ( )#	TOT OUT
01	VBBLK207A	104	94	93		0
02	VBLCS207A	115 *	94	102		1
03	DECON RE	119 *	88 *	86		2
04	MW-TB RE	117 *	95	97		1
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS	
S1 (DCE)	= 1,2-Dichloroethane-d4	(76-114)	
S2 (TOL)	= Toluene-D8	(88-110)	
S3 (BFB)	= Bromofluorobenzene	(86-115)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

WATER SPIKE

Name: Environmetrics Contract: GEOTECH.

Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: WASLCS6572

Sample wt/vol: 1000 (g/ml) ml Lab File ID: >A7747

Level: (low/med) LOW Date Received: 07/19/95

% Moisture: decanted: (Y/N) N Date Extracted: 07/20/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: NA

COMPOUND	Conc.	Spike	Recovery
Phenol	130	200	65
2-Chlorophenol	140	200	70
1,4-Dichlorobenzene	45	100	45
N-Nitroso-Di-nPropylamine	192	160	92
1,2,4-Trichlorobenzene	56	100	56
4-Chloro-3-Methylphenol	170	200	83
Acenaphthene	69	100	69
4-Nitrophenol	150	200	77
2,4-Dinitrotoluene	71	100	71
Pentachlorophenol	170	200	85
Pyrene	73	100	73

WATER SEMIVOLATILE [redacted]C RIX SPIKE/MATRIX SPIKE [redacted] ICATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 9507262-2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS REC.
Phenol	200	0	150	75		12- 89
2-Chlorophenol	200	0	160	78		27-123
1,4-Dichlorobenzene	100	0	49	49		36- 97
N-Nitroso-Di-nPropylami	100	0	98	98		41-116
1,2,4-Trichlorobenzene	100	0	62	62		39- 98
4-Chloro-3-Methylphenol	200	0	200	102	*	23- 97
Acenaphthene	100	0	80	80		46-118
4-Nitrophenol	200	0	180	92	*	10- 80
2,4-Dinitrotoluene	100	0	83	83		24- 96
Pentachlorophenol	200	0	180	88		9-103
Pyrene	100	0	75	75		26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	200	160	81		7		42	12- 89
2-Chlorophenol	200	160	82		5		40	27-123
1,4-Dichlorobenzene	100	48	48		2		28	36- 97
N-Nitroso-Di-nPropylami	100	96	96		2		38	41-116
1,2,4-Trichlorobenzene	100	61	61		1		28	39- 98
4-Chloro-3-Methylphenol	200	190	97		5		42	23- 97
Acenaphthene	100	74	74		9		31	46-118
4-Nitrophenol	200	180	89	*	3		50	10- 80
2,4-Dinitrotoluene	100	78	78		6		38	24- 96
Pentachlorophenol	200	160	80		9		50	9-103
Pyrene	100	72	72		4		31	26-127

column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 3 out of 22 outside limits

COMMENTS: _____

2C

WATER SEMIVOL E SURROGATE RECOVERY

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (DCB)#	S3 (FBP)#	S4 (TPH)#	S5 (PHL)#	S6 (2CP)#	S7 (2FP)#	S8 (TBP)#	TOT OUT
01	WASBLK6572	76	36	46	83	58	51	46	73	0
02	WASLCS6572	83	43	55	87	59	57	54	84	0
03	9507262-1	76	36	55	97	63	59	52	80	0
04	9507262-2	85	41	59	109	67	66	57	81	0
05	9507262-2MS	95	57	58	104	65	64	57	84	0
06	9507262-2MSD	90	43	59	95	70	66	58	82	0
07	9507262-3	87	68	72	103	48	61	48	88	0
08	9507262-4	81	58	61	78	41	48	30	68	0
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)
S3 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S4 (TPH)	= Terphenyl-d14	(33-141)	
S5 (PHL)	= Phenol-d5	(10- 94)	
S6 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S7 (2FP)	= 2-Fluorophenol	(21-100)	
S8 (TBP)	= 2,4,6-Tribromophenol	(10-123)	

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

SEMIVOLATI[illegible]ETHOD BLANK SUMMARY

EPA SAMPLE NO.

DEV:WATER

Lab Name: Environmetrics Contract: GEOTECH.

Lab code: Case No.: SAS No.: SDG No.:

Lab File ID: >A7748 Lab Sample ID: WASBLK6572

Instrument ID: HP5970 Date Extracted: 07/20/95

Matrix: (soil/water) WATER Date Analyzed: 07/24/95

Level: (low/med) LOW Time Analyzed: 10:12

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	WASLCS6572	WASLCS6572	>A7747	07/24/95
2	9507262-1	9507262-1	>A7767	07/24/95
3	9507262-2	9507262-2	>A7781	07/25/95
4	9507262-2M	9507262-2MS	>A7782	07/25/95
5	9507262-2M	9507262-2MSD	>A7783	07/25/95
6	9507262-3	9507262-3	>A7768	07/24/95
7	9507262-4	9507262-4	>A7802	07/26/95
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS: _____

_____

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ENVIRONMETRICS Contract: GEOTECHOLOGY

Lab code: 8240 Case No.: SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	S4 ( )#	TOT OUT
01	VBBLK205A	104	102	105		0
02	VBLCS205A	114 *	102	123 *		2
03	MW-1	115 *	102	100		1
04	MW-2	117 *	102	112		1
05	MW-2 MS	121 *	102	105		1
06	MW-2 MSD	115 *	98	99		1
07	MW-3	117 *	105	102		1
08	DECON	121 *	102	104		1
09	MW-TB	114 *	101	105		0
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS	
S1 (DCE)	= 1,2-Dichloroethane-d4	(76-114)	
S2 (TOL)	= Toluene-D8	(88-110)	
S3 (BFB)	= Bromofluorobenzene	(86-115)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

INTERNAL CUSTODY TRANSFER RECORD / LABORATORY WORK REQUEST

COC : 2203
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/19/95
Date Logged: 07/19/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/31/95 Proj #: 2498.03.4120.05
Date Due (Client): 08/03/95 P.O. #: 10181
Mode: Mail Quot #:

Items Transferred	Relinquished By	Date	Time	Received By	Date	Time	Reason For Transfer
5 VOA	PWoods	7/19/95	6[illegible]	[illegible]	7/20/95	935	VOA
1-4	PWoods	7/20/95	8[illegible]	[illegible]	7-20	1158	
0	[illegible]	7-20	2:21	[illegible]	7-20	221	SK's used
	[illegible]	7-21	1120	[illegible]	7-21	1120	Preservatives
	[illegible]	7-24	4:05	[illegible]	7-24	405	Return
	PWoods	7-26	930	[illegible]	7-26	920	Metals
5	[illegible]	7-27-95	1008	[illegible]	7/27	1008	Return
	[illegible]	7/31/95	2:00	[illegible]	7/31	2:00	Return

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

COC : 2203
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/19/95
Date Logged: 07/19/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/31/95 Proj #: 2498.03.4120.05
Date Due (Client): 08/03/95 P.O. #: 10181
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
18491							
507000262-001-01	MW-1	WASTE WATER	3-40 ml VOA	Hydrochloric Acid	07/19/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
		Sample Instructions:					
18492							
507000262-001-02	MW-1	WASTE WATER	2-1 LITER GLASS	Cold	07/19/95		SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:					
[redacted]							
5[redacted]262-001-03	MW-1	WASTE WATER	1-1 LITER PLASTIC	Nitric Acid	07/19/95		PREPARATION,WATER, (Total)-SW-846 3010A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A TOTAL MERCURY-SW-846 7470A
		Sample Instructions:					
18494 MS / MSD							
507000262-002-01	MW-2	WASTE WATER	2-1 LITER PLASTIC	Nitric Acid	07/19/95		PREPARATION,WATER, (Total)-SW-846 3010A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A TOTAL MERCURY-SW-846 7470A
		Sample Instructions:					
[redacted]95 MS / MSD							
[redacted]62-002-02	MW-2	WASTE WATER	6-40 ml VOA	Hydrochloric Acid	07/19/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
		Sample Instructions:					
18496 MS / MSD							
507000262-002-03	MW-2	WASTE WATER	1-1 gal GLASS	Cold	07/19/95		SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions: ALSO 2 1 L GLASS					
18497							
507000262-003-01	MW-3	WASTE WATER	2-1 LITER GLASS	Cold	07/19/95		SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
		Sample Instructions:					
18498							
507000262-003-02	MW-3	WASTE WATER	3-40 ml VOA	Hydrochloric Acid	07/19/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
		Sample Instructions:					
18499							
507000262-003-03	MW-3	WASTE WATER	1-1 LITER PLASTIC	Nitric Acid	07/19/95		PREPARATION,WATER, (Total)-S V-846 3010A TOTAL ARSENIC-SW-846 6010A TOTAL BARIUM-SW-846 6010A CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A LEAD-SW-846 6010A SELENIUM-SW-846 6010A SILVER-SW-846 6010A

INTERNAL CUSTODY TRANSFER REC(LABORATORY WORK REQUEST

Page

COC : 2203
Geotechnology, Inc. - G034
2258 Grissom Drive
St. Louis, Mo. 63146
Sam Brenneke

Date Received: 07/19/95
Date Logged: 07/19/95
Status: Normal/LEVEL 4
Hubert Wheeler State School

Date Due (PM): 07/31/95 Proj #: 2498.03.4120.05
Date Due (Client): 08/03/95 P.O. #: 10181
Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date Collected	Temp	Tests
507000262-003-03	MW-3	WASTE WATER	1-1 LITER PLASTIC	Nitric Acid	07/19/95		TOTAL MERCURY-SW-846 7470A
	Sample Instructions:						
18500							
507000262-004-01	DECON / DEV:WATER	WASTE WATER	1-500 ml PLASTIC	Cold	07/19/95		pH-EPA 150.1 TOTAL SUSPENDED SOLIDS-EPA 160.2
	Sample Instructions:						
18501							
[redacted]62-004-02	DECON / DEV:WATER	WASTE WATER	1-500 ml PLASTIC	Nitric Acid	07/19/95		LEAD-SW-846 6010A
	Sample Instructions:						
18502							
507000262-004-03	DECON / DEV:WATER	WASTE WATER	1-500 ml PLASTIC	Sulfuric Acid	07/19/95		COD (CHEMICAL OXYGEN DEMAND)-EPA 410.4
	Sample Instructions:						
18503							
507000262-004-04	DECON / DEV:WATER	WASTE WATER	2-1 LITER GLASS	Cold	07/19/95		SEMIVOLATILE ORGANICS by CAPILLARY GC/MS-SW-846 8270
	Sample Instructions:						
18504							
507000262-004-05	DECON / DEV:WATER	WASTE WATER	2-40 ml VOA	Hydrochloric Acid	07/19/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
	Sample Instructions:						
18505							
507000262-005-01	MW-TB	WASTE WATER	2-40 ml VOA	Hydrochloric Acid	07/19/95		VOLATILE ORGANICS by GC/MS-SW-846 8240
	Sample Instructions:						

tems Transferred	Relinquished By	Date		Logged In By	Date	Time
15		07/19/95	PM Signature : Karen Coons Client Services Rep.	Ann Quinlisk Sample Login Specialist	07/19/95	17:53:45

Karen Coons

GEOTECHNOLOGY, INC.
ENGINEERING & ENVIRONMENTAL SERVICES
ST. LOUIS KANSAS CITY INDIANAPOLIS

Page ____ of ____

CHAIN OF CUSTODY RECORD

COC Record # 2203 P.O. # 10181

Project No. 2498.03.4120.05

Project Name: Hubert Wheeler State School

Shipper Name: Geotechnology, Inc

Address: 2258 Grissom Drive St. Louis MO

Sampler's Signature: [signature] Telephone # 997-7440

Contact: Sam Brennecka Telephone # Same

Collectors Sample #	Date	Time	Sample Type	No. of Containers	Analysis	Remarks
MW-2	7/19/95	1330	Water	3-40ml	Volatile Organics	
				2-liter 1-liter	Semi-Volatiles Total Metals (RCRA 8)	
				3-40ml 2-liter	Volatile Organics Semi-Volatiles	use for MS/MSD
				1-liter	Total Metals (RCRA 8)	use for MS/MSD
MW-3		1410		3-40 ml	Volatile Organics	
				2-liter 1-liter	Semi-Volatiles Total Metals (RCRA 8)	
MW-1		1430		3-40 ml	Volatile Organics	
				2-liter 1-liter	Semi-Volatiles Total Metals (RCRA 8)	
Decon/DW.Water		1450		1-500ml 1-500ml	PH, TSS Total Lead	
				1-500ml 2-liter	COD Semi-Volatiles	
				2-40ml	Volatile Organics	
MW-TB				2-40ml	Volatile Organics	

Receiver Name: Environmetrics, Inc
(Company Name and Address)

Chain of Possession:

From: [signature] 7/19/95 To: P Woods 7/19/95 445pm
(Name and Date/Time) (Name and Date/Time)

From: _____ To: _____

White copy to Laboratory • Yellow copy to COC File • Pink copy to Job File

APPENDIX I

LIMITATIONS OF REPORT

LIMITATIONS OF REPORT

1. The geophysical analyses, conclusions, and recommendations contained herein are based on the site conditions, project layout, grid size, geophysical data, and interpretive procedures described herein, and are for preliminary planning purposes only. Subsurface exploration would be required to verify below grade conditions.

2. The geophysical data were prepared for the exclusive use of the engineer for evaluating the design of the project as it related to the geophysical aspects discussed herein. It should be made available to prospective contractors for information on data only and not as a warranty of subsurface conditions.

3. This report has been prepared on behalf of and for the exclusive use of the addressee, solely for use in assessing conditions at the site. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of Geotechnology. However, Geotechnology acknowledges and agrees that the report may be conveyed to the regulatory agencies as desired.

4. The assessment was performed in general accordance with appropriate state guidelines and generally accepted practices of other consultants undertaking similar assessments at the same time and in the same geographical area, and Geotechnology observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. The findings and conclusions stated herein must be considered not as scientific certainties, but rather as professional opinions concerning the significance of the limited data gathered during the course of the assessment. No other warranty, express or implied, is made. Specifically, Geotechnology does not and cannot represent that the site contains no hazardous waste or material, oil (including petroleum products) or other latent condition beyond that observed by Geotechnology during the assessment.

5. The observations described in the Report were made under the conditions stated therein. The conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedure beyond the scope of described services. The work described in this report was carried out in accordance with the Contract which both parties have previously executed.

6. In the event that information is developed relative to environmental or hazardous waste or material issues at the site and not contained in this report, such information shall be brought to Geotechnology's attention. Geotechnology will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this Report.

7. The conclusions and recommendations contained in this Report are based in part upon the data obtained from a limited number of soil and/or groundwater samples obtained from widely spaced sampling. The identified presence of contaminated soil is limited to the extent that contaminated soil could be identified by color, smell, instrumentation and

sampling and testing. There is a potential for contaminated soil above the indicated concentrations to occur elsewhere on the site. The nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, and/or if changes are made in regulations, it will be necessary to reevaluate the conclusions and recommendations of this report.

8. Quantitative laboratory testing was performed as part of the site assessment by an outside laboratory, Geotechnology has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.

9. Chemical analyses have been performed for specific parameters during the course of this assessment as described in the text. However, it should be noted that additional chemical constituents not searched for during the assessment could be present in soil and/or groundwater at the site.

Attachment 2

PHASE I
REMOVAL ASSESSMENT WORK PLAN

Hubert Wheeler State School Site
5707 Wilson Avenue
St. Louis, Missouri

Prepared By:

Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

Table of Contents

Section

1.0 Introduction 1

2.0 Site Summary 1
2.1 Objective of the Removal Assessment 1
2.2 Authority for the Work 2
2.3 Purpose and Technical Approach of the Work Plan . . . 2

3.0 Existing Data Summary 2
3.1 Site Location and Description 2
3.2 Site History 3
3.3 Previous Site Sampling 3
3.3.1 DNR Sampling 3
3.3.2 Geotechnology Sampling 4

4.0 Data Gaps 4

5.0 Contaminants of Concern 5
5.1 Lead 5
5.2 PAHs 5

6.0 Preliminary Removal Action Goals 5

7.0 Removal Assessment - Technical Approach 6
7.1 Proposed Phase I Activities 6
7.2 Proposed Phase II and III Activities 6

8.0 Phase I Schedule and Budget 7

9.0 References 7

10.0 Attachments 7

Hubert Wheeler State School
Removal Assessment
Phase I Work Plan

1.0 Introduction

This work plan was prepared in support of the Removal Assessment activities planned for the Hubert Wheeler State School site during February and March 1996.

2.0 Site Summary

The Hubert Wheeler State School is located in the city of St. Louis, near the intersection of I-44 and Hampton Avenue. The Hubert Wheeler State School site was reported to the Missouri Department of Natural Resources (DNR) in February of 1993. A black, tar-like substance was observed oozing through the asphalt playground used by the students of the school. The Missouri Department of Elementary and Secondary Education (DESE) closed the school on August 12, 1994.

Historical records indicate that this area was mined extensively for clay. The excavated area of the clay mine was used as a dump from the early 1900's to the mid-1960's. Various wastes were reportedly disposed in the clay pit, including solid wastes (glass bottles, scrap paper, spoiled food) and hazardous wastes (medical wastes, roofing tar, barrels of tar). The extent of the site boundaries have not been determined at this time, but are thought to extend past the Hubert Wheeler State School boundaries, to include portions of the surrounding residential and commercial neighborhood.

Soil sampling conducted on the Hubert Wheeler State School property indicates that carcinogenic semi-volatile organic compounds and lead are present in the soil. Many of the levels detected exceed the Any-Use Soil Levels (ASLs) proposed by the Missouri Department of Health (DOH).

The full extent of contamination is unknown at this time. Extensive investigation and site characterization has been conducted within the school property boundaries. However, sampling is not known to have been conducted outside of the school's property. The source of the tar-like material has not been determined.

2.1 Objective of the Removal Assessment

The primary objective of the removal assessment is to determine whether or not residents living near the Hubert Wheeler State School are at an increased risk of exposure to hazardous substances due to the site.

Additional objectives include the following:

- to characterize the waste,
- to determine the source(s) of contamination,
- to delineate site boundaries (both vertical and horizontal),
- to obtain additional information regarding the site history and any potentially responsible parties through community involvement (such as residential interviews),
- to determine the appropriate action(s) necessary to protect human health and the environment, based upon appropriate health and risk-based criteria.

2.2 Authority for the Work

This work is being performed through a Cooperative Agreement with the U.S. Environmental Protection Agency (EPA) (CA# V007587-03), under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments Reauthorization Act of 1986.

2.3 Purpose and Technical Approach of the Work Plan

This work plan is intended to outline the objectives of the removal action, while also considering remedial goals. As outlined by the Superfund Accelerated Cleanup Model (SACM), future actions at this site will consider both removal and remedial concerns.

The primary objective of the removal assessment will be to define the horizontal and vertical extent of the contamination and determine whether or not the nearby residential population is at risk from the site. Potential future activities at the Hubert Wheeler State School site may include, but are not limited to, the following: removal of waste, contaminated fill, and affected native soils; or a remedial action (i.e. protective cap with institutional controls).

3.0 Existing Data Summary

3.1 Site Location and Description

The Hubert Wheeler State School site is located approximately 10 miles west of downtown St. Louis, in a mixed residential/ commercial area known as "the Hill". This location is approximately one mile south of Forest Park. If normal survey

sections are projected into this area, the location would be in the southern half of section 19, T45N, R7E. The geographic coordinates of the school are 38° 35' 26.76" N latitude and 90° 17' 51.48" W longitude. (Attachment 1)

Contamination has been detected across the Hubert Wheeler State School property at depths exceeding 15 feet. The greatest levels of contamination appear to be associated with non-native soil, most likely fill material from prior landfilling activities. While the full extent of the site boundaries have not been determined at this time, contamination may extend at least one block east and west and may encompass a portion of the I-44 right of way to the north.

3.2 Site History

Clay mining was conducted in this part of the city earlier in the 20th century. A fire brick manufacturer operated on-site in the past. A large area of excavation, most likely from clay mining activities, existed in the vicinity of the school and neighboring properties. This pit was reportedly operating as a dump, and was used for general landfilling by the neighborhood residents, several local businesses, and a nearby hospital. Once the former pit areas were filled in, the land was apparently divided for development. A portion of the former pit area was purchased by the State of Missouri in 1968. The Hubert Wheeler State School was opened in 1970 and was operated by DESE as a school for severely developmentally disabled students.

DNR became involved with the site in February 1993, when Geotechnology, Inc., DESE's consultant, notified DNR of a black material "oozing" through the asphalt playground at the school. DNR, in concurrence with the DOH, recommended to DESE in December 1993, that access to the playground be restricted. A fence was subsequently erected by DESE.

DNR completed a Preliminary Assessment (PA) report dated January 7, 1994, and a Site Inspection (SI) report dated September 20, 1994. The SI report concluded that further actions, including an Expanded Site Inspection and/or a removal action, may be warranted at this site. In August 1994, DESE decided to close the school pending further sampling and analyses at the site. Based on the results of an additional site assessment, completed by Geotechnology in September 1995, DESE decided to permanently relocate the Hubert Wheeler students to another facility.

3.3 Previous Site Sampling

3.3.1 DNR Sampling

DNR conducted sampling at the Hubert Wheeler State School site on July 7, 1994, as part of the SI. Six samples were collected from the top two feet of soil. Four samples were collected in the vicinity of the asphalt playground on the western side of the school and two were collected from the eastern side of the school.

Detectable levels of benzo(a)anthracene, chrysene, fluoranthene, phenanthrene and pyrene were found in all six samples. One of the soil samples, collected nine feet west of the asphalt playground, exceeded three times the background sample. This sample also exceeded the SI site screening standard for benzo(a)pyrene (0.08 ppm).

3.3.2 Geotechnology Sampling

Geotechnology completed soil sampling from ten subsurface borings in the playground area in August 1993. The report of this investigation was completed November 30, 1993. Contamination with semi-volatile organic constituents (like those found in coal-tar) and lead were detected. The source and full extent of contamination were not determined during this investigation.

Surficial soil sampling was conducted by Geotechnology in July 1994. A total of ten composite soil samples were collected from the 0-6 inch depth. These surficial sampling results, collected from areas outside of the fenced asphalt playground, were similar to the results found by DNR.

Geotechnology conducted several non-invasive site assessment activities including magnetometer, infrared thermographic, and ground penetrating radar surveys. The results of these surveys indicate that anomalies are present beneath the asphalt playground. These anomalies may indicate the presence of buried metal.

At DESE's request, an additional site assessment was conducted by Geotechnology in 1995. Field work was completed in July 1995, and the report of this work was dated September 7, 1995. This investigation included surface soil sampling, several additional soil borings and installation of three groundwater monitoring wells across the entire property. Contamination with semi-volatile organic constituents and lead was found to extend across the entire property, up to the property boundaries.

4.0 Data Gaps

To date, no off-site sampling has been conducted. The lateral and vertical extent of contamination has not been defined. Anomalous readings were found during thermographic and electromagnetic studies of the subsurface materials on-site. However, the source of the tar-like substance which emerged in the asphalt playground has not been found.

5.0 Contaminants of Concern

Lead and polycyclic aromatic hydrocarbons (PAHs) are the primary contaminants of concern. The main semi-volatile compounds found during the investigations on the Hubert Wheeler State School property have been benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, and chrysene. In many instances, these contaminants were detected at levels exceeding DOH's residential Any-Use Soil Levels.

5.1 Lead

Human exposure to this metal can have adverse effects on such tissues as the heart, kidneys, lungs and brain. These effects are more striking in children. Nearly all of the lead entering the bloodstream of an adult will move into bones and teeth within a few weeks. In children, however, over 25% of the lead remains in their soft tissues.

Lead exposure can cause poor growth and decreased mental ability in an unborn child. Similar effects can occur in young children. At high levels of exposure, lead can severely damage the brain and kidneys of both adults and children. Lower levels of lead exposure contribute to slower reaction time, poor memory, and weakness in the extremities. Some lead compounds may be carcinogenic, but have not been classified as such at this time.

5.2 Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are a group of chemicals that are formed during the incomplete burning of coal and other organic substances. A few PAHs are used to prepare medicines, dyes, plastics and pesticides; others are contained in asphalt used in road construction. EPA has determined that seven PAHs are probable human carcinogens. Negative immunologic effects have been reported in animals.

6.0. Preliminary Removal Action Goals

Preliminary Removal Action Goals (PRGs) have been requested from the DOH. As this site is being addressed through the SACM

process, both removal and remedial goals will be addressed at the same time. The PRGs will be utilized to determine whether a removal of residential soils is necessary.

7.0 Removal Assessment - Technical Approach

7.1 Proposed Phase I Activities

Community interviews, surficial soil sampling of nearby residences, and subsurface sampling of nearby commercial properties have been planned.

Approximately 2-4 staff members from DNR and DOH will interview residents in their homes. The interview form which has been prepared for this survey is attached. (Attachment 2) The purpose of the interviews will be to gather additional information regarding historical land uses, the extent of possible contamination, and to provide an opportunity for the residents to obtain information from the state agencies.

Approximately 10-20 surficial soil samples will be collected from the 0-6 inch depth in nearby residential yards. Four to five aliquots of soil will be composited per soil sample. Sampling locations will be determined in the field and will be thoroughly documented.

Approximately five soil borings will be collected from nearby commercial and/or residential properties. The borings will extend roughly five feet below grade or below the first encounter with fill material. Sampling locations will be determined in the field, pending site access. One grab soil sample will be collected per boring. Grab samples will be collected of any non-fill (i.e. tar-like) substance encountered.

All samples will be analyzed for base neutral extractables and total lead. Grab samples may be analyzed for volatile organic compounds as determined by DNR field staff. The Phase I Removal Assessment Sampling Plan is attached. (Attachment 3).

7.2 Proposed Phase II and III Activities

If a significant number of residential homes exceed the PRGs, additional residential sampling will be warranted. The surficial soils of up to fifty residential homes may be sampled as part of Phase II. Trenching along the asphalt playground of the Hubert Wheeler State School is also planned during this phase, to determine the origin of the tar-like waste.

Phase III activities may include additional characterization of the fill area to determine the quantity of hazardous material present, define the vertical/horizontal extent of contamination, and to characterize any sources of contamination outside of the school boundaries.

8.0 Phase I Schedule and Budget

Community interviews will be conducted February 28-29, 1996. Phase I soil sampling will be conducted during the week of March 4-8, 1996.

The budget for Phase I of the Removal Assessment is $24,650.00.

9.0 References

ATSDR, U.S. Department of Health & Human Services. Toxicological Profile for Polycyclic Aromatic Hydrocarbons (PAHs). October 1993.

ATSDR, U.S. Department of Health and Human Services. Toxicological Profile for Lead. April 1993.

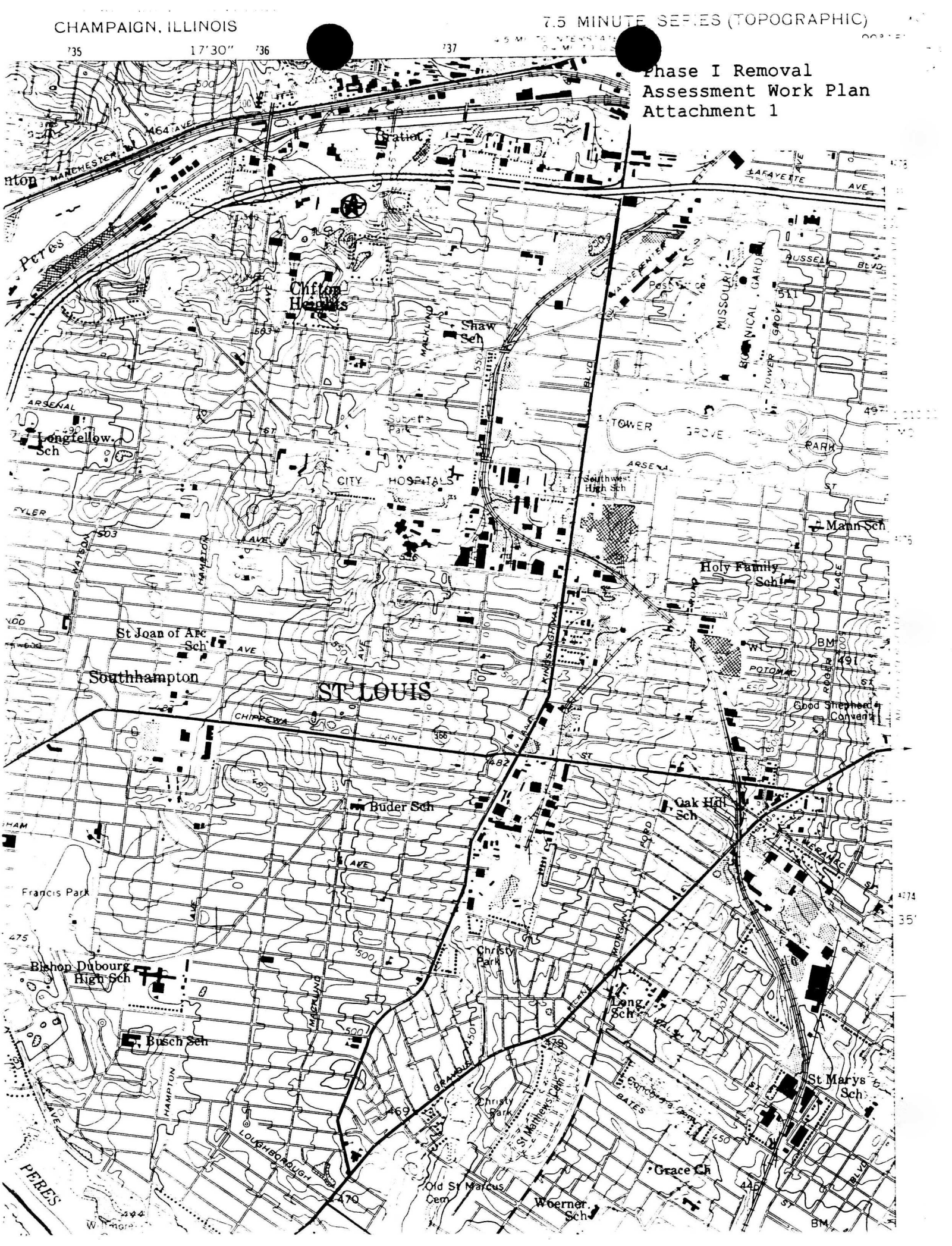
Bloss, Julie A., Missouri Department of Natural Resources. Site Inspection Report for the Hubert Wheeler State School site. September 20, 1994.

Bloss, Julie A., Missouri Department of Natural Resources. Hubert Wheeler State School Site. Briefing paper. August 23, 1994.

Hinkson, Robert, Missouri Department of Natural Resources. Hubert Wheeler State School Site. Briefing paper. February 9, 1996.

10.0 Attachments

Attachment 1 - Site Map
Attachment 2 - Community Interview Survey form
Attachment 3 - Site Sampling Plan/Site Safety Plan


CHAMPAIGN, ILLINOIS
7.5 MINUTE SERIES (TOPOGRAPHIC)
17'30"
Phase I Removal
Assessment Work Plan
Attachment 1
Chifton Heights
Shaw Sch
Longfellow Sch
CITY HOSPITAL
TOWER GROVE PARK
Southwest High Sch
Mann Sch
Holy Family Sch
St Joan of Arc Sch
Southhampton
ST LOUIS
Good Shepherd Convent
Buder Sch
Oak Hill Sch
Francis Park
Bishop Dubourg High Sch
Busch Sch
Christy Park
Long Sch
St Marys Sch
Grace Ch
Old St Marcus Cem
Woerner Sch
LAFAYETTE AVE
RUSSELL BLVD
MISSOURI BOTANICAL GARDEN
ARSENAL ST
CHIPPEWA AVE
POTOMAC ST
MACKLIND AVE
HAMPTON AVE
KINGSHIGHWAY BLVD
GRAND BLVD
LOUGHBOROUGH
PERES

COMMUNITY INTERVIEW FORM
HUBERT WHEELER STATE SCHOOL SITE
ST. LOUIS, MISSOURI

DATE:_____ **TIME:**_____ **SURVEYOR:**_____

Hello. My name is Julie, Bob, Tim, or Art. We are from the Missouri Department of Natural Resources (and the Missouri Department of Health) in Jefferson City, Missouri. As you know, we are conducting community interviews near the Hubert Wheeler State School site. We appreciate your time.

We would like for you to answer a few questions so we may add your thoughts to those of your neighbors and other area residents:

NAME:_____

ADDRESS:_____

PHONE NUMBER: (314)_____

1. **How long have you lived at this residence?** _____ **years**

2. **Where did you live prior to this (i.e. in this neighborhood or elsewhere)?**

_____
_____
_____

3. **How many people live in your residence? What are their ages?**

_____
_____
_____

4. **How old is your home? Do you remember in what year was it built?**

_____
_____
_____

5. **Are you familiar with the Hubert Wheeler School site? (If not, explain some of the site history)**

Yes **No** **Don't know**

6. **What do you recall hearing or reading about the site?**

_____
_____
_____
_____

7. Do you have a garden on your property? Have you conducted any other excavation work on your property?

8. Have you ever observed any evidence of fill material on the surface or in excavations on your property? If so, please describe the materials you saw.

9. Have you ever noticed any tar-like material or any other black substances in your soil, in the yard or during excavations? If so, please describe.

10. Have you ever noticed containers of any kind that have been buried on your property? If so, please describe.

11. Have you ever experienced any adverse health effects while working on your property? If so, to what did you attribute them?

12. Do you remember any dumping on the Hubert Wheeler School property? If so, do you remember in what year this occurred?

IF RESIDENT HAS LIVED IN THE AREA FOR OVER 25 YEARS ASK QUESTIONS 13 - 21:

**13. What do you recall about past land usage of the Hubert Wheeler School property and the surrounding area? Did you work or play in this area?

**14. What companies do you remember operating on these properties in the past?

**15. Do you recall any manufactured coal gas producing plants or coke producing plants in the area? Were other industries present in the area? Do you remember any other industries that you might suspect of generating tar-like materials?

**16. Do you recall a "pit" or dump in the area? (If yes, ask questions 17 - 21; If no, skip to Question 22)

Yes No Don't know

**17. Do you know the origin or uses of the pit / dump?

**18. What were the approximate dimensions of the pit / dump (area and depth) based on modern-day landmarks?

**19. Was anything stored in the pit / dump? Do you recall the types of things that were placed in the pit / dump? Do you know why this material was stored or placed in the pit / dump?

**20. Do you recall seeing any companies, buildings, or vehicles in the pit / dump?

**21. How was the pit / dump area filled in? Do you know who may have placed fill material in the pit / dump area?

22. Are there any questions that you would like for us to answer?

23. Do you have other concerns about this site that we haven't talked about?

24. Are you aware that the Missouri Department of Natural Resources previously set up an Information Repository at the St. Louis Public Library on 1301 Olive Street (2nd Floor, Government Documents Section)? Have you ever viewed this material? Would you like for us to keep this material updated?

25. Is that the best place for this information to be made available to the public? Is there another location that would be better?

26. Do you feel that you have been kept informed about the Hubert Wheeler State School site?

Yes No Don't know

27. How would you prefer to receive informational updates? Please rate first choice as number 1, second as 2, and so on:

Letter ____ Newspaper ____ Radio ____ T.V. ____ Public Meeting ____

28. We have prepared a mailing list for interested residents and community leaders. Would you like to be included in future mailings?

Yes No Don't know

29. The Missouri Department of Natural Resources is planning to be back in the area during the week of March 4, 1996, to conduct soil sampling. Additional sampling may be planned later in the year. If possible, would you like the Department of Natural Resources to sample the soil in your yard?

Yes No Don't know

30. Would you be interested in possibly participating in a community advisory group concerning this site?

Yes No Don't know

31. Do you know anyone else living in the neighborhood who might have information and who might be willing to speak with us? (Do you know anyone who might have worked in industries that might have generated the tar-like material or who might have contributed fill to the pit?)

32. May we contact you again in the future if we have further questions?

This concludes our formal questions. Thank you for your help. Are there any additional questions, suggestions or thoughts you have regarding this site? (Continue on back of page as needed)

Hubert Wheeler State Scho[redacted]
Community Interview Form
February 28-29, 1996

SURVEYORS SIGNATURE:_____

DATE: _____

RECE
MAR 2
HAZARD
MISSOURI
NATURAL

Phase I
Removal Assessment Sampling Plan

Hubert Wheeler State School Site
5707 Wilson Avenue
St. Louis, Missouri

Prepared For:

Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

Prepared By:

Missouri Department of Natural Resources
Division of Environmental Quality
Environmental Services Program

Table of Contents

Section		Page
1.0	Introduction	1
2.0	Site Description and History	1
	2.1 Site Location	1
	2.2 Site Description	1
	2.3 Site History/Contaminants of Concern	2
3.0	Sampling Strategies	2
	3.1 Sampling Technique	2
	3.1.1 Surface soil composite samples	2
	3.1.2 Subsurface soil grab samples	3
	3.1.3 Miscellaneous soil grab samples	3
4.0	Sample Collection Order/Quantity	3
5.0	Sample Container and Preservation Requirements	4
6.0	Chain-of-Custody	4
7.0	Analyses Requested	4
8.0	Data Quality Objectives	4
	8.1 Field Technique	5
	8.1.1 Field decontamination	5
	8.2 Quality Assurance/Quality Control Samples	5
	8.2.1 Duplicate samples	5
9.0	Investigation Derived Wastes (IDW)	6
10.0	Site Safety	6
11.0	Reporting	6
Attachments		Located at back of document
	Appendix A - Site Map	
	Appendix B - Health and Safety Plan	

1.0 Introduction

As authorized under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Missouri Department of Natural Resources (MDNR), Hazardous Waste Program (HWP), Site Evaluation Unit is conducting a removal assessment of the Hubert Wheeler State School Site. The MDNR, HWP requested the MDNR, Environmental Services Program (ESP) to prepare and implement a sampling plan as part of the removal assessment. As requested by HWP, the removal assessment will be implemented in phases. This sampling plan addresses the first phase of a proposed three phase removal assessment. Information learned from field observations and sampling will aid the HWP in determining potential health risks posed to local residents, environmental concerns potentially present in the surface and subsurface soils surrounding the site, and the scope of further removal assessment activities.

2.0 Site Description and History

2.1 Site Location

The Hubert Wheeler State School is located at 5707 Wilson Avenue, in St. Louis, Missouri. Although the site is named as such, the actual boundaries for the site have yet to be determined. Based upon reports and historical use of the area, the boundaries would likely extend outside of the Hubert Wheeler State School property. The legal description is the S 1/2, Sec. 19, T. 45N., R. 7E. The site can be reached by traveling, from I-44, south on Hampton Avenue to Wilson Avenue and then by traveling east on Wilson Avenue approximately three city blocks. The site is on the north side of Wilson Avenue.

2.2 Site Description

The Hubert Wheeler State School Site is on property owned by the Missouri Department of Elementary and Secondary Education (DESE). The site is in a mixed residential and commercial area and was most recently used as a school for severely developmentally disabled students. The school was constructed in 1970 and operated until August 1994 when it was determined the potential risks to students and faculty from environmental contamination were present.

Previous site ownership has included a fire brick manufacturing company and a clay mining company. Building and occupancy permits also indicate the site was used as storage by the St. Louis Coke & Foundry Supply Company.

Aerial photographs indicate the site is located near demolition landfilling operations which occurred around 1960. The area has been reportedly used for general dumping from approximately the early 1900s to the 1960s.

Please refer to Appendix A for a map of the site.

2.3 Site History/Contaminants of Concern

A "seep" of tar-like material has apparently surfaced in the area of an asphalt playground at the school ever since the school was constructed. As a result of the continued "seep", DESE obtained the services of an environmental consultant and has conducted a multi-phase site assessment of the property. During initial investigations, DESE discovered a zone of tar-like material in the subsurface near the location of the seep and at least one buried drum which may have been associated with the material.

MDNR became aware of the site in February 1993 and subsequently conducted a preliminary assessment/site inspection. Analytical results from samples collected during both MDNR and DESE investigations indicate the surface and subsurface soils have polynuclear aromatic hydrocarbons and lead present at levels of concern.

3.0 Sampling Strategies

HWP is attempting to determine whether local residents may be at risk from contaminants in the surface soils and whether any contaminants may be present beneath commercial properties at approximately five feet below ground (the approximate depth where a horizontal zone of "tar-like" material was discovered on the school property).

A judgmental sampling approach will be utilized during this event. Personnel will attempt to determine sample locations so as to reflect the most potential for risk to humans or the environment.

During the first phase of the removal assessment, sampling will focus upon collecting approximately 15-20 surface soil (0- to 6-inch depth) composite samples from residential properties adjacent to the site as well as approximately five subsurface (five-foot depth) soil grab samples from commercial properties adjacent to the site. If sampling personnel encounter any unnatural or suspect materials during field activities, grab samples will be collected of the material(s).

3.1 Sampling Technique

3.1.1 Surface Soil Composite Samples

Soil composite samples will be collected from the 0- to 6-inch depth from adjacent residential properties utilizing a combination of clean stainless steel spoons and clean or field decontaminated stainless steel bucket augers, trowels, or shovels.

Each residential surface soil composite sample will consist of approximately five separate locations (aliquots) determined in the field. Upon determining locations for each composite soil sample, personnel will remove any vegetation which may be present on the surface and utilize clean or field decontaminated sampling equipment to retrieve soil down to the 6-inch depth. The soil will be transferred into clean aluminum foil pans, thoroughly homogenized, and placed into sample containers.

3.1.2 Subsurface Soil Grab Samples

Subsurface soil grab samples will be collected from the approximate five-foot depth from adjacent commercial properties. A hydraulic soil probe using clean or field decontaminated core samplers with clean acetate liners inserted will be used to retrieve soil from the desired depth at locations determined in the field. Sampling personnel will ensure all underground utilities will be located prior to conducting any subsurface boring. The soil will be removed from the acetate liners, placed into clean aluminum foil pans, thoroughly homogenized, and placed into sample containers.

3.1.3 Miscellaneous Soil Grab Samples

In the event personnel encounter suspect or unnatural materials, such as the "tar-like" material encountered on-site, grab samples may be collected. Personnel will utilize clean or field decontaminated sampling equipment to retrieve the soil/material. If it is suspected the material is volatile in nature, personnel will immediately transfer a portion of the material to sample containers for volatile organic analysis. The remaining portions of material/soil will be transferred to clean aluminum foil pans, homogenized, and placed into sample containers.

4.0 Sample Collection Order/Quantity

Samples will be collected in the order of decreasing volatility. The approximate number of samples to be collected are as follows (subject to change based upon field conditions and observations):

Surface soil composites - 22
Subsurface soil grabs - 6

The above estimate includes Quality Assurance/Quality Control samples.

5.0 Sample Container and Preservation Requirements

Soil/Source Samples

Parameter	Container(s)/Volume	Preservative(s)	Holding Time
Volatile Organic	One 4-oz glass jar	Cool	14 days
Base Neutrals	One 4-oz glass jar	Cool, solvent-rinsed container	7 days to extract
Total Metals	One 4-oz glass jar	Cool	6 months

All samples will either be collected in pre-preserved sample containers or will be preserved in the field as appropriate.

6.0 Chain-of-Custody

All samples will receive a numbered tag and the corresponding number entered onto a chain-of-custody form indicating the location, date and time of collection, and analytes requested.

Samples will be stored and transported on ice in coolers. Custody of the samples will be maintained by ESP field personnel until relinquishing the samples to personnel at the state's environmental laboratory within the Environmental Services Program in Jefferson City for analyses.

7.0 Analyses Requested

Based on the history of the site and previous sampling conducted, all samples will be analyzed for base neutrals and total lead analyses. If suspect materials are encountered, volatile organic analyses may also be requested. Instructions will be relayed to analytical personnel that if a soil sample's total analyte results are twenty times 80% of the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limit for an analyte, TCLP analysis will be performed on that sample.

8.0 Data Quality Objectives

To help ensure precise, accurate, representative, complete, and comparable data is achieved, ESP field personnel will consistently use the following protocols for sampling conducted. All analyses will be conducted in accordance with the Fiscal Year 1996 Quality Assurance Project Plan for site inspection/expanded site inspection (which shall include sampling conducted in association with this removal assessment) sites in Missouri.

8.1 Field Technique

Clean disposable nitrile gloves will be worn by sampling personnel for each separate sample collected.

Clean or field decontaminated equipment will be utilized for all sample collections.

8.1.1 Field Decontamination

Field decontamination of any reusable sampling equipment, if required, will be accomplished by washing with a non-phosphate detergent and potable water solution, followed by a tap water rinse, a 10% nitric acid rinse, a deionized water rinse, a methanol rinse, a hexane rinse, and a final deionized water rinse. Decontaminated equipment will be stored on clean plastic,

allowed to air dry, and wrapped in foil until used again.

The hydraulic soil probe core sampling devices will be decontaminated using a pressure sprayer with non-phosphate detergent and a deionized water rinse.

8.2 Quality Assurance/Quality Control Samples

8.2.1 Duplicate samples

Duplicate samples will be collected at a rate of 10% of the total number of samples or at least one for each media sampled. Each duplicate sample will be collected alongside its true sample using the same equipment and technique as for the true sample. Each duplicate will receive a numbered tag, be entered onto the chain-of-custody form, and submitted for the same analyses as its true sample.

9.0 Investigation Derived Wastes (IDW)

Efforts will be made to minimize IDW generation. IDW may include soil, decontamination fluids, disposable sampling equipment, disposable personnel protective equipment (PPE), and reusable sampling equipment.

Field personnel will make every attempt to return soils to their source immediately after generation. Disposable PPE will generally be treated as solid waste and disposed through the ESP laboratory in Jefferson City. Decontamination fluids will be containerized and transported back to the ESP laboratory for proper disposal. All reusable sampling equipment will be returned to the ESP laboratory in Jefferson City and properly decontaminated.

10.0 Site Safety

A site safety plan has been prepared and is attached as Appendix B. All personnel involved with sampling will be required to read and initial the safety plan prior to starting work.

11.0 Reporting

The analytical results of the samples collected will be presented, along with methods of sample collection and observations, in a formal report to be submitted to the HWP.

Submitted by:

Brian J. Allen
Environmental Specialist
Superfund/RCRA Unit
Environmental Services Program

Date: March 1, 1996

Approved by:

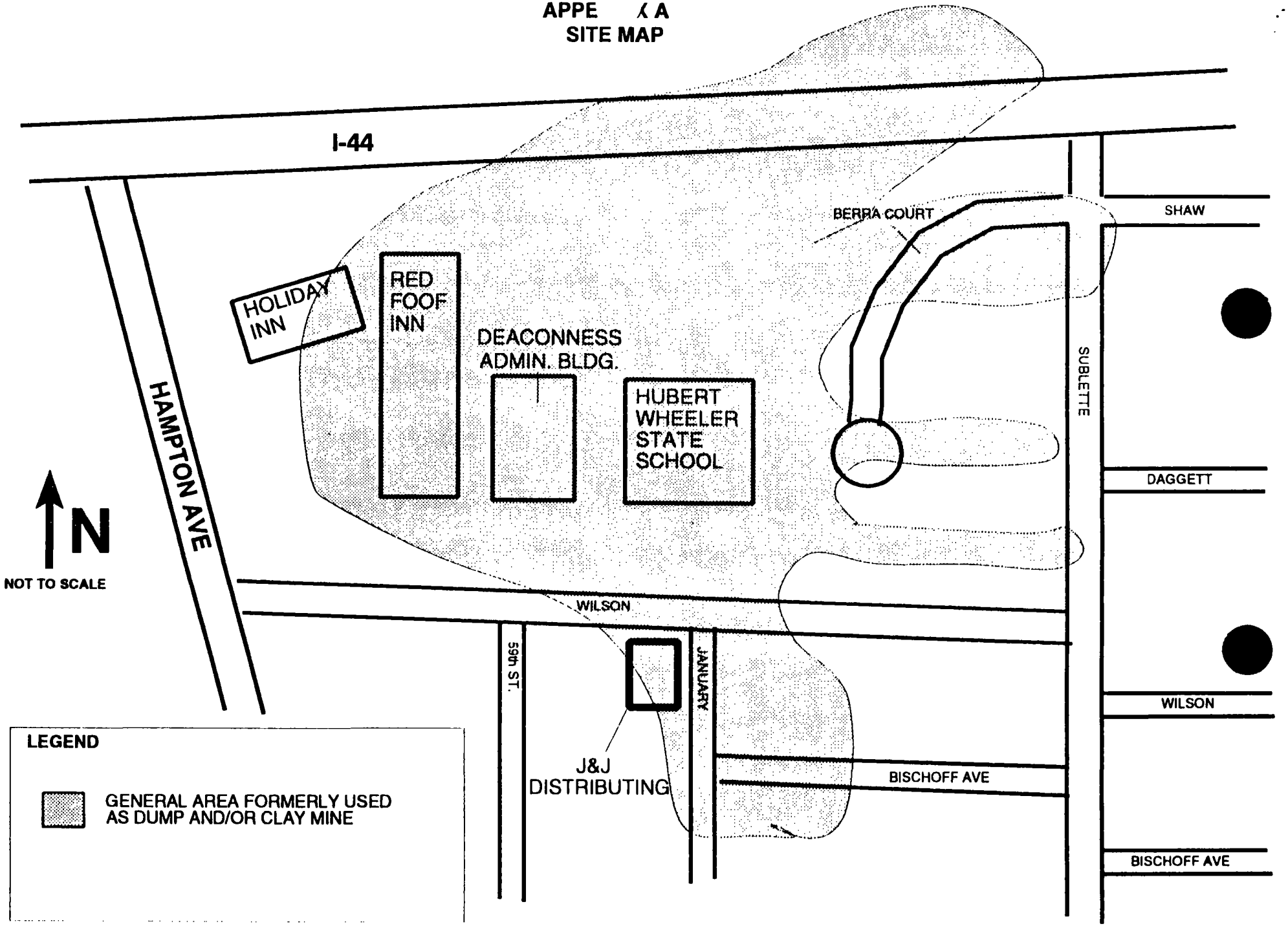
Douglas N. Edwards
Field Services Section Chief
Environmental Services Program

DNE:bac

c: Julie Kelsey, Environmental Specialist, HWP
Bob Hinkson, Environmental Specialist, HWP
Bob Eck, Regional Director, SLRO

APPENDIX A
Site Map
Hubert Wheeler State School Site
St. Louis, Missouri

APPE X A
SITE MAP



APPENDIX B
Site Safety Plan
Hubert Wheeler State School Site
St. Louis, Missouri

SAFETY OUTLINE
(Use back of page to complete items)
(Attach pertinent documents)

Page 1 of 1
County: St. Louis City
Site/Location: Hubert Wheeler State School

Date Prepared: 2/29/96 Date Used: _____

	Initials		Initials	
1. Prepared by:	Brian Allen	BJA	_____	_____
for:	_____	_____	_____	_____
	_____	_____	_____	_____

2. Purpose of Activity and Procedures: To collect samples for analyses to be used in assessing possible removal activities for the site.

3. Material(s): Soils and possible source material.

4. Possible Hazards: Contact with polynuclear aromatic hydrocarbons associated with the Hubert Wheeler State School Site. Cold stress.

5. Personnel Monitoring: All sampling personnel will be involved in a medical monitoring program and be current. All personnel will also have received at least 40 hours of hazardous materials operations training and subsequent 8 hour annual refresher training.

6. Site Monitoring: Air monitoring will be conducted for volatile organic intermittently in the breathing zone during sampling activities.

7. Protective Level: A B C XXD (Modified)

8. Protective Gear:
___ Steel toed rubber or leather work boots
___ Gloves, nitrile, inner
___ Gloves, nitrile, outer
___ Suit, saranex or tyvek
___ Hard hats
___ Hearing protection
___ Eye protection

9. Decontamination Procedures: Personnel will utilize boots, gloves, and protective clothing during sampling activities. Hard hats, ear and eye protection will be worn at all times while in the vicinity of the hydraulic soil probe. Personnel will shower upon departing the site and properly

containerize and dispose of spent equipment.

10. Precautions, Site Control, Emergency Exit: No eating, drinking, or smoking during sampling activities. Unauthorized personnel will not be permitted near the hydraulic soil probe or sampling locations during work periods.

11. Hospital Location:
Ambulance 911
Police 911
Fire 911

12. Further precautions/notes/comments:

Attachment 3

STATE OF MISSOURI Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

MEMORANDUM

DATE: April 17, 1996

TO: Hubert Wheeler State School
Superfund technical file

FROM: Julie B. Kelsey, Environmental Specialist JBK
Superfund Section, Hazardous Waste Program

SUBJECT: Removal Assessment Community Interviews

On February 28-29, 1996, the Missouri Department of Natural Resources and the Missouri Department of Health (DOH) conducted community interviews near the Hubert Wheeler State School site. On February 28, 1996, Mr. Tim Lacy and I, each interviewed one residence. After the interviews, we researched the area surrounding the Hubert Wheeler State School site at the St. Louis public library. Copies of historical information we located, are attached.

On February 29, 1996, Mr. Arthur Busch, DOH, and I interviewed six residences. We also had a brief meeting with Deaconess Hospital staff, which I have addressed in a separate log. I have compiled the information we received from the residents into one attachment.

JBK:dal

♻

INFORMATION TAKEN FROM COMMUNITY INTERVIEWS
AT THE HUBERT WHEELER STATE SCHOOL SITE
FEBRUARY 28-29, 1996

GENERAL INFORMATION

Thirteen residents, representing eight families, were interviewed for this survey. Most of those interviewed had lived in this area of St. Louis, commonly known as "the Hill", for their entire lives. The Hill was described by one person as a tight-knit Italian community, one in which some residents do not feel the need for a car, since they are able to walk to church and the store.

Several residents expressed their feelings of loss over the closure of the Hubert Wheeler State School. Some were concerned about the future use of the property and hoped the building could re-open as a school or retirement home.

The Hill 2000, a civic organization, was described by many as a group that unites the community. This group may be an appropriate point of contact for future public outreach. They also may have important historical information of this area, such as archived photographs, which may aid in future investigations.

The address of the Hill 2000 is as follows:

Hill 2000, Incorporated
5129 Shaw Avenue
St. Louis, MO 63110
(314) 776-2000

DESCRIPTION OF THE CLAY MINE/PIT

Laclede-Christy operated a clay mine near the current Hubert Wheeler State School property. As a result of the mining activities, which included Laclede-Christy piling clay in 30-40 foot piles, a pit area was formed. This pit has been described as being "over 30 feet in depth", "50-60 feet deep", "60-70 feet deep", "75-80 feet deep" and "large enough to put a house in".

One resident said that there was also a large excavated pit area near Wilson & Lily. There was once a house built near the base of the slope. The surrounding land was so much higher that the roof of the house was even with adjacent ground surface.

The former pit area is known to have been filled in with waste materials. The affected area ranges roughly from Macklind Avenue on the east to Hampton Avenue on the west, and from River des

Peres on the north to Stephens Court (off Elizabeth Street) on the south. One resident reported dump areas as far south as the intersection of January and Columbia Avenues; another said there was a dump at Fyler and Jasper Park, with fill on the south side of Fyler.

DESCRIPTION OF THE EXTENT OF THE FILL AND THE SURROUNDING AREA

River des Peres used to run freely through the Hubert Wheeler School property. During the early 1900's, the River des Peres was re-channeled to the north. After Laclede-Christy had mined the area, a gully 10-feet in depth washed materials from the present Hubert Wheeler property north to the River des Peres. A pond, fed by a spring and/or a small tributary of River des Peres, formed near Macklind and Sublette Avenues. The water was said to be deep enough for local children to wade in the water. Reportedly, this lake was filled in when the school was built. One resident said that the location of Berra Court is where the lake would be today.

A spring reportedly was present near the Hubert Wheeler State School property. One resident said that this caused problems for the house built right across from the former school.

There is a mine shaft near Red Roof Inn and Holiday Inn; water was reportedly pumped into the shaft after closure of the clay mine. One resident remembered that Laclede-Christy had a small train which ran from this mine shaft to the southern portion of the clay mine at the intersection of Fyler and Macklind Avenues.

Another clay mine shaft is reportedly located near 5400 Dempsey Avenue. The clay mines here were said to be 100-200 feet deep. There is also a clay mine shaft reported to be at the northwest corner of 59th Street and Elizabeth, southeast of Imo's.

Berra Park, currently located at Macklind and Daggett, was formerly Macklind Field. One resident remembers when this field was leveled by the city in 1940. A 12 foot high mound of dirt was deposited on the property, and it was developed as a softball field as requested by a local politician.

Several residents remembered the construction of the school. One resident said that Schnurr Construction Company had the contract to build the Hubert Wheeler State School. Schnurr

reportedly brought in dirt and put drains in so that the water on the school property drained north to the River des Peres.

One resident reported that a portion of the pit was filled in as a part of the school construction. Dirt, waste concrete, and at least ten feet of fill were introduced to the site on two separate occasions. This fill material was then compacted and more dirt was introduced. This resident described the school as having been placed on "concrete floating footings". The floating footings were used so that if one part of the school were to sink into the fill, the rest of the structure would absorb the impact and sink as well.

Another resident said that the fill near the school is 18-20 feet deep, and that Sam Rallo (presumably from C. Rallo Construction) was hired to fill this area in with rock and dirt. Another estimated that 30-35 feet of fill underlie Wilson Avenue, with 12-15 feet of that as cinders. According to one resident, up to 50 feet of fill may be present beneath the residential area near Stephens Court. A swale near January & Bischoff was also reportedly filled in.

Mr. John DiPaulos was said to have been the director of planning and construction for the state of Missouri at the time the school was constructed. Mr. James Becker prepared the structural design for the school.

One resident observed the construction of the Hubert Wheeler State School's roof. Two inches of gypsum was placed on the roof, then the roof was covered with tar. Black paper was placed over the tar, with rock placed on top of that.

OPERATION OF THE PIT AS A DUMP

Several residents said that the overall pit area was operated as a dump. Separate portions of this pit area were operated as smaller dumps by different people. One dump was said to have been located near the intersection of Macklind and Daggett Avenues (where Berra Park is today), with the entrance on Macklind, and the other between Sublette and January Avenues, with the entrance on Sublette.

The operators of the dumps were said to have been Bill Brandhardt (deceased) who handled "Brandhardt's Dump" at Macklind and Daggett in the 1930's, C. Rallo Construction (also referred to as C. Rallo Contracting) who reportedly paved Wilson Avenue, Marnotti's, and a man named Marcelle (in the 1930's) who lived on Dempsey Avenue. The dump operators were said to have collected fees from the dump trucks. The dump trucks reportedly paid by the load.

Two residents reported that the dumped wastes in the pit were always smoldering, or that fires burned frequently. The fire department was often called to address the fires, prior to the installation of I-44 (about 1970). Two residents reported that children were burned by the hot ashes. One of these incidents was said to have occurred in the mid-1960's.

WASTES DISPOSED IN THE PIT

Many residents described playing in the dump as children. They were able to recall a variety of waste materials, including the following: cinders, ash, bottles, medical waste (prescription bottles, blue Phillips Milk of Magnesia bottles, vials, X-rays, casts), bleach bottles, brick, glass, cans, truckloads of dirt, refractory materials, fire brick, pieces of tile, straw, a pile of plastic/wooden heels from a shoe factory, and "anything mis-manufactured".

Twelve to eighteen full 55-gallon drums of tar were reportedly buried on the Hubert Wheeler State School property, at a depth of 25 feet. This was thought to have occurred around 1932. One resident said that tar was used to roof the school. It is thought that tar may have been buried on-site around 1970, during the construction of the school. The suspected location of burial is east and north of the present school buildings. Another resident said that her child brought home a wad of tar from the dump around this time.

Another resident remembers ether vapors coming out of the street sewers, after the nearby hospital dumped ether down their drains.

HISTORICAL LOCAL INDUSTRIES/POSSIBLE SOURCES OF WASTE MATERIALS

Laclede-Christy operated the clay mine and produced fire bricks. Reportedly, no hazardous wastes were generated by Laclede-Christy. Laclede-Christy was described by one resident as a "cooperative company".

Carondelet Foundry was said to have been located near Daggett, Bischoff, and Kingshighway, near where King Plymouth Dodge is today. Carondelet Foundry reportedly had a contract with Marnotti's to fill in portions of the pit area (owned by Marnotti's) with molding sand. The odor from the melting pots at Carondelet Foundry was said to have been strong.

Evans & Howard produced sewer pipe using kilns in their production process. The Blackburn-Post Pipe company also made sewer pipe using kilns. Blackburn-Post reportedly buried partially burned coal. American Stove (produced porcelain), Pearlite Pre-Castings on Kingshighway, McQuay-Norris, St. Louis Brick Company, Banner Iron Works on Shaw Avenue, National Lead, and Scullins Steel (located where Ace Metals is today) were other industries that historically operated in the area. Clay pots were said to have been manufactured on Patterson Avenue.

One resident remembers that garbage trucks of spoiled food and hospital waste were disposed in the pit. Another reported that American Stove deposited porcelain fragments, a body shop in Forest Park may have dumped lead, Pearlite Pre-castings brought sweepings, and a nearby hospital brought medical wastes.

During the construction of the school, trucks reportedly dumped materials at the request of the school developer. One resident surmised that any drum burial would have occurred at this time.

Mr. Sam Caputa reportedly acquired dirt from the H.K. Porter Company during the construction of the homes along Berra Court.

Several residents said that, as children, they had taken cinders from their family-owned coal stoves and deposited the ash material at the dump.

POSSIBLE ADVERSE HEALTH EFFECTS

One resident reported that his wife died of breast cancer in 1991. Another family said that their daughter has lymphoma. She has not lived in the area for the last 16 years.

POSSIBLE SOURCES OF HUMAN EXPOSURE

Several residents have vegetable gardens. One resident remarked that the only thing that grows in ash is tomatoes. At least one resident, knowing of the fill material, has an elevated garden.

All of the residents we spoke with knew their homes were built on or near a former dump area. Many spoke of finding ash, cinders, and glass bottles in their yards. One resident also found a commode in 1990, while building a patio.

Several residents said that the homes in Berra Court were potentially at the greatest risk of exposure. These homes were built in the late 1940's/early 1950's. One resident said that the yards along Berra Court were initially covered with two feet of topsoil, but that a significant amount of topsoil had eroded over time. This resident estimated that 25-30 feet of ash underlie the homes along Berra Court. Another resident said that it took "three fills" to elevate Berra Court to the height of Sublette Avenue.

Several residents reported that a water line on the south side of Wilson Avenue across from the school had "blown up" in 1995. The hole this created was at least 20 feet deep. One resident showed us flattened, warped glass bottles which emerged at the ground surface. Another resident surmised that the water line break was the result of sulfuric acid from the coal ash and cinders corroding the water line, causing the line to burst.

POTENTIAL ADVERSE ENVIRONMENTAL EFFECTS

One resident told us that he had a hard time getting grass to grow and that the problem was getting worse over time.

POSSIBLE ADDITIONAL SOURCES OF INFORMATION

Pete Ferrario was said to have worked at another Laclede-Christy plant and may have information about the origin of the fill material.

The Missouri Highway and Transportation Department may have historical records of the area dating back to the construction of I-44.

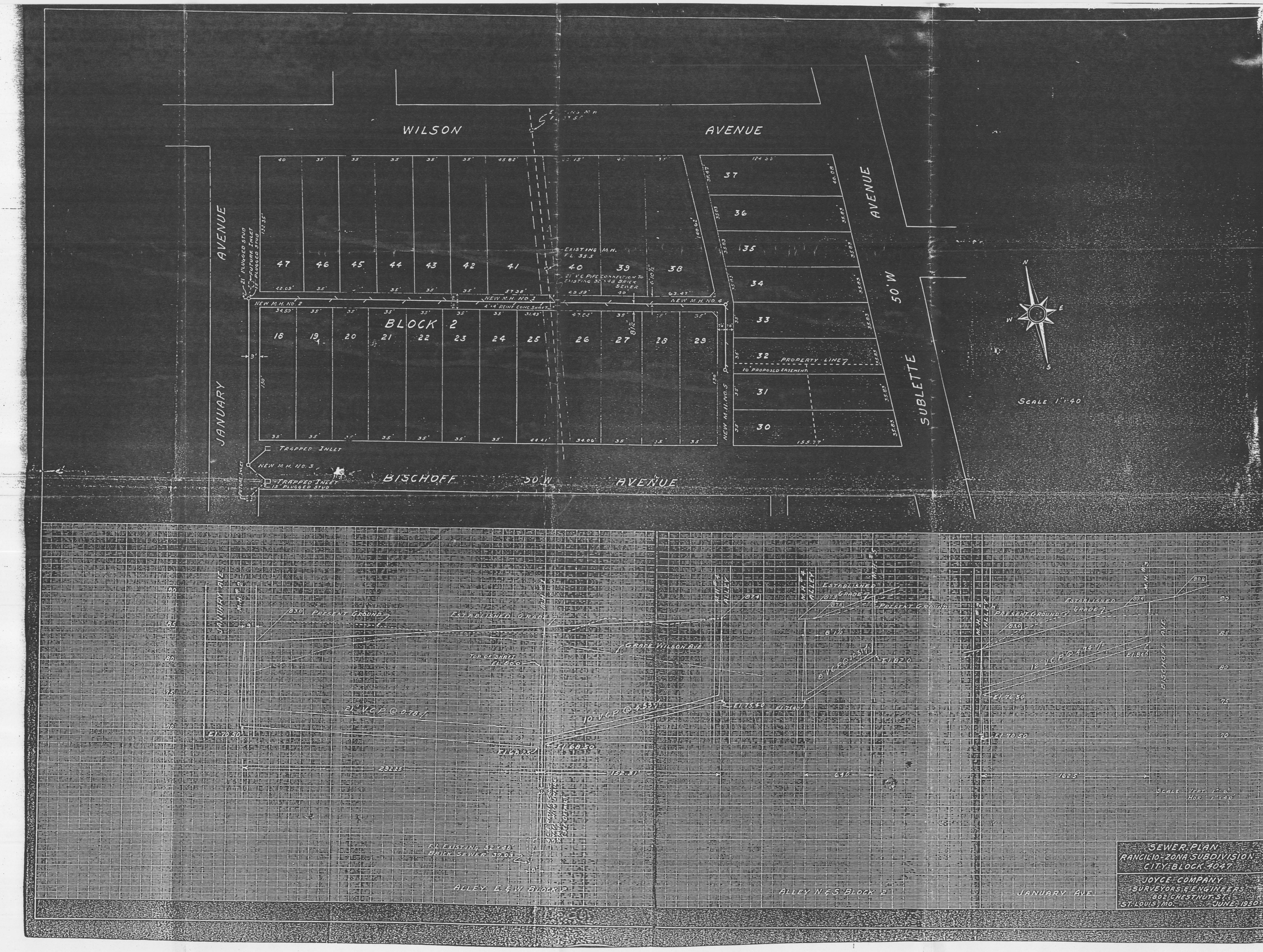
Fred Weber or John Weber Construction was said to have been involved with the highway project.

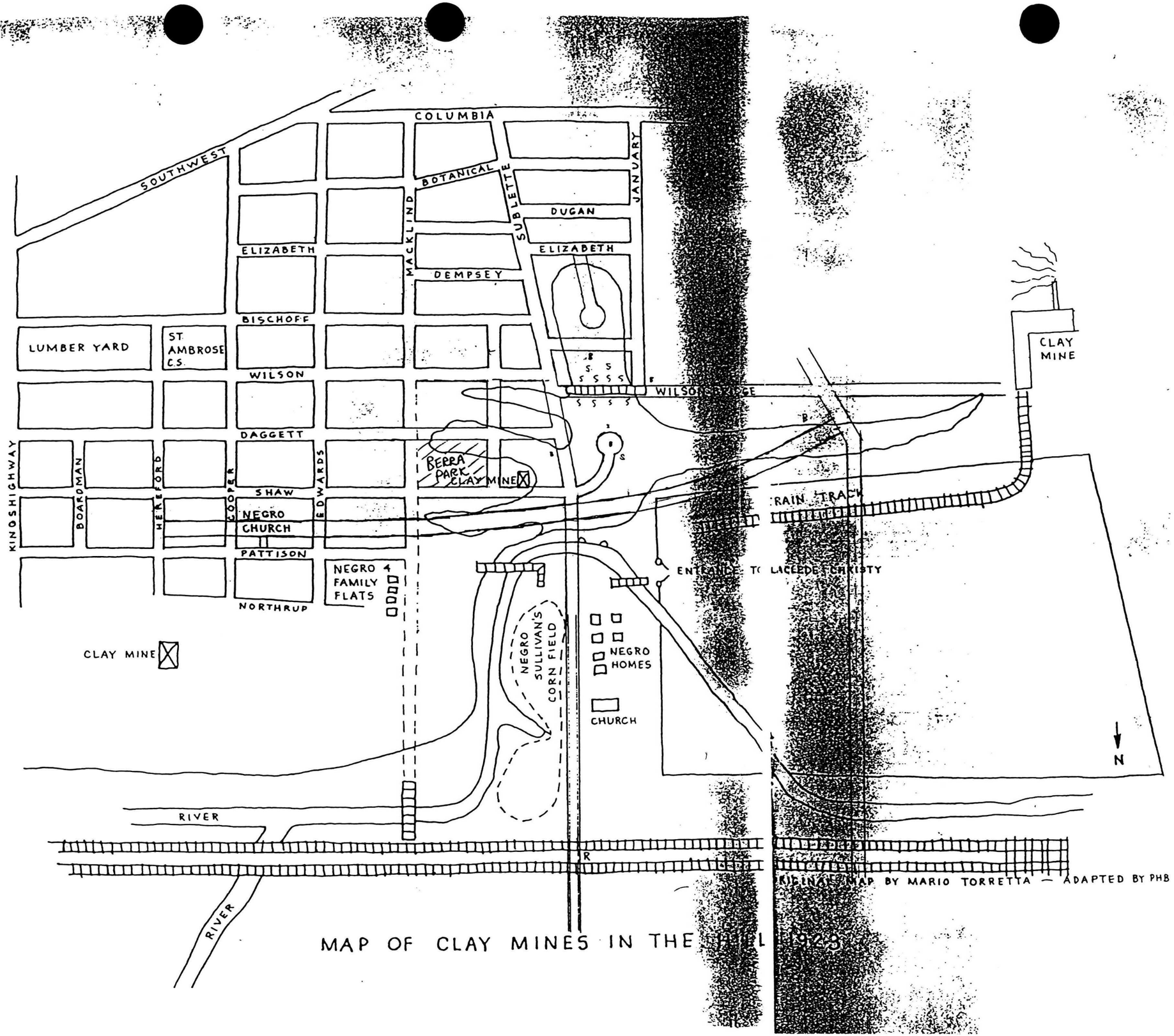
Mrs. Dickie has written a historical account of the Hill area and prepared a film on the subject.

Mr. Charles LaFerla reportedly has photographs of Berra Court prior to completion of the homes.

The Metropolitan Sewer District may have files of this area.

JBK:dal


WILSON AVENUE
JANUARY AVENUE
SUBLETTE AVENUE
BISCHOFF AVENUE
BLOCK 2
PROPERTY LINE
10' PROPOSED EASEMENT
EXISTING M.H.
TRAPPED INLET
NEW M.H. NO. 3
NEW M.H. NO. 2
NEW M.H. NO. 4
NEW M.H. NO. 5
SCALE 1"=40'
PRESENT GROUND
ESTABLISHED GRADE
GRADE WILSON AVE
ALLEY E. & W. BLOCK 2
ALLEY N. & S. BLOCK 2
JANUARY AVE
BISCHOFF AVE
SEWER PLAN
RANCILIO-ZONA SUBDIVISION
CITY BLOCK 4047
JOYCE COMPANY
SURVEYORS & ENGINEERS
802 CHESTNUT ST.
ST. LOUIS, MO.
JUNE, 1950



MAP OF CLAY MINES IN THE HILL 1923

Well, you see, first there was coal mining here. Some of the places – I remember in my early days you could tell certain places where they had a shaft, where they went down . . . You can't see that everywhere today, because everything is improved and leveled off. There's a lot of fireclay. Right across from here, the company I worked for, I was under all of this here, sixty feet deep. We used to go down in the mine. For over forty years they took that clay out of there. Did you ever see fire clay – how it looks? It looks like soap stone, kind of bluish clay – they make these fireclay brick, which is not a building brick. They line these furnaces in these foundries and the locomotive furnaces; it's a high-grade material that will stand a lot of heat. These glass furnaces. It's not a building brick. That's all they made where I worked. They manufactured that firebrick. From Manchester all the way up to Arsenal Street and from here over to Hampton Avenue – that's all undermined. We had to go down there, and they always had two pumps working day and night. The water was coming in there all the time. If they wouldn't pump it out, they would get drowned out and couldn't work in the mines. We had to go down and take care of those pumps. That was awful valuable stuff. There were several other mines around here, too. That's where a lot of these men made their living. They got to get the clay out and then they would grind it and pulverize it, rub it over a screen and then it goes through the machine and they mix it. Then it goes through the press and the driers and then they burn it. It was quite an interesting piece of work. They've been there for about 125 years, that company. And years ago, they got that land for nothing. But they finally did run out, and later on they had to ship it in by railroad. They're gone all together now, you know; they're out of business. The highway went through there. It looks like nothing happened there. Many a hard day's work went in there, I'll tell you. We had three shifts going. They didn't care if you brought your bed down there, because the machinery was running day and night. We couldn't hardly keep things together. It'd wear out so fast. It was our place to keep the things running, you know. The government took everything you could produce. I got away from there. It'll soon be twenty-two years since I've been away from that. (H-12)

Historical map (1923), with current residential development added by Bob Hinkson, DNR. "S" denote soil sample (surface); "B" denotes boring (5 feet) sampled as part of DNR removal assessment

Birds Force Bucs to Strand Thirteen Men

By MARTIN J. HALEY,
Globe-Democrat Sports Writer.

PITTSBURGH, PA., Aug. 20.—By virtue of magnificent pitching in the pinches and Lou Klein's timely double in the ninth inning, the Cardinals shaded Pittsburgh, 4 to 3, here this afternoon. A crowd of 20,659 saw the two-hour-and-40-minute struggle which evened up the series. It winds up in a double-header tomorrow. The Red Birds now lead the National League by a full game as their red-hot rivals, the Brooklyn Dodgers, were cooled off by the Boston Braves, 4 to 0, tonight.

KELIN DELIVERS

Klein delivered the day's winning punch for the Cards when he doubled past third base in the final round after Glenn Nelson singled and Joe Garagiola walked.

Ex-Cardinal Harry Gumbert was the target for that decisive uprising. He was the third of three Pirate pitchers in the long, tense battle.

Tiny Bonham started for Pittsburgh, but the Birds belted him for three runs and a 3-1 lead in the second inning, and when Marty Marion led off the third with a single, Southpaw Vic Lombardi relieved Bonham. Lombardi pitched out of trouble in that frame, then held the Cards hitless in the next four stanzas. Gumbert did likewise in the eighth, after Lombardi gave way to a pinchbatter, but the Birds finally regained their batting sights in the ninth.

Meanwhile the Cardinal pitchers George Munger and Howard Pollet made Pittsburgh waste numerous scoring chances.

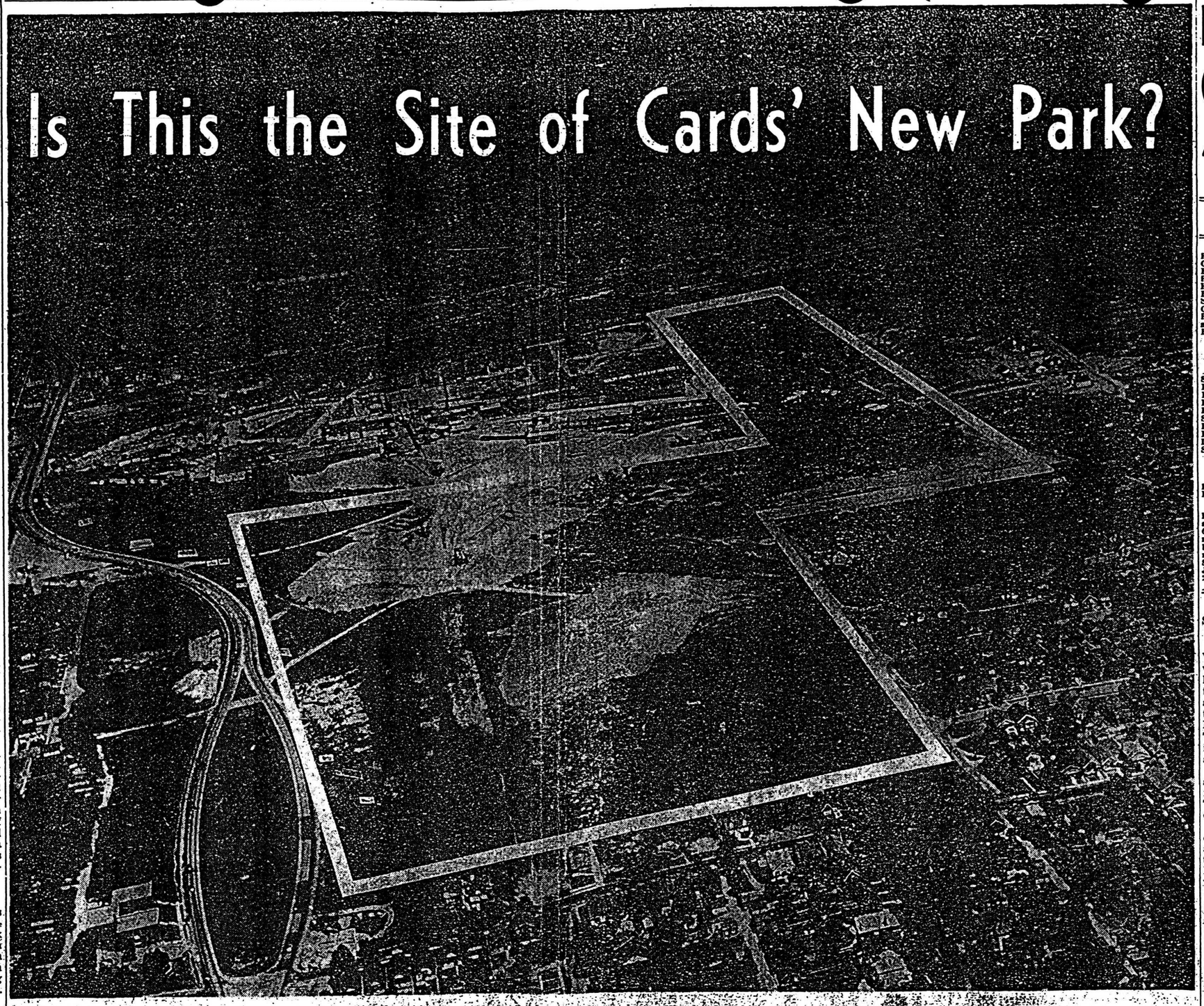
The Bucs did score one run in the first, another in the fourth and one in the fifth to tie up the contest, but they placed 18 men in all on base and left 13 stranded, four of these on third base, four on second, the rest on first. One of the Pirates was picked off second and another was erased in a double play. The ninth inning was the only one in which the Corsairs did not reach base.

GETS OFF SPOT

Pollet was brought to Munger's rescue in the sixth with two Bucos on base. Howard turned back the foe there, did it again with the aisles crowded in the seventh and got off a spot after Tom Saffell paced the eighth inning with his fourth hit of the game. One of his blows was a triple.

The Pirates had a total of 11 hits, two of them doubles, by Monte Basgall and Jack Phillips. The Bucs also drew seven walks. Of the Cards' eight hits, Nelson had two of them, one a run-scor-

Is This the Site of Cards' New Park?



THE LOCATION OF THE PROJECTED NEW BALL PARK for the Cardinals has been a much discussed subject ever since it was announced, and recent rumors indicate that the area outlined above may be the site. It is located in Southwest St. Louis, bounded on the west by Hampton avenue, on the north by Manchester avenue and on the south by Columbia avenue. Adjacent to bus lines, two railroads and on highways leading to Missouri and southern Illinois spots, it is ideally located for out-of-town visitors. It is also in a sports area, as the Arena is just north and Walsh Stadium northeast of the site.—Picture by Paul Hoban, Globe-Democrat Staff Photographer.

Lefty Spahn Gives Bums 4-0 Cleaning

O-FUL NICE

BROOKLYN.	AB.	R.	H.	O.	A.	E.
Reese, ss	4	0	2	2	2	0
Cox, 3b	4	0	1	2	1	1
Furillo, rf	4	0	1	4	0	0
Robinson, 2b	4	0	1	2	5	0
Hodges, 1b	4	0	0	7	0	0
Brown, lf	4	0	0	1	3	0
Snider, cf	3	0	1	1	0	0
Camoanella, c	3	0	1	3	0	0
Roe, p	2	0	0	0	1	0
a-Edwards	1	0	0	0	0	0
Barney, p	0	0	0	0	0	0
Totals	33	0	7	24	9	1

a-Fanned for Roe in seventh inning.

BOSTON.	AB.	R.	H.	O.	A.	E.
Stanley, 2b	2	1	0	0	2	0
Fletcher, 1b	3	0	1	9	1	0
Dark, ss	4	0	2	2	5	0
Russell, cf	3	1	1	2	0	0
Heath, lf	4	0	0	2	0	0
Sisti, lf	0	0	0	0	0	0
Holmes, rf	3	0	0	4	0	0
Ryan, 3b	3	1	0	2	1	1
Livingston, c	3	0	0	6	1	0
Spahn, p	2	1	0	0	1	0
Totals	27	4	4	27	11	1

CLUB.	1	2	3	4	5	6	7	8	9	
Brooklyn	0	0	0	0	0	0	0	0	0	—0
Boston	0	1	1	0	0	0	2	0	*	—4

RBI—Ryan. Dark (3). 2B—Furillo. Hodges, Russell. S—Fletcher. DP—Robinson to Reese to Hodges. Left—Brooklyn, 6; Boston, 6. BB—Off Roe, 3; off Barney, 3. SO—By Roe, 2; by Barney, 1; by Spahn, 6. HO—Off Roe, 3 in 6 innings; off Barney, 1 in 2. Winner—Spahn (15-10). Loser—Roe (9-4). U—Jorda, Dascoli, Goetz and Reardon. T—2:09. A—24,386.

By ROSCOE McGOWN.
Special to the Globe-Democrat From the New York Times.

BOSTON, MASS., Aug. 20.—With Warren Spahn swinging the whitewash brush most artistically the Dodgers subsided before the Braves tonight by a 4-0 score and dropped a full game behind the first-place Cardinals in the National League's two-team race. The Braves, incidentally, moved into third place, half a game ahead of the Giants.

The Boston southpaw received a tremendous cheer from 24,386 fans as Al Dark camped under Tommy Brown's pop fly and caught it to end the game.

Spahn deserved the ovation, for, despite the seven hits he allowed, as compared to only four safeties the Braves collected off Preacher Roe (3) and Rex Barney (1), his work was highly effective.

In spinning his third shutout and his fifteenth triumph of the campaign, Spahn did not issue a single pass and fanned six men—striking out the side in the seventh, one of the few innings in which the Dodgers threatened him.

The Brooks made a single and double in the first inning but failed to score because Pee Wee Reese, who had singled at the start, got himself picked off first by Spahn and run down. Thus the long double clouted a bit later by Carl Furillo did no damage.

Attachment 4

Phase I
Removal Assessment Sampling Report

Hubert Wheeler State School Site
5707 Wilson Avenue
St. Louis, Missouri

March 4-5, 1996

Prepared For:

Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program

Prepared By:

Missouri Department of Natural Resources
Division of Environmental Quality
Environmental Services Program

Table of Contents

Section		Page
1.0	Introduction	1
2.0	Site Description and History	1
	2.1 Site Location	1
	2.2 Site Description	2
	2.3 Site History/Contaminants of Concern	2
3.0	Methods	3
	3.1 Field Procedures	3
	3.1.1 Surface Soil Composite Samples	3
	3.1.2 Subsurface Soil Grab Samples	3
	3.2 Chain-of-Custody	4
	3.3 Analyses Requested	4
	3.4 Quality Assurance/Quality Control (QA/QC)	4
	3.4.1 QA/QC Methods	4
	3.4.2 QA/QC Samples	4
	3.4.3 Field Decontamination	4
4.0	Investigation Derived Wastes	5
5.0	Observations	5
6.0	Data Reporting	6
Attachments		Located at end of report
	Appendix A - Site maps	
	Appendix B - Analytical results	
	Appendix C - Ssmple Index/Locations	

1.0 Introduction

As authorized under the federal Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act of 1986, the Missouri Department of Natural Resources (MDNR), Hazardous Waste Program (HWP), Site Evaluation Unit is conducting a removal assessment of the Hubert Wheeler State School Site. The MDNR, HWP requested the MDNR, Environmental Services Program (ESP) to prepare and implement a sampling plan as part of the removal assessment.

Sampling was conducted on March 4-5, 1996. ESP Environmental Specialists Brian Allen and Eric Gramlich traveled to the site to conduct sampling on March 4-5, 1996. ESP Environmental Specialist Ron Sheeley was present on March 5, 1996, to conduct soil borings with a hydraulic soil probe. HWP Environmental Specialist Robert Hinkson was also present during a portion of the sampling event. Information learned from field observations and sampling will be used by the HWP in determining potential health risks posed to local residents, environmental concerns potentially present in the surface and subsurface soils surrounding the site, and the scope of further removal assessment activities.

2.0 Site Description and History

2.1 Site Location

The Hubert Wheeler State School is located at 5707 Wilson Avenue, in St. Louis, Missouri. Although the site is named as such, the actual boundaries for the site have yet to be determined. Based upon reports and historical use of the area, the boundaries would likely extend outside of the Hubert Wheeler State School property. The legal description is the S 1/2, Sec. 19, T. 45 N., R. 7 E. The site can be reached by traveling, from I-44, south on Hampton Avenue to Wilson Avenue and then by traveling east on Wilson Avenue approximately three city blocks. The school is on the north side of Wilson Avenue.

2.2 Site Description

The Hubert Wheeler State School Site is on property owned by the Missouri Department of Elementary and Secondary Education (DESE). The site is in a mixed residential and commercial area and was most recently used as a school for severely developmentally disabled students. The school was constructed in 1970 and operated until August 1994 when it was determined that potential risks to students and faculty from environmental contamination were present.

Previous site ownership has included a fire brick manufacturing company and a clay mining company. Building and occupancy permits also indicate the site was used as storage by the St. Louis Coke & Foundry Supply Company.

Aerial photographs indicate the site is located near demolition landfilling operations which occurred around 1960. The area has been reportedly used for general dumping from approximately the early 1900s to the 1960s.

Please refer to Appendix A, Map A-1, for an overall view of the site.

2.3 Site History/Contaminants of Concern

A "seep" of tar-like material has apparently surfaced in the area of an asphalt playground at the school ever since the school was constructed. As a result of the continued "seep", DESE obtained the services of an environmental consultant and has conducted a multi-phase site assessment of the property. During initial investigations, DESE discovered a zone of tar-like material in the subsurface near the location of the seep and at least one buried drum which may have been associated with the material.

MDNR became aware of the site in February 1993 and subsequently conducted a preliminary assessment/site inspection. Analytical results from samples collected during both MDNR and DESE investigations indicate the surface and subsurface soils have polynuclear aromatic hydrocarbons and lead present at levels of concern.

3.0 Methods

3.1 Field Procedures

As specified in the sampling plan, ESP personnel collected surface soil composite samples from several residential yards and depth discreet soil grabs in selected areas in and around the suspected area of contamination.

3.1.1 Surface Soil Composite Samples

Soil composite samples were collected from the 0- to 6-inch depth from residential properties utilizing a combination of clean stainless steel spoons and clean or field decontaminated stainless steel trowels.

Each residential surface soil composite sample consisted of five separate locations (aliquots) determined in the field. Personnel primarily located the aliquots in both the front and back yards of all the residences sampled. Upon determining locations for each composite soil sample, personnel removed any vegetation present on the surface and utilized clean or field decontaminated sampling equipment to retrieve soil down to the 6-inch depth. The soil was transferred into clean aluminum foil pans, thoroughly homogenized, and placed into sample containers.

3.1.2 Subsurface Soil Grab Samples

Subsurface soil grab samples were collected from the approximate five-foot depth from two commercial properties and three residential properties in suspected areas of contamination. Sampling personnel ensured all underground utilities were located prior to conducting any subsurface boring. A hydraulic soil probe using clean or field decontaminated core samplers with clean acetate liners inserted was used to retrieve soil from the desired depth at locations determined in the field. The soil was removed from the acetate liners, placed into clean aluminum foil pans, thoroughly homogenized, and placed into sample containers.

Refer to Appendix C for a listing of samples collected by ESP personnel. Refer to Appendix A, Map A-2, for sample locations.

3.2 Chain-of-Custody

All samples received a numbered tag and were placed on ice in coolers. The corresponding tag number was entered onto a chain-of-custody form indicating the location, date and time of collection, and parameters to be analyzed. Custody of the samples was maintained by ESP field personnel until relinquishing them to laboratory personnel within the Environmental Services Program in Jefferson City for analyses. To expedite analytical turnaround time, ESP field personnel transported samples to the laboratory on the same day that they were collected.

3.3 Analyses Requested

All samples were submitted for total lead and base neutrals analyses. Instructions were relayed to laboratory personnel that if any sample's total analyte levels exceeded 80% of twenty times the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limit for a particular analyte, TCLP analysis was to be performed on that sample.

3.4 Quality Assurance/Quality Control (QA/QC)

3.4.1 QA/QC Methods

All analyses were conducted in accordance with the Fiscal Year 1996 Quality Assurance Project Plan for Site Inspection sites in Missouri (which incorporates the analyses conducted in connection with this removal assessment sampling event). ESP field personnel wore clean disposable nitrile gloves for each sample collected to minimize cross-contamination.

3.4.2 QA/QC Samples

Three duplicate samples were collected during the sampling event. The duplicate samples were collected alongside their true samples using the same equipment and technique as for the true samples.

3.4.3 Field Decontamination

All sampling equipment reused in the field was decontaminated by washing with a non-phosphate soap solution and brush, followed by a deionized water rinse, a 10% hydrochloric acid rinse, a deionized water rinse, a methanol rinse, a hexane rinse, and a final deionized water rinse. Decontaminated equipment was stored in a clean container until needed again.

4.0 Investigation Derived Wastes

All personal protective equipment and spent disposable sampling equipment generated by ESP personnel was containerized and disposed as solid waste at the laboratory in Jefferson City.

All reusable sampling equipment was returned to the laboratory in Jefferson City and properly decontaminated. All decontamination fluids generated in the field were returned to the laboratory in Jefferson City for proper disposal.

5.0 Observations

The weather on March 4, 1996, was sunny and approximately 45 degrees Fahrenheit with winds from the south at 5-10 miles per hour. Winds picked up significantly overnight and into the next day. March 5, 1996, began as cloudy and approximately 50 degrees Fahrenheit with winds from the south at 10-15 miles per hour. Rain began in the mid-morning and continued intermittently for the remainder of the sampling event. Temperatures dropped into the low 50s as a result of the rain.

Virtually all surface soil composite samples consisted of brown top soil, organic matter (grass roots), and brown clayey soil. Small gravel was intermittently encountered during sampling as well as cinder material from when the area was used as a dump and open burning area. Old solid waste (broken glass, brick fragments) was also encountered in several samples.

Five soil grab samples were collected from approximately 4-6 ft in depth (refer to Appendix C and Map A-2 for exact locations). Samples consisted of brown clay with gravel interspersed (Holiday Inn property) to dry, tan, silty clay (J&L Distributors), to cinders, ash, and gravel (on Berra Court cul-de-sac), to brown clay with ash-like material interspersed (Merlo property), to gravelly, sandy soil with brick, wood, and "clinker" (hardened ash) interspersed (DeGregorio property).

Several residents relayed they had lived in this area since their homes were first built (approximately 40 years), and that they all had to bring approximately 1-foot of fill material to lay over the material remaining from when the area was used as a dump and open burning area. Several residents also indicated that the area was used to receive hospital wastes in addition to other solid wastes.

6.0 Data Reporting

Please refer to Appendix B for analytical results of samples collected.

Submitted by:

Brian J. Allen
Environmental Specialist
Superfund/RCRA Unit
Environmental Services Program

Date: 4/2/96

Approved by:

James H. Long
Director
Environmental Services Program

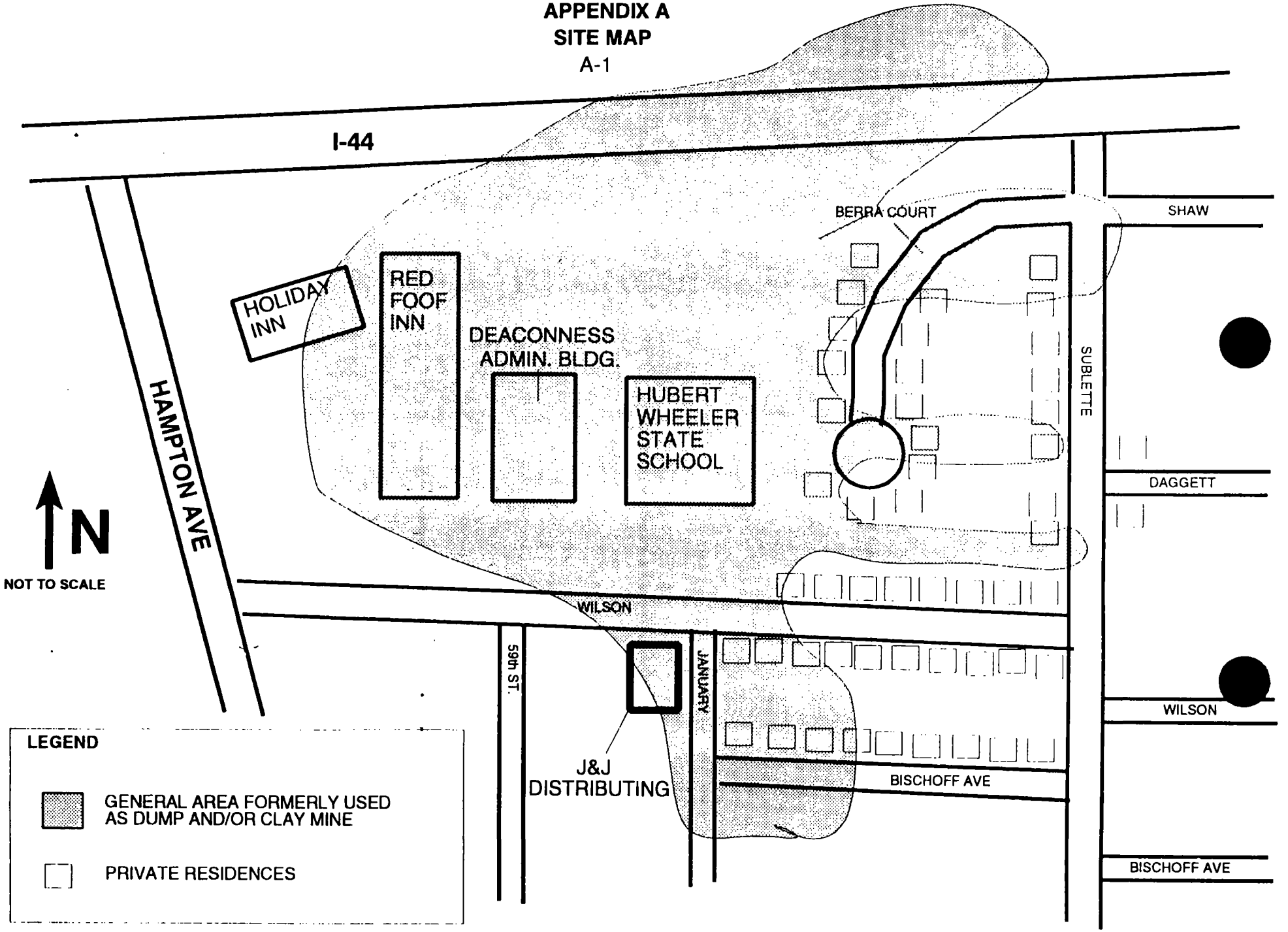
JHL:bam

c: Julie Kelsey, Environmental Specialist, HWP
Bob Hinkson, Environmental Specialist, HWP
Bob Eck, Regional Director, SLRO

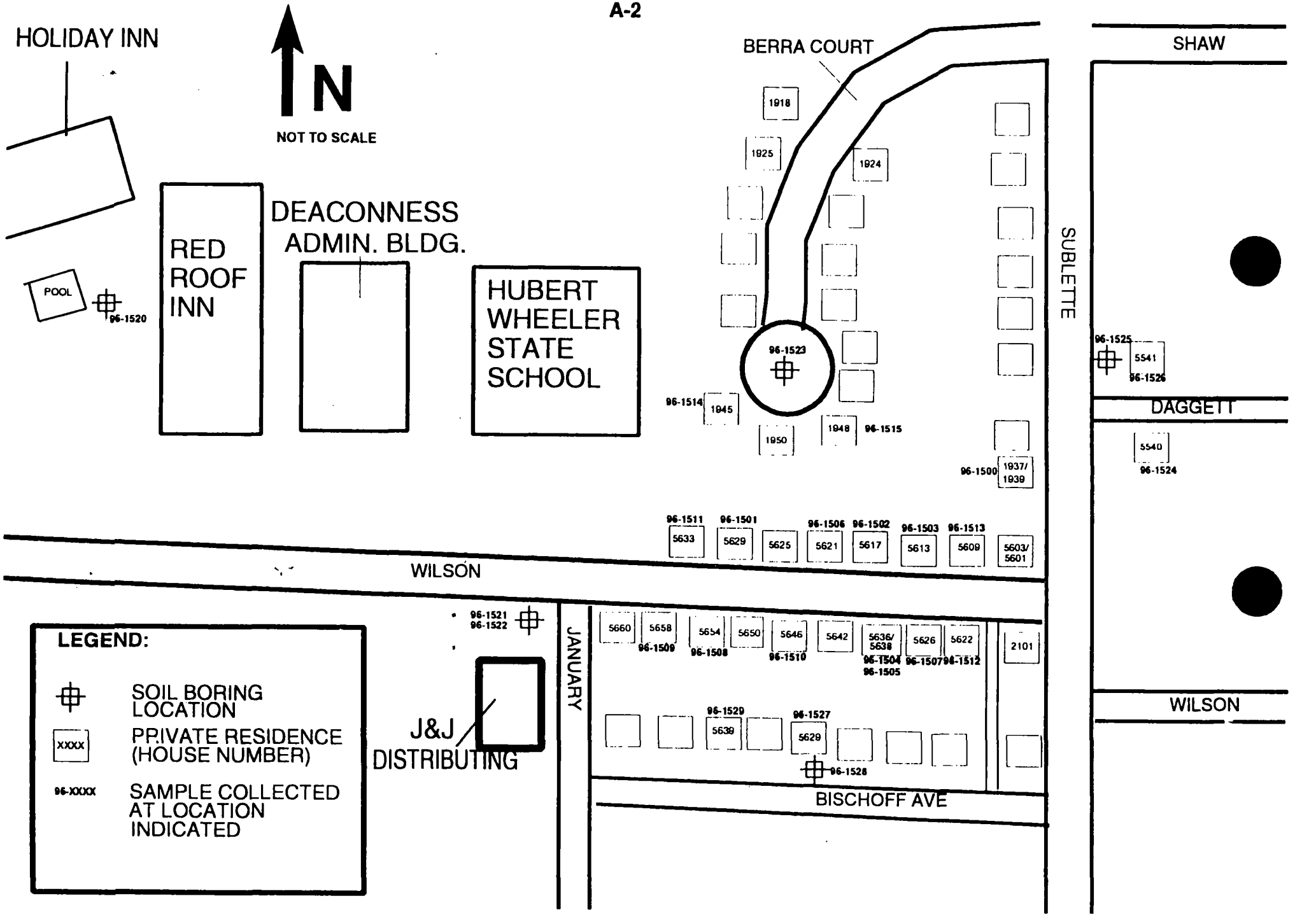
APPENDIX A
Site Maps
Hubert Wheeler State School Site
St. Louis, Missouri

A-1. . . . . Overall Site Map
A-2. . . . . Sampling Locations

APPENDIX A
SITE MAP
A-1



APPENDIX A
SITE MAP
A-2



LEGEND:

- ⌖ SOIL BORING LOCATION
- XXXX PRIVATE RESIDENCE (HOUSE NUMBER)
- 96-XXXX SAMPLE COLLECTED AT LOCATION INDICATED

APPENDIX B
Analytical Results
Hubert Wheeler State School Site
St. Louis, Missouri

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1500
Lab Number: 96-D481

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6 INCH DEPTH, (5 ALIQUOTS) COLLECTED FROM GRASSI RESIDENCE 1937/1939 SUBLETTE

Analysis Performed	Results		Analyzed	Method
Lead, Total	353,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenyléthe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	1,300	ug/kg	3/ 6/96	8270
Anthrancene	170	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	1,400	ug/kg	3/ 6/96	8270
Fluoranthene	2,200	ug/kg	3/ 6/96	8270
Pyrene	1,500	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	940	ug/kg	3/ 6/96	8270
Chrysene	910	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	240	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	1,400	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	460	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	790	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	780	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	310	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	880	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James A. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1501
Lab Number: 96-D482

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6 INCH DEPTH, (5 ALIQUOTS) COLLECTED FROM BRIAN KOPFF RESIDENCE, 5629 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	223,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenyléthe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	460	ug/kg	3/ 6/96	8270
Anthrancene	< 100	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	3,600	ug/kg	3/ 6/96	8270
Fluoranthene	640	ug/kg	3/ 6/96	8270
Pyrene	470	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	270	ug/kg	3/ 6/96	8270
Chrysene	280	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	200	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	390	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	160	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	240	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	260	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	300	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1502
Lab Number: 96-D483

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6 INCH DEPTH, (5 ALIQUOTS) COLLECTED FROM CHARLES RE RESIDENCE, 5617 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	200,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	1,100	ug/kg	3/ 6/96	8270
Anthrancene	190	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	2,600	ug/kg	3/ 6/96	8270
Fluoranthene	1,100	ug/kg	3/ 6/96	8270
Pyrene	1,100	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	450	ug/kg	3/ 6/96	8270
Chrysene	490	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	370	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	550	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	240	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	490	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	390	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	490	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1503
Lab Number: 96-D484

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6 INCH DEPTH, (5 ALIQUOTS) COLLECTED FROM EUGENE MERLOTTI RES., 5613 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	190,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenyléthe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	120	ug/kg	3/ 6/96	8270
Anthrancene	< 100	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	2,100	ug/kg	3/ 6/96	8270
Fluoranthene	170	ug/kg	3/ 6/96	8270
Pyrene	120	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	< 100	ug/kg	3/ 6/96	8270
Chrysene	< 100	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	160	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	104	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	< 100	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	< 100	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	< 100	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for
James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1504
Lab Number: 96-D485

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6 INCH DEPTH, (5 ALIQUOTS) COLLECTED FROM MARIO COLOMBO RES., 5636 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	215,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
`-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
imethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	170	ug/kg	3/ 6/96	8270
Anthrancene	< 100	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	1,100	ug/kg	3/ 6/96	8270
Fluoranthene	260	ug/kg	3/ 6/96	8270
Pyrene	230	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	150	ug/kg	3/ 6/96	8270
Chrysene	130	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	180	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	300	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	150	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	130	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	140	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edmonds for
James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1505
Lab Number: 96-D486

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM MARIO COLOMBO RES., 5636 WILSON DUPLICATE

Analysis Performed	Results		Analyzed	Method
Lead, Total	211,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	150	ug/kg	3/ 6/96	8270
Anthrancene	< 100	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	2,900	ug/kg	3/ 6/96	8270
Fluoranthene	270	ug/kg	3/ 6/96	8270
Pyrene	170	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	130	ug/kg	3/ 6/96	8270
Chrysene	120	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	230	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	360	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	160	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	170	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	160	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan • Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1506
Lab Number: 96-D487

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM LARRY TORNETTO RESIDENCE, 5621 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	532,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	170	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	130	ug/kg	3/ 6/96	8270
Dibenzofuran	130	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	150	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 6/96	8270
Fluorene	140	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	2,300	ug/kg	3/ 6/96	8270
Anthrancene	460	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	2,200	ug/kg	3/ 6/96	8270
Fluoranthene	2,600	ug/kg	3/ 6/96	8270
Pyrene	2,200	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	1,300	ug/kg	3/ 6/96	8270
Chrysene	1,000	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	190	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	1,400	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	430	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	1,100	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	820	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	260	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	920	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1507
Lab Number: 96-D488

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM JOE CORLA RESIDENCE, 5626 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	392,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	130	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	130	ug/kg	3/ 6/96	8270
Dibenzofuran	100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	130	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 6/96	8270
Fluorene	120	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	2,100	ug/kg	3/ 6/96	8270
Anthrancene	410	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	3,500	ug/kg	3/ 6/96	8270
Fluoranthene	1,600	ug/kg	3/ 6/96	8270
Pyrene	1,600	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	800	ug/kg	3/ 6/96	8270
Chrysene	660	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	170	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	940	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	340	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	720	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	420	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	140	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	600	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edmunds Jr

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

Mel Carnahan, Governor • David A. Shorr, Director

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1508
Lab Number: 96-D489

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM CHARLES GUIDICI RESIDENCE, 5624 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	161,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 7/96	8270
Hexachloroethane	< 100	ug/kg	3/ 7/96	8270
Nitrobenzene	< 100	ug/kg	3/ 7/96	8270
Isophorone	< 100	ug/kg	3/ 7/96	8270
Benzoic Acid	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 7/96	8270
Naphthalene	< 100	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 7/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Acenaphthene	< 100	ug/kg	3/ 7/96	8270
Dibenzofuran	< 100	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
Diethylphthalate	< 100	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 7/96	8270
Fluorene	< 100	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 7/96	8270
Phenanthrene	620	ug/kg	3/ 7/96	8270
Anthrancene	170	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	1,900	ug/kg	3/ 7/96	8270
Fluoranthene	1,400	ug/kg	3/ 7/96	8270
Pyrene	2,200	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	1,100	ug/kg	3/ 7/96	8270
Chrysene	960	ug/kg	3/ 7/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	740	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	280	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	580	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	350	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	590	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan Governor • David A. Shorr Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1509
Lab Number: 96-D490

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM MARIE CASTIGLIONI RESIDENCE, 5658 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	177,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 7/96	8270
Hexachloroethane	< 100	ug/kg	3/ 7/96	8270
Nitrobenzene	< 100	ug/kg	3/ 7/96	8270
Isophorone	< 100	ug/kg	3/ 7/96	8270
Benzoic Acid	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 7/96	8270
Naphthalene	< 100	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 7/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Acenaphthene	< 100	ug/kg	3/ 7/96	8270
Dibenzofuran	< 100	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
Diethylphthalate	< 100	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 7/96	8270
Fluorene	< 100	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 7/96	8270
Phenanthrene	270	ug/kg	3/ 7/96	8270
Anthrancene	< 100	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	1,500	ug/kg	3/ 7/96	8270
Fluoranthene	550	ug/kg	3/ 7/96	8270
Pyrene	610	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	380	ug/kg	3/ 7/96	8270
Chrysene	370	ug/kg	3/ 7/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	370	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	130	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	310	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	260	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	< 100	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan • Governor • David A. Shorr • Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1510
Lab Number: 96-D491

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM AL FARINA RESIDENCE, 5646 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	292,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100*	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 7/96	8270
Hexachloroethane	< 100	ug/kg	3/ 7/96	8270
Nitrobenzene	< 100	ug/kg	3/ 7/96	8270
Isophorone	< 100	ug/kg	3/ 7/96	8270
Benzoic Acid	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 7/96	8270
Naphthalene	< 100	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 7/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Acenaphthene	< 100	ug/kg	3/ 7/96	8270
Dibenzofuran	< 100	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
Diethylphthalate	< 100	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 7/96	8270
Fluorene	< 100	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 7/96	8270
Phenanthrene	680	ug/kg	3/ 7/96	8270
Anthrancene	190	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	1,500	ug/kg	3/ 7/96	8270
Fluoranthene	1,100	ug/kg	3/ 7/96	8270
Pyrene	1,400	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	800	ug/kg	3/ 7/96	8270
Chrysene	630	ug/kg	3/ 7/96	8270
bis(2-ethylhexyl)phthalat	190	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	600	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	160	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	400	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	390	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	130	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	440	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
[illegible] • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1511
Lab Number: 96-D492

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM LOUIS SALAMONE RESIDENCE, 5633 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	160,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 6/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 6/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 6/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 6/96	8270
Hexachloroethane	< 100	ug/kg	3/ 6/96	8270
Nitrobenzene	< 100	ug/kg	3/ 6/96	8270
Isophorone	< 100	ug/kg	3/ 6/96	8270
Benzoic Acid	< 100	ug/kg	3/ 6/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 6/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 6/96	8270
Naphthalene	< 100	ug/kg	3/ 6/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 6/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 6/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 6/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 6/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 6/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 6/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 6/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
Acenaphthene	< 100	ug/kg	3/ 6/96	8270
Dibenzofuran	< 100	ug/kg	3/ 6/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 6/96	8270
Diethylphthalate	< 100	ug/kg	3/ 6/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 6/96	8270
Fluorene	< 100	ug/kg	3/ 6/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 6/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 6/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 6/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 6/96	8270
Phenanthrene	160	ug/kg	3/ 6/96	8270
Anthrancene	< 100	ug/kg	3/ 6/96	8270
Di-n-Butylphthalate	720	ug/kg	3/ 6/96	8270
Fluoranthene	360	ug/kg	3/ 6/96	8270
Pyrene	420	ug/kg	3/ 6/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 6/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 6/96	8270
Benzo(a)anthracene	290	ug/kg	3/ 6/96	8270
Chrysene	250	ug/kg	3/ 6/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/ 6/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 6/96	8270
Benzo(b)fluoranthene	230	ug/kg	3/ 6/96	8270
Benzo(k)fluoranthene	110	ug/kg	3/ 6/96	8270
Benzo(a)pyrene	180	ug/kg	3/ 6/96	8270
Indeno(1,2,3-cd)pyrene	150	ug/kg	3/ 6/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 6/96	8270
Benzo(g,h,i)perylene	160	ug/kg	3/ 6/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1512
Lab Number: 96-D493

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM J. GRIMOLDI RESIDENCE, 5622 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	234,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 500	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 500	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 500	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 500	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 500	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 500	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 500	ug/kg	3/ 7/96	8270
Hexachloroethane	< 500	ug/kg	3/ 7/96	8270
Nitrobenzene	< 500	ug/kg	3/ 7/96	8270
Isophorone	< 500	ug/kg	3/ 7/96	8270
Benzoic Acid	< 500	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 500	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 500	ug/kg	3/ 7/96	8270
Naphthalene	< 500	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 1,200	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 500	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 500	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 500	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 500	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 1,200	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 500	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 500	ug/kg	3/ 7/96	8270
2,6-Dinitrotoluene	< 500	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 1,200	ug/kg	3/ 7/96	8270
Acenaphthene	< 500	ug/kg	3/ 7/96	8270
Dibenzofuran	< 500	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	< 500	ug/kg	3/ 7/96	8270
Diethylphthalate	< 500	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 500	ug/kg	3/ 7/96	8270
Fluorene	< 500	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 1,200	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 500	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 500	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 500	ug/kg	3/ 7/96	8270
Phenanthrene	< 500	ug/kg	3/ 7/96	8270
Anthrancene	< 500	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	1,100	ug/kg	3/ 7/96	8270
Fluoranthene	< 500	ug/kg	3/ 7/96	8270
Pyrene	580	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 500	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 1,200	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	< 500	ug/kg	3/ 7/96	8270
Chrysene	< 500	ug/kg	3/ 7/96	8270
Comment: Detected at 480 ug/Kg				
bis(2-ethylhexyl)phthalat	< 500	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 500	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	< 500	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	< 500	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	< 500	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	< 500	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	< 500	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	< 500	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Bob Holden, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1513
Lab Number: 96-D494

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM G. GRIFFIRO RESIDENCE, 5609 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	147,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 7/96	8270
Hexachloroethane	< 100	ug/kg	3/ 7/96	8270
Nitrobenzene	< 100	ug/kg	3/ 7/96	8270
Isophorone	< 100	ug/kg	3/ 7/96	8270
Benzoic Acid	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 7/96	8270
Naphthalene	104	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	103	ug/kg	3/ 7/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Acenaphthene	< 100	ug/kg	3/ 7/96	8270
Dibenzofuran	110	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	150	ug/kg	3/ 7/96	8270
Diethylphthalate	< 100	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 7/96	8270
Fluorene	140	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 7/96	8270
Phenanthrene	2,400	ug/kg	3/ 7/96	8270
Anthrancene	530	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	760	ug/kg	3/ 7/96	8270
Fluoranthene	4,000	ug/kg	3/ 7/96	8270
Pyrene	5,000	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	3,000	ug/kg	3/ 7/96	8270
Chrysene	2,200	ug/kg	3/ 7/96	8270
bis(2-ethylhexyl)phthalat	102	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	2,100	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	570	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	1,400	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	1,400	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	370	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	1,500	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
[illegible] • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1514
Lab Number: 96-D495

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM J. CACCIATORE RESIDENCE, 1945 BERRA CT

Analysis Performed	Results		Analyzed	Method
Lead, Total	227,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100*	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 7/96	8270
Hexachloroethane	< 100	ug/kg	3/ 7/96	8270
Nitrobenzene	< 100	ug/kg	3/ 7/96	8270
Isophorone	< 100	ug/kg	3/ 7/96	8270
Benzoic Acid	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 7/96	8270
Naphthalene	< 100	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/ 7/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Acenaphthene	< 100	ug/kg	3/ 7/96	8270
Dibenzofuran	< 100	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
Diethylphthalate	< 100	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 7/96	8270
Fluorene	< 100	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 7/96	8270
Phenanthrene	270	ug/kg	3/ 7/96	8270
Anthrancene	< 100	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	760	ug/kg	3/ 7/96	8270
Fluoranthene	460	ug/kg	3/ 7/96	8270
Pyrene	600	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	420	ug/kg	3/ 7/96	8270
Chrysene	320	ug/kg	3/ 7/96	8270
bis(2-ethylhexyl)phthalat	570	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	280	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	140	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	250	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	< 100	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	< 100	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1515
Lab Number: 96-D496

Reported To:	BRIAN ALLEN	Report Date:	3/21/96
Affiliation:	SPFD	Date Collected:	3/ 4/96
Project Code:	3667/3538	Date Received:	3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM S. CAPUTA RESIDENCE, 1948 BERRA CT.

Analysis Performed	Results		Analyzed	Method
Lead, Total	41,800	ug/kg	3/13/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/ 7/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/ 7/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/ 7/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/ 7/96	8270
Hexachloroethane	< 100	ug/kg	3/ 7/96	8270
Nitrobenzene	< 100	ug/kg	3/ 7/96	8270
Isophorone	< 100	ug/kg	3/ 7/96	8270
Benzoic Acid	< 100	ug/kg	3/ 7/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/ 7/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/ 7/96	8270
Naphthalene	< 100	ug/kg	3/ 7/96	8270
4-Chloroaniline	< 250	ug/kg	3/ 7/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/ 7/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/ 7/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/ 7/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/ 7/96	8270
2-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Dimethylphthalate	< 100	ug/kg	3/ 7/96	8270
Acenaphthylene	< 100	ug/kg	3/ 7/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
2,6-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
3-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
Acenaphthene	< 100	ug/kg	3/ 7/96	8270
Dibenzofuran	< 100	ug/kg	3/ 7/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/ 7/96	8270
Diethylphthalate	< 100	ug/kg	3/ 7/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/ 7/96	8270
Fluorene	< 100	ug/kg	3/ 7/96	8270
4-Nitroaniline	< 250	ug/kg	3/ 7/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/ 7/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/ 7/96	8270
Hexachlorobenzene	< 100	ug/kg	3/ 7/96	8270
Phenanthrene	600	ug/kg	3/ 7/96	8270
Anthrancene	140	ug/kg	3/ 7/96	8270
Di-n-Butylphthalate	750	ug/kg	3/ 7/96	8270
Fluoranthene	1,200	ug/kg	3/ 7/96	8270
Pyrene	1,600	ug/kg	3/ 7/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/ 7/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/ 7/96	8270
Benzo(a)anthracene	700	ug/kg	3/ 7/96	8270
Chrysene	610	ug/kg	3/ 7/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/ 7/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/ 7/96	8270
Benzo(b)fluoranthene	580	ug/kg	3/ 7/96	8270
Benzo(k)fluoranthene	240	ug/kg	3/ 7/96	8270
Benzo(a)pyrene	380	ug/kg	3/ 7/96	8270
Indeno(1,2,3-cd)pyrene	< 100	ug/kg	3/ 7/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/ 7/96	8270
Benzo(g,h,i)perylene	500	ug/kg	3/ 7/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Joe Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1516
Lab Number: 96-D497

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM M. DUNSFORD RES., 5234 BISCHOFF AVE

Analysis Performed	Results		Analyzed	Method
Lead, Total	533,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/12/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	2,400	ug/kg	3/12/96	8270
Anthrancene	270	ug/kg	3/12/96	8270
Di-n-Butylphthalate	2,100	ug/kg	3/12/96	8270
Fluoranthene	3,100	ug/kg	3/12/96	8270
Pyrene	820	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	1,000	ug/kg	3/12/96	8270
Chrysene	590	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	990	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	330	ug/kg	3/12/96	8270
Benzo(a)pyrene	720	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	860	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	280	ug/kg	3/12/96	8270
Comment: Approximate value				
Benzo(g,h,i)perylene	1,000	ug/kg	3/12/96	8270
Comment: Approximate value				

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edmonds for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1517
Lab Number: 96-D498

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6", 5 ALIQUOTS COLLECTED FROM M. DUNSFORD RES., 5234 BISCHOFF AVE, DUPLICATE

Analysis Performed	Results		Analyzed	Method
Lead, Total	265,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/12/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	1,100	ug/kg	3/12/96	8270
Anthrancene	230	ug/kg	3/12/96	8270
Di-n-Butylphthalate	< 100	ug/kg	3/12/96	8270
Fluoranthene	2,900	ug/kg	3/12/96	8270
Pyrene	690	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	880	ug/kg	3/12/96	8270
Chrysene	570	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	900	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	240	ug/kg	3/12/96	8270
Benzo(a)pyrene	670	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	880	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	440	ug/kg	3/12/96	8270
Comment: Approximate value				
Benzo(g,h,i)perylene	< 100	ug/kg	3/12/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1518
Lab Number: 96-D499

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM M. DIMARTINO RES., 5238 BISCHOFF AVE.

Analysis Performed	Results		Analyzed	Method
Lead, Total	361,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100*	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/12/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	240	ug/kg	3/12/96	8270
Anthrancene	< 100	ug/kg	3/12/96	8270
Di-n-Butylphthalate	< 100	ug/kg	3/12/96	8270
Fluoranthene	610	ug/kg	3/12/96	8270
Pyrene	190	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	260	ug/kg	3/12/96	8270
Chrysene	240	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	420	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	160	ug/kg	3/12/96	8270
Benzo(a)pyrene	250	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	590*	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	340	ug/kg	3/12/96	8270
Comment: Approximate value				
Benzo(g,h,i)perylene	670	ug/kg	3/12/96	8270
Comment: Approximate value				

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1519
Lab Number: 96-D500

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 4/96
Date Received: 3/ 5/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM D. GAMBARO RESIDENCE, 5320 WILSON

Analysis Performed	Results		Analyzed	Method
Lead, Total	216,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/12/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	760	ug/kg	3/12/96	8270
Anthrancene	130	ug/kg	3/12/96	8270
Di-n-Butylphthalate	2,500	ug/kg	3/12/96	8270
Fluoranthene	1,500	ug/kg	3/12/96	8270
Pyrene	390	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	450	ug/kg	3/12/96	8270
Chrysene	280	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	430	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	130	ug/kg	3/12/96	8270
Benzo(a)pyrene	330	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	490	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	240	ug/kg	3/12/96	8270
Comment: Approximate value				
Benzo(g,h,i)perylene	570	ug/kg	3/12/96	8270
Comment: Approximate value				

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas V. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1520
Lab Number: 96-D501

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL GRAB FROM BORING AT HOLIDAY INN, COLLECTED FROM 4.5-5.5 FT. DEPTH

Analysis Performed	Results		Analyzed	Method
Lead, Total	173,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/12/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	< 100	ug/kg	3/12/96	8270
Anthrancene	< 100	ug/kg	3/12/96	8270
Di-n-Butylphthalate	< 100	ug/kg	3/12/96	8270
Fluoranthene	< 100	ug/kg	3/12/96	8270
Pyrene	< 100	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	< 100	ug/kg	3/12/96	8270
Chrysene	< 100	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	< 100	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/12/96	8270
Benzo(a)pyrene	< 100	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	< 100	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/12/96	8270
Benzo(g,h,i)perylene	< 100	ug/kg	3/12/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
[illegible] Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1521
Lab Number: 96-D502

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL GRAB FROM BORING AT J & J DISTRIBUTORS, COLLECTED FROM 4-6 FT. DEPTH

Analysis Performed	Results		Analyzed	Method
Lead, Total	34,900	ug/kg	3/13/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270
Acenaphthylene	< 100	ug/kg	3/12/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	< 100	ug/kg	3/12/96	8270
Anthrancene	< 100	ug/kg	3/12/96	8270
Di-n-Butylphthalate	< 100	ug/kg	3/12/96	8270
Fluoranthene	< 100	ug/kg	3/12/96	8270
Pyrene	< 100	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	< 100	ug/kg	3/12/96	8270
Chrysene	< 100	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	< 100	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/12/96	8270
Benzo(a)pyrene	< 100	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	< 100	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/12/96	8270
Benzo(g,h,i)perylene	< 100	ug/kg	3/12/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1522
Lab Number: 96-D503

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL GRAB FROM BORING AT J & J DISTRIBUTORS, COLLECTED FROM 4-6 FT. DEPTH (DUPLICATE)

Analysis Performed	Results		Analyzed	Method
Lead, Total	40,000	ug/kg	3/13/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/12/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/12/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/12/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/12/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/12/96	8270
Hexachloroethane	< 100	ug/kg	3/12/96	8270
Nitrobenzene	< 100	ug/kg	3/12/96	8270
Isophorone	< 100	ug/kg	3/12/96	8270
Benzoic Acid	< 100	ug/kg	3/12/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/12/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/12/96	8270
Naphthalene	< 100	ug/kg	3/12/96	8270
4-Chloroaniline	< 250	ug/kg	3/12/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/12/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/12/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/12/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/12/96	8270
2-Nitroaniline	< 250	ug/kg	3/12/96	8270
Dimethylphthalate	< 100	ug/kg	3/12/96	8270
Acenaphthylene	< 100	ug/kg	3/12/96	8270

Analysis Performed	Results		Analyzed	Method
2,6-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
3-Nitroaniline	< 250	ug/kg	3/12/96	8270
Acenaphthene	< 100	ug/kg	3/12/96	8270
Dibenzofuran	< 100	ug/kg	3/12/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/12/96	8270
Diethylphthalate	< 100	ug/kg	3/12/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/12/96	8270
Fluorene	< 100	ug/kg	3/12/96	8270
4-Nitroaniline	< 250	ug/kg	3/12/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/12/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/12/96	8270
Hexachlorobenzene	< 100	ug/kg	3/12/96	8270
Phenanthrene	< 100	ug/kg	3/12/96	8270
Anthrancene	< 100	ug/kg	3/12/96	8270
Di-n-Butylphthalate	1,500	ug/kg	3/12/96	8270
Fluoranthene	102	ug/kg	3/12/96	8270
Pyrene	< 100	ug/kg	3/12/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/12/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/12/96	8270
Benzo(a)anthracene	< 100	ug/kg	3/12/96	8270
Chrysene	< 100	ug/kg	3/12/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/12/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/12/96	8270
Benzo(b)fluoranthene	< 100	ug/kg	3/12/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/12/96	8270
Benzo(a)pyrene	< 100	ug/kg	3/12/96	8270
Indeno(1,2,3-cd)pyrene	< 100	ug/kg	3/12/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/12/96	8270
Benzo(g,h,i)perylene	< 100	ug/kg	3/12/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1523
Lab Number: 96-D504

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL GRAB FROM BORING IN BERRA CT. CUL-DE-SAC, COLLECTED FROM 4-6 FT. DEPTH

Analysis Performed	Results		Analyzed	Method
Lead, Total	1,060,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 500	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 500	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 500	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 500	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 500	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 500	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 500	ug/kg	3/13/96	8270
Hexachloroethane	< 500	ug/kg	3/13/96	8270
Nitrobenzene	< 500	ug/kg	3/13/96	8270
Isophorone	< 500	ug/kg	3/13/96	8270
Benzoic Acid	< 500	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 500	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 500	ug/kg	3/13/96	8270
Naphthalene	< 500	ug/kg	3/13/96	8270
4-Chloroaniline	< 1,250	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 500	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 500	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 500	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 500	ug/kg	3/13/96	8270
2-Nitroaniline	< 1,250	ug/kg	3/13/96	8270
Dimethylphthalate	< 500	ug/kg	3/13/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 500	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 500	ug/kg	3/13/96	8270
3-Nitroaniline	< 1,250	ug/kg	3/13/96	8270
Acenaphthene	< 500	ug/kg	3/13/96	8270
Dibenzofuran	< 500	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	< 500	ug/kg	3/13/96	8270
Diethylphthalate	< 500	ug/kg	3/13/96	8270
4-Chlorophenyl-phenylethe	< 500	ug/kg	3/13/96	8270
Fluorene	< 500	ug/kg	3/13/96	8270
4-Nitroaniline	< 1,250	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 500	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 500	ug/kg	3/13/96	8270
Hexachlorobenzene	< 500	ug/kg	3/13/96	8270
Phenanthrene	1,500	ug/kg	3/13/96	8270
Anthrancene	< 500	ug/kg	3/13/96	8270
Di-n-Butylphthalate	2,400	ug/kg	3/13/96	8270
Fluoranthene	940	ug/kg	3/13/96	8270
Pyrene	< 500	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 500	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 1,250	ug/kg	3/13/96	8270
Benzo(a)anthracene	520	ug/kg	3/13/96	8270
Chrysene	940	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 500	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 500	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	1,000	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	< 500	ug/kg	3/13/96	8270
Benzo(a)pyrene	520	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	880	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	< 500	ug/kg	3/13/96	8270
Benzo(g,h,i)perylene	940	ug/kg	3/13/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas V. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1524
Lab Number: 96-D505

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM A. GIUFFRIDA RES., 5540 DAGGETT ST.

Analysis Performed	Results		Analyzed	Method
Lead, Total	348,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/13/96	8270
Hexachloroethane	< 100	ug/kg	3/13/96	8270
Nitrobenzene	< 100	ug/kg	3/13/96	8270
Isophorone	< 100	ug/kg	3/13/96	8270
Benzoic Acid	< 100	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/13/96	8270
Naphthalene	< 100	ug/kg	3/13/96	8270
4-Chloroaniline	< 250	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/13/96	8270
2-Nitroaniline	< 250	ug/kg	3/13/96	8270
methylphthalate	< 100	ug/kg	3/13/96	8270

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
3-Nitroaniline	< 250	ug/kg	3/13/96	8270
Acenaphthene	< 100	ug/kg	3/13/96	8270
Dibenzofuran	< 100	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
Diethylphthalate	< 100	ug/kg	3/13/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/13/96	8270
Fluorene	< 100	ug/kg	3/13/96	8270
4-Nitroaniline	< 250	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/13/96	8270
Hexachlorobenzene	< 100	ug/kg	3/13/96	8270
Phenanthrene	1,600	ug/kg	3/13/96	8270
Anthrancene	220	ug/kg	3/13/96	8270
Di-n-Butylphthalate	1,100	ug/kg	3/13/96	8270
Fluoranthene	4,600	ug/kg	3/13/96	8270
Pyrene	1,700	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/13/96	8270
Benzo(a)anthracene	1,800	ug/kg	3/13/96	8270
Chrysene	1,300	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	1,700	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	410	ug/kg	3/13/96	8270
Benzo(a)pyrene	1,200	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	1,500	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	890	ug/kg	3/13/96	8270
Benzo(g,h,i)perylene	1,600	ug/kg	3/13/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P O Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1525
Lab Number: 96-D506

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL GRAB FROM BORING ON J. MERLO PROPERTY, 5541 DAGGETT COLLECTED FROM 4.5-5.5 FT. DEPTH

Analysis Performed	Results		Analyzed	Method
Lead, Total	482,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/13/96	8270
Hexachloroethane	< 100	ug/kg	3/13/96	8270
Nitrobenzene	< 100	ug/kg	3/13/96	8270
Isophorone	< 100	ug/kg	3/13/96	8270
Benzoic Acid	< 100	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/13/96	8270
Naphthalene	< 100	ug/kg	3/13/96	8270
4-Chloroaniline	< 250	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/13/96	8270
-Nitroaniline	< 250	ug/kg	3/13/96	8270
methylphthalate	< 100	ug/kg	3/13/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
3-Nitroaniline	< 250	ug/kg	3/13/96	8270
Acenaphthene	< 100	ug/kg	3/13/96	8270
Dibenzofuran	< 100	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
Diethylphthalate	< 100	ug/kg	3/13/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/13/96	8270
Fluorene	< 100	ug/kg	3/13/96	8270
4-Nitroaniline	< 250	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/13/96	8270
Hexachlorobenzene	< 100	ug/kg	3/13/96	8270
Phenanthrene	120	ug/kg	3/13/96	8270
Anthrancene	< 100	ug/kg	3/13/96	8270
Di-n-Butylphthalate	7,800	ug/kg	3/13/96	8270
Fluoranthene	220	ug/kg	3/13/96	8270
Pyrene	< 100	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/13/96	8270
Benzo(a)anthracene	110	ug/kg	3/13/96	8270
Chrysene	< 100	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	160	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/13/96	8270
Benzo(a)pyrene	130	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	106	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/13/96	8270
Benzo(g,h,i)perylene	120	ug/kg	3/13/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1526
Lab Number: 96-D507

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM J. MERLO RESIDENCE, 5541 DAGGETT

Analysis Performed	Results		Analyzed	Method
Lead, Total	185,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/13/96	8270
Hexachloroethane	< 100	ug/kg	3/13/96	8270
Nitrobenzene	< 100	ug/kg	3/13/96	8270
Isophorone	< 100	ug/kg	3/13/96	8270
Benzoic Acid	< 100	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/13/96	8270
Naphthalene	< 100	ug/kg	3/13/96	8270
4-Chloroaniline	< 250	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/13/96	8270
2-Nitroaniline	< 250	ug/kg	3/13/96	8270
Dimethylphthalate	< 100	ug/kg	3/13/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
3-Nitroaniline	< 250	ug/kg	3/13/96	8270
Acenaphthene	< 100	ug/kg	3/13/96	8270
Dibenzofuran	< 100	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
Diethylphthalate	< 100	ug/kg	3/13/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/13/96	8270
Fluorene	< 100	ug/kg	3/13/96	8270
4-Nitroaniline	< 250	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/13/96	8270
Hexachlorobenzene	< 100	ug/kg	3/13/96	8270
Phenanthrene	140	ug/kg	3/13/96	8270
Anthrancene	< 100	ug/kg	3/13/96	8270
Di-n-Butylphthalate	1,600	ug/kg	3/13/96	8270
Fluoranthene	300	ug/kg	3/13/96	8270
Pyrene	< 100	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/13/96	8270
Benzo(a)anthracene	110	ug/kg	3/13/96	8270
Chrysene	130	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	120	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	< 100	ug/kg	3/13/96	8270
Benzo(a)pyrene	110	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	140	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	< 100	ug/kg	3/13/96	8270
Benzo(g,h,i)perylene	160	ug/kg	3/13/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1527
Lab Number: 96-D508

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6"
(5 ALIQUOTS) COLLECTED FROM
DEGREGORIO RES., 5629 BISCHOFF AVE.

Analysis Performed	Results		Analyzed	Method
Lead, Total	233,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/13/96	8270
Hexachloroethane	< 100	ug/kg	3/13/96	8270
Nitrobenzene	< 100	ug/kg	3/13/96	8270
Isophorone	< 100	ug/kg	3/13/96	8270
Benzoic Acid	< 100	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/13/96	8270
Naphthalene	< 100	ug/kg	3/13/96	8270
4-Chloroaniline	< 250	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/13/96	8270
2-Nitroaniline	< 250	ug/kg	3/13/96	8270
methylphthalate	< 100	ug/kg	3/13/96	8270

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
3-Nitroaniline	< 250	ug/kg	3/13/96	8270
Acenaphthene	< 100	ug/kg	3/13/96	8270
Dibenzofuran	< 100	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
Diethylphthalate	< 100	ug/kg	3/13/96	8270
4-Chlorophenyl-phenylethe	< 100	ug/kg	3/13/96	8270
Fluorene	< 100	ug/kg	3/13/96	8270
4-Nitroaniline	< 250	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/13/96	8270
Hexachlorobenzene	< 100	ug/kg	3/13/96	8270
Phenanthrene	600	ug/kg	3/13/96	8270
Anthrancene	130	ug/kg	3/13/96	8270
Di-n-Butylphthalate	5,700	ug/kg	3/13/96	8270
Fluoranthene	1,100	ug/kg	3/13/96	8270
Pyrene	400	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/13/96	8270
Benzo(a)anthracene	490	ug/kg	3/13/96	8270
Chrysene	320	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	540	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	140	ug/kg	3/13/96	8270
Benzo(a)pyrene	380	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	440	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	170	ug/kg	3/13/96	8270
Comment: Approximate value				
Benzo(g,h,i)perylene	470	ug/kg	3/13/96	8270
Comment: Approximate value				

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1528
Lab Number: 96-D509

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL GRAB FROM BORING ON DEGREGORIO PROPERTY, 5629 BISCHOFF AVE., COLLECTED 4-6' DEPTH

Analysis Performed	Results		Analyzed	Method
Lead, Total	1,130,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 1,000	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 1,000	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 1,000	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 1,000	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 1,000	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 1,000	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 1,000	ug/kg	3/13/96	8270
Hexachloroethane	< 1,000	ug/kg	3/13/96	8270
Nitrobenzene	< 1,000	ug/kg	3/13/96	8270
Isophorone	< 1,000	ug/kg	3/13/96	8270
Benzoic Acid	< 1,000	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 1,000	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 1,000	ug/kg	3/13/96	8270
Naphthalene	< 1,000	ug/kg	3/13/96	8270
4-Chloroaniline	< 2,500	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 1,000	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 1,000	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 1,000	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 1,000	ug/kg	3/13/96	8270
2-Nitroaniline	< 2,500	ug/kg	3/13/96	8270
Dimethylphthalate	< 1,000	ug/kg	3/13/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 1,000	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 1,000	ug/kg	3/13/96	8270
3-Nitroaniline	< 2,500	ug/kg	3/13/96	8270
Acenaphthene	1,600	ug/kg	3/13/96	8270
Dibenzofuran	1,100	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	1,800	ug/kg	3/13/96	8270
Diethylphthalate	< 1,000	ug/kg	3/13/96	8270
4-Chlorophenyl-phenyléthe	< 1,000	ug/kg	3/13/96	8270
Fluorene	1,600	ug/kg	3/13/96	8270
4-Nitroaniline	< 2,500	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 1,000	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 1,000	ug/kg	3/13/96	8270
Hexachlorobenzene	< 1,000	ug/kg	3/13/96	8270
Phenanthrene	29,000	ug/kg	3/13/96	8270
Anthrancene	5,100	ug/kg	3/13/96	8270
Di-n-Butylphthalate	3,800	ug/kg	3/13/96	8270
Fluoranthene	49,000	ug/kg	3/13/96	8270
Pyrene	21,000	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 1,000	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 2,500	ug/kg	3/13/96	8270
Benzo(a)anthracene	15,000	ug/kg	3/13/96	8270
Chrysene	12,000	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 1,000	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 1,000	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	16,000	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	3,800	ug/kg	3/13/96	8270
Benzo(a)pyrene	12,000	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	14,000	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	3,400	ug/kg	3/13/96	8270
Benzo(g,h,i)perylene	16,000	ug/kg	3/13/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Douglas N. Edwards for

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

RESULTS OF SAMPLE ANALYSES

Sample Number: 96-1529
Lab Number: 96-D510

Reported To: BRIAN ALLEN
Affiliation: SPFD
Project Code: 3667/3538

Report Date: 3/21/96
Date Collected: 3/ 5/96
Date Received: 3/ 6/96

Sample Collected by: BRIAN ALLEN, SPFD
Sampling Location: HUBERT WHEELER STATE SCHOOL SITE
Sample Description: ST. LOUIS, SOIL COMPOSITE, 0-6" (5 ALIQUOTS) COLLECTED FROM T. REGALIA RES., 5639 BISCHOFF AVE.

Analysis Performed	Results		Analyzed	Method
Lead, Total	252,000	ug/kg	3/13/96	239.2
Lead, TCLP	< 2,500	ug/L	3/20/96	239.2
BNA Results:				
bis(-2-Chloroethyl)Ether	< 100	ug/kg	3/13/96	8270
1,3-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
1,4-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
N-nitrosodimethylamine	< 100	ug/kg	3/13/96	8270
1,2-Dichlorobenzene	< 100	ug/kg	3/13/96	8270
bis(2-Chloroisopropyl)Eth	< 100	ug/kg	3/13/96	8270
N-Nitro-Di-n-Propylamine	< 100	ug/kg	3/13/96	8270
Hexachloroethane	< 100	ug/kg	3/13/96	8270
Nitrobenzene	< 100	ug/kg	3/13/96	8270
Isophorone	< 100	ug/kg	3/13/96	8270
Benzoic Acid	< 100	ug/kg	3/13/96	8270
bis(2-Chloroethoxy)Methan	< 100	ug/kg	3/13/96	8270
1,2,4-Trichlorobenzene	< 100	ug/kg	3/13/96	8270
Naphthalene	< 100	ug/kg	3/13/96	8270
4-Chloroaniline	< 250	ug/kg	3/13/96	8270
Hexachlorobutadiene	< 100	ug/kg	3/13/96	8270
2-Methylnaphthalene	< 100	ug/kg	3/13/96	8270
Hexachlorocyclopentadiene	< 100	ug/kg	3/13/96	8270
2-Chloronaphthalene	< 100	ug/kg	3/13/96	8270
-Nitroaniline	< 250	ug/kg	3/13/96	8270
methylphthalate	< 100	ug/kg	3/13/96	8270

RECYCLED PAPER

Analysis Performed	Results		Analyzed	Method
Acenaphthylene	< 100	ug/kg	3/13/96	8270
2,6-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
3-Nitroaniline	< 250	ug/kg	3/13/96	8270
Acenaphthene	< 100	ug/kg	3/13/96	8270
Dibenzofuran	< 100	ug/kg	3/13/96	8270
2,4-Dinitrotoluene	< 100	ug/kg	3/13/96	8270
Diethylphthalate	< 100	ug/kg	3/13/96	8270
4-Chlorophenyl-phenyléthe	< 100	ug/kg	3/13/96	8270
Fluorene	< 100	ug/kg	3/13/96	8270
4-Nitroaniline	< 250	ug/kg	3/13/96	8270
N-Nitrosodiphenylamine	< 100	ug/kg	3/13/96	8270
4-Bromophenyl-phenylether	< 100	ug/kg	3/13/96	8270
Hexachlorobenzene	< 100	ug/kg	3/13/96	8270
Phenanthrene	540	ug/kg	3/13/96	8270
Anthrancene	120	ug/kg	3/13/96	8270
Di-n-Butylphthalate	2,000	ug/kg	3/13/96	8270
Fluoranthene	1,200	ug/kg	3/13/96	8270
Pyrene	460	ug/kg	3/13/96	8270
Butylbenzylphthalate	< 100	ug/kg	3/13/96	8270
3-3'-Dichlorobenzidine	< 250	ug/kg	3/13/96	8270
Benzo(a)anthracene	580	ug/kg	3/13/96	8270
Chrysene	420	ug/kg	3/13/96	8270
bis(2-ethylhexyl)phthalat	< 100	ug/kg	3/13/96	8270
Di-n-Octylphthalate	< 100	ug/kg	3/13/96	8270
Benzo(b)fluoranthene	560	ug/kg	3/13/96	8270
Benzo(k)fluoranthene	190	ug/kg	3/13/96	8270
Benzo(a)pyrene	380	ug/kg	3/13/96	8270
Indeno(1,2,3-cd)pyrene	420	ug/kg	3/13/96	8270
Dibenz(a,h)anthracene	200	ug/kg	3/13/96	8270
Benzo(g,h,i)perylene	560	ug/kg	3/13/96	8270

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

James W. Long, Director
Environmental Services Program
Division of Environmental Quality

c: JULIE BLOSS, HWP

APPENDIX C
Sample Index/Locations
Hubert Wheeler State School Site
St. Louis, Missouri

Appendix C

Sample #	Sample Media/Type	Location Collected	Date/Time Collected
96-1500	Surface soil composite	K. Grassi property, 1937/1939 Sublette. All aliquots collected from the back yard from the 0- to 6-inch depth.	3/4/96 @ 1250
96-1501	Surface soil composite	B. Kopff property, 5629 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1315
96-1502	Surface soil composite	C. Re property, 5617 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1340
96-1503	Surface soil composite	E. Merlotti property, 5613 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1355
96-1504	Surface soil composite	M. Colombo property, 5636 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1420
96-1505	Surface soil composite	M. Colombo property. Duplicate sample of 96-1504.	3/4/96 @ 14[redacted]
96-1506	Surface soil composite	L. Tornetto property, 5621 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1430
96-1507	Surface soil composite	J. Gorla property, 5626 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1443
96-1508	Surface soil composite	C. Guidici property, 5654 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1450
96-1509	Surface soil composite	M Castiglioni property, 5658 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1505
96-1510	Surface soil composite	A. Farina property, 5646 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1525
96-1511	Surface soil composite	L. Salamone property, 5633 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1535
96-1512	Surface soil composite	J. Grimoldi property, 5622 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1[redacted]
96-1513	Surface soil composite	G. Griffiro property, 5609 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1653
96-1514	Surface soil composite	J. Cacciatore property, 1945 Berra Court. Aliquots collected from the back yard from the 0- to 6-inch depth.	3/4/96 @ 1707
96-1515	Surface soil composite	S. Caputa property, 1948 Berra Court. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1718

Appendix C (continued)

Sample #	Sample Media/Type	Location Collected	Date/Time Collected
96-1516	Surface soil composite	M. Dunsford property, 5234 Bischoff Ave. Aliquots collected from front yard from the 0- to 6-inch depth.	3/4/96 @ 1737
96-1517	Surface soil composite	M. DiMartino property, 5238 Bischoff Ave. Aliquots collected from back yard from the 0- to 6-inch depth.	3/4/96 @ 1752
96-1518	Surface soil composite	M. DiMartino property, 5238 Bischoff Ave. Duplicate sample of 96-1517.	3/4/96 @ 1753
96-1519	Surface soil composite	D. Gambaro property, 5320 Wilson. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/4/96 @ 1805
96-1520	Soil grab	Holiday Inn property, 5915 Wilson. Boring conducted in grassy area adjacent to swimming pool. Collected soil grab from the 4.5-5.5 ft depth.	3/5/96 @ 10
96-1521	Soil grab	J&L Distributors, across from Hubert Wheeler State School, on Wilson. Boring conducted in grassy area on the northeast corner of the property. Collected soil grab from the 4-6 ft depth.	3/5/96 @ 1120
96-1522	Soil grab	J&L Distributors. Duplicate sample of 96-1521.	3/5/96 @ 1121
96-1523	Soil grab	Berra Court. Boring conducted in grassy area in center of cul-de-sac. Collected soil grab from the 4-6 ft depth.	3/5/96 @ 1153
96-1524	Surface soil composite	A. Giuffrida property, 5540 Daggett. Aliquots collected from front and back yards from the 0- to 6-inch depth.	3/5/96 @ 1245
96-1525	Soil grab	J. Merlo property, 5541 Daggett. Boring conducted along western property boundary, adjacent to Sublette Ave. Collected soil grab from the 4.5-5.5 ft depth.	3/5/96 @ 1253
96-1526	Surface soil composite	J. Merlo property, 5541 Daggett. Aliquots collected from side (west) and back yards (along western property boundary) from the 0- to 6-inch depth.	3/5/96 @ 1303
96-1527	Surface soil composite	DeGregorio property, 5629 Bischoff Ave. Aliquots collected from back yard from the 0- to 6-inch depth.	3/5/96 @ 132
96-1528	Soil grab	DeGregorio property, 5629 Bischoff Ave. Boring conducted in front yard (adjacent to Bischoff Ave.). Soil grab collected from the 4-6 ft depth.	3/5/96 @ 1335
96-1529	Surface soil composite	T. Regalia property, 5639 Bischoff Ave. Aliquots collected from back yard from the 0- to 6-inch depth.	3/5/96 @ 1345

DRAFT

Health Consultation

HUBERT WHEELER STATE SCHOOL SITE

PRIVATE RESIDENTIAL YARDS

CITY OF ST. LOUIS, MISSOURI

June 20, 1996

Prepared by:

Missouri Department of Health
Bureau of Environmental Epidemiology
in Cooperation with the
Agency for Toxic Substances and Disease Registry

RECE
JUL 05
ZARDOUS
SOURI D
TURA

STATEMENT OF ISSUES

The Missouri Department of Health (DOH), in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), has prepared this health consultation to address health concerns raised during its investigation and involvement in the Hubert Wheeler State School site, located in St. Louis, Missouri. This document has also been developed to provide residents living near the site with more information about the site, and to explain to what extent residents are being exposed to contaminants from past dumping and landfill operations at what is now the Hubert Wheeler State School campus and adjoining neighborhood.

The above-mentioned neighborhood is located in an area where fill and landfill activities are reported to have occurred. Because many of the houses in this neighborhood are built directly on top of landfill material, exposure is most likely to occur in these residential yards.

To briefly summarize DOH's investigation conclusions, residents living in the neighborhood adjoining the Hubert Wheeler school campus, may be exposed to low levels of polycyclic aromatic hydrocarbons (PAHs) when they work or play in the contaminated soil in their yards. However, at these low contaminant levels, and because residents spend relatively short periods of time exposed to the soil, adverse health effects are not expected to occur. Further exposure can be avoided by taking precautions to limit contact with contaminated soil. Finally, ingestion of produce grown in gardens found to have contaminated soil may present another possible exposure pathway to site contaminants, which can be avoided.

BACKGROUND

Hubert Wheeler State School is located at 5707 Wilson Avenue in St. Louis, Missouri. This part of St. Louis was an industrial area that included clay mining and storage, brick manufacturing and storage, and general waste dumping from approximately the early 1900s to the 1960s. File information indicates that this area was also used as a demolition and waste landfill in the 1960s (1,2). Cinders and ash are believed to make up the major portion of material dumped at and around the site. Also reported to have been dumped there are bottles, medical waste, brick, glass, cans, truckloads of dirt, refractory materials, fire brick, pieces of tile, straw, shoe factory waste, and faulty manufactured goods (3).

File information shows that as early as 1923 there were well-established neighborhoods east and southeast of what was the industrial and dump areas, and what is now the Hubert Wheeler School. As use of the landfill and industrial areas began to decline, these areas started to be developed for housing. Houses were built on Wilson Street (location of the school) as early as the late 1940s and early 1950s, and many of the original owners of these homes are still living on Wilson Street.

Long-time residents of this area also report that the dumped materials were almost always smoldering and that the fire department had to be called to address several large fires that broke out in the dump. Ash and cinders were widely used as fill during the development of the local community, and many of the houses sit directly on fill material (3).

The State of Missouri's Department of Elementary and Secondary Education (DESE) purchased the Wilson Avenue property in 1968 and constructed a school in 1970 for severely developmentally disabled children. File information indicates that a "tar-like substance bubbled up from the ground every spring since the school opened" (4). In 1990, DESE excavated an area near the playground to determine the location and extent of the tar-like substance and a shallow "vein" of the tar was found. Sampling results for polycyclic aromatic hydrocarbons (PAHs) were determined to be inconclusive, but the literature is not clear on what was done with the tar (4).

In 1993, DESE hired an environmental contractor to conduct a subsurface assessment of the school's playground. During its investigation of the Hubert Wheeler property, the contractor was able to confirm that the school had been built on fill material, that on-site soil was contaminated, and that "the upper 6 to 8 feet of school's courtyard consisted of rubble fill including brown and green silty clays, brick, gravel, sand, and cinders" (4).

Also in 1993, DESE's contractor involved MDNR in the site characterization process, and began discussion on remedial alternatives. MDNR conducted some coordinated environmental sampling with the contractor to help characterize the site.

Throughout the site investigation process, the Hubert Wheeler school operated without disruption until DESE officials closed it in August 1994. This was done to protect the students and faculty from potential risk of exposure to environmental contaminants (PAHs in the tar-like substance) (1).

After the school's closing and as activities at and around the school progressed, MDNR decided to conduct its own environmental sampling because historical information about the site indicated that the nearby neighborhood had been built on similar fill material (ash). With this sampling MDNR attempted to more specifically confirm the exact size of the landfill and the extent of the contamination. This sampling, conducted in residential yards March 4-5, 1996, was also designed to determine if residents are at risk of exposure to site-related contaminants. A few days prior to MDNR' sampling, DOH and MDNR conducted a community door-to-door interview effort to gather site information and community concerns (2).

In conducting its environmental sampling, MDNR took 24 surface soil samples (four combined grab samples per yard sampled) including duplicates, at depths of 0 to 6 inches, in an arc from east to southeast of the Hubert Wheeler campus (2). Six subsurface soil samples including duplicates were taken at depths of 4 to 6 feet (2). The contaminants and their levels found during the environmental sampling will be discussed in the Discussion section following.

DISCUSSION

Most of the contaminants found during the soil sampling belong to a family of more than 100 chemicals called polycyclic aromatic hydrocarbons (PAHs). PAH chemicals are formed during the incomplete burning of coal, oil, gas, wood, garbage, or other organic substances such as tobacco, as well as in charbroiled and smoked meat. PAHs can also be found in substances such as crude oil, coal, coal tar pitch, creosote, and roofing tar (5).

PAHs are found throughout the environment in the air, water, and soil. In general, PAHs do not easily dissolve in water. They are present in air as vapors or attached to the surface of small solid particles. In soils, these chemicals are most likely to bond tightly to soil and dust particles. Many plants, including vegetables and fruit, can take up and store PAH chemicals; therefore, the edible parts of plants grown in PAH-contaminated soil may contain these chemicals at higher concentrations than are found in the soil in which they are grown (5).

Of the various PAH chemicals found in surface soil samples from residential yards near Hubert Wheeler, the following were the only chemicals found above ATSDR's Soil Comparison Values or DOH's Any-Use Soil Levels (ASLs)[1] (6,7,8,9):

- Benzo (a) pyrene was detected in 6 of 24 samples above DOH's ASL of 680 ppb. The levels from all of the samples ranged from less than 100 parts per billion (ppb) (minimum detectable level) to a maximum of 1400 ppb;

- Dibenz (a,h) anthracene was detected in 1 of 24 samples above DOH's ASL of 620 ppb. The levels from all of the samples ranged from less than 100 ppb (minimum detectable level) to a maximum of 890 ppb;

- Dibenzofuran was detected in only 4 of the 24 samples taken from private yards at levels above the minimum detection limit of the sampling equipment (100 ppb), including one sample that is questionable because of a higher minimum detection limit. The levels found in the 3 known samples ranged from 100 ppb to 130 ppb (9);

- Lead was also found in 9 of the 24 samples taken from the yards at levels above DOH's ASL of 240,000 ppb. Levels from all of the samples ranged from 41,000 ppb to 533,000 ppb.

---

[1]Comparison Values and Any-Use Soil Levels are used to determine if a chemical is present at a level that could pose a health risk. Contaminants found below these levels are not expected to cause adverse health effects.

It should be emphasized that we listed the results of the chemicals detected above their comparison value or ASL in ranges from below detection to the maximum level detected. This does not mean that every yard sampled contains these contaminants above their comparison value or ASLs. To compare the levels of contamination in deeper soil to those of surface soil, the level of contamination found in subsurface soils (4 to 6 feet deep) varied greatly, from completely undetectable for all chemicals in some samples to approximately ten times greater than the level found in surface soil samples (0 to 6 inches deep). DOH does not expect local residents to become exposed to site-related contaminants at the deeper soil depths, unless residents conduct deep soil excavation (e.g., home remodeling--foundation repair, digging a basement, swimming pool installation, gardening) over an extended period of time. Therefore, subsurface soil samples will not be considered in evaluating exposure.

Exposure Pathways

Residents living in the community around Hubert Wheeler may be exposed to site-related contaminants in a variety of ways called pathways. If exposure were to occur, contaminants could enter the body through three pathways: ingestion (eating), dermal (skin) contact, and inhalation (breathing) of soil or dust.

Exposure to contaminants in the soil can occur when the soil is disrupted during activities such as digging, raking, gardening, and children playing in dust and dirt. If a person is involved in such activities, he/she stands a chance of taking the contaminants into his/her body through ingesting the dust or dirt, getting the dirt on his/her skin, or by inhaling airborne dust.

Gardening presents another exposure risk in addition to digging in contaminated soil. Vegetables and fruits grown in soil contaminated with PAHs can absorb the chemicals from the soil. A person who eats the vegetables grown in this soil can then become exposed to the contaminants (ingestion pathway).

Health Effects

PAHs vary in their carcinogenic (cancer causing) potential, ranging from a probable human carcinogen and/or known animal carcinogens for benzo (a) pyrene and dibenz (a,h) anthracene, to other PAHs that are not classifiable as to their carcinogenicity to humans. There are no known studies that show PAHs directly cause cancer in humans, but some studies have shown increased mortality (death) due to lung cancer in humans exposed to coke oven emissions, roofing-tar emissions, and cigarette smoke, all of which contain PAHs. Exposure by dermal contact has caused skin cancer in persons exposed to compounds found in chimneys and shale oils. PAHs could not be confirmed as the cause of the cancers, since the materials were a mixture of many possible cancer-causing chemicals. Other health effects caused by exposure to PAHs have been found in animals. Animal studies have shown that mice fed high levels of benzo (a) pyrene during pregnancy had difficulty reproducing, and so did their offspring. People could experience similar health effects, but there is no information showing that these effects occur (5).

Dibenzofuran is a chemical which is released to the environment from the combustion of coal, refuse, diesel fuel, and tobacco. Although dibenzofuran is considered a toxin, there are no comparison values or toxicological information available for this chemical. This means that little is known about what health effects can be caused by exposure to this chemical (9). However, if residents protect themselves by limiting contact with soil contaminated by the other chemicals, they should be safe from exposure to dibenzofuran.

Lead was the other primary contaminant found in residential yards near Hubert Wheeler. It was found at levels above its ASL, but not at levels expected to cause adverse health effects in adults (10). If residents keep grass growing on the contaminated soil and prevent children 6 months to 6 years of age (the age range most affected by lead poisoning) from playing in and on bare contaminated soil and dust, there should also be no adverse health effects in children.

CONCLUSIONS

1. Residents may be exposed to low levels of PAHs and lead when they work or play in the contaminated soil.

2. At the contaminant levels present, and because residents are not expected to spend long periods of time working/playing in the contaminated soil, adverse health effects are not expected to occur.

3. Garden produce (vegetables or fruits) grown in contaminated soils may be able to take up some of the PAHs. Ingestion of produce grown in these gardens may lead to exposure to site contaminants.

RECOMMENDATIONS

1. Residents should avoid exposure to contaminated soil by maintaining a good thickness of top soil along with ground cover (grass) in their yards. Because lead has also been found in yards above its ASL, residents should prevent children 6 months to 6 years old from playing in contaminated dust and dirt.

2. To prevent further exposure to contaminants, residents should limit the time they work/play in the contaminated soil.

3. Edible plants should only be grown in raised-bed gardens using clean top soil of sufficient depth so plant roots do not contact contaminated soil or fill material.

Preparers of the Report: Arthur Busch and Brian Quinn, Missouri Department of Health

The information presented in this health consultation, along with the conclusions and recommendations, are based on the information referenced. They relate only to the residential yards in the neighborhood around the Hubert Wheeler State School site and should not be applied to any other site or situation. When additional information becomes available, it will be thoroughly evaluated, and existing assessment documents will be updated to reflect any changes. DOH/ATSDR will respond appropriately to any request for additional information or action.

CERTIFICATION

This Health Consultation for the residential yards in the community adjoining the Hubert Wheeler State School site was prepared by the Missouri Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated.

Technical Project Officer, SPS, SSAB, DHAC

The Superfund Site Assessment Branch of the Division of Health Assessment and Consultation, ATSDR, has reviewed this Health Consultation and concurs with its findings.

Chief, SSAB, DHAC

REFERENCES

1. Missouri Department of Natural Resources. Site Inspection Report, Hubert Wheeler State School, St. Louis City, Missouri. September 20, 1994.

2. Missouri Department of Natural Resources. Phase 1 Removal Assessment Sampling Report, Hubert Wheeler State School Site, 5707 Wilson Avenue, St. Louis, Missouri. March 4-5, 1996.

3. Missouri Department of Natural Resources. Memorandum on Removal Assessment Community Interviews, Hubert Wheeler State School Site. April 17, 1996.

4. Geotechnology, Inc. Subsurface Assessment Playground Site Restoration, Hubert Wheeler State School. Geotechnology, Inc., St. Louis, Mo. November 30, 1993.

5. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Polycyclic Aromatic Hydrocarbons (PAHs), Update. Atlanta: ATSDR, August 1995.

6. Agency for Toxic Substances and Disease Registry. Public Health Assessment Guidance Manual. Lewis Publishers, Chelsea, Michigan, 1992.

7. Missouri Department of Health. 19 CSR 20-9.020 Any-Use Soil Levels for Residential Settings, Proposed Rule. Filed August 14, 1992.

8. Environmental Protection Agency. New Interim Region IV Guidelines on Toxicity Equivalency Factor (TEF) methodology for carcinogenic PAHs based on the each compounds relative potency to the potency of benzo (a) pyrene. February 11, 1992.

9. Telephone conversations with Dana Aborrelnasr, ATSDR, Atlanta, Georgia. May 21& 22, 1996.

10. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Lead, Atlanta: ATSDR, 1993.

OTHER DOCUMENTS REVIEWED

Missouri Department of Health. Preliminary Removal Goals, Hubert Wheeler State School, St. Louis, Missouri. April 15, 1996.

Geotechnology, Inc. Additional Assessment Playground Site Restoration, Hubert Wheeler State School. Geotechnology, Inc., St. Louis, Mo. September 7, 1995.

Attachment 6

MISSOURI DEPARTMENT OF HEALTH

Mel Carnahan
Governor

Coleen Kivlahan, M.D., M.S.P.H.
Director

P.O. Box 570, Jefferson City, MO 65102-0570 • 573/751-6400 • FAX 573/751-6010

April 15, 1996

Mr. Bob Hinkson
Superfund Section
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Dear Mr. Hinkson,

Enclosed please find Preliminary Removal Goals for Residential Areas in the Vicinity of the Hubert Wheeler State School Site. As requested, PRGs were calculated at two risk levels, 1×10^{-6} and 1×10^{-4}. Missouri's Any Use Soil levels have also been provided for comparison. Soil concentrations of several chemicals [benzo(a)pyrene, benz(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene] from several samples exceeded the more conservative PRG (1×10^{-6}) and the ASL, but did not exceed the less conservative PRG (1×10^{-4}).

If you would like to discuss this situation further or have any questions on this document, please feel free to call me at 751-6111.

Sincerely,

Cherri Baysinger-Daniel
Environmental Specialist
Bureau of Environmental Epidemiology

Enclosure

The Missouri Department of Health is responsible for the promotion and protection of the public's health through education, disease and injury prevention, regulation, and direct delivery of health care services in order that all Missourians may achieve their fullest health potential.

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER — Services provided on a nondiscriminatory basis

Preliminary Removal Goals
Hubert Wheeler State School, St. Louis, MO

Prepared by:

Missouri Department of Health
Bureau of Environmental Epidemiology
210 El Mercado Plaza, P. O. Box 570
Jefferson City, MO 65102

The Missouri Department of Natural Resources (DNR) requested that Missouri Department of Health (DOH) determine preliminary removal goals (PRGs) for residential areas surrounding the Hubert Wheeler State School Site. The Hubert Wheeler Site is located in St. Louis, MO, southeast of the intersection of I-44 and Hampton Avenue. A tar-like substance has oozed up from the ground on the site every spring since 1970. Analysis of soil samples collected from the site indicated that polynuclear aromatic hydrocarbon (PAHs) were the primary contaminants of concern at the site. Thus far, investigations have not determined a source for the contaminants detected at the site or the extent of contamination. The area surrounding the site is a mix of residential and commercial properties. Additional soil sampling has recently been conducted in the nearby residential areas. The PRGs presented in this document were developed to assist in determining if concentrations detected in residential areas were sufficient to warrant a removal action.

Soil PRGs were developed using Risk Assessment Guidance for Superfund, Volume I, Part B (EPA 1991a) for all chemicals which were found above detection limits and which had toxicity information available. The following chemicals were detected in residential yards in the vicinity of the Hubert Wheeler Site:

2,4-Dinitrotoluene	Benzo(k)fluoranthene	Fluorene
Acenaphthene	Bis(2-ethylhexyl)phthalate	Indeno(1,2,3-cd)pyrene
Anthracene	Chrysene	Napthalene
Benzo(a)anthracene	Di-n-butyl phthalate	Phenanthrene
Benzo(a)pyrene	Dibenz(a,h)anthracene	Pyrene
Benzo(b)fluoranthene	Dibenzofuran	
Benzo(g,h,i)perylene	Fluoranthene	

PRGs were calculated using the following formulae (EPA 1991a):

Carcinogenic compounds:

$$PRG = \frac{TR*BW*ATc*365\ days/year}{EF*ED*[(SFo*IRs*CF)+(SFi*IRa*[1/VF+1/PEF])+(SFd*SA*ABS*AF*CF)]}$$

Noncarcinogenic compounds:

$$PRG = \frac{THI*BW*ATn*365\ days/year}{EF*ED*[([1/RfD]*IRs*CF)+([1/RfD]*IRa*[1/VF+1/PEF])+([1/RfD]*SA*ABS*AF*CF)]}.$$

Variable definitions and the specific variable values used to calculated PRGs are presented in Table 1. A residential exposure scenario was used to develop PRGs for residential areas in the vicinity of the Hubert Wheeler Site. Exposure was expected to occur 350 days per year over a 30 year period. Body weight and soil ingestion rate were adjusted to allow for 6 out of the 30 years of exposure as a child (15 kg body weight , 200 mg/d soil ingestion) and the remaining 24 years of exposure as an adult (70 kg body weight, 100 mg/d soil ingestion rate). The adjusted body weight and soil ingestion rate are presented in Table 1. PRGs were calculated at two risk levels, 10^{-6} (HI=0.1, Cancer risk=1 x 10^{-6}) and 10^{-4} (HI=1, Cancer risk=1 x 10^{-4}).

Oral and Inhalation Reference Doses (RfD) and Slope Factors (SF) were obtained from the Integrated Risk Information System (IRIS) or the Health Effects Assessment Summary Tables (HEAST). Several of the PAHs have been determined to be carcinogenic. However, there is an SF value in IRIS only for benzo(a)pyrene. EPA suggests calculating chemical specific SFs for the remaining carcinogenic PAHs using the following formula (ECAO 1993):

$$SF_{PAH} = SF_{benzo(a)pyrene} \times \text{Toxic Equivalency Factor}_{PAH}$$

The following TEF values were used in this calculation:

Chemical	Toxic Equivalency Factor
Benzo(a)pyrene	1.0
Benz(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(a,h)anthracene	1.0
Indeno(1,2,3-cd)pyrene	0.1

SF and RfD values used to calculate PRG values are presented in Tables 2 and 3. Two chemicals, phenanthrene and dibenzofuran, did not have toxicity information available. Thus, PRGs were not calculated for these chemicals.

Carcinogenic and noncarcinogenic PRGs were calculated for each risk level. The final PRG for each risk level was determined by comparing the carcinogenic and noncarcinogenic PRGs and selecting the lowest value. These values have been provided in Tables 4 (10^{-6} risk level) and 5 (10^{-4} risk level). A summary of the range of PRGs, along with the Any Use Soil Level, is presented in Table 6.

Table 1.

Variable Values Used to Calculate Preliminary Remediation Goals for the Hubert Wheeler State School Site, St. Louis, MO

Variable (Units)	Variable Value
PRG = Preliminary Removal Goal (mg/kg)	Calculated Value
TR = Target Risk	1×10^{-6}, 1×10^{-4}
THI = Target Hazard Index	0.1, 1.0
BW = Body Weight (kg) [2]	59
ATc = Averaging Time - carcinogenic (years) [1]	70
ATn = Averaging Time - noncarcinogenic (years) [1]	30
EF = Exposure Frequency (days/year) [1]	350
ED = Exposure Duration (years) [2]	30
SFo = Oral Slope Factor (per mg/kg/day)	Chemical Specific Value
SFi = Inhalation Slope Factor (per mg/kg/day)	Chemical Specific Value
SFd = Dermal Slope Factor	SFo x OAE
RfDo = Oral Reference Dose (mg/kg/day)	Chemical Specific Value
RfDi = Inhalation Reference Dose (mg/kg/day)	Chemical Specific Value
RfDd = Dermal Reference Dose	RfDo x OAE
IRs = Soil Ingestion Rate (mg/day) [2]	120
IRa = Inhalation Rate for Air (m^3/day) [2]	20
VF = Soil to Air Volatilization Factor	Chemical Specific Value
PEF = Particulate Emissions Factor (m^3/kg) [1]	4.63×10^{9}
CF = Conversion Factor (kg/mg) [1]	1×10^{-6}
SA = Body Surface Area Exposed (cm^2) [3]	180000
ABS = Absorption Fraction (unitless) [2]	Chemical Specific Value
AF = Adherence Factor (mg/cm^2) [2]	1

[1] EPA 1991a
[2] EPA 1991b

Table 2.

Carcinogenic Toxicity Values and Tumor Locations for Chemicals found in Soil at the Hubert Wheeler State School Site, St. Louis, MO

Chemical (Weight of Evidence)	Oral Slope Factor $(mg/kg/d)^{-1}$	Inhalation Slope Factor $(mg/kg/d)^{-1}$	Location of Tumor
2,4-Dinitrotoluene (B2)	0.68 (I)	NA	Kidney
Benzo(a)anthracene (B2)	0.73 (E)	NA	Skin
Benzo(a)pyrene (B2)	7.3 (I)	NA	Skin
Benzo(b)fluoranthene (B2)	0.73 (E)	NA	Skin
Benzo(k)fluoranthene (B2)	0.073 (E)	NA	Skin
Bis(2-ethylhexyl) phthalate (B2)	0.014 (E)	NA	Liver
Chrysene (B2)	0.0073 (E)	NA	Skin
Dibenz(a,h)anthracene (B2)	7.3 (E)	NA	Skin
Indeno(1,2,3-cd)pyrene (B2)	0.73 (E)	NA	Skin

NA Not Available
(I) Integrated Risk Information System, April, 1996
(E) Environmental Criteria and Assessment Office (ECAO 1993)

Table 3.

Noncarcinogenic Toxicity Values and Effects of Concern for Chemicals found in Soil at the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Oral Reference Dose (mg/kg/d)	Inhalation Reference Dose (mg/kg/d)	Effect of Concern
2,4-Dinitrotoluene	0.002 (I)	NA	Neurotoxicity
Acenaphthene	0.06 (I)	NA	Hepatotoxicity
Anthracene	0.3 (I)	NA	No observed effects
Bis(2-ethylhexyl)phthalate	0.02 (I)	0.02	No observed effects
Di-n-butyl phthalate	0.1 (I)	NA	Increased mortality
Fluoranthene	0.04 (I)	NA	Nephropathy, increased liver weight
Fluorene	0.04 (I)	NA	Decreased RBC, packed cell volume and hemoglobin
Napthalene	0.04 (I)	NA	
Pyrene	0.03 (I)	NA	Kidney effects

N/A Not Available
(I) Integrated Risk Information System, April, 1996
(H) Health Effects Assessment Summary Tables, 1995 Annual volume and updates

Table 4.

Preliminary Removal Goals Calculated at a 10^{-6} Risk Level for the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Noncarcinogenic PRG (mg/kg)	Carcinogenic PRG (mg/kg)	Final PRG (mg/kg)
2,4 Dinitrotoluene	102	1.8	**1.8**
Acenaphthene	3100	NC	**3100**
Anthracene	15000	NC	**15000**
Benzo(a)anthracene	NC	1.6	**1.6**
Benzo(a)pyrene	NC	0.16	**0.16**
Benzo(b)fluoranthene	NC	1.6	**1.6**
Benzo(k)fluoranthene	NC	16.0	**16.0**
Bis(2-ethylhexyl)phthalate	1000	12.0	**12.0**
Chrysene	NC	160	**160**
Di-n-butyl phthalate	5100	NC	**5100**
Dibenz(a,h,)anthracene	NC	0.16	**0.16**
Fluorene	2100	NC	**2100**
Fluoranthene	2100	NC	**2100**
Indeno(1,2,3-c,d)pyrene	NC	1.6	**1.6**
Napthalene	2100	NC	**2100**
Pyrene	1500	NC	**1500**

NC Not Calculated

Table 5.

Preliminary Removal Goals Calculated at a 10^{-4} Risk Level for the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Noncarcinogenic PRG (mg/kg)	Carcinogenic PRG (mg/kg)	Final PRG (mg/kg)
2,4 Dinitrotoluene	1000	180	**180**
Acenaphthene	31000	NC	**31000**
Anthracene	150000	NC	**150000**
Benzo(a)anthracene	NC	160	**160**
Benzo(a)pyrene	NC	16.0	**16.0**
Benzo(b)fluoranthene	NC	160	**160**
Benzo(k)fluoranthene	NC	1600	**1600**
Bis(2-ethylhexyl)phthalate	10000	1200	**1200**
Chrysene	NC	16000	**16000**
Di-n-butyl phthalate	51000	NC	**51000**
Dibenz(a,h,)anthracene	NC	16.0	**16.0**
Fluorene	21000	NC	**21000**
Fluoranthene	21000	NC	**21000**
Indeno(1,2,3-c,d)pyrene	NC	160	**160**
Napthalene	21000	NC	**21000**
Pyrene	15000	NC	**15000**

NC Not Calculated

Table 6.

Summary of Residential PRGs
for the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Maximum Concentration (mg/kg)	ASL (mg/kg)	10^{-6} Risk Level (mg/kg)	10^{-4} Risk Level (mg/kg)
2,4 Dinitrotoluene	1.8	11	1.8	180
Acenaphthene	1.6	3400	3100	31000
Anthracene	5.1	17000	15000	1500000
Benzo(a)anthracene	15.0	4.5	1.6	160
Benzo(a)pyrene	12.0	0.68	0.16	16.0
Benzo(b)fluoranthene	16.0	4.0	1.6	160
Benzo(k)fluoranthene	3.8	34	16.0	1600
Bis(2-ethylhexyl)phthalate	0.57	100	12.0	1200
Chrysene	12.0	160	160	16000
Di-n-butyl phthalate	7.8	5600	5100	51000
Dibenz(a,h,)anthracene	3.4	0.62	0.16	16.0
Fluorene	1.6	2300	2100	21000
Fluoranthene	49.0	2300	2100	21000
Indeno(1,2,3-c,d)pyrene	14.0	12	1.6	160
Napthalene	0.17	230	2100	21000
Pyrene	21.0	1700	1500	15000

References:

EPA. 1989. Risk Assessment Guidance for Superfund: Part I. Human Health Evaluation Manual. Office of Emergency and Remedial Response. Washington, D. C. EPA/540/1-89/002.

EPA. 1991a. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B: Development of Risk-based Preliminary Remediation Goals. Office of Solid Waste and Emergency Response,. Washington, D. C. OSWER Directive 9285.7-01b.

EPA. 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response,. Washington, D. C. OSWER Directive 9285.6-03.

ECAO. 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. Office of Health and Environmental Assessment. Cincinnati, OH. EPA/600/T-93/089.

Missouri Department of Natural Resources. 1994. Site Inspection Report, Hubert Wheeler State School, St. Louis City, MO. Missouri Department of Natural Resources, Jefferson City, MO.

Appendix I

Preliminary Removal Goal Worksheets for the Hubert Wheeler State School Site, St. Louis, MO

Contaminants of Concern

Soil	Contaminant	RfDo mg/kg-d	RfDi mg/kg-d	SFo kg-d/mg	SFi kg-/mg	OAE	ABS	Di cm2/sec	H atm-m3/mol	Koc cm3/g
	2,4 Dinitrotoluene	0.002		0.68			0.001	0.066		282
	Acenapthene	0.06								
	Anthracene	0.3								
	Benzo(a)anthracene			0.73						
	Benzo(a)pyrene			7.3						
	Benzo(b)fluoranthene			0.73						
	Benzo(k)fluoranthene			0.073						
	bis(2-ethylhexyl)pthalate	0.02	0.02	0.014		1	0.004			
	Chrysene			0.0073						
	Di-n-butyl pthalate	0.1								
	Dibenz(a,h,)anthracene			7.3						
	Fluorene	0.04								
	Fluoranthene	0.04								
	Indeno(1,2,3-c,d)pyrene			0.73						
	Napthalene	0.04								
	Pyrene	0.03								

Preliminary Removal Goals for Soil				
Residential Exposure				
Carcinogenic PRG Formula:				
C = (TR X BW X AT X 365 days/year) / {EF X ED X [(SFo X IRs X 1E-6 kg/mg) + (SFi x IRa x [1/VF + 1/PEF])				
+ (SFd x SA x ABS x AF x 10E-6 kg/m)]}				
Where:	Default	Site Specific	Value Used	
C = Preliminary Removal Goal (mg/kg)				
TR = Target Risk (unitless)	0.000001	0.0001	0.0001	
BW = Body Weight (kg)	70	59	59	
AT = Averaging Time (years)	70		70	
EF = Exposure Frequency (days/year)	365	350	350	
ED = Exposure Duration (years)	30		30	
SFo = Oral Slope Factor (per mg/kg/day)	Chemical specific		Chemical specific	
SFi = Inhalation Slope Factor (per mg/kg/day)	Chemical specific		Chemical specific	
IRs = Soil Ingestion Rate (mg/day)	100	120	120	
IRa = Inhalation Rate for Air (m3/day)	20		20	
VF = Soil to Air Volatilization Factor	Chemical specific		Chemical specific	
PEF = Particulate Emissions Factor (m3/kg)	4630000000		4630000000	
SFd = Dermal Slope Factor (per mg/kg/d)	Chemical specific		Chemical specific	
SA = Surface Area (cm2)	180000		180000	
ABS = Dermal Absorption (unitless)	Chemical specific		Chemical specific	
AF = Adherence Factor (mg/cm2)	1		1	

Preliminary Removal Goals for Soil			
Residential Exposure			
Noncarcinogenic PRG Formula:			
C = (THI X BW X AT X 365 days/year) / {EF X ED X [((1/RfDo) X IRs X 1E-6 kg/mg) + ((1/RfDi) x IRa x [1/VF + 1/PEF])			
+ ((1/RfDd) x SA x ABS x AF x 10E-6 kg/mg)]}			
Where:	Default Value	te Specific Value	Value Used
C = Preliminary Removal Goal (mg/kg)			
THI = Target Hazard Index (unitless)	1		1
BW = Body Weight (kg)	70	59	59
AT = Averaging Time (years)	30		30
EF = Exposure Frequency (days/year)	365	350	350
ED = Exposure Duration (years)	30		30
RfDo = Oral Reference Dose (mg/kg/day)	Chemical specific		Chemical specific
RfDi = Inhalation Reference Dose (mg/kg/day)	Chemical specific		Chemical specific
IRs = Soil Ingestion Rate (mg/day)	100	120	120
IRa = Inhalation Rate for Air (m3/day)	20		20
VF = Soil to Air Volatilization Factor	Chemical specific		Chemical specific
PEF = Particulate Emissions Factor (m3/kg)	4630000000		4630000000
RfDd = Dermal Reference Dose (mg/kg/d)	Chemical specific		Chemical specific
SA = Surface Area (cm2)	180000		180000
ABS = Dermal Absorption (unitless)	Chemical specific		Chemical specific
AF = Adherence Factor (mg/cm2)	1		1

Calculation of Preliminary Removal Goals														
Chemical	**General**	**EFD**	**SFo**	**Soil**	**SFi**	**VF**	**1/VF**	**PEF**	**1/PEF**	**Air**	**SFd**	**ABS**	**Dermal**	**PRG**
2,4 Dinitrotoluene	150.75	10500	0.68	8E-05	0		0	5E+09	2E-10	0	0	0.001	0	**175.94**
Acenapthene	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Anthracene	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(a)anthracene	150.75	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**163.89**
Benzo(a)pyrene	150.75	10500	7.3	9E-04	0		0	5E+09	2E-10	0	0	0	0	**16.39**
Benzo(b)fluoranthe	150.75	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**163.89**
Benzo(k)fluoranthe	150.75	10500	0.073	9E-06	0		0	5E+09	2E-10	0	0	0	0	**1638.89**
bis(2-ethylhexyl)pth	150.75	10500	0.014	2E-06	0		0	5E+09	2E-10	0	0.014	0.004	1E-05	**1220.80**
Chrysene	150.75	10500	0.007	9E-07	0		0	5E+09	2E-10	0	0	0	0	**16388.89**
Di-n-butyl pthalate	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Dibenz(a,h,)anthrac	150.75	10500	7.3	9E-04	0		0	5E+09	2E-10	0	0	0	0	**16.39**
Fluorene	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Fluoranthene	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Indeno(1,2,3-c,d)pyr	150.75	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**163.89**
Napthalene	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Pyrene	150.75	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Where:	General = TR X BW X AT X 365 days/					150.7								
	EFD = EF X ED					10500								
	Soil = SFo X IRs X 1E-6 kg/mg)					1E-04								
	Air = SFi x IRa x (1/VF + 1/PEF)					20								
	Dermal = SFd x SA x ABS x 10E-6					0.18								
	PRG = General / {EFD x (Soil + Air + Dermal)}													
Calculation of Nonarcinogenic Preliminary Removal Goals														

Chemical	General	EFD	RfDo	Soil	RfDi	VF	1/VF	PEF	1/PEF	Air	RfDd	ABS	Dermal	PRG
2,4 Dinitrotoluene	646050	10500	0.002	0.06	0		0	5E+09	2E-10	0	0	0.001	0	**1025.48**
Acenapthene	646050	10500	0.06	0.002	0		0	5E+09	2E-10	0	0	0	0	**30764.29**
Anthracene	646050	10500	0.3	4E-04	0		0	5E+09	2E-10	0	0	0	0	**153821.43**
Benzo(a)anthracene	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(a)pyrene	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(b)fluoranthe	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(k)fluoranthe	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
bis(2-ethylhexyl)pth	646050	10500	0.02	0.006	0.02		0	5E+09	2E-10	2E-07	0.02	0.004	0.036	**10254.39**
Chrysene	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Di-n-butyl pthalate	646050	10500	0.1	0.001	0		0	5E+09	2E-10	0	0	0	0	**51273.81**
Dibenz(a,h,)anthrac	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Fluorene	646050	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**20509.52**
Fluoranthene	646050	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**20509.52**
Indeno(1,2,3-c,d)pyr	646050	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Napthalene	646050	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**20509.52**
Pyrene	646050	10500	0.03	0.004	0		0	5E+09	2E-10	0	0	0	0	**15382.14**
0														
0														

Where:	General = TR X BW X AT X 365 days/	6E+05
	EFD = EF X ED	10500
	Soil = (1/RfDo) X IRs X 1E-6 kg/mg	1E-04
	Air = (1/RfDi) x IRa x (1/VF + 1/PEF)	20
	Dermal = (1/RfDd) x SA x ABS x 10E-	0.18
	PRG = General / {EFD x (Soil + Air + Dermal)}	

Calculation of Chemical Specific Volatilization Factors			
VF = [(LS x V x DH) / A] x [(3.14 x a x T)e1/2 / (2 x Dei x E x Kas x 1e-3 kg/g)]			
Where:	Default Value	Site Specific Value	Value Used
LS = Length of side of contaminated area (m)	4.5		4.5
V = Wind Speed in mixing zone (m/sec)	2.25		2.25
DH = Diffusion Height (m)	2		2
A = Area of Contamination (cm2)	20250000		20250000
T = Exposure Interval (sec)	790000000		790000000
E=True soil porosity (unitless)	0.35		0.35
ps = True soil density (g/cm3)	2.65		2.65
a = (Dei x E) / (E + (ps)(1-E)/Kas) (cm2/sec)			
Dei = Effective Diffusivity = Di*E e0.33 (cm2/sec)			
Kas = Soil/Air Partitioning Coefficient = (H/Kd)*41 (g soil/cm3 air)			
Di = Molecular Diffusivity (cm2/sec)	Chemical Specific		
H = Henry's Law Constant (atm-m3/mol)	Chemical Specific		
Kd = Soil-Water partitioning coefficient (cm3/g)	Chemical Specific or Koc*OC		
Koc = Organic carbon partition coefficient (cm3/g)	Chemical Specific		
OC = Organic carbon content of soil	Site specific or 0.02		

Calculation of Chemical Specific Volatilization Factors

VF = [(LS x V x DH) / A] x [(3.14 x a x T)e1/2 / (2 x Dei x Kas x 1e-3 kg/g)]

Where:	Default Value	Site Specific Value	Value Used
LS = Length of side of contaminated area (m)	4.5		4.5
V = Wind Speed in mixing zone (m/sec)	2.25		2.25
DH = Diffusion Height (m)	2		2
A = Area of Contamination (cm2)	20250000		20250000
T = Exposure Interval (sec)	790000000		790000000
E=True soil porosity (unitless)	0.35		0.35
ps = True soil density (g/cm3)	2.65		2.65
a = (Dei x E) / (E + (ps)(1-E)/Kas) (cm2/sec)			
Dei = Effective Diffusivity = Di*E e0.33 (cm2/sec)			
Kas = Soil/Air Partitioning Coefficient = (H/Kd)*41 (g soil/cm3 air)			
Di = Molecular Diffusivity (cm2/sec)	Chemical Specific		
H = Henry's Law Constant (atm-m3/mol)	Chemical Specific		
Kd = Soil-Water partitioning coefficient (cm3/g)	Chemical Specific or Koc*OC		
Koc = Organic carbon partition coefficient (cm3/g)	Chemical Specific		
OC = Organic carbon content of soil	Site specific or 0.02		

Chemical	Di	Henry's Law	Koc	OC	Kd	Dei	a	Kas	Top	Bottom	Area Specific	VF
2,4 Dinitrotoluene	0.066	0	282	0.02	5.64	0.047	0	0	0	0	0.000001	
Acenapthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Anthracene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)anthrace	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(b)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(k)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
bis(2-ethylhexyl)p	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Chrysene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Di-n-butyl pthalat	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Dibenz(a,h,)anthr	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluorene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluoranthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Indeno(1,2,3-c,d)	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Napthalene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
0												
0												
0												
Where:	Area Specific = (LS*V*DH)/A				1E-06							
	Top = sqrt(3.14*a*T)											
	Bottom = (2*Dei*E*Kas*0.001kg/g)											

Chemical	Di	Henry's Law	Koc	OC	Kd	Dei	a	Kas	Top	Bottom	Area Specific	VF
2,4 Dinitrotoluene	0.066	0	282	0.02	5.64	0.047	0	0	0	0	0.000001	
Acenapthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Anthracene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)anthrace	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(b)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(k)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
bis(2-ethylhexyl)p	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Chrysene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Di-n-butyl pthalat	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Dibenz(a,h,)anthr	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluorene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluoranthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Indeno(1,2,3-c,d)	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Napthalene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	

Where:	Area Specific = (LS*V*DH)/A	1E-06	
	Top = sqrt(3.14*a*T)		

Preliminary Removal Goals for Soil
Residential Exposure

Carcinogenic PRG Formula:

C = (TR X BW X AT X 365 days/year) / {EF X ED X [(SFo X IRs X 1E-6 kg/mg) + (SFi x IRa x [1/VF + 1/PEF])
+ (SFd x SA x ABS x AF x 10E-6 kg/m)]}

Where:	Default	Site Specific	Value Used
C = Preliminary Removal Goal (mg/kg)			
TR = Target Risk (unitless)	0.000001	0.000001	0.000001
BW = Body Weight (kg)	70	59	59
AT = Averaging Time (years)	70		70
EF = Exposure Frequency (days/year)	365	350	350
ED = Exposure Duration (years)	30		30
SFo = Oral Slope Factor (per mg/kg/day)	Chemical specific		Chemical specific
SFi = Inhalation Slope Factor (per mg/kg/day)	Chemical specific		Chemical specific
IRs = Soil Ingestion Rate (mg/day)	100	120	120
IRa = Inhalation Rate for Air (m3/day)	20		20
VF = Soil to Air Volatilization Factor	Chemical specific		Chemical specific
PEF = Particulate Emissions Factor (m3/kg)	4630000000		4630000000
SFd = Dermal Slope Factor (per mg/kg/d)	Chemical specific		Chemical specific
SA = Surface Area (cm2)	180000		180000
ABS = Dermal Absorption (unitless)	Chemical specific		Chemical specific
AF = Adherence Factor (mg/cm2)	1		1

Calculation of Preliminary Removal Goals

Chemical	General	EFD	SFo	Soil	SFi	VF	1/VF	PEF	1/PEF	Air	SFd	ABS	Dermal	PRG
2,4 Dinitrotoluene	1.5075	10500	0.68	8E-05	0		0	5E+09	2E-10	0	0	0.001	0	**1.76**
Acenapthene	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Anthracene	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(a)anthracene	1.5075	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**1.64**
Benzo(a)pyrene	1.5075	10500	7.3	9E-04	0		0	5E+09	2E-10	0	0	0	0	**0.16**
Benzo(b)fluoranthe	1.5075	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**1.64**
Benzo(k)fluoranthe	1.5075	10500	0.073	9E-06	0		0	5E+09	2E-10	0	0	0	0	**16.39**
bis(2-ethylhexyl)pth	1.5075	10500	0.014	2E-06	0		0	5E+09	2E-10	0	0.014	0.004	1E-05	**12.21**
Chrysene	1.5075	10500	0.007	9E-07	0		0	5E+09	2E-10	0	0	0	0	**163.89**
Di-n-butyl pthalate	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Dibenz(a,h,)anthrac	1.5075	10500	7.3	9E-04	0		0	5E+09	2E-10	0	0	0	0	**0.16**
Fluorene	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Fluoranthene	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Indeno(1,2,3-c,d)pyr	1.5075	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**1.64**
Napthalene	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Pyrene	1.5075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	

Where:

General = TR X BW X AT X 365 days/	1.507
EFD = EF X ED	10500
Soil = SFo X IRs X 1E-6 kg/mg)	1E-04
Air = SFi x IRa x (1/VF + 1/PEF)	20
Dermal = SFd x SA x ABS x 10E-6	0.18

PRG = General / {EFD x (Soil + Air + Dermal)}

Calculation of Nonarcinogenic Preliminary Removal Goals

Calculation of Chemical Specific Volatilization Factors

VF = [(LS x V x DH) / A] x [(3.14 x a x T)e1/2 / (2 x Dei x E x Kas x 1e-3 kg/g)]

Where:	Default Value	Site Specific Value	Value Used
LS = Length of side of contaminated area (m)	4.5		4.5
V = Wind Speed in mixing zone (m/sec)	2.25		2.25
DH = Diffusion Height (m)	2		2
A = Area of Contamination (cm2)	20250000		20250000
T = Exposure Interval (sec)	790000000		790000000
E=True soil porosity (unitless)	0.35		0.35
ps = True soil density (g/cm3)	2.65		2.65

a = (Dei x E) / (E + (ps)(1-E)/Kas) (cm2/sec)
Dei = Effective Diffusivity = Di*E e0.33 (cm2/sec)
Kas = Soil/Air Partitioning Coefficient = (H/Kd)*41 (g soil/cm3 air)

Di = Molecular Diffusivity (cm2/sec)	Chemical Specific
H = Henry's Law Constant (atm-m3/mol)	Chemical Specific
Kd = Soil-Water partitioning coefficient (cm3/g)	Chemical Specific or Koc*OC
Koc = Organic carbon partition coefficient (cm3/g)	Chemical Specific
OC = Organic carbon content of soil	Site specific or 0.02

Chemical	Di	Henry's Law	Koc	OC	Kd	Dei	a	Kas	Top	Bottom	Area Specific	VF
2,4 Dinitrotoluene	0.066	0	282	0.02	5.64	0.047	0	0	0	0	0.000001	
Acenapthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Anthracene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)anthrace	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(b)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(k)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
bis(2-ethylhexyl)p	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Chrysene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Di-n-butyl pthalat	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Dibenz(a,h,)anthr	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluorene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluoranthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Indeno(1,2,3-c,d)	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Napthalene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
0												
0												
0												

Where: Area Specific = (LS*V*DH)/A 1E-06
Top = sqrt(3.14*a*T)
Bottom = (2*Dei*E*Kas*0.001kg/g)

Preliminary Removal Goals for Soil
Residential Exposure

Noncarcinogenic PRG Formula:

C = (THI X BW X AT X 365 days/year) / {EF X ED X [((1/RfDo) X IRs X 1E-6 kg/mg) + ((1/RfDi) x IRa x [1/VF + 1/PEF])
+ ((1/RfDd) x SA x ABS x AF x 10E-6 kg/mg)]}

Where:	Default Value	te Specific Value	Value Used
C = Preliminary Removal Goal (mg/kg)			
THI = Target Hazard Index (unitless)	1	0.1	0.1
BW = Body Weight (kg)	70	59	59
AT = Averaging Time (years)	30		30
EF = Exposure Frequency (days/year)	365	350	350
ED = Exposure Duration (years)	30		30
RfDo = Oral Reference Dose (mg/kg/day)	Chemical specific		Chemical specific
RfDi = Inhalation Reference Dose (mg/kg/day)	Chemical specific		Chemical specific
IRs = Soil Ingestion Rate (mg/day)	100	120	120
IRa = Inhalation Rate for Air (m3/day)	20		20
VF = Soil to Air Volatilization Factor	Chemical specific		Chemical specific
PEF = Particulate Emissions Factor (m3/kg)	4630000000		4630000000
RfDd = Dermal Reference Dose (mg/kg/d)	Chemical specific		Chemical specific
SA = Surface Area (cm2)	180000		180000
ABS = Dermal Absorption (unitless)	Chemical specific		Chemical specific
AF = Adherence Factor (mg/cm2)	1		1

Chemical	General	EFD	RfDo	Soil	RfDi	VF	1/VF	PEF	1/PEF	Air	RfDd	ABS	Dermal	PRG
2,4 Dinitrotoluene	64605	10500	0.002	0.06	0		0	5E+09	2E-10	0	0	0.001	0	**102.55**
Acenapthene	64605	10500	0.06	0.002	0		0	5E+09	2E-10	0	0	0	0	**3076.43**
Anthracene	64605	10500	0.3	4E-04	0		0	5E+09	2E-10	0	0	0	0	**15382.14**
Benzo(a)anthracene	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(a)pyrene	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(b)fluoranthe	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(k)fluoranthe	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
bis(2-ethylhexyl)pth	64605	10500	0.02	0.006	0.02		0	5E+09	2E-10	2E-07	0.02	0.004	0.036	**1025.44**
Chrysene	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Di-n-butyl pthalate	64605	10500	0.1	0.001	0		0	5E+09	2E-10	0	0	0	0	**5127.38**
Dibenz(a,h,)anthrac	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Fluorene	64605	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**2050.95**
Fluoranthene	64605	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**2050.95**
Indeno(1,2,3-c,d)pyr	64605	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Napthalene	64605	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**2050.95**
Pyrene	64605	10500	0.03	0.004	0		0	5E+09	2E-10	0	0	0	0	**1538.21**
0														
0														

Where:

General = TR X BW X AT X 365 days/	64605
EFD = EF X ED	10500
Soil = (1/RfDo) X IRs X 1E-6 kg/mg	1E-04
Air = (1/RfDi) x IRa x (1/VF + 1/PEF)	20
Dermal = (1/RfDd) x SA x ABS x 10E-	0.18

PRG = General / {EFD x (Soil + Air + Dermal)}

Calculation of Chemical Specific Volatilization Factors

VF = [(LS x V x DH) / A] x [(3.14 x a x T)e1/2 / (2 x Dei x Kas x 1e-3 kg/g)]

Where:	Default Value	Site Specific Value	Value Used
LS = Length of side of contaminated area (m)	4.5		4.5
V = Wind Speed in mixing zone (m/sec)	2.25		2.25
DH = Diffusion Height (m)	2		2
A = Area of Contamination (cm2)	20250000		20250000
T = Exposure Interval (sec)	790000000		790000000
E=True soil porosity (unitless)	0.35		0.35
ps = True soil density (g/cm3)	2.65		2.65

a = (Dei x E) / (E + (ps)(1-E)/Kas) (cm2/sec)
Dei = Effective Diffusivity = Di*E e0.33 (cm2/sec)
Kas = Soil/Air Partitioning Coefficient = (H/Kd)*41 (g soil/cm3 air)

Di = Molecular Diffusivity (cm2/sec)	Chemical Specific
H = Henry's Law Constant (atm-m3/mol)	Chemical Specific
Kd = Soil-Water partitioning coefficient (cm3/g)	Chemical Specific or Koc*OC
Koc = Organic carbon partition coefficient (cm3/g)	Chemical Specific
OC = Organic carbon content of soil	Site specific or 0.02

Chemical	Di	Henry's Law	Koc	OC	Kd	Dei	a	Kas	Top	Bottom	Area Specific	VF
2,4 Dinitrotoluene	0.066	0	282	0.02	5.64	0.047	0	0	0	0	0.000001	
Acenapthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Anthracene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)anthrace	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(b)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(k)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
bis(2-ethylhexyl)p	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Chrysene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Di-n-butyl pthalat	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Dibenz(a,h,)anthr	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluorene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluoranthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Indeno(1,2,3-c,d)	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Napthalene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	

Where: Area Specific = (LS*V*DH)/A 1E-06
Top = sqrt(3.14*a*T)

Determination of Final PRGs						
	More Conservative Scenario			Less Conservative Scenario		
Chemical	Noncarcinogenic	Carcinogenic	Final PRG	Noncarcinogenic	Carcinogenic	Final PRG
2,4 Dinitrotoluene	102.55	1.76	1.76	1025.48	175.94	175.94
Acenapthene	3076.43		3076.43	30764.29		30764.29
Anthracene	15382.14		15382.14	153821.43		153821.43
Benzo(a)anthracene		1.64	1.64		163.89	163.89
Benzo(a)pyrene		0.16	0.16		16.39	16.39
Benzo(b)fluoranthene		1.64	1.64		163.89	163.89
Benzo(k)fluoranthene		16.39	16.39		1638.89	1638.89
bis(2-ethylhexyl)pthalate	1025.44	12.21	12.21	10254.39	1220.80	1220.80
Chrysene		163.89	163.89		16388.89	16388.89
Di-n-butyl pthalate	5127.38		5127.38	51273.81		51273.81
Dibenz(a,h,)anthracene		0.16	0.16		16.39	16.39
Fluorene	2050.95		2050.95	20509.52		20509.52
Fluoranthene	2050.95		2050.95	20509.52		20509.52
Indeno(1,2,3-c,d)pyrene		1.64	1.64		163.89	163.89
Napthalene	2050.95		2050.95	20509.52		20509.52
Pyrene	1538.21		1538.21	15382.14		15382.14

Attachment 7

MISSOURI DEPARTMENT OF HEALTH

Mel Carnahan
Governor

Coleen Kiviahan, M.D., M.S.P.H.
Director

P.O. Box 570, Jefferson City, MO 65102-0570 • 573/751-6400 • FAX 573/751-6010

July 5, 1996

Mr. Gary Behrns
Superfund Section
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

Dear Mr. Behrns,

Enclosed please find two documents: an Expedited Risk Assessment for Exposure to Residential Soils in the Vicinity of the Hubert Wheeler State School and Preliminary Removal Goals for Residential Yards in the Vicinity of the Hubert Wheeler State School. As requested, this set of PRGs were calculated at the 1×10^{-5} risk level. The risk assessment was limited to current and future exposure to residential soils.

In your letter dated June 12, you requested an explanation of why PRGs were not calculated for acenaphthylene and benzo(g,h,i)perylene. There are no toxicity values available for either of these chemicals, thus PRGs cannot be calculated. This was an omission on my part. Text in the new PRG document has been corrected.

Your June 12 letter also mentioned PRGs for lead. Using the Integrated Exposure Uptake Biokinetic Model and default input values, the lead PRG for residential childhood exposures would be 400 mg/kg. This is also the soil screening level mentioned in the OSWER Directive which you mentioned.

If you would like to discuss this situation further or have any questions on this document, please feel free to call me at 751-6111.

Sincerely,

Cherri Baysinger-Daniel
Environmental Specialist
Bureau of Environmental Epidemiology

Enclosures

The Missouri Department of Health is responsible for the promotion and protection of the public's health through education, disease and injury prevention, regulation, and direct delivery of health care services in order that all Missourians may achieve their fullest health potential.
AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER — Services provided on a nondiscriminatory basis

Expedited Risk Assessment for Exposure to Residential Soils in the Vicinity of the Hubert Wheeler State School, St. Louis, MO

Prepared by:

Missouri Department of Health
Bureau of Environmental Epidemiology
P. O. Box 570
Jefferson City, MO 65102

1.0 Introduction

The Missouri Department of Natural Resources (DNR) requested that the Missouri Department of Health (DOH) conduct an expedited risk assessment for residential areas surrounding the Hubert Wheeler State School Site. The Hubert Wheeler Site is located in St. Louis, MO, southeast of the intersection of I-44 and Hampton Avenue. A tar-like substance has surfaced on the ground on the site every spring since 1970. Analysis of soil samples collected from the site indicated that high concentrations of polynuclear aromatic hydrocarbon (PAHs) were present on the school property. Because of the contamination on school property, the Hubert Wheeler State School was closed in August, 1994. The area surrounding the site is a mix of residential and commercial properties. Additional soil sampling has recently been conducted in the surrounding residential areas. This risk assessment will focus on these residential areas.

The purpose of the risk assessment is to determine if exposure to compounds detected in nearby residential yards poses sufficient risk to warrant remedial actions in those yards. Guidance used in conducting this assessment includes the Environmental Protection Agency's *Risk Assessment Guidance for Superfund: Volume I* (RAGS, EPA 1989), *Standard Default Factors* (EPA 1991) and other related guidance.

1.2 Site History

The area surrounding the Hubert Wheeler State School site has been mined for clay and subsequently used for landfilling and as a general dumping area. The Missouri Department of Elementary and Secondary Education constructed a school for severely developmentally disabled students in 1970. The school operated between 1970 and 1994.

1.3 Scope of the Risk Assessment

Measurable concentrations of PAHs have been detected in residential yards in the vicinity of the Hubert Wheeler State School Site. Because of the potential for exposure, MDNR requested that this risk assessment focus on risks resulting from residential exposure to soils.

1.4 Organization of the Risk Assessment Report

This report has been divided into six sections. Section 1.0, Introduction, presents a general introduction to the site and the scope of the risk assessment. Chemicals of Concern are identified in section 2.0. Section 3.0 presents the Exposure Assessment. Toxicological properties of the chemicals of concern are presented in section 4.0, the Toxicity Assessment. Risks posed by the site and the attendant uncertainties are presented in section 5.0, the Risk Characterization. Section 6.0, the Summary, summarizes the risk assessment process. References used in conducting the risk assessment are presented in section 7.0, References.

2.0 Contaminants of Concern

Composite surface soil samples (0-6") were collected from 25 residential yards. Each composite consisted of five aliquots, generally collected from the front and back yards. All samples were analyzed for total lead and base neutral acids. Any chemical which was detected in at least one sample was considered a contaminant of concern and retained in the risk assessment. Chemicals which were dropped from the risk assessment because they were not detected included: bis(2-chloroethyl)ether, 1,3-dichlorobenzene, 1,4-dichlorobenzene, n-nitrosodimethylamine, 1,2-dichlorobenzene, bis(2-chloroisopropyl)ether, n-nitro-di-n-propylamine, hexachloroethane, nitrobenzene, isophorone, benzoic acid, bis(2-chloroethoxy)methane, 1,2,4-trichlorobenzene, 4-chloroanaline, hexachlorobutadiene, 2-methylnapthalene, hexachlorocyclopentadiene, 2-chloronapthalene, 2-nitroanaline, dimethylphthalate, 2,6-dinitrotoluene, 3-nitroanaline, diethylphthalate, 4-chlorophenyl-phenylether, 4-nitroanaline, n-nitrosodiphenylamine, 4-bromophenyl-phenylether, hexachlorobenzene, butylbenzylphthalate, 3-3'-dichlorobenzidine and di-n-octylphthalate. The data set used is presented in Appendix I.

The 95% upper confidence limit of the mean chemical concentration was used as the exposure point concentration. Summary statistics for the chemicals detected on site, including exposure point concentrations, are presented in Table 1.

Table 1.
Chemicals Detected in Surface Soil Samples Collected from Residential Yards Near the Hubert Wheeler State School Site, St. Louis, MO

Compound	Minimum Value (mg/kg)	Maximum Value (mg/kg)	Mean Value (mg/kg)	Standard Deviation	95% UCL (mg/kg)	Retained as a COC?
Lead	41.8	533	265	121	306	yes
bis(2-Chloroethyl)Ether	0.05 U	0.25 U	0.058	0.040	0.072	no
1,3-Dichlorobenzene	0.05 U	0.25 U	0.058	0.040	0.072	no
1,4-Dichlorobenzene	0.05 U	0.25 U	0.058	0.040	0.072	no
N-Nitrosodimethylamine	0.05 U	0.25 U	0.058	0.040	0.072	no
1,2-Dichlorobenzene	0.05 U	0.25 U	0.058	0.040	0.072	no
bis(2-Chloroisopropyl)Ether	0.05 U	0.25 U	0.058	0.040	0.072	no
N-Nitro-di-n-propylamine	0.05 U	0.25 U	0.058	0.040	0.072	no
Hexachloroethane	0.05 U	0.25 U	0.058	0.040	0.072	no
Nitrobenzene	0.05 U	0.25 U	0.058	0.040	0.072	no
Isophorone	0.05 U	0.25 U	0.058	0.040	0.072	no
Benzoic Acid	0.05 U	0.25 U	0.058	0.040	0.072	no
bis(2-Chloroethoxy)Methane	0.05 U	0.25 U	0.058	0.040	0.072	no
1,2,4-Trichlorobenzene	0.05 U	0.25 U	0.058	0.040	0.072	no
Napthalene	0.05 U	0.25 U	0.068	0.048	0.085	yes
4-Chloroanaline	0.125 U	0.6 U	0.144	0.095	0.176	no
Hexachlorobutadiene	0.05 U	0.25 U	0.058	0.040	0.072	no
2-Methylnapthalene	0.05 U	0.25 U	0.058	0.040	0.072	no
Hexachlorocyclopentadiene	0.05 U	0.25 U	0.058	0.040	0.072	no
2-Chloronapthalene	0.05 U	0.25 U	0.058	0.040	0.072	no
2-Nitroanaline	0.125 U	0.6 U	0.144	0.095	0.176	no
Dimethylphthalate	0.05 U	0.25 U	0.058	0.040	0.072	no
Acenaphthylene	0.05 U	0.25 U	0.060	0.041	0.074	yes
2,6-Dinitrotoluene	0.05 U	0.25 U	0.058	0.040	0.072	no
3-Nitroanaline	0.125 U	0.6 U	0.144	0.095	0.176	no
Acenaphthene	0.05 U	0.25 U	0.064	0.045	0.080	yes
Dibenzofuran	0.05 U	0.25 U	0.066	0.044	0.081	yes
2,4-Dinitrotoluene	0.05 U	0.25 U	0.069	0.049	0.086	yes
Diethylphthalate	0.05 U	0.25 U	0.058	0.040	0.072	no
4-Chlorophenyl-phenylether	0.05 U	0.25 U	0.058	0.040	0.072	no
Fluorene	0.05 U	0.25 U	0.068	0.047	0.084	yes
4-Nitroanaline	0.125 U	0.6 U	0.144	0.095	0.176	no
N-nitrosodiphenylamine	0.05 U	0.25 U	0.058	0.040	0.072	no
4-Bromophenyl-phenylether	0.05 U	0.25 U	0.058	0.040	0.072	no
Hexachlorobenzene	0.05 U	0.25 U	0.058	0.040	0.072	no
Phenanthrene	0.12	2.4	0.818	0.769	1.080	yes
Anthracene	0.05 U	0.53	0.164	0.136	0.211	yes
Di-n-butylphthalate	0.05 U	7.8	2.052	1.719	2.636	yes
Fluoranthene	0.17	4.6	1.348	1.232	1.767	yes
Pyrene	0.05 U	5	0.982	1.066	1.344	yes
Butylbenzylphthalate	0.05 U	0.25 U	0.058	0.040	0.072	no
3-3'-Dichlorobenzidine	0.125 U	0.6 U	0.144	0.095	0.176	no
Benzo(a)anthracene	0.05 U	3	0.668	0.647	0.888	yes

Compound	Minimum Value (mg/kg)	Maximum Value (mg/kg)	Mean Value (mg/kg)	Standard Deviation.	95% UCL (mg/kg)	Retained as a COC?
Chrysene	0.05 U	2.2	0.534	0.472	0.695	yes
bis(2-Ethylhexyl)Phthalate	0.05 U	0.57	0.140	0.127	0.183	yes
Di-n-Octylphthalate	0.05 U	0.25 U	0.058	0.040	0.072	no
Benzo(b)fluoranthene	0.104	2.1	0.657	0.516	0.832	yes
Benzo(k)fluoranthene	0.05 U	0.57	0.214	0.143	0.263	yes
Benzo(a)pyrene	0.05 U	1.4	0.465	0.357	0.586	yes
Indeno(1,2,3-cd)pyrene	0.05 U	1.5	0.454	0.394	0.588	yes
Dibenz(a,h)anthracene	0.05 U	0.89	0.185	0.192	0.250	yes
Benzo(g,h,i)perylene	0.05 U	1.6	0.491	0.427	0.636	yes

U - Not detected, value presented is one half of the detection limit

3.0 Exposure Assessment

The objective of this exposure assessment is to estimate the frequency, duration, and magnitude of human exposure to chemicals found in residential yards near the Hubert Wheeler State School site. The exposure assessment consists of: characterizing the exposure setting, identifying potential human receptors, determining pathways of exposure, and estimating total contaminant intake by residents for all relevant pathways of exposure.

Land use surrounding the Hubert Wheeler State School Site is a mix of residential and commercial property. Residential soils surrounding the site contain measurable concentrations of PAHs and other chemicals. Thus, residents may be exposed to chemicals in yard soil. A residential exposure scenario was assessed. A combined child/adult who lived in the area over a 30 year period, incidentally ingesting and directly contacting yard soil, was evaluated. Because land use is not expected to change in the future, future exposures should be similar to current exposures.

Chemical intake was calculated using the 95% upper confidence limit of the mean chemical concentration (see Table 1). Chemical intake was calculated using the following equations (EPA 1989):

Incidental ingestion of soil

Intake (mg/kg/day) = CS x IR x CF x FI x EF x ED / (BW x AT)

Direct contact with soil

Absorbed Dose (mg/kg/day) = CS x CF x SA x AF x ABS x EF x ED / (BW x AT)

Where:

CS=Chemical Concentration in soil (95% UCL)
IR=Ingestion Rate (120 mg soil/day, EPA 1991)
CF=Conversion Factor (1×10^{-6} kg/mg, EPA 1989)
FI=Fraction Ingested from contaminated source (1, EPA 1991)
EF=Exposure Frequency (350 days/year, EPA 1991)
ED=Exposure Duration (30 years, EPA 1991)
SA=Skin Surface Area for Contact (4120 cm^2 - Adult 50th percentile Body Part Specific Surface Area--arms, hands, and heads of males and females--EPA 1990)
AF=Soil to Skin Adherence Factor (1 mg/cm^2)
ABS=Absorption Factor (Chemical Specific Value)
BW=Body Weight (59 kg, EPA 1991)
AT=Averaging Time (10950 days for noncarcinogenic effects, 25550 days for carcinogenic effects, EPA 1989)

Worksheets showing intake calculations are presented in Appendix II.

4.0 Toxicity Assessment

Toxicity is the ability of a chemical to cause an adverse effect. The occurrence of an adverse effect is dependent upon chemical and physical properties of the chemical, the degree and type of exposure to the chemical and the sensitivity of the receptor. Two types of effects have been considered in this assessment: noncarcinogenic, or systemic effects and carcinogenic, or cancer causing effects.

4.1 Noncarcinogenic Effects

Oral Reference Doses (RfD) were the toxicity values used in assessing noncarcinogenic effects from oral exposure. An RfD is the dose which can be ingested on a daily basis without causing adverse effects, even to sensitive subpopulations. EPA's Integrated Risk Information System (IRIS) contains contaminant-specific RfD values which have been verified by an intra-Agency work group. Reference Doses and critical effects for chemicals of concern in this assessment are presented in Table 2.

4.2 Carcinogenic Effects

A Slope Factor (SF) is the plausible upper-bound estimate of the probability of a response (cancer) per unit intake of a chemical expressed over a lifetime. Slope Factors found in IRIS or the Health Effects Assessment Summary Tables (HEAST) are used to assess carcinogenic effects for specific chemicals. To indicate the likelihood that a particular chemical is a human carcinogen, a weight of evidence designation has been assigned to each chemical. Following is the weight of evidence scheme used by EPA:

Weight of Evidence	Description
A	Known human carcinogen
B1	Probable human carcinogen, limited human data available
B2	Probable human carcinogen, sufficient animal data available
C	Possible human carcinogen
D	Not classifiable as to carcinogenicity
E	Evidence of noncarcinogenicity

Slope Factors, weight of evidence classification and target organs for chemicals of concern in this assessment are presented in Table 3.

4.3 Dermal Exposure

Toxicity values for dermal exposure must be adjusted from administered RfD and SF values to absorbed RfD and SF values using chemical specific oral absorption values. Because

oral absorption efficiencies were not available for 2,4 dinitrotoluene, bis(2-ethylhexyl)phthalate or di-n-butyl phthalate, dermal exposure to these chemicals could not be evaluated.

Dermal exposure to PAHs may cause localized skin irritation. Because RfD and SF values do not take point of contact effects into consideration, quantitative evaluation of dermal exposure to these chemicals is not possible. Dermal exposure to PAHs will be evaluated qualitatively in the risk characterization (Section 5.0).

4.4 Chemicals Lacking Toxicity Values

Toxicity values were not available for four chemicals: acenapthylene, dibenzofuran, phenanthrene and benzo(g,h,i)perylene. These chemicals were excluded from the risk assessment.

Table 2.
Noncarcinogenic Toxicity Values for Chemicals Found in Residential Yards Near the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Oral Reference Dose (mg/kg/d)	Effect of Concern
2,4-Dinitrotoluene	0.002 (I)	Neurotoxicity
Acenaphthene	0.06 (I)	Hepatotoxicity
Anthracene	0.3 (I)	No observed effects
Bis(2-ethylhexyl)phthalate	0.02 (I)	No observed effects
Di-n-butyl phthalate	0.1 (I)	Increased mortality
Fluoranthene	0.04 (I)	Nephropathy, increased liver weight
Fluorene	0.04 (I)	Decreased RBC, packed cell volume and hemoglobin
Napthalene	0.04 (I)	
Pyrene	0.03 (I)	Kidney effects

(I) IRIS-Integrated Risk Information System, June, 1996

Table 3.
Carcinogenic Toxicity Values for Chemicals Found in Residential Yards Near the Hubert Wheeler State School Site, St. Louis, MO

Chemical (Weight of Evidence)	Slope Factor $(mg/kg/d)^{-1}$	Location of Tumor
2,4-Dinitrotoluene (B2)	0.68 (I)	Kidney
Benzo(a)anthracene (B2)	0.73 (E)	Skin
Benzo(a)pyrene (B2)	7.3 (I)	Skin
Benzo(b)fluoranthene (B2)	0.73 (E)	Skin
Benzo(k)fluoranthene (B2)	0.073 (E)	Skin
Bis(2-ethylhexyl) phthalate (B2)	0.014 (E)	Liver
Chrysene (B2)	0.0073 (E)	Skin
Dibenz(a,h)anthracene (B2)	7.3 (E)	Skin
Indeno(1,2,3-cd)pyrene (B2)	0.73 (E)	Skin

(I) IRIS-Integrated Risk Information System, June, 1996
(E) Environmental Criteria and Assessment Office (EPA 1993)

5.0 Risk Characterization

Characterization of the risk posed by a site requires the summarization and integration of the exposure and toxicity assessments. To characterize potential noncancer risks, the estimated intake of each chemical is compared with the reference dose for the chemical. The excess lifetime cancer risk is calculated to characterize potential carcinogenic risks.

5.1 Noncarcinogenic Risks

Noncancer hazard quotients were calculated for chemicals with RfDs. The hazard quotient was calculated by dividing the RfD into the calculated intake. Chemical specific hazard quotients were summed to determine the hazard index. According to RAGS (EPA 1989), human health risks may exist when the hazard index exceeds unity (1.0).

5.1.1 Noncarcinogenic Risks Calculated using 95% UCLs

The total hazard index for a 30 year residential exposure to upperbound concentrations of chemicals in residential yard soils was 0.00035 (Table 4). Because the hazard index is substantially below 1.0, adverse health effects are not expected to occur.

Table 4.
Noncarcinogenic Risks for
Residential Exposure to Chemicals detected in Residential Yards Near the
Hubert Wheeler State School Site, St. Louis, MO

Chemical	Concentration (mg/kg)	Final Intake (mg/kg/d)	Intake/RfD Adjusted for Absorption?	RfD (mg/kg/d)	Hazard Index
2,4 Dinitrotoluene	0.086	0.00000017	no/no	0.002	0.000087
Acenapthene	0.08	0.00000016	no/no	0.06	0.0000027
Anthracene	0.21	0.00000043	no/no	0.3	0.0000014
bis(2-ethylhexyl)pthalate	0.18	0.00000036	no/no	0.02	0.000018
Di-n-butyl pthalate	2.6	0.0000053	no/no	0.1	0.000053
Fluorene	0.084	0.00000017	no/no	0.04	0.0000043
Fluoranthene	1.8	0.0000037	no/no	0.04	0.000092
Napthalene	0.085	0.00000017	no/no	0.04	0.0000043
Pyrene	1.3	0.0000026	no/no	0.03	0.000088
Pathway Hazard Index					**0.00035**

5.2 Carcinogenic Risks

Excess lifetime cancer risks were calculated for carcinogenic chemicals in soil by multiplying the calculated intake by the SF. A total excess lifetime cancer risk was determined

by summing all excess cancer risks for chemicals. EPA's policy is that excess lifetime cancer risks which are less than 1×10^{-6} (1 in 1,000,000) are negligible and do not require remediation. Excess lifetime cancer risks which exceed 1×10^{-4} (1 in 10,000) require some form of remediation. Risks between 1×10^{-6} (1 in 1,000,000) and 1×10^{-4} (1 in 10,000) require a risk management decision.

5.2.1 Risks Calculated Using 95% UCL

The total excess lifetime cancer risk for a 30 year residential exposure to upperbound concentrations of chemicals in residential yard soils was 6.9 in 1,000,000 (6.9×10^{-6}, Table 6). Although this risk exceeds 1 in 1,000,000 (1×10^{-6}), it does not exceed the level which requires remediation (1 in 10,000 or 1×10^{-4}).

Table 5.
Carcinogenic Risks for Residential Exposure to Upperbound Concentrations of Chemicals detected in Residential Yards Near the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Concentration (mg/kg)	Final Intake (mg/kg/d)	Intake/SF Adjusted for Absorption?	Slope Factor (kg-d/mg)	Cancer Risk
2,4 Dinitrotoluene	0.086	7.5×10^{-8}	no/no	0.68	5.1×10^{-8}
Benzo(a)anthracene	0.89	7.8×10^{-7}	no/no	0.73	5.7×10^{-7}
Benzo(a)pyrene	0.59	5.1×10^{-7}	no/no	7.3	3.8×10^{-6}
Benzo(b)fluoranthene	0.83	7.2×10^{-7}	no/no	0.73	5.3×10^{-7}
Benzo(k)fluoranthene	0.26	2.3×10^{-7}	no/no	0.073	1.7×10^{-8}
bis(2-ethylhexyl)pthalate	0.18	1.6×10^{-7}	no/no	0.014	2.2×10^{-9}
Chrysene	0.7	6.1×10^{-7}	no/no	0.0073	4.5×10^{-9}
Dibenz(a,h,)anthracene	0.25	2.2×10^{-7}	no/no	7.3	1.6×10^{-6}
Indeno(1,2,3-c,d)pyrene	0.59	5.1×10^{-7}	no/no	0.73	3.8×10^{-7}
Pathway Cancer Risk					**6.9×10^{-6}**

5.3 Dermal Exposure

Dermal exposure to PAHs may cause a variety of skin disorders in humans and in animals. Effects resulting from exposure to specific PAHs, except for benzo(a)pyrene, have not been described. Mixtures of PAHs have been used to treat some skin disorders in humans.

5.4 Uncertainties

The estimation of risk posed by a site involves several areas of uncertainty in the determination of chemical intake and toxicity. Daily chemical intake is estimated using a variety of variables. The values used for most intake variables upper-bound variable values. This is done in an attempt to ensure the protection of public health, but it may overestimate the risk posed by the site. Most of the toxicity values used to calculate risk are derived from toxicity tests carried out on animals. Interspecific, as well as intraspecific variation adds uncertainty to the toxicity values; therefore the true risks posed by the site may be higher or lower than those presented in this document.

For the purpose of comparison, risks calculated using the maximum concentration of each chemical found on site is presented in Appendix III. This scenario is highly likely to overestimate risks posed by the site.

6.0 Summary

Measurable concentrations of PAHs and other chemicals were detected in residential soils in the vicinity of the Hubert Wheeler State School Site. Residential exposure to these soils was assessed. Exposure to PAHs, the primary contaminants of concern at the site, may cause adverse effects, primarily to the skin and liver.

Noncarcinogenic effects were assessed using a hazard index approach, where a calculated intake of each chemical was compared to the reference dose. If the ratio of intake to reference dose (hazard quotient) exceeded 1.0, the possibility for adverse effects resulting from the exposure exists. The hazard index (sum of all hazard quotients) calculated for residential exposure to soil was 0.00035, substantially less than 1.0, thus adverse effects are not likely to occur.

Carcinogenic effects were assessed by determining the excess lifetime cancer risk. Calculated risks which are less than 1 in 1,000,000 (1×10^{-6}) are considered safe. Excess lifetime cancer risks were determined by multiplying the calculated intake of each chemical by the slope factor for that chemical. Calculated risks which exceed 1 in 10,000 (1×10^{-4}) require that some type of remedial action be taken. Risks which fall between 1 in 1,000,000 (1×10^{-6}) and 1 in 10,000 (1×10^{-4}) require a risk management decision. The total excess lifetime cancer risk (sum of all chemical specific risks) for residential exposure to soil was 6.9 in 1,000,000 (6.9×10^{-6}).

7.0 References

EPA. 1989. Risk Assessment Guidance for Superfund: Part I. Human Health Evaluation Manual. Office of Emergency and Remedial Response. Washington, D. C. EPA/540/1-89/002.

EPA. 1991. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response,. Washington, D. C. OSWER Directive 9285.6-03.

ECAO. 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. Office of Health and Environmental Assessment. Cincinnati, OH. EPA/600/T-93/089.

Missouri Department of Natural Resources. 1994. Site Inspection Report, Hubert Wheeler State School, St. Louis City, MO. Missouri Department of Natural Resources, Jefferson City, MO.

Missouri Department of Natural Resources. 1996. Phase I Removal Assessment Sampling Report, Hubert Wheeler State School, St. Louis City, MO. Missouri Department of Natural Resources, Jefferson City, MO.

Appendix I

Data Collected from Residential Yards in the Vicinity of the Hubert Wheeler State School Site, St. Louis, MO

Contaminints Detected at the Residential Properties in the Vicinity of the Hubert Wheeler State School Site												
	Sample											
Contaminant	96-1500		96-1501		96-1502		96-1503		96-1504		96-1505	
Lead	353		223		200		190		215		211	
bis(2-Chloroethyl)Ether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,3-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,4-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitrosodimethylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroisopropyl)Ether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitro-di-n-propylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachloroethane	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Nitrobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Isophorone	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzoic Acid	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroethoxy)Methane	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2,4-Trichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Napthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Chloroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Hexachlorobutadiene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Methylnapthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorocyclopentadiene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Chloronapthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Dimethylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Acenaphthylene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2,6-Dinitrotoluene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Acenaphthene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Dibenzofuran	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2,4-Dinitrotoluene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Diethylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Chlorophenyl-phenylether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Fluorene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
N-nitrosodiphenylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Bromophenyl-phenylether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Phenanthrene	1.3		0.46		1.1		0.12		0.17		0.15	
Anthracene	0.17		0.05	u	0.19		0.05	u	0.05	u	0.05	u
Di-n-butylphthalate	1.4		3.6		2.6		2.1		1.1		2.9	
Fluoranthene	2.2		0.64		1.1		0.17		0.26		0.27	
Pyrene	1.5		0.47		1.1		0.12		0.23		0.17	
Butylbenzylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-3'-Dichlorobenzidine	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Benzo(a)anthracene	0.94		0.27		0.45		0.05	u	0.15		0.13	
Chrysene	0.91		0.28		0.49		0.05	u	0.13		0.12	
bis(2-Ethylhexyl)Phthalate	0.24		0.2		0.37		0.16		0.18		0.23	
Di-n-Octylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzo(b)fluoranthene	1.4		0.39		0.55		0.104		0.3		0.36	
Benzo(k)fluoranthene	0.46		0.16		0.24		0.05	u	0.05	u	0.05	u
Benzo(a)pyrene	0.79		0.24		0.49		0.05	u	0.15		0.16	
Indeno(1,2,3-cd)pyrene	0.78		0.26		0.39		0.05	u	0.13		0.17	
Dibenz(a,h)anthracene	0.31		0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzo(g,h,i)perylene	0.88		0.3		0.49		0.05	u	0.14		0.16	

u=not detected, value=1/2 detection limit
j=approximate value

Contaminints Detected at the												
Contaminant	**96-1506**		**96-1507**		**96-1508**		**96-1509**		**96-1510**		**96-1511**	
Lead	532		392		161		177		292		160	
bis(2-Chloroethyl)Ether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,3-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,4-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitrosodimethylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroisopropyl)Ether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitro-di-n-propylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachloroethane	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Nitrobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Isophorone	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzoic Acid	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroethoxy)Methane	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2,4-Trichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Napthalene	0.17		0.13		0.05	u	0.05	u	0.05	u	0.05	u
4-Chloroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Hexachlorobutadiene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Methylnapthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorocyclopentadiene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Chloronapthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Dimethylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Acenaphthylene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2,6-Dinitrotoluene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Acenaphthene	0.13		0.13		0.05	u	0.05	u	0.05	u	0.05	u
Dibenzofuran	0.13		0.1		0.05	u	0.05	u	0.05	u	0.05	u
2,4-Dinitrotoluene	0.15		0.13		0.05	u	0.05	u	0.05	u	0.05	u
Diethylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Chlorophenyl-phenylether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Fluorene	0.14		0.12		0.05	u	0.05	u	0.05	u	0.05	u
4-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
N-nitrosodiphenylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Bromophenyl-phenylether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Phenanthrene	2.3		2.1		0.62		0.27		0.68		0.16	
Anthracene	0.46		0.41		0.17		0.05	u	0.19		0.05	u
Di-n-butylphthalate	2.2		3.5		1.9		1.5		1.5		0.72	
Fluoranthene	2.6		1.6		1.4		0.55		1.1		0.36	
Pyrene	2.2		1.6		2.2		0.61		1.4		0.42	
Butylbenzylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-3'-Dichlorobenzidine	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Benzo(a)anthracene	1.3		0.8		1.1		0.38		0.8		0.29	
Chrysene	1		0.66		0.96		0.37		0.63		0.25	
bis(2-Ethylhexyl)Phthalate	0.19		0.17		0.05	u	0.05	u	0.19		0.05	u
Di-n-Octylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzo(b)fluoranthene	1.4		0.94		0.74		0.37		0.6		0.23	
Benzo(k)fluoranthene	0.43		0.34		0.28		0.13		0.16		0.11	
Benzo(a)pyrene	1.1		0.72		0.58		0.31		0.4		0.18	
Indeno(1,2,3-cd)pyrene	0.82		0.42		0.35		0.26		0.39		0.15	
Dibenz(a,h)anthracene	0.26		0.14		0.05	u	0.05	u	0.13		0.05	u
Benzo(g,h,i)perylene	0.92		0.6		0.59		0.05	u	0.44		0.16	

u=not detected, value=1/2 detection limit

j=approximate value

Contaminints Detected at the												
Contaminant	96-1512		96-1513		96-1514		96-1515		96-1516		96-1517	
Lead	234		147		227		41.8		533		265	
bis(2-Chloroethyl)Ether	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,3-Dichlorobenzene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,4-Dichlorobenzene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitrosodimethylamine	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2-Dichlorobenzene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroisopropyl)Ether	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitro-di-n-propylamine	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachloroethane	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Nitrobenzene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Isophorone	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzoic Acid	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroethoxy)Methane	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2,4-Trichlorobenzene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Napthalene	0.25	u	0.104		0.05	u	0.05	u	0.05	u	0.05	u
4-Chloroanaline	0.6	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Hexachlorobutadiene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Methylnapthalene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorocyclopentadiene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Chloronapthalene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Nitroanaline	0.6	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Dimethylphthalate	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Acenaphthylene	0.25	u	0.103		0.05	u	0.05	u	0.05	u	0.05	u
2,6-Dinitrotoluene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-Nitroanaline	0.6	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Acenaphthene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Dibenzofuran	0.25	u	0.11		0.05	u	0.05	u	0.05	u	0.05	u
2,4-Dinitrotoluene	0.25	u	0.15		0.05	u	0.05	u	0.05	u	0.05	u
Diethylphthalate	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Chlorophenyl-phenylether	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Fluorene	0.25	u	0.14		0.05	u	0.05	u	0.05	u	0.05	u
4-Nitroanaline	0.6	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
N-nitrosodiphenylamine	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Bromophenyl-phenylether	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorobenzene	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Phenanthrene	0.25	u	2.4		0.27		0.6		2.4		1.1	
Anthracene	0.25	u	0.53		0.05	u	0.14		0.27		0.23	
Di-n-butylphthalate	1.1		0.76		0.76		0.75		2.1		0.05	u
Fluoranthene	0.25	u	4		0.46		1.2		3.1		2.9	
Pyrene	0.58		5		0.6		1.6		0.82		0.69	
Butylbenzylphthalate	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-3'-Dichlorobenzidine	0.6	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Benzo(a)anthracene	0.25	u	3		0.42		0.7		1		0.88	
Chrysene	0.48	uj	2.2		0.32		0.61		0.59		0.57	
bis(2-Ethylhexyl)Phthalate	0.25	u	0.102		0.57		0.05	u	0.05	u	0.05	u
Di-n-Octylphthalate	0.25	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzo(b)fluoranthene	0.25	u	2.1		0.28		0.58		0.99		0.9	
Benzo(k)fluoranthene	0.25	u	0.57		0.14		0.24		0.33		0.24	
Benzo(a)pyrene	0.25	u	1.4		0.25		0.38		0.72		0.67	
Indeno(1,2,3-cd)pyrene	0.25	u	1.4		0.05	u	0.05	u	0.86		0.88	
Dibenz(a,h)anthracene	0.25	u	0.37		0.05	u	0.05	u	0.28	j	0.44	j
Benzo(g,h,i)perylene	0.25	u	1.5		0.05	u	0.5		1	j	0.05	u

u=not detected, value=1/2 detection limit
j=approximate value

Contaminints Detected at the												
Contaminant	**96-1518**		**96-1519**		**96-1524**		**96-1525**		**96-1526**		**96-1527**	
Lead	361		216		348		482		185		233	
bis(2-Chloroethyl)Ether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,3-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,4-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitrosodimethylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2-Dichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroisopropyl)Ether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
N-Nitro-di-n-propylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachloroethane	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Nitrobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Isophorone	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzoic Acid	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
bis(2-Chloroethoxy)Methane	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
1,2,4-Trichlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Napthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Chloroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Hexachlorobutadiene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Methylnapthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorocyclopentadiene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Chloronapthalene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Dimethylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Acenaphthylene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2,6-Dinitrotoluene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Acenaphthene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Dibenzofuran	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
2,4-Dinitrotoluene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Diethylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Chlorophenyl-phenylether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Fluorene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Nitroanaline	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
N-nitrosodiphenylamine	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
4-Bromophenyl-phenylether	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Hexachlorobenzene	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Phenanthrene	0.24		0.76		1.6		0.12		0.14		0.6	
Anthracene	0.05	u	0.13		0.22		0.05	u	0.05	u	0.13	
Di-n-butylphthalate	0.05	u	2.5		1.1		7.8		1.6		5.7	
Fluoranthene	0.61		1.5		4.6		0.22		0.3		1.1	
Pyrene	0.19		0.39		1.7		0.05	u	0.05	u	0.4	
Butylbenzylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
3-3'-Dichlorobenzidine	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u	0.125	u
Benzo(a)anthracene	0.26		0.45		1.8		0.11		0.11		0.49	
Chrysene	0.24		0.28		1.3		0.05	u	0.13		0.32	
bis(2-Ethylhexyl)Phthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Di-n-Octylphthalate	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u	0.05	u
Benzo(b)fluoranthene	0.42		0.43		1.7		0.16		0.12		0.54	
Benzo(k)fluoranthene	0.16		0.13		0.41		0.05	u	0.05	u	0.14	
Benzo(a)pyrene	0.25		0.33		1.2		0.13		0.11		0.38	
Indeno(1,2,3-cd)pyrene	0.59		0.49		1.5		0.106		0.14		0.44	
Dibenz(a,h)anthracene	0.34	j	0.24	j	0.89		0.05	u	0.05	u	0.17	j
Benzo(g,h,i)perylene	0.67	j	0.57	j	1.6		0.12		0.16		0.47	j

u=not detected, value=1/2 detection limit

j=approximate value

Contaminints Detected at the		
Contaminant	**96-1529**	
Lead	252	
bis(2-Chloroethyl)Ether	0.05	u
1,3-Dichlorobenzene	0.05	u
1,4-Dichlorobenzene	0.05	u
N-Nitrosodimethylamine	0.05	u
1,2-Dichlorobenzene	0.05	u
bis(2-Chloroisopropyl)Ether	0.05	u
N-Nitro-di-n-propylamine	0.05	u
Hexachloroethane	0.05	u
Nitrobenzene	0.05	u
Isophorone	0.05	u
Benzoic Acid	0.05	u
bis(2-Chloroethoxy)Methane	0.05	u
1,2,4-Trichlorobenzene	0.05	u
Napthalene	0.05	u
4-Chloroanaline	0.125	u
Hexachlorobutadiene	0.05	u
2-Methylnapthalene	0.05	u
Hexachlorocyclopentadiene	0.05	u
2-Chloronapthalene	0.05	u
2-Nitroanaline	0.125	u
Dimethylphthalate	0.05	u
Acenaphthylene	0.05	u
2,6-Dinitrotoluene	0.05	u
3-Nitroanaline	0.125	u
Acenaphthene	0.05	u
Dibenzofuran	0.05	u
2,4-Dinitrotoluene	0.05	u
Diethylphthalate	0.05	u
4-Chlorophenyl-phenylether	0.05	u
Fluorene	0.05	u
4-Nitroanaline	0.125	u
N-nitrosodiphenylamine	0.05	u
4-Bromophenyl-phenylether	0.05	u
Hexachlorobenzene	0.05	u
Phenanthrene	0.54	
Anthracene	0.12	
Di-n-butylphthalate	2	
Fluoranthene	1.2	
Pyrene	0.46	
Butylbenzylphthalate	0.05	u
3-3'-Dichlorobenzidine	0.125	u
Benzo(a)anthracene	0.58	
Chrysene	0.42	
bis(2-Ethylhexyl)Phthalate	0.05	u
Di-n-Octylphthalate	0.05	u
Benzo(b)fluoranthene	0.56	
Benzo(k)fluoranthene	0.19	
Benzo(a)pyrene	0.38	
Indeno(1,2,3-cd)pyrene	0.42	
Dibenz(a,h)anthracene	0.2	
Benzo(g,h,i)perylene	0.56	

u=not detected, value=1/2 detection limit
j=approximate value

Summary Statistics	Minimum	Maximum	Mean	St. Dev.	95% UCL	Max > UCL?
Lead	41.8	533	265.232	121.392	306.505	yes
bis(2-Chloroethyl)Ether	0.05	0.25	0.058	0.040	0.072	yes
1,3-Dichlorobenzene	0.05	0.25	0.058	0.040	0.072	yes
1,4-Dichlorobenzene	0.05	0.25	0.058	0.040	0.072	yes
N-Nitrosodimethylamine	0.05	0.25	0.058	0.040	0.072	yes
1,2-Dichlorobenzene	0.05	0.25	0.058	0.040	0.072	yes
bis(2-Chloroisopropyl)Ether	0.05	0.25	0.058	0.040	0.072	yes
N-Nitro-di-n-propylamine	0.05	0.25	0.058	0.040	0.072	yes
Hexachloroethane	0.05	0.25	0.058	0.040	0.072	yes
Nitrobenzene	0.05	0.25	0.058	0.040	0.072	yes
Isophorone	0.05	0.25	0.058	0.040	0.072	yes
Benzoic Acid	0.05	0.25	0.058	0.040	0.072	yes
bis(2-Chloroethoxy)Methane	0.05	0.25	0.058	0.040	0.072	yes
1,2,4-Trichlorobenzene	0.05	0.25	0.058	0.040	0.072	yes
Napthalene	0.05	0.25	0.068	0.048	0.085	yes
4-Chloroanaline	0.125	0.6	0.144	0.095	0.176	yes
Hexachlorobutadiene	0.05	0.25	0.058	0.040	0.072	yes
2-Methylnapthalene	0.05	0.25	0.058	0.040	0.072	yes
Hexachlorocyclopentadiene	0.05	0.25	0.058	0.040	0.072	yes
2-Chloronapthalene	0.05	0.25	0.058	0.040	0.072	yes
2-Nitroanaline	0.125	0.6	0.144	0.095	0.176	yes
Dimethylphthalate	0.05	0.25	0.058	0.040	0.072	yes
Acenaphthylene	0.05	0.25	0.060	0.041	0.074	yes
2,6-Dinitrotoluene	0.05	0.25	0.058	0.040	0.072	yes
3-Nitroanaline	0.125	0.6	0.144	0.095	0.176	yes
Acenaphthene	0.05	0.25	0.064	0.045	0.080	yes
Dibenzofuran	0.05	0.25	0.066	0.044	0.081	yes
2,4-Dinitrotoluene	0.05	0.25	0.069	0.049	0.086	yes
Diethylphthalate	0.05	0.25	0.058	0.040	0.072	yes
4-Chlorophenyl-phenylether	0.05	0.25	0.058	0.040	0.072	yes
Fluorene	0.05	0.25	0.068	0.047	0.084	yes
4-Nitroanaline	0.125	0.6	0.144	0.095	0.176	yes
N-nitrosodiphenylamine	0.05	0.25	0.058	0.040	0.072	yes
4-Bromophenyl-phenylether	0.05	0.25	0.058	0.040	0.072	yes
Hexachlorobenzene	0.05	0.25	0.058	0.040	0.072	yes
Phenanthrene	0.12	2.4	0.818	0.769	1.080	yes
Anthracene	0.05	0.53	0.164	0.136	0.211	yes
Di-n-butylphthalate	0.05	7.8	2.052	1.719	2.636	yes
Fluoranthene	0.17	4.6	1.348	1.232	1.767	yes
Pyrene	0.05	5	0.982	1.066	1.344	yes
Butylbenzylphthalate	0.05	0.25	0.058	0.040	0.072	yes
3-3'-Dichlorobenzidine	0.125	0.6	0.144	0.095	0.176	yes
Benzo(a)anthracene	0.05	3	0.668	0.647	0.888	yes
Chrysene	0.05	2.2	0.534	0.472	0.695	yes
bis(2-Ethylhexyl)Phthalate	0.05	0.57	0.140	0.127	0.183	yes
Di-n-Octylphthalate	0.05	0.25	0.058	0.040	0.072	yes
Benzo(b)fluoranthene	0.104	2.1	0.657	0.516	0.832	yes
Benzo(k)fluoranthene	0.05	0.57	0.214	0.143	0.263	yes
Benzo(a)pyrene	0.05	1.4	0.465	0.357	0.586	yes
Indeno(1,2,3-cd)pyrene	0.05	1.5	0.454	0.394	0.588	yes
Dibenz(a,h)anthracene	0.05	0.89	0.185	0.192	0.250	yes
Benzo(g,h,i)perylene	0.05	1.6	0.491	0.427	0.636	yes

u=not detected, value=1/2 detection limit
j=approximate value

Appendix II

Worksheets Used to Calculate Risk for Residential Yards in the Vicinity of the Hubert Wheeler State School Site, St. Louis, MO

Chemical Specific Values

Media	Chemical	Concentration	RfD	SF	Perm. Const.	Oral Abs. Eff.
Soil	2,4 Dinitrotoluene	0.086	0.002	0.68	0.0003	0.6
	Acenapthene	0.08	0.06			
	Anthracene	0.21	0.3			
	Benzo(a)anthracene	0.89		0.73		
	Benzo(a)pyrene	0.59		7.3		
	Benzo(b)fluoranthene	0.83		0.73		
	Benzo(k)fluoranthene	0.26		0.073		
	bis(2-ethylhexyl)pthalat	0.18	0.02	0.014		
	Chrysene	0.7		0.0073		
	Di-n-butyl pthalate	2.6	0.1			
	Dibenz(a,h,)anthracene	0.25		7.3		
	Fluorene	0.084	0.04			
	Fluoranthene	1.8	0.04			
	Indeno(1,2,3-c,d)pyrene	0.59		0.73		
	Napthalene	0.085	0.04			
	Pyrene	1.3	0.03			

RME 1 - NONCANCER WORKSHEET

VARIABLE	WATER	SOIL	AIR	FOOD
Ingestion rate (IR - l/d, mg/d or m3/hr)	2	120	0.83	
Contact rate (CR - l/hr)	0.05	x	x	x
Skin surface area (SA - cm2 or cm2/d))	18500	18500	x	x
Conversion factor (CF)	0.001	1E-06	x	x
Fraction ingested (FI)	x	1	x	
Soil-Skin adherence factor (SSA - mg/cm2)	x	1	x	x
Exposure frequency-days (EFd - d/yr or meals/yr)	365	365	365	
Exposure frequency-events (EFe - hr/event)	4	x	x	x
Exposure duration (ED - yr)	30	30	30	30
Exposure time-days (ETd - hrs/day)	2	x	24	x
Exposure time-events (ETe - events/yr)	60	x	x	x
Averaging time (AT - d)	10950	10950	10950	10950
Body weight (BW - kg)	59	59	59	59

CALCULATED INTAKES

WATER	
Ingestion of drinking water=IR*EFd*ED/(BW*AT)	0.0339
Incidental ingestion while swimming=CR*EFe*ED*ETe/(BW*AT)	0.00056
Dermal contact with water=SA*CF*EFd*ED*ETd/(BW*AT)	0.62712
SOIL	
Incidental ingestion of soil=IR*CF*FI*EFd*ED/(BW*AT)	2E-06
Dermal contact with soil=SA*CF*SSA*EFd*ED/(BW*AT)	0.00031
AIR	
Inhalation of air=IR*EFd*ED*ETd/(BW*AT)	0.33763
FOOD	
Ingestion of contaminated food=IR*FI*EFd*ED/(BW*AT)	0

FINAL INTAKE CALCULATIONS

Pathway: Incidental Ingestion of contaminated soil

Chemical	Concentration	Intake	Final Intake	RfD	Hazard Index
2,4 Dinitrotoluen	0.086	2E-06	1.7492E-07	0.002	8.74576E-05
Acenapthene	0.08	2E-06	1.6271E-07	0.06	2.71186E-06
Anthracene	0.21	2E-06	4.2712E-07	0.3	1.42373E-06
Benzo(a)anthra	0.89	2E-06	1.8102E-06	0	
Benzo(a)pyrene	0.59	2E-06	0.0000012	0	
Benzo(b)fluoran	0.83	2E-06	1.6881E-06	0	
Benzo(k)fluoran	0.26	2E-06	5.2881E-07	0	
bis(2-ethylhexyl)	0.18	2E-06	3.661E-07	0.02	1.83051E-05
Chrysene	0.7	2E-06	1.4237E-06	0	
Di-n-butyl pthala	2.6	2E-06	5.2881E-06	0.1	5.28814E-05
Dibenz(a,h,)ant	0.25	2E-06	5.0847E-07	0	
Fluorene	0.084	2E-06	1.7085E-07	0.04	4.27119E-06
Fluoranthene	1.8	2E-06	3.661E-06	0.04	9.15254E-05
Indeno(1,2,3-c,d	0.59	2E-06	0.0000012	0	
Napthalene	0.085	2E-06	1.7288E-07	0.04	4.32203E-06
Pyrene	1.3	2E-06	2.6441E-06	0.03	8.81356E-05
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
				Pathway Hazard Index	**0.000351034**

RME1 - Cancer Worksheet

VARIABLE	WATER	SOIL	AIR	FOOD
Ingestion rate (IR - l/d, mg/d or m3/hr)	2	120	0.83	
Contact rate (CR - l/hr)	0.05	x	x	x
Skin surface area (SA - cm2 or cm2/d))	18500	18500	x	x
Conversion factor (CF)	0.001	1E-06	x	x
Fraction ingested (FI)	x	1	x	
Soil-Skin adherence factor (SSA - mg/cm2)	x	1	x	x
Exposure frequency-days (EFd - d/yr or meals/yr)	365	365	365	
Exposure frequency-events (EFe - hr/event)	4	x	x	x
Exposure duration (ED - yr)	30	30	30	30
Exposure time-days (ETd - hrs/day)	2	x	24	x
Exposure time-events (ETe - events/yr)	60	x	x	x
Averaging time (AT - d)	25550	25550	25550	25550
Body weight (BW - kg)	59	59	59	59

CALCULATED INTAKES

WATER	
Ingestion of drinking water=IR*EFd*ED/(BW*AT)	0.01453
Incidental ingestion while swimming=CR*EFe*ED*ETe/(BW*AT)	0.00024
Dermal contact with water=SA*CF*EFd*ED*ETd/(BW*AT)	0.26877
SOIL	
Incidental ingestion of soil=IR*CF*FI*EFd*ED/(BW*AT)	8.7E-07
Dermal contact with soil=SA*CF*SSA*EFd*ED/(BW*AT)	0.00013
AIR	
Inhalation of air=IR*EFd*ED*ETd/(BW*AT)	0.1447
FOOD	
Ingestion of contaminated food=IR*FI*EFd*ED/(BW*AT)	0

FINAL INTAKE CALCULATIONS

Pathway: Incidental ingestion of contaminated soil

Chemical	Concentration	Intake	Final Intake	SF	Cancer Risk
2,4 Dinitrotoluen	0.086	8.7E-07	7.49637E-08	0.68	5.09753E-08
Acenapthene	0.08	8.7E-07	6.97337E-08	0	
Anthracene	0.21	8.7E-07	1.83051E-07	0	
Benzo(a)anthra	0.89	8.7E-07	7.75787E-07	0.73	5.66324E-07
Benzo(a)pyrene	0.59	8.7E-07	5.14286E-07	7.3	3.75429E-06
Benzo(b)fluoran	0.83	8.7E-07	7.23487E-07	0.73	5.28145E-07
Benzo(k)fluoran	0.26	8.7E-07	2.26634E-07	0.073	1.65443E-08
bis(2-ethylhexyl)	0.18	8.7E-07	1.56901E-07	0.014	2.19661E-09
Chrysene	0.7	8.7E-07	6.10169E-07	0.0073	4.45424E-09
Di-n-butyl pthala	2.6	8.7E-07	2.26634E-06	0	
Dibenz(a,h,)ant	0.25	8.7E-07	2.17918E-07	7.3	1.5908E-06
Fluorene	0.084	8.7E-07	7.32203E-08	0	
Fluoranthene	1.8	8.7E-07	1.56901E-06	0	
Indeno(1,2,3-c,d	0.59	8.7E-07	5.14286E-07	0.73	3.75429E-07
Napthalene	0.085	8.7E-07	7.4092E-08	0	
Pyrene	1.3	8.7E-07	1.13317E-06	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
				Pathway Cancer Risk	**6.88915E-06**

Appendix III

Summary of Risks Calculated Using Maximum Chemical Concentrations Found in Residential Yards in the Vicinity of the Hubert Wheeler State School Site, St. Louis, MO

Summary of Risks Calculated Using
Maximum Chemical Concentrations Found in Residential Yards in the
Vicinity of the Hubert Wheeler State School Site, St. Louis, MO

For comparison, carcinogenic and noncarcinogenic risks were calculated using the site-wide maximum concentration of each chemical detected on site (see Table 1). Intake formulae and variables used were the same as those presented in Section 3.0. Toxicity values used were those presented in Section 4.0. Worksheets used to determine risk are presented in Appendix II.

III.1 Noncarcinogenic Risks Calculated using Maximum Concentrations

The total hazard index for a 30 year residential exposure to maximum concentrations of chemicals in residential yard soils was 0.0011 (Table III-1). Because the hazard index is substantially below 1.0, adverse health effects are not expected to occur.

Table III-1.
Noncarcinogenic Risks for Residential Exposure to
Maximum Concentrations of Chemicals detected in Residential Yards Near the
Hubert Wheeler State School Site, St. Louis, MO

Chemical	Concentration (mg/kg)	Final Intake (mg/kg/d)	Intake/RfD Adjusted for Absorption?	RfD (mg/kg/d)	Hazard Index
2,4 Dinitrotoluene	0.25	0.00000051	no/no	0.002	0.00025
Acenapthene	0.25	0.00000051	no/no	0.06	0.0000085
Anthracene	0.53	0.00000011	no/no	0.3	0.0000035
bis(2-ethylhexyl)pthalate	0.57	0.0000012	no/no	0.02	0.000058
Di-n-butyl pthalate	7.8	0.000016	no/no	0.1	0.00016
Fluorene	0.25	0.00000051	no/no	0.04	0.000013
Fluoranthene	4.6	0.0000093	no/no	0.04	0.00023
Napthalene	0.25	0.00000051	no/no	0.04	0.000013
Pyrene	5	0.000011	no/no	0.03	0.00034
Pathway Hazard Index					**0.0011**

5.2.1 Risks Calculated Using Maximum Value

The total excess lifetime cancer risk for a 30 year residential exposure to upperbound concentrations of chemicals in residential yard soils was 1.9 in 100,000 (1.9×10^{-5}, Table III-2). Although this risk exceeds 1 in 1,000,000 (1×10^{-6}), it does not exceed the level which requires remediation (1 in 10,000 or 1×10^{-4}).

Table III-2.
Carcinogenic Risks for Residential Exposure to Maximum Concentrations of Chemcials detected in Residential Yards Near the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Concentration (mg/kg)	Final Intake (mg/kg/d)	Intake/SF Adjusted for Absorption?	Slope Factor (kg-d/mg)	Cancer Risk
2,4 Dinitrotoluene	0.25	2.2×10^{-7}	no/no	0.68	1.5×10^{-7}
Benzo(a)anthracene	3	2.6×10^{-6}	no/no	0.73	1.9×10^{-6}
Benzo(a)pyrene	1.4	1.2×10^{-6}	no/no	7.3	8.9×10^{-6}
Benzo(b)fluoranthene	2.1	1.8×10^{-6}	no/no	0.73	1.3×10^{-6}
Benzo(k)fluoranthene	0.57	5.0×10^{-7}	no/no	0.073	3.6×10^{-8}
bis(2-ethylhexyl)pthalate	0.57	5.0×10^{-7}	no/no	0.014	7.0×10^{-9}
Chrysene	2.2	1.9×10^{-6}	no/no	0.0073	1.4×10^{-8}
Dibenz(a,h,)anthracene	0.89	7.7×10^{-7}	no/no	7.3	5.7×10^{-6}
Indeno(1,2,3-c,d)pyrene	1.5	1.3×10^{-6}	no/no	0.73	9.5×10^{-7}
Pathway Cancer Risk					**1.9×10^{-5}**

Chemical Specific Values

Media	Chemical	Concentration		RfD	SF	Perm. Const.	Oral Abs. Eff.
Soil	2,4 Dinitrotoluene	0.25		0.002	0.68		
	Acenapthene	0.25	120	0.06			
	Anthracene	0.53		0.3			
	Benzo(a)anthracene	3			0.73		
	Benzo(a)pyrene	1.4			7.3		
	Benzo(b)fluoranthene	2.1			0.73		
	Benzo(k)fluoranthene	0.57			0.073		
	bis(2-ethylhexyl)pthalat	0.57		0.02	0.014		
	Chrysene	2.2			0.0073		
	Di-n-butyl pthalate	7.8		0.1			
	Dibenz(a,h,)anthracene	0.89			7.3		
	Fluorene	0.25		0.04			
	Fluoranthene	4.6		0.04			
	Indeno(1,2,3-c,d)pyrene	1.5			0.73		
	Napthalene	0.25		0.04			
	Pyrene	5		0.03			

RME 1 - NONCANCER WORKSHEET

VARIABLE	WATER	SOIL	AIR	FOOD
Ingestion rate (IR - l/d, mg/d or m3/hr)	2	120	0.83	
Contact rate (CR - l/hr)	0.05	x	x	x
Skin surface area (SA - cm2 or cm2/d))	18500	18500	x	x
Conversion factor (CF)	0.001	1E-06	x	x
Fraction ingested (FI)	x	1	x	
Soil-Skin adherence factor (SSA - mg/cm2)	x	1	x	x
Exposure frequency-days (EFd - d/yr or meals/yr)	365	365	365	
Exposure frequency-events (EFe - hr/event)	4	x	x	x
Exposure duration (ED - yr)	30	30	30	30
Exposure time-days (ETd - hrs/day)	2	x	24	x
Exposure time-events (ETe - events/yr)	60	x	x	x
Averaging time (AT - d)	10950	10950	10950	10950
Body weight (BW - kg)	59	59	59	59

CALCULATED INTAKES

WATER	
Ingestion of drinking water=IR*EFd*ED/(BW*AT)	0.0339
Incidental ingestion while swimming=CR*EFe*ED*ETe/(BW*AT)	0.00056
Dermal contact with water=SA*CF*EFd*ED*ETd/(BW*AT)	0.62712
SOIL	
Incidental ingestion of soil=IR*CF*FI*EFd*ED/(BW*AT)	2E-06
Dermal contact with soil=SA*CF*SSA*EFd*ED/(BW*AT)	0.00031
AIR	
Inhalation of air=IR*EFd*ED*ETd/(BW*AT)	0.33763
FOOD	
Ingestion of contaminated food=IR*FI*EFd*ED/(BW*AT)	0

FINAL INTAKE CALCULATIONS

Pathway: Incidental ingestion of contaminated soil

Chemical	Concentration	Intake	Final Intake	RfD	Hazard Index
2,4 Dinitrotoluen	0.25	2E-06	5.0847E-07	0.002	0.000254237
Acenapthene	0.25	2E-06	5.0847E-07	0.06	8.47458E-06
Anthracene	0.53	2E-06	1.078E-06	0.3	3.59322E-06
Benzo(a)anthra	3	2E-06	6.1017E-06	0	
Benzo(a)pyrene	1.4	2E-06	2.8475E-06	0	
Benzo(b)fluoran	2.1	2E-06	4.2712E-06	0	
Benzo(k)fluoran	0.57	2E-06	1.1593E-06	0	
bis(2-ethylhexyl)	0.57	2E-06	1.1593E-06	0.02	5.79661E-05
Chrysene	2.2	2E-06	4.4746E-06	0	
Di-n-butyl pthala	7.8	2E-06	1.5864E-05	0.1	0.000158644
Dibenz(a,h,)ant	0.89	2E-06	1.8102E-06	0	
Fluorene	0.25	2E-06	5.0847E-07	0.04	1.27119E-05
Fluoranthene	4.6	2E-06	9.3559E-06	0.04	0.000233898
Indeno(1,2,3-c,d	1.5	2E-06	3.0508E-06	0	
Napthalene	0.25	2E-06	5.0847E-07	0.04	1.27119E-05
Pyrene	5	2E-06	1.0169E-05	0.03	0.000338983
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
0	0	2E-06	0	0	
				Pathway Hazard Index	**0.00108122**

RME1 - Cancer Worksheet

VARIABLE	WATER	SOIL	AIR	FOOD
Ingestion rate (IR - l/d, mg/d or m3/hr)	2	120	0.83	
Contact rate (CR - l/hr)	0.05	x	x	x
Skin surface area (SA - cm2 or cm2/d))	18500	18500	x	x
Conversion factor (CF)	0.001	1E-06	x	x
Fraction ingested (FI)	x	1	x	
Soil-Skin adherence factor (SSA - mg/cm2)	x	1	x	x
Exposure frequency-days (EFd - d/yr or meals/yr)	365	365	365	
Exposure frequency-events (EFe - hr/event)	4	x	x	x
Exposure duration (ED - yr)	30	30	30	30
Exposure time-days (ETd - hrs/day)	2	x	24	x
Exposure time-events (ETe - events/yr)	60	x	x	x
Averaging time (AT - d)	25550	25550	25550	25550
Body weight (BW - kg)	59	59	59	59

CALCULATED INTAKES

WATER	
Ingestion of drinking water=IR*EFd*ED/(BW*AT)	0.01453
Incidental ingestion while swimming=CR*EFe*ED*ETe/(BW*AT)	0.00024
Dermal contact with water=SA*CF*EFd*ED*ETd/(BW*AT)	0.26877
SOIL	
Incidental ingestion of soil=IR*CF*FI*EFd*ED/(BW*AT)	8.7E-07
Dermal contact with soil=SA*CF*SSA*EFd*ED/(BW*AT)	0.00013
AIR	
Inhalation of air=IR*EFd*ED*ETd/(BW*AT)	0.1447
FOOD	
Ingestion of contaminated food=IR*FI*EFd*ED/(BW*AT)	0

FINAL INTAKE CALCULATIONS

Pathway: Incidental ingestion of contaminated soil

Chemical	Concentration	Intake	Final Intake	SF	Cancer Risk
2,4 Dinitrotoluen	0.25	8.7E-07	2.17918E-07	0.68	1.48184E-07
Acenapthene	0.25	8.7E-07	2.17918E-07	0	
Anthracene	0.53	8.7E-07	4.61985E-07	0	
Benzo(a)anthra	3	8.7E-07	2.61501E-06	0.73	1.90896E-06
Benzo(a)pyrene	1.4	8.7E-07	1.22034E-06	7.3	8.90847E-06
Benzo(b)fluoran	2.1	8.7E-07	1.83051E-06	0.73	1.33627E-06
Benzo(k)fluoran	0.57	8.7E-07	4.96852E-07	0.073	3.62702E-08
bis(2-ethylhexyl)	0.57	8.7E-07	4.96852E-07	0.014	6.95593E-09
Chrysene	2.2	8.7E-07	1.91768E-06	0.0073	1.3999E-08
Di-n-butyl pthala	7.8	8.7E-07	6.79903E-06	0	
Dibenz(a,h,)ant	0.89	8.7E-07	7.75787E-07	7.3	5.66324E-06
Fluorene	0.25	8.7E-07	2.17918E-07	0	
Fluoranthene	4.6	8.7E-07	4.00969E-06	0	
Indeno(1,2,3-c,d	1.5	8.7E-07	1.30751E-06	0.73	9.54479E-07
Napthalene	0.25	8.7E-07	2.17918E-07	0	
Pyrene	5	8.7E-07	4.35835E-06	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
0	0	8.7E-07	0	0	
				Pathway Cancer Risk	**1.89768E-05**

Preliminary Removal Goals for Residential Yards in the Vicinity of the Hubert Wheeler State School, St. Louis, MO

Prepared by:

Missouri Department of Health
Bureau of Environmental Epidemiology
210 El Mercado Plaza, P. O. Box 570
Jefferson City, MO 65102

The Missouri Department of Natural Resources (DNR) requested that Missouri Department of Health (DOH) determine additional preliminary removal goals (PRGs) for residential areas surrounding the Hubert Wheeler State School Site. The Hubert Wheeler Site is located in St. Louis, MO, southeast of the intersection of I-44 and Hampton Avenue. A tar-like substance has oozed up from the ground on the site every spring since 1970. Analysis of soil samples collected from the site indicated that polynuclear aromatic hydrocarbon (PAHs) were the primary contaminants of concern at the site. Thus far, investigations have not determined a source for the contaminants detected at the site or the extent of contamination. The area surrounding the site is a mix of residential and commercial properties. Additional soil sampling has recently been conducted in the nearby residential areas. The PRGs presented in this document were developed to assist in determining if concentrations detected in residential areas were sufficient to warrant a removal action.

Soil PRGs were developed using Risk Assessment Guidance for Superfund, Volume I, Part B (EPA 1991a) for all chemicals which were found above detection limits and which had toxicity information available. The following chemicals were detected in residential yards in the vicinity of the Hubert Wheeler Site:

2,4-Dinitrotoluene	Benzo(k)fluoranthene	Fluorene
Acenaphthene	Bis(2-ethylhexyl)phthalate	Indeno(1,2,3-cd)pyrene
Anthracene	Chrysene	Napthalene
Benzo(a)anthracene	Di-n-butyl phthalate	Phenanthrene
Benzo(a)pyrene	Dibenz(a,h)anthracene	Pyrene
Benzo(b)fluoranthene	Dibenzofuran	
Benzo(g,h,i)perylene	Fluoranthene	

PRGs were calculated using the following formulae (EPA 1991a):

Carcinogenic compounds:

$$PRG = \frac{TR*BW*ATc*365\ days/year}{EF*ED*[(SFo*IRs*CF)+(SFi*IRa*[1/VF+1/PEF])+(SFd*SA*ABS*AF*CF)]}$$

Noncarcinogenic compounds:

$$PRG = \frac{THI*BW*ATn*365\ days/year}{EF*ED*[([1/RfD]*IRs*CF)+([1/RfD]*IRa*[1/VF+1/PEF])+([1/RfD]*SA*ABS*AF*CF)]}.$$

Variable definitions and the specific variable values used to calculated PRGs are presented in Table 1. A residential exposure scenario was used to develop PRGs for residential areas in the vicinity of the Hubert Wheeler Site. Exposure was expected to occur 350 days per year over a 30 year period. Body weight and soil ingestion rate were adjusted to allow for 6 out of the 30 years of exposure as a child (15 kg body weight , 200 mg/d soil ingestion) and the remaining 24 years of exposure as an adult (70 kg body weight, 100 mg/d soil ingestion rate). The adjusted body weight and soil ingestion rate are presented in Table 1. PRGs were calculated at the 10^{-5} risk level (HI=0.5, Cancer risk=1 x 10^{-5}).

Oral and Inhalation Reference Doses (RfD) and Slope Factors (SF) were obtained from the Integrated Risk Information System (IRIS) or the Health Effects Assessment Summary Tables (HEAST). Several of the PAHs have been determined to be carcinogenic. However, there is an SF value in IRIS only for benzo(a)pyrene. EPA suggests calculating chemical specific SFs for the remaining carcinogenic PAHs using the following formula (ECAO 1993):

$$SF_{PAH} = SF_{benzo(a)pyrene} \times \text{Toxic Equivalency Factor}_{PAH}$$

The following TEF values were used in this calculation:

Chemical	Toxic Equivalency Factor
Benzo(a)pyrene	1.0
Benz(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(a,h)anthracene	1.0
Indeno(1,2,3-cd)pyrene	0.1

SF and RfD values used to calculate PRG values are presented in Tables 2 and 3. Four chemicals; acenapthylene, phenanthrene, benzo(g,h,i)perylene and dibenzofuran, did not have toxicity information available. Thus, PRGs were not calculated for these chemicals.

Carcinogenic and noncarcinogenic PRGs were calculated. The final PRG was determined by comparing the carcinogenic and noncarcinogenic PRGs and selecting the lowest value. These values have been provided in Tables 4.

Table 1.

Variable Values Used to Calculate Preliminary Remediation Goals for the Hubert Wheeler State School Site, St. Louis, MO

Variable (Units)	Variable Value
PRG = Preliminary Removal Goal (mg/kg)	Calculated Value
TR = Target Risk	1×10^{-5}
THI = Target Hazard Index	0.5
BW = Body Weight (kg) [2]	59
ATc = Averaging Time - carcinogenic (years) [1]	70
ATn = Averaging Time - noncarcinogenic (years) [1]	30
EF = Exposure Frequency (days/year) [1]	350
ED = Exposure Duration (years) [2]	30
SFo = Oral Slope Factor (per mg/kg/day)	Chemical Specific Value
SFi = Inhalation Slope Factor (per mg/kg/day)	Chemical Specific Value
SFd = Dermal Slope Factor	SFo x OAE
RfDo = Oral Reference Dose (mg/kg/day)	Chemical Specific Value
RfDi = Inhalation Reference Dose (mg/kg/day)	Chemical Specific Value
RfDd = Dermal Reference Dose	RfDo x OAE
IRs = Soil Ingestion Rate (mg/day) [2]	120
IRa = Inhalation Rate for Air (m^3/day) [2]	20
VF = Soil to Air Volatilization Factor	Chemical Specific Value
PEF = Particulate Emissions Factor (m^3/kg) [1]	4.63×10^{9}
CF = Conversion Factor (kg/mg) [1]	1×10^{-6}
SA = Body Surface Area Exposed (cm^2) [3]	4187
ABS = Absorption Fraction (unitless) [2]	Chemical Specific Value
AF = Adherence Factor (mg/cm^2) [2]	1

[1] EPA 1991a
[2] EPA 1991b

Table 2.

Carcinogenic Toxicity Values and Tumor Locations for Chemicals found in Soil at the Hubert Wheeler State School Site, St. Louis, MO

Chemical (Weight of Evidence)	Oral Slope Factor $(mg/kg/d)^{-1}$	Inhalation Slope Factor $(mg/kg/d)^{-1}$	Location of Tumor
2,4-Dinitrotoluene (B2)	0.68 (I)	NA	Kidney
Benzo(a)anthracene (B2)	0.73 (E)	NA	Skin
Benzo(a)pyrene (B2)	7.3 (I)	NA	Skin
Benzo(b)fluoranthene (B2)	0.73 (E)	NA	Skin
Benzo(k)fluoranthene (B2)	0.073 (E)	NA	Skin
Bis(2-ethylhexyl) phthalate (B2)	0.014 (E)	NA	Liver
Chrysene (B2)	0.0073 (E)	NA	Skin
Dibenz(a,h)anthracene (B2)	7.3 (E)	NA	Skin
Indeno(1,2,3-cd)pyrene (B2)	0.73 (E)	NA	Skin

NA Not Available
(I) Integrated Risk Information System, April, 1996
(E) Environmental Criteria and Assessment Office (ECAO 1993)

Table 3.

Noncarcinogenic Toxicity Values and Effects of Concern for Chemicals found in Soil at the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Oral Reference Dose (mg/kg/d)	Inhalation Reference Dose (mg/kg/d)	Effect of Concern
2,4-Dinitrotoluene	0.002 (I)	NA	Neurotoxicity
Acenaphthene	0.06 (I)	NA	Hepatotoxicity
Anthracene	0.3 (I)	NA	No observed effects
Bis(2-ethylhexyl)phthalate	0.02 (I)	0.02	No observed effects
Di-n-butyl phthalate	0.1 (I)	NA	Increased mortality
Fluoranthene	0.04 (I)	NA	Nephropathy, increased liver weight
Fluorene	0.04 (I)	NA	Decreased RBC, packed cell volume and hemoglobin
Napthalene	0.04 (I)	NA	
Pyrene	0.03 (I)	NA	Kidney effects

N/A Not Available
(I) Integrated Risk Information System, April, 1996
(H) Health Effects Assessment Summary Tables, 1995 Annual volume and updates

Table 4.

Preliminary Removal Goals Calculated at a 10^{-5} Risk Level for the Hubert Wheeler State School Site, St. Louis, MO

Chemical	Noncarcinogenic PRG (mg/kg)	Carcinogenic PRG (mg/kg)	Final PRG (mg/kg)
2,4 Dinitrotoluene	510	18	**18**
Acenapthene	15000	NC	**15000**
Anthracene	77000	NC	**77000**
Benzo(a)anthracene	NC	16	**16**
Benzo(a)pyrene	NC	1.6	**1.64**
Benzo(b)fluoranthene	NC	16	**16**
Benzo(k)fluoranthene	NC	160	**160**
bis(2-ethylhexyl)pthalate	5130	750	**750**
Chrysene	NC	1600	**1600**
Di-n-butyl pthalate	26000	NC	**26000**
Dibenz(a,h,)anthracene	NC	1.60	**1.60**
Fluorene	10000	NC	**10000**
Fluoranthene	10000	NC	**10000**
Indeno(1,2,3-c,d)pyrene	NC	16	**16**
Napthalene	10000	NC	**10000**
Pyrene	7700	NC	**7700**

NC Not Calculated

References:

EPA. 1989. Risk Assessment Guidance for Superfund: Part I. Human Health Evaluation Manual. Office of Emergency and Remedial Response. Washington, D. C. EPA/540/1-89/002.

EPA. 1991a. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B: Development of Risk-based Preliminary Remediation Goals. Office of Solid Waste and Emergency Response,. Washington, D. C. OSWER Directive 9285.7-01b.

EPA. 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response,. Washington, D. C. OSWER Directive 9285.6-03.

ECAO. 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. Office of Health and Environmental Assessment. Cincinnati, OH. EPA/600/T-93/089.

Missouri Department of Natural Resources. 1994. Site Inspection Report, Hubert Wheeler State School, St. Louis City, MO. Missouri Department of Natural Resources, Jefferson City, MO.

Appendix I

Preliminary Removal Goal Worksheets for the Hubert Wheeler State School Site, St. Louis, MO

Contaminants of Concern

Soil	Contaminant	RfDo mg/kg-d	RfDi mg/kg-d	SFo kg-d/mg	SFi kg-/mg	OAE	ABS	Di cm2/sec	H atm-m3/mol	Koc cm3/g
	2,4 Dinitrotoluene	0.002		0.68			0.001	0.066		282
	Acenapthene	0.06								
	Anthracene	0.3								
	Benzo(a)anthracene			0.73						
	Benzo(a)pyrene			7.3						
	Benzo(b)fluoranthene			0.73						
	Benzo(k)fluoranthene			0.073						
	bis(2-ethylhexyl)pthalate	0.02	0.02	0.014		1	0.004			
	Chrysene			0.0073						
	Di-n-butyl pthalate	0.1								
	Dibenz(a,h,)anthracene			7.3						
	Fluorene	0.04								
	Fluoranthene	0.04								
	Indeno(1,2,3-c,d)pyrene			0.73						
	Napthalene	0.04								
	Pyrene	0.03								

Preliminary Removal Goals for Soil
Residential Exposure

Carcinogenic PRG Formula:

C = (TR X BW X AT X 365 days/year) / {EF X ED X [(SFo X IRs X 1E-6 kg/mg) + (SFi x IRa x [1/VF + 1/PEF]) + (SFd x SA x ABS x AF x 10E-6 kg/m)]}

Where:	Default	Site Specific	Value Used
C = Preliminary Removal Goal (mg/kg)			
TR = Target Risk (unitless)	0.000001	0.00001	0.00001
BW = Body Weight (kg)	70	59	59
AT = Averaging Time (years)	70		70
EF = Exposure Frequency (days/year)	365	350	350
ED = Exposure Duration (years)	30		30
SFo = Oral Slope Factor (per mg/kg/day)	Chemical specific		Chemical specific
SFi = Inhalation Slope Factor (per mg/kg/day)	Chemical specific		Chemical specific
IRs = Soil Ingestion Rate (mg/day)	100	120	120
IRa = Inhalation Rate for Air (m3/day)	20		20
VF = Soil to Air Volatilization Factor	Chemical specific		Chemical specific
PEF = Particulate Emissions Factor (m3/kg)	4630000000		4630000000
SFd = Dermal Slope Factor (per mg/kg/d)	Chemical specific		Chemical specific
SA = Surface Area (cm2)	180000	4187	4187
ABS = Dermal Absorption (unitless)	Chemical specific		Chemical specific
AF = Adherence Factor (mg/cm2)	1		1

Calculation of Preliminary Removal Goals

Chemical	General	EFD	SFo	Soil	SFi	VF	1/VF	PEF	1/PEF	Air	SFd	ABS	Dermal	PRG
2,4 Dinitrotoluene	15.075	10500	0.68	8E-05	0		0	5E+09	2E-10	0	0	0.001	0	**17.59**
Acenapthene	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Anthracene	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(a)anthracene	15.075	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**16.39**
Benzo(a)pyrene	15.075	10500	7.3	9E-04	0		0	5E+09	2E-10	0	0	0	0	**1.64**
Benzo(b)fluoranthe	15.075	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**16.39**
Benzo(k)fluoranthe	15.075	10500	0.073	9E-06	0		0	5E+09	2E-10	0	0	0	0	**163.89**
bis(2-ethylhexyl)pth	15.075	10500	0.014	2E-06	0		0	5E+09	2E-10	0	0.014	0.004	2E-07	**749.90**
Chrysene	15.075	10500	0.007	9E-07	0		0	5E+09	2E-10	0	0	0	0	**1638.89**
Di-n-butyl pthalate	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Dibenz(a,h,)anthrac	15.075	10500	7.3	9E-04	0		0	5E+09	2E-10	0	0	0	0	**1.64**
Fluorene	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Fluoranthene	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Indeno(1,2,3-c,d)pyr	15.075	10500	0.73	9E-05	0		0	5E+09	2E-10	0	0	0	0	**16.39**
Napthalene	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Pyrene	15.075	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	

Where:

General = TR X BW X AT X 365 days/	15.07
EFD = EF X ED	10500
Soil = SFo X IRs X 1E-6 kg/mg)	1E-04
Air = SFi x IRa x (1/VF + 1/PEF)	20
Dermal = SFd x SA x ABS x 10E-6	0.004

PRG = General / {EFD x (Soil + Air + Dermal)}

Calculation of Nonarcinogenic Preliminary Removal Goals

Calculation of Chemical Specific Volatilization Factors

VF = [(LS x V x DH) / A] x [(3.14 x a x T)e1/2 / (2 x Dei x E x Kas x 1e-3 kg/g)]

Where:	Default Value	Site Specific Value	Value Used
LS = Length of side of contaminated area (m)	4.5		4.5
V = Wind Speed in mixing zone (m/sec)	2.25		2.25
DH = Diffusion Height (m)	2		2
A = Area of Contamination (cm2)	20250000		20250000
T = Exposure Interval (sec)	790000000		790000000
E=True soil porosity (unitless)	0.35		0.35
ps = True soil density (g/cm3)	2.65		2.65

a = (Dei x E) / (E + (ps)(1-E)/Kas) (cm2/sec)
Dei = Effective Diffusivity = Di*E e0.33 (cm2/sec)
Kas = Soil/Air Partitioning Coefficient = (H/Kd)*41 (g soil/cm3 air)

Di = Molecular Diffusivity (cm2/sec)	Chemical Specific
H = Henry's Law Constant (atm-m3/mol)	Chemical Specific
Kd = Soil-Water partitioning coefficient (cm3/g)	Chemical Specific or Koc*OC
Koc = Organic carbon partition coefficient (cm3/g)	Chemical Specific
OC = Organic carbon content of soil	Site specific or 0.02

Chemical	Di	Henry's Law	Koc	OC	Kd	Dei	a	Kas	Top	Bottom	Area Specific	VF
2,4 Dinitrotoluene	0.066	0	282	0.02	5.64	0.047	0	0	0	0	0.000001	
Acenapthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Anthracene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)anthrace	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(b)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(k)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
bis(2-ethylhexyl)p	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Chrysene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Di-n-butyl pthalat	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Dibenz(a,h,)anthr	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluorene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluoranthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Indeno(1,2,3-c,d)	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Napthalene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
0												
0												
0												

Where: Area Specific = (LS*V*DH)/A 1E-06
Top = sqrt(3.14*a*T)
Bottom = (2*Dei*E*Kas*0.001kg/g)

Preliminary Removal Goals for Soil
Residential Exposure

Noncarcinogenic PRG Formula:

C = (THI X BW X AT X 365 days/year) / {EF X ED X [((1/RfDo) X IRs X 1E-6 kg/mg) + ((1/RfDi) x IRa x [1/VF + 1/PEF])
+ ((1/RfDd) x SA x ABS x AF x 10E-6 kg/mg)]}

Where:	Default Value	te Specific Value	Value Used
C = Preliminary Removal Goal (mg/kg)			
THI = Target Hazard Index (unitless)	1	0.5	0.5
BW = Body Weight (kg)	70	59	59
AT = Averaging Time (years)	30		30
EF = Exposure Frequency (days/year)	365	350	350
ED = Exposure Duration (years)	30		30
RfDo = Oral Reference Dose (mg/kg/day)	Chemical specific		Chemical specific
RfDi = Inhalation Reference Dose (mg/kg/day)	Chemical specific		Chemical specific
IRs = Soil Ingestion Rate (mg/day)	100	120	120
IRa = Inhalation Rate for Air (m3/day)	20		20
VF = Soil to Air Volatilization Factor	Chemical specific		Chemical specific
PEF = Particulate Emissions Factor (m3/kg)	4630000000		4630000000
RfDd = Dermal Reference Dose (mg/kg/d)	Chemical specific		Chemical specific
SA = Surface Area (cm2)	180000	4187	4187
ABS = Dermal Absorption (unitless)	Chemical specific		Chemical specific
AF = Adherence Factor (mg/cm2)	1		1

Chemical	General	EFD	RfDo	Soil	RfDi	VF	1/VF	PEF	1/PEF	Air	RfDd	ABS	Dermal	PRG
2,4 Dinitrotoluene	323025	10500	0.002	0.06	0		0	5E+09	2E-10	0	0	0.001	0	**512.74**
Acenapthene	323025	10500	0.06	0.002	0		0	5E+09	2E-10	0	0	0	0	**15382.14**
Anthracene	323025	10500	0.3	4E-04	0		0	5E+09	2E-10	0	0	0	0	**76910.71**
Benzo(a)anthracene	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(a)pyrene	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(b)fluoranthe	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Benzo(k)fluoranthe	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
bis(2-ethylhexyl)pth	323025	10500	0.02	0.006	0.02		0	5E+09	2E-10	2E-07	0.02	0.004	0.0008	**5127.20**
Chrysene	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Di-n-butyl pthalate	323025	10500	0.1	0.001	0		0	5E+09	2E-10	0	0	0	0	**25636.90**
Dibenz(a,h,)anthrac	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Fluorene	323025	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**10254.76**
Fluoranthene	323025	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**10254.76**
Indeno(1,2,3-c,d)pyr	323025	10500	0	0	0		0	5E+09	2E-10	0	0	0	0	
Napthalene	323025	10500	0.04	0.003	0		0	5E+09	2E-10	0	0	0	0	**10254.76**
Pyrene	323025	10500	0.03	0.004	0		0	5E+09	2E-10	0	0	0	0	**7691.07**
0														
0														

Where:

General = TR X BW X AT X 365 days/	3E+05
EFD = EF X ED	10500
Soil = (1/RfDo) X IRs X 1E-6 kg/mg	1E-04
Air = (1/RfDi) x IRa x (1/VF + 1/PEF)	20
Dermal = (1/RfDd) x SA x ABS x 10E-	0.004

PRG = General / {EFD x (Soil + Air + Dermal)}

Calculation of Chemical Specific Volatilization Factors

VF = [(LS x V x DH) / A] x [(3.14 x a x T)e1/2 / (2 x Dei x Kas x 1e-3 kg/g)]

Where:	Default Value	Site Specific Value	Value Used
LS = Length of side of contaminated area (m)	4.5		4.5
V = Wind Speed in mixing zone (m/sec)	2.25		2.25
DH = Diffusion Height (m)	2		2
A = Area of Contamination (cm2)	20250000		20250000
T = Exposure Interval (sec)	790000000		790000000
E=True soil porosity (unitless)	0.35		0.35
ps = True soil density (g/cm3)	2.65		2.65

a = (Dei x E) / (E + (ps)(1-E)/Kas) (cm2/sec)
Dei = Effective Diffusivity = Di*E e0.33 (cm2/sec)
Kas = Soil/Air Partitioning Coefficient = (H/Kd)*41 (g soil/cm3 air)

Di = Molecular Diffusivity (cm2/sec)	Chemical Specific
H = Henry's Law Constant (atm-m3/mol)	Chemical Specific
Kd = Soil-Water partitioning coefficient (cm3/g)	Chemical Specific or Koc*OC
Koc = Organic carbon partition coefficient (cm3/g)	Chemical Specific
OC = Organic carbon content of soil	Site specific or 0.02

Chemical	Di	Henry's Law	Koc	OC	Kd	Dei	a	Kas	Top	Bottom	Area Specific	VF
2,4 Dinitrotoluene	0.066	0	282	0.02	5.64	0.047	0	0	0	0	0.000001	
Acenapthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Anthracene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)anthrace	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(a)pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(b)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Benzo(k)fluorant	0	0	0	0.02	0	0	0	0	0	0	0.000001	
bis(2-ethylhexyl)p	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Chrysene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Di-n-butyl pthalat	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Dibenz(a,h,)anthr	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluorene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Fluoranthene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Indeno(1,2,3-c,d)	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Napthalene	0	0	0	0.02	0	0	0	0	0	0	0.000001	
Pyrene	0	0	0	0.02	0	0	0	0	0	0	0.000001	

Where: Area Specific = (LS*V*DH)/A 1E-06

Top = sqrt(3.14*a*T)

Summary of PRGs for Residential Yards in the Vicinity of the Hubert Wheeler State School Site

Chemical	Noncarcinogenic PRG (mg/kg)	Carcinogenic PRG (mg/kg)	Final PRG (mg/kg)
2,4 Dinitrotoluene	512.74	17.59	17.59
Acenapthene	15382.14		15382.14
Anthracene	76910.71		76910.71
Benzo(a)anthracene		16.39	16.39
Benzo(a)pyrene		1.64	1.64
Benzo(b)fluoranthene		16.39	16.39
Benzo(k)fluoranthene		163.89	163.89
bis(2-ethylhexyl)pthalate	5127.20	749.90	749.90
Chrysene		1638.89	1638.89
Di-n-butyl pthalate	25636.90		25636.90
Dibenz(a,h,)anthracene		1.64	1.64
Fluorene	10254.76		10254.76
Fluoranthene	10254.76		10254.76
Indeno(1,2,3-c,d)pyrene		16.39	16.39
Napthalene	10254.76		10254.76
Pyrene	7691.07		7691.07