APPENDIX B

Photodocumentation Log

Photo № 1 Roll № 1 Frame №: 0 Date: 6/24/92
Subject: Greens Creek exit off of Hercules Property. Northeast portion of site property. Notice the leachate flowing from the south bank potentially originating from inactive landfill (Geophysical area 2). Locale of HI-SD-02.

Photo № 2 Roll № 1 Frame №: 1 Date: 6/24/92
Subject: Greens Creek exit off site property. Notice the "security gate" limiting public access to site property - Location of HI-SW-02

Photo № 3 Roll № 1 Frame №: 2 Date: 6/24/92
Subject: South bank of Greens Creek, near the exit off of site property. Green and brown leachate present.

Photo № 4 Roll № 1 Frame №: 3 Date: 6/25/92
Subject: West view of the former pinetree stump pile area, west portion of site property.

Photo № 5 Roll № 1 Frame №: 4 Date: 6/24/92
Subject: An abandoned drum stuck in the sludge pits in the "back forty" portion of site property.

Photo № 6 Roll № 1 Frame №: 5 Date: 6/24/92
Subject: Location of HI-SD-03, within the "back forty" sludge pits.

Photo № 7 Roll № 1 Frame №: 6 Date: 6/24/92
Subject: "Back forty" sludge pits.

Photo № 8 Roll № 1 Frame №: 7 Date: 6/24/92
Subject: "Back forty" sludge pits.

Photo № 9 Roll № 1 Frame №: 10 Date: 6/24/92
Subject: "Back forty" sludge pits.

Photo № 10 Roll № 1 Frame №: 11 Date: 6/24/92
Subject: "Back forty" sludge pits - partially dried.

Photo № 11 Roll № 1 Frame №: 12 Date: 6/24/92
Subject: Dried "back forty" sludge pits.

Photo № 12 Roll № 1 Frame №: 13 Date: 6/24/92
Subject: Foreground shows dumped boiler ash, background lies another sludge pit.

Photo № 13 Roll № 1 Frame №: 14 Date: 6/24/92
Subject: Drainage ditch along the eastern portion of site property. Location of HI-SD-04.

Photo № 14 Roll № 1 Frame №: 15 Date: 6/25/92
Subject: A dike breach in the sludge pits located near the E-O tank, northeast corner of site property.

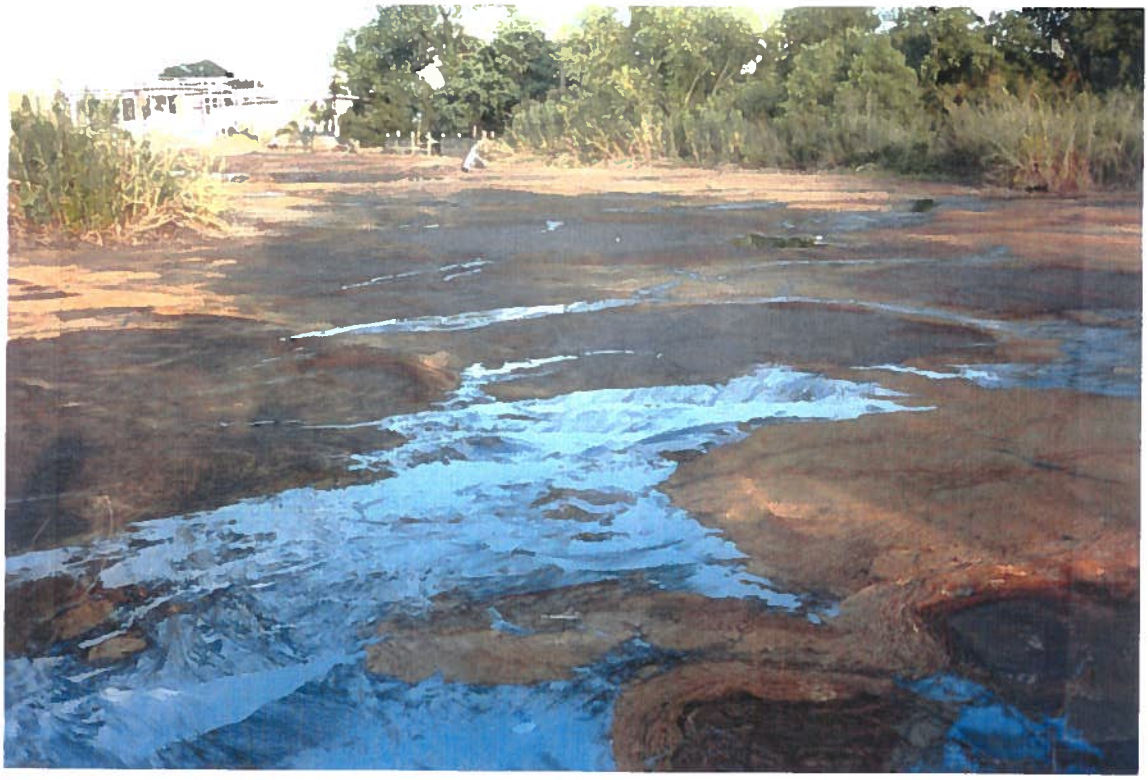

Photo № 15 Roll № 1 Frame №: 16 Date: 6/25/92
Subject: Sludge pits located near the E-O tank.

Photo № 16 Roll № 1 Frame №: 17 Date: 6/25/92
Subject: Sludge pit material that has flowed out of the diked areas, and has hardened. This sludge exhibits increased viscosity with ambient temperature.

Photo № 17 Roll № 1 Frame №: 18 Date: 6/25/92
Subject: The E-O Tank (Ethylene Oxide) located in the northeast portion of site property.

Photo № 18 Roll № 1 Frame №: 19 Date: 6/25/92
Subject: Sludge flow near E-O tank - overflow from the diked pond.

Photo № 19 Roll № 1 Frame №: 20 Date: 6/25/92
Subject: Sludge flow through a breach in the containing dike. Near the E-O tank.

Photo № 20 Roll № 1 Frame №: 21 Date: 6/25/92
Subject: Looking south from E-O tank area, of breached dike wall.

Photo № 21 Roll № 1 Frame №: 23 Date: 6/25/92
Subject: The unloading dock located near the drum recycling area. Location of HI-SS-02. Notice the stained soil and stressed vegetation.

Photo № 22 Roll № 1 Frame №: 24 Date: 6/25/92
Subject: Dumpster on left (covered with a tarp) which has been filled off the unloading dock. Note: Dumpster was removed, area was "clean" during the second site visit in August 1992.

Photo № 23 Roll № 1 Frame №: 25 Date: 6/25/92
Subject: Piles of recycled galvanized 55-gallon drums, located at the center of site property.

Photo № 24 Roll № 2 Frame №: 1 Date: 6/25/92
Subject: Purging monitoring well B-1, in the "back forty" portion of site property. Preparing for Sample HI-MW-B1

Photo № 25 Roll № 2 Frame №: 3 Date: 6/25/92
Subject: A neighbor that exists on the east side of Providence Street - Solar Supply.

Photo № 26 Roll № 2 Frame №: 4 Date: 6/25/92
Subject: The drainage ditch in which sample Hi-SD-04 was collected. Runoff flows north.

Photo № 27 Roll № 2 Frame №: 6 Date: 6/25/92
Subject: North view of drainage ditch which lies along eastern portion of site property. Location of HI-SD-04.

Photo № 28 Roll № 2 Frame №: 13 Date: 6/25/92
Subject: The well obstruction found within monitoring well MW-B2- near the water treatment plant (east of Providence Street).

Photo № 2
Subject:
property.

Photo № 3
Subject:
facility.

ame №: 8 - 11 Date: 6/25/92
ge ditch on the east side of site
to north.

rame №: 14 - 16 Date: 6/25/92
water treatment plant. West view of

APPENDIX C

Summary of Geophysical Methods

SUMMARY OF GEOPHYSICAL METHODS

The following sections are from "Geophysical Techniques for Sensing Buried Wastes and Waste Migration" by Glaccum, R. A., and M. R. Noel, August, 1983, Technos, Inc., for Environmental Monitoring Systems Laboratory, ORD., USEPA, Las Vegas, Nevada.

ELECTROMAGNETICS (EM)*

The electromagnetic (EM) method provides a means of measuring the electrical conductivity of subsurface soil, rock, and ground water. Electrical conductivity is a function of the type of soil and rock, its porosity, its permeability, and the fluids which fill the pore space. In most cases the conductivity (specific conductance) of the pore fluids will dominate the measurement. Accordingly, the EM method is applicable both to assessment of natural geohydrologic conditions and to mapping of many types of contaminant plumes Additionally, trench boundaries, buried wastes and drums, as well as metallic utility lines can be located with EM techniques.

Natural variations in subsurface conductivity may be caused by changes in soil moisture content, ground water specific conductance, depth of soil cover over rock, and thickness of soil and rock layers. Changes in basic soil or rock types, and structural features such as fractures or voids may also produce changes in conductivity. Localized deposits of natural organic, clay, sand, gravel, or saltrich zones will also affect subsurface conductivity.

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*The term electromagnetic has been used in contemporary literature as a descriptive term for other geophysical methods, including GPR and metal detectors which are based on electromagnetic principles. However, this document will use electromagnetic (EM) to specifically imply the measurement of subsurface conductivities by low-frequency electromagnetic induction. This is in keeping with the traditional use of the term in the geophysical industry from which the EM methods originated. While the authors recognize that there are many electromagnetic systems and manufacturers, the discussion in this section is based solely on instruments which are calibrated to read in electrical conductivity units and which have been effectively and extensively used at hazardous waste sites. There is only one manufacturer of such instruments at the time of this writing.

Many contaminants will produce an increase in free ion concentration when introduced into the soil or ground water systems. This increase over background conductivity enables detection and mapping of contaminated soil and ground water at Hazardous Waste Sites (HWS), landfills, and impoundments. Large amounts of organic fluids such as diesel fuel can displace the normal soil moisture, causing a decrease in conductivity which may also be mapped, although this is not commonly done. The mapping of a plume will usually define the local flow direction of contaminants. Contaminant migration rates can be established by comparing measurements taken at different times.

The absolute values of conductivity for geologic materials (and contaminants) are not necessarily diagnostic in themselves, but the variations in conductivity, laterally and with depth, are significant. It is these variations which enable the investigator to rapidly find anomalous conditions.

Since the EM method does not require ground contact, measurements may be made quite rapidly. Lateral variations in conductivity can be detected and mapped by a field technique called profiling. Profiling measurements may be made to depths ranging from 0.75 to 60 meters. The data is recorded using strip chart and magnetic tape recorders. This continuous measurement allows increased rates of data acquisition and improved resolution for mapping small geohydrologic features. Further, recorded data enhanced by computer processing has proved invaluable in the evaluation of complex hazardous waste sites. The excellent lateral resolution obtained from EM profiling data has been used to advantage in efforts to outline closely-spaced burial pits, to reveal the migration of contaminants into the surrounding soil, and to delineate fracture patterns.

Vertical variations in conductivity can also be detected by the EM method. A station measurement technique called sounding is employed for this purpose. Data can be acquired from depths by combining results from a variety of EM instruments, each requiring different field application techniques. Other EM systems are capable of sounding to depth of one-thousand feet or more, but have not yet been used at HWS and are not adaptable to continuous measurements.

Profiling is the most cost-effective use of the EM method. Continuous profiling can be used in many applications to increase resolution, data density, and permit total site coverage at critical sites.

At HWS, applications of EM can provide:

- Assessment of natural geohydrologic conditions;
- Locating and mapping of burial trenches and pits containing drums and/or bulk wastes;
- Determination of flow direction in both unsaturated and saturated zones;
- Rate of plume movement by comparing measurement taken at different times;
- Locating and mapping of utility pipes and cables which may affect other geophysical measurements, or whose trench may provide a permeable pathway for contaminant flow.

Although there is available a wide variety of EM equipment, most of it is intended for geophysical exploration of mineral deposits. These units have not been used at HWS and do not provide a simple conductivity reading. This document discusses only those instruments which are designed and calibrated to read directly in units of conductivity.

Conductance is measured with electronic instrumentation consisting of a transmitter coil and receiver coil. The transmitter coil radiates an electromagnetic field which induces eddy currents in the earth below the instrument. Each of these eddy current loops, in turn, generates a secondary electromagnetic field which is proportional to the magnitude of the current flowing within that loop. A part of the secondary magnetic field from each loop is intercepted by the receiver coil and produces an output voltage which (within limits) is linearly related to subsurface conductivity. This reading is a bulk measurement of conductivity, e.g., the cumulative response to subsurface conditions ranging all the way from the surface to the effective depth of the instrument.

The sampling depth of EM equipment is related to the instrument's coil spacing. Instruments with coil spacings of one, four, ten, twenty, and forty meters are commercially available. The nominal sampling depth of an EM system is taken to be approximately 1.5 times the coil spacing.

The EM sounding method can rarely identify more than two or three layers with reasonable confidence. The greater the contrast in the conductivity values of each layer, the better the results. Often, the more detailed resistivity sounding method is used to complement EM profiling data.

The results of sounding analysis are usually presented as a vertical section, in which the conductivity layers are identified as a function of depth. The analyst may be able to correlate these layers to geohydrologic units believed to exist at the site.

Although the EM technique can be used for profiling or sounding, profiling is the most effective use of the EM method. Profiling makes possible the rapid mapping of subsurface conductivity changes, and the location, delineation, and assessment of spatial variables resulting from changes in the natural setting or from many contaminants.

EM is a very effective reconnaissance tool. The use of qualitative non-recorded data can provide initial interpretation in the field. If site conditions are complex, the use of a high-density survey grid, continuously-recording instruments, and computer processing may be necessary, in order to properly evaluate subsurface conditions. When continuously-recording instruments are used, total site coverage is feasible. More quantitative information can be obtained by using conductivity data from different depth ranges. At present, three different systems must be used to acquire data from 0.75 to 60 meters. Very often, however, data from two standard depths, e.g. six and fifteen meters, is adequate to furnish depth information.

Capabilities

- The EM profile method permits rapid data acquisition, resulting in high-density and high-resolution surveys.
- Profiling data may be acquired from various discrete depths, ranging from 0.75 meters to 60 meters.
- Continuously-recording instruments (to fifteen meter depth) can increase survey speed, density, and resolution permitting total site coverage, if required.
- EM reads directly in conductivity units (mm/m) permitting use of raw data in the field, and correlation to specific conductance of ground water samples.
- EM can map local and general changes in the natural geohydrologic setting.
- EM can detect and measure the boundaries of a conductivity plume.
- Direction of plume flow can be determined from an EM conductivity map.
- EM measurements taken at different times can provide the means to compute movement rates of conservative contaminants.
- EM can detect and map burial pits and trenches of both bulk and drummed wastes.
- EM can detect and map the location of buried metallic utility lines.

Limitations

- EM has less sounding (vertical) resolution than the resistivity method due to its limited number of depth intervals.
- The acquisition of data from depths of 0.75 to 60 meters requires the use of three different EM systems.
- Continuous data can be obtained only to depths up to approximately fifteen meters.
- An EM measurement is influenced by the shallower materials more than the deeper ones; this must be considered when evaluating the data.
- EM measurements become non-linear in zones of very high conductivity.
- The EM method is susceptible to noise from a number of sources, including natural atmospheric noise, powerlines, radio transmitters, buried metallic trash, pipes, cables, nearby fences, vehicles, and buildings.

MAGNETOMETER

Magnetic measurements are commonly used to map regional geologic structure and to explore for minerals. They are also used to locate pipes and survey stakes or to map archeological sites. They are commonly used at HWS to locate buried drums and trenches.

A magnetometer measures the intensity of the earth's magnetic field. The presence of ferrous metals creates variations in the local strength of that field, permitting their detection. A magnetometer's response is proportional to the mass of the ferrous target. Typically, a single drum can be detected at distances up to six meters, while massive piles of drums can be detected at distances up to twenty meters or more.

Some magnetometers require the operator to stop and take discrete measurements; other instruments permit the acquisition of continuous data as the magnetometer is moved across the site. This continuous coverage is much more suitable for high resolution requirements and the mapping of extensive areas.

The effectiveness of a magnetometer can be reduced or totally inhibited by noise or interference from time-variable changes in the earth's field and spatial variations caused by magnetic minerals in the soil, or iron and steel debris, ferrous pipes, fences, buildings, and vehicles. Many of these problems can be avoided by careful selection of instruments and field techniques.

At HWS, magnetometers may be used to:

- Locate buried steel containers, such as 55-gallon drums;
- Define boundaries of trenches filled with ferrous containers;
- Locate ferrous underground utilities, such as iron piles or tanks, and the permeable pathways often associated with them;
- Select drilling locations that are clear of buried drums, underground utilities, and other obstructions.

A magnetometer measures the intensity of the earth's magnetic field. Variations in this field may be caused by the natural distribution of iron oxides within the soil and rock or by the presence of buried iron or steel objects. (The magnetometer does not respond to nonferrous metals such as aluminum, copper, tin, and brass).

The earth's magnetic field behaves much as if there were a large bar magnet embedded in the earth. Although the earth's field intensity varies considerably throughout the United States, its average value is approximately 50,000 gammas.* The angle of the magnetic field with respect to the earth's surface also varies. In the U.S., this angle of inclination ranges approximately sixty to seventy-five degrees from the horizontal.

The intensity of the earth's magnetic field changes daily with sunspots and ionospheric conditions which can cause large and sometimes rapid variations. With time, these variations produce unwanted signals (noise) and can substantially affect magnetic measurements.

If the magnetic properties of the soil and rock were perfectly uniform, there would be no local magnetic anomalies; however, a concentration of natural iron minerals, or a buried iron object, will cause a local magnetic anomaly which can be detected at the surface.

Typical magnetic anomalies at HWS will range from one to hundreds of gammas for small discrete targets, depending on their depth. Massive piles of buried drums will result in anomalies of from one-hundred to one-thousand gammas or more.

---

*The unit of magnetic measurement is the gamma. Recently, the gamma unit has been renamed the Nano Tesla. At this time, most instruments are still labeled in gammas, as are specification sheets, existing literature, and field data; hence all references to magnetic data in this document are expressed in gammas.

While several factors influence the response of a magnetometer, the mass of a buried target and its depth are the most important. A magnetometer's response is directly proportional to the mass of ferrous metal present and varies by one over the distance cubed ($1/d^3$) for total measurements. If a gradiometer is used, the response falls off even faster, as one over the distance to the fourth power ($1d^4$). With sensors of equal sensitivity, the total field system provides the greater working range. Typically a single drum can be detected at distances up to six meters or more. There is a wide variety of magnetometers available commercially; specific performance is highly dependent upon the type of magnetometer and the field conditions. Theoretically, the number of drums may be calculated, however, such results should be considered only approximations because of the number of variables associated with targets, site conditions, and calculations. Actual results may vary considerably.

A magnetometer with continuous recording capabilities can be used to produce a strip chart of the field data, which is helpful in assessing signal-to-noise ratio, anomaly shape, target location, and provides a means of exercising quality control over field data. This continuous coverage is much more suitable for high-resolution requirements and the mapping of extensive areas.

The effectiveness of a magnetometer can be reduced or totally inhibited by noise or interference from time-variable changes in the earth's field and spatial variations caused by magnetic minerals in the soil, or iron and steel debris, ferrous pipes, fences, buildings, and vehicles. Many of these problems can be avoided by careful selection of instruments and field techniques.

Capabilities

- Magnetometers respond to ferrous metals (iron or steel) only.
- Individual drums can be detected at depths up to six meters.
- Large masses of drums can be detected at depths of six to twenty meters.
- Magnetometers can provide a greater depth range than metal detectors.
- Interpretation of their data may be used to provide estimates of the number and depth of buried drums.
- They can provide a continuous response along a traverse line.
- They may be mounted on vehicles for coverage of a large site.

Limitations

- In general, magnetometers are susceptible to noise from many different sources, including steel fences, vehicles, buildings, iron debris, natural soil minerals, and underground utilities.
- Low cost units are limited in depth range (but their limitations make them insensitive to many of the above sources of noise).
- Total field instruments are also sensitive to fluctuations in the earth's magnetic field which can seriously affect data.
- Data is of limited use in determining the number and depth of targets.
- Complex site conditions may require the use of highly skilled operators, special equipment, and the recording and processing of data, along with skilled interpretation.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV
Environmental Services Division
College Station Road, Athens, Ga. 30613

*****MEMORANDUM******

DATE: 09/30/92

SUBJECT: Results of Extractable Organic Analysis;
92-0781 HERCULES, INC
HATTIESBUR MS
CASE NO: 18613

FROM: Robert W. Knight
Chief, Laboratory Evaluation/Quality Assurance Section

TO: JOE SLYKERMAN

Attached are the results of analysis of samples collected as part of the subject project.

As a result of the Quality Assurance Review, certain data qualifiers may have been placed on the data. Attached is a DATA QUALIFIER REPORT which explains the reasons that these qualifiers were required.

If you have any questions please contact me.

ATTACHMENT

ORGANIC DATA QUALIFIER REPORT

Case Number 18613 Project Number 92-0781 SAS Number
Site ID. Hercules, Inc., Hattiesburg, MS.

Affected Samples	Compound or Fraction	Flag Used	Reason
Volatiles			
71240	styrene	J	<quantitation limit
	xylenes	J	<quantitation limit
71242	chloroform	J	<quantitation limit
Extractables			
all soil samples	2-chlorophenol	J	low blind spike recovery
	acenaphthene	J	low blind spike recoveru
71241	1,2-dichlorobenzene	J	<quantitation limit
Pesticides			
none			

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71238 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SW-01 COLLECTION START: 08/18/92 0910 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN52

UG/L	ANALYTICAL RESULTS
10U	PHENOL
10U	BIS(2-CHLOROETHYL) ETHER
10U	2-CHLOROPHENOL
10U	1,3-DICHLOROBENZENE
10U	1,4-DICHLOROBENZENE
10U	1,2-DICHLOROBENZENE
10U	2-METHYLPHENOL
10U	2,2'-CHLOROISOPROPYLETHER
10U	(3-AND/OR 4-)METHYLPHENOL
10U	N-NITROSODI-N-PROPYLAMINE
10U	HEXACHLOROETHANE
10U	NITROBENZENE
10U	ISOPHORONE
10U	2-NITROPHENOL
10U	2,4-DIMETHYLPHENOL
10U	BIS(2-CHLOROETHOXY) METHANE
10U	2,4-DICHLOROPHENOL
10U	1,2,4-TRICHLOROBENZENE
10U	NAPHTHALENE
10U	4-CHLOROANILINE
10U	HEXACHLOROBUTADIENE
10U	4-CHLORO-3-METHYLPHENOL
10U	2-METHYLNAPHTHALENE
10U	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	2,4,6-TRICHLOROPHENOL
25U	2,4,5-TRICHLOROPHENOL
10U	2-CHLORONAPHTHALENE
25U	2-NITROANILINE
10U	DIMETHYL PHTHALATE
10U	ACENAPHTHYLENE
10U	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
25U	3-NITROANILINE
10U	ACENAPHTHENE
25U	2,4-DINITROPHENOL
25U	4-NITROPHENOL
10U	DIBENZOFURAN
10U	2,4-DINITROTOLUENE
10U	DIETHYL PHTHALATE
10U	4-CHLOROPHENYL PHENYL ETHER
10U	FLUORENE
25U	4-NITROANILINE
25U	2-METHYL-4,6-DINITROPHENOL
10U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	4-BROMOPHENYL PHENYL ETHER
10U	HEXACHLOROBENZENE (HCB)
25U	PENTACHLOROPHENOL
10U	PHENANTHRENE
10U	ANTHRACENE
10U	CARBAZOLE
10U	DI-N-BUTYLPHTHALATE
10U	FLUORANTHENE
10U	PYRENE
10U	BENZYL BUTYL PHTHALATE
10U	3,3' DICHLOROBENZIDINE
10U	BENZO(A)ANTHRACENE
10U	CHRYSENE
10U	BIS(2-ETHYLHEXYL) PHTHALATE
10U	DI-N-OCTYLPHTHALATE
10U	BENZO(B AND/OR K)FLUORANTHENE
10U	BENZO-A-PYRENE
10U	INDENO (1,2,3-CD) PYRENE
10U	DIBENZO(A,H)ANTHRACENE
10U	BENZO(GHI)PERYLENE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71239 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SW-02 COLLECTION START: 08/18/92 0940 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN53

UG/L	ANALYTICAL RESULTS
10U	PHENOL
10U	BIS(2-CHLOROETHYL) ETHER
10U	2-CHLOROPHENOL
10U	1,3-DICHLOROBENZENE
10U	1,4-DICHLOROBENZENE
10U	1,2-DICHLOROBENZENE
10U	2-METHYLPHENOL
10U	2,2'-CHLOROISOPROPYLETHER
10U	(3-AND/OR 4-)METHYLPHENOL
10U	N-NITROSODI-N-PROPYLAMINE
10U	HEXACHLOROETHANE
10U	NITROBENZENE
10U	ISOPHORONE
10U	2-NITROPHENOL
10U	2,4-DIMETHYLPHENOL
10U	BIS(2-CHLOROETHOXY) METHANE
10U	2,4-DICHLOROPHENOL
10U	1,2,4 TRICHLOROBENZENE
10U	NAPHTHALENE
10U	4-CHLOROANILINE
10U	HEXACHLOROBUTADIENE
10U	4-CHLORO-3-METHYL PHENOL
10U	2 METHYLNAPHTHALENE
10U	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	2,4,6-TRICHLOROPHENOL
25U	2,4,5-TRICHLOROPHENOL
10U	2-CHLORONAPHTHALENE
25U	2-NITROANILINE
10U	DIMETHYL PHTHALATE
10U	ACENAPHTHYLENE
10U	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
25U	3-NITROANILINE
10U	ACENAPHTHENE
25U	2,4-DINITROPHENOL
25U	4-NITROPHENOL
10U	DIBENZOFURAN
10U	2,4-DINITROTOLUENE
10U	DIETHYL PHTHALATE
10U	4-CHLOROPHENYL PHENYL ETHER
10U	FLUORENE
25U	4-NITROANILINE
25U	2-METHYL-4,6-DINITROPHENOL
10U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	4-BROMOPHENYL PHENYL ETHER
10U	HEXACHLOROBENZENE (HCB)
25U	PENTACHLOROPHENOL
10U	PHENANTHRENE
10U	ANTHRACENE
10U	CARBAZOLE
10U	DI-N-BUTYLPHTHALATE
10U	FLUORANTHENE
10U	PYRENE
10U	BENZYL BUTYL PHTHALATE
10U	3,3' DICHLOROBENZIDINE
10U	BENZO(A)ANTHRACENE
10U	CHRYSENE
10U	BIS(2-ETHYLHEXYL) PHTHALATE
10U	DI-N-OCTYLPHTHALATE
10U	BENZO(B AND/OR K)FLUORANTHENE
10U	BENZO-A-PYRENE
10U	INDENO (1,2,3-CD) PYRENE
10U	DIBENZO(A,H)ANTHRACENE
10U	BENZO(GHI)PERYLENE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71240 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SD-04

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1030 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN54

UG/KG	ANALYTICAL RESULTS
26000U	PHENOL
26000U	BIS(2-CHLOROETHYL) ETHER
26000UJ	2-CHLOROPHENOL
26000U	1,3-DICHLOROBENZENE
26000U	1,4-DICHLOROBENZENE
26000U	1,2-DICHLOROBENZENE
26000U	2-METHYLPHENOL
26000U	2,2'-CHLOROISOPROPYLETHER
26000U	(3-AND/OR 4-)METHYLPHENOL
26000U	N-NITROSODI-N-PROPYLAMINE
26000U	HEXACHLOROETHANE
26000U	NITROBENZENE
26000U	ISOPHORONE
26000U	2-NITROPHENOL
26000U	2,4-DIMETHYLPHENOL
26000U	BIS(2-CHLOROETHOXY) METHANE
26000U	2,4-DICHLOROPHENOL
26000U	1,2,4 TRICHLOROBENZENE
26000U	NAPHTHALENE
26000U	4-CHLOROANILINE
26000U	HEXACHLOROBUTADIENE
26000U	4-CHLORO-3-METHYLPHENOL
26000U	2 METHYLNAPHTHALENE
26000U	HEXACHLOROCYCLOPENTADIENE (HCCP)
26000U	2,4,6-TRICHLOROPHENOL
67000U	2,4,5-TRICHLOROPHENOL
26000U	2-CHLORONAPHTHALENE
67000U	2-NITROANILINE
26000U	DIMETHYL PHTHALATE
26000U	ACENAPHTHYLENE
26000U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
67000U	3-NITROANILINE
26000UJ	ACENAPHTHENE
67000U	2,4-DINITROPHENOL
67000U	4-NITROPHENOL
26000U	DIBENZOFURAN
26000U	2,4-DINITROTOLUENE
26000U	DIETHYL PHTHALATE
26000U	4-CHLOROPHENYL PHENYL ETHER
26000U	FLUORENE
67000U	4-NITROANILINE
67000U	2-METHYL-4,6-DINITROPHENOL
26000U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
26000U	4-BROMOPHENYL PHENYL ETHER
26000U	HEXACHLOROBENZENE (HCB)
67000U	PENTACHLOROPHENOL
26000U	PHENANTHRENE
26000U	ANTHRACENE
26000U	CARBAZOLE
26000U	DI-N-BUTYLPHTHALATE
26000U	FLUORANTHENE
26000U	PYRENE
26000U	BENZYL BUTYL PHTHALATE
26000U	3,3' DICHLOROBENZIDINE
26000U	BENZO(A)ANTHRACENE
26000U	CHRYSENE
26000U	BIS(2-ETHYLHEXYL) PHTHALATE
26000U	DI-N-OCTYLPHTHALATE
26000U	BENZO(B AND/OR K)FLUORANTHENE
26000U	BENZO-A-PYRENE
26000U	INDENO (1,2,3-CD) PYRENE
26000U	DIBENZO(A,H)ANTHRACENE
26000U	BENZO(GHI)PERYLENE
66	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71241 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SD-03

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1145 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN55

UG/KG	ANALYTICAL RESULTS
130000U	PHENOL
130000U	BIS(2-CHLOROETHYL) ETHER
130000UJ	2-CHLOROPHENOL
130000U	1,3-DICHLOROBENZENE
130000U	1,4-DICHLOROBENZENE
130000U	1,2-DICHLOROBENZENE
22000J	2-METHYLPHENOL
130000U	2,2'-CHLOROISOPROPYLETHER
130000U	(3-AND/OR 4-)METHYLPHENOL
130000U	N-NITROSODI-N-PROPYLAMINE
130000U	HEXACHLOROETHANE
130000U	NITROBENZENE
130000U	ISOPHORONE
130000U	2-NITROPHENOL
130000U	2,4-DIMETHYLPHENOL
130000U	BIS(2-CHLOROETHOXY) METHANE
130000U	2,4-DICHLOROPHENOL
130000U	1,2,4-TRICHLOROBENZENE
130000U	NAPHTHALENE
130000U	4-CHLOROANILINE
130000U	HEXACHLOROBUTADIENE
130000U	4-CHLORO-3-METHYLPHENOL
130000U	2 METHYLNAPHTHALENE
130000U	HEXACHLOROCYCLOPENTADIENE (HCCP)
130000U	2,4,6-TRICHLOROPHENOL
330000U	2,4,5-TRICHLOROPHENOL
130000U	2-CHLORONAPHTHALENE
330000U	2-NITROANILINE
130000U	DIMETHYL PHTHALATE
130000U	ACENAPHTHYLENE
130000U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
330000U	3-NITROANILINE
130000UJ	ACENAPHTHENE
330000U	2,4-DINITROPHENOL
130000U	4-NITROPHENOL
130000U	DIBENZOFURAN
130000U	2,4-DINITROTOLUENE
130000U	DIETHYL PHTHALATE
130000U	4-CHLOROPHENYL PHENYL ETHER
130000U	FLUORENE
330000U	4-NITROANILINE
130000U	2-METHYL-4,6-DINITROPHENOL
130000U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
130000U	4-BROMOPHENYL PHENYL ETHER
130000U	HEXACHLOROBENZENE (HCB)
330000U	PENTACHLOROPHENOL
130000U	PHENANTHRENE
130000U	ANTHRACENE
130000U	CARBAZOLE
130000U	DI-N-BUTYLPHTHALATE
130000U	FLUORANTHENE
130000U	PYRENE
130000U	BENZYL BUTYL PHTHALATE
130000U	3,3' DICHLOROBENZIDINE
130000U	BENZO(A)ANTHRACENE
130000U	CHRYSENE
130000U	BIS(2-ETHYLHEXYL) PHTHALATE
130000U	DI-N-OCTYLPHTHALATE
130000U	BENZO(B AND/OR K)FLUORANTHENE
130000U	BENZO-A-PYRENE
130000U	INDENO (1,2,3-CD) PYRENE
130000U	DIBENZO(A,H)ANTHRACENE
130000U	BENZO(GHI)PERYLENE
25	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71242 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SS-04 COLLECTION START: 08/18/92 1010 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN56

UG/KG	ANALYTICAL RESULTS
660U	PHENOL
660U	BIS(2-CHLOROETHYL) ETHER
660UJ	2-CHLOROPHENOL
660U	1,3-DICHLOROBENZENE
660U	1,4-DICHLOROBENZENE
660U	1,2-DICHLOROBENZENE
660U	2-METHYLPHENOL
660U	2,2'-CHLOROISOPROPYLETHER
660U	(3-AND/OR 4-)METHYLPHENOL
660U	N-NITROSODI-N-PROPYLAMINE
660U	HEXACHLOROETHANE
660U	NITROBENZENE
660U	ISOPHORONE
660U	2-NITROPHENOL
660U	2,4-DIMETHYLPHENOL
660U	BIS(2-CHLOROETHOXY) METHANE
660U	2,4-DICHLOROPHENOL
660U	1,2,4-TRICHLOROBENZENE
660U	NAPHTHALENE
660U	4-CHLOROANILINE
660U	HEXACHLOROBUTADIENE
660U	4-CHLORO-3-METHYLPHENOL
660U	2-METHYLNAPHTHALENE
660U	HEXACHLOROCYCLOPENTADIENE (HCCP)
660U	2,4,6-TRICHLOROPHENOL
1600U	2,4,5-TRICHLOROPHENOL
660U	2-CHLORONAPHTHALENE
1600U	2-NITROANILINE
660U	DIMETHYL PHTHALATE
660U	ACENAPHTHYLENE
660U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1600U	3-NITROANILINE
660UJ	ACENAPHTHENE
1600U	2,4-DINITROPHENOL
1600U	4-NITROPHENOL
660U	DIBENZOFURAN
660U	2,4-DINITROTOLUENE
660U	DIETHYL PHTHALATE
660U	4-CHLOROPHENYL PHENYL ETHER
660U	FLUORENE
1600U	4-NITROANILINE
1600U	2-METHYL-4,6-DINITROPHENOL
660U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
660U	4-BROMOPHENYL PHENYL ETHER
660U	HEXACHLOROBENZENE (HCB)
1600U	PENTACHLOROPHENOL
660U	PHENANTHRENE
660U	ANTHRACENE
660U	CARBAZOLE
660U	DI-N-BUTYLPHTHALATE
660U	FLUORANTHENE
660U	PYRENE
660U	BENZYL BUTYL PHTHALATE
660U	3,3' DICHLOROBENZIDINE
660U	BENZO(A)ANTHRACENE
660U	CHRYSENE
660U	BIS(2-ETHYLHEXYL) PHTHALATE
660U	DI-N-OCTYLPHTHALATE
660U	BENZO(B AND/OR K)FLUORANTHENE
660U	BENZO-A-PYRENE
660U	INDENO (1,2,3-CD) PYRENE
660U	DIBENZO(A,H)ANTHRACENE
660U	BENZO(GHI)PERYLENE
1	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

** PROJECT NO. 92-0781 SAMPLE NO. 71243 SAMPLE TYPE: SOIL
** SOURCE: HERCULES, INC
** STATION ID: HI-SS-05
**
** CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1125 STOP: 00/00/00

D. NO.: DN57

UG/KG	ANALYTICAL RESULTS
390U	PHENOL
390U	BIS(2-CHLOROETHYL) ETHER
390UJ	2-CHLOROPHENOL
390U	1,3-DICHLOROBENZENE
390U	1,4-DICHLOROBENZENE
390U	1,2-DICHLOROBENZENE
390U	2-METHYLPHENOL
390U	2,2'-CHLOROISOPROPYLETHER
390U	(3-AND/OR 4-)METHYLPHENOL
390U	N-NITROSODI-N-PROPYLAMINE
390U	HEXACHLOROETHANE
390U	NITROBENZENE
390U	ISOPHORONE
390U	2-NITROPHENOL
390U	2,4-DIMETHYLPHENOL
390U	BIS(2-CHLOROETHOXY) METHANE
390U	2,4-DICHLOROPHENOL
390U	1,2,4-TRICHLOROBENZENE
390U	NAPHTHALENE
390U	4-CHLOROANILINE
390U	HEXACHLOROBUTADIENE
390U	4-CHLORO-3-METHYLPHENOL
390U	2-METHYLNAPHTHALENE
390U	HEXACHLOROCYCLOPENTADIENE (HCCP)
390U	2,4,6-TRICHLOROPHENOL
950U	2,4,5-TRICHLOROPHENOL
390U	2-CHLORONAPHTHALENE
950U	2-NITROANILINE
390U	DIMETHYL PHTHALATE
390U	ACENAPHTHYLENE
390U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
950U	3-NITROANILINE
390UJ	ACENAPHTHENE
950U	2,4-DINITROPHENOL
950U	4-NITROPHENOL
390U	DIBENZOFURAN
390U	2,4-DINITROTOLUENE
390U	DIETHYL PHTHALATE
390U	4-CHLOROPHENYL PHENYL ETHER
390U	FLUORENE
950U	4-NITROANILINE
950U	2-METHYL-4,6-DINITROPHENOL
390U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
390U	4-BROMOPHENYL PHENYL ETHER
390U	HEXACHLOROBENZENE (HCB)
950U	PENTACHLOROPHENOL
390U	PHENANTHRENE
390U	ANTHRACENE
390U	CARBAZOLE
390U	DI-N-BUTYLPHTHALATE
390U	FLUORANTHENE
390U	PYRENE
390U	BENZYL BUTYL PHTHALATE
390U	3,3' DICHLOROBENZIDINE
390U	BENZO(A)ANTHRACENE
390U	CHRYSENE
390U	BIS(2-ETHYLHEXYL) PHTHALATE
390U	DI-N-OCTYLPHTHALATE
390U	BENZO(B AND/OR K)FLUORANTHENE
390U	BENZO-A-PYRENE
390U	INDENO (1,2,3-CD) PYRENE
390U	DIBENZO(A,H)ANTHRACENE
390U	BENZO(GHI)PERYLENE
16	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71244 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SB-05

CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1145 STOP: 00/00/00

D. NO.: DN58

UG/KG	ANALYTICAL RESULTS
400U	PHENOL
400U	BIS(2-CHLOROETHYL) ETHER
400UJ	2-CHLOROPHENOL
400U	1,3-DICHLOROBENZENE
400U	1,4-DICHLOROBENZENE
400U	1,2-DICHLOROBENZENE
400U	2-METHYLPHENOL
400U	2,2'-CHLOROISOPROPYLETHER
400U	(3-AND/OR 4-)METHYLPHENOL
400U	N-NITROSODI-N-PROPYLAMINE
400U	HEXACHLOROETHANE
400U	NITROBENZENE
400U	ISOPHORONE
400U	2-NITROPHENOL
400U	2,4-DIMETHYLPHENOL
400U	BIS(2-CHLOROETHOXY) METHANE
400U	2,4-DICHLOROPHENOL
400U	1,2,4-TRICHLOROBENZENE
400U	NAPHTHALENE
400U	4-CHLOROANILINE
400U	HEXACHLOROBUTADIENE
400U	4-CHLORO-3-METHYLPHENOL
400U	2-METHYLNAPHTHALENE
400U	HEXACHLOROCYCLOPENTADIENE (HCCP)
400U	2,4,6-TRICHLOROPHENOL
970U	2,4,5-TRICHLOROPHENOL
400U	2-CHLORONAPHTHALENE
970U	2-NITROANILINE
400U	DIMETHYL PHTHALATE
400U	ACENAPHTHYLENE
400U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
970U	3-NITROANILINE
400UJ	ACENAPHTHENE
970U	2,4-DINITROPHENOL
970U	4-NITROPHENOL
400U	DIBENZOFURAN
400U	2,4-DINITROTOLUENE
400U	DIETHYL PHTHALATE
400U	4-CHLOROPHENYL PHENYL ETHER
400U	FLUORENE
970U	4-NITROANILINE
970U	2-METHYL-4,6-DINITROPHENOL
400U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
400U	4-BROMOPHENYL PHENYL ETHER
400U	HEXACHLOROBENZENE (HCB)
970U	PENTACHLOROPHENOL
400U	PHENANTHRENE
400U	ANTHRACENE
400U	CARBAZOLE
400U	DI-N-BUTYLPHTHALATE
400U	FLUORANTHENE
400U	PYRENE
400U	BENZYL BUTYL PHTHALATE
400U	3,3'-DICHLOROBENZIDINE
400U	BENZO(A)ANTHRACENE
400U	CHRYSENE
400U	BIS(2-ETHYLHEXYL) PHTHALATE
400U	DI-N-OCTYLPHTHALATE
400U	BENZO(B AND/OR K)FLUORANTHENE
400U	BENZO-A-PYRENE
400U	INDENO (1,2,3-CD) PYRENE
400U	DIBENZO(A,H)ANTHRACENE
400U	BENZO(GHI)PERYLENE
18	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

EXTRACTABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71250 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-TB-01 COLLECTION START: 08/18/92 0720 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN51

UG/L	ANALYTICAL RESULTS
10U	PHENOL
10U	BIS(2-CHLOROETHYL) ETHER
10U	2-CHLOROPHENOL
10U	1,3-DICHLOROBENZENE
10U	1,4-DICHLOROBENZENE
10U	1,2-DICHLOROBENZENE
10U	2-METHYLPHENOL
10U	2,2'-CHLOROISOPROPYLETHER
10U	(3-AND/OR 4-)METHYLPHENOL
10U	N-NITROSODI-N-PROPYLAMINE
10U	HEXACHLOROETHANE
10U	NITROBENZENE
10U	ISOPHORONE
10U	2-NITROPHENOL
10U	2,4-DIMETHYLPHENOL
10U	BIS(2-CHLOROETHOXY) METHANE
10U	2,4-DICHLOROPHENOL
10U	1,2,4 TRICHLOROBENZENE
10U	NAPHTHALENE
10U	4-CHLOROANILINE
10U	HEXACHLOROBUTADIENE
10U	4-CHLORO-3-METHYLPHENOL
10U	2 METHYLNAPHTHALENE
10U	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	2,4,6-TRICHLOROPHENOL
25U	2,4,5-TRICHLOROPHENOL
10U	2-CHLORONAPHTHALENE
25U	2-NITROANILINE
10U	DIMETHYL PHTHALATE
10U	ACENAPHTHYLENE
10U	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
25U	3-NITROANILINE
10U	ACENAPHTHENE
25U	2,4-DINITROPHENOL
25U	4-NITROPHENOL
10U	DIBENZOFURAN
10U	2,4-DINITROTOLUENE
10U	DIETHYL PHTHALATE
10U	4-CHLOROPHENYL PHENYL ETHER
10U	FLUORENE
25U	4-NITROANILINE
25U	2-METHYL-4,6-DINITROPHENOL
10U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	4-BROMOPHENYL PHENYL ETHER
10U	HEXACHLOROBENZENE (HCB)
25U	PENTACHLOROPHENOL
10U	PHENANTHRENE
10U	ANTHRACENE
10U	CARBAZOLE
10U	DI-N-BUTYLPHTHALATE
10U	FLUORANTHENE
10U	PYRENE
10U	BENZYL BUTYL PHTHALATE
10U	3,3' DICHLOROBENZIDINE
10U	BENZO(A)ANTHRACENE
10U	CHRYSENE
10U	BIS(2-ETHYLHEXYL) PHTHALATE
10U	DI-N-OCTYLPHTHALATE
10U	BENZO(B AND/OR K)FLUORANTHENE
10U	BENZO-A-PYRENE
10U	INDENO (1,2,3-CD) PYRENE
10U	DIBENZO(A,H)ANTHRACENE
10U	BENZO(GHI)PERYLENE

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71239 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SW-02 COLLECTION START: 08/18/92 0940 STOP: 00/00/00
CASE.NO.: 18613 SAS NO.: D. NO.: DN53 MD NO: DN53

ANALYTICAL RESULTS UG/L

100J	4 UNIDENTIFIED COMPOUNDS
N	PETROLEUM PRODUCT

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71240 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SD-04 COLLECTION START: 08/18/92 1030 STOP: 00/00/00
CASE.NO.: 18613 SAS NO.: D. NO.: DN54 MD NO: DN54

ANALYTICAL RESULTS UG/KG

N	PETROLEUM PRODUCT
4000000J	20 UNIDENTIFIED COMPOUNDS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 92-0781	SAMPLE NO. 71241	SAMPLE TYPE: SOIL	PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC			CITY: HATTIESBUR ST: MS
STATION ID: HI-SD-03			COLLECTION START: 08/18/92 1145 STOP: 00/00/00
CASE.NO.: 18613	SAS NO.:		D. NO.: DN55 MD NO: DN55

ANALYTICAL RESULTS UG/KG

6000000J	15 UNIDENTIFIED COMPOUNDS
1+E06JN	PHOSPHORODITHIOIC ACID, DIETHYLESTER
1+E06JN	BIPHENYL

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71242 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SS-04 COLLECTION START: 08/18/92 1010 STOP: 00/00/00
CASE.NO.: 18613 SAS NO.: D. NO.: DN56 MD NO: DN56

ANALYTICAL RESULTS UG/KG

N	PETROLEUM PRODUCT
200000J	20 UNIDENTIFIED COMPOUNDS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71243 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SS-05
CASE.NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1125 STOP: 00/00/00
D. NO.: DN57 MD NO: DN57

ANALYTICAL RESULTS UG/KG

400J 1 UNIDENTIFIED COMPOUND

FOOTNOTES
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV
Environmental Services Division
College Station Road, Athens, Ga. 30613

*****MEMORANDUM******

DATE: 09/30/92

SUBJECT: Results of Pesticide/PCB Analysis:
92-0781 HERCULES, INC
HATTIESBUR MS
CASE NO: 18613

FROM: Robert W. Knight
Chief, Laboratory Evaluation/Quality Assurance Section

TO: JOE SLYKERMAN

Attached are the results of analysis of samples collected as part of the subject project.

As a result of the Quality Assurance Review, certain data qualifiers may have been placed on the data. Attached is a DATA QUALIFIER REPORT which explains the reasons that these qualifiers were required.

If you have any questions please contact me.

ATTACHMENT

ORGANIC DATA QUALIFIER REPORT

Case Number 18613 Project Number 92-0781 SAS Number
Site ID. Hercules, Inc., Hattiesburg, MS.

Affected Samples	Compound or Fraction	Flag Used	Reason
Volatiles			
71240	styrene	J	<quantitation limit
	xylenes	J	<quantitation limit
71242	chloroform	J	<quantitation limit
Extractables			
all soil samples	2-chlorophenol	J	low blind spike recovery
	acenaphthene	J	low blind spike recoveru
71241	1,2-dichlorobenzene	J	<quantitation limit
Pesticides			
none			

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71238 SAMPLE TYPE: SURFACEWA
SOURCE: HERCULES, INC
STATION ID: HI-SW-01
CASE NUMBER: 18613 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 0910 STOP: 00/00/00
D. NUMBER: DN52

UG/L	ANALYTICAL RESULTS
0.050U	ALPHA-BHC
0.050U	BETA-BHC
0.050U	DELTA-BHC
0.050U	GAMMA-BHC (LINDANE)
0.050U	HEPTACHLOR
0.050U	ALDRIN
0.050U	HEPTACHLOR EPOXIDE
0.050U	ENDOSULFAN I (ALPHA)
0.10U	DIELDRIN
0.10U	4,4'-DDE (P,P'-DDE)
0.10U	ENDRIN
0.10U	ENDOSULFAN II (BETA)
0.10U	4,4'-DDD (P,P'-DDD)
0.10U	ENDOSULFAN SULFATE
0.10U	4,4'-DDT (P,P'-DDT)

UG/L	ANALYTICAL RESULTS
0.50U	METHOXYCHLOR
0.10U	ENDRIN KETONE
0.10U	ENDRIN ALDEHYDE
--	CHLORDANE (TECH. MIXTURE) /1
0.050U	GAMMA-CHLORDANE /2
0.050U	ALPHA-CHLORDANE /2
5.0U	TOXAPHENE
1.0U	PCB-1016 (AROCLOR 1016)
2.0U	PCB-1221 (AROCLOR 1221)
1.0U	PCB-1232 (AROCLOR 1232)
1.0U	PCB-1242 (AROCLOR 1242)
1.0U	PCB-1248 (AROCLOR 1248)
1.0U	PCB-1254 (AROCLOR 1254)
1.0U	PCB-1260 (AROCLOR 1260)

REMARKS

REMARKS

FOOTNOTES
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*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71239 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SW-02 COLLECTION START: 08/18/92 0940 STOP: 00/00/00
CASE NUMBER: 18613 SAS NUMBER: D. NUMBER: DN53

UG/L	ANALYTICAL RESULTS
0.050U	ALPHA-BHC
0.050U	BETA-BHC
0.050U	DELTA-BHC
0.050U	GAMMA-BHC (LINDANE)
0.050U	HEPTACHLOR
0.050U	ALDRIN
0.050U	HEPTACHLOR EPOXIDE
0.050U	ENDOSULFAN I (ALPHA)
0.10U	DIELDRIN
0.10U	4,4'-DDE (P,P'-DDE)
0.10U	ENDRIN
0.10U	ENDOSULFAN II (BETA)
0.10U	4,4'-DDD (P,P'-DDD)
0.10U	ENDOSULFAN SULFATE
0.10U	4,4'-DDT (P,P'-DDT)

UG/L	ANALYTICAL RESULTS
0.50U	METHOXYCHLOR
0.10U	ENDRIN KETONE
0.10U	ENDRIN ALDEHYDE
--	CHLORDANE (TECH. MIXTURE) /1
0.050U	GAMMA-CHLORDANE /2
0.050U	ALPHA-CHLORDANE /2
5.0U	TOXAPHENE
1.0U	PCB-1016 (AROCLOR 1016)
2.0U	PCB-1221 (AROCLOR 1221)
1.0U	PCB-1232 (AROCLOR 1232)
1.0U	PCB-1242 (AROCLOR 1242)
1.0U	PCB-1248 (AROCLOR 1248)
1.0U	PCB-1254 (AROCLOR 1254)
1.0U	PCB-1260 (AROCLOR 1260)

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71240 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SD-04
CASE NUMBER: 18613 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1030 STOP: 00/00/00
D. NUMBER: DN54

UG/KG	ANALYTICAL RESULTS		UG/KG	ANALYTICAL RESULTS
5.0U	ALPHA-BHC		50U	METHOXYCHLOR
5.0U	BETA-BHC		9.7U	ENDRIN KETONE
5.0U	DELTA-BHC		9.7U	ENDRIN ALDEHYDE
5.0U	GAMMA-BHC (LINDANE)	--		CHLORDANE (TECH. MIXTURE) /1
5.0U	HEPTACHLOR		5.0U	GAMMA-CHLORDANE /2
5.0U	ALDRIN		9.0U	ALPHA-CHLORDANE /2
5.0U	HEPTACHLOR EPOXIDE		500U	TOXAPHENE
5.0U	ENDOSULFAN I (ALPHA)		97U	PCB-1016 (AROCLOR 1016)
9.7U	DIELDRIN		200U	PCB-1221 (AROCLOR 1221)
9.7U	4,4'-DDE (P,P'-DDE)		97U	PCB-1232 (AROCLOR 1232)
9.7U	ENDRIN		97U	PCB-1242 (AROCLOR 1242)
9.7U	ENDOSULFAN II (BETA)		97U	PCB-1248 (AROCLOR 1248)
9.7U	4,4'-DDD (P,P'-DDD)		97U	PCB-1254 (AROCLOR 1254)
9.7U	ENDOSULFAN SULFATE		97U	PCB-1260 (AROCLOR 1260)
20U	4,4'-DDT (P,P'-DDT)		66	PERCENT MOISTURE

REMARKS
WATER MISCIBLE PHASE-94.4% :0.08U MG/KG MERCURY

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71241 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SD-03
CASE NUMBER: 18613 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1145 STOP: 00/00/00
D. NUMBER: DN55

UG/KG	ANALYTICAL RESULTS
220U	ALPHA-BHC
220U	BETA-BHC
220U	DELTA-BHC
220U	GAMMA-BHC (LINDANE)
220U	HEPTACHLOR
220U	ALDRIN
220U	HEPTACHLOR EPOXIDE
220U	ENDOSULFAN I (ALPHA)
440U	DIELDRIN
440U	4,4'-DDE (P,P'-DDE)
440U	ENDRIN
440U	ENDOSULFAN II (BETA)
440U	4,4'-DDD (P,P'-DDD)
440U	ENDOSULFAN SULFATE
440U	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
2200U	METHOXYCHLOR
440U	ENDRIN KETONE
440U	ENDRIN ALDEHYDE
--	CHLORDANE (TECH. MIXTURE) /1
220U	GAMMA-CHLORDANE /2
220U	ALPHA-CHLORDANE /2
22000U	TOXAPHENE
4400U	PCB-1016 (AROCLOR 1016)
8900U	PCB-1221 (AROCLOR 1221)
4400U	PCB-1232 (AROCLOR 1232)
4400U	PCB-1242 (AROCLOR 1242)
4400U	PCB-1248 (AROCLOR 1248)
4400U	PCB-1254 (AROCLOR 1254)
4400U	PCB-1260 (AROCLOR 1260)
25	PERCENT MOISTURE

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71242 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SS-04
CASE NUMBER: 18613 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1010 STOP: 00/00/00
D. NUMBER: DN56

UG/KG	ANALYTICAL RESULTS		UG/KG	ANALYTICAL RESULTS	
1.7U	ALPHA-BHC		17U	METHOXYCHLOR	
1.7U	BETA-BHC		3.3U	ENDRIN KETONE	
1.7U	DELTA-BHC		3.3U	ENDRIN ALDEHYDE	
1.7U	GAMMA-BHC (LINDANE)	--		CHLORDANE (TECH. MIXTURE)	/1
1.7U	HEPTACHLOR		1.7U	GAMMA-CHLORDANE	/2
1.7U	ALDRIN		1.7U	ALPHA-CHLORDANE	/2
1.7U	HEPTACHLOR EPOXIDE		170U	TOXAPHENE	
1.7U	ENDOSULFAN I (ALPHA)		33U	PCB-1016 (AROCLOR 1016)	
3.3U	DIELDRIN		67U	PCB-1221 (AROCLOR 1221)	
3.3U	4,4'-DDE (P,P'-DDE)		33U	PCB-1232 (AROCLOR 1232)	
3.3U	ENDRIN		33U	PCB-1242 (AROCLOR 1242)	
3.3U	ENDOSULFAN II (BETA)		33U	PCB-1248 (AROCLOR 1248)	
3.3U	4,4'-DDD (P,P'-DDD)		33U	PCB-1254 (AROCLOR 1254)	
3.3U	ENDOSULFAN SULFATE		33U	PCB-1260 (AROCLOR 1260)	
3.3U	4,4'-DDT (P,P'-DDT)		1	PERCENT MOISTURE	

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71243 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SS-05
CASE NUMBER: 18613 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1125 STOP: 00/00/00
D. NUMBER: DN57

UG/KG	ANALYTICAL RESULTS		UG/KG	ANALYTICAL RESULTS
2.0U	ALPHA-BHC		20U	METHOXYCHLOR
2.0U	BETA-BHC		3.9U	ENDRIN KETONE
2.0U	DELTA-BHC		3.9U	ENDRIN ALDEHYDE
2.0U	GAMMA-BHC (LINDANE)	--		CHLORDANE (TECH. MIXTURE) /1
2.0U	HEPTACHLOR		2.0U	GAMMA-CHLORDANE /2
2.0U	ALDRIN		2.0U	ALPHA-CHLORDANE /2
2.0U	HEPTACHLOR EPOXIDE		200U	TOXAPHENE
2.0U	ENDOSULFAN I (ALPHA)		39U	PCB-1016 (AROCLOR 1016)
3.9U	DIELDRIN		79U	PCB-1221 (AROCLOR 1221)
3.9U	4,4'-DDE (P,P'-DDE)		39U	PCB-1232 (AROCLOR 1232)
3.9U	ENDRIN		39U	PCB-1242 (AROCLOR 1242)
3.9U	ENDOSULFAN II (BETA)		39U	PCB-1248 (AROCLOR 1248)
3.9U	4,4'-DDD (P,P'-DDD)		39U	PCB-1254 (AROCLOR 1254)
3.9U	ENDOSULFAN SULFATE		39U	PCB-1260 (AROCLOR 1260)
3.9U	4,4'-DDT (P,P'-DDT)		16	PERCENT MOISTURE

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71244 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SB-05 COLLECTION START: 08/18/92 1145 STOP: 00/00/00
CASE NUMBER: 18613 SAS NUMBER: D. NUMBER: DN58

UG/KG	ANALYTICAL RESULTS
2.1U	ALPHA-BHC
2.1U	BETA-BHC
2.1U	DELTA-BHC
2.1U	GAMMA-BHC (LINDANE)
2.1U	HEPTACHLOR
2.1U	ALDRIN
2.1U	HEPTACHLOR EPOXIDE
2.1U	ENDOSULFAN I (ALPHA)
4.1U	DIELDRIN
4.1U	4,4'-DDE (P,P'-DDE)
4.1U	ENDRIN
4.1U	ENDOSULFAN II (BETA)
4.1U	4,4'-DDD (P,P'-DDD)
4.1U	ENDOSULFAN SULFATE
4.1U	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
21U	METHOXYCHLOR
4.1U	ENDRIN KETONE
4.1U	ENDRIN ALDEHYDE
--	CHLORDANE (TECH. MIXTURE) /1
2.1U	GAMMA-CHLORDANE /2
2.1U	ALPHA-CHLORDANE /2
210U	TOXAPHENE
41U	PCB-1016 (AROCLOR 1016)
82U	PCB-1221 (AROCLOR 1221)
41U	PCB-1232 (AROCLOR 1232)
41U	PCB-1242 (AROCLOR 1242)
41U	PCB-1248 (AROCLOR 1248)
41U	PCB-1254 (AROCLOR 1254)
41U	PCB-1260 (AROCLOR 1260)
19	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71250 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-TB-01 COLLECTION START: 08/18/92 0720 STOP: 00/00/00
CASE NUMBER: 18613 SAS NUMBER: D. NUMBER: DN51

UG/L	ANALYTICAL RESULTS
0.050U	ALPHA-BHC
0.050U	BETA-BHC
0.050U	DELTA-BHC
0.050U	GAMMA-BHC (LINDANE)
0.050U	HEPTACHLOR
0.050U	ALDRIN
0.050U	HEPTACHLOR EPOXIDE
0.050U	ENDOSULFAN I (ALPHA)
0.10U	DIELDRIN
0.10U	4,4'-DDE (P,P'-DDE)
0.10U	ENDRIN
0.10U	ENDOSULFAN II (BETA)
0.10U	4,4'-DDD (P,P'-DDD)
0.10U	ENDOSULFAN SULFATE
0.10U	4,4'-DDT (P,P'-DDT)

UG/L	ANALYTICAL RESULTS
0.50U	METHOXYCHLOR
0.10U	ENDRIN KETONE
0.10U	ENDRIN ALDEHYDE
--	CHLORDANE (TECH. MIXTURE) /1
0.050U	GAMMA-CHLORDANE /2
0.050U	ALPHA-CHLORDANE /2
5.0U	TOXAPHENE
1.0U	PCB-1016 (AROCLOR 1016)
2.0U	PCB-1221 (AROCLOR 1221)
1.0U	PCB-1232 (AROCLOR 1232)
1.0U	PCB-1242 (AROCLOR 1242)
1.0U	PCB-1248 (AROCLOR 1248)
1.0U	PCB-1254 (AROCLOR 1254)
1.0U	PCB-1260 (AROCLOR 1260)

FOOTNOTES
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV
Environmental Services Division
College Station Road, Athens, Ga. 30613

*****MEMORANDUM******

DATE: 09/30/92

SUBJECT: Results of Purgeable Organic Analysis;
92-0781 HERCULES, INC
HATTIESBUR MS
CASE NO: 18613

FROM: Robert W. Knight
Chief, Laboratory Evaluation/Quality Assurance Section

TO: JOE SLYKERMAN

Attached are the results of analysis of samples collected as part of the subject project.

As a result of the Quality Assurance Review, certain data qualifiers may have been placed on the data. Attached is a DATA QUALIFIER REPORT which explains the reasons that these qualifiers were required.

If you have any questions please contact me.

ATTACHMENT

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71243 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SS-05

CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1125 STOP: 00/00/00

D. NO.: DN57

UG/KG	ANALYTICAL RESULTS
12U	CHLOROMETHANE
12U	BROMOMETHANE
12U	VINYL CHLORIDE
12U	CHLOROETHANE
12U	METHYLENE CHLORIDE
12U	ACETONE
12U	CARBON DISULFIDE
12U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
12U	1,1-DICHLOROETHANE
12U	1,2-DICHLOROETHENE (TOTAL)
12U	CHLOROFORM
12U	1,2-DICHLOROETHANE
12U	METHYL ETHYL KETONE
12U	1,1,1-TRICHLOROETHANE
12U	CARBON TETRACHLORIDE
12U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
12U	1,2-DICHLOROPROPANE
12U	CIS-1,3-DICHLOROPROPENE
12U	TRICHLOROETHENE(TRICHLOROETHYLENE)
12U	DIBROMOCHLOROMETHANE
12U	1,1,2-TRICHLOROETHANE
12U	BENZENE
12U	TRANS-1,3-DICHLOROPROPENE
12U	BROMOFORM
12U	METHYL ISOBUTYL KETONE
12U	METHYL BUTYL KETONE
12U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
12U	1,1,2,2-TETRACHLOROETHANE
12U	TOLUENE
12U	CHLOROBENZENE
12U	ETHYL BENZENE
12U	STYRENE
12U	TOTAL XYLENES
16	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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ORGANIC DATA QUALIFIER REPORT

Case Number 18613 Project Number 92-0781 SAS Number
Site ID. Hercules, Inc., Hattiesburg, MS.

Affected Samples	Compound or Fraction	Flag Used	Reason
Volatiles			
71240	styrene	J	<quantitation limit
	xylenes	J	<quantitation limit
71242	chloroform	J	<quantitation limit
Extractables			
all soil samples	2-chlorophenol	J	low blind spike recovery
	acenaphthene	J	low blind spike recoveru
71241	1,2-dichlorobenzene	J	<quantitation limit
Pesticides			
none			

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71238 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SW-01 COLLECTION START: 08/18/92 0910 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN52

UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE
10U	BROMOMETHANE
10U	VINYL CHLORIDE
10U	CHLOROETHANE
10U	METHYLENE CHLORIDE
10U	ACETONE
10U	CARBON DISULFIDE
10U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
10U	1,1-DICHLOROETHANE
10U	1,2-DICHLOROETHENE (TOTAL)
10U	CHLOROFORM
10U	1,2-DICHLOROETHANE
10U	METHYL ETHYL KETONE
10U	1,1,1-TRICHLOROETHANE
10U	CARBON TETRACHLORIDE
10U	BROMODICHLOROMETHANE

UG/L	ANALYTICAL RESULTS
10U	1,2-DICHLOROPROPANE
10U	CIS-1,3-DICHLOROPROPENE
10U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	DIBROMOCHLOROMETHANE
10U	1,1,2-TRICHLOROETHANE
10U	BENZENE
10U	TRANS-1,3-DICHLOROPROPENE
10U	BROMOFORM
10U	METHYL ISOBUTYL KETONE
10U	METHYL BUTYL KETONE
10U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
10U	1,1,2,2-TETRACHLOROETHANE
10U	TOLUENE
10U	CHLOROBENZENE
10U	ETHYL BENZENE
10U	STYRENE
10U	TOTAL XYLENES

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71239 SAMPLE TYPE: SURFACEWA
SOURCE: HERCULES, INC
STATION ID: HI-SW-02

CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 0940 STOP: 00/00/00

D. NO.: DN53

UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE
10U	BROMOMETHANE
10U	VINYL CHLORIDE
10U	CHLOROETHANE
10U	METHYLENE CHLORIDE
10U	ACETONE
10U	CARBON DISULFIDE
10U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
10U	1,1-DICHLOROETHANE
10U	1,2-DICHLOROETHENE (TOTAL)
10U	CHLOROFORM
10U	1,2-DICHLOROETHANE
10U	METHYL ETHYL KETONE
10U	1,1,1-TRICHLOROETHANE
10U	CARBON TETRACHLORIDE
10U	BROMODICHLOROMETHANE

UG/L	ANALYTICAL RESULTS
10U	1,2-DICHLOROPROPANE
10U	CIS-1,3-DICHLOROPROPENE
10U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	DIBROMOCHLOROMETHANE
10U	1,1,2-TRICHLOROETHANE
10U	BENZENE
10U	TRANS-1,3-DICHLOROPROPENE
10U	BROMOFORM
10U	METHYL ISOBUTYL KETONE
10U	METHYL BUTYL KETONE
10U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
10U	1,1,2,2-TETRACHLOROETHANE
10U	TOLUENE
10U	CHLOROBENZENE
10U	ETHYL BENZENE
10U	STYRENE
10U	TOTAL XYLENES

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71240 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SD-04

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1030 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN54

UG/KG	ANALYTICAL RESULTS
150U	CHLOROMETHANE
150U	BROMOMETHANE
150U	VINYL CHLORIDE
150U	CHLOROETHANE
150U	METHYLENE CHLORIDE
7100U	ACETONE
150U	CARBON DISULFIDE
150U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
150U	1,1-DICHLOROETHANE
150U	1,2-DICHLOROETHENE (TOTAL)
150U	CHLOROFORM
150U	1,2-DICHLOROETHANE
470	METHYL ETHYL KETONE
150U	1,1,1-TRICHLOROETHANE
150U	CARBON TETRACHLORIDE
150U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
150U	1,2-DICHLOROPROPANE
150U	CIS-1,3-DICHLOROPROPENE
150U	TRICHLOROETHENE(TRICHLOROETHYLENE)
150U	DIBROMOCHLOROMETHANE
150U	1,1,2-TRICHLOROETHANE
180	BENZENE
150U	TRANS-1,3-DICHLOROPROPENE
150U	BROMOFORM
230U	METHYL ISOBUTYL KETONE
150U	METHYL BUTYL KETONE
150U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
150U	1,1,2,2-TETRACHLOROETHANE
14000	TOLUENE
150U	CHLOROBENZENE
150U	ETHYL BENZENE
15J	STYRENE
21J	TOTAL XYLENES
66	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71241 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SD-03

CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1145 STOP: 00/00/00

D. NO.: DN55

UG/KG	ANALYTICAL RESULTS
1600000U	CHLOROMETHANE
1600000U	BROMOMETHANE
1600000U	VINYL CHLORIDE
1600000U	CHLOROETHANE
1600000U	METHYLENE CHLORIDE
1600000U	ACETONE
1600000U	CARBON DISULFIDE
1600000U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
1600000U	1,1-DICHLOROETHANE
1600000U	1,2-DICHLOROETHENE (TOTAL)
1600000U	CHLOROFORM
1600000U	1,2-DICHLOROETHANE
1600000U	METHYL ETHYL KETONE
1600000U	1,1,1-TRICHLOROETHANE
1600000U	CARBON TETRACHLORIDE
1600000U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
1600000U	1,2-DICHLOROPROPANE
1600000U	CIS-1,3-DICHLOROPROPENE
1600000U	TRICHLOROETHENE(TRICHLOROETHYLENE)
1600000U	DIBROMOCHLOROMETHANE
1600000U	1,1,2-TRICHLOROETHANE
1600000U	BENZENE
1600000U	TRANS-1,3-DICHLOROPROPENE
1600000U	BROMOFORM
1600000U	METHYL ISOBUTYL KETONE
1600000U	METHYL BUTYL KETONE
1600000U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
1600000U	1,1,2,2-TETRACHLOROETHANE
18000000	TOLUENE
1600000U	CHLOROBENZENE
1600000U	ETHYL BENZENE
1600000U	STYRENE
1600000U	TOTAL XYLENES
25	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71242 SAMPLE TYPE: SOIL
SOURCE: HERCULES, INC
STATION ID: HI-SS-04

CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 1010 STOP: 00/00/00

D. NO.: DN56

UG/KG	ANALYTICAL RESULTS
10U	CHLOROMETHANE
10U	BROMOMETHANE
10U	VINYL CHLORIDE
10U	CHLOROETHANE
10U	METHYLENE CHLORIDE
30U	ACETONE
10U	CARBON DISULFIDE
10U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
10U	1,1-DICHLOROETHANE
10U	1,2-DICHLOROETHENE (TOTAL)
2J	CHLOROFORM
10U	1,2-DICHLOROETHANE
10U	METHYL ETHYL KETONE
10U	1,1,1-TRICHLOROETHANE
10U	CARBON TETRACHLORIDE
10U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
10U	1,2-DICHLOROPROPANE
10U	CIS-1,3-DICHLOROPROPENE
10U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	DIBROMOCHLOROMETHANE
10U	1,1,2-TRICHLOROETHANE
10U	BENZENE
10U	TRANS-1,3-DICHLOROPROPENE
10U	BROMOFORM
10U	METHYL ISOBUTYL KETONE
10U	METHYL BUTYL KETONE
10U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
10U	1,1,2,2-TETRACHLOROETHANE
11	TOLUENE
10U	CHLOROBENZENE
10U	ETHYL BENZENE
10U	STYRENE
10U	TOTAL XYLENES
1	PERCENT MOISTURE

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71250 SAMPLE TYPE: SURFACEWA
SOURCE: HERCULES, INC
STATION ID: HI-TB-01

CASE NO.: 18613 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R JORDAN
CITY: HATTIESBUR ST: MS
COLLECTION START: 08/18/92 0720 STOP: 00/00/00

D. NO.: DN51

UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE
10U	BROMOMETHANE
10U	VINYL CHLORIDE
10U	CHLOROETHANE
10U	METHYLENE CHLORIDE
30U	ACETONE
10U	CARBON DISULFIDE
10U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
10U	1,1-DICHLOROETHANE
10U	1,2-DICHLOROETHENE (TOTAL)
10U	CHLOROFORM
10U	1,2-DICHLOROETHANE
10U	METHYL ETHYL KETONE
10U	1,1,1-TRICHLOROETHANE
10U	CARBON TETRACHLORIDE
10U	BROMODICHLOROMETHANE

UG/L	ANALYTICAL RESULTS
10U	1,2-DICHLOROPROPANE
10U	CIS-1,3-DICHLOROPROPENE
10U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	DIBROMOCHLOROMETHANE
10U	1,1,2-TRICHLOROETHANE
10U	BENZENE
10U	TRANS-1,3-DICHLOROPROPENE
10U	BROMOFORM
10U	METHYL ISOBUTYL KETONE
10U	METHYL BUTYL KETONE
10U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
10U	1,1,2,2-TETRACHLOROETHANE
10U	TOLUENE
10U	CHLOROBENZENE
10U	ETHYL BENZENE
10U	STYRENE
10U	TOTAL XYLENES

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71244 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SB-05 COLLECTION START: 08/18/92 1145 STOP: 00/00/00

CASE NO.: 18613 SAS NO.: D. NO.: DN58

UG/KG	ANALYTICAL RESULTS
12U	CHLOROMETHANE
12U	BROMOMETHANE
12U	VINYL CHLORIDE
12U	CHLOROETHANE
12U	METHYLENE CHLORIDE
12U	ACETONE
12U	CARBON DISULFIDE
12U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
12U	1,1-DICHLOROETHANE
12U	1,2-DICHLOROETHENE (TOTAL)
12U	CHLOROFORM
12U	1,2-DICHLOROETHANE
12U	METHYL ETHYL KETONE
12U	1,1,1-TRICHLOROETHANE
12U	CARBON TETRACHLORIDE
12U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
12U	1,2-DICHLOROPROPANE
12U	CIS-1,3-DICHLOROPROPENE
12U	TRICHLOROETHENE(TRICHLOROETHYLENE)
12U	DIBROMOCHLOROMETHANE
12U	1,1,2-TRICHLOROETHANE
12U	BENZENE
12U	TRANS-1,3-DICHLOROPROPENE
12U	BROMOFORM
12U	METHYL ISOBUTYL KETONE
12U	METHYL BUTYL KETONE
12U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
12U	1,1,2,2-TETRACHLOROETHANE
12U	TOLUENE
12U	CHLOROBENZENE
12U	ETHYL BENZENE
12U	STYRENE
12U	TOTAL XYLENES
18	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS PURGEABLE ORGANICS - DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71240 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SD-04 COLLECTION START: 08/18/92 1030 STOP: 00/00/00
CASE.NO.: 18613 SAS NO.: D. NO.: DN54 MD NO: DN54

ANALYTICAL RESULTS UG/KG

100JN	CARENE
400JN	DIMETHYLMETHYLENEBICYCLOHEPTANE
3000JN	MENTHANE (2 ISOMERS)
500JN	TRIMETHYLBICYCLOHEPTANE
8000JN	METHYL(METHYLETHYL)CYCLOHEXANE
30000JN	METHYL(METHYLETHYL)BENZENE

FOOTNOTES
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*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/29/92

MISCELLANEOUS PURGEABLE ORGANICS - DATA REPORT

PROJECT NO. 92-0781 SAMPLE NO. 71241 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R JORDAN
SOURCE: HERCULES, INC CITY: HATTIESBUR ST: MS
STATION ID: HI-SD-03 COLLECTION START: 08/18/92 1145 STOP: 00/00/00
CASE.NO.: 18613 SAS NO.: D. NO.: DN55 MD NO: DN55

ANALYTICAL RESULTS UG/KG

8+E06JN	CYCLOHEXANE
1+E06JN	CAMPHENE
2+E07JN	MENTHANE
6+E06JN	METHYL(METHYLETHYL)CYCLOHEXANE
2+E06JN	METHYL(METHYLETHYL)BENZENE
2+E07JN	3 UNIDENTIFIED COMPOUNDS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.