Since 1948

Mixon Brothers Wood Preserving, Inc.
P.O. Box 327
Idabel, OK 74745
Phone: (580) 286-9494

May 15, 2024

CERTIFIED MAIL

RECEIVED
MAY 17 2024
LAND PROTECTION DIVISION
DEPT. OF ENVIRON. QLTY

Ms. Kelly Dixon, Division Director
Land Protection Division
Oklahoma Department of Environmental Quality
707 North Robinson, P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

Dear Adrian Simmons:

Please find enclosed some of the material we talked about on 04/30/2024. Please let me know if these answers the questions for the appropriate N.O.D. sections. We are working on the other sections and will forward them to you as soon as we get them completed

If you have any questions, or comments, please call me at (580) 286-9494.

Thanks,

Bob Mixon

Bob Mixon

cc: Mr. Jerry J. Black

NOD
#5

RCRA C urface Impound aste Pile, Revision II

Black and Associates Environmental Consultants, Inc.

RCRA CLOSURE PLAN
FOR SURFACE IMPOUNDMENTS AND WASTE PILE
REVISION II
MIXON BROTHERS WOOD PRESERVING, INC.
IDABEL, OKLAHOMA

1.0 INTRODUCTION

Mixon Brothers Wood Preserving, Inc. (Mixon) operates a wood preserving facility near Idabel, Oklahoma, (Facility) which in the past has generated a listed hazardous waste. This waste is stored in three (3) surface impoundments and one waste pile. Mixon desires to close these impoundments under the Oklahoma Rules and Regulations for Controlled Industrial Waste. All waste sludges, and contaminated soil in the unsaturated zone associated with the impoundments, to the extent possible, will be consolidated into one of the impoundments and all three (3) impoundments will be closed as landfills. Waste stored in the waste pile will be biologically decontaminated in-place as allowed by 40 CFR § 265.258 (b), stabilized and closed in-place. A cap will be placed over the decontaminated waste pile residue and unsaturated zone soils impacted by the waste pile.

On December 18, 1985, Mixon received a Warning Letter from the Oklahoma State Department of Health (OSDH) which officially informed the company of the need to prepare a closure plan and required that such a submittal be made within 30 days of receipt of the letter. Waste characterization and preliminary field investigation activities had already been initiated by Mixon prior to receipt of the letter. Mixon submitted the required closure plan to OSDH on January 17, 1986, in compliance with the Warning Letter.

In October, 1986, Mixon received a Complaint, Compliance Order, and Notice of Opportunity for Hearing, Docket Number RCRA VI-657-H (Order) from the U.S. Environmental Protection Agency (EPA) which required Mixon to submit additional technical information regarding the Facility and to revise the closure plan which was previously submitted. Included with the order were comments regarding the closure plan, some of which were prepared by OSDH and some by EPA. Subsequently, a meeting was held between Mixon and representatives of EPA to discuss these comments and the terms of the Order. Mixon indicated and EPA concurred that the comments were ambiguous and conflicting. EPA directed Mixon to develop the technical information required by the Order and agreed to provide Mixon with revised comments regarding the closure plan at a later date. Since that time, Mixon has developed technical information required by the Order including: 1) Interim Status Compliance documentation; 2) Waste Characterization Assessment Report; and 3) Technical Investigation Plan Implementation.

A revised closure plan was prepared and submitted to the EPA on June 10, 1988. The plan was based on verbal comments from the EPA and the above listed technical information developed under direction of EPA, but without official written comments by the agency. EPA did, however, inform Mixon by letter (4) that the agency had determined that it is feasible to perform the type of closure proposed at this Facility.

That document discussed the Facility conditions, proposed closure scenario, schedule, and associated closure costs with respect to the Facility's RCRA impoundments.

On December 30, 1991, Mixon was issued a Consent Agreement and Final Order (CA/FO) from EPA requiring, among other things, a revised closure plan. The CA/FO states that "The revised closure plan shall include, in addition to the information previously submitted, a post-closure plan and financial assurance documentation in compliance with 40 CFR Subparts G and H, but not including 40 CFR § 265.147, and shall include revisions to the previously-submitted closure plan to reflect the necessary modifications to plans for closure of the impoundments, for disposal of the waste pile, and to the groundwater monitoring as discussed by the Respondent and EPA." A letter from EPA to Mixon's attorney on February 13, 1991, summarizes these discussions between EPA and the Respondent.

The revised closure plan presented herein has been prepared based on the CA/FO and EPA comments presented in the February 13, 1991, letter. The significant revisions include the development of the wastepile closure plan and post-closure plan and the inclusion of the financial assurance documentation. Mixon now seeks approval from the OSDH and EPA to close the impoundments and waste pile as described herein.

The specific requests that the EPA asked Mixon to address are listed below with the Section of the report that addresses the issue also listed:

1. The June, 1988 Closure Plan proposed a Land Treatment Demonstration to close the Waste Pile. The EPA requested this be removed from the Closure Plan and the Waste Pile residue be removed and incinerated.

   Response: The Land Treatment Demonstration reference was removed. As an alternative, in-place biological decontamination of waste pile residue, as allowed in 40 CFR 265.258 (b), is addressed in Section 6.1, 6.8, and 6.9.

2. The June, 1988 Closure Plan proposed on-site stabilization of surface impoundments as a single unit. Mixon agreed to review process relationship of the three (3) impoundments and present information diagrammatically and in supporting narrative of Figure 2.4 to explain how the three (3) impoundments were connected.

   Response: The explanation of the three (3) impoundments' physical connection is given in Section 2.2. No change was made to Figure 2.4 due to the fact that the figure is a simple schematic and does not show the relationship of the three (3) impoundments in the process. The narrative explains the relationship sufficiently.

3. The EPA requested a downgradient monitoring well be installed northeast of Impoundment #1.

   Response: This monitoring well was installed in January, 1992.

4. The EPA requested two (2) additional soil borings to be provided.

   Response: The additional soil borings will be incorporated in the Groundwater Assessment Plan that accompanies this report.

1.1 Applicability Of Regulations

The Facility has not previously, nor does it presently store, treat, or dispose of hazardous waste in or by the following:

- Containers
- Tanks
- Incinerators
- Landfills
- Land Treatment

Therefore, the specific information requirement for these processes in 40 CFR 265 are Not Applicable to the Facility.

Surface impoundments and waste piles represent the only processes at the Facility which have been utilized for hazardous waste management. Active use of the surface impoundments for receiving hazardous waste and waste in general, ceased in 1984.

As indicated in the 1986 Order and stated by EPA representatives in meetings with Mixon, interim status regulations provided in 40 CFR Part 265 governing closure and post-closure of the impoundments and waste pile are considered applicable to these activities at the Mixon Facility.

2.0 FACILITY DESCRIPTION

2.1 Location

The Mixon Facility is located northwest of Idabel, Oklahoma off of U.S. Highway 70. The legal description of the Facility location is included in Appendix F. Figure 2.1 depicts the site location. Topographic features of the area surrounding the Facility are presented in Figure 2.2.

2.2 Operations

The plant has been in operation at this location since 1964, and maintains 20-25 employees during normal operations. The primary products produced are treated fence posts.

Past operational practice included use of an oil-based pentachlorophenol or creosote to replace the natural moisture in the wood, thus producing a wastewater in the process. The primary contaminants of this wastewater were pentachlorophenols (PCP's), creosote, as well as tar resins and natural organics found in wood. This wastewater was placed in a settling impoundment (Impoundment #2) for settlement of suspended solids and oil/water separation. Water resulting from the completion of this process was then transferred into an evaporation (Impoundment #3) impoundment for volume reduction. In addition to these impoundments, another impoundment (Impoundment #1) was used as a holding area for make-up water in the cooling tower operation.

Water from the holding impoundment was pumped to the top of the cooling tower and allowed to gravity flow through the cooling tower and back into the holding impoundment. The cooling tower was used to cool air in the cylinders when placing the cylinders under vacuum. Past operations allowed for the transfer of fluids from one impoundment to another via pumping. This transfer of fluids occurred from the north to the south (from Impoundment #1 to Impoundment #2 to Impoundment #3).

In the west/central portion of the Facility is a waste pile in which used motor oil taken from company equipment was disposed. Analytical data indicates that some PCP contaminated materials are also present in this area. Figure 2.3 presents the layout of the Facility and depicts the location of the impoundments and the waste pile.

The bottom sediment sludges in the impoundments and the waste pile materials contain listed hazardous wastes as defined by 40 CFR 261 which have an EPA hazardous waste number designation K001.

2.3 Operation Improvements

As stated, in Section 2.2, the preserving process used by Mixon included the use of an oil based pentachlorophenol. This mixture replaced the natural moisture in the wood. In order to accomplish this, the untreated wood was heated by steam, under pressure. After a sufficient time, pressure and temperature had been reached, the entire system was placed under a negative pressure in order to facilitate the removal of the steam, water, sap, and tar resins in the wood.

Since this entire process took place in the same vessel, the result was an excess of water contaminated with PCP, tar resins, and other organic compounds. The impoundments which are now to be closed were used to contain this excess liquid. Figure 2.4 is a flow diagram of this process.

In order to cease generation of the excess fluids, the process was altered. The new treatment process involves the same equipment and the use of a water-based PCP. In this process, the wood is allowed to dry before being treated. The water-based treatment chemical mixes with (rather than replaces) the moisture in the wood. The result of this operation is a negative water balance from the process. Water from the cooler blowdown operation is placed in a holding tank and recycled back into the cooler operation thus eliminating the need for impoundments. Figure 2.5 is a flow diagram of this presently used process.

3.0 WASTE CHARACTERIZATION

3.1 Objectives

During the period of June, 1985 to January, 1986, and February, 1987, field investigations were conducted at the Facility. The objective of these investigations was to develop information about the site's wastes sufficient to characterize the total volume of sludge on-site which potentially is subject to closure management.

3.2 Initial Waste Characterization Activities (June, 1985 -January, 1986)

3.2.1 Impoundment Sludge Sampling

On November 27, 1985, measurements were taken of liquid and sludge depth in each impoundment. Additionally, representative samples were extracted in order to perform the waste characterization task.

Representative, composite samples of the waste impoundment sludges were taken using a sampling method similar to that found in SW 846, Method No. 1.44 (1). A description of sampling procedures is provided below. Table 3.1 presents the list of the parameters for which the waste samples were analyzed. Some of these compounds are found in 40 CFR Part 261 as the primary hazardous constituents which may be associated with K001 wastes. Each impoundment was divided into approximate quarter sections. A 1-1/2 inch steel tube was pushed through liquid and sludge contents until it was plugged with soil at the bottom of the impoundment.

In order to obtain representative samples, twelve (12) aliquots of sludge were extracted from each impoundment, three (3) from each quadrant. The quadrant samples were taken at roughly equal distances apart around the perimeter. A heavy-duty fork lift was used with an attached wooden beam and sampling platform to support the sampling technician over the edge of the impoundments. The twelve (12) columnar push tube samples of sludge and liquid were composited to yield one sample which was considered to be representative of the sludge in each impoundment. Push tubes were decontaminated between ponds by washing with water and rinsing with liquid contents of the next pond to be sampled.

Since these samples were composited from numerous locations at each impoundment, and used for preliminary evaluation only, sample locations are not depicted on any of the drawings.

3.2.2 Waste Pile Sampling

The waste pile area was sampled on two (2) occasions. The first sampling was completed in June of 1985. The area was staked off and measured to be roughly ninety feet by ninety feet. This area was divided into three equal portions. Three (3) random surface samples were taken from each portion (one from each side and one from the middle) and an additional sample was taken from the center of the area for a total of ten samples taken. These samples were composited into one sample which was analyzed for reactivity, corrosivity, ignitability and EP-toxicity. Since this was a composite sample from the entire area taken for preliminary evaluation only, the sample is not located on any of the drawings. Appendix D contains a copy of the results of this analysis as well as a copy of analytical results of previously collected OSDH samples. No PCP was indicated to be present in the OSDH samples.

More recent analytical results provided by the OSDH have indicated that PCP is present in this waste material. In light of this information, a second sampling event was performed on December 31, 1985 to estimate the extent of contamination in this area. Due to the short time frame allowed by OSDH in which to develop the closure plan, a quantitative analysis was not performed on the soil sampled at that time. Soil samples were observed for oil contamination and it was assumed this oil could contain PCP.

During the December, 1985 field investigation, five (5) sampling locations were selected based upon their relative locations and surface appearance. Three (3) of these locations were along the south side of the area and two (2) were along the north side. These sampling locations were excavated to a total depth of

6.5 feet and the soil was examined along the sides of the excavation to determine the presence of any oil contamination. Oil contamination was observed at a depth of four (4) feet in all of these excavations. Since analytical data was not produced from these samples, they are not located on any of the drawings.

Appendix D-3 contains a copy of the OSDH laboratory's analytical results of samples collected from this area during an inspection conducted on September 15, 1985.

3.2.3 Analytical Methodology

All waste samples were preserved and analyzed according to SW-846 (1). Appendix A-1 cites the particular analytical procedures which were used and the source of those procedures. Chain of custody procedures were observed. The sampler kept possession of all samples until they were placed on a bus for transportation to the Enviromed Laboratories in Ruston, LA. A preprinted label supplied by the lab was filled out and attached to each sample. The lab certifies that quality control procedures used were in accordance with EPA guidelines found in SW-846 and these procedures were described in previously submitted documents. (2,3)

3.2.4 Analytical Results

Table 3.2 provides a list of the parameters and concentrations from analysis of the waste characterization samples. Actual laboratory reports are included in Appendix D-1 and D-2 of this document.

3.3 <u>Supplemental Waste Characterization Activities (February, 1987)</u>

This comprehensive waste characterization assessment was planned and conducted to supplement the initial waste characterization data. The objective of this investigation was to develop information about the site wastes sufficient to:

1. Characterize the chemical and physical nature of the wastes.
2. Provide an updated estimate of the total volume of wastes on-site which are subject to closure management.

These activities are described in Section 3.3.1. No further assessment regarding potentially contaminated soils was performed as a part of this investigation. The EPA and Mixon agreed that soil contamination and background soil constituents could be assessed by implementing a Site Boring Plan, to be prepared for submittal to the EPA on March 31, 1987.

A sampling strategy was developed which conforms with guidelines provided in SW-846 (1). This strategy was discussed with EPA prior to implementation.

EPA approved of the strategy with minor revisions and the investigation was initiated on February 9, 1987.

3.3.1 Assessment Plan

3.3.1.1 Sampling Locations and Strategy

Existing information regarding the characteristics of the impoundments and waste pile materials was considered and random selection of the sample sites was selected as the sampling approach for all the waste units.

<u>Impoundment Samples</u>

All potential sample locations are defined relative to a grid system established for each of the impoundments. The systems are depicted in the Waste Characterization Assessment Report (Report) (2) in Figures 3, 4 and 5 for Impoundments 1, 2 and 3 respectively, and are based on approximately 10 foot grid dimensions. The total number of assessment grids within each system was as follows:

Impoundment	No. of Grids
No. 1	10
No. 2	4
No. 3	18

All potential assessment grids were numbered sequentially beginning with the southwest corner of each impoundment. Within a grid, the sample site location is defined to be the grid center or nearest accessible point. At each sample site location, the entire sediment profile was sampled. All sample locations had sludge depths of less than three (3) feet, so only one sample representing the entire sediment profile was required for each selected grid, as planned and discussed in meetings between Mixon and EPA.

Some existing data were available to estimate expected statistical variation for the purpose of estimating the required number of samples. A total of ten (10) sample sites from the three (3) impoundments were randomly selected, or 25%. The selected sample number was judged to likely be sufficient to develop contaminant concentration information which will be representative of the impoundment sediments and allow an 80% confidence level determination as required in EPA's SW-846 (1). The randomly selected grids were as follows (see Figures 3, 4, and 5 in the Report (2)):

IMPOUNDMENT	GRID IDENTIFICATION NO.
No. 1	3,5, & 10
No. 2	2 & 4
No. 3	3,6,8,13 & 17

The randomly obtained samples from each of these grids were individually tested. No compositing of samples was allowed. This sample site selection methodology is consistent with guidance provided in SW-846 (1) and according to discussions with EPA.

Waste Pile Samples

Random samples were taken from the waste pile using a grid system similar to that prepared for the impoundments. The total number of potential assessment grids was 10, each with approximate dimensions of 5'x 5'. A total of three (3) grids were selected for sampling, or more than 25% of the total number of potential assessment grids. As shown on Figure 6 of the Report (2), the grids selected for sampling were numbers 3, 5, and 8.

3.3.1.2 Sample Analysis

All samples were analyzed for the parameters listed in Table 3.3 by the referenced methodology.

3.3.1.3 Containers

Sample containers used were wide mouth glass jars equipped with teflon lined lids. The containers were purchased precleaned. Once the samples were placed in the containers, the lids were tightened and taped to ensure they would not be loosened during shipment. All containers were affixed with an appropriate label.

3.3.1.4 Laboratory

The analyses were performed by Enviromed Laboratories, Inc. of Ruston, LA. QA/QC information for the laboratory is presented in Appendix D of the Report (2).

3.3.2 Field Investigation

3.3.2.1 Implementation

The sampling plan was implemented on February 9, 1987. The field work was performed by Mr. Mark Fuchs of RSA. The team arrived at the Site at about 4:30 p.m. on February 8, and began to prepare for sampling on the following morning. Initially the impoundment and waste pile areas were measured and staked according to the grid maps provided as Figure 3, 4, 5 and 6 of the Report (2).

3.3.2.2 Sample Collection and Shipment

Field notes are included in Appendix A of the Report (2) which describe each sample location. Sample identification codes correspond to the grid numbers.

Descriptions of the sampling efforts at the individual waste units are provided in the following subsections.

3.3.2.3 Impoundment Sample Collection

At each sampled grid, stainless steel tubes were driven manually through the sediment layer and into the soil below in order to plug the end of the tubes to obtain a core sample of the entire sediment profile. The entire profile of sediment was sampled at each site. Sludge depth in all sample locations was less than three (3) feet. Average sludge thickness is estimated to be about 22 inches throughout No. 1, 23 inches in Impoundment No. 2, two (2) inches in Impoundment No. 3.

Individual samples obtained from each site were composited by thoroughly mixing in a cleaned stainless steel bowl before sample containers were filled. All sampling equipment was decontaminated between each sampling location. The following steps comprised the decontamination procedure used for this sampling event:

1. Wash with high pressure steam and soap.
2. Wash with tap water and low phosphate soap.
3. Rinse with tap water.
4. Rinse with distilled water.

5. Rinse with acetone.

6. Rinse with hexane.

7. Rinse with distilled water.

8. Rinse with 0.1 normal HC1.

9. Rinse with distilled water.

3.3.2.4 Waste Pile Sample Collection

Samples were taken from the waste pile area with the use of a back-hoe excavator and hand trowels. Using this equipment a vertical cut was made at each sample location.

One side of each cut was then scraped clean with hand trowels. A sample was then taken by trenching the entire side of each cut and collecting the soil from these trenches. The approximate dimensions of these trenches were 1" x 1" x the depth of the cut. Individual samples taken from each sample location were composited by thorough mixing in a cleaned stainless steel bowl before sample containers were filled. The waste pile materials were less than three (3) feet in thickness at each sampling location.

3.3.2.5 Custody Control

Chain-of-custody control documentation for each sample was maintained. Completed Forms 1.4 and 1.6 are provided in Appendix B of the Report (2).

The custody form was initiated by the sampling team and signed by the receiving laboratory.

3.3.2.6 Shipment

The sample containers were placed in an ice chest and packed with plastic bubble wrap and styrofoam chips. Containerized ice was added and the chest was sealed and taped shut. The samples were delivered to the laboratory by overnight carrier service.

3.3.3 Analytic Results and Statistical Analysis

The samples were collected in accordance with objectives and procedures outlined in Section 3.1 and 3.3.2. The laboratory analysis report and the chain of custody sheets are presented in Appendices A and B of the Report (2) respectively. QA/QC information for the analyses is also provided in Appendix A of the Report (2) including: 1) Analyst's discussion of methods and results; 2) Trip blank sample results; and 3) Duplicate and spike recovery report forms.

The analytical test results are summarized in Table 3.4. Further data analysis was performed by segregating the data relative to the waste management units and calculating the following statistics for each parameter data set:

N: Number of sample analyses.

X: Mean parameter concentration.

SD: Sample standard deviation.

R: Range (maximum to minimum values).

The above statistics are summarized in Tables 4 through 19 of the Report (2).

3.3.4 Data Interpretation

The analytical results of the supplemental waste characterization investigation are consistent with previous site investigations. Measurable concentrations of PCP and base neutral organics were found to be present in the impoundment waste sludges and waste pile material. These constituents are indicative of the RCRA wastes managed previously at the Site. In the impoundments, higher concentrations of these constituents were generally found in the Impoundment No. 2 sludges and this is consistent with the sequence of waste management operations in the past. This relationship is graphically depicted in Figure 3.1 for pentachlorophenol.

Additionally, the investigation characterized metal concentrations in the wastes. This has not been done previously. The data indicated that of the RCRA hazardous metals assessed only chromium was consistently present at elevated concentrations in all waste management units. Additionally, measurable mercury and cadmium concentrations were found to be present in the

Impoundment No. 2 sludge and the waste pile material. Elevated concentrations of non-RCRA metals, copper, nickel and zinc were detected in all unit wastes.

3.3.5 Summary of Conclusions

The waste characterization study objectives were all obtained. Rigid QA/QC procedures (2) were followed by the laboratory performing the chemical analyses. The waste sludges in all units have been characterized adequately as requested by EPA. The characterization results are consistent with previous site investigations. Additionally, metal concentrations in the site wastes were determined. This information is sufficient to assess the viability of the closure plan recommended.

These data provide a basis for selecting indicator test parameters to be utilized in the soil and groundwater assessment plans submitted to EPA in a separate document. The following indicator parameters are recommended for all units:

Pentachlorophenol (PCP)

Base Neutral Organics

Chromium

In addition, mercury will be assessed in waste pile soil samples.

3.4 Waste Volume Estimates

The information obtained from the most recent field investigation provides the basis for the waste volume estimates presented in this section. A summary of the waste volumes (excluding contaminated soil) by location is provided below. Unit locations are provided in Figure 2.3. As indicated below, the total waste volume is estimated to be 126 cubic yards. This total consists of 103 cubic yards of sludge in the impoundments, and 23 cubic yards of waste material in the waste pile. Contaminated soil volume is addressed in Section 6.0.

Unit	Surface Area	Estimated Waste
Impoundment No. 1	930 sq ft	62 yd^3
Impoundment No. 2	400 sq ft	28 yd^3
Impoundment No. 3	2100 sq ft	13 yd^3
Waste Pile	250 sq ft	23 yd^3

4.0 CONTAMINATED SOIL ASSESSMENT PROGRAM

4.1 Introduction

At the Mixon site, three (3) surface impoundments and one waste pile has been utilized to manage RCRA hazardous waste. The location of the impoundments and the waste pile is shown in Figure 4.1 and Drawing No. 1. Previous soils investigations (November, 1985) by RSA indicated that soils adjacent to these waste management units had been affected by the operation of these units.

RSA prepared a "Technical Investigation Plan" (3) in March, 1987 (revised in August, 1987) to assess the extent to which soils adjacent to the three (3) impoundments and the waste pile have been affected by past waste management operations. This "Plan" was implemented in October, 1987.

4.2 Soil Assessment Plan (October, 1987)

The objective of the Soil Assessment Plan was to establish the extent to which the soils adjacent to the three (3) impoundments and the waste pile had been affected by past waste management operations. Lateral and vertical boundaries were established for the affected soils in the unsaturated zone. The indicator parameters (IP) identified in Table 4.1 provided the analytical basis for the assessment.

A grid system for the impoundment area and a grid system for the waste pile area was established for defining a random sampling program. The grid systems are depicted on Drawing No. 4 and are based on approximately twenty (20) foot grid dimensions. Boundaries for the grid systems were established using rationale based on impoundment operation practices, surface slope conditions, field observations, drainage features and previous investigations. Peripheral sample sites adjacent to each of the boundaries were assessed to help confirm the boundary line locations.

The two (2) grid systems resulted in defining 62 and 25 potential sampling grids for the impoundment and waste pile areas respectively. Grids at the surface impoundments which are not accessible were excluded. The grid sampling point was defined to be the grid center or nearest accessible point.

Fifteen (15) percent of the grids were sampled. As a result, ten (10) and four (4) grids were randomly selected for sampling in the impoundment and waste pile grid systems respectively. A computer driven random number generator program was utilized for selecting the grids to be sampled. This number of grids sampling points was adequate to achieve the assessment objectives. The total area of the two grid systems is equivalent to a square with dimensions of only 185 feet by 185 feet.

At a minimum, each randomly selected grid site was continuously sampled to a depth of (6) feet. Samples were obtained by advancing a CME continuous tube sample device (5 foot long) through hollow-stem augers. Each retrieved soil core was inspected for visual signs of contamination from waste operations. If contamination was visually observed, a Threshold Contamination Depth (TCD) was then determined. The TCD is the deepest depth at which contamination can be visually confirmed in the core sample. If the total soil profile that appears to be effected above the TCD is greater than or equal to two (2) feet, then three (3) six (6) inch segments from each two (2) foot section of the affected profile were composited into separate samples for analysis. These segments were obtained generally from the top, middle and bottom portion of the effected two (2) foot zone. Otherwise, one (1) six (6) inch segment from the most visually affected area of the less than two (2) foot sections was composited for analysis. Additionally, one six (6) inch segment from the profile directly below the TCD was composited for analysis. Sampling was completed to a depth of at least two (2) feet below the TCD or six (6) feet whichever was greater. If no contamination was visually observed in the sample profile of the grid sites, the zero to six (6) inch depth zone was composited for analysis.

After the grid system samples were obtained, additional sample sites were established at approximately the mid point of each grid system boundary and at a background site near previously installed observation well PZ-3 (see Drawing No.1 for location). This defined nine (9) additional sampling sites. The boundary sites and background site are depicted in Drawing No. 1. The purpose of the background site sampling points was to establish the chemical and physical properties of soils unaffected by Facility operations; therefore, no contamination is expected in the background soil profile. The background site was sampled the same as the grid sites as explained in the previous paragraph, but the TCD was considered to be at the five (5) foot - six (6) inch depth (greater than 2 feet). The boundary and background soil sampling sites were also analyzed for the same parameters listed in Table 4.1.

A detailed borehole log was prepared for each grid, background, and boundary sample site. The borehole logs are presented in Appendix E. Each borehole log documents the soil properties in accordance with ASTM D-2488 procedures for visual classification. Each sample recovered from the borehole was identified on the log as well as the method of recovery. All sections of the soil profile visually determined to be affected by contamination were documented.

The selected contamination indicator parameters and analytical methods are presented in Table 4.1. The indicator parameters selected were based upon the results of the waste characterization study presented in Section 3.0.

Enviromed Laboratories, Baton Rouge, Louisiana, performed all contaminant characterization analytical work.

Undisturbed soil samples from impoundment grid sites BH-6 and BH-55, waste pile grid site W-24, and the background site (BG-1A) were obtained for physical characterization tests. The number of samples obtained for characterization from each site were determined in the field by identifying and sampling each different soil series type present in the bore hole profile based on visual classification. The objective was to characterize all different soil series types encountered in the field investigation. Each sample obtained was tested in a soils laboratory to establish soil classification in accordance with the Unified Soil Classification (USC) System (ASTM D 2487). The USC system test included determination of particle size distribution and Atterberg limits.

Additionally, an undisturbed soil core sample from just below the TCD, or at the four (4) foot depth for sites with no visual contamination, was obtained from these same specified sites for permeability testing and USC classification. The undisturbed samples were obtained by shelby tube sampling methods. The core was left in the shelby tube, trimmed, sealed with wax and shipped directly to the soils testing laboratory. Permeability was determined in accordance with ASTM 479 "Suggested Method of Test for Coefficient of Permeability of Soils with Values Less Than One Foot per Day." All physical soil tests were performed by the Law Engineering Testing Company, 5500 Guhn Road, Houston, Texas, 77040. All downhole sampling equipment used in the collection of the soil characterization samples was thoroughly cleaned prior to use within an individual borehole and between boreholes. All CME continuous tube samplers were steam cleaned following each sample collection event within an individual borehole and between boreholes. All downhole sampling equipment was steam cleaned between borehole locations. The drilling rig and associated equipment was thoroughly steam cleaned prior to starting drilling operations. The drill rig was steam cleaned periodically during the course of the soil sampling program at the direction of the site geologist.

A rigid QA/QC program was followed by site personnel involved in the drilling, soil sampling operations and laboratory testing. The QA/QC procedures are documented in the "Technical Investigation Plan" (3) which was submitted to EPA (and subsequently approved by EPA) in August, 1987. The QA/QC procedures outlined in the "Technical Investigation Plan" included collecting duplicate samples and preparing field and trip blanks.

4.3 Soil Assessment Results

4.3.1 Waste Pile Area

The soil assessment program conducted in the waste pile area consisted of drilling eight (8) soil borings to depths of between 6.0 to 7.2 feet on October 21, 1987. The soil boring locations selected for drilling were grid sites (refer to Drawing No. 4) 3, 6, 11, 13, 15 (2 sites), 23 and 24. A detailed map showing the locations at the waste pile soil borings is presented in Figure 4.2. A summary of the soil boring drilling details (date drilled, depth drilled, ground elevation, and groundwater observations) for these eight (8) waste pile borings is presented in Table 4.2.

Soil samples collected from the eight (8) waste pile borings were visually examined for signs of contamination in the soil matrix. Based upon the soil compositing criteria presented in Section 4.2, selected soil sample intervals were then composited for analytical testing. Table 4.3 summarizes the depth intervals where visual impact was observed, the intervals composited for chemical analysis, and soil intervals for physical characterization tests on all of the waste pile soil sample locations.

The composited soil samples from the waste pile area were analyzed for total chromium, mercury, and base neutral extractable organic compounds. Table

4.4 summarizes the total chromium and mercury analytical results for selected sample intervals from the soil boring in the waste pile area. Referring to Table 4.4, the total chromium varied from a high of 56.7 mg/kg in boring W-6 to a low of 19.4 mg/kg in boring W15B. Background total chromium values ranged from 13.5 to 23.7 mg/kg. Mercury was not detected in any of the soil samples. The total chromium values on soil samples from the waste pile area have been plotted on Figure 4.3 to show the chromium distribution with soil depth. Inspection of this diagram indicates that there appears to be a slight increase in total chromium over background values for the first one (1) foot of soil in the waste pile area. Below one (1) foot, the observed values are at or near background value.

Base neutral extractable organic compounds were also measured on selected soil cores from the waste pile area. A summary of the base neutral extractable organics detected in soil samples from the waste pile area is shown in Table 4.5. Several base neutral compounds were detected in many of the soil samples from the waste pile area. Pentachlorophenol was selected as being a representative indicator parameter from the base neutral extractable organic list to further evaluate the extent of impact to soils at the site. Referring to Figure 4.4, a fence diagram has been prepared for the waste pile area showing the vertical and areal extent of pentachlorophenol found in the soils. The areal extent of pentachlorophenol impacted soil zones greater than one (1) foot in depth is also shown in Figure 4.2. The distribution of pentachlorophenol with depth for soil samples collected from the waste pile area is shown in Figure 4.5. Generally, the extent of pentachlorophenol impact to soils in the waste pile area is less than 4 feet vertically. The base neutral extractable organic analyses and the total chromium and mercury analyses are presented in Appendix D-4.

Another method used to evaluate the extent of organic impacts to subsurface soils in the waste pile area was through the use of a soil gas survey on soils collected from each boring. An HNU photoionization detector was used to measure headspace volatile hydrocarbon gases on soil samples from each boring which were generally composited in 2-foot intervals. A summary of the HNU soil gas readings are presented in Table 4.6.

4.3.2 Impoundment Area

On October 19 and 20, 1988, fourteen (14) soil assessment borings were drilled adjacent to the surface impoundment area. The location of these fourteen (14) borings are shown on Drawing 1 and Figure 4.6. The drilling details (date drilled, depth drilled, ground elevation and groundwater observations) for these fourteen (14) borings are presented in Table 4.2.

Soil samples collected from the fourteen (14) impoundment area borings were examined for signs of visual contamination in the soil matrix. Based upon the soil compositing criteria presented in Section 4.2, selected soil sample intervals were then composited for analytical testing. Table 4.3 summarizes the depth intervals where visual impact was observed, the intervals composited for chemical analyses, and the soil intervals for physical characterization tests.

The composited soil samples from the impoundment area were analyzed for total chromium and base neutral extractable organic compounds. Table 4.4 summarizes the total chromium analytical results for selected soil samples from the impoundment area. Referring to Table 4.4, the total chromium varied from a high of 31.5 mg/kg in boring BH-60B to a low of 7.5 mg/kg for BH-59. Background chromium values ranged from 13.5 to 23.7 mg/kg. Mercury was not analyzed in the impoundment area samples. The total chromium values for soil samples from the impoundment area have been plotted in Figure 4.7 to show the chromium distribution with soil depth. Inspection of this diagram indicates that there is a generally slight increase in total chromium over background values for the first two (2) feet of soil in the impoundment area.

Base neutral extractable organic compounds were also measured on selected soil cores from the impoundment area. A summary of the base neutral extractable organics detected in soil samples from the impoundment area is shown in Table 4.5. Several base neutral compounds were detected in the soil samples from the impoundment area. Pentachlorophenol was selected as being a representative contamination indicator parameter from the base neutral extractable organics list to further evaluate the extent of impact to soils at the site. Referring to Figure 4.8, a fence diagram has been prepared for the impoundment area showing the vertical and areal extent of pentachlorophenol found in the soils. The greatest vertical extent of pentachlorophenol impact to subsurface soils is found adjacent to Impoundment No. 2. Except for areas adjacent to Impoundment No. 2, the vertical extent of pentachlorophenol impact appears to be restricted to the upper three (3) feet of soil in the remaining impoundment area. The distribution of pentachlorophenol with depth, as shown in Figure 4.9, also shows that the majority of pentachlorophenol impacted soils occur within 3-feet of the ground surface. Boring BH-32 was the only soil boring where pentachlorophenol was detected vertically in the soil profile past a depth of three (3) feet. Figure 4.6 shows the areal extent of pentachlorophenol impacted soil zone of 0 to 2.0 feet and greater than 2.0 feet in vertical profile. The base neutral extractable organic analyses and the total chromium and mercury analyses are presented in Appendix D-4.

Another method that was used to evaluate the extent of organic impacts to subsurface soils in the impoundment area was through the use of a soil gas survey on soils collected from each boring. A HNU photoionization detector was used to measure headspace volatile hydrocarbon gases on soils collected from each boring which were generally composited in 2-foot intervals. A summary of the HNU soil gas readings are presented in Table 4.6.

4.3.3 Background Area

Soil samples were collected from a background area near observation well PZ-3. The purpose of the background soil boring was to define natural chemical characteristics of soils unaffected by site activities. The location of the background soil sample boring (BG-1) is shown on Drawing No. 1.

Soil Boring BG-1 was sampled continuously to a depth of six (6) feet. Composited soil samples from this boring were collected from the following intervals: 0 to 0.5', 0 to 2.0', 2.0' to 4.0', and 4.0' to 6.0'. These sample intervals were analyzed for total chromium and base neutral extractable organic compounds. Information and analytical test data for boring BG-1 are presented in Tables 4.2 through 4.6. The soils analytical data from this boring were used for comparison with soil samples from the impoundment and waste pile areas to determine the extent of impact. The boring log for BG-1 is presented in Appendix E. The base neutral extractable organic analyses and the total chromium and mercury analyses for this boring are presented in Appendix D-4.

4.4 Soil Physical Characterization Tests

Soil samples were collected from four (4) of the soil boring locations (BH-6, BH-55, W-24, and BG-1A) for physical characterization tests. The objective for conducting the physical characterization tests were to define each type of soil material present in the subsurface at the site.

The physical characterization tests conducted on soil samples (upper six feet) from boring BH-6, BH-55, W-24, and BG-1A were: moisture content, dry density, vertical permeability, Atterberg limits, Unified Soils Classification, grain size distribution and hydrometer analysis. The physical characterization test results are summarized in Table 4.7. The physical soil characterization report is presented in Appendix D-6.

Referring to Table 4.7, all soil samples are classified as CL or CL-ML under the Unified Soil Classification system. All of the soil samples were either sandy silty clays, sandy silts, or sandy clayey silts. The vertical permeabilities of these samples ranged from a high of 3.6×10^{-9} cm/sec to a low of 8.6×10^{-10} cm/sec. These permeabilities are very low and indicate that the potential for waste migration through the soil matrix is minimal.

There were no major physical differences in soil samples collected from the background area over those collected from the waste pile or impoundment area.

This suggests that operations in the waste pile and impoundment areas have not affected the physical properties of the soils. Further, these results indicate that the physical properties of the shallow soils (upper six feet) is nearly constant over the site.

5.0 HYDROGEOLOGY

5.1 Introduction

The Mixon Brothers Wood Preserving Facility is located northwest of Idabel, in McCurtain County, Oklahoma (Figure 5.1). The site is located in the NW 1/4 of Section 31, Township 7S, Range 24E. The topography at the site is flat lying and occurs at an elevation of approximately 490 feet above mean sea level. The nearest drainage is Mud Creek located approximately 1400 feet southwest from the site. The nearest major drainage is the Little River located approximately 2 1/2 miles to the north. Geologically, the site is situated on Cretaceous rocks of the Gulf Coastal Plain Province which overlap Paleozoic lithologies of the Ouachita Mountains (Figure 5.2).

This report summarizes the site hydrogeologic investigations conducted during January, 1986, October, 1987, and January, 1992, by Roberts/Schornick and Associates, Inc. (RSA) of Norman, Oklahoma.

The main objectives of the investigations were to:

- Define the local surficial and subsurface geologic setting of the Mixon Brother's Treated Post Facility.
- Identify the water-bearing strata and define the groundwater system at the Facility.
- Install groundwater observation wells to define the chemical and physical characteristics of water-bearing strata and to allow the direction and rate of groundwater flow to be determined.

- Establish the vertical and areal extent to which soils adjacent to the waste impoundments and waste pile have been affected by past waste management operations.

5.2 Regional Hydrogeology

5.2.1 Geology

Rocks exposed in McCurtain County range in age from Early Ordovician to Late Cretaceous (Gulfian). These lithologies are overlain at places by extensive terraces and alluvial deposits of Pleistocene and Holocene age (Figure 5.3). The following geologic summary is taken largely from the work of Davis (1960), Huffman and others (1975), Huffman and others (1978), Hart and Davis (1981), and Marcher and Bergman (1983).

The older Paleozoic rocks are exposed primarily in the northern half of the county, where they are overlapped by Cretaceous sedimentary rocks of the Gulf Coastal Plain. The Lower Cretaceous Antlers Sandstone rests unconformably upon eroded Paleozoic rocks. Cretaceous sediments dip gently southward at rates of 50 to 125 feet per mile, forming low, northward-facing escarpments and long, gentle, southward- sloping dip slopes.

The Lower Cretaceous (Comanchean) is divided into the Trinity, Fredericksburg, and Washita Groups, in ascending order. The Trinity Group is represented by the Holly Creek Formation, DeQueen Limestone, and the Antlers Sandstone; the Fredericksburg Group by the Goodland Limestone and the Kiamichi Formation; and the Washita Group by the Caddo Formation, Bokchito Formation, and the Bennington Limestone. The Bokchito Formation and the Bennington Limestone have been removed by erosion in McCurtain County. The lowermost unit of the Upper Cretaceous (Gulfian), the Woodbine Formation, lies disconformably upon the Lower Cretaceous rocks. Figure 5.4 is a stratigraphic column of the major lithologic units in McCurtain County.

Several distinct Quaternary-age terrace and alluvial deposits unconformably overlie the Cretaceous rocks, occurring along the Little River and its tributaries, Bokchito Creek, and Mud Creek. These sediments are the youngest units in the region.

5.2.2 Hydrogeology

The availability of groundwater in McCurtain County is variable, depending upon the storage capacity and permeability of the underlying sediments. Of the various geological formations present in the County, Holocene alluvium along the Red River is one of the most favorable sources for large amounts of groundwater. Pleistocene terrace deposits are widespread along the Red River, but they provide only small supplies of water because of their high silt content.

The Lower Cretaceous Antlers Sandstone is the most important aquifer in southeastern Oklahoma. The formation is composed of sandstone, clay, conglomerate, and limestone; and averages about 55 percent sandstone with a few conglomerate lenses, 40 percent is sandy shale and shale, and about 5 percent is limestone (Marcher and Bergman, 1983). The sandstone occurs more consistently in the lower part of the formation, and that part of the section is most favorable for large well yields. The Antlers Sandstone crops out north of the outcrop of the overlying Goodland Limestone (Figure 5.3) and water in the formation is under unconfined or water table conditions. South of the outcrop area, the Goodland Limestone acts as an aquitard which confines the water in the Antlers Aquifer. Under these conditions, water within the Antlers Sandstone will rise above the top of the Goodland Limestone when the aquifer is tapped by a well. Well yields of the Antlers Aquifer range from a few gallons per minute (gpm) to 500 gpm. The depth to the top of the Antlers Sandstone in the vicinity of Idabel is about 200 feet above mean sea level (ft msl) (Figure 5.5).

With the exception of the Antlers Sandstone, rocks of Cretaceous age in the region are generally fine grained and contain much silt and clay; consequently, they are unproductive of water in quantities greater than what is needed for household use (Marcher and Bergman, 1983). Groundwater within these units lie in irregularly-connected solution cavities, fractures, or joints in rocks that otherwise have low porosity and permeability. This is probably the nature of the groundwater in the low-yielding shale and limestone formations of McCurtain County, in which the openings constitute only a small fraction of the total volume of the rock.

5.2.3 Recharge, Discharge, and Movement of Groundwater

Recharge to the Antlers aquifer is from precipitation on the outcrop, by seepage from lakes or other bodies of water, and by vertical and lateral movement of water between and within aquifers (Hart and Davis, 1981). The latter process is not a primary source of recharge but incidental to the main movement of groundwater. During periods of precipitation, a part of the water is evaporated, part enters the soil zone and is transpired by vegetation, and the remaining water percolates downward to the saturated zone. Recharge is most effective during periods of extended, moderate to heavy rainfall when the evaporation and transpiration rates are low.

Water in the Antlers aquifer in Oklahoma is discharged naturally through springs and seeps, evaporation, transpiration by plants, underflow out of Oklahoma to the south and southeast, and, in the artesian part of the reservoir, by upward movement of water through overlying strata. Water in the Antlers aquifer is contained in the voids or interstices of the zone of saturation. Water in the outcrop area is unconfined, and the upper limit of the zone of saturation is the water table. Where the Antlers is saturated and overlain by the Goodland Limestone or where the Antlers has extensive clays in the upper part, the aquifer is confined, and water will rise above the confining layer when the aquifer is tapped by a well (Hart and Davis, 1981). Although numerous clay units separate the productive water- bearing sands in the aquifer, the clays are not continuous and the individual sands are hydraulically connected (Hart and Davis, 1981).

5.3 Site Investigations

Three (3) separate site investigations have been conducted at the Mixon Brothers Wood Preserving Facility in order to define the subsurface lithology and groundwater properties beneath the site. The first investigation was initiated in January, 1986 with follow-up investigations in October, 1987 and January, 1992. Specific details concerning these three (3) investigations are presented in the following sections.

5.3.1 January, 1986 Site Investigation

Drilling activities began on January 8, and were completed on January 11, 1986. Two soil borings (B-1 and B-2) and two groundwater observation wells (PZ-2 and PZ-3) were drilled to define the site hydrogeologic system. The locations of the observation wells and borings completed in this investigation are shown in Figure 5.6 and Drawing No. 1. Table 5.1 lists the completion details of these two observation wells. In addition, an in-situ field test was conducted to measure the hydraulic conductivity of the shallow groundwater system at well PZ-3.

5.3.2 October, 1987 Site Investigation

Drilling activities began on October 19, 1988 and were completed on October 21, 1988. Two (2) groundwater observation wells (PZ-1 and PZ-4) were drilled to further define the site hydrogeologic system. In addition to drilling these two observation wells, twenty-three (23) shallow (6 to 15 feet deep) waste characterization borings were drilled at the site. Fourteen (14) of these borings were drilled in the impoundment area, eight (8) borings were drilled in the waste pile area, and one (1) boring was drilled at a background location near well PZ-3. The soil boring logs are presented in Appendix E. Well construction diagrams for PZ-1 and PZ-4 are presented in Appendix J. The location of the observations wells and borings completed in this investigation are shown in Figure 5.6 and Drawing No. 1. The well completion details for these two (2) wells are also presented in Table 5.1. In-situ field permeability tests were also conducted on wells PZ-1, PZ-2, PZ-3 and PZ-4 to measure the hydraulic conductivity of the uppermost shallow groundwater system at the site. A program to measure groundwater levels on a weekly frequency was also initiated. Groundwater quality samples were collected on November 11, 1987.

5.3.3 January, 1992 Site Investigation

Drilling activity began and was completed on January 27, 1992. One (1) groundwater observation well (PZ-5) was drilled to further define the site hydrogeolic system. A well completion record is presented in Appendix J. The location of the observation well is shown in Drawing No. 1.

5.3.4 Drilling and Soil Sampling Procedures (January, 1986)

Four (4) boreholes, two of which were completed as observation wells, were drilled by Winnek Drilling Inc. of Tulsa, Oklahoma using hydraulic rotary-air drilling equipment. The two monitoring wells (PZ-2 and PZ-3) were drilled 7-7/8 inches in diameter, and extended to depths ranging from 14 to 15 feet below ground surface. Borehole B-2, was initially cored to a depth of 95 feet and drilled to a depth of 150 feet to obtain hydrogeologic information at depth at the site. This borehole was backfilled to the ground surface with a portland cement grout mixture. An observation well, PZ-2, was redrilled and completed about 10 feet west of B-2. Borehole B-1 was drilled to a depth of 25.5 feet to obtain additional lithological information at the site. This boring was backfilled with a cement grout mixture. All borings were advanced using air only.

Continuous samples of subsurface geologic materials were obtained using a 2 and 3 inch o.d. split spoon sampler and a 3-inch o.d. thin-walled shelby tube sampler, in accordance with ASTM designations D-1586 and D-1587, respectively. In addition, rock core (NX) and cutting samples were obtained using standard rotary-core drilling techniques as outlined in ASTM designation D-2113-70.

Records for borings B-1 and B-2, observation well PZ-2 and observation well PZ-3, which graphically depict the subsurface geologic materials penetrated at each borehole and the details of observation well installation are presented in Appendix E and Appendix J. A field geologist monitored all drilling and well installation activities, maintained a log of these activities, and verified compliance with technical procedures.

To minimize the potential for introduction of shallow waste materials into water wells, the following procedures were followed:

- The down-hole portions of soil-sampling tools were washed thoroughly with clean water and a non-phosphatic detergent between use at each boring.

- The down-hole portions of all drilling tools were cleaned before drilling and after completion of each boring with a high-pressure, hot-water steam cleaner.

- All well-completion materials were examined by the field geologist and judged to be acceptably clean before use. Materials which required cleaning were washed with a high-pressure, hot-water steam cleaner before use.

- The split-spoon and shelby tube samplers and core barrel were washed with a non-phosphatic detergent and clean water, rinsed, using tap water, then acetone, then methanol and a final rinse in distilled water between each use.

All borings not completed as wells were abandoned by grouting with portland cement after drilling. Grout was placed in the boring from the bottom using a 1-inch diameter tremie pipe.

5.3.5 Drilling and Soil Sampling Procedures (October, 1987)

Two (2) observations wells and twenty-three (23) shallow soil test borings were drilled by Shepherd Engineering and Testing Co., Norman, Oklahoma, using a CME continuous tube sampling system and hollow stem augers. The two (2) observation wells were drilled on the east side of the impoundment area as shown in Figure 5.6 and Drawing No. 1. Both wells (PZ-1 and PZ-4) were drilled to a depth of twenty-nine (29) feet using 6 7/8-inch o.d. hollow stem augers. The well completion diagrams for wells PZ-1 and PZ- 4 are presented in Appendix J.

Soil samples from each well boring were collected continuously to total boring depth using a 5-foot long, 3-inch diameter CME continuous tube sampling system. A trained hydrogeologist supervised the soil sample collection and the observation well installations.

Rigid QA/QC procedures were followed during drilling to insure that all drilling and sampling equipment was thoroughly cleaned prior to use within a borehole or between boreholes. All downhole portions of sampling or drilling equipment were washed thoroughly with distilled water and a non-phosphoric detergent between use at each boring. The sampling tools were then steam cleaned prior to reinsertion into the borehole. All well completion materials were also steam cleaned prior to use.

The twenty-three (23) soil characterization borings were also sampled continuously to total boring depth using a CME continuous tube sampling system and hollow stem augers. Again, rigid QA/QC procedures were followed to insure that representative samples were obtained. A "Technical Investigation Plan" (3),August, 1987, outlines the QA/QC procedures which were followed in the field during the waste characterization program. All twenty-three (23) shallow waste characterization borings were properly abandoned by grouting to surface with a portland cement-bentonite grout mix.

5.3.6 Drilling and Soil Sampling Procedures (January, 1992)

One (1) observation well (PZ-5) was drilled by P.S.I. Corp., Norman, Oklahoma using a CME continuous tube sampling system and hollow stem augers. The observation well was drilled northeast of the impoundment as shown in Drawing No. 1. The observation well was drilled to a depth of thirty (30) feet using 6-7/8 inch o.d. hollow stem augers. The well completion diagram is presented in Appendix J.

Soil samples were collected continuously to total boring depth using a 5-foot long, 3-inch diameter CME continuous tube sampling system. A trained hydrogeologist supervised the soil sample collection and the observation well installation.

5.3.7 Observation Well Installation (January, 1986)

The basic objective of the initial field investigation program was to define the site hydrogeologic system. The initial locations of the wells (PZ-2 and PZ- 3) were selected to cover a large area of the site and provide groundwater levels over as large an area as possible. The depths of the wells ranged from 14 to 15 feet in depth and are screened from about 8 to 15 feet in depth. The wells were completed at the soil-bedrock interface.

Upon completion of drilling to the proper termination depth, a well casing was installed in the borehole. Four-inch diameter, schedule 40, drinking-water grade PVC screen and blank well casing was used for all wells. All well casing sections are flush-joint threaded. The PVC casing at each well was fitted with a PVC bottom plug and a vented PVC top cap.

The length of screen within wells PZ-2 and PZ-3 is 5 feet. This length allows data from a small vertical portion of the aquifer to be obtained. The slots in the screens are factory-cut with a width of 0.010 inches. A graded sand filter was placed in the annulus of the borehole against the screened interval and extends one (1) foot above the top of the screen.

A one-foot thick bentonite seal was placed above the sand filter. The integrity of the bentonite seal was protected with an upper layer of sand, typically one (1) foot thick. A portland cement grout was placed from the top of the sand layer above the bentonite seal to the ground surface. The grout was placed, in a continuous process, from the top of the upper sand backfill to the ground surface. All grouting below the groundwater level or deeper than ten feet below ground surface was performed using a 1-inch diameter tremie pipe.

A lockable protective steel well cover was cemented in place over the PVC well casing. The steel well cover was painted and the identifying well number was clearly marked inside the protective steel cap and on the outside steel well cover.

5.3.8 Observation Well Installation (October, 1987)

Two (2) additional observation wells (PZ-1 and PZ-4) were installed at the site east of the impoundment area in October, 1987. The purpose for these two (2) wells was to further define the site hydrogeology and to provide downgradient monitoring from the impoundment area. The depth of the two (2) wells are 28.8 feet (PZ-1) and 27.7 feet (PZ-4) and are screened from 16.0 to 26.0 feet in PZ-1 and 14.6 to 24.6 feet in PZ-4. The wells are completed to the top of a massive limestone layer that underlies the site at approximately 26 to 30 feet in depth.

Wells PZ-1 and PZ-4 were constructed of 2-inch diameter, schedule 40, screw-threaded, tri-lock PVC casing and screen. The screens were 10-feet long and are factory cut with a width of 0.010 inches. A two-foot long fine-sediment sump with cap was installed beneath the screen. A graded silica sand filter was placed in the annulus of the borehole against the screened interval and extends about two feet above the top of the screen. A cement bentonite grout mix was then tremied into the borehole to approximately 2 feet from ground level. A pad was then formed and concrete poured cementing a lockable steel protective cover in place. A vented cap was placed on top of the PVC riser. The steel well covers were painted and an identifying well number marked on the inside of the protective cover.

5.3.9 Observation Well Installation (January, 1992)

One (1) additional observation well (PZ-5) was installed at the site northeast of the impoundment area in January, 1992. The purpose of the additional observation well installation was to further define the site hydrogeology, provide additional downgradient monitoring from the impoundment area, and to fulfill the requirements set forth in the EPA Consent Agreement and Final

Order dated December, 1991. The observation well was drilled to 30 foot total boring depth and is screened from 18.1 to 27.7 feet. The well is completed above the top of the massive limestone that underlies the site between the depths of approximately 26 to 30 feet.

Monitor well PZ-5 was constructed of two-inch diameter, schedule 40, screw-threaded, tri-lock PVC casing and screen. The screen was 10-feet long and was factory slotted with a width of 0.010 inches. A graded silica sand filter was placed in the annulus of the borehole against the screened interval and extends two (2) feet above the top of the screen. A 2-foot seal of sodium bentonite was placed above the sand pack. A cement bentonite grout mix was backfilled into the borehole to near surface. A pad was formed around the borehole and concrete was poured cementing a lockable steel protective cover in place. A vent cap was placed on top of the PVC riser.

5.3.10 Hydraulic Conductivity Measurements

In-situ field tests to obtain measurements of horizontal hydraulic conductivity in the uppermost shallow groundwater system were conducted on all four (4) observation wells drilled at the site. The "slug" tests were conducted on November 10, 1988 using an In-situ Hermit 1000 SE Data Logger and a 10 PSI pressure transducer. The "slug" method involved lowering a slug of known volume into each well and noting the rise or fall of the groundwater level in response to removing or inserting the slug into the water. Falling head tests were conducted in all four (4) wells. Rising head tests were conducted in wells PZ-1, PZ-2, and PZ-3. The "slug" test data was evaluated using the Bower and Rice, 1976 solution.

The results of the hydraulic conductivity tests are summarized in Table 5.2. The hydraulic conductivity measured in the four (4) wells varied from $<1.0 \times 10^{-9}$ cm/sec in well PZ-2 to 8.24×10^{-5} cm/sec in well PZ-4. Except for well PZ-2, the hydraulic conductivity for the other three (3) wells varied from 9.8×10^{-7} cm/sec to 8.24×10^{-5} cm/sec and averaged 2.6×10^{-5} cm/sec. A hydraulic conductivity slug test conducted on well PZ-3 in January, 1986 measured a hydraulic conductivity of 2.1×10^{-6} cm/sec. Slug tests on this same well in November, 1987 were 2.2×10^{-6} cm/sec (falling head) and 9.8×10^{-7} cm/sec (rising head).

5.4 Site Geology

5.4.1 Surficial Geology

The Mixon Brothers Treated Post Facility is situated on sands and clays of the Upper Cretaceous Woodbine Formation. Surficial geologic maps of the area have been prepared by Davis (1960) and Marcher and Bergman (1983). Figure 5.3 is a site area geologic map (Marcher and Bergman, 1983). Underlying

Lower Cretaceous formations crop out approximately two miles north and west of the site. These outcrops are of the Goodland Limestone, Kiamichi Formation, and the Caddo Formation, in ascending stratigraphic order. A large area of the Caddo Formation is exposed along Bokchito Creek and its tributaries about one mile west of the site.

The surficial soils of the site (Figure 5.7) are characterized as the Alusa Loam and the Muskogee Loam by the U. S. Department of Agriculture Soil Conservation Service (USDA, 1974). The Alusa Loam is mapped over most of the site, however, the western portion of the property is underlain by soils described as the Muskogee Loam.

The Alusa Loam is a deep, poorly drained, very slowly permeable soils on uplands. In a representative soil profile (Figure 5.8), the surface layer (A horizon) is grayish-brown loam with mottles in shades of brown. This layer extends to a depth of nine (9) inches. The subsoil (B horizon) extends to a depth of 72 inches or more and is characterized by brownish-gray to gray clay with mottles in shades of gray, brown, and red. Permeability is very slow in Alusa soils, and available water capacity is high. The near-surface soils are seasonally saturated during November through April. Permeabilities reported for the A horizon range from 1×10^{-3} cm/sec to 4×10^{-4} cm/sec, whereas the underlying B horizon has reported permeabilities of less than 4×10^{-5} cm/sec.

The Muskogee Loam consists of deep, very gently sloping, moderately well-drained soils on uplands. In a representative soil profile (Figure 5.8), the surface layer (A horizon) is about eight (8) inches of dark grayish-brown and yellow-brown loam. The subsoil (B horizon) extends to a depth of 80 inches or more and is composed of red clay loam and clay. It is mottled in shades of red, brown, and gray. Permeability is slow in these soils, and the available water capacity is high. Near-surface soils in the Muskogee Loam typically are saturated during the winter months. Permeabilities within the Muskogee Loam are similar to those reported for the Alusa Loam, ranging from 1×10^{-3} cm/sec to 4×10^{-4} cm/sec in the A horizon to 1×10^{-4} cm/sec to 4×10^{-5} cm/sec in the B horizon.

5.4.2 Subsurface Geology

To fully characterize the site geology, twenty-nine (29) soil borings and five (5) groundwater observation wells have been drilled at the site. Of the twenty-nine (29) soil borings drilled, seven (7) of the borings were drilled to depths of between 10 and 30 feet, twenty-one (21) drilled to depths of 6 to 8 feet, and one (1) boring drilled to a depth of 150 feet. Soil borings drilled to depths of between 10 to 30 feet included: PZ-1, PZ-2, PZ-3, PZ-4, PZ-5, B-1, BH-32, and BH-40. Boring drilled to depths of between 6 to 8 feet are: BH-2, BH-4B, BH-6, BH-19, BH-29B, BH-33, BH-42B, BH-43, BH-52, BH-55, BH-59, BH-60B, W3B, W6, W11B, W13, W15, W15B, W23B, W24, and BG1. Boring B-2 was drilled to a depth of 150 feet. The locations of these borings are shown on Drawing No. 1 and Figure 5.6.

Borehole B-2 was drilled to a depth of 150 feet in the central site area near the waste pile. This boring encountered an upper soil unit and an underlying interbedded weathered limestone, massive limestone, and shale sequence. The upper soil horizon is composed of an upper zone of silty clay loam (A horizon) and a lower silty and sandy clay unit (B horizon). Borings B-1, PZ-2, B-2, PZ-3, PZ-1, PZ-4, PZ-5, BH-32, and BH-40, were drilled to depths of between 10-30 feet. A similar lithologic sequence was also determined at these locations. Lithologic logs for each of these borings are presented in Appendix E or Appendix J.

The silty clay loam is generally light to dark brown with brownish-orange mottles. This horizon is damp and contains abundant root and organic litter. The silty clay loam is classified as ML-CL according to the unified soil classification (USC). The A horizon averages less than one (1) foot in thickness.

The underlying B soil horizon is typically a reddish-brown to gray silty and sandy clay with up to ten (10) percent subrounded, less than one-inch diameter quartz gravel. The unit is generally mottled in shades of red, brown, and dark gray. This soil is commonly damp and exhibits moderate to high plasticity.

Roots and organic material decrease rapidly downward, disappearing below about five (5) feet. Black iron and manganese oxide concretions occur sporadically in the upper B horizon, increasing in abundance with depth. These concretions are found most frequently below about eight (8) feet. The B horizon soils average about ten (10) feet thick and are classified as CL according to the USC classification scheme.

The contact between the site soils and the underlying bed rock surface is characterized by a mixture of reddish-brown to gray clay (CL) with abundant weathered limestone fragments. This unit is the most permeable horizon within the site soils and occasionally shows evidence of water stains.

The bedrock lithologies of the site consist of a thick, interbedded sequence of brownish-gray to gray fossiliferous limestones and blue-green to green shales. The limestones are highly weathered to massive, medium-to-thick bedded, fine- to medium-grained lime wackestones with abundant brachiopod and mollusc shells and fragments. The wackestones have a very fine-grained micrite matrix which exhibits little primary or secondary porosity. The limestones have thin shale partings which separate the individual beds. Secondary jointing and fracturing was not observed within the limestone units. Horizontal bedding-plane partings are common. A few styolites were noted during the observation of the rock core. The individual limestone beds range from about 4 feet to 20 feet in thickness.

The intervening green shale beds range from slightly less than one foot to more than 28 feet in thickness. The shale units are generally homogenous, fissile, and have horizontal partings less than 0.25 inches thick. Concentrations of fossil hash may occur in the basal portion of a shale bed. This zone is typically calcareous. Fracturing was not observed in the shale lithologies. These shales probably have a very low permeability.

Geologic cross-sections were prepared using the lithologic information gathered and are presented in Figures 5.9, 5.10, and 5.11. The cross-sectional lines are shown in Figure 5.6. The stratigraphic sequence across the site is generally uniform. It is characterized by an overlying soil cover, weathered bedrock horizon, and an underlying sequence of interbedded limestones and shales, which have a minimum thickness, at the site, of 140 feet.

5.4.3 Correlation of Site and Regional Stratigraphy

The site stratigraphic units are correlated with the Upper Cretaceous Woodbine Formation and the Lower Cretaceous Caddo Formation. The gravelly, sandy and silty clay soil at the site is a weathered residual of the Woodbine Formation. The Woodbine Formation consists of fine-to-coarse grained yellowish-red, white, gray sand and quartzose noncalcareous brownish-red clay with some gravel lentils. The Woodbine Formation rests unconformably upon the Lower Cretaceous Caddo Formation.

The interbedded brownish-gray to gray limestone and green shale sequence at the site is correlated with the Caddo Formation. The Caddo Formation is composed of an alternating sequence of white, cream, and gray silty limestones with blue-gray to green shales and is about 150 feet in thickness. The Caddo Formation is equivalent to the Fort Worth Limestone and Duck Creek Formation of north-central Texas. These lithologies were deposited in a shallow carbonate shelf-transition zone environment.

5.5 Site Hydrogeology

5.5.1 Site Groundwater System

The Antlers Sandstone appears to be the first major aquifer beneath the site. The top of the Antlers Sandstone occurs at depths greater than 300 feet in the vicinity of Idabel (Hart and Davis, 1981). Figure 5.12 is a potentiometric map of the Antlers aquifer in 1975 (Hart and Davis, 1981). Groundwater in the Antlers Formation in the site area flows generally to the south-southeast. The elevation of the potentiometric surface in the Antlers sandstone ranges between 350 to 400 ft msl, which is about 200 to 250 feet below ground surface. Boreholes B-1, B-2, and observation wells PZ-1, PZ-2, PZ-3, PZ-4, and PZ-5 were drilled to identify the uppermost ground-water aquifer at the site. Drilling proceeded to a depth of 150 feet in borehole B-2, during which time the rock samples were logged and noted for evidence of ground water. Based upon the results of the drilling program, a shallow groundwater system occurs beneath the site. Depth-to-groundwater measured in wells PZ-1, PZ-2, PZ-3, PZ-4, and PZ-5 typically vary from about ground level to approximately eight (8) feet below ground level. The groundwater found in the shallow geological units at the site occurs in microfractures (slickensides) principally in the weathered bedrock zone. Based upon the rise in the groundwater levels in a drilled well, the groundwater in the weathered limestone and shale formations at the site are under confined conditions. The potentiometric surface at the site is shown on the geologic cross-sections presented in Figures 5.10 and 5.11. A potentiometric map (Figure 5.13) for the site (1-11-88) has been prepared showing that the shallow groundwater beneath the site flows east-northeast under an average gradient of 0.01 or 1%. The gradient near the impoundment area is higher and averages 0.017 or 1.7%. The potentiometric surface for the site on February 6, 1992, is similar to the January 11, 1988, map and shows that groundwater flows to the east-northeast at an average gradient of 0.017 feet/foot as shown on Figure 5.13a. Slug tests conducted on four (4) of the observation wells show that the average horizontal hydraulic conductivity for the shallow weathered bedrock is 2.6×10^{-5} cm/sec (excluding well PZ-2, which has a hydraulic conductivity of $<1.0 \times 10^{-9}$ cm/sec). Based upon Darcy's Law, the average groundwater flow velocity (assuming a conservative porosity of 0.05, an average gradient of 0.01, and a hydraulic conductivity of 2.6×10^{-5} cm/sec) in the uppermost groundwater system is 5.14×10^{-6} cm/sec or 8.9×10^{-3} feet/day (3.27 feet/year).

Beginning on October 21, 1987 to February 3, 1988, groundwater levels were measured on a weekly frequency in all existing monitoring wells. The hydrographs for wells PZ-2 and PZ-4 show a gradual rise in water levels over this time interval. Hydrographs for wells PZ-1 and PZ-3 show a rapid rise in water levels followed by a long, very stable period in which there is little groundwater fluctuations noted. The water level measurements for these wells have been summarized in Table 5.3. The well hydrographs are presented in Figures 5-14, 5-15, 5-16, and 5-17.

5.5.2 Groundwater Quality

On November 11, 1987 groundwater quality samples were collected by RSA from wells PZ-1, PZ-2, PZ-3, and PZ-4 and analyzed for base neutral extractable organics, total chromium, and the RCRA groundwater quality parameters. The water quality data report for this sampling is presented in Appendix D-5.

All groundwater quality samples were collected after first purging (bailing) each well to dryness, then allowing the well to partially recover, then purging to dryness again. This procedure was followed until 3 casing volumes were removed from each well prior to collecting a groundwater sample. All groundwater samples were collected using clean dedicated, bottom discharge stainless steel bailers. The samples were preserved appropriately in the field and shipped overnight express to Enviromed Laboratories in Baton Rouge, Louisiana for testing. A field blank was prepared in the field by pouring "organic free" water provided by the analytical laboratory through the field sampling equipment as if a groundwater sample was being collected. A duplicate sample was obtained from well PZ-1 and a trip blank accompanied the bottles from the analytical laboratory and the groundwater samples back to the laboratory. A summary of the analytical data is presented in Table 5.4. Inspection of the data indicates that no base neutral organics were found in the groundwater (Bis (2-Ethylhexyl) phthalate was found in the groundwater but it was also found in the trip blank and field blanks at similar levels). This data appears to indicate that there is no impact to the groundwater at the existing monitoring well sites.

6.0 CLOSURE

6.1 Introduction

The Facility's three (3) impoundments will be closed on-site according to 40 CFR 265 standards. No waste from the impoundments will be disposed off-site. The closure operations will include the following:

- Impoundment Free Liquid Management
- Impoundment Sludge Stabilization and On-site Disposal
- Contaminated Soil in Unsaturated Zone Consolidation and On-site Disposal
- Placement of Final Cover
- Run-on and Run-off Management
- Construction and Earthwork Equipment
- Decontamination of Equipment
- Access Control

The Facility waste pile materials will be decontaminated on-site in accordance with 40 CFR § 265.258 (b), stabilized and the unit closed in-place as a landfill. It is emphasized that off-site disposal was evaluated and determined to be economically infeasible. Decontamination will be accomplished with in-place biological treatment of the waste pile residue. By biologically decontaminating the waste pile in-place, no new treatment units will be required. The closure operations will include the following:

- Decontamination of Waste Pile Residue
- Stabilization of Decontaminated Waste Pile Residue
- Unsaturated Zone Soil In-Place Stabilization
- Placement of Final Cover
- Run-on and Run-off Management
- Construction and Earthwork Equipment
- Decontamination of Equipment
- Access Control

A description of each of the above operations is described within this subsection. This section also presents a closure schedule, procedure for certification of the closure and closure cost estimate. Removal and off-site disposal of waste and contaminated soil in the waste pile and impoundments has been determined to be economically infeasible.

In accordance with 265.115, a copy of the approved Closure Plan and all revisions will be kept at the Facility until closure is completed and certified. Mr. Bob Mixon will be the Facility contact during and after closure.

6.2 Summary of Proposed Plan For Surface Impoundments

The Facility impoundments will be closed on-site as landfills. The total area occupied by the three (3) impoundments is small, at only 0.4 acres (see

Drawing No. 1). All impoundment sludges will be stabilized and consolidated into Impoundment No. 3. Residual disposal capacity in Impoundment No. 3 is designated for disposal of contaminated soil from the unsaturated zone associated with the impoundments.

All contaminated soil associated with the impoundments and identified by field investigations to date (see Section 4.0) will remain on-site for disposal. All contaminated soil from the unsaturated zone, to the extent possible, will be consolidated into Impoundment No. 3 for disposal. It is currently estimated that at least the upper one (1) foot of contaminated soil in Impoundments No. 1 and 2, below the sludges, can be removed, stabilized (if necessary), and consolidated into Impoundment No. 3. Additionally, contaminated soil from "hot spot" areas in the unsaturated zone adjacent to Impoundment No. 2 and No. 3 will be excavated and placed in Impoundment No. 3. This soil volume and the impoundment sludges will total approximately 380 cubic yards. An estimated additional 100 cubic yards of capacity will remain in Impoundment No. 3 for "hot spot" contaminated soil disposal. A total of 480 cubic yards disposal capacity is available in Impoundment No. 3 for closure. Contaminated soil which cannot be placed in Impoundment No. 3 will remain in-place and will be capped.

All standing liquids in the impoundments will be recycled back into the wood preserving process before and during the closure activities as described in Section 6.3.

6.3 Impoundment Free Liquid Management

The free standing impoundment liquids will be managed during closure by recycling into the plant wood treatment operation for use as make-up water in the process (Section 2.0 gives a detailed description of this operation). It is assumed that approximately 90,000 gallons of free liquid may be present in the impoundments before closure begins.

Free liquids will be transferred from each of the smaller impoundments (i.e. Impoundments No. 1 and 2) into Impoundment No. 3 prior to sludge stabilization. During this time, Impoundment No. 3 will be used as make-up water in the wood treatment process. After the sludge stabilization is complete in Impoundments No. 1 and 2, the free liquids in Impoundment No. 3, and any liquid which accumulates in the other impoundments before the cover is placed, will be transferred to an existing tank system at the Facility for later use in the wood treatment process. This system consists of five (5) tanks, has a capacity of approximately 80,000 gallons, and is currently used for process water storage.

It is important that closure activities take place during a dry period of the year, preferably July and August, in order to facilitate sludge stabilization and liquids management. If closure activities take place at this time, the available tank storage (80,000 gallons) and normal process make-up water use (3000 to 4000 gallons per day) should be sufficient to control impoundment liquids in a manner that provides for timely closure of the impoundments. During the period of May to November (see rainfall/evaporation tables, in Appendix G), total evaporation exceeds total rainfall on the average:

Total Rainfall (2.39 feet)
- Total Evaporation (2.78 feet)

= -0.39 feet

Thus, it is likely that all the impoundment liquids can be reused or stored for re-use as process make-up water.

6.4 Impoundment Sludge Stabilization and On-site Disposal

All sludge in the three (3) impoundments will be stabilized in-place and disposed on-site in Impoundment No. 3. The maximum sludge volume is estimated to be 103 cubic yards (see Section 3.4). The stabilization process objective is to ensure sufficient structural integrity of the waste sludges in the impoundment to support the final backfill and cover. The stabilized sludges must also have sufficient structural strength to support the equipment loading which will occur during backfill and cover construction. With the addition of the stabilization agents, the sludge disposal volume is estimated to increase to approximately 129 cubic yards (116 c.y. for Impoundment No. 1 and No. 2, 13 c.y. for Impoundment No. 3).

The approach to be taken in stabilizing the sludges is consistent with current state-of-the-art methods being utilized to achieve this objective at other such facilities. A contractor experienced in sludge stabilization process will be utilized. Some variation may occur among contractors in the testing and operation stabilization procedure, however, the stabilization process is anticipated to proceed as follows:

1. A contract will be negotiated with a stabilization contractor. Tentatively, Progressive Environmental Management, Inc. of Norman, Oklahoma, has been selected to perform this work.
2. A representative sample of the impoundment sludge will be sent to the contractor for testing. The objectives of the testing will be as follows:

    2.1 Establish the optimum stabilization reagent. The alternative stabilization reagents are cement kiln dust, class C fly ash, portland cement lime fines, or a combination of these. It is presently anticipated that cement kiln dust and/or lime fines will be the selected stabilization reagents. These materials should provide satisfactory structural integrity for stabilization of sludges in the impoundments.

2.2 Establish the optimum mixing ratio of the selected stabilization reagent. The mixing ratio is estimated to be between 0.2 tons to 1.0 tons of stabilization reagent per cubic yard of sludges.

2.3 Establish the unconfined compressive strength of the stabilized sludge to ensure sufficient structural integrity for supporting the construction and cover loads. ASTM method 2166 or its equivalent will be utilized to establish the compressive strength of the stabilized sludge. The laboratory testing will also establish a correlation between unconfined compressive strength and cone penetrometer readings. Cone penetrometer readings will be used in the field to verify that the sludge has been stabilized adequately.

The construction loads will generate greater stresses (i.e. pressures) on the stabilized sludges than the final cover.

The bearing pressures on the upper layer of stabilized sludge from a 5,000 lb. concentrated wheel load on top of the first backfill lift (12 inches, see Section 6.6) is estimated to be between 0.4 and 0.5 tons per square foot (estimate based on methods presented in Soil Engineering, 3rd Edition, M. Spangler, R. Henry, 1973, Chapter 17).

The maximum possible unit pressure on the upper layer of stabilized sludge from the completed cover is less than 0.3 tons per square foot (maximum thickness of five (5) feet, maximum soil unit weight of 108 PCF, see Appendix D-6). Conservatively, then, an unconfined compressive strength criteria of 0.5 tons per square foot is more than adequate for the stabilized sludge. The ability to achieve this strength will be demonstrated in the laboratory and verified in the field by testing as indicated below.

3. Field stabilization operations will begin once all laboratory testing is complete. The field operations include the following:

3.1 Delivery of the stabilization reagents to the site.

3.2 Mobilization of the following stabilization equipment to the site:

Caterpiller Model 215 track backhoe or equivalent.

3.3 The stabilization reagents will be loaded and transported by a pneumatic truck or standard end dump truck to the impoundment where stabilization is to occur.

3.4 The stabilization reagents will be mixed with the sludges by pumping from the pneumatic trucks via a four (4) inch hose to the impoundment areas, or physically spread over the sludges with the bucket of the track backhoe.

3.5 The track backhoe will then completely mix the reagents with the impoundment sludges. Samples of the sludge/reagent mixture will be added to cardboard test cylinders. The stabilized sludge will be allowed to cure 36 hours before testing.

3.6 The cardboard sample cylinders will be tested by the cone penetrometer to determine whether adequate strength has been achieved. Additional stabilization agent and further mixing may be required if the test results so indicate. A minimum of three (3) test cylinders will be prepared for each impoundment for testing.

The cone penetrometer test procedure is described in the information provided in Appendix I.

6.5 Surface Impoundment Contaminated Soil Consolidation and On-site Disposal

Contaminated soil has been assessed at the site and the investigation results are presented in Section 4.0. The total impoundment and impacted soil area to be remediated by closure at this site is less than 0.5 acres. The selected closure scenario includes consolidation of sludges and contaminated soil into Impoundment No. 3 as feasible based on Impoundment No. 3 available capacity. After stabilization of the sludge in Impoundment No. 3 and placement of stabilized sludges from Impoundment No. 1 and No. 2 into Impoundment No. 3, approximately 364 cubic yards of residual capacity is estimated to be available for contaminated soil disposal in Impoundment No. 3 (480 c.y. - 116 c.y.).

This residual capacity will be utilized by first removing and stabilizing (if necessary) the upper one foot of soil in the bottom of Impoundments No. 1 and 2 below the sludge layer. This volume is estimated to be 85 cubic yards.

Next, two (2) "hot spot" soil contamination areas associated with Impoundments No. 2 and No. 3 will be excavated and disposed in Impoundment No. 3. These areas are identified on Drawing 2 as Area 1 and Area 2. Excavation of

Area 1 and Area 2 to depths of two (2) feet and five (5) feet, respectively, should result in removal of all soil with PCP concentrations greater than 40 to 50 PPM. The total soil disposal volume from these areas is estimated to be 180 cubic yards.

After disposal of these contaminated soil volumes (i.e. 85 c.y. + 180 c.y. = 265 c.y.), the remaining disposal capacity in Impoundment No. 3 is estimated to be 99 cubic yards (i.e. 480 c.y. total - 116 c.y. stabilized sludge - 265 c.y. contaminated soils).

In the field, "hot spots" of contaminated soil associated with all three (3) impoundments will be identified and disposed soils into Impoundment No. 3 until no residual capacity remains. The "hot spots" will be visually identified by using previously developed field methods and existing analytical data as guidance. The goal will be to try and dispose of all soils in the unsaturated zone (i.e., soils not associated with water table fluctuation) having PCP concentrations greater than 50 PPM. Contaminated soil removal zones and the placement zone in Impoundment No. 3 are depicted on Drawings No. 2 and No. 3.

6.6 Placement of Final Cover on Surface impoundments

After the sludge in Impoundments No. 1 and No. 2 has been stabilized, placed and compacted above the stabilized sludges in Impoundment No. 3, the contaminated soil described in Section 6.5 will be placed and compacted in Impoundment No. 3. The maximum disposal elevation in Impoundment No. 3 is shown on Drawing No. 2 to be elevation 491.0 feet. Once this elevation is reached, sufficient elevation will remain in Impoundment No. 3 within the existing dike berms to place a minimum two (2) foot compacted clay cap (See Drawings No. 2 and 3). The clay cap material will be excavated from an on-site borrow area (see Drawing 1) and is required to have a compacted permeability coefficient of less than or equal to 1×10^{-8} cm/sec. Permeability tests of clay soils on-site are presented in Section 4.0 and indicate this specification can be easily achieved.

The initial compacted lift in Impoundment No. 3 to establish a working surface, will be approximately twelve (12) inches in thickness. After this initial lift, the remaining lifts will be limited to a six (6) inch compacted thickness. All lifts will be compacted to 95% Standard Proctor Density.

After the clay cap has been placed in Impoundment No. 3, the clay cap will be constructed in the Impoundment No. 1 and No. 2 areas as depicted in Drawing No. 2 and No. 3. It is noted that contaminated soil removal in the Impoundment No. 1 and No. 2 areas may allow the northern boundary of the cap area to be moved further south. It will not be known whether reduction in cap area can be made until contaminated soil excavation operations are complete. Mixon may elect to perform sampling and testing of the northern excavated area during closure to demonstrate that no unsaturated zone contaminated soils remain and therefore no cap is required. A soil contamination criteria will be proposed for this purpose if applicable. If alternative maximum concentration limits cannot be easily agreed to by EPA, then analytical detection limits will be utilized as a basis of clean closure assessment criteria.

As noted in Drawings No. 2 and No. 3, the top of the clay cap will be graded to a minimum slope of 1%. A sand drain zone (6 inch, $k > 10^{-3}$ cm/sec) and a topsoil zone (1 to 2 feet) will be constructed above the clay cap as depicted in Drawings No. 2 and No. 3. This will complete construction of the cover.

The sand drain layer and cover surface, above the disposed sludges and soils will have a slope of at least 1% for drainage. The sides of the cover will be constructed at a 5:1 slope. The gentle slopes will minimize soil erosion.

A drainage ditch will be constructed on the outside of the cover toe as shown in Drawings No. 2 and No. 3. This drainage ditch will route run-on and run-off away from the cover and prevent standing water from occurring.

The backfill soil will be obtained on-site from the borrow area location identified on Drawing No. 1. Analysis of background soil samples from near this area has established that the backfill borrow soil is free of contamination (see Section 4.0. Physical properties of the borrow area soil are also presented in Section 4.0. The topsoil and sand will be obtained off-site. Local sources are available at economic prices. The topsoil will be a loam to clay loam material free of rocks or debris and capable of supporting and sustaining good vegetational growth.

6.6.1 Earth Fill Specifications

The earth fill materials shall be placed in six (6) inch to one-foot thick lifts and compacted to at least 95% of the Standard Proctor maximum dry density (ASTM D 698). It is anticipated that a sheepsfoot roller may be the most appropriate piece of equipment for compaction of the natural soil if adequate compaction is not being achieved using other on-site equipment. Spreading, disking and air drying at borrow may be required to reduce the soil's moisture content to attain the stipulated degree of compaction. Density testing will be necessary during earthmoving operations to determine the degree of attained compaction. After placement and before compaction, all soil particles greater than six (6) inches in diameter shall be raked or removed from the lift. No frozen material shall be placed in this fill, and no fill may be placed in this fill, and no fill may be placed on frozen surfaces. Frozen material on the working surface shall be removed and reworked or disposed of prior to fill placement.

At minimum, two moisture-density relationships and permeability tests of representative soil borrow samples for earth fill construction shall be established prior to fill compaction. Testing shall be performed in accordance with ASTM D698 and ASTM D2434. For each sample, the grain size distribution shall be established in accordance with ASTM D422. These laboratory tests shall form the basis for the acceptability of compaction in the field. Additional tests to re-establish grain size distribution and moisture-density relationships may be performed if the borrow material exhibits different characteristics than the tested soil.

Field testing to determine the adequacy of compaction shall include density testing determination of compacted fill and shall be performed in accordance with any of the following test methods:

- ASTM D2922 - "Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)"
- ASTM D2167 - "Density of Soil and Soil-In-Place by the Rubber Balloon Method"
- ASTM D1556 - "Density of Soil In-Place by the Sand Cone Method"

Results of the in-place density test shall be compared to the previously-performed moisture-density relationship to determine if the compactive effort applied in the field was adequate to attain at least 95% of the maximum dry density as indicated by the Standard Proctor Method of Compaction (ASTM D698). In-place fill not meeting this requirement shall be recompacted or removed and replaced. A minimum of one (1) test shall be performed for each compacted earth fill lift.

The topsoil zones for each impoundment are shown on Drawing No. 2 and No. 3. The topsoil zones will be placed in two (2) lifts. The minimum final topsoil thickness will be twelve (12) inches. The topsoil will be compacted adequately by the construction equipment as it's placed and no minimum density specification is necessary. After the topsoil is placed in an area, care will be taken to not allow heavy excavation equipment to be routed over the topsoil to ensure over compaction does not occur.

Following the top soil placement a crop will be established on the cover. This cover crop will consist of a combination of wheat, rye grass, and native bermuda grass. The native bermuda grass will eventually become the dominant soil cover crop with time. The McCurtain County Soil Survey indicates that the soils on-site are capable of supporting these crops in this area. The cover crop will be sprigged and seeded into the soil then fertilized and irrigated as necessary to establish a 100% cover.

6.7 Run-on and Run-off Management

The cover for the impoundments will be constructed to prevent any run-on from entering the disposal area. During the sludge stabilization and initial cover construction operations, precipitation which accumulates in the impoundment will be managed as detailed in Section 6.3. After the backfill zone has been placed, the run-off from the impoundment cover will not be contaminated and will be allowed to move off-site as dictated by the site's topographical and natural drainage features.

The final cover slopes (see Drawing No. 2) are designed to be between 1% and 5%. The final drainage plan for routing run-on and run-off in the closed impoundment area is presented on Drawing No. 2 and No. 3. This drainage plan will prevent pooling adjacent to the impoundments and prevent run-on to the closed surface impoundment covers.

6.8 Summary of Proposed Plan For Waste Pile

The waste pile residue will be decontaminated on-site in accordance with 40 CFR § 265.258 (b). Decontamination will be accomplished through the use of biological treatment of the waste residue. In the past, land treatment of the waste pile residue was considered and rejected because creation of a new treatment unit was prohibited. As an alternative, biodegradation will be accomplished within the waste pile area, therefore not conflicting with Land

Ban requirements in 40 CFR 268. Biodegradation options will be evaluated and the most effective method will be selected after review. Decontamination procedures will continue for six (6) months, at which time samples will be taken to characterize decontamination results.

The waste pile area was defined by staking inspection in June, 1985 and measured to be approximately 90 feet by 90 feet and the volume of residue was estimated to be 23 cubic yards (yd^3).

All waste residue and contaminated soil associated with the waste pile will remain on-site for closure. To the extent possible, the upper six (6) inches of contaminated soil beneath the waste pile will be stabilized in-place, if necessary. Any additional obvious contamination in the waste pile area will be stabilized in-place, if necessary.

6.9 Waste Pile Residue Decontamination and Stabilization

The waste pile residue (soils, sludges, and similar residues) will be biologically decontaminated in-place in accordance with 40 CFR § 265.258 (b). Large inert objects, such as tires, will be decontaminated by steam cleaning and placed in the stabilized residue. Following decontamination of the waste residue, the residue will be stabilized for structural support of the clay cap. All decontaminated waste residue will be stabilized in-place and closed in-place.

The maximum residue volume is estimated to be 23 cubic yards (see Section 3.4). The stabilization process objective is to ensure sufficient structural integrity of the waste residue from the waste pile to support the final backfill and cover. The stabilized residue must also have sufficient structural strength to support the equipment loading which will occur during backfill and cover construction. With the addition of the stabilization agents, the residue volume is estimated to increase to approximately 30 cubic yards. The approach to be taken in stabilizing the residue is the same as covered in Section 6.4.

6.10 Waste Pile Contaminated Soil In-place Stabilization

Contaminated soil in the unsaturated zone is suspected to be present under the waste pile. The contaminated soil is expected to be capable of supporting installation of the final cap, and therefore should not require stabilization. If stabilization is required, the contaminated soil directly beneath the waste pile will be stabilized in-place. The potentiometric surface in the vicinity of the waste pile is approximately one foot below the ground surface (see Figure 5.11), therefore, the depth of any required in-place stabilization of contaminated soil will be limited to the upper six (6) inches.

6.11 Placement of Final Cover on Waste Pile Area

After the decontaminated waste pile residue and upper six (6) inches of in-place soils have been stabilized, a final cover will be placed over the waste pile area. This area has been measured as approximately 90 feet by 90 feet.

Backfill will be added to the decontaminated residue and compacted prior to placement of the final cap. A minimum of two (2) feet of compacted clay will be placed over the backfill as a final cap. The clay cap material will be excavated from an on-site borrow area (see Drawing No. 1) and is required to have a compacted permeability coefficient of less than or equal to 1×10^{-8} cm/sec.

Permeability tests of clay soils on-site are presented in Section 4.0 and indicate this specification can be easily achieved. The initial compacted lift for the cap will be approximately twelve (12) inches, with remaining lifts limited to six (6) inch compacted thickness. All lifts will be compacted to 95% Standard Proctor Density.

As shown of Drawing No. 5, the top of the clay cap will be graded to a minimum slope of 1%. A six (6) inch sand zone with a permeability coefficient of greater than 1×10^{-3} cm/sec and a one (1) to two (2) foot topsoil layer will be constructed above the clay cap as shown in Drawing No. 5.

The sand drainage layer and the topsoil layer will be graded to a minimum slope of 1% for proper drainage. The side slopes will be constructed at a 5:1 slope, as shown on Drawing No. 5. A drainage ditch will be constructed, as needed to route run-on and run-off away from the cover and prevent standing water from occurring.

The backfill compaction and topsoil placement will be conducted as specified in Section 6.6.1.

6.12 Run-on and Run-off Management

The cover for the waste pile will be constructed to prevent any run-on from entering the area. After the clay cap has been placed and compacted, the run-off from the impoundment cover will not be contaminated and will be allowed to move off-site as dictated by the site's topographical and natural drainage features.

The final cover slopes (see Drawing No. 5) are designed to be between 1% and 5%. The final drainage plan for routing run-on and run-off in the closed waste pile area is presented on Drawing No. 5. This drainage plan will prevent pooling adjacent to the waste pile area and prevent run-on to the closed waste pile cover.

6.13 Equipment Decontamination

In accordance with 265.114, after completion of excavation and disposal operations, all contaminated equipment will be decontaminated by steam cleaning in an area designated for this activity. The free liquids will be collected and used as make-up water in the wood treating process. Any solids generated during equipment decontamination will be stabilized in Impoundment No. 3 before backfill operations begin. It is estimated that 200 gallons of contaminated water and five (5) cubic yards of contaminated soil will be generated during this process.

The following equipment utilized in closure operations will potentially contact contaminated sludges or waste and will be decontaminated:

- Caterpillar Model 215 track hoe used to stabilize the impoundment sludges.
- Dozer used to place initial backfill lift.
- Pipe and pump used to transfer free liquids in impoundments.
- Earth Movers

Each of the above pieces of equipment will be steam cleaned to the point where all visible contamination is removed. Once this occurs, the equipment will be determined to be decontaminated and allowed to be removed from the active work area.

6.14 Access Control

A "hog wire" fence with top barbed wire strands has been installed around the periphery of the closed impoundments and waste pile area. This fence includes lockable gates and will be sufficient to prevent unknowing and/or unauthorized entry of all persons and domestic livestock. Appropriate warning signs in keeping with the Requirements of Oklahoma Rule 7.4, have been installed around the fenced areas to discourage unauthorized entry. This fence will be removed during closure construction operations and re-established once closure is complete.

6.15 Closure Schedule

All impoundment sludges will be stabilized well within 90 days of initiating closure. All closure activities will be completed well within 180 days as required by the regulations. A schedule for closure is presented in Table 6.2. The optimum time to begin closure operations at the site is in the late summer months. During this period of the year, the rainfall events occur with less frequency, duration, and intensity. As indicated previously, the free liquid recycle activities would be initiated prior to closure.

6.16 Closure Certification

The Site operator will, upon completion of closure activities, submit to the OSDH and EPA, his personal certification and that of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

6.17 Closure Cost Estimate

The cost estimate is provided in Table 6.1.

7.0 POST-CLOSURE CARE

A post-closure care plan will be developed to address maintenance, security, inspection and monitoring of the closed impoundments and wastepile. This plan will be submitted under separate cover.

8.0 FINANCIAL ASSURANCE FOR CLOSURE AND POST-CLOSURE CARE

EPA regulations require use of one or more of the following mechanisms to establish financial assurance for cost of closure and post-closure care:

- Trust Fund
- Surety Bond
- Letter of Credit
- Financial Test and Corporate Guarantee

These same mechanisms are also required by the OSDH, as the federal requirements are adopted by reference in the OSDH regulations.

Facility management is now choosing the instrument to provide assurance. Counsel for Facility will prepare proper documentation and will submit the instrument under separate cover.

9.0 PUBLIC NOTIFICATION

Mixon has prepared a public notice (see Appendix H) announcing the proposed closure which was worded in accordance with the OSDH Rules and Regulations for Controlled Industrial Waste Management. This notice was posted twice each in the local newspapers, Broken Bow News and McCurtain Gazette and broadcast twice by a local radio station, KBEL (Idabel Broadcasting Company) in Idabel, Oklahoma during the period April 24, 1986 to May 1, 1986. Mixon is not aware of any comments which were received by the OSDH. No public meeting was ever scheduled or held.

REFERENCES

Bouwer, H. and R.C. Rice, 1976, "A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Well", Water Resources Research, Vol. 12, No. 3, pp. 423-428.

Davis, L. V., 1960, Geology and Ground-Water Resources of Southern McCurtain County, Oklahoma: Oklahoma Geological Survey Bulletin 86, 108 pp.

Hart, D. L., Jr., and R. E. Davis, 1981, Geohydrology of the Antlers Aquifer (Cretaceous), southeastern Oklahoma: Oklahoma Geological Survey Circular 81, 33 pp.

Huffman, G. G., P. P. Alfonsi, R. C. Dalton, A. Duarte-Vivas, and E. L. Jeffries, 1975, Geology and Mineral Resources of Choctaw County, Oklahoma: Oklahoma Geological Survey Bulletin 120, 39 pp.

Huffman, G. G., T. A. Hart, L. J. Oslon, J. D. Currier, and R. W. Ganser, 1978, Geology and Mineral Resources of Bryan County, Oklahoma: Oklahoma Geological Survey Bulletin 126, 113 pp.

Marcher, M. V. and Bergman, D. L., 1983, Reconnaissance of the Water Resources of the McAlester and Texarkana Quadrangles, Southeastern Oklahoma: Oklahoma Geological Survey Hydrologic Atlas 9, Map HA-9.

U. S. Department of Agriculture, 1974, Soil Survey of McCurtain County, Oklahoma, 99 pp.

REFERENCES

Table 4. POST CLOSURE ESTIMATE

COST FOR POST CLOSURE ON THE MIXON BROTHERS WOOD PRESERVING, INC. PROPERTY

Contractor Cost (Sampling, Inspection, Maintenance):		
Cost to Sample and Inspect Compliance Wells (3.5 hrs.@ $60/hr., 2 times/year for 20 years)	$8,400	
Chain of Custody and Samples to Laboratory for Analysis (2.5 hrs.@ $70/hr., 2 times/year for 20 years)	$7,000	
Mileage, 454 miles @ $ 0.54/mile (2 times/year for 20 years)	$9,806	
Subtotal for Contractor Cost		$25,206
Compliance Wells Laboratory Cost:		
Pentachlorophenol (Method 8270) (3 Compliance Wells @ $100/CW, 2 times/year for 20 years)	$12,000	
Naphthalene (Method 8021B) (3 Compliance Wells @ $50/CW, 2 times/year for 20 years)	$6,000	
Temperature, pH, and Specific Conductance (3 Compliance Wells @ $11/CW, 2 times/year for 20 years)	$1,320	
Subtotal for Compliance Wells Laboratory Cost		$19,320
Management Cost:		
Post Closure Management Cost (4 hrs.@ $70/hr., 2 times/year for 20 years)	$11,200	
Subtotal for Management Cost		$11,200
Subtotal of Post Closure Cost		$55,726
Incidental Expenses (15%)		8,359
Total Cost for Post Closure of Mixon Brothers Wood Preserving, Inc.		**$64,085**

NOD
#6

NOD

#2

TABLE 3

Post-closure Inspection/Remedial Action Report

Mixon Brothers Wood Preserving, Inc.

PROBLEM:

Name of Inspector:______________________________Time and Date:_________

____

____

____

____

ACTION TAKEN:

Name of Official:______________________________Time and Date:_________

____

____

____

____

COMPLETION AND FOLLOW-UP REMARKS:

Name of Official:______________________________Time and Date:_________

____

____

____

____

Time and Date:______________________

Signature of Responsible Official:________________________

NOD

#2

TABLE [illegible]NSPECTION LOG

SEMIANNUAL INSPECTION LOG SHEET

INSPECTOR'S NAME/TITLE ____________

INSPECTION DATE: ____________
INSPECTION TIME: ____________

ITEM	TYPES OF PROBLEMS	STATUS ( ) ACCEPTABLE	UNACCEPTABLE	OBSERVATIONS	DATE AND NATURE OF REPAIRS/REMEDIAL ACTION
WASTE PILE					
SURFACE IMPOUNDMENTS					
Diking/Drainage	Structural integrity, deterioration, damage, erosion				
Cover (cap)	Settlement, Ponding erosion				
Leachate Systems	N/A				
Vegetative Cover	Inadequate Cover				
GENERAL FACILITY RCRA MONITORING/SECURITY					
Fencing	Wire breaks, gate open or unlocked, etc.				
Warning Signs	Lost, Vandalized, not legible				
Groundwater Monitoring Wells	Damaged, Vandalized, unlocked				
Benchmark Integrity	Missing, damaged				
GENERAL FACILITY RCRA MONITORING/SECURITY					
Fencing	Wire breaks, gate open or unlocked, etc.				
Warning Signs	Lost, Vandalized, not legible				
Groundwater Monitoring Wells	Damaged, Vandalized, unlocked				
Benchmark Integrity	Missing, damaged				

NOD
#2

T

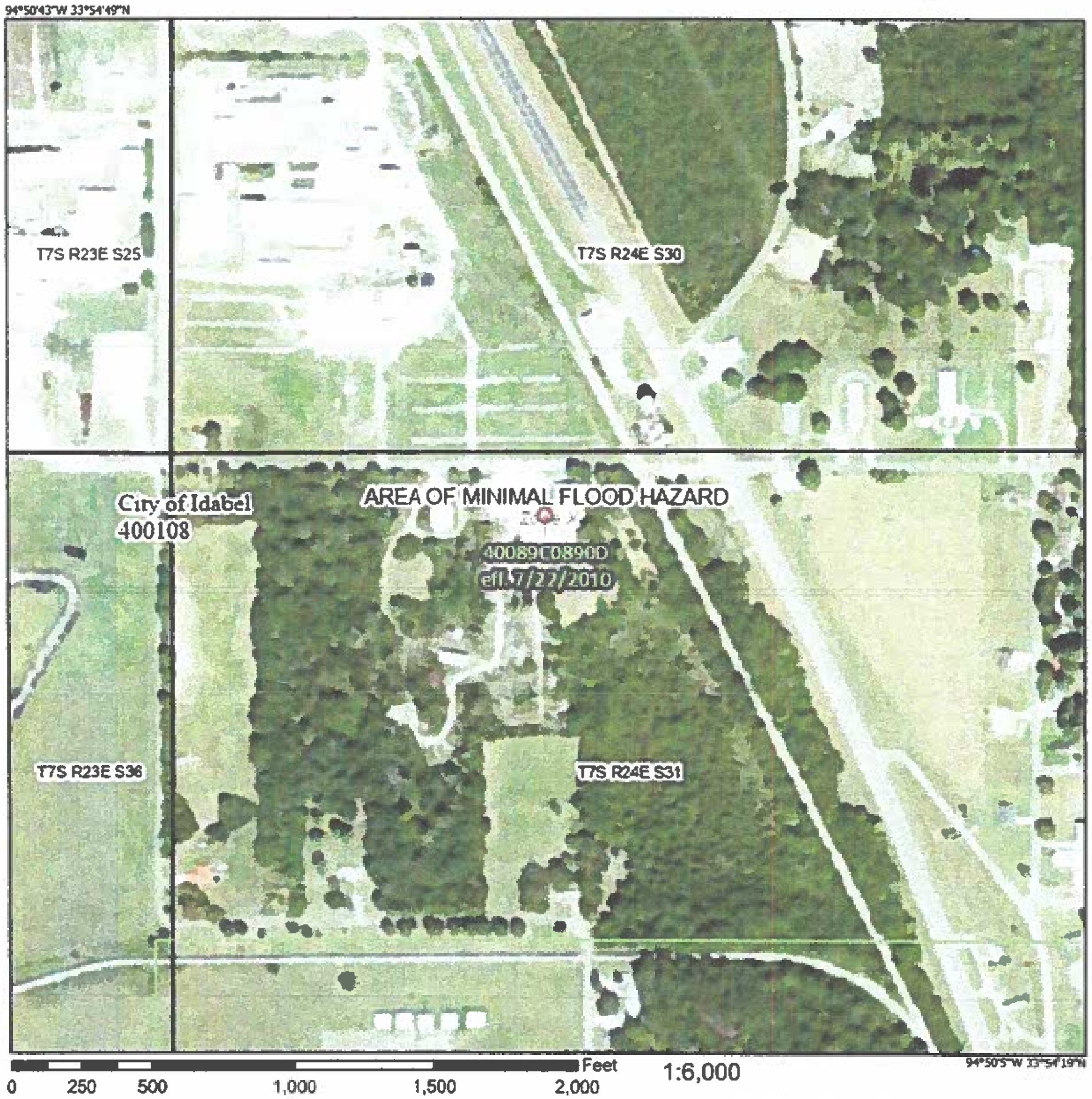
POST-CLOSURE

Facility Component or Feature		quency of spection
<u>Surface Impoundments and Waste Pile</u> Diking, Drainage Ditches integrity,	Se de e	ructural
Cover (cap)	S	miannual
Leachate Systems	N/A	
Vegetative Cover	Inadequate Cover	Semiannual
<u>General Facility</u>		
Fencing	Wire breaks, gate open, unlocked, etc.	Semiannual
Warning Signs	Lost, vandalized, not legible	Semiannual
Groundwater Monitoring Wells	Damaged, vandalized, unlocked	Semiannual
Benchmark Integrity	Missing, damaged	Semiannual

N.O.D. #4

National Flood Hazard Layer FIRMette

FEMA



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/30/2024 at 3:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOD #7

STEVEN A. THOMPSON
Executive Director

OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

January 24, 2007

Bob Mixon
Mixon Bros. Wood Preserving, Inc.
P. O. Box 327
Idabel, Oklahoma 74745

Re: Financial Assurance -- Irrevocable Standby Letter of Credit #12
DEQ Consent Order, Case No. 96-245

Dear Mr. Mixon:

The DEQ received your Letter of Credit #13, in the amount of $7,000.00 from McCurtain County National Bank on December 26, 2006. This satisfies the annual increase in financial assurance for the Mixon Bros. Wood Preserving Facility in Idabel pursuant to the above referenced Consent Order. Together with your Irrevocable Letter of Credits #8 ($41,736.00), #9 ($7,000.00), #10 ($7,000.00), #11 ($7,000.00) and #12 ($7,000.00), there is currently a total line of credit as financial assurance in the amount of $76,736.00 for the facility. If your records are not in agreement with that, please let us know as soon as possible.

Thank you for your continued attention to the matter of financial assurance for the Idabel facility.

Sincerely,

Saba Tahmassebi, Ph.D., P.E.
Chief Engineer
Land Protection Division

ST/bsa

cc: Pam Dizikes, DEQ

NOD
#6

N

RC tus Post-
Plan

Black and Associates
Environmental Consultants, Inc.

TABLE OF CONTENTS

LIST OF TABLES

POST-CLOSURE CARE PLAN

FOR THE

MIXON BROTHERS WOOD PRESERVING, INC. FACILITY

IDABEL, OK

1.0 INTRODUCTION

Facility I.D. No.: OKD007336258

Owner's Name: MIXON BROTHERS WOOD PRESERVING, INC.

Address and Telephone No.: P.O. Drawer 327

Idabel, OK 74745

405-286-3740

The purpose of this document is to present the plan for post-closure monitoring and maintenance at the Mixon Brothers Wood Preserving, Inc., Idabel, Oklahoma Facility (Facility). No hazardous wastes are now generated at the facility but hazardous waste and/or constituents will remain on-site in closed and capped impoundments and waste pile after closure under the terms of a Closure Plan which is being submitted under separate cover to the Oklahoma State Department of Health (OSDH) and the United States Environmental Protection Agency (EPA). If the Facility generates hazardous wastes in the future, these wastes will be stored on-site for 90 days or less.

The impoundments contain wood preservation wastewater treatment sludges, federal waste code K001. The sludges are considered toxic for pentachlorophenol content as well as other hazardous constituents. Although the waste and constituents will remain on-site in closed and capped impoundments and waste pile, their mobility is reduced by the closure process.

A groundwater monitoring system which may include or expand existing monitoring wells will be designed and installed (if installation is necessary) pursuant to the supplemental assessment activities. Groundwater monitoring described in this Post-Closure Care Plan (Plan) will be performed utilizing this network of wells which is yet undefined.

Copies of this Plan will be kept by Mixon Brothers at the Facility. The Facility Contact responsible for storage and updating of the Facility copy of the Plan will be:

Mr. Bob Mixon
Mixon Brothers Wood Preserving, Inc.
P.O. Drawer 327
Idabel, OK 74745

This Plan addresses general post-closure requirements of the OSDH and the EPA regulations in 40 CFR 265.

Consent Agreement and Final Order issued by EPA on December 30, 1991, a second revision of the closure plan was submitted on February 28, 1992.

2.0 POST-CLOSURE CARE PERIOD

In accordance with 40 CFR 265.117(a), the post-closure care period established in this Plan is thirty years. If, during the post-closure care period, it is determined that a reduction of this period is technically justifiable, a petition for an amendment to the Plan will be made in accordance with the provisions of 40 CFR 265.118.

3.0 INSPECTION OF POST-CLOSURE COMPONENTS

The site will be inspected semiannually to assess the condition of post-closure components. The date, time, inspection results, and maintenance activities will be logged and filed with the Facility Contact (Section 1.0).

3.1 Components to be Inspected and Inspection Schedule

The post-closure components which will be routinely inspected semiannually during the post-closure care period will include:

- Security control facilities or systems
- Final cover of closed impoundments and waste pile
- Run-on/Run-off control structures
- Surveyed Benchmarks
- Groundwater monitoring wells

This section addresses inspection requirements for these components during the post-closure period. Groundwater monitoring, inspection, and maintenance of monitoring equipment will be accomplished in accordance with the requirements of Subpart F of 40 CFR Part 265.

3.2 Inspection Procedures

Procedures for inspection of post-closure care components are summarized in the following paragraphs. The inspections will be conducted by Facility personnel or subcontractors under the authority of Mixon Brothers Wood Preserving, Inc. A schedule of inspected items and a log for recording inspection observations are provided in Tables 1 and 2, respectively.

3.2.1 Security Fence

A security fence and gates will protect surface facilities associated with the closed impoundments and waste pile during the post- closure period. Currently, a "hog wire" fence with top barbed-wire strands provides this function and is anticipated to remain for the duration of the post-closure period. The security fence is equipped with lockable gates which will be sufficient to prevent unknowing and/or unauthorized entry of all persons and domestic livestock. The security fence and gate will be inspected semi-annually during routine site inspections for damage, holes, damaged posts, broken or missing wire, gate damage, and erosion under the fence and around the posts. Repairs will be made as necessary during the post-closure period.

3.2.2 Final Cover and Run-on/Run-off Control

The site will be inspected semiannually to observe the integrity of the final cover and run-on/run-off control drainage areas for the impoundments and waste pile. If erosion of the drainage areas or final cover becomes problematic, maintenance will be required.

The final covers will also be inspected semi-annually to observe signs of settling and subsidence. If repairs are required to maintain the integrity of the final covers, they will be effected by a contractor under the direction of the Facility Contact.

3.2.3 Surveyed Benchmarks

Benchmarks will be maintained throughout the post-closure period. If semiannual inspections reveal that a benchmark is damaged or missing, repair or replacement will be required. A survey team will be used to relocate a missing benchmark, if necessary.

3.2.4 Groundwater Monitoring System

During regular groundwater sampling events, the integrity, and operation of groundwater monitoring wells will be inspected. The surface casing of the wells will be inspected to identify damage to or deterioration of the casing and locking mechanism, deterioration of the concrete surface seal and pad, evidence of tampering, retention of water between the surface casing and well casing, and deterioration of well labeling. The depth of the wells will be measured routinely during inspections to check for accumulation of fines within the wellbore. Water produced from each well will be visually inspected for excessive sediment accumulation which might indicate poor performance of the sand filter or well screen.

Once annually, Mixon Brothers will evaluate the groundwater surface elevation data to confirm that the location of the wells (hydraulically upgradient and downgradient of the impoundments and downgradient of the waste pile) continues to be in keeping with the operational design of the monitoring system. If these data indicate that the designed location requirements are no longer satisfied, relocation of one or more wells may be required.

3.3 Inspection Records

The records of all inspection and testing activities will be recorded in an inspection log book. The inspection log book will be kept by the Facility Contact. Required maintenance will be documented on a Remedial Action Report Form provided in Table 3.

4.0 POST-CLOSURE MAINTENANCE ACTIVITIES

Maintenance activities will be performed as necessary during the post-closure care period in response to deficiencies noted during inspections. Detailed reports of all repair activities will be kept as part of the permanent sampling record.

4.1 Security Facilities

Maintenance of security facilities will be in direct and immediate response to the findings of regular inspections. All deficiencies noted during inspections will be corrected within 15 business days of identification. All maintenance activities will be documented on the Remedial Action Report Form (Table 3).

4.2 Final Cover and Run-on/Run-Off Control

A cover crop will be established on the impoundment cover and waste pile cover during the final closure activity period. The crop will be fertilized and irrigated as necessary to obtain adequate cover. Once the grass is established, it will be mowed as needed so long as Mixon Brothers Wood Preserving, Inc. is in operation. Erosion will be controlled by the vegetative cover and the site will be inspected semiannually throughout the post-closure period to ensure that erosion does not become problematic.

The impoundment cover and waste pile cover will be inspected twice annually to observe the integrity of the cap material. If the cover is damaged by erosion or other causes, it will be repaired by a contractor. Special attention will be paid to the cover after periods of severe storms when erosion affects may be anticipated. Eroded areas will be filled in, repaired, and revegetated.

Final contouring of the closed impoundments and waste pile will provide for gentle but adequate drainage. Compaction of fill material should reduce the likelihood of severe settlement. No subsidence is anticipated in these areas. Settlement and drainage will be observed during semiannual inspections and any necessary repairs accomplished by the contractor.

4.3 Benchmark Integrity

Permanent benchmarks placed during the survey of the property and used to develop the closure plan will be maintained throughout the post-closure period. Any deficiencies noted in this regard during semiannual inspections will be corrected.

5.0 POST-CLOSURE MONITORING

Given that floating product was recently observed in one (1) downgradient groundwater monitoring well at the Facility (Monitoring Well PZ-1), the Mixon Facility will forego conducting a detection monitoring program. Instead, an assessment monitoring program is proposed for the facility to evaluate rate and extent of observed impacts in accordance with 40 CFR 265.93. A Groundwater Assessment Plan for the Facility has been prepared and is provided herewith. Following completion of the rate and extent investigation, the need for conducting a Corrective Measures Study will be evaluated. In addition, a system for post-closure groundwater monitoring will be proposed at that time.

5.1 Management and Communication

The following paragraphs describe the mechanism which Mixon Brothers will establish for obtaining and managing monitoring data during the post-closure compliance monitoring period.

a) The Facility Contact is the representative who has been authorized by Mixon Brothers to initiate whatever actions he believes necessary to provide appropriate responses to situations which might occur under this program.

Overall responsibility for RCRA compliance and oversight is vested in the Facility Contact. To initiate the response activities, the Facility Contact will notify the OSDH.

b) All formal communications between Mixon Brothers and the OSDH will be directed through the Facility Contact.

c) The Facility Contact will be responsible for making required or appropriate notifications to other institutions, agencies, or persons regarding the status of the Facility.

6.0 POST-CLOSURE CARE COST ESTIMATE

The total cost for post-closure activities is estimated at $99,269, or about $ 3,309 per year. The cost estimate is based upon an estimated thirty-year post-closure care duration.

The estimated costs are summarized in Table 4.

7.0 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE CARE

7.1 Corporate Financial Test

EPA regulations require use of one or more of the following mechanisms to establish financial assurance for cost of closure and post-closure care:

- Trust Fund
- Surety Bond
- Letter of Credit
- Financial Test and Corporate Guarantee

These same mechanisms are also required by the OSDH, as the federal requirements are adopted by reference in the OSDH regulations.

Facility management is now choosing the instrument to provide assurance. Counsel for Facility will prepare proper documentation and will submit the instrument under separate cover.

7.2 Liability Requirements

The Consent Agreement and Final Order (CA/FO) stated in paragraph 4 of the orders, that "The revised closure plan shall include, in addition to the information previously submitted, a post-closure plan and financial assurance documentation in compliance with 40 CFR Subparts G and H, but not including

40 CFR 265.147...". Liability requirements are covered in 40 CFR 265.147. Therefore, the liability requirements for Mixon Brothers have been removed.

8.0 POST-CLOSURE NOTICES (40 CFR 265.119)

8.1 Notice to Local Zoning Authority (265.119(a))

Mixon Brothers will develop and submit within 60 days of certification of closure, a record of the type, location, and quantity of hazardous wastes disposed within each closed unit. These records will be submitted to the Director of Hazardous Waste Management Service of the OSDH and to the local authority with jurisdiction over local land use and/or zoning of the Facility.

The specified records may be submitted simultaneously with the closure survey plat which is to be submitted as part of closure certification activities under 40 CFR 265.116 or they may be separately submitted within 60 days after certification of closure.

8.2 Notice-In-Deed (265.119(b))

Within 60 days of certification of closure of the impoundments and waste pile, Mixon Brothers will cause to be recorded on the facility property deed or on another instrument normally examined during title search, a notation that will in perpetuity notify any potential purchaser of the facility property of the following facts:

1. The land has been used to manage the RCRA hazardous wastes.

2. Use of the land is restricted under 40 CFR 265 Subparts G and M regulations.

3. A survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each hazardous waste disposal unit of the facility have been developed in accordance with 40 CFR 265.116 and 265.119(a), and are filed with the local land use authority and with the Director of Hazardous Waste Management Service of the OSDH.

The notation will specify the title and business address of the local land use authority and of the OSDH where this information is filed.

8.3 <u>Development of Post-Closure Notifications and Certification (40 CFR 265.119(b)(2))</u>

In order to fulfill the requirements of Sections 8.1 and 8.2, Mixon Brothers will:

1. Verify the appropriate local authority with jurisdiction over local use and/or zoning of the property. The post-closure records discussed in Section 8.1 will then be submitted.

2. Prepare and record, in accordance with Oklahoma State law, the post-closure notation on the facility property deed or another instrument discussed in Section 8.2.

3. Prepare a certification statement, to be signed by the authorized representative of Mixon Brothers that the notice-in-deed has been recorded as required by 40 CFR 265.119(b)(2).

Following preparation of the notice-in-deed and the certification statement of recording the notice-in-deed, Mixon Brothers will submit the certification to the Director of Hazardous Waste Management Service of the OSDH together with a copy of the notice-in-deed, as recorded. This submission will be accomplished within 60 days of certification of closure. Following their development, the post-closure notice of Section 8.1, the notice-in-deed of Section 8.2, and the certification statement of Section 8.3 will each be incorporated into this post-closure plan, for future reference.

Appendix M

Waste Characterization Assessment Report

NOD 12A

Environmental Consultants, Inc.

TABLE OF CONTENTS

TABLES

LIST OF FIGURES

WASTE CHARACTERIZATION ASSESSMENT REPORT
MIXON BROTHERS WOOD PRESERVING, INC.
IDABEL, OKLAHOMA

1.0 INTRODUCTION

1.1 Facility Description

This assessment has been performed for the Mixon Brothers Wood Preserving Inc. facility (Facility) in Idabel, OK. The Facility is located northwest of Idabel off of U.S. Highway 70 in McCurtain County, OK. The Facility has been in operation since 1967. A location map is provided in Figure 1.

1.2 Background

The Facility contains three (3) impoundments and a waste pile in which hazardous wastes may have been managed in the past. According to Mixon, waste has not been added to the units since 1982, due to Facility process changes. Mixon prepared a closure plan (Plan) for these units pursuant to the Resource Conservation Recovery Act (RCRA) as required by the OSDH in a warning letter received December 18, 1985. The Plan was submitted to the OSDH on January 17, 1986. In order to facilitate approval of the Plan, the U.S. Environmental Protection Agency (EPA) directed Mixon to obtain additional waste characterization information. This report summarizes the information developed by Mixon pursuant to EPA's directive.

1.3 Assessment Objectives

Mixon requested Roberts/Schornick and Associates, Inc. (RSA) to perform the waste characterization assessment of the sediment in the Facility's wastewater impoundments and the waste pile materials. The waste unit locations are identified on Figure 2. RSA prepared and executed a plan of sampling and analyzing the impoundment sludge and wastepile materials in a manner consistent with EPA and OSDH protocols for classifying industrial and hazardous wastes. The primary objective of the characterization assessment was to evaluate the wastes in terms of hazardous characteristics and constituents.

The surface areas and waste volumes of the impoundments and wastepile are as follows:

Unit	Surface Area	Estimated Waste Volume
Impoundment No. 1	930 sq. ft.	62 $yd.^3$
Impoundment No. 2	400 sq. ft.	28 $yd.^3$
Impoundment No. 3	2100 sq. ft.	13 $yd.^3$
Waste Pile	250 sq. ft.	23 $yd.^3$

The units are depicted on the RCRA Units Location Map provided in Figure 2.

1.4 Report Overview

A sampling plan was prepared by RSA and the sampling effort took place on February 9, 1987. This report summarizes the waste characterization findings. It is organized in the following sections:

2.0 Assessment Rationale

Applicable regulations are identified and rationale is presented for the impoundment sediment characterization parameters which were selected. Regulatory review and discussions related to the assessment process are presented.

3.0 Assessment Plan

The scope of work performed by RSA for the assessment is presented in this section. Included are: sampling strategy, sample locations, assumptions, analytical methodology, QA/QC, and procedure documentation.

4.0 Field Investigation

The actual field sampling event is documented. The details of sample collection, identification, and handling are presented.

5.0 Analytical Results and Statistical Analysis

Tables summarizing the analytical data are presented. Statistical analytical result tables are presented. Custody control forms and laboratory QA/QC sample results are also discussed and provided.

6.0 Data Interpretation

The data are interpreted in terms of applicable regulations and the characteristics of the sediment as evidenced by the analytical results.

7.0 Summary of Conclusions

Waste volume, properties, and regulatory classification are discussed in detail.

2.0 ASSESSMENT RATIONALE

This comprehensive characterization assessment was planned and conducted to supplement the preliminary waste characterization data provided by Mixon in the Plan. The objective of this investigation was to develop information about the site wastes sufficient to:

1. Characterize the chemical and physical nature of the wastes.
2. Provide an updated estimate of the total volume of wastes on-site which are subject to closure management.

These activities are described in Section 3.0. No further assessment regarding potentially contaminated soils was performed as a part of this investigation. EPA agreed that soil contamination and background soil constituents could be assessed by implementing a Site Boring Plan, to be prepared for submittal to EPA on March 31, 1987. (1,2)

A sampling strategy was developed which conforms with guidelines provided in SW-846; Test Methods for Evaluating Solid Waste, U.S. Environmental Protection Agency, 1984. (3) This strategy was discussed with EPA prior to implementation. (1) EPA approved of the strategy with minor revisions and the investigation was initiated on February 9, 1987.

3.0 ASSESSMENT PLAN

3.1 Sample Locations and Strategy

Existing information regarding the characteristics of the impoundments and waste pile materials was considered and random selection of the sample sites was selected as the sampling approach for all the waste units.

3.1.1. Impoundment Samples

All potential sample locations are defined relative to a grid systems established for each of the impoundments. The systems are depicted in Figures 3, 4 and 5 for impoundments 1, 2 and 3 respectively, and are based on approximately 10 foot grid dimensions. The total number of assessment grids within each system is as follows:

Impoundment	No. of Grids
No. 1	10
No. 2	4
No. 3	18

All potential assessment grids were numbered sequentially beginning with the southwest corner of each impoundment. Within a grid, the sample site location is defined to be the grid center or nearest accessible point. At each sample site location, the entire sediment profile was sampled. All sample locations had sludge depths of less than three (3) feet, so only one sample representing the entire sediment profile was required for each selected grid, as planned and discussed with EPA (1).

Some existing data were available to estimate expected statistical variation for the purpose of estimating the required number of samples. A total of 10 sample sites from the three impoundments were randomly selected, or 25%. The selected sample number was judged to likely be sufficient to develop contaminant concentration information which will be representative of the impoundment sediments and allow an 80% confidence level determination as required in EPA's SW-846 (3). The randomly selected grids are as follows (see Figures 3, 4 and 5):

IMPOUNDMENT	GRID IDENTIFICATION NO.
No. 1	3,5, & 10
No. 2	2 & 4
No. 3	3,6,8,13 & 17

The randomly obtained samples from each of these grids were individually tested. No compositing of samples was allowed. This sample site selection methodology is consistent with guidance provided in SW-846 (3) and according to discussions with EPA (1).

3.1.2 Waste Pile Samples

Random samples were taken from the waste pile using a grid system similar to those prepared for the impoundments. (see Figure 6). The total number of potential assessment grids was 10, each with approximate dimensions of 5'x 5'. A total of 3 grids were selected for sampling, or more than 25% of the total number of potential assessment grids. As shown on Figure 6, the grids selected for sampling were numbers 3, 5, and 8.

3.2 Sample Analysis

All samples were analyzed for the parameters listed in Table 1 by the referenced methodology.

3.3 Containers

Sample containers used were wide mouth glass jars equipped with teflon lined lids. The containers were purchased precleaned. Once the samples were placed in the containers, the lids were tightened and taped to ensure they would not be loosened during shipment. All containers were affixed with an appropriate label.

3.4 Laboratory

The analyses were performed by Enviromed Laboratories, Inc. of Ruston, LA. QA/QC information for the laboratory is presented in Appendix D.

4.0 FIELD INVESTIGATION

4.1 Implementation

The sampling plan was implemented on February 9, 1987. The field work was performed by Mr. Mark Fuchs of RSA. The team arrived at the site at about 4:30 p.m. on February 8, and began to prepare for sampling on the following morning. Initially the impoundment and waste pile areas were measured and staked according to the grid maps provided as Figure 3, 4, 5 and 6.

4.2 Sample Collection and Shipment

Field notes are included in Appendix A which describe each sample location. Sample identification codes correspond to the grid numbers. Descriptions of the sampling efforts at the individual waste units are provided in the following subsections.

4.2.1 Impoundment Sample Collection

At each sampled grid, stainless steel tubes were driven manually through the sediment layer and into the soil below in order to plug the end of the tubes to obtain a core sample of the entire sediment profile. The entire profile of sediment was sampled at each sample site. Sludge depth in all sample locations was less than three

(3) feet. Average sludge thickness is estimated to be about 22 inches throughout No. 1, 23 inches in impoundment No. 2, two (2) inches in impoundment No. 3.

Individual samples obtained from each site were composited by thoroughly mixing in a cleaned stainless steel bowl before sample containers were filled.

All sampling equipment was decontaminated between each sampling location. The following steps comprised the decontamination procedure used for this sampling event:

1. Wash with high pressure steam and soap.
2. Wash with tap water and low phosphate soap.
3. Rinse with tap water.
4. Rinse with distilled water.
5. Rinse with acetone.
6. Rinse with Hexane.
7. Rinse with Distilled water.
8. Rinse with 0.1 normal HCl.
9. Rinse with distilled water.

4.2.2 <u>Waste Pile Sample Collection</u>

Samples were taken from the waste pile area with the use of a back-hoe excavator and hand trowels. Using this equipment a vertical cut was made at each sample location.

One side of each cut was then scraped clean with hand trowels. A sample was then taken by trenching the entire side of each cut and collecting the soil from these trenches. The approximate dimensions of these trenches were 1" x 1" x the depth of the cut. Individual samples taken from each sample location were composited by thorough mixing in a cleaned stainless steel bowl before sample containers were filled. The waste pile materials were less than three (3) feet in thickness at each sampling location.

4.3 Custody Control

Chain of custody control documentation for each sample was maintained. Completed Forms 1.4 and 1.6 are provided in Appendix B. The custody form was initiated by the sampling team and signed by the receiving laboratory.

4.4 Shipment

The sample containers were placed in an ice chest and packed with plastic bubble wrap and styrofoam chips. Containerized ice was added and the chest was sealed and taped shut. The samples were delivered to the laboratory by overnight carrier service.

5.0 ANALYTIC RESULTS AND STATISTICAL ANALYSIS

The samples were collected in accordance with procedures outlined in Section 3.0 and 4.0 of this report. The laboratory analysis report and the chain of custody sheets are presented in Appendices A and B respectively. QA/QC information for the analyses is also provided in Appendix A including 1) Analyst's discussion of methods and results; 2) Trip blank sample results; and 3) Duplicate and spike recovery report forms.

The analytical test results are summarized in Table 2 and Table 3. Further data analysis was performed by segregating the data relative to the waste management units and calculating the following statistics for each parameter data set:

- N: Number of sample analyses.
- $\bar{X}$: Mean parameter concentration.
- SD: Sample standard deviation.
- R: Range (maximum to minimum values).

The above statistics are summarized in Tables 4 through 19.

6.0 DATA INTERPRETATION

The analytical results of the waste characterization investigation are consistent with previous site investigations. measurable concentrations of PCP and base neutral organics were found to be present in the impoundment waste sludges and waste pile material. These constituents are indicative of the RCRA wastes managed previously at the site. In the impoundments, higher concentrations of these constituents were generally found in the Impoundment No. 2 sludges and is consistent with the sequence of waste management operations in the past. This relationship is graphically depicted in Figure 7 for pentachlorophenol.

Additionally, the investigation characterized metal concentrations in the wastes. This has not been done previously. The data indicated that of the RCRA hazardous metals assessed only chromium was consistently present at elevated concentrations in all waste management units. Additionally, measurable mercury and cadmium concentrations were found to be present in the Impoundment No. 2 sludge and the waste pile material. Elevated concentrations of non-RCRA metals, copper, nickel and zinc were detected in all unit wastes.

7.0 SUMMARY OF CONCLUSIONS

The waste characterization study objectives were all obtained. The waste sludges in all units have been characterized adequately as requested by EPA. The characterization results are consistent with previous site investigations. Additionally, metal concentrations in the site wastes were determined. This information is sufficient to assess the viability of the closure plan recommended.

These data provide a basis for selecting indicator test parameters to be utilized in the soil and groundwater assessment plans submitted to EPA in a separate document. The following indicator parameters are recommended for all units:

Pentachlorophenol (PCP

Base Neutral Organics

Chromium

In addition, mercury will be assessed in waste pile soil samples.

Tables

Black and Associates
Environmental Consultants, Inc.

TABLE 1
Analysis Parameters and Methodology

Parameter	Method	Reference
Acid Extractable Compounds	8270	1
Base Neutral Compounds	8270	1
Heavy Metals:		
Antimony	7041	1
Arsenic	7060	1
Beryllium	7091	1
Cadmium	7131	1
Chromium	7191	1
Copper	7211	1
Lead	7421	1
Mercury	7471	1
Nickel	7521	1
Selenium	7740	1
Silver	7761	1
Thallium	7841	1
Zinc	7951	1
Moisture Content	209-A	3
PH	9040	1
Phenols	3-355	2
TOC	9060 (Dohrmann procedure)	1

(1) Test Methods for Evaluating Solid Waste, SW-846; U.S. EPA; 1984.
(2) Procedures for Handling and Chemical Analysis of Sediment and Water Samples; U.S. EPA/Corps of Engineer; Technical EPA/Corps of Engineer; Technical EPA/CE-81-1; May, 1981.
(3) Standard Methods (16th Edition), APHA, AWWA, WPCF.

TABLE 2 ANALYTICAL TEST RESULTS

PARAMETER	CONCENTRATIONS														
	MB3.17	MB3.13	MB3.3	MB3.6	MB3.8	MB2.2	MB2.4	MB1.10	MB1.5	MB1.3	WP5	WP8	WP3	TRIP BLANK	TRIP BLANK
Arsenic	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
Beryllium	<0.2	1.1	<0.2	0.97 0.93	<0.2	0.28 0.23	<0.2	1.9	0.87	0.99 0.96	<0.2	<0.2	<0.2		
Cadmium	<0.1	0.26	<0.1	<0.1	<0.1	0.46	0.26	0.34	0.39	0.62	1.74	0.23	0.279		
Chromium	43.3	47.1	50.3	26.8	18.3	179.2	65.5	81.6	232.1	145.5	9.8	36.4	23.3		
Copper	4.1	5.8	10.7	4.1 4.8	4.6	16.7	5.7	11.0	15.6	20.0	14.8	9.6	13.8		
Lead	<0.9	<0.9	<0.9	4.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9		
Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	1.21	0.84	<0.2	<0.2	0.35	2.92	4.83	3.9		
Nickel	9.4	8.2	15.7	7.2	7.9	5.3	2.4	17.4 17.5	9.7	15.5	4.1	14.5 13.9 14.5	14.5		
Selenium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
Silver	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.19	0.41		
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
Zinc	25.3	52.5	88.8	62.2	31.3	114.6	51.2	83.7	153.5	259.6	148.8	62.0	124.8 123.7		
Moisture Content	57.0%	51.4%	65.8%	42.8%	40.4%	47.3%	27.6%	62.1%	55.8%	72.3%	22.7%	16.9%	20.1%		
pH (Std. units)	7.2	6.6	6.4	7.1	7.1	6.0	6.0	6.9	6.8	6.9	7.0	6.6	6.6		
Phenols	4.2	8.2	29.4	7.4	6.8	19.9	14.1	25.0	18.4	27.9	10.3	18.1	41.1		
TOC	1.6%	5.8%	7.2%	3.2%	0.97% 1.0%	12.2%	24.4%	3.3%	5.7%	4.2%	3.2%	3.9%	5.8%		

* Concentration of Carbazole and Fluorene are combined

TABLE 3 ANALYTICAL TEST RESULTS

	CONCENTRATIONS														
PARAMETER	MB3.17	MB3.13	MB3.3	MB3.6	MB3.8	MB2.2	MB2.4	MB1.10	MB1.5	MB1.3	WP5	WP8	WP3	TRIP BLANK	TRIP BLANK
2 - Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	0.022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.9	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p - Chloro-m-cresol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	1370	857	693	786	4040	22800	77	156	46	1720	ND	2860	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	13	130	7.5	13	ND	178	ND	ND	ND	32	ND	56	ND	ND
Acenaphthylene	0.01	6.1	ND	4.2	5.9	55	135	ND	ND	ND	3.1	7.0	8.2	ND	ND
Benzo (a) anthracene	0.20	32	228	52	18	916	1287	9.0	5.4	7.0	115	187	272	ND	ND
Benzo (a) Pyrene	ND	10	48	12	2.4	189	255	1.3	2.0	2.9	39	11	92	ND	ND
Benzo (b) Fluoranthene	ND	33	61	19	17	208	271	5.1	3.0	4.2	45	65	118	ND	ND
Fluoranthene	0.28	238	865	262	169	217	2496	119	75.5	91	127	1620	488	ND	ND
Indeno (1,2,3,c,d) Pyrene	ND	ND	21	ND	ND	ND	ND	ND	ND	ND	8.0	ND	51	ND	ND
Naphthalene	0.37	305	228	165	284	2240	2995	960	364	316	262	1250	332	ND	ND
Phenanthrene	0.42	233	340	383	197	3250	3871	310	186	260	261	1680	342	ND	ND
Carbazole	*	*	*	*	*	*	*	*	*	*	*	*	*	ND	ND
(Fluorene)	0.17	90	133	136	65	1830	2305	174	87	145	129	248	227	ND	ND
Antimony	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 <1.0	<1.0	<1.0	<1.0	<1.0		

* Concentration of Carbazole and Fluorene are combined

TAB

SEDIMENT SAMPLES FROM IMPOUNDMENT #1

METALS ANALYSES

CONC. (PPM)

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MB1.1	MB1.3	MB1.5	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ANTIMONY	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
ARSENIC	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
BERYLLIUM	1.90	.98	.87	3	1.90	.87	1.25	.57
CADMIUM	.34	.62	.39	3	.62	.34	.45	.15
CHROMIUM	81.60	145.50	232.10	3	232.10	81.60	153.07	75.53
COPPER	11.00	20.00	15.60	3	20.00	11.00	15.53	4.50
LEAD	.90*	.90*	.90*	3	.90	.90	.90	.00
MERCURY	.20*	.35	.20*	3	.35	.20	.25	.09
NICKEL	17.45	15.50	9.70	3	17.45	9.70	14.22	4.03
SELENIUM	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
SILVER	.20*	.20*	.20*	3	.20	.20	.20	.00
THALLIUM	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
ZINC	83.70	259.60	153.50	3	259.60	83.70	165.60	88.57

* = LESS THAN DETECTION LIMIT

1. .E 5

SEDIMENT SAMPLES FROM IMPOUNDMENT #2

METALS ANALYSES

CONC. (PPM)

PARAMETER	SAMPLE NUMBER		STATISTICAL ANALYSIS				
	M2.2	M2.4	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ANTIMONY	1.00*	1.00*	2	1.00	1.00	1.00	.00
ARSENIC	1.00*	1.00*	2	1.00	1.00	1.00	.00
BERYLLIUM	.25	.20*	2	.25	.20	.23	.04
CADMIUM	.46	.26	2	.46	.26	.36	.14
CHROMIUM	179.20	65.50	2	179.20	65.50	122.35	80.40
COPPER	16.70	5.70	2	16.70	5.70	11.20	7.78
LEAD	.90*	.90*	2	.90	.90	.90	.00
MERCURY	1.21	.84	2	1.21	.84	1.03	.26
NICKEL	5.30	2.40	2	5.30	2.40	3.85	2.05
SELENIUM	1.00*	1.00*	2	1.00	1.00	1.00	.00
SILVER	.20*	.20*	2	.20	.20	.20	.00
THALLIUM	1.00*	1.00*	2	1.00	1.00	1.00	.00
ZINC	114.60	51.20	2	114.60	51.20	82.90	44.83

* = LESS THAN DETECTION LIMIT

TAL 6

SEDIMENT SAMPLES FROM IMPOUNDMENT #3

METALS ANALYSES

CONC. (PPM)

PARAMETER	SAMPLE NUMBER					STATISTICAL ANALYSIS				
	MB3.3	MB3.6	MB3.8	MB3.13	MB3.17	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ANTIMONY	1.00*	1.00*	1.00*	1.00*	1.00*	5	1.00	1.00	1.00	.00
ARSENIC	1.00*	1.00*	1.00*	1.00*	1.00*	5	1.00	1.00	1.00	.00
BERYLLIUM	.20*	.95	.20*	1.10	.20*	5	1.10	.20	.53	.45
CADMIUM	.10*	.10*	.10*	.26	.10*	5	.26	.10	.13	.07
CHROMIUM	50.30	26.80	18.30	47.10	43.30	5	50.30	18.30	37.16	13.89
COPPER	10.70	4.45	4.60	5.80	4.10	5	10.70	4.10	5.93	2.74
LEAD	.90*	4.90	.90*	.90*	.90*	5	4.90	.90	1.70	1.79
MERCURY	.20*	.20*	.20*	.20*	.20*	5	.20	.20	.20	.00
NICKEL	15.70	7.20	7.90	8.20	9.40	5	15.70	7.20	9.68	3.46
SELENIUM	1.00*	1.00*	1.00*	1.00*	1.00*	5	1.00	1.00	1.00	.00
SILVER	.20*	.20*	.20*	.20*	.20*	5	.20	.20	.20	.00
THALLIUM	1.00*	1.00*	1.00*	1.00*	1.00*	5	1.00	1.00	1.00	.00
ZINC	88.80	62.20	31.30	52.50	25.30	5	88.80	25.30	52.02	25.49

* = LESS THAN DETECTION LIMIT

TABL

SAMPLES FROM WASTE PILE

METALS ANALYSES

CONC. (PPM)

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MBWP3	MBWP5	MBWP8	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ANTIMONY	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
ARSENIC	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
BERYLLIUM	.20*	.20*	.20*	3	.20	.20	.20	.00
CADMIUM	.28	1.74	.23	3	1.74	.23	.75	.86
CHROMIUM	23.30	9.80	36.40	3	36.40	9.80	23.17	13.30
COPPER	13.80	14.80	9.60	3	14.80	9.60	12.73	2.76
LEAD	.90*	.90*	.90*	3	.90	.90	.90	.00
MERCURY	3.90	2.92	4.83	3	4.83	2.92	3.88	.96
NICKEL	14.50	4.10	14.30	3	14.50	4.10	10.97	5.95
SELENIUM	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
SILVER	.41	.20*	.19	3	.41	.19	.27	.00
THALLIUM	1.00*	1.00*	1.00*	3	1.00	1.00	1.00	.00
ZINC	124.25	148.80	62.00	3	148.80	62.00	111.68	44.74

* = LESS THAN DETECTION LIMIT

TABLE 8

SEDIMENT SAMPLES FROM IMPOUNDMENT #1

ORGANICS ANALYSES

(ACID EXTRACTABLES)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MB1.1	MB1.3	MB1.5	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
2 - CHLOROPHENOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
2,4 - DIMETHYLPHENOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
2,4 - DINITROPHENOL	25.00*	25.00*	25.00*	3	25.00	25.00	25.00	.00
p - CLORO-m-CRESOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
PENTACHLOROPHENOL	77.00	46.00	156.00	3	156.00	46.00	93.00	56.72
2,4,6 - TRICHLOROPHENOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
2,3,4,6, - TETRACHLOROPHENOL	25.00*	25.00*	25.00*	3	25.00	25.00	25.00	.00

* = LESS THAN DETECTION LIMIT

TABLE 9

SEDIMENT SAMPLES FROM IMPOUNDMENT #2

ORGANICS ANALYSES

(ACID EXTRACTABLES)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER		STATISTICAL ANALYSIS				
	M2.2	M2.4	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
2 - CHLOROPHENOL	5.00*	5.00*	2	5.00	5.00	5.00	.00
2,4 - DIMETHYLPHENOL	5.00*	5.00*	2	5.00	5.00	5.00	.00
2,4 - DINITROPHENOL	25.00*	25.00*	2	25.00	25.00	25.00	.00
p - CHLORO-m-CRESOL	5.00*	5.00*	2	5.00	5.00	5.00	.00
PENTACHLOROPHENOL	4040.00	22800.0	2	22800.0	4040.00	13420.0	13265.3
2,4,6 - TRICHLOROPHENOL	5.00*	5.00*	2	5.00	5.00	5.00	.00
2,3,4,6 - TETRACHLOROPHENOL	25.00*	178.00*	2	178.00	25.00	101.50	108.19

* = LESS THAN DETECTION LIMIT

TABLE 10

SEDIMENT SAMPLES FROM IMPOUNDMENT #3

ORGANIC ANALYSES

(ACID EXTRACTABLES)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER					STATISTICAL ANALYSIS				
	MB3.3	MB3.6	MB3.8	MB3.13	MB3.17	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
2 - CHLOROPHENOL	5.00*	5.00*	5.00*	5.00*	.010*	5	5.00	.01	4.00	2.23
2,4 - DIMETHYLPHENOL	5.00*	5.00*	5.00*	5.00*	.022	5	5.00	.02	4.00	2.23
2,4 - DINITROPHENOL	25.00*	25.00*	25.00*	25.00*	.050*	5	25.00	.05	20.01	11.16
p - CHLORO-m-CRESOL	5.00*	5.00*	5.00*	5.00*	.010*	5	5.00	.01	4.00	2.23
PENTACHLOROPHENOL	857.00	693.00	786.00	1370.00	.050*	5	1370.00	.05	741.21	490.52
2,4,6 - TRICHLOROPHENOL	5.00*	5.00*	5.00*	5.00*	.010*	5	5.00	.01	4.00	2.23
2,3,4,6 - TETRACHLOROPHENOL	130.00	7.50	13.00	13.00	.050*	5	130.00	.05	32.71	54.65

* = LESS THAN DETECTION LIMIT

TABLE 11

SAMPLES FROM WASTE PILE

ORGANICS ANALYSES

(ACID EXTRACTABLES)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MBWP3	MBWP5	MBWP8	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
2 - CHLOROPHENOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
2,4 - DIMETHYLPHENOL	6.90	5.00*	5.00*	3	6.90	5.00	5.63	1.10
2,4 - DINITROPHENOL	25.00*	25.00*	25.00*	3	25.00	25.00	25.00	.00
p - CLORO-m-CRESOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
PENTACHLOROPHENOL	2860.00	1720.00	25.00*	3	2860.00	25.00	1535.00	1426.53
2,4,6 - TRICHLOROPHENOL	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
2,3,4,6, - TETRACHLOROPHENOL	56.00	32.00	25.00*	3	56.00	25.00	37.67	16.26

* = LESS THAN DETECTION LIMIT

TABLE 12

SEDIMENT SAMPLES FROM IMPOUNDMENT #1

ORGANICS ANALYSES

(BASE/NEUTRALS)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MB1.1	MB1.3	MB1.5	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ACENAPHTHYLENE	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
BENZO (a) ANTHRACENE	9.00	7.00	5.40	3	9.00	5.40	7.13	1.80
BENZO (a) PYRENE	1.30	2.90	2.00	3	2.90	1.30	2.07	.80
BENZO (b) FLUORANTHENE	5.10	4.20	3.00	3	5.10	3.00	4.10	1.05
FLUORANTHENE	119.00	91.00	75.50	3	119.00	75.50	95.17	22.05
INDENO (1,2,3,c,d) PYRENE	5.00*	5.00*	5.00*	3	5.00	5.00	5.00	.00
NAPHTHALENE	960.00	316.00	364.00	3	960.00	316.00	546.67	358.76
PHENANTHRENE	310.00	260.00	186.00	3	310.00	186.00	252.00	62.39
CARBAZOLE (FLUORENE INCLUDED)	174.00	145.00	87.00	3	174.00	87.00	135.33	44.30

* = LESS THAN DETECTION LIMIT

TABLE 13

SEDIMENT SAMPLES FROM IMPOUNDMENT #2

ORGANICS ANALYSES

(BASE/NEUTRALS)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER		STATISTICAL ANALYSIS				
	M2.2	M2.4	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ACENAPHTHYLENE	55.00	135.00	2	135.00	55.00	95.00	56.57
BENZO (a) ANTHRACENE	916.00	1287.00	2	1287.00	916.00	1101.50	262.34
BENZO (a) PYRENE	189.00	255.00	2	255.00	189.00	222.00	46.67
BENZO (b) FLUORANTHENE	208.00	271.00	2	271.00	208.00	239.50	44.55
FLUORANTHENE	217.00	2496.00	2	2496.0	217.00	1356.5	1611.5
INDENO (1,2,3,c,d) PYRENE	5.00*	5.00*	2	5.00	5.00	5.00	.00
NAPHTHALENE	2240.00	2995.00	2	2995.00	2240.00	2617.50	533.87
PHENANTHRENE	3250.00	3871.00	2	3871.00	3250.00	3560.50	439.11
CARBAZOLE (FLUORENE INCLUDED)	1830.00	2305.00	2	2305.00	1830.00	2067.50	335.88

* = LESS THAN DETECTION LIMIT

TABLE 14

SEDIMENT SAMPLES FROM IMPOUNDMENT #3

ORGANIC ANALYSES

(BASE/NEUTRALS)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER					STATISTICAL ANALYSIS				
	MB3.3	MB3.6	MB3.8	MB3.13	MB3.17	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ACENAPHTHYLENE	5.00*	4.20	5.90	6.10	.010	5	6.10	.01	4.24	2.48
BENZO (a) ANTHRACENE	228.00	52.00	18.00	32.00	.200	5	228.00	.20	66.04	92.51
BENZO (a) PYRENE	48.00	12.00	2.40	10.00	.010*	5	48.00	.01	14.48	19.40
BENZO (b) FLUORANTHENE	61.00	19.00	17.00	33.00	.010*	5	61.00	.01	26.00	22.80
FLUORANTHENE	865.00	262.00	169.00	238.00	.280	5	865.00	.28	306.86	328.36
INDENO (1,2,3,c,d) PYRENE	21.00	5.00*	5.00*	5.00*	.025*	5	21.00	.03	7.21	8.01
NAPHTHALENE	228.00	165.00	284.00	305.00	.370	5	305.00	.37	196.47	122.35
PHENANTHRENE	340.00	383.00	197.00	233.00	.420	5	383.00	.42	230.68	149.43
CARBAZOLE (FLUORENE INCLUDED)	133.00	136.00	65.00	90.00	.170	5	136.00	.17	84.83	55.96

* = LESS THAN DETECTION LIMIT

TABLE 15

SAMPLES FROM WASTE PILES

ORGANICS ANALYSES

(BASE/NEUTRALS)

CONC. (MG/KG)

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MBWP3	MBWP5	MBWP8	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
ACENAPHTHYLENE	8.20	3.10	7.00	3	8.20	3.10	6.10	2.67
BENZO (a) ANTHRACENE	272.00	115.00	187.00	3	272.00	115.00	191.33	78.59
BENZO (a) PYRENE	92.00	39.00	11.00	3	92.00	11.00	47.33	41.14
BENZO (b) FLUORANTHENE	118.00	45.00	65.00	3	118.00	45.00	76.00	37.72
FLUORANTHENE	488.00	127.00	1620.00	3	1620.00	127.00	745.00	778.97
INDENO (1,2,3,c,d) PYRENE	51.00	8.00	5.00*	3	51.00	5.00	21.33	25.74
NAPHTHALENE	332.00	262.00	1250.00	3	1250.00	262.00	614.67	551.33
PHENANTHRENE	342.00	261.00	1680.00	3	1680.00	261.00	761.00	796.91
CARBAZOLE (FLUORENE INCLUDED)	227.00	129.00	248.00	3	248.00	129.00	201.33	63.52

* = LESS THAN DETECTION LIMIT

TABLE 16

SAMPLES FROM IMPOUNDMENT #1

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MB1.1	MB1.3	MB1.5	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
MOISTURE CONTENT (%)	62.10	72.30	55.80	3	72.30	55.80	63.40	8.33
pH (S.U.)	6.90	6.90	6.80	3	6.90	6.80	6.87	.06
PHENOLS (MG/L)	25.00	27.90	18.40	3	27.90	18.40	23.77	4.87
TOC (%)	3.30	4.20	5.70	3	5.70	3.30	4.40	1.21

TABLE 17

SEDIMENT SAMPLES FROM IMPOUNDMENT #2

PARAMETER	SAMPLE NUMBER		STATISTICAL ANALYSIS				
	M2.2	M2.4	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
MOISTURE CONTENT (%)	47.30	27.60	2	47.30	27.60	37.45	13.93
pH (S.U.)	6.00	6.00	2	6.00	6.00	6.00	.00
PHENOLS (MG/L)	19.90	14.10	2	19.90	14.10	17.00	4.10
TOC (%)	12.20	24.40	2	24.40	12.20	18.30	8.63

TABLE 18

SEDIMENT SAMPLES FROM IMPOUNDMENT #3

PARAMETER	SAMPLE NUMBER					STATISTICAL ANALYSIS				
	MB3.3	MB3.6	MB3.8	MB3.13	MB3.17	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
MOISTURE CONTENT (%)	65.80	42.80	40.40	51.40	57.00	5	65.80	40.40	51.48	10.41
pH (S.U.)	6.40	7.10	7.10	6.60	7.20	5	7.20	6.40	6.88	.36
PHENOLS (MG/L)	29.40	7.40	6.80	8.20	4.20	5	29.40	4.20	11.20	10.28
TOC (%)	7.20	3.20	.99	5.80	1.60	5	7.20	.99	3.76	2.68

TABLE 19

SAMPLES FROM WASTE PILES

PARAMETER	SAMPLE NUMBER			STATISTICAL ANALYSIS				
	MBWP3	MBWP5	MBWP8	NUMBER	MAXIMUM	MINIMUM	MEAN	S.D.
MOISTURE CONTENT (%)	20.10	22.70	16.90	3	22.70	16.90	19.90	2.91
pH (S.U.)	6.60	7.00	6.60	3	7.00	6.60	6.73	.23
PHENOLS (MG/L)	41.10	10.30	18.10	3	41.10	10.30	23.17	16.01
TOC (%)	5.80	3.20	3.90	3	5.80	3.20	4.30	1.35

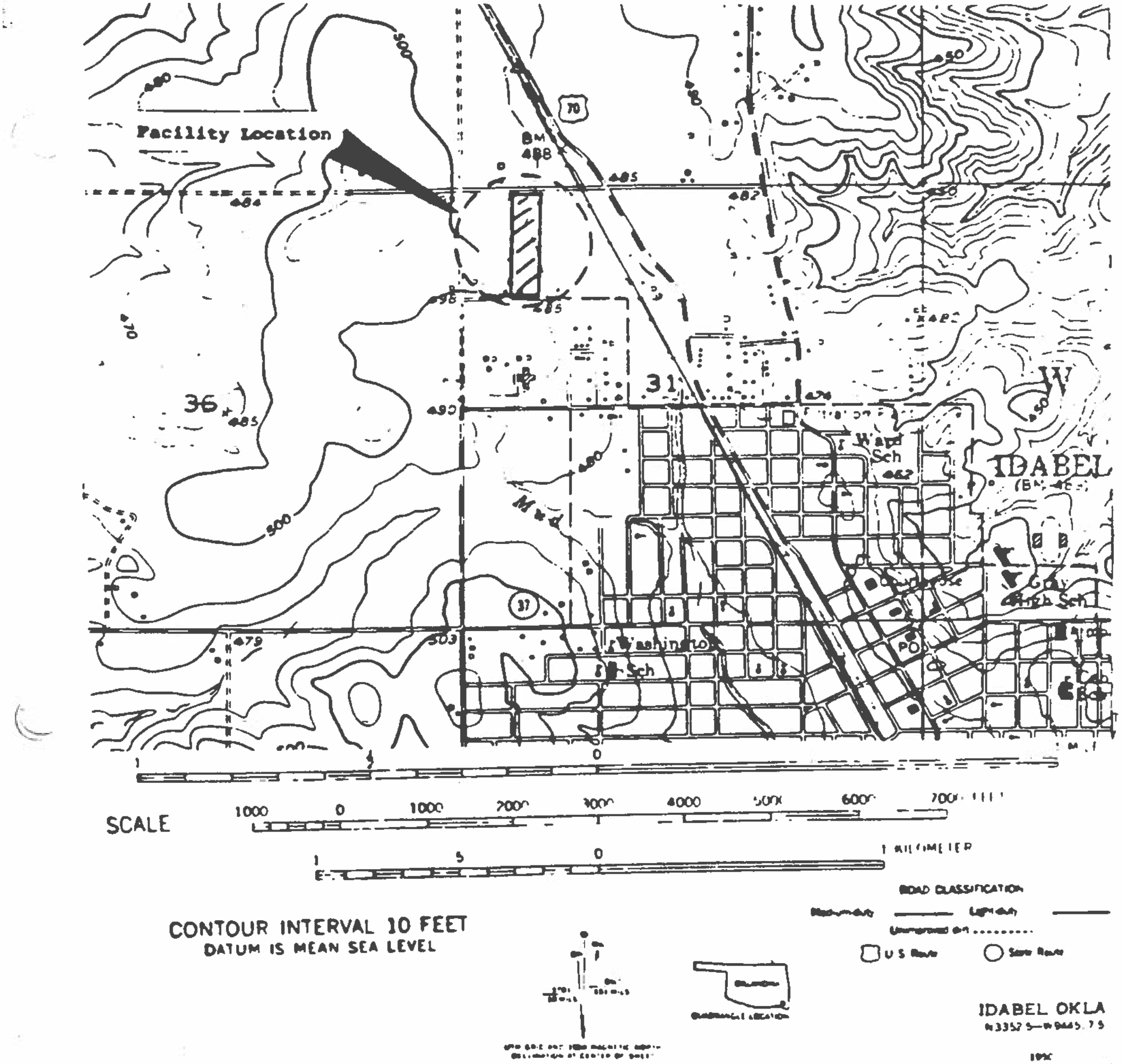


Figure Title: Location Map	Client: Mixon Brothers Wood Preserving, Inc.
Document Title: Waste Characterization Assessment Report	Location: Idabel, OK

ROBERTS/SCHORNICK & ASSOCIATES, INC.
860 Copperfield Drive, Suite A
Norman, Oklahoma 73072
(405) 321-3895

Drawn by: MF	Scale: N/A
Checked by: MF	Date: 3-27
Project No.: 87014	Figure No.: 1

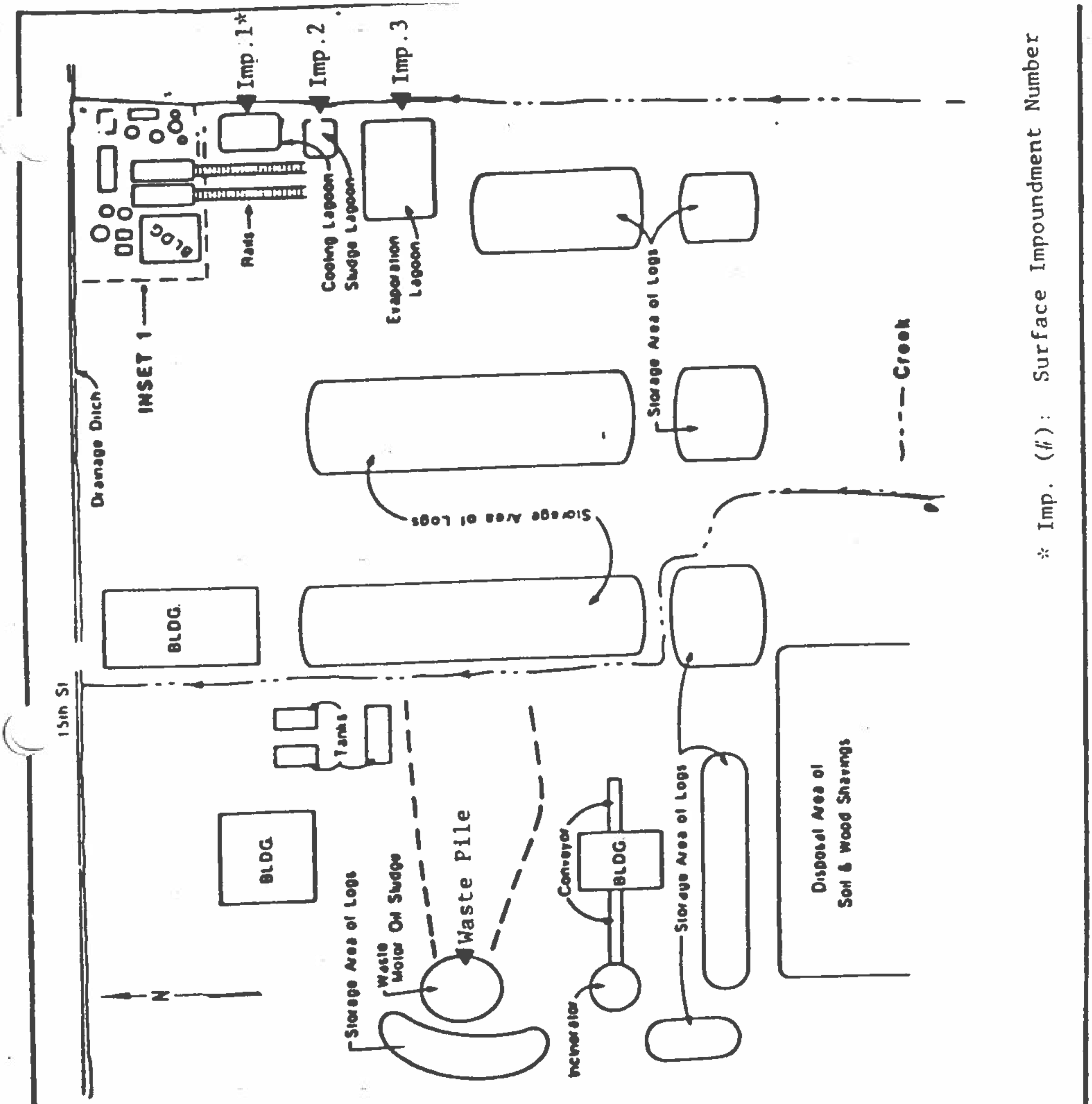
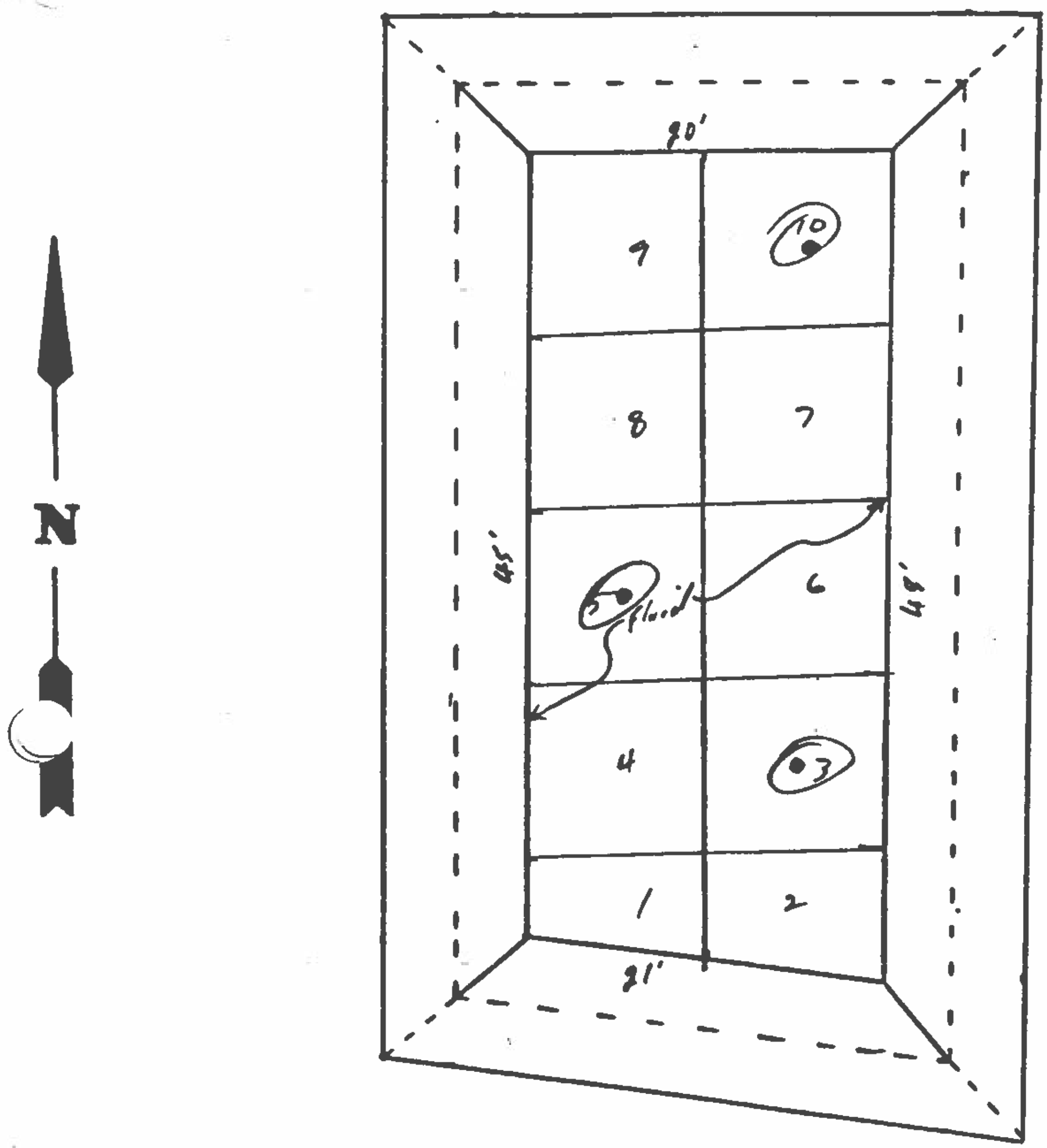


Figure Title: RCRA Units Location Map	Client: Mixon Brothers Wood Preserving, Inc.
Document Title: Waste Characterization Assessment Report	Location: Idabel, OK

ROBERTS/SCHORNICK & ASSOCIATES, INC. 860 Copperfield Drive, Suite A Norman, Oklahoma 73072 (405) 321-3895	Drawn by: MF	Scale: N/A
	Checked by: MF	Date: 3-27
	Project No.: 87014	Figure No.: 2

Impoundment #1

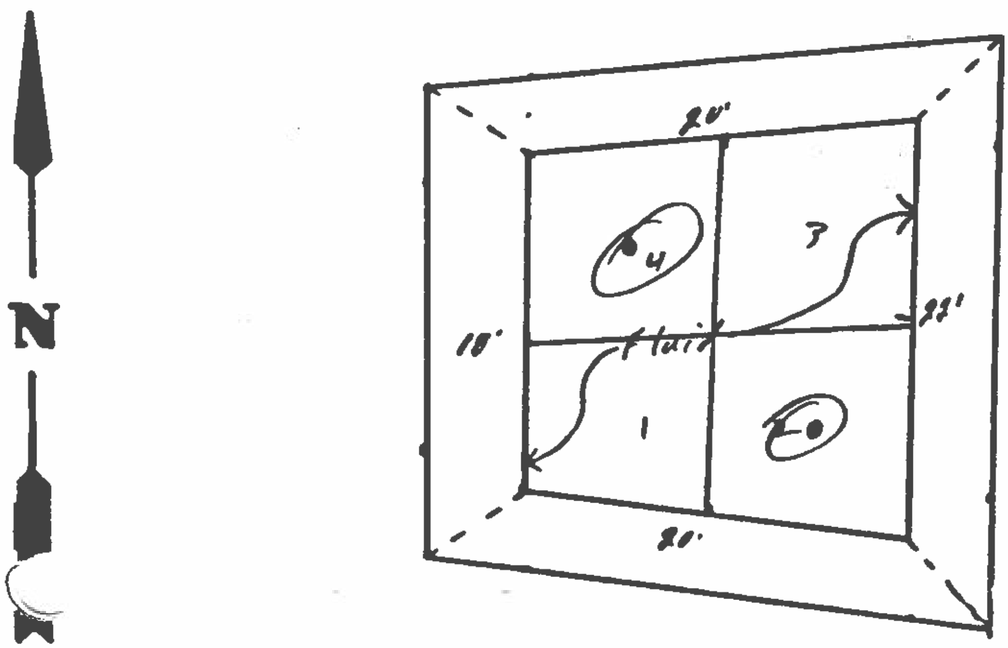


Scale 1"=10'

Figure Title: Impoundment #1	Client: Mixon Brothers Wood Preserving, Inc.
Document Title: Waste Characterization Assessment Report	Location: Idabel, OK

ROBERTS/SCHORNICK & ASSOCIATES, INC. 860 Copperfield Drive, Suite A Norman, Oklahoma 73072 (405) 321-3895	Drawn by: MF	Scale: 1"=10'
	Checked by: MF	Date: 3-27
	Project No.: 87014	Figure No.: 3

Impoundment #2



Scale 1"=10'

Figure Title:	Client:
Impoundment No. 2	Mixon Brothers Wood Preserving, Inc.
Document Title: Waste Characterization Assessment Report	**Location:** Idabel, OK

ROBERTS/SCHORNICK & ASSOCIATES, INC.
860 Copperfield Drive, Suite A
Norman, Oklahoma 73072
(405) 321-3895

Drawn by: MF	Scale: 1"=10'
Checked by: MF	Date: 3-27
Project No.: 87014	Figure No.: 4

Impoundment #3

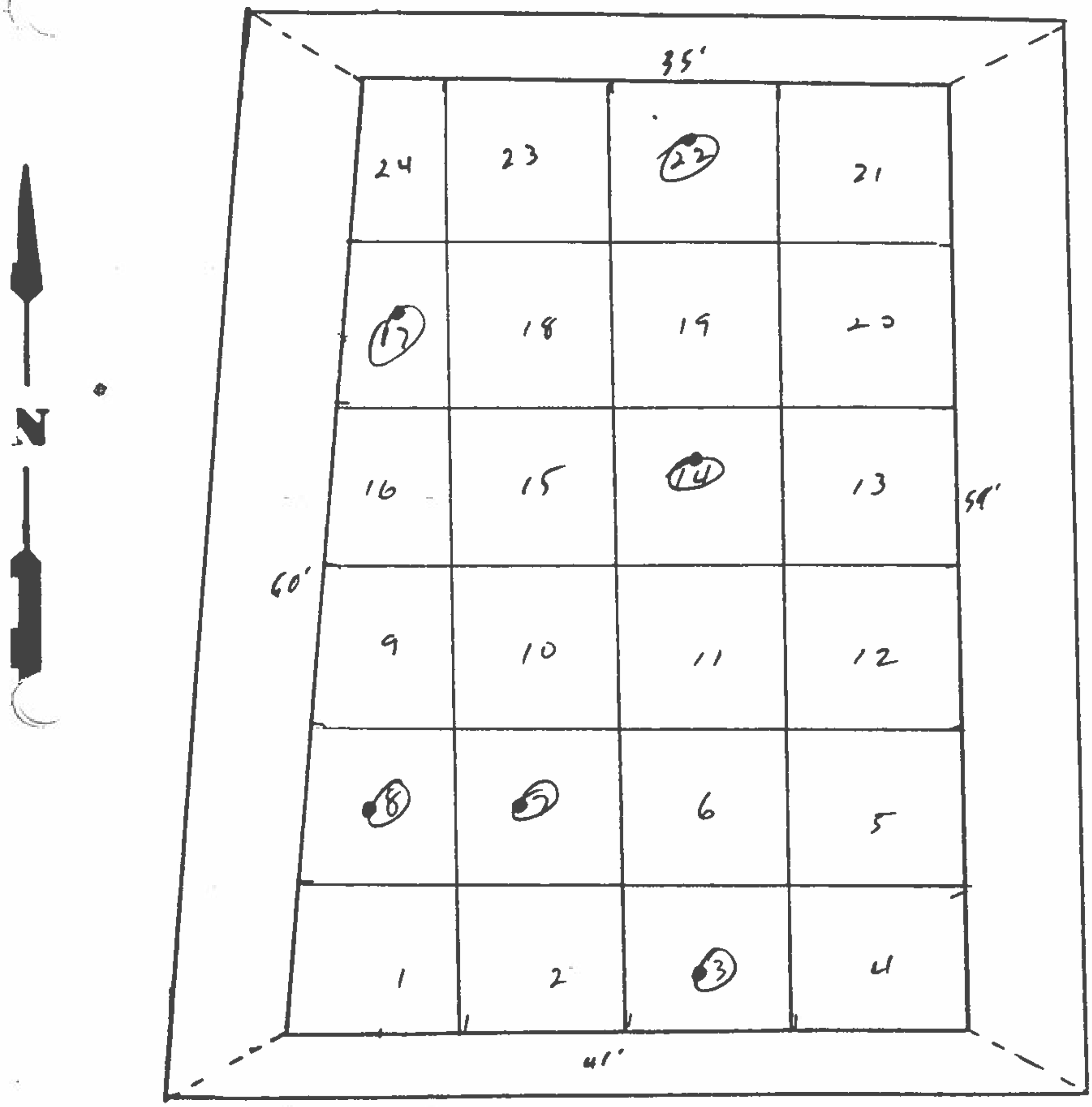
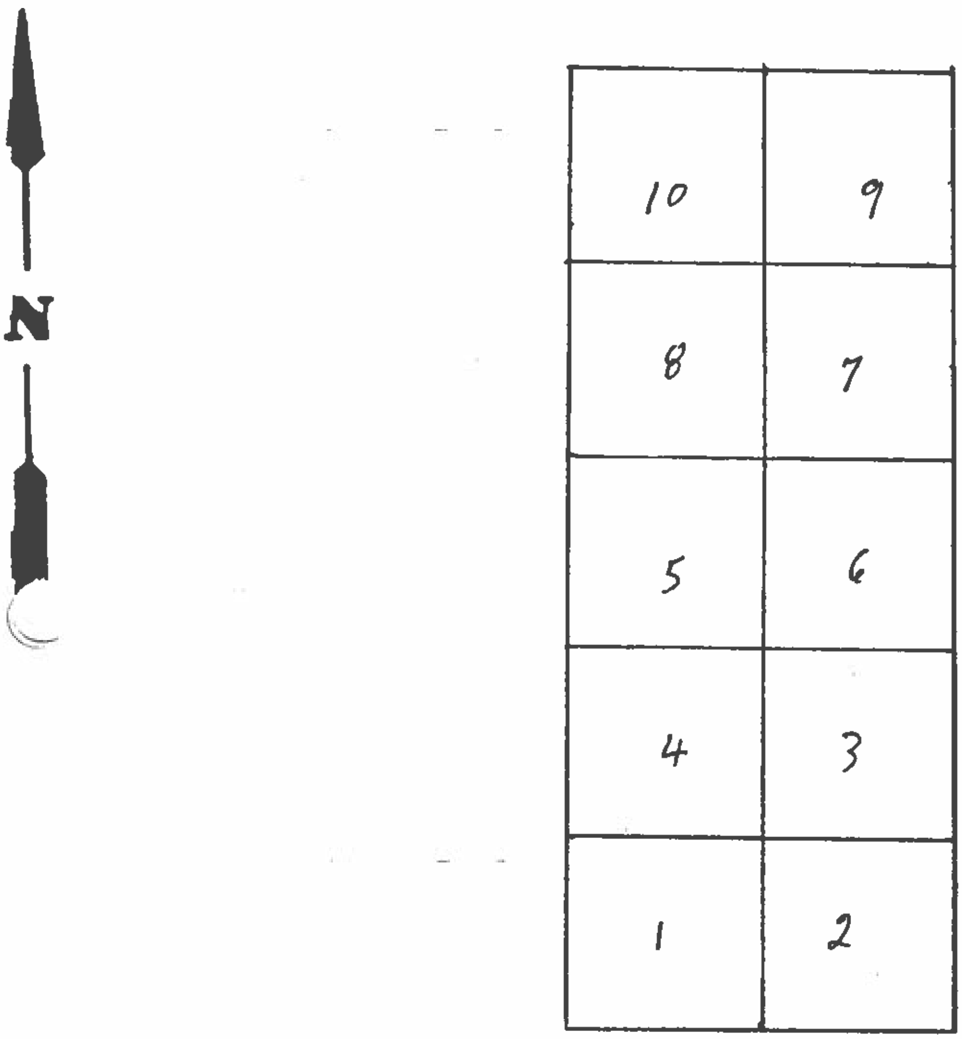


Figure Title Impoundment No. 3		*Client* Mixon Brothers Wood Preserving, Inc.	
Document Title Waste Characterization Assessment Report		*Location* Idabel, OK	
ROBERTS/SCHORNICK & ASSOCIATES, INC. 860 Copperfield Drive, Suite A Norman, Oklahoma 73072 (405) 321-3895		*Drawn by* MF	*Scale* 1"=10'
		Checked by MF	*Date* 3-25
		Project No. 87014	*Figure No* 5

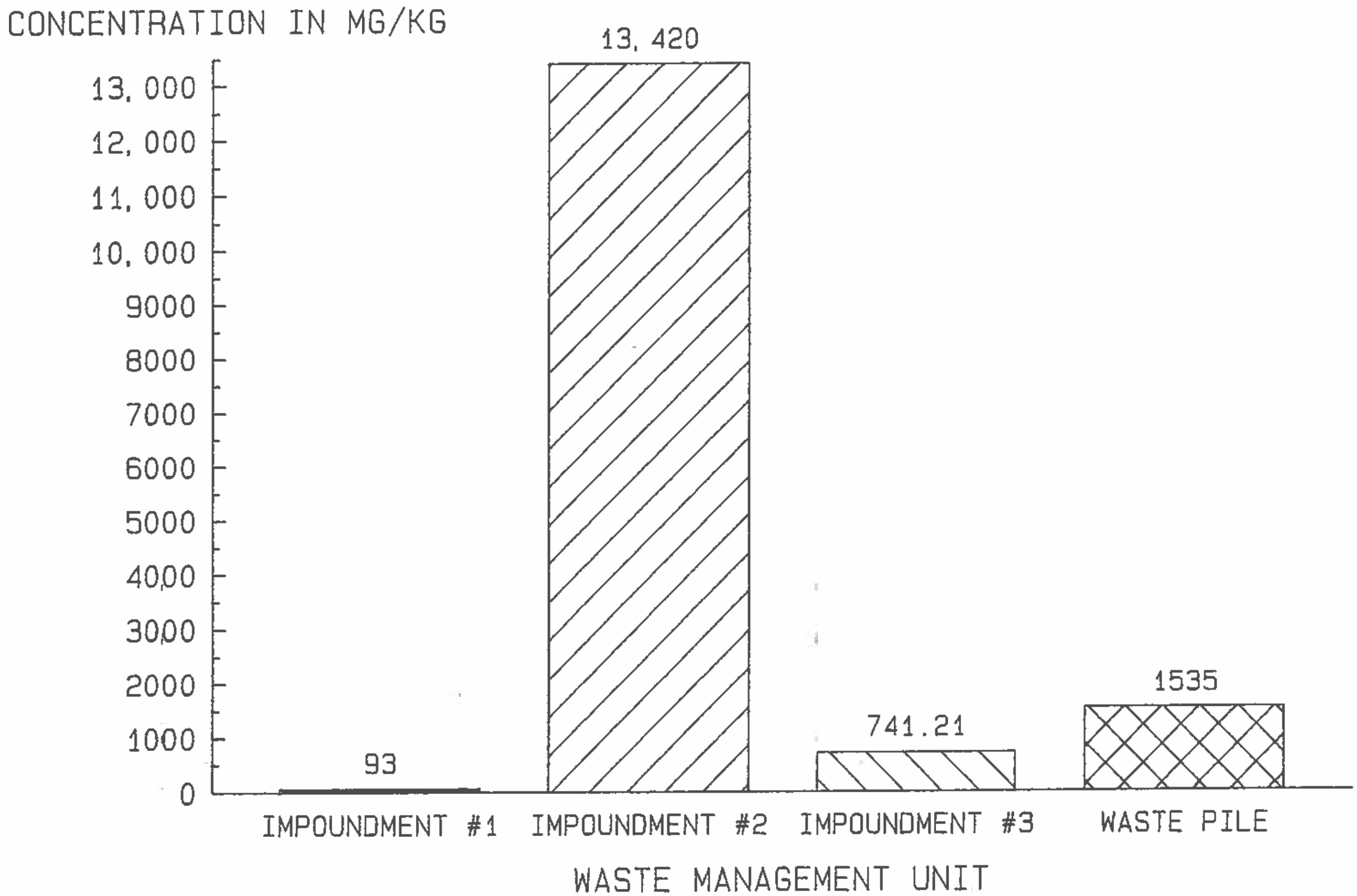
Waste Pile Area



Scale 1"=5'

Figure Title: Waste Pile Area		*Client:* Mixon Brothers Wood Preserving, Inc.	
Document Title: Waste Characterization Assessment Report		*Location:* Idabel, OK	
ROBERTS/SCHORNICK & ASSOCIATES, INC. 860 Copperfield Drive, Suite A Norman, Oklahoma 73072 (405) 321-3895		*Drawn by:* MF	*Scale:* 1"=5'
		Checked by: MF	*Date:* 3-27
		Project No.: 87014	*Figure No.:* 6

FIGURE 7
COMPARISON OF PENTACHLOROPHENOL
MEAN CONCENTRATIONS



APPENDIX A

Laboratory Data Sheets

MAR 10 1987

PROJECT
PROJECT NO.
SUB FILE NO.

SAMPLE ANALYSIS METHODS

Each sludge sample was weighed (30 grams) and sonicated 3 times (150ml) with a 1:1 solution of methylene chloride/acetone. The combined organic extracts were concentrated and prepared for GC/MS analyses. Many of the organic extracts were diluted before GC/MS analyses because of the large oil (organics) content of each extract. Aliquots (1ul) of each extract were injected into a HP 5970B mass spectrometer (MSD) equipped with a 25m x 0.2mm i.d. fused silica capillary column (SE-54). The concentrations of each organic compound were determined using the internal standard method of quantitation as described in EPA Method 625 and in the EPA CLP Statement of Work for Organic Analyses Multi-Media, Multi Concentration Organics GC/MS Techniques 10/86 Revision (SOW 10-86), Office of Solid Waste and Emergency Response, Washington D.C., October, 1986.

RESULTS AND DISCUSSION

The respective Organic Analyses Report forms (EML#77329-77342) list the concentration of each organic compound in each of the respective samples. Samples EML# 77337 and 77342 were water samples and all other samples were sludges. Concentrations of the organic compounds in the sludge samples were determined on the basis of 30 grams wet-weight/sample.

The concentrations of carbazole and fluorene were summed together since the experimental conditions and sample matrix did not allow an unambiguous distinction between the two compounds. It is estimated that the actual carbazole concentration is probably 25% of the total combined concentration for each sample.

The "trace" listing after some compounds indicates that the listed concentration is below the estimated detection limit. These "trace" compounds are present in the sample but the concentration value is less accurate due to the low levels and matrix interferences.

Sample EML# 77342 was the trip blank sample and the results indicated that there was no laboratory or other contamination in the analysis procedures.

Included in the report are the duplicate analysis of EML# 77342 and the surrogate and spiked matrix data which is appropriate for these sample analyses.

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1138
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 19 - 1.5-2.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1420
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-11-87
Sample Type: Soil
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1138	

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	0.59	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	7.2	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahma Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1147
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 29B - 0.0-0.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1400
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-13-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	83.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

* - Detection Limit raised 10 X due to sample matrix and Dilution.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1149
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 32 - 0.0-2.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample Type: Soil
Sample Volume or Weight: 30.16 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	20.0	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	15.4	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	29.6	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	9.5	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	34.6	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	97.4	1.60
85-01-8		Phenanthrene	81.6	0.33
120-12-7		Anthracene	20.3	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	94.2	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	71.5	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	9.3	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.6	0.33
218-01-9		Chrysene	12.0	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

* - Detection Limit raised 10 X due to sample matrix and Dilution.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1150
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample I.D.: 32 - 2.0-3.8
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	25.6	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	16.7	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1150	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	16.8	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	7.7	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	26.2	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	187	1.60
85-01-8		Phenanthrene	70.0	0.33
120-12-7		Anthracene	16.0	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	43.5	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	34.9	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	5.6	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	5.6	0.33
218-01-9		Chrysene	6.9	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

* - Detection Limit raised 10 X due to sample matrix and Dilution.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1151

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 32 - 5.0-7.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample Type: Soil
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

NODIZA

2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	1.48	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	.87	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	.65	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	2.13	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1152
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 32 - 7.0-9.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample Type: Soil
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	.35	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	.35	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	.62	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	6.94	1.60
85-01-8		Phenanthrene	2.14	0.33
120-12-7		Anthracene	.42	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	1.11	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	.84	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.87	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1153
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample I.D.: 32 - 9.0-11.0
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	5.01	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	2.20	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	1.81	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	1.09	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	2.56	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	6.5	1.60
85-01-8		Phenanthrene	2.5	0.33
120-12-7		Anthracene	1.5	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	2.3	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	2.2	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	.73	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	2.32	0.33
218-01-9		Chrysene	.85	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1142
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 33 - 0.0 - 0.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1740
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-12-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.7	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1154
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 40 - 0.0-2.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1230
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.6 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg***
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	34.4	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	16.6	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg***
83-32-9		Acenaphthene	15.9	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	6.7	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	18.5	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	357	1.60
85-01-8		Phenanthrene	*ND	0.33
120-12-7		Anthracene	*171	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	86	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	131	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	6.7	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	7.0	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	**5.2	0.33
207-08-9		Benzo(k)Fluoranthene	**ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

* - Anthracene and Phenanthrene coeluted.
** - Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.
*** - Detection limit raised 10 X due to sample matrix and dilution.
(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1155
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr. Suite A Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1230
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample I.D.: 40 - 2.0-4.0
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg***
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
06-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	23.4	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	47	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	4.2	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg***
83-32-9		Acenaphthene	26.8	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	24	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	63	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	794	1.60
85-01-8		Phenanthrene	*293	0.33
120-12-7		Anthracene	*ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	284	0.33
92-87-5		Benzidine	ND	0.33
.29-00-0		Pyrene	210	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	14	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	12.6	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	**6.2	0.33
207-08-9		Benzo(k)Fluoranthene	**ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

* - Anthracene and Phenanthrene coeluted.
** - Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.
*** - Detection limit raised 10 X due to sample matrix and dilution.
(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Babu Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1156
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr., Suite A, Norman, OK 73072
Sample I.D.: 40 - 4.3-4.8
P. O. No.:
Collected: 10-20-87 By: MT Time: 1230
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.3 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	0.79	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	0.35	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	0.49	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	0.58	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	0.63	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	0.60	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	0.43	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1157
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 40 - 5.0-5.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1230
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	1.0	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	NA	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	6.32	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1158
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 42B - 0.0-0.5
P. O. No.: ______

Collected: 10-20-87 By: MT Time: 1800
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.3 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
.06-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	NA	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
'8-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	2.13	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1159
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 43 - 0.0-2.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1205
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.6 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-[illegible]	Isophorone	ND	0.33
88-75-[illegible]	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	NA	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
38-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	62.9	1.60
85-01-8		Phenanthrene	7.61	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection Limit raised 10 X due to sample matrix and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1160
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1205
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample I.D.: 43 - 2.3-2.8
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 30 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	0.75	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	NA	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
38-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	0.41	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.5	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1161

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 43 - 2.8-3.3
P. O. No.:

Collected: 10-20-87 By: MT Time: 1205
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	4.0	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	2.4	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
38-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1161		Page 2 of 2
CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9	Acenaphthene	2.4	0.33
51-28-5	2,4-Dinitrophenol	NA	1.60
100-02-7	4-Nitrophenol	NA	1.60
32-64-9	Dibenzofuran	1.0	0.33
121-14-2	2,4-Dinitrotoluene	ND	0.33
606-20-2	2,6-Dinitrotoluene	ND	0.33
84-66-2	Diethylphthalate	ND	0.33
7005-72-3	4-Chlorophenyl-phenylether	ND	0.33
86-73-7	Fluorene	3.1	0.33
100-01-6	4-Nitroanialine	ND	1.60
534-52-1	4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6	N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3	4-Bromophenyl-phenylether	ND	0.33
118-74-1	Hexachlorobenzene	ND	0.33
87-86-5 (PCP)	Pentachlorophenol	6.7	1.60
85-01-8	Phenanthrene	6.4	0.33
120-12-7	Anthracene	1.8	0.33
84-74-2	Di-n-Butylphthalate	ND	0.33
206-44-0	Fluoranthene	ND	0.33
92-87-5	Benzidine	ND	0.33
129-00-0	Pyrene	3.8	0.33
85-68-7	Butylbenzylphthalate	ND	0.33
91-94-1	3,3,-Dichlorobenzidine	ND	0.66
56-55-3	Benzo(a)Anthracene	0.59	0.33
117-81-7	bis(2-Ethylhexyl)Phthalate	1.1	0.33
218-01-9	Chrysene	0.66	0.33
117-84-0	Di-n-Octyl Phthalate	ND	0.33
205-99-2	Benzo(b)Fluoranthene	ND	0.33
207-08-9	Benzo(k)Fluoranthene	ND	0.33
50-32-8	Benzo(a)Pyrene	ND	0.33
193-39-5	Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3	Dibenz(a,h)Anthracene	ND	0.33
191-24-2	Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1162
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 52 - 0.9-1.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1120
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.2 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	2.3	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	1.5	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
38-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	1.1	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	0.42	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	1.7	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	2.0	1.60
85-01-8		Phenanthrene	2.7	0.33
120-12-7		Anthracene	0.37	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	1.4	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	1.6	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1163
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 52 - 1.5-2.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1120
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.9 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	1.3	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	0.47	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
38-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6 Sample I.D.: 1163

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	0.40	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	0.50	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	0.78	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	0.48	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	0.34	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahma Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1164
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 55 - 0.0-0.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 0940
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 30.6 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
.31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.5	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1165

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 59 - 0.0-0.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1100
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 29.9 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg**
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg**
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	160	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	5.5	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	7.2	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	156	0.33
218-01-9		Chrysene	2.4	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Benzo(b) and Benzo(k)Fluoranthene coeluted.
** - Detection Limit raised 10 X due to sample matrix.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1166
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 59 - 1.7-2.2
P. O. No.:

Collected: 10-20-87 By: MT Time: 1100
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-17-87
Sample Type: Soil
Sample Volume or Weight: 19.6 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	1.0	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
.29-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.9	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1167
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1030
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample I.D.: 60B - 0.0-0.5
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 29.6 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
00-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	20.7	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
29-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	26.3	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection Limit raised 10 X due to sample matrix.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1168
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr., Suite A, Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1030
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-18-87
Sample I.D.: 60B - 1.5-2.0
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 29.5 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
29-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	12.1	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Balm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1169
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W38p- 0.0-0.5
P. O. No.:

Collected: 10-21-87 By: MT Time: 1225
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-18-87
Sample Type: Soil
Sample Volume or Weight: 30.9 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	0.92	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	79.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1170

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W38 - 0.5-1.0
P. O. No.: 0

Collected: 10-21-87 By: MT Time: 1225
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-18-87
Sample Type: Soil
Sample Volume or Weight: 28.4 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
.00-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample No.: 1170	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	5.65	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	0.82	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	0.74	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	106.6	0.33
218-01-9		Chrysene	0.44	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Babu Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1172
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W6 - 0.2-0.8
P. O. No.:

Collected: 10-21-87 By: MT Time: 0815
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 29.9 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
.31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

'orm - #6 Sample No.: 1172

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	16.0	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	4.5	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	20.2	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	37.9	1.60
85-01-8		Phenanthrene	31.8	0.33
120-12-7		Anthracene	14.1	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	20.3	0.33
92-87-5		Benzidine	ND	0.33
29-00-0		Pyrene	23.3	0.33
35-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	9.0	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	8.2	0.33
218-01-9		Chrysene	19.3	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection Limits raised 10 X due to sample matrix.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1171
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-21-87 By: MT Time: 0815
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-18-87
Sample I.D.: W6 - 0.8-1.3
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 30.5 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	1.11	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	0.60	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	0.70	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	0.98	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	1.62	1.60
85-01-8		Phenanthrene	1.39	0.33
120-12-7		Anthracene	0.34	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	0.89	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	137.2	0.33
218-01-9		Chrysene	0.39	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1173
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W11B - 0.0-2.0
P. O. No.:

Collected: 10-21-87 By: MT Time: 0855
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 31.7 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg***
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	63.6	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	32.5	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg***
83-32-9		Acenaphthene	34.0	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	19.2	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	53.3	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	49.5	1.60
85-01-8		Phenanthrene	*90.2	0.33
120-12-7		Anthracene	*90.2	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	40.3	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	52.9	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	12.7	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	11.1	0.33
218-01-9		Chrysene	23.0	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	**5.41	0.33
207-08-9		Benzo(k)Fluoranthene	**5.41	0.33
50-32-8		Benzo(a)Pyrene	** 5.41	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
*** - Detection Limits raised 10 X due to sample matrix.
** - Benzo(b) and Benzo(k)Fluoranthene coeluted.
* - Anthracene and Phenantherene coeluted.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1174
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W11B - 2.0-4.0
P. O. No.:

Collected: 10-21-87 By: MT Time: 0855
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 34.3 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg**
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	136.9	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	52.0	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg**
83-32-9		Acenaphthene	58.1	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	32.5	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	89.6	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	185.0	1.60
85-01-8		Phenanthrene	136.6	0.33
120-12-7		Anthracene	45.2	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	101.4	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	75.7	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	15.2	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	14.8	0.33
218-01-9		Chrysene	30.0	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	*6.11	0.33
207-08-9		Benzo(k)Fluoranthene	*6.11	0.33
50-32-8		Benzo(a)Pyrene	*6.11	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
** - Detection Limits raised 10 X due to sample matrix.
* - Benzo(b) and Benzo(k)Fluoranthene coeluted.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1175
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W11B - 4.0-5.2
P. O. No.:

Collected: 10-21-87 By: MT Time: 0855
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 34.4 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	59.2	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	20.2	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	31.1	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	19.8	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	46.1	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	11.2	1.60
85-01-8		Phenanthrene	64.3	0.33
120-12-7		Anthracene	22.9	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	43.5	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	42.0	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	7.3	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	13.6	0.33
218-01-9		Chrysene	14.5	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection Limits raised 10 X due to sample matrix.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1176
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W11B - 5.2-5.7
P. O. No.:

Collected: 10-21-87 By: MT Time: 0855
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 30.2 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	0.40	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	0.82	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	0.40	0.33
206-44-0		Fluoranthene	0.46	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	0.35	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1178

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-21-87 By: MT Time: 1200
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample I.D.: W13 - 0.3-0.8
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 31.2 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg**
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
.00-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
'31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6 Sample No.: 1178

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg**
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	4.72	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	123.0	1.60
85-01-8		Phenanthrene	11.7	0.33
120-12-7		Anthracene	4.13	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	23.9	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	22.8	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	3.90	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	12.1	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	*3.932	0.33
207-08-9		Benzo(k)Fluoranthene	*3.935	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	3.43	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
** - Detection limits raised 10 X due to sample matrix and dilution.
* - Benzo(b) and Benzo(k)Fluoranthene coeluted.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1177
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr. Collected: 10-21-87 By: MT Time: 1200
Suite A Received: 11-05-87 By: RC Time: 0930
Norman, OK 73072 GC/MS Analysis Date: 11-19-87
Sample I.D.: W13 - 0.8-1.3 Sample Type: Soil
P. O. No.: Sample Volume or Weight: 31.5 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
00-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	12.6	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	6.9	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	10.0	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	4.2	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	18.1	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	43.4	1.60
85-01-8		Phenanthrene	32.9	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	21.8	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	17.5	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	3.6	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	6.0	0.33
218-01-9		Chrysene	7.9	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection limits raised 10 X due to sample matrix and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph/D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1179

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W15 - 0.2-0.5
P. O. No.:

Collected: 10-21-87 By: MT Time: 1125
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-19-87
Sample Type: Soil
Sample Volume or Weight: 34.2 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
.00-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
.31-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	4.91	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	36.3	1.60
85-01-8		Phenanthrene	12.8	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	8.34	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	8.28	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	7.75	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection limits raised 10 X due to sample matrix and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1180
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W15 - 0.5-1.0
P. O. No.:

Collected: 10-21-87 By: MT Time: 1125
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-23-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	3.82	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	31.9	1.60
85-01-8		Phenanthrene	16.4	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	336.1	0.33
206-44-0		Fluoranthene	14.3	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	10.9	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	435.4	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection limits raised 10 X due to sample matrix and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1181

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W15B - 2.5-3.0
P. O. No.:

Collected: 10-21-87 By: MT Time: 1155
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-24-87
Sample Type: Soil
Sample Volume or Weight: 30.5 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	2.39	1.60
85-01-8		Phenanthrene	1.06	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	0.64	0.33
206-44-0		Fluoranthene	0.61	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	0.37	0.33
35-68-7		Butylbenzylphthalate	1.70	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	86.7	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1182

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-21-87 By: MT Time: 1155
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-24-87
Sample I.D.: W15B - 3.0-3.5
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 29.2 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
5-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
08-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample No.: 1182	

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	0.9	1.60
85-01-8		Phenanthrene	0.56	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	0.42	0.33
206-44-0		Fluoranthene	0.37	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1183

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W23B - 0.0-0.5
P. O. No.:

Collected: 10-21-87 By: MT Time: 0930
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-24-87
Sample Type: Soil
Sample Volume or Weight: 31.9 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
)5-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
:08-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	46.5	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	3.80	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	5.10	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	174.4	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.
* - Detection limit raised 10 X due to sample matirx and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1184
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W24 - 0.0-0.5
P. O. No.:

Collected: 10-21-87 By: MT Time: 1010
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-24-87
Sample Type: Soil
Sample Volume or Weight: 31.4 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
5-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
08-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6 Sample No.: 1184

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	0.74	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	43.8	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1143
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: BG-1- 0.0 - 0.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1900
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-12-87
Sample Type: Soil
Sample Volume or Weight: 30.5 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1143		

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1144
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: BG-1 0.0 - 2.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1900
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-13-87
Sample Type: Soil
Sample Volume or Weight: 30.4 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1144	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.2	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1145

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: BG-1 2.0 - 4.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1900
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-13-87
Sample Type: Soil
Sample Volume or Weight: 30.8 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	2.34	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahma Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1146
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: BG-1- 4.0 - 6.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1900
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-13-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1146	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.17	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1148
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: Trip Blank
P. O. No.:

Collected: 10-20-87 By: MT Time: 1340
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample Type: Water
Sample Volume or Weight: 500 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	ND	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	ND	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	ND	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	ND	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	ND	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	ND	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	ND	0.010
120-82-1	1,2,4-Trichlorobenzene	ND	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	ND	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	ND	0.010
95-95-4	2,4,5-Trichlorophenol	ND	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9	Acenaphthene	ND	0.010
51-28-5	2,4-Dinitrophenol	ND	0.050
100-02-7	4-Nitrophenol	ND	0.050
32-64-9	Dibenzofuran	ND	0.010
121-14-2	2,4-Dinitrotoluene	ND	0.010
606-20-2	2,6-Dinitrotoluene	ND	0.010
84-66-2	Diethylphthalate	ND	0.010
7005-72-3	4-Chlorophenyl-phenylether	ND	0.010
86-73-7	Fluorene	ND	0.010
100-01-6	4-Nitroaniline	ND	0.050
534-52-1	4,6-Dinitro-2-Methylphenol	ND	0.050
86-30-6	N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3	4-Bromophenyl-phenylether	ND	0.010
118-74-1	Hexachlorobenzene	ND	0.010
87-86-5	Pentachlorophenol	ND	0.050
85-01-8	Phenanthrene	ND	0.010
120-12-7	Anthracene	ND	0.010
84-74-2	Di-n-Butylphthalate	ND	0.010
?06-44-0	Fluoranthene	ND	0.010
?-87-5	Benzidine	ND	0.010
?29-00-0	Pyrene	ND	0.010
85-68-7	Butylbenzylphthalate	ND	0.010
91-94-1	3,3,-Dichlorobenzidine	ND	0.020
56-55-3	Benzo(a)Anthracene	ND	0.010
117-81-7	bis(2-Ethylhexyl)Phthalate	.24 BDP	0.010
218-01-9	Chrysene	ND	0.010
117-84-0	Di-n-Octyl Phthalate	ND	0.010
205-99-2	Benzo(b)Fluoranthene	ND	0.010
207-08-9	Benzo(k)Fluoranthene	ND	0.010
50-32-8	Benzo(a)Pyrene	ND	0.010
193-39-5	Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3	Dibenz(a,h)Anthracene	ND	0.010
191-24-2	Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.

Brahm Prakash, M.S.
Analyst

D L Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1139

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: Field Blank
P. O. No.:

Collected: 10-20-87 By: BS Time: 1340
Received: 11-16-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 900 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	2.7	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED
LABORATORIES, INC.

10/4 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77330

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1130
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/24/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 gms.
Sample I.D. MB 1.10

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	77	25	
2,4,6-Trichlorophenol	ND	5	
4,6-Tetrachlorophenol	ND	25	
Base/Neutrals			
Acenaphthylene	ND	5	
Benzo (a) anthracene	9.0	5	
Benzo (a) Pyrene	1.3	5	Trace
Benzo (b) Fluoranthene	5.1	5	
Fluoranthene	119	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	960	5	
Phenanthrene	310	5	
Carbazole	*	5	
(Fluorene)	174	5	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77342

Client: Roberts/Schornick & Assoc.
Address: 860 Copperfield Drive, Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: Unk
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 3/30/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 1000 ml
Sample I.D. TRIP BLANK

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	0.010	
2,4-Dimethylphenol	ND	0.010	
2,4-Dinitrophenol	ND	0.050	
p - Chloro-m-cresol	ND	0.010	
Pentachlorophenol	ND	0.050	
2,4,6-Trichlorophenol	ND	0.010	
,3,4,6-Tetrachlorophenol	ND	0.050	
Base/Neutrals			
Acenaphthylene	ND	0.010	
Benzo (a) anthracene	ND	0.010	
Benzo (a) Pyrene	ND	0.010	
Benzo (b) Fluoranthene	ND	0.010	
Fluoranthene	ND	0.010	
Indeno (1,2,3,c,d) Pyrene	ND	0.025	
Naphthalene	ND	0.010	
Phenanthrene	ND	0.010	
Carbazole	ND	0.010	
(Fluorene)	ND	0.010	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry, Ph.D.
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED
LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77342-Duplicate

Client: Roberts/Schornick and Assoc.
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: Unk
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 3/3/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 1000 ml
Sample I.D. Trip Blank

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	0.010	
2,4-Dimethylphenol	ND	0.010	
2,4-Dinitrophenol	ND	0.050	
p - Chloro-m-cresol	ND	0.010	
Pentachlorophenol	ND	0.050	
2,4,6-Trichlorophenol	ND	0.010	
,3,4,6-Tetrachlorophenol	ND	0.050	
Base/Neutrals			
Acenaphthylene	ND	0.010	
Benzo (a) anthracene	ND	0.010	
Benzo (a) Pyrene	ND	0.010	
Benzo (b) Fluoranthene	ND	0.010	
Fluoranthene	ND	0.010	
Indeno (1,2,3,c,d) Pyrene	ND	0.025	
Naphthalene	ND	0.010	
Phenanthrene	ND	0.010	
Carbazole	ND	0.010	
(Fluorene)	ND	0.010	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

Robert N. Mauney, M.S.
Analyst(s)

Donald Lee Perry PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED
LABORATORIES, INC.

414 W. CALIFORNIA
RUSTON, LA. 71270
[318] 255-0060
1-800-421-2993 LA.

QA/QC

DUPLICATE AND SPIKE RECOVERY REPORT FORM

EML Sample #: 77329-77341

Service to: Roberts/Schornick & Assoc.
Attention: Herschel Roberts
Address: 860 Copperfield Dr. - #A
Norman, OK 73072

Sample I.D.: Mixon Brothers Wood Preserving, Inc.
Sample Type (circle one):
Water Soil Sludge Other

PARAMETER	CONCENTRATION (ppm) % Recovery	DUPLICATES (ppm)	COMMENTS
timony	105.0	<1.0,<1.0	
rsenic	92.0	<1.0,<1.0	
Beryllium	92.0	0.99, 0.96	
Cadmium	97.0	<0.001,<0.001	
Chromium	104.0	47.0, 47.0	
Copper	90.0	4.1, 4.8	
Lead	99.0	0.064, 0.067	
Mercury	107.0	<0.002,<0.002	
Nickel	113.0	84.8, 85.9	
Selenium	92.0	<0.01,<0.01	
Silver	88.0	0.41, 0.40	
Thallium	107.0	<0.01,<0.01	
Zinc	100.0	124.8, 123.7	

Samples were analyzed using EPA Method listed in the "Test Methods for Evaluation of Solid Wastes - Physical/Chemical Methods". EPA SW-846 2nd Edition, July 1982.

Stan A. Kuhlkis, M.S.
Laboratory Supervisor

ENVIROMED
LABORATORIES, INC.

414 W. CALIFORNIA
RUSTON, LA. 71270
[318] 255-0060
1-800-421-2993 LA.

QA/QC

DUPLICATE AND SPIKE RECOVERY REPORT FORM

EML Sample #: 77329-77341

Service to: Roberts/Schornick & Assoc.
Attention: Herschel Roberts
Address: 860 Copperfield Dr. - #A
Norman, OK 73072

Sample I.D.: Mixon Brothers Wood Preserving, Inc.
Sample Type (circle one):
Water Soil Sludge Other

PARAMETER	CONCENTRATION (ppm) % Recovery	DUPLICATES (ppm)	COMMENTS
isture Content	---	20.1%, 20.0%	
(Std. units)	---	4.9, 4.8	
Phenols	---	0.14, 0.10	
TOC	92.0	0.97%, 1.0%	

Samples were analyzed using EPA Method listed in the "Test Methods for Evaluation of Solid Wastes - Physical/Chemical Methods". EPA SW-846 2nd Edition, July 1982.

Stan A. Kilukis, M.S.
Laboratory Supervisor

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1130

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved

Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77330	MB 1.10	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 1300	02/19 1800	KM
		Beryllium	"	1.9	02/18 0700	02/18 1200	KM
		Cadmium	"	0.34	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	81.6	02/17	02/17	WS
		Copper	"	11.0	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	17.4 17.5	02/23 1300	02/23 1700	JM
		Spike Recovery		113%			

Stan A. Kuhlig M.S.
Certified by: Laboratory Manager

Kamal Moaf
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1130

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300
Collected by: Mark

Sample Type: Comp/Preserved

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77330	MB 1.10	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2150	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	83.7	02/18 1700	02/18 1800	WS
		Moisture Content	93	62.1%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.9	02/13 0840	02/13 0940	SJ
		Phenols	556	25.0	02/16 0930	02/16 1400	EP
		TOC	511	3.3%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kishi, M.S.
Certified by: Laboratory Manager

Kamal Mech
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examinatio of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EL Sample No. 77329

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1030
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/24/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 gms.
Sample I.D. MB 1.3

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	46	25	
,6-Trichlorophenol	ND	5	
,4,6-Tetrachlorophenol	ND	25	
Base/Neutrals			
Acenaphthylene	ND	5	
Benzo (a) anthracene	7.0	5	
Benzo (a) Pyrene	2.9	5	Trace
Benzo (b) Fluoranthene	4.2	5	Trace
Fluoranthene	91	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	316	5	
Phenanthrene	260	5	
Carbazole	*	5	
(Fluorene)	145	5	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Moeur, M.S.
Analyst(s)

Donald Lee Perry, Ph.D.
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1030

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300
Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77329	MB 1.3	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 1300	02/19 1800	KM
		Beryllium	"	0.99 0.96	02/18 0700	02/18 1200	KM
		Cadmium	"	0.62	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	145.5	02/17	02/17	WS
		Copper	"	20.0	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	0.35	02/16 2100	02/16 2300	RD
		Nickel	173	15.5	02/20 1500	02/20 1800	JM

Stan A. Kilichi, M.S.
Certified by: Laboratory Manager

Kamal Moak
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1030

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77329	MB 1.3	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2150	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	259.6	02/18 1700	02/18 1800	WS
		Moisture Content	93	72.3%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.9	02/13 0840	02/13 0940	SJ
		Phenols	556	27.9	02/23 0800	02/23 1530	EP
		TOC	511	4.2%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kiliban, M.S.
Certified by: Laboratory Manager

Kamal Maaks
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

ML Sample No. 77331

Client: Roberts/Schornick & Associates
ddress: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1300
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/24/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 1.5

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
cid Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	156	25	
,6-Trichlorophenol	ND	5	
,3,4,6-Tetrachlorophenol	ND	25	
ase/Neutrals			
Acenaphthylene	ND	5	
Benzo (a) anthracene	5.4	5	Trace
Benzo (a) Pyrene	2.0	5	Trace
Benzo (b) Fluoranthene	3.0	5	
Fluoranthene	75.5	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	364	5	
Phenanthrene	186	5	
Carbazole	*	5	
(Fluorene)	87	5	

] - Not Detected (no compound detected above detection limit).

S-mples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for (ganic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry, PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072
Date/Time Collected: 2/10/87 1300
Attention: Herschel Roberts
Date/Time Received: 2/12/87 1300
Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77331	MB 1.5	Antimony	173	<1.0	02/17	02/17	JM
				<1.0	1300	1700	
		Spike Recovery		105%			
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	0.87	02/18 0900	02/18 1200	KM
		Cadmium	"	0.39	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	232.1	02/17	02/17	WS
		Copper	"	15.6	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	9.7	02/23 1300	02/23 1700	JM

Stan A. Lichtin, M.S.
Certified by: Laboratory Manager

Kamal Masch
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1300

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved

Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77331	MB 1.5	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2150	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	153.5	02/18 1700	02/18 1800	WS
		Moisture Content	93	55.8%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.8	02/13 0840	02/13 0940	SJ
		Phenols	556	18.4	02/18 0900	02/18 1530	EP
		TOC	511	5.7%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Hitchins, M.S.
Certified by: Laboratory Manager

Kamal Moss
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

IL Sample No. 77333

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1245
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/25/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 2.2

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
id Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	4040	25	
6-Trichlorophenol	ND	5	
4,6-Tetrachlorophenol	ND	25	
e/Neutrals			
cenaphthylene	55	5	
Benzo (a) anthracene	916	5	
Benzo (a) Pyrene	189	5	
enzo (b) Fluoranthene	208	5	
luoranthene	217	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
aphthalene	2240	5	
henanthrene	3250	5	
Carbazole	*	5	
(Fluorene)	1830	5	

- Not Detected (no compound detected above detection limit).

amples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for anic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 9 2.

Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under xperimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry, PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1245

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77333	MB 2.2	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	0.28 0.23	02/18 0700	02/18 1200	KM
		Cadmium	"	0.46	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	179.2	02/17	02/17	WS
		Copper	"	16.7	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	1.21	02/16 2100	02/16 2300	RD
		Nickel	173	5.3	02/23 1300	02/23 1700	JM

Stan A. Kikikis, M.S.
Certified by: Laboratory Manager

Komal Mod
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to:	ROBERTS/SCHORNICK & ASSOC.	File No. 18680	Invoice: 29843
Address:	860 Copperfield Dr. - #A	P.O. No.	Date: 3/11/87
	Norman, OK 73072		
		Date/Time Collected:	2/10/87 1245
Attention:	Herschel Roberts		
		Date/Time Received:	2/12/87 1300
Sample Type:	Comp/Preserved	Collected by:	Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77333	MB 2.2	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2150	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	114.6	02/18 1700	02/18 1800	WS
		Moisture Content	93	47.3%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.0	02/13 0840	02/13 0940	SJ
		Phenols	556	19.9	02/25 1130	02/25 1500	EP
		TOC	511	12.2%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kiriakis, M.S.
Certified by: Laboratory Manager

Kamal [illegible]
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for [illegible] years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.
18/4 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77332

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P. O. No.

Date Collected: 2/10/87 By: Unk Time: 1140
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/26/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 2.4

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	22800	25	
2,4,6-Trichlorophenol	ND	5	
2,3,4,6-Tetrachlorophenol	178	25	
Base/Neutrals			
Acenaphthylene	135	5	
Benzo (a) anthracene	1287	5	
Benzo (a) Pyrene	255	5	
Benzo (b) Fluoranthene	271	5	
Fluoranthene	2496	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	2995	5	
Phenanthrene	3871	5	
Carbazole	*	5	
(Fluorene)	2305	5	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1140

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77332	MB 2.4	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0900	02/18 1200	KM
		Cadmium	"	0.26	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	65.5	02/17	02/17	WS
		Copper	"	5.7	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	0.84	02/16 2100	02/16 2300	RD
		Nickel	173	2.4	02/23 1300	02/23 1700	JM

Stan A. Kirkling, M.S.
Certified by: Laboratory Manager

Kemal Meah
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 217 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1140

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77332	MB 2.4	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2150	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	51.2	02/18 1700	02/18 1800	WS
		Moisture Content	93	27.6%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.0	02/13 0840	02/13 0940	SJ
		Phenols	556	14.1	02/20 1000	02/20 1530	EP
		TOC	511	24.4%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kirkins, M.S.
Certified by: Laboratory Manager

Kamal Moak
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77334

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
O. No.

Date Collected: 2/10/87 By: Unk Time: 1530
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/25/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 3.3

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
id Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	857	25	
2,4,6-Trichlorophenol	ND	5	
4,6-Tetrachlorophenol	130	25	
ase/Neutrals			
cenaphthylene	ND	5	
Benzo (a) anthracene	228	5	
Benzo (a) Pyrene	48	5	
enzo (b) Fluoranthene	61	5	
luoranthene	865	5	
Indeno (1,2,3,c,d) Pyrene	21	5	
aphthalene	228	5	
henanthrene	340	5	
Carbazole	*	5	
(Fluorene)	133	5	

- Not Detected (no compound detected above detection limit).

amples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for anic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 2.

Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry, Ph.D.
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Attention: Herschel Roberts Date/Time Collected: 2/10/87 1530

Sample Type: Comp/Preserved Date/Time Received: 2/12/87 1300
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77334	MB 3.3	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0700	02/18 1200	KM
		Cadmium	"	<0.1	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	50.3	02/17	02/17	WS
		Copper	"	10.7	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	15.7	02/23 1300	02/23 1700	JM

Stan A. Kikilizyn M.S.
Certified by: Laboratory Manager

Kamal Mesk
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHOENICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1530

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77334	MB 3.3	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2150	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	88.8	02/18 1700	02/18 1800	WS
		Moisture Content	93	65.8%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.4	02/13 0840	02/13 0940	SJ
		Phenols	556	29.4	02/23 0800	02/23 1530	EP
		TOC	511	7.2%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kinkins M.S.
Certified by: Laboratory Manager

Kamal Moab
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2/17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
(504)-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77335

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1515
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/25/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 3.6

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	693	25	
2,4,6-Trichlorophenol	ND	5	
2,3,4,6-Tetrachlorophenol	7.5	25	
Base/Neutrals			
Acenaphthylene	4.2	5	
Benzo (a) anthracene	52	5	
Benzo (a) Pyrene	12	5	
Benzo (b) Fluoranthene	19	5	
Fluoranthene	262	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	165	5	
Phenanthrene	383	5	
Carbazole	*	5	
(Fluorene)	136	5	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry, PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1515

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77335	MB 3.6	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	0.97 0.93	02/18 0700	02/18 1200	KM
		Cadmium	"	<0.1	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	26.8	02/17	02/17	WS
		Copper	"	4.1 4.8	02/20 0930	02/20 1400	KM
		Lead	"	4.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	7.2	02/23 1300	02/23 1700	JM

Stan A. Kihikian, M.S.
Certified by: Laboratory Manager

Kamal Moody
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Attention: Herschel Roberts

Date/Time Collected: 2/10/87 1515

Sample Type: Comp/Preserved

Date/Time Received: 2/12/87 1300
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77335	MB 3.6	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2130	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	62.2	02/18 1700	02/18 1800	WS
		Moisture Content	93	42.8%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	7.1	02/13 0840	02/13 0940	SJ
		Phenols	556	7.4	02/20 0800	02/20 1430	EP
		TOC	511	3.2%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kirkpatrick, M.S.
Certified by: Laboratory Manager

Kamal Mogh
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

. Sample No. 77338

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite A
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1430
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/25/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 3.8

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
.d Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	786	25	
6-Trichlorophenol	ND	5	
,4,6-Tetrachlorophenol	13	25	
se/Neutrals			
Acenaphthylene	5.9	5	
Benzo (a) anthracene	18	5	
Benzo (a) Pyrene	2.4	5	
Benzo (b) Fluoranthene	17	5	
Fluoranthene	169	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	284	5	
Phenanthrene	197	5	
Carbazole	*	5	
(Fluorene)	65	5	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Moran, M.S.
Analyst(s)

Donald Lee Perry, PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
ddress: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1430

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300
Collected by: Mark

Sample Type: Comp/Preserved

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77338	MB 3.8	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0700	02/18 1200	KM
		Cadmium	"	<0.1	02/19 1300	02/19 1700	JM
		Chromium	157/ 173	18.3	02/17	02/17	WS
		Copper	"	4.6	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	7.9	02/23 1300	02/23 1700	JM

Stan A. Nicholson M.S.
Certified by: Laboratory Manager

Kamal Marsh
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 217 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1430

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved

Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77338	MB 3.8	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2130	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	31.3	02/18 1700	02/18 1800	WS
		Moisture Content	93	40.4%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	7.1	02/13 0840	02/13 0940	SJ
		Phenols	556	6.8	02/23 0800	02/23 1530	EP
		TOC	511	0.97% 1.0%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kihihis, M.S.
Certified by: Laboratory Manager

Konrad Mock
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

Sample No. 77336

Date Collected: 2/10/87 By: Unk Time: 1500
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/25/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. MB 3.13

.ient: Roberts/Schornick & Associates
'ress: 860 Copperfield Dr., Suite A
Norman, OK 70372
O. No.

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
d Extractables			
2 - Chlorophenol	ND	5	
?,4-Dimethylphenol	ND	5	
,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	1370	25	
-Trichlorophenol	ND	5	
,6-Tetrachlorophenol	13	25	
e/Neutrals			
cenaphthylene	6.1	5	
Benzo (a) anthracene	32	5	
enzo (a) Pyrene	10	5	
enzo (b) Fluoranthene	33	5	
luoranthene	238	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
aphthalene	305	5	
henanthrene	233	5	
Carbazole	*	5	
Fluorene)	90	5	

· Not Detected (no compound detected above detection limit).

mples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for nic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 82.

Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under perimental conditions and sample matrix).

Robert N. Moore, M.S.
Analyst(s)

Donald Lee Perry, PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC.
`ddress: 860 Copperfield Dr. - #A
Norman, OK 73072

File No. 18680
P.O. No.

Invoice: 29843
Date: 3/11/87

Attention: Herschel Roberts

Date/Time Collected: 2/10/87 1500

Sample Type: Comp/Preserved

Date/Time Received: 2/12/87 1300
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77336	MB 3.13	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	1.1	02/18 0700	02/18 1200	KM
		Cadmium	"	0.26	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	47.1	02/17	02/17	WS
		Copper	"	5.8	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	8.2	02/23 1300	02/23 1700	JM

Stan A. Nikilin, M.S.
Certified by: Laboratory Manager

Kamel Mod
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
ddress: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Attention: Herschel Roberts Date/Time Collected: 2/10/87 1500

Sample Type: Comp/Preserved Date/Time Received: 2/12/87 1300
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77336	MB 3.13	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2130	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	52.5	02/18 1700	02/18 1800	WS
		Moisture Content	93	51.4%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.6	02/13 0840	02/13 0940	SJ
		Phenols	556	8.2	02/20 0800	02/20 1430	EP
		TOC	511	5.8%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Hirtsinkin, M.S.
Certified by: Laboratory Manager

Konrad Moak
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2/17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

NOD 12 A

3

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

EML Sample No. 77337

Client: Roberts/Schornick & Associates
Address: 860 Copperfield Dr., Suite
Norman, OK 70372
P.O. No.

Date Collected: 2/10/87 By: Unk Time: 1400
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 3/3/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 300 ml.
Sample I.D. MB-3.17

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
Acid Extractables			
2 - Chlorophenol	ND	0.010	
2,4-Dimethylphenol	0.022	0.010	
2,4-Dinitrophenol	ND	0.050	
p - Chloro-m-cresol	ND	0.010	
Pentachlorophenol	ND	0.050	
',4,6-Trichlorophenol	ND	0.010	
-,3,4,6-Tetrachlorophenol	ND	0.050	
Base/Neutrals			
Acenaphthylene	0.01	0.010	
Benzo (a) anthracene	0.20	0.010	
Benzo (a) Pyrene	ND	0.010	
Benzo (b) Fluoranthene	ND	0.010	
Fluoranthene	0.28	0.010	
Indeno (1,2,3,c,d) Pyrene	ND	0.025	
Naphthalene	0.37	0.010	
Phenanthrene	0.42	0.010	
Carbazole	*	0.010	
(Fluorene)	0.17	0.010	

ND - Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (I.E. unable to separate under experimental conditions and sample matrix).

** The sample was mostly water therefore the analysis was performed on 300 ml. of water.

Analyst(s)

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to:	ROBERTS/SCHORNICK & ASSOC.	File No. 18680	Invoice: 29843
Address:	860 Copperfield Dr. - #A	P.O. No.	Date: 3/11/87
	Norman, OK 73072		
		Date/Time Collected:	2/10/87 1400
Attention:	Herschel Roberts		
		Date/Time Received:	2/12/87 1300
Sample Type:	Comp/Preserved	Collected by:	Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77337	MB 3.17	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0700	02/18 1200	KM
		Cadmium	"	<0.1	02/19 1000	02/19 1200	KM
		Chromium	157/ 173	43.3	02/17	02/17	WS
		Copper	"	4.1	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	<0.2	02/16 2100	02/16 2300	RD
		Nickel	173	9.4	02/23 1300	02/23 1700	JM

Alan A. Hinkins M.S.
Certified by: Laboratory Manager

Kamal Moorh
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examinati of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985) or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notifie within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1400

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved
Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77337	MB 3.17	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2130	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	25.3	02/18 1700	02/18 1800	WS
		Moisture Content	93	57.0%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	7.2	02/13 0840	02/13 0940	SJ
		Phenols	556	4.2	02/16 0930	02/16 1400	EP
		TOC	511	1.6%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kichin, M.S.
Certified by: Laboratory Manager

Kamal Maad
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIV[E]
BATON ROUGE, LA. 7080[6]
[504]-928-0232

ORGANIC ANALYSES REPORT

Sample No. 77341

[Cl]ient: Roberts/Schornick & Associates
[Ad]dress: 860 Copperfield Dr., Suite A
Norman, OK 70372
[P.]O. No.

Date Collected: 2/10/87 By: Unk Time: 1645
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/25/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. WP-3

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
[Aci]d Extractables			
[2] - Chlorophenol	ND	5	
2,4-Dimethylphenol	6.9	5	
[2],4-Dinitrophenol	ND	25	
[4] - Chloro-m-cresol	ND	5	
Pentachlorophenol	2860	25	
[2,4,]6-Trichlorophenol	ND	5	
[2,3,4],6-Tetrachlorophenol	56	25	
[Bas]e/Neutrals			
[Ac]enaphthylene	8.2	5	
Benzo (a) anthracene	272	5	
Benzo (a) Pyrene	92	5	
[Be]nzo (b) Fluoranthene	118	5	
[Fl]uoranthene	488	5	
Indeno (1,2,3,c,d) Pyrene	51	5	
[Na]phthalene	332	5	
[Ph]enanthrene	342	5	
Carbazole	*	5	
(Fluorene)	227	5	

[ND] Not Detected (no compound detected above detection limit).

[Sa]mples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for [Orga]nic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, [1982].

[*] Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under [ex]perimental conditions and sample matrix).

Robert N. Manny, M.S.
Analyst(s)

Donald Lee Perry, PhD
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
\ddress: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1645

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300
Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77341	MBWP 3	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0700	02/18 1200	KM
		Cadmium	"	0.279	02/19 1300	02/19 1700	JM
		Chromium	157/ 173	23.3	02/17	02/17	WS
		Copper	"	13.8	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	3.9	02/16 2100	02/16 2300	RD
		Nickel	173	14.5	02/23 1300	02/23 1700	JM

Stan A. Kulikis, M.S.
Certified by: Laboratory Manager

Kamal Mearl
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examinatic of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notifiec within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
ddress: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1645

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved

Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77341	MBWP 3	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	0.41	02/17 2130	02/17 2300	RD
		Spike Recovery		88%			
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	124.8 123.7	02/18 1700	02/18 1800	WS
		Spike Recovery		100%			
		Moisture Content	93	20.1%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.6	02/13 0840	02/13 0940	SJ
		Phenols	556	41.1	02/18 0900	02/18 1530	EP
		TOC	511	5.8%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kilshin, M.S.
Certified by: Laboratory Manager

Kamal Mead
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examinatior of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

18/4 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

I'. Sample No. 77339

lient: Roberts/Schornick & Associates
ddress: 860 Copperfield Dr., Suite A
Norman, OK 70372
.o. No.

Date Collected: 2/10/87 By: Unk Time: 1640
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/24/87
Sample Type: Water Soil Sludge, Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. WP 5

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
d Extractables			
- Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
,4-Dinitrophenol	ND	25	
- Chloro-m-cresol	ND	5	
Pentachlorophenol	1720	25	
6-Trichlorophenol	ND	5	
,6-Tetrachlorophenol	32	25	
e/Neutrals			
cenaphthylene	3.1	5	
Benzo (a) anthracene	115	5	
Benzo (a) Pyrene	39	5	
enzo (b) Fluoranthene	45	5	
.luoranthene	127	5	
Indeno (1,2,3,c,d) Pyrene	8.0	5	
aphthalene	262	5	
henanthrene	261	5	
Carbazole	*	5	
(Fluorene)	129	5	

- Not Detected (no compound detected above detection limit).

amples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for anic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 2.

Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under xperimental conditions and sample matrix).

Robert D. Mauy, M.S.
Analyst(s)

Donald Lee Perry, Ph.D.
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072
Date/Time Collected: 2/10/87 1640
Attention: Herschel Roberts
Date/Time Received: 2/12/87 1300
Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77339	MBWP 5	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0700	02/18 1200	KM
		Cadmium	"	1.74	02/19 1300	02/19 1700	JM
		Chromium	157/ 173	9.8	02/17	02/17	WS
		Copper	"	14.8	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	2.92	02/16 2100	02/16 2300	RD
		Nickel	173	4.1	02/23 1300	02/23 1700	JM

Stan A. Kukihiz M.S.
Certified by: Laboratory Manager

Kamal Mood
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examinatio of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
`ddress: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1640

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77339	MBWP 5	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	<0.2	02/17 2130	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	148.8	02/18 [illegible]	02/18 1800	WS
		Moisture Content	93	22.7%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	7.0	02/13 0840	02/13 0940	SJ
		Phenols	556	10.3	02/18 0900	02/18 1530	EP
		TOC	511	3.2%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Kitikis, M.S.
Certified by: Laboratory Manager

Kamal Moosk
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 277 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED
LABORATORIES, INC.

1074 DALLAS DRIVE
BATON ROUGE, LA. 70806
[504]-928-0232

ORGANIC ANALYSES REPORT

Sample No. 77340

lient: Roberts/Schornick & Associates
ress: 860 Copperfield Dr., Suite A
Norman, OK 70372
.O. No.

Date Collected: 2/10/87 By: Unk Time: ;630
Date Received: 2/17/87 By: RC Time: 1000
GC/MS Analysis Date: 2/26/87
Sample Type: Water Soil Sludge Soil Other
Sample Volume or Weight: 30 grams
Sample I.D. WP 8

Parameter	Conc. (ppm) mg/L mg/Kg	Det. Lmt. (ppm) mg/L mg/Kg	Comments
id Extractables			
2 - Chlorophenol	ND	5	
2,4-Dimethylphenol	ND	5	
2,4-Dinitrophenol	ND	25	
p - Chloro-m-cresol	ND	5	
Pentachlorophenol	ND	25	
2 6-Trichlorophenol	ND	5	
,4,6-Tetrachlorophenol	ND	25	
se/Neutrals			
Acenaphthylene	7.0	5	
Benzo (a) anthracene	187	5	
Benzo (a) Pyrene	11	5	
Benzo (b) Fluoranthene	65	5	
Fluoranthene	1620	5	
Indeno (1,2,3,c,d) Pyrene	ND	5	
Naphthalene	1250	5	
Phenanthrene	1680	5	
Carbazole	*	5	
(Fluorene)	248	5	

- Not Detected (no compound detected above detection limit).

Samples were analyzed using EPA Method 624 and/or 625 listed in Manual of Methods for ganic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July, 1982.

* Concentration of Carbazole and Fluorene are combined (i.e. unable to separate under experimental conditions and sample matrix).

Robert N. Mann, M.S.
Analyst(s)

Donald Lee Perry, Ph.D.
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1630

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300

Sample Type: Comp/Preserved

Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANAL
77340	MBWP 8	Antimony	173	<1.0	02/17 1300	02/17 1700	JM
		Arsenic	"	<1.0	02/19 0700	02/19 1500	KM
		Beryllium	"	<0.2	02/18 0700	02/18 1200	KM
		Cadmium	"	0.23	02/19 1300	02/19 1700	JM
		Chromium	157/ 173	36.4	02/17	02/17	WS
		Copper	"	9.6	02/20 0930	02/20 1400	KM
		Lead	"	<0.9	02/18 1900	02/18 2300	RD
		Mercury	171	4.83	02/16 2100	02/16 2300	RD
		Nickel	173	14.5 13.9 14.5	02/23 1300	02/23 1700	JM

Stan A. Kihtia, M.S.
Certified by: Laboratory Manager

Konrad Y...
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 217 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: ROBERTS/SCHORNICK & ASSOC. File No. 18680 Invoice: 29843
Address: 860 Copperfield Dr. - #A P.O. No. Date: 3/11/87
Norman, OK 73072

Date/Time Collected: 2/10/87 1630

Attention: Herschel Roberts

Date/Time Received: 2/12/87 1300
Sample Type: Comp/Preserved Collected by: Mark

EML #	SOURCE	PARAMETER	PG#	CONC.	BEGUN	ENDED	ANA
77340	MBWP 8	Selenium	173	<1.0	02/18 1300	02/18 1800	KM
		Silver	"	0.19	02/17 2130	02/17 2300	RD
		Thallium	"	<1.0	02/17 1600	02/17 2000	WS
		Zinc	157	62.0	02/18 1700	02/18 1800	WS
		Moisture Content	93	16.9%	02/16 0730	02/17 0830	SJ
		pH (Std. units)	429	6.6	02/13 0840	02/13 0940	SJ
		Phenols	556	18.1	02/18 0900	02/18 1530	EP
		TOC	511	3.9%	02/19 0800	02/19 1400	RA
		AE/BN		See Attached			

Stan A. Hutchins, M.S.
Certified by: Laboratory Manager

Kamal Mesh
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examinati of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985) or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 2-17 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notifie within 5 days of non-compliance conditions).
**Past Holding Time

APPENDIX B

Chain of Custody and Sample Log Forms

FORM: 1.

CHAIN OF CUSTODY RECORD — ENVIRONMENTAL SAMPLES

FACILITY	SAMPLING FIRM	SAMPLE
NAME: Mixon Brothers Wood Preserving, Inc.	NAME: ROBERTS/SCHORNICK AND ASSOCIATES	☐ Effluent ☐ Groundwater
ADDRESS: Idabel, OK.	ADDRESS: 860 COPPERFIELD DR. STE. A, NORMAN, OK	☐ Solid ☐ Surface Water
	SIGNATURE: Mark Fink	☒ Sludge

NO.	LOCATION	DATE	TIME	WEATHER TEMP	WEATHER PREC	SAMPLE TYPE AND METHOD COMP	GRAB	MECH	MAN	TIMES CASING CLEANED	NO OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
MB1.3	Impoundment #1	2-10	10:30	64°	NO	X				N/A	2	Attached	
MB1.10	Impoundment #1	2-10	11:30										
MB1.5	Impoundment #1	2-10	1300										
MB2.4	Impoundment #2	2-10	11:40										
MB2.2	Impoundment #2	2-10	1245										
MB3.3	Impoundment #3		1530										
MB3.6	Impoundment #3		1515										
MB3.13	Impoundment #3		1300										
MB3.17	Impoundment #3		1400										
MB3.8	Impoundment #3		1430	64°	NO	X				N/A	2.	Attached	

RELINQUISHED BY (SIGNATURE): Mark Fink 2-10	RECEIVED BY (SIGNATURE):	DATE:	TIME:
RELINQUISHED BY (SIGNATURE): [illegible]	RECEIVED BY (SIGNATURE): [illegible]	DATE: 2-17	TIME: 0900
RELINQUISHED BY (SIGNATURE):	RECEIVED BY (SIGNATURE):	DATE:	TIME:

ADDITIONAL REMARKS: Call upon sample Arrival for directions

DISPATCHED BY (SIGNATURE): Federal Express	DATE: 2-11	TIME:	RECEIVED FOR LABORATORY (SIGNATURE): [illegible]	DATE: 2-12	TIME: 1311
CARRIER: Oklahoma City, Ok			LABORATORY: Environmental Lab		
ADDRESS: Overnight			ADDRESS: Ruston, La.		
METHOD OF SHIPMENT:					

ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES

☐ Yes ☐ No, explain above

CHAIN OF CUSTODY RECORD— ENVIRONMENTAL SAMPLES

FACILITY	SAMPLING FIRM	SAMPLE
NAME: Mixon Brothers Wood Preserving, Inc.	NAME: ROBERTS/SCHORNICK AND ASSOCIATES	☐ Effluent ☐ Groundwater
ADDRESS: Idabel, OK.	ADDRESS: 860 COPPERFIELD DR. STE. A, NORMAN, OK	☐ Solid ☐ Surface Water
	SIGNATURE: Mark Fenly	☒ Sludge

NO.	LOCATION	DATE	TIME	WEATHER TEMP	WEATHER PREC	COMP	GRAB	MECH	MAN	TIMES CASING CLEANED	NO OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
MB1.3	Impoundment #1	2-10	10:30	64°	NO	X				N/A	2	Attached	
MB1.10	Impoundment #1	2-10	11:30										
MB1.5	Impoundment #1	2-10	1300										
MB2.4	Impoundment #2	2-10	11:40										
MB2.2	Impoundment #2	2-10	1245										
MB3.3	Impoundment #3		1530										
MB3.6	Impoundment #3		1515										
MB3.13	Impoundment #3		1300										
MB3.17	Impoundment #3		1400										
MB3.8	Impoundment #3		1430	64°	NO	X				N/A	2.	Attached	

RELINQUISHED BY (SIGNATURE): Mark Fenly 2-10
RECEIVED BY (SIGNATURE): DATE: TIME:

RELINQUISHED BY (SIGNATURE): Alan A. Rikilivic
RECEIVED BY (SIGNATURE): Kamel Moach DATE: 2-17 TIME: 0900

RELINQUISHED BY (SIGNATURE):
RECEIVED BY (SIGNATURE): DATE: TIME:

ADDITIONAL REMARKS: Call upon sample Arrival for Digestion

DISPATCHED BY (SIGNATURE): Federal Express DATE: 2-11 TIME:
RECEIVED FOR LABORATORY (SIGNATURE): Alan A. Rikilivic DATE: 2-12 TIME: 1300
CARRIER: Oklahoma City, OK
LABORATORY: Environmental Lab
ADDRESS: Overnight
ADDRESS: Ruston, La.
METHOD OF SHIPMENT:

ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES

☐ Yes ☐ No, explain above

CHAIN OF CUSTODY RECORD — ENVIRONMENTAL SAMPLES

FACILITY

NAME: Mixon Brothers Wood Preserving Inc

ADDRESS: Idabel, OK.

SAMPLING FIRM

NAME: ROBERTS/SCHORNICK AND ASSOCIATES

ADDRESS: 860 COPPERFIELD DR. STE. A, NORMAN, OK

SIGNATURE: [signature]

SAMPLE

☐ Effluent ☐ Groundwater

☐ Solid ☐ Surface Water

☒ Sludge

NO.	LOCATION	DATE	TIME	WEATHER TEMP	WEATHER PREC	SAMPLE TYPE AND METHOD COMP	GRAB	MECH	MAN	TIMES CASING CLEANED	NO OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
MBWP.5	Waste Pile	2-10	1600	64°	NO	X				N/A	1	Attached	
MBWP.8	Waste Pile	2-10	1630	64°	NO	X				N/A	2	Attached	
MBWP.3	Waste Pile	2-10	1645	64°	NO	X				N/A	1	Attached	

RELINQUISHED BY (SIGNATURE): [signature] 2-11

RECEIVED BY (SIGNATURE):

DATE: TIME:

RELINQUISHED BY (SIGNATURE): [signature]

RECEIVED BY (SIGNATURE): [signature]

DATE: 2-17 TIME: 0900

RELINQUISHED BY (SIGNATURE):

RECEIVED BY (SIGNATURE):

DATE: TIME:

DISPATCHED BY (SIGNATURE): DATE: TIME:

RECEIVED FOR LABORATORY (SIGNATURE): [signature] DATE: [illegible] TIME: [illegible]

ADDITIONAL REMARKS: Call upon Sample Arrival for Digestion

CARRIER: Federal Express

ADDRESS: Oklahoma City, OK

METHOD OF SHIPMENT: Overnight

LABORATORY: Environmental Laboratory

ADDRESS: Ruston, La.

ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES

☐ Yes ☐ No, explain above

1.

CHAI USTODY RECORD — ENVIRONMENTAL SAMPLES

FACILITY	SAMPLING FIRM	SAMPLE
NAME: Mixon Brothers Wood Preserving, Inc.	NAME: ROBERTS/SCHORNICK AND ASSOCIATES	[ ] Effluent [ ] Groundwater
ADDRESS: Idabel, Ok.	ADDRESS: 860 COPPERFIELD DR. STE. A, NORMAN, OK	[ ] Solid [ ] Surface Water
	SIGNATURE: Mark Fenly	[x] Sludge

NO.	LOCATION	DATE	TIME	WEATHER TEMP	WEATHER PREC	SAMPLE TYPE AND METHOD COMP	GRAB	MECH	MAN	TIMES CASING CLEANED	NO OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
MB1.3	Impoundment #1	2-10	10:30	64°	NO	X				N/A	2	Attached	
MB1.10	Impoundment #1	2-10	11:30										
MB1.5	Impoundment #1	2-10	1300										
MB2.4	Impoundment #2	2-10	11:00										
MB2.2	Impoundment #2	2-10	1245										
MB3.3	Impoundment #3		1530										
MB3.6	Impoundment #3		1515										
MB3.13	Impoundment #3		1300										
MB3.17	Impoundment #3		1400										
MB3.8	Impoundment #3		1430	64°	NO	X				N/A	2	Attached	

RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME
Mark Fenly 2-10			

DISPATCHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY (SIGNATURE)	DATE	TIME
Federal Express	2-11				

CARRIER: Oklahoma City, Ok

ADDRESS: Overnight

METHOD OF SHIPMENT

LABORATORY: Environmental Lab

ADDRESS: Ruston, La.

ADDITIONAL REMARKS: Call upon sample Arrival

ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES

[ ] Yes [ ] No, explain above

CHAIN OF CUSTODY RECORD — ENVIRONMENTAL SAMPLES

FACILITY

NAME: Mixon Brothers Wood Preserving Inc

ADDRESS: Idabel, OK.

SAMPLING FIRM

NAME: ROBERTS/SCHORNICK AND ASSOCIATES

ADDRESS: 860 COPPERFIELD DR. STE. A, NORMAN, OK

SIGNATURE: [signature]

SAMPLE

- [ ] Effluent
- [ ] Groundwater
- [ ] Solid
- [ ] Surface Water
- [x] Sludge

NO.	LOCATION	DATE	TIME	WEATHER TEMP	WEATHER PREC	SAMPLE TYPE AND METHOD COMP	GRAB	MECH	MAN	TIMES CASING CLEARED	NO OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
MBWP.5	Waste Pile	2-10	1600	64°	NO	X				N/A	2	Attached	
MBWP.8	Waste Pile	2-10	1630	64°	NO	X				N/A	2	Attached	
MBWP.3	Waste Pile	2-10	1645	64°	NO	X				N/A	2	Attached	

RELINQUISHED BY (SIGNATURE): [signature] 2-10 | RECEIVED BY (SIGNATURE): | DATE | TIME

RELINQUISHED BY (SIGNATURE): | RECEIVED BY (SIGNATURE): | DATE | TIME

RELINQUISHED BY (SIGNATURE): | RECEIVED BY (SIGNATURE): | DATE | TIME

DISPATCHED BY (SIGNATURE): | DATE | TIME | RECEIVED FOR LABORATORY (SIGNATURE): | DATE | TIME

ADDITIONAL REMARKS: Call upon Sample Arrival

CARRIER: Federal Express

ADDRESS: Oklahoma City, OK

METHOD OF SHIPMENT: Overnight

LABORATORY: Environmental Laboratory

ADDRESS: Ruston, La.

ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES

- [ ] Yes
- [ ] No, explain above

ROBERTS/SCHORNICK & ASSOCIATES
708 24th Avenue N.W., Suite F
Norman, Oklahoma 73069

SAMPLE LOG SHEET

Log Sheet No.: MB871

Sample Type: ☐ Solid ☐ Liquid ☒ Sludge ☐ Other
Sample Source: Impoundments # 1,2,3, Waste Pile

Sampling Method: Composite

Date Sampled: 2-10-87 Time Sampled: 0800-1645
Sampled By:
Method of Shipment: Overnight
Date of Shipment: 2-11-87
Transported to: Environmental Laboratory

Purpose: ☒ Chemical Analysis ☐ Physical Analysis ☐ Other

Special Instructions/Remarks: Call when Sample Arrives

Sample ID No.	SAMPLE TYPE	Type Container	PRESERVATIVE	Nutrients	BOD	COD	TOC	Total Solids	Suspended Solids	Alkalinity	DO	pH	Conductivity	Temperature	Turbidity	Oil and Grease	Metals	Bacteriology	Pesticides	Herbicides	Trace Organics	Phenol	Cyanide	Ttl. Org. Halogen	Other*
MB1.3	Sludge	Glass	Ice																						
MB1.10																									
MB1.5																									
MB2.4																									
MB2.2																									
MB3.3																									
MB3.6																									
MB3.13																									
MB3.17																									
MB3.8																									
MB WP.5																									
MB WP.4			Ice																						

*Other
MBWP.3 Sludge Glass Ice

See Attachment for Analysis Request

RSA Form 1.6

ENVIROMED
LABORATORIES, INC.

414 WEST CALIFORNIA AVE. • RUSTON, LOUISIANA 71270
9074 DALLAS DRIVE • BATON ROUGE, LA 70806
9013 LOIS LANE • BOSSIER CITY, LOUISIANA 71111

ANALYTICAL REQUEST FORM

Sample # MB 1.3, MB 1.10, MB 1.5, MB 2.4, MB 2.2, MB 3.3, MB 3.6, MB 3.13, MB 3.17, MB 3.8, MB WP.5, MB WP.8, MB WP.3

Client: Roberts / Schornick and Assoc.
Address: Norman, OK
Attention: Herschel Roberts
Title: Principal
Sample Type: Water-Soil-Sludge-Other ______
Collection Method: Grab/Comp Preserved? Ice
Sample Source: Impoundments # 1,2,3 + Waste Pile

Date Collected: 2-10 Time: 0800-1645 By: MF
Samples 12 Containers: 24
Date Received: ______ Time: ______ By: ______
Sampling Witnessed By: ______
Requested By: ______
Comments: ______

( ) 129 Priority Pollutants
( ) Purgeables (VOA) ______
(x) Acid Extractables See Attachment
(x) Base Neutrals See Attachment
( ) Priority Pesticides/PCBs ______
(x) Priority Metals All 13
( ) Pesticide/Herbicide ______
( ) PCBs ______

Asbestos (Yes) (No)
( ) Ignitability ______
( ) Corrosivity ______
( ) Reactivity ______
( ) EP Toxicity ______
( ) Radiological: Total Radium ______ Radium 226 + 228 ______
Gross Alpha ______ Gross Beta ______

INVOICE: Ruston ______ Baton Rouge ______
REPORT: Ruston ______ Baton Rouge ______

CHEMISTRY:

( ) Acidity	( ) Cyanide, T.	( ) Odor	( ) Sulphur-Sulfate
( ) Alkalinity	( ) Dissolved Oxy	(x) TOC	( ) Sulfide
( ) Bicarb. Alk.	( ) Flow (MGD)	( ) DOC	( ) Sulfate
( ) Carbonate Alk.	( ) Hardness	( ) Turb. (NTU)	( ) Solids-Tot.
( ) Fecal Coliform	( ) Oil & Grease	(x) pH	( ) Total Diss.
( ) Total Coliform	( ) Halogenated Phenols	( ) Phenols	( ) Total Susp.
( ) Temperature		( ) Total Phosphate	( ) Vola. Diss.
( ) BOD_5	( ) Ammonia-N	( ) Ortho. Phosphate	( ) Vola. Susp.
( ) Bromide	( ) Kjelhahl-TKN	( ) Settleable Solids	( ) Fixed Diss.
( ) Chloride	( ) Nitrate-N	( ) Silica	( ) Fixed Susp.
( ) COD	( ) Nitrite-N	( ) Spec. Conductance	( ) TOX
( ) Color	( ) Organic-N	( ) Surfactants	( ) Fluoride

METALS: (Non-Priority)

( ) Aluminum	( ) Calcium	( ) Lead	( ) Potassium	( ) Vanadium
( ) Antimony	Chromium	( ) Lithium	( ) Selenium	( ) Zinc
( ) Arsenic	( ) Total	( ) Magnesium	( ) Silver	
( ) Barium	( ) Hexavalent	( ) Manganese	( ) Sodium	
( ) Beryllium	( ) Cobalt	( ) Mercury	( ) Strontium	
( ) Boron	( ) Copper	( ) Molybdenum	( ) Thallium	
( ) Cadmium	( ) Iron	( ) Nickel	( ) Tin	

Other Tests: See Attachments

Authorized by: ______ Date: ______
Signature: ______ Witnessed by: ______
Samples received by: ______ Date: ______ Time: ______

RSA 1.13

ENVIROMED
LABORATORIES, INC.
414 WEST CALIFORNIA AVE. • RUSTON, LOUISIANA 71270
1874 DALLAS DRIVE • BATON ROUGE, LA 70806
1813 LOIS LANE • BOSSIER CITY, LOUISIANA 71111

ANALYTICAL REQUEST FORM

Sample #: MB 1.3, MB 1.10, MB 1-5, MB 2.4, MB 2.2, MB 3.3, MB 3.6, MB 3.13, MB 3.17, MB 3.8, MB WP.5, MB WP.8, MB WP.3

Client: Roberts / Schornick and Assoc. — Date Collected: 2-10 — Time: 0800-1645 — By: M[illegible]

Address: Norman, OK — Samples: 19 — Containers: 24

Date Received: ____ Time: ____ By: ____

Attention: Herschel Roberts — Sampling Witnessed By: ____

Title: Principle — Requested By: ____

Sample Type: Water-Soil-Sludge-Other ____ — Comments: ____

Collection Method: Grab/Comp Preserved? Ice

Sample Source: Impoundments 1,2,3 + Waste Pile

( ) 129 Priority Pollutants
( ) Purgeables (VOA) ____
(x) Acid Extractables: See Attachment
(x) Base Neutrals: See Attachment
( ) Priority Pesticides/PCBs ____
(x) Priority Metals: All 13
( ) Pesticide/Herbicide ____
( ) PCBs ____

Asbestos (Yes) (No)
( ) Ignitability ____
( ) Corrosivity ____
( ) Reactivity ____
( ) EP Toxicity ____
( ) Radiological: Total Radium ____ Radium 226 + 22[8]
Gross Alpha ____ Gross Beta ____

INVOICE: Ruston ____ Baton Rouge ____
REPORT: Ruston ____ Baton Rouge ____

CHEMISTRY:

( ) Acidity	( ) Cyanide, T.	( ) Odor	( ) Sulphur-Sulfate
( ) Alkalinity	( ) Dissolved Oxy	(x) TOC	( ) Sulfide
( ) Bicarb. Alk.	( ) Flow (MGD)	( ) DOC	( ) Sulfate
( ) Carbonate Alk.	( ) Hardness	( ) Turb.(NTU)	( ) Solids-Tot.
( ) Fecal Coliform	( ) Oil & Grease	(x) pH	( ) Total Diss.
( ) Total Coliform	( ) Halogenated Phenols	( ) Phenols	( ) Total Susp.
( ) Temperature		( ) Total Phosphate	( ) Vola. Diss.
( ) BOD_5	( ) Ammonia-N	( ) Ortho. Phosphate	( ) Vola. Susp.
( ) Bromide	( ) Kjelhahl-TKN	( ) Settleable Solids	( ) Fixed Diss.
( ) Chloride	( ) Nitrate-N	( ) Silica	( ) Fixed Susp.
( ) COD	( ) Nitrite-N	( ) Spec. Conductance	( ) TOX
( ) Color	( ) Organic-N	( ) Surfactants	( ) Fluoride

METALS: (Non-Priority)

( ) Aluminum	( ) Calcium	( ) Lead	( ) Potassium	( ) Vanadium
( ) Antimony	Chromium	( ) Lithium	( ) Selenium	( ) Zinc
( ) Arsenic	( ) Total	( ) Magnesium	( ) Silver	
( ) Barium	( ) Hexavalent	( ) Manganese	( ) Sodium	
( ) Beryllium	( ) Cobalt	( ) Mercury	( ) Strontium	
( ) Boron	( ) Copper	( ) Molybdenum	( ) Thallium	
( ) Cadmium	( ) Iron	( ) Nickel	( ) Tin	

Other Tests: See Attachments

Authorized by: ____ Date: ____

Signature: ____ Witnessed by: ____

Samples received by: ____ Date: ____ Time: ____

RSA 1.13

TABLE 3.0

ANALYSIS REQUEST

I Phenolics pH

Total Organic Carbon

Moisture Content

II ACID EXTRACTABLES

2 - Chlorophenol

2,4 - Dimethylphenol

2,4 - Dinitrophenol

p - Chloro-m-cresol

Pentachlorophenol

2,4,6 - Trichlorophenol

2,3,4,6 - Tetrachlorophenol

pH

III BASE/NEUTRALS

Acenaphthylene

Benzo (a) anthracene

Benzo (a) pyrene

Benzo (b) fluoranthene

Fluoranthene

Indeno (1,2,3.-c,d) Pyrene

Napthalene

Phenanthrene

Carbazole

IV PRIORITY POLLUTANTS

All 13 Heavy Metals

I ANALYSIS REQUEST

pH

Phenolics

Total Organic Carbon

Moisture Content

Trip B. II ACID EXTRACTABLES

2 - Chlorophenol

2,4 - Dimethylphenol

2,4 - Dinitrophenol

p - Chloro-m-cresol

Pentachlorophenol

2,4,6 - Trichlorophenol

2,3,4,6 - Tetrachlorophenol

Trip B. III BASE/NEUTRALS

Acenaphthylene

Benzo (a) anthracene

Benzo (a) pyrene

Benzo (b) fluoranthene

Fluoranthene

Indeno (1,2,3.-c,d)Pyrene

Napthalene

Phenanthrene

Carbazole

IV PRIORITY POLLUTANTS

All 13 Heavy Metals

Sample Shipment 2015

Blue Chest	Red Chest	Small
MB 1.5	MB1.10	MB3.6D
1.3	MB1.10	MB3.6D
3.8	MB 2.4	
3.13	MB 3.8	
3.17	MBWP.8	
3.3	MBWP.3	
3.17	MBWP.5	
2.2	MB1.5	
1.3	MBWP.8	
3.3	MBWP.5	
2.2	MBWP.3	
3.13	MB 2.4	
TRIP BLANK	MB 3.6	
	MB 3.6	

APPENDIX C

Field Notes

FIELD NOTES

DATE: 2/9-2/11

CLIENT: MIXON BROTHERS WOOD PRESERVING, INC.

LOCATION: IDABEL, OKLAHOMA

SAMPLE TEAM MEMBERS: MARK FUCHS
DAVE SCHORNICK

On 2-9-87 Mark Fuchs and Dave Schornick implemented a sampling event on the three waste impoundments and the waste pile at the Mixon Brothers Wood Preserving, Inc. (Mixon) facility. The purpose of this event was to characterize the waste in these units as required in 40CFR for all generators of hazardous waste. Prior to our arrival on the scene the sampling locations were selected by laying out a grid pattern on each of these units. The size of these grids was ten feet except for the Waste Pile which had five foot grids. Twenty five per cent of these grids were randomly selected and the center of the random selected grids was selected as the sample point.

We arrived on the scene at 0800. the temperature was 62 degrees fahrenheit, the skies were clear the wind was calm with slight gusts out of the south-southwest.

The first task undertaken was to measure each unit in order to determine the accuracy of the predesigned grid/sampling system. All measurements Made by an earlier survey were apparently accurate except for impoundment # 3. This impoundment (due to significant changes with the volume as a result of rainwater) measured 35 feet by 60 feet from the toe of each dike. As a result of these measurements 5 samples were taken from this impoundment. A total of ten samples were taken from the impoundments and three samples were taken from the waste pile area. Table 1.0 gives the measurements of each waste unit, the number of samples from each waste unit, and the sample locations in each waste unit.

Samples were taken by using a 1 1/4" thin walled stainless steel push tube. Samples were collected by pushing the tube through the sludge until the end was plugged with the soil at the bottom of the impoundment. The other end of the push tube had been fabricated to attach an air fitting and air pressure was used to extrude the sample.

Impoundment number three had less than two inches of sludge which did not facilitate the use of the push tube. A dredge type sampler was used to sample the waste from this impoundment.

The waste pile unit was sampled by taking a back-hoe and making a vertical cut in the pile at each sampling location. The sides were then scraped with hand trowels in order to collect the samples.

Measurements were taken of the liquid and sludge depths of each impoundment at each sampling location and of the sludge depth at each of the sampling locations in the waste pile unit. Tble 2.0 lists these measurements.

All sampling equipment was decontaminated between each sampling location. The following is a description of the decontamination procedure used for this sampling event:

1.0 Wash with high pressure steam and soap.

2.0 Wash with tap water and low phosphate soap.

3.0 Rinse with tap water.

4.0 Rinse with distilled water.

5.0 Rinse with acetone.

6.0 Rinse with Hexane.

7.0 Rinse with Distilled water.

8.0 Rinse with o.1 normal HCl.

9.0 Rinse with distilled water.

Samples were composited in stainless steel bowls and placed in laboratory cleaned sample bottles. All samples were packed in ice immediately and shipped by overnight express to the laboratory the day after the sampling event. Attached are the chain of custody control forms. Table 3.0 is a copy of the Analysis Request sheet which was submitted to the Lab.

TABLE 1.0

IMPOUNDMENT MEASUREMENTS

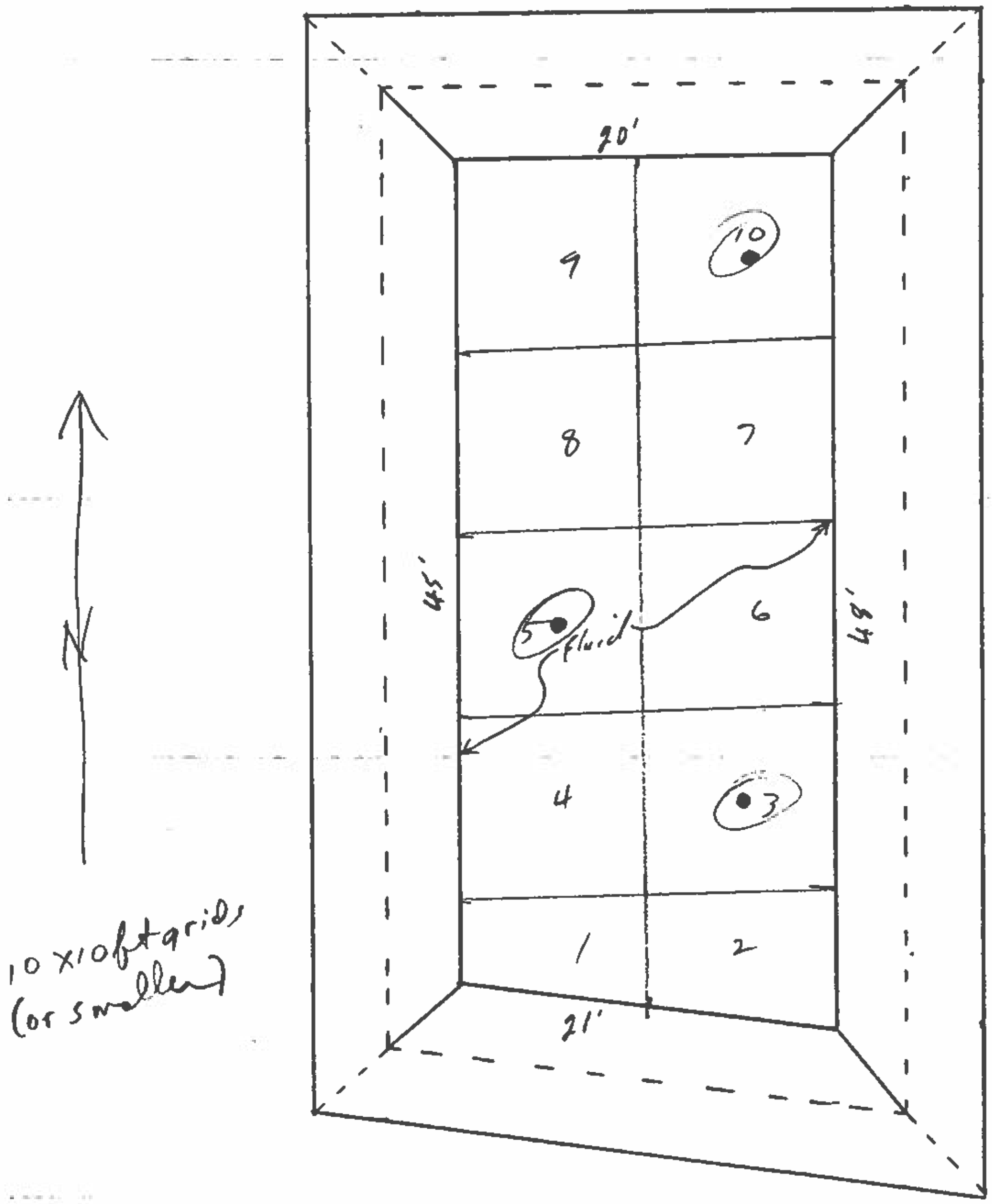
IMPOUNDMENT NUMBER	TOTAL NO. IMPOUNDMENT SAMPLES	SAMPLE LOCATION	IMPOUNDMENT DIMENSIONS
1	3	MB1.3	20' X 45'
1	3	MB1.10	20' X 45'
1	3	MB1.5	20' X 45'
2	2	MB2.4	20' X 21'
2	2	MB2.2	20' X 21'
3	5	MB3.3	35' X 60'
3	5	MB3.6	35' X 60'
3	5	MB3.13	35' X 60'
3	5	MB3.17	35' X 60'
3	5	MB3.8	35' X 60'
Waste Pile	3	MBWP.3	10' X 25'
Waste Pile	3	MBWP.5	10' X 25'
Waste Pile	3	MBWP.8	10' x 25'

TABLE 2.0

SAMPLE LOCATION DATA

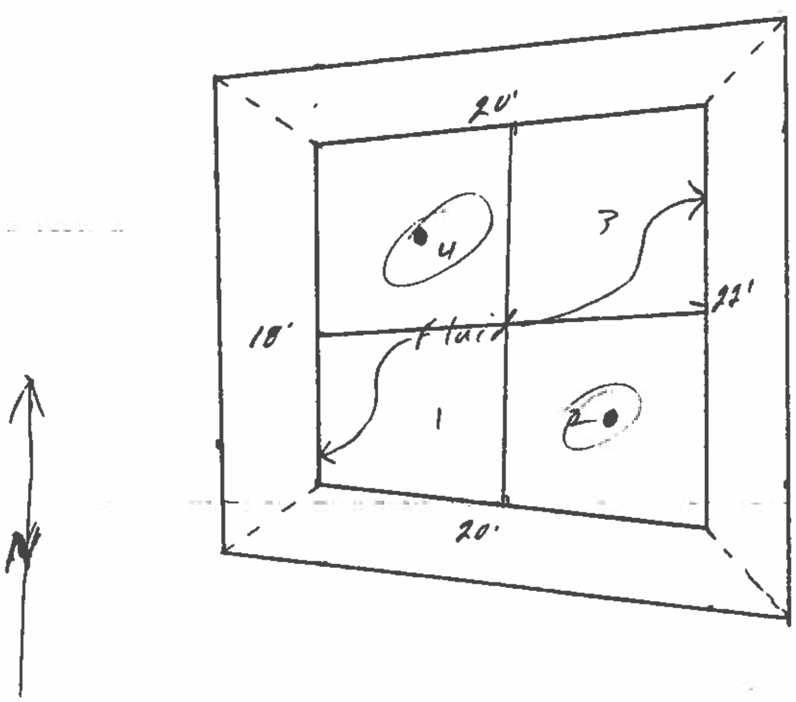
IMPOUNDMENT NUMBER	SAMPLE NUMBER	TOTAL NO. IMPOUNDMENT SAMPLES	WATER DEPTH	SLUDGE DEPTH
1	MB1.3	3	0"-25"	25"-60"
1	MB1.10	3	0"-18"	18"-28"
1	MB1.5	3	0"-16"	16"-36"
2	MB2.4	2	0"-11"	11"-46"
2	MB2.2	2	0"-42"	42"-52"
3	MB3.3	5	0"-96"	96:-97.5"
3	MB3.6	5	0"-96"	96"-98"
3	MB3.13	5	0"-96"	96"-98"
3	MB3.17	5	0"-96"	96"-97.5"
3	MB3.8	5	0"-96"	96"-98"
WASTE PILE	MBWP.3	3	N/A	0"-32"
WASTE PILE	MBWP.5	3	N/A	0"-30"
WASTE PILE	MBWP.8	3	N/A	0"-28"

Impoundment # 1



Scale 1" = 10'

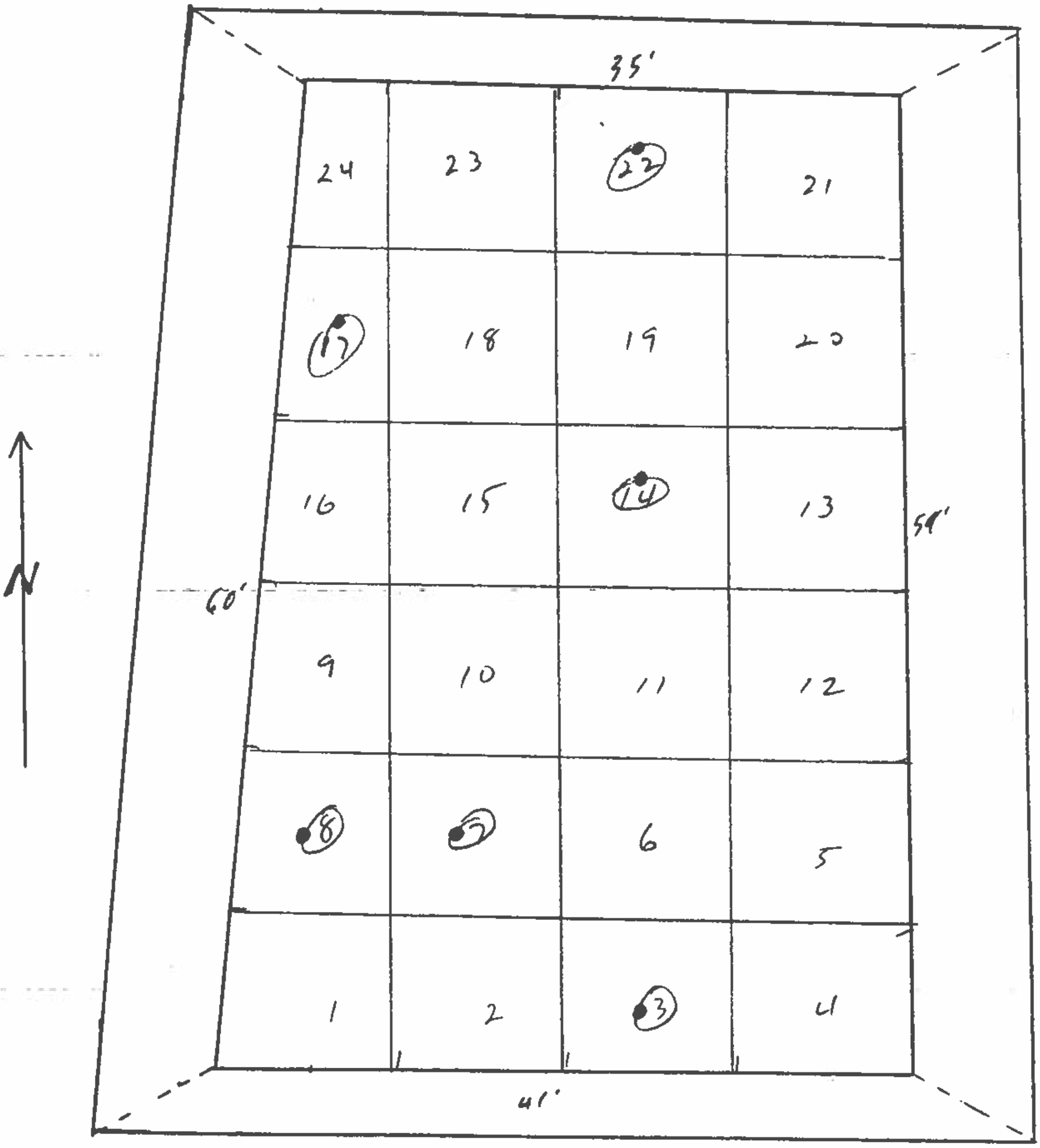
Impoundment # 2



10 x 10 ft grids (approx.)

Scale 1" = 10'

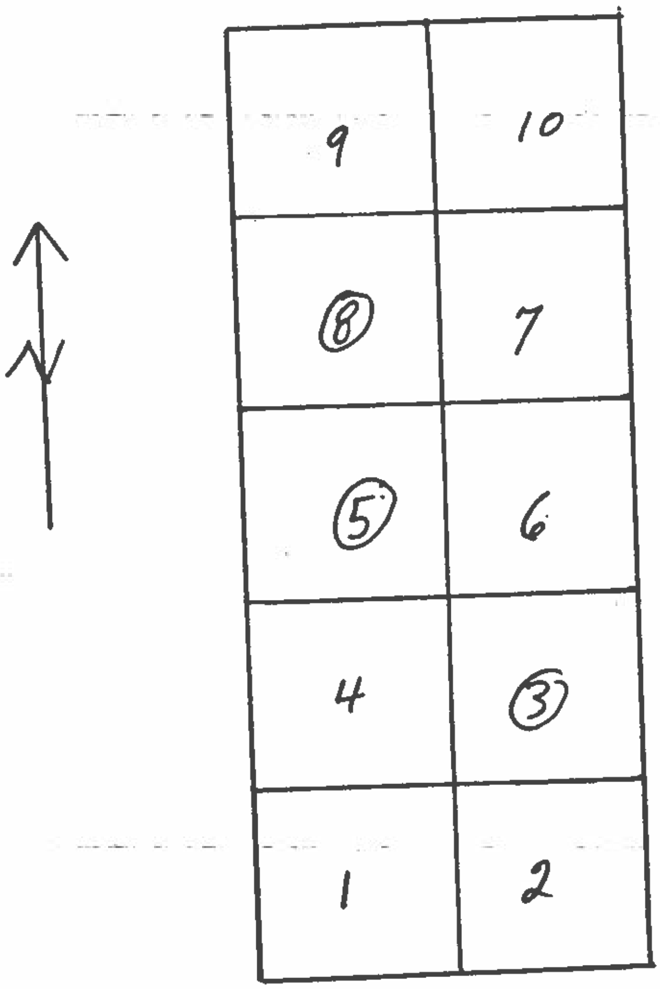
Impoundment # 3



10x10 ft grids (or smaller)

Scale 1" = 10'

Waste Pile



5' x 5' Grids

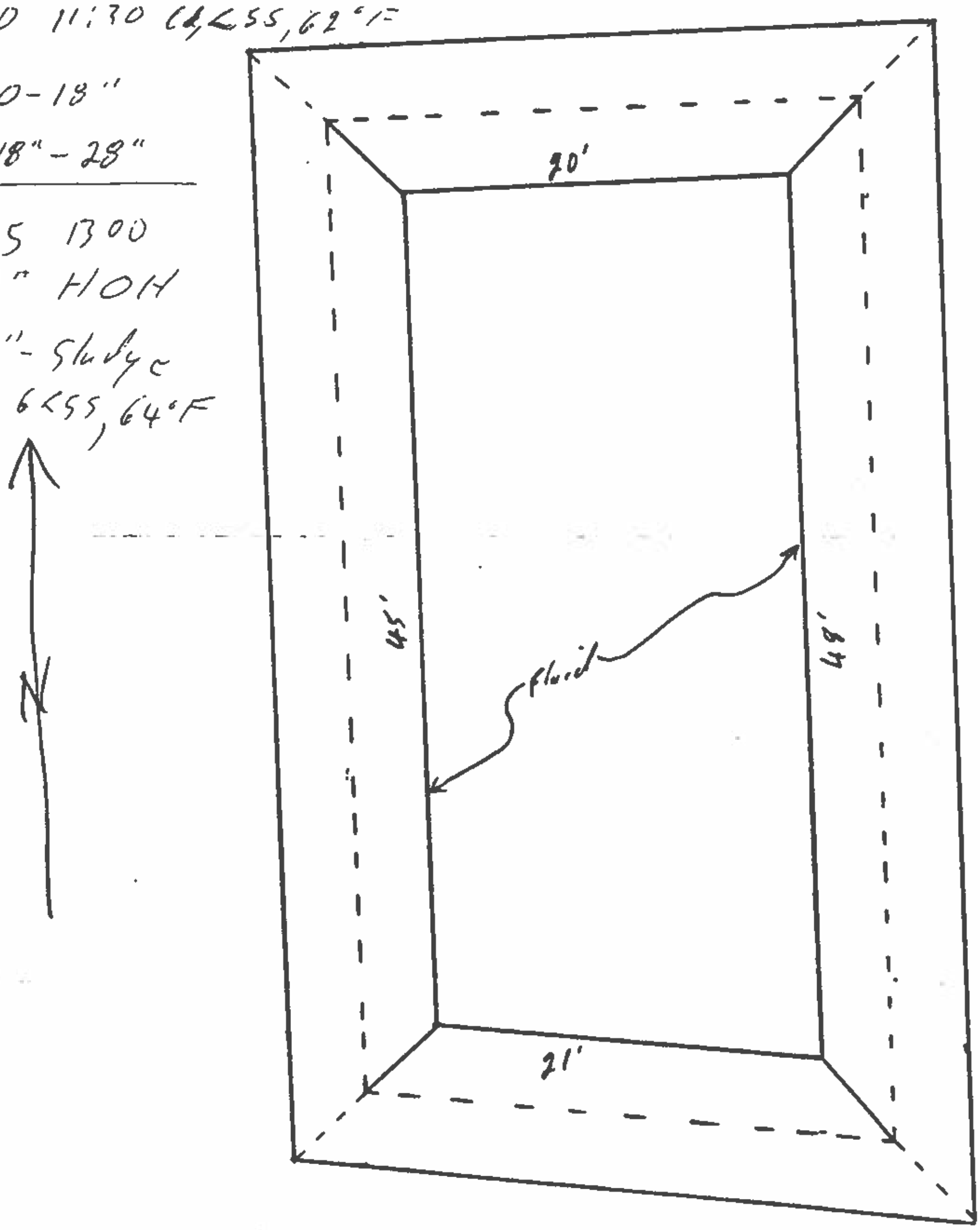
Scale 1" = 5'

Impoundment # 1

MB1.3 ~ 10:30 Cl Cx 60°F
HOH 0 — 2'1"
Sludge 2'1" — 5'-11"

MB1.10 11:30 Cl<55, 62°F
HOH - 0-18"
Sludge 18" - 28"

MB1.5 1300
0-16" HOH
16" - 36" - Sludge
Cl Co 6<55, 64°F

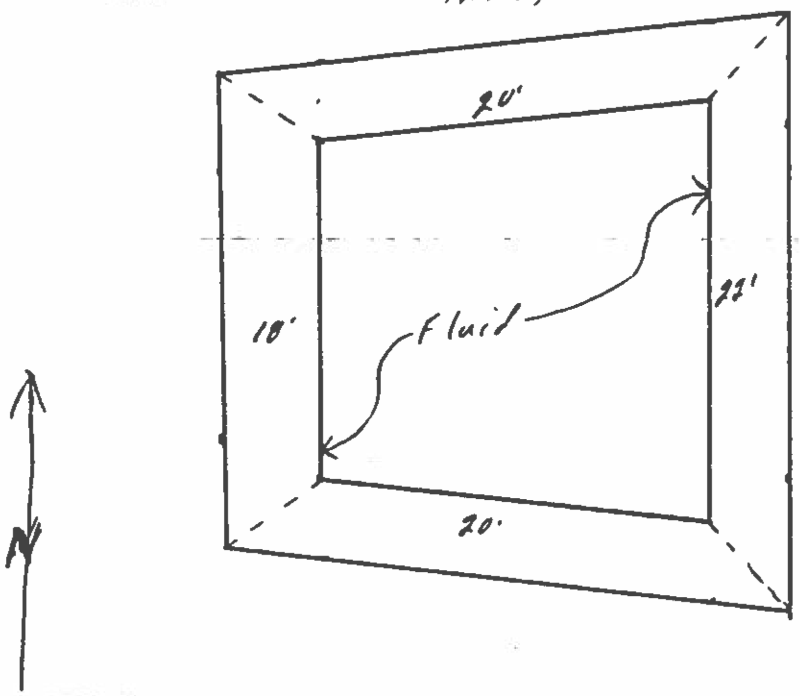


Scale 1"=10'

Impoundment # 2

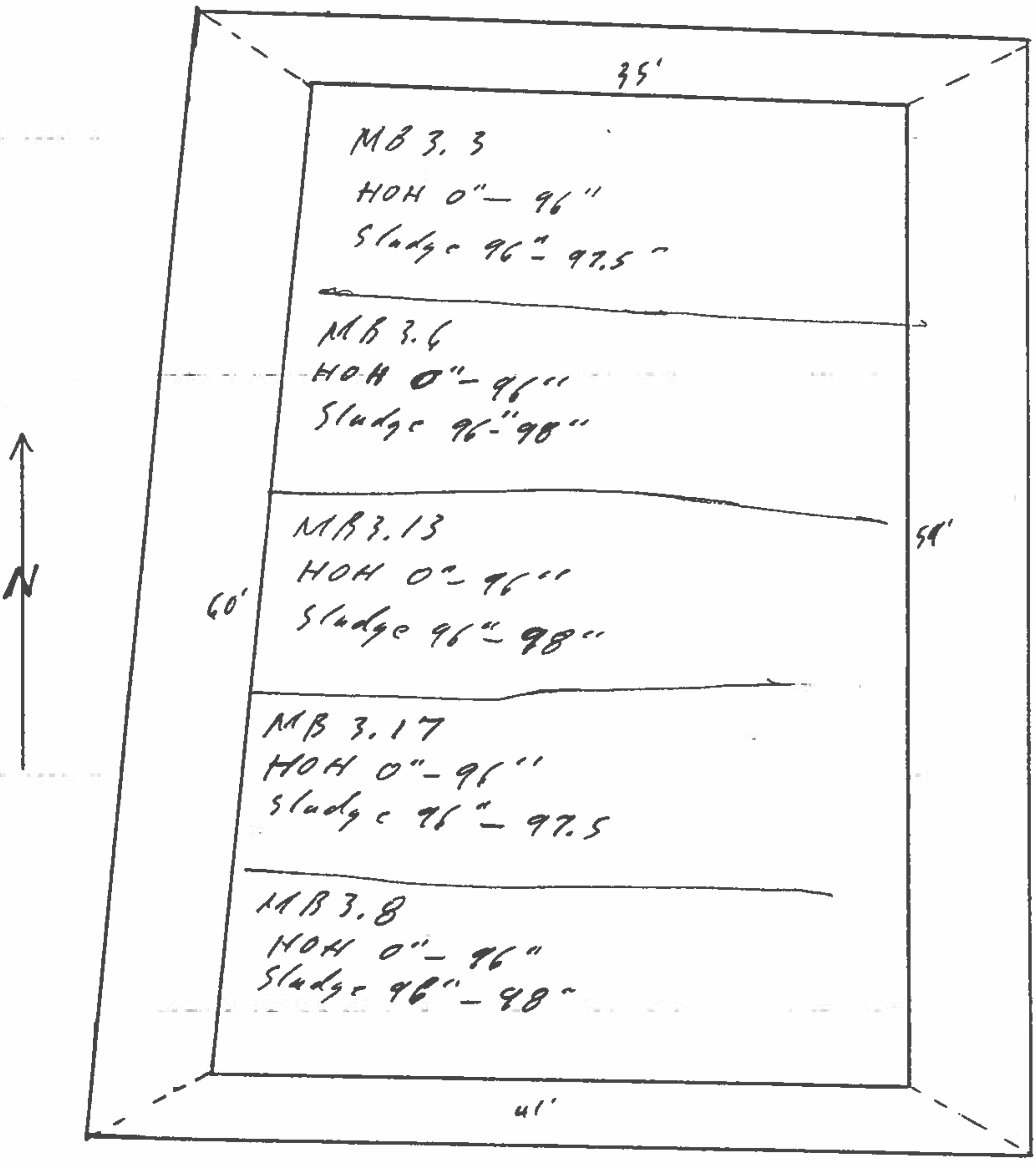
MB 2.4
Cl, Ca, 62 °F
0-11" - HOH
11 - 3'10" - Sludge
11:30

MB 2.2
Cl, Ca, 64 °F
0 - 42 - HOH
42 - 52 - Sludge
12:45



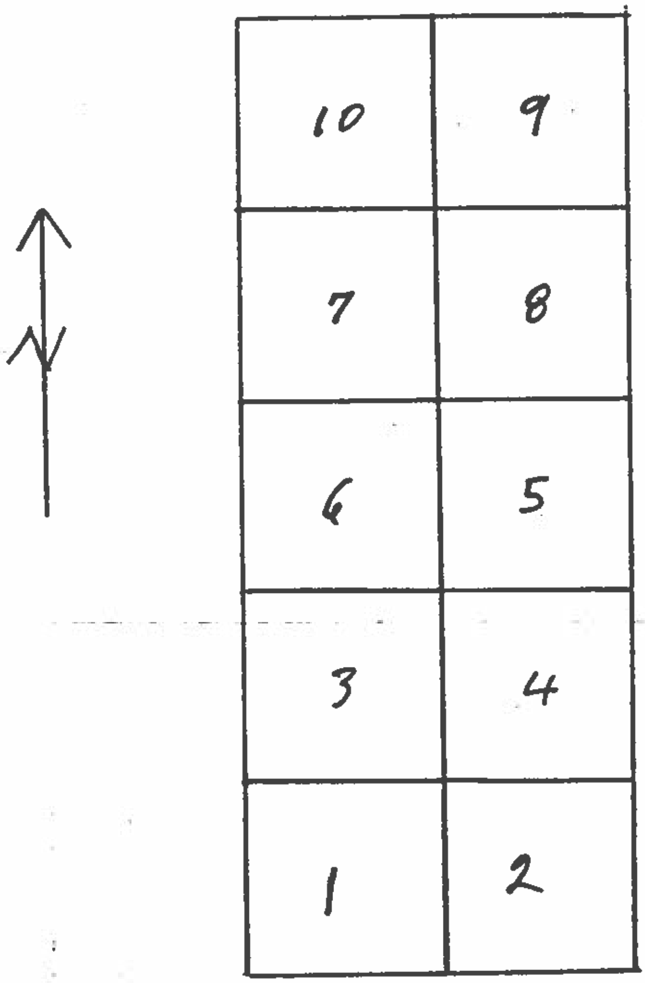
Scale 1" = 10'

Impoundment # 3



Scale 1" = 10'

Waste Pile



MBWP.3 = 32"
MBWP.5 = 30"
MBWP.8 = 20"

Scale 1" = 5'

APPENDIX D

Lab QA/QC Document

TABLE OF CONTENTS

TABLES

FIGURES

]. **Quality Assurance/Quality Control**

1. QA Organization/Policy (EML Quality Assurance Project Plan)

The objectives of the quality-assurance procedures for this program will be to assure, assess, and document the precision, accuracy, and adequacy of data developed during the program (contract) and to assure the technical accuracy of work performed on tasks. The 16 elements of EML's Quality Assurance Project Plan are the same elements stipulated by EPA, DEQ and CERCLIA Quality Assurance Plans. The following sections will address each Item in EML's Quality Assurance Project Plan.

a) Items 1 -- Title Page, Item 2 -- Table of Contents, and Item 3 -- Project Description are addressed in the previous discussions of this proposal.

b) Item 4 -- Project Organization and Responsibility

Figure 1 describes the project organizational structure to be utilized on this project. This description defines: lines of required QA communications, lines of technical and QA authority; and identifies the key personnel assigned to each organization function for this project.

* Project Manager - Dr. Donald Lee Perry

Responsible for day to day technical and financial management of the project. The project manager is responsible for insuring that the technical, schedule and control requirements established by the QA Officer are enforced on the project.

* Quality Assurance Officer - Mr. Frank Jerome

The QAO is responsible for developing the project QA plan and verifying its proper implementation on the project. The QAO, through the action of his support staff and technical advisors, is responsible for auditing the project to insure compliance with the QA plan.

* QA Coordinators - Stan Kirkikis and Mozetta Grant

One or more QA coordinators will be assigned to each project to assist the QAO in the completion of field and office audits, program plan review, and to maintain QA records for the project. The QA Coordinator will interact directly with the designated laboratory QA Coordinators.

Key laboratory personnel will be identified in each laboratory-specific QA plan.

EML MANAGEMENT

Dr. Robert W. Flournoy, President & CEO

Mr. Frank Jerome
Vice President
QA/QC Officer

Ruston Laboratory

Stan Kirkikis
Laboratory Supervisor

Kamal Moorti
Atomic Absorption

Steve Morris
Eric Chamberlin
quatic Bioassays

Ricky Holcomb
Field Sampling

Robert Mann
Wet Chemistry

Rhonda Dillingham
Ambient Air Monitoring and
Industrial Hygiene

Brahm Prakash
TOX

Baton Rouge Laboratory

Dr. Donald L. Perry
Vice President & Technical
Director

Theresa Holmes/Richie Hoffmann
Wet Chemistry & Field Sampling

Doni Neufeld
GC/MS

Mozetta Grant
GC/Pesticides/Herbicides

Figure 1 - EML Organizational Chart

c) Item 5 -- QA objectives for measurement data in terms of precision, accuracy, completeness, representativeness, and comparability.

For each major measurement parameter, including all pollutant measurement systems, a list of the QA objectives for precision, accuracy and completeness is provided in the table at the end of this section; discussions as to this matter will be held with the prime contract laboratory personnel and amanded as need be for each project site. Measurements will be made so that results are representative of the media (air, water, soil, etc.) and conditions being measured, and all data will be calculated and reported in a consistent manner to allow comparability with other results which have been obtained through similar analytical and quality control procedures. The goals set for the program are given below:

1. Precision: The precision of measurements made for each project will be (a) evaluated and reported along with developed method or survey; (b) the highest attainable through the use of high purity or traceable material, knowledgeable personnel, and procedures consistent with good scientific practice, and will further be ensured by rigorous internal quality control; and (c) consistent with any previously published prescision data from the applicable literature, mechanism for demonstrating the precision (reproducibility) for each measurement process. Examples of activities which can be used to assess precision are:

(a) Replicate Samples, Replicate sample data shall be within predetermined acceptance limits. (b) Instrument Checks. Each measurement device shall have routine checks performed to demonstrate that variables are within predetermined acceptance limits. Examples of these checks include: Zero and span, noise levels, drift, flowrate, and linearity. Precision will be expressed in terms of the standard deviation;

2. Accuracy: Accuracy, the relationship of the reported data to that of the "true" value(s) will be (a) reported with the data; (b) attained by independent audits using standards which are different from those used during routine operations, and (c) consistent with any previously published accuracy data from the applicable literature and Federal regulations and guidelines. CLP spike duplicate forms will be used to express the accuracy ranges suitable for the specific sample matrix.

A high degree of accuracy will be maintained through the application of; a) strict traceability of instrumentation, standards, and samples. All calibration standards will be traceable to available National Bureau of Standards (NBS) standards where such standards exist. If NBS standards are not available, other primary standards will be utilized; (b) data will be documented to allow complete reconstruction, from initial field records through data storage (c) use of EPA-approved methodologies; (d) use of reference or spiked samples, and (e) performance audits.

Accuracy is expressed as the difference between the reported (X) and true value (T), (X - T), or the difference as a percentage of the true value, (100 (X-T)/T), or sometimes as the ratio (X/T);

3. Completeness: The data base resultant from any project will be (a) routinely assessed on the basis of expected versus actual data capture and of a completeness sufficient to any statistical applications or future data use to which the data may be subjected.

4. Representativeness: All data will be representative of the media, method, or parameters evaluated during the course of this proposed effort. Conceptually, this will involve detailed consideration of the total system being sampled and its manipulation in relationship to the validity of raw datum finally recorder.

5. Comparability: All data will be reported (a) in units consistent with both Federal regulations, methods, and guidelines, and (b) in units comparable with previously published work with similar methods within the same media. Comparability between data bases will also be achieved by standardized siting, sampling, analysis and standardized data formats.

The following Table 1 is presented detailing the quality assurance objectives for general chemical and physical analyses to be performed under this contract.

d) Item 6 -- Sampling Procedures

It is anticipated that RSA personnel will perform the actual sampling. EML personnel are available for consultation or assistance as requested by RSA. EML will provide the proper sample containers and adhere to the proper preservation procedures and maximum holding time for each particular sample analysis.

TABLE 1

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

GENERAL ORGANIC AND PESTICIDE ANALYSIS BY GAS CHROMOTOGRAPHY

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completene
Aldrin	SW/846 - Method 8080	Water	10%	15%	90%
Aldrin	SW/846 - Method 8080	Solids	10%	15%	90%
Chlordane Cis Isomer	SW/846 - Method 8080	Water	10%	15%	90%
Chlordane Cis Isomer	SW/846 - Method 8080	Solids	10%	15%	90%
Chlordane Trans Isomer	SW/846 - Method 8080	Water	10%	15%	90%
Chlordane Trans Isomer	SW/846 - Method 8080	Solids	10%	15%	90%
Chlordane Total	SW/846 - Method 8080	Water	10%	15%	90%
Chlordane Total	SW/846 - Method 8080	Solids	10%	15%	905
Dieldrin	SW/846 - Method 8080	Water	10%	15%	90%
Dieldrin	SW/846 - Method 8080	Solids	10%	15%	90%
Endrin	SW/846 - Method 8080	Water	10%	15%	90%
Endrin	SW/846 - Method 8080	Solids	10%	15%	90%
Hexachlorobenzene	SW/846 - Method 8080	Water	10%	15%	90%
Hexachlorobenzene	SW/846 - Method 8080	Solids	10%	15%	90%
Methoxychlor	SW/846 - Method 8080	Water	10%	15%	90%
Methoxychlor	SW/846 - Method 8080	Solids	10%	15%	90%
Nanochlor Trans Isomer	SW/846 - Method 8080	Water	10%	15%	90%
Nanochlor Trans Isomer	SW/846 - Method 8080	Solids	10%	15%	90%
Nanochlor Cis Isomer	SW/846 - Method 8080	Water	10%	15%	90%
Nanochlor Cis Isomer	SW/846 - Method 8080	Solids	10%	15%	90%
0,P-DDE	SW/846 - Method 8080	Water	10%	15%	90%
0,P-DDE	SW/846 - Method 8080	Solids	10%	15%	90%
0,P-DDE	SW/846 - Method 8080	Water	10%	15%	90%
0,P-DDE	SW/846 - Method 8080	Solids	10%	15%	90%
0,P-DDD	SW/846 - Method 8080	Water	10%	15%	90%
0,P-DDD	SW/846 - Method 8080	Solids	10%	15%	90%
0,P-DDD	SW/846 - Method 8080	Water	10%	15%	90%
0,P-DDD	SW/846 - Method 8080	Solids	10%	15%	90%
0,P-DDT	SW/846 - Method 8C80	Water	10%	15%	90%
0,P-DDT	SW/846 - Method 8080	Solids	10%	15%	90%
0,P-DDT	SW/846 - Method 8080	Water	10%	15%	90%
0,P-DDT	SW/846 - Method 8080	Solids	10%	15%	90%
DDT Total	SW/846 - Method 8080	Water	10%	15%	90%
DDT Total	SW/846 - Method 8080	Solids	10%	15%	90%
Lindane	SW/846 - Method 8080	Water	10%	15%	90%
Lindane	SW/846 - Method 8080	Solids	10%	15%	90%
PCBs	SW/846 - Method 8080	Water	10%	15%	90%
PCBs	SW/846 - Method 8080	Solids	10%	15%	90%
EP Toxicity	SW/846 - Method 1310	Liquid	20%	20%	90%
EP Toxicity	SW/846 - Method 1310	Solids	20%	20%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

BASE NEUTRAL EXTRACTABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Phenanthrene	SW/846 - Method 8270	Water	30%	30%	90%
Phenanthrene	SW/846 - Method 8270	Solids	40%	40%	90%
Pyrene	SW/846 - Method 8270	Water	30%	30%	90%
Pyrene	SW/846 - Method 8270	Solids	40%	40%	90%
Toxaphene	SW/846 - Method 8270	Water	40%	40%	90%
Toxaphene	SW/846 - Method 8270	Solids	50%	50%	90%
1,2,4-Trichlorobenzene	SW/846 - Method 8270	Water	30%	30%	90%
1,2,4-Trichlorobenzene	SW/846 - Method 8270	Solids	40%	40%	90%

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

ACID EXTRACTABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Chloro-3-Methylphenol	SW/846 - Method 8270	Water	30%	30%	90%
Chloro-3-Methylphenol	SW/846 - Method 8270	Solids	40%	40%	90%
Chlorophenol	SW/846 - Method 8270	Water	30%	30%	90%
Chlorophenol	SW/846 - Method 8270	Solids	40%	40%	90%
4-Dichlorophenol	SW/846 - Method 8270	Water	30%	30%	90%
4-Dichlorophenol	SW/846 - Method 8270	Solids	40%	40%	90%
4-Dimethylphenol	SW/846 - Method 8270	Water	30%	30%	90%
4-Dimethylphenol	SW/846 - Method 8270	Solids	40%	40%	90%
4-Dinitrophenol	SW/846 - Method 8270	Water	60%	60%	90%
4-Dinitrophenol	SW/846 - Method 8270	Solids	75%	75%	90%
Methyl-4,6-Dinitrophenol	SW/846 - Method 8270	Water	40%	40%	90%
Methyl-4,6-Dinitrophenol	SW/846 - Method 8270	Solids	50%	50%	90%
Nitrophenol	SW/846 - Method 8270	Water	25%	25%	90%
Nitrophenol	SW/846 - Method 8270	Solids	40%	40%	90%
Nitrophenol	SW/846 - Method 8270	Water	30%	30%	90%
Nitrophenol	SW/846 - Method 8270	Solids	40%	40%	90%
Pentachlorophenol	SW/846 - Method 8270	Water	60%	60%	90%
Pentachlorophenol	SW/846 - Method 8270	Solids	50%	50%	90%
Phenol	SW/846 - Method 8270	Water	25%	25%	90%
Phenol	SW/846 - Method 8270	Solids	40%	40%	90%
2,4,6-Trichlorophenol	SW/846 - Method 8270	Water	25%	25%	90%
2,4,6-Trichlorophenol	SW/846 - Method 8270	Solids	60%	40%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

BASE NEUTRAL EXTRACTABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Fluoranthene	SW/846 - Method 8270	Water	30%	30%	90%
Fluoranthene	SW/846 - Method 8270	Solids	40%	40%.	90%
Fluorene	SW/846 - Method 8270	Water	25%	25%	90%
Fluorene	SW/846 - Method 8270	Solids	40%	40%	90%
Heptachlor	SW/846 - Method 8270	Water	25%	25%	90%
Heptachlor	SW/846 - Method 8270	Solids	30%	30%	90%
Heptachlor Epoxide	SW/846 - Method 8270	Water	25%	25%	90%
Heptachlor Epoxide	SW/846 - Method 8270	Solids	30%	30%	90%
Hexachlorobenzene	SW/846 - Method 8270	Water	25%	25%	90%
Hexachlorobenzene	SW/846 - Method 8270	Solids	30%	30%	90%
Hexachlorobutadiene	SW/846 - Method 8270	Water	30%	30%	90%
Hexachlorobutadiene	SW/846 - Method 8270	Solids	40%	40%	90%
Hexachlorocyclopentadiene	SW/846 - Method 8270	Water	30%	30%	90%
Hexachlorocyclopentadiene	SW/846 - Method 8270	Solids	40%	40%	90%
Hexachloroethane	SW/846 - Method 8270	Water	30%	30%	90%
Hexachloroethane	SW/846 - Method 8270	Solids	40%	40%	90%
Indeno(1,2,3-cd)Pyrene	SW/846 - Method 8270	Water	30%	30%	90%
Indeno(1,2,3-cd)Pyrene	SW/846 - Method 8270	Solids	60%	60%	90%
Isophorone	SW/846 - Method 8270	Water	40%	40%	90%
Isophorone	SW/846 - Method 8270	Solids	50%	50%	90%
Naphthalene	SW/846 - Method 8270	Water	40%	40%	90%
Naphthalene	SW/846 - Method 8270	Solids	50%	50%	90%
Nitrobenzene	SW/846 - Method 8270	Water	60%	60%	90%
Nitrobenzene	SW/846 - Method 8270	Solids	75%	75%	90%
N,Nitrosodimethylamine	SW/846 - Method 8270	Water	60%	60%	90%
N,Nitrosodimethylamine	SW/846 - Method 8270	Solids	75%	75%	90%
N,Nitroso-Di-N-Propylamine	SW/846 - Method 8270	Water	50%	50%	90%
N,Nitroso-Di-N-Propylamine	SW/846 - Method 8270	Solids	75%	75%	90%
N,Nitroso-Diphenylamine	SW/846 - Method 8270	Water	40%	40%	90%
N,Nitroso-Diphenylamine	SW/846 - Method 8270	Solids	50%	50%	90%
PCB-1016	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1016	SW/846 - Method 8270	Solids	40%	40%	90%
PCB-1221	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1221	SW/846 - Method 8270	Solids	40%	40%	90%
PCB-1232	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1232	SW/846 - Method 8270	Solids	40%	40%	90%
PCB-1242	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1242	SW/846 - Method 8270	Solids	40%	40%	90%
PCB-1248	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1248	SW/846 - Method 8270	Solids	40%	40%	90%
PCB-1254	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1254	SW/846 - Method 8270	Solids	40%	40%	90%
PCB-1260	SW/846 - Method 8270	Water	25%	25%	90%
PCB-1260	SW/846 - Method 8270	Solids	40%	40%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

BASE NEUTRAL EXTRACTABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completene
Chlorophenyl Phenyl Ether	SW/846 - Method 8270	Water	25%	25%	90%
Chlorophenyl Phenyl Ether	SW/846 - Method 8270	Solids	40%	40%	90%
Chrysene	SW/846 - Method 8270	Water	30%	30%	90%
Chrysene	SW/846 - Method 8270	Solids	40%	40%	90%
4,4'-DDD	SW/846 - Method 8270	Water	25%	25%	90%
4,4'-DDD	SW/846 - Method 8270	Solids	40%	40%	90%
4,4'-DDE	SW/846 - Method 8270	Water	25%	25%	90%
4,4'-DDE	SW/846 - Method 8270	Solids	40%	40%	90%
4,4'-DDT	SW/846 - Method 8270	Water	25%	25%	90%
4,4'-DDT	SW/846 - Method 8270	Solids	40%	40%	90%
Dibenzo(a,h)Anthracene	SW/846 - Method 8270	Water	30%	30%	90%
Dibenzo(a,h)Anthracene	SW/846 - Method 8270	Solids	60%	60%	90%
Di-N-Butyl Phthalate	SW/846 - Method 8270	Water	30%	30%	90%
Di-N-Butyl Phthalate	SW/846 - Method 8270	Solids	60%	60%	90%
1,2-Dichlorobenzene	SW/846 - Method 8270	Water	30%	30%	90%
1,2-Dichlorobenzene	SW/846 - Method 8270	Solids	40%	40%	90%
1,3-Dichlorobenzene	SW/846 - Method 8270	Water	30%	30%	90%
1,3-Dichlorobenzene	SW/846 - Method 8270	Solids	40%	40%	90%
1,4-Dichlorobenzene	SW/846 - Method 8270	Water	40%	40%	90%
1,4-Dichlorobenzene	SW/846 - Method 8270	Solids	50%	50%	90%
3,3'-Dichlorobenzidine	SW/846 - Method 8270	Water	150%	150%	90%
3,3'-Dichlorobenzidine	SW/846 - Method 8270	Solids	200%	200%	90%
Dieldrin	SW/846 - Method 8270	Water	25%	25%	90%
Dieldrin	SW/846 - Method 8270	Solids	40%	40%	90%
Diethyl Phthalate	SW/846 - Method 8270	Water	30%	30%	90%
Diethyl Phthalate	SW/846 - Method 8270	Solids	60%	60%	90%
Dimethyl Phthalate	SW/846 - Method 8270	Water	40%	40%	90%
Dimethyl Phthalate	SW/846 - Method 8270	Solids	50%	50%	90%
2,4-Dinitrotoluene	SW/846 - Method 8270	Water	40%	40%	90%
2,4-Dinitrotoluene	SW/846 - Method 8270	Solids	50%	50%	90%
2,6-Dinitrotoluene	SW/846 - Method 8270	Water	30%	30%	90%
2,6-Dinitrotoluene	SW/846 - Method 8270	Solids	40%	40%	90%
Di-N-octyl Phthalate	SW/846 - Method 8270	Water	60%	60%	90%
Di-N-octyl Phthalate	SW/846 - Method 8270	Solids	75%	75%	90%
Endosulfan I	SW/846 - Method 8270	Water	30%	30%	90%
Endosulfan I	SW/846 - Method 8270	Solids	40%	40%	90%
Endosulfan II	SW/846 - Method 8270	Water	30%	30%	90%
Endosulfan II	SW/846 - Method 8270	Solids	40%	40%	90%
Endosulfan Sulfate	SW/846 - Method 8270	Water	30%	30%	90%
Endosulfan Sulfate	SW/846 - Method 8270	Solids	40%	40%	90%
Endrin	SW/846 - Method 8270	Water	30%	30%	90%
Endrin	SW/846 - Method 8270	Solids	40%	40%	90%
Endrin Aldehyde	SW/846 - Method 8270	Water	40%	40%	90%
Endrin Aldehyde	SW/846 - Method 8270	Solids	50%	50%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

BASE NEUTRAL EXTRACTABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Acenaphthene	SW/846 - Method 8270	Water	30%	30%	90%
Acenaphthene	SW/846 - Method 8270	Solids	40%	40%	90%
Acenaphthylene	SW/846 - Method 8270	Water	25%	25%	90%
Acenaphthylene	SW/846 - Method 8270	Solids	40%	40%	90%
Aldrin	SW/846 - Method 8270	Water	25%	25%	90%
Aldrin	SW/846 - Method 8270	Solids	30%	30%	90%
Anthracene	SW/846 - Method 8270	Water	25%	25%	90%
Anthracene	SW/846 - Method 8270	Solids	40%	40%	90%
Benzo(a)Anthracene	SW/846 - Method 8270	Water	30%	30%	90%
Benzo(a)Anthracene	SW/846 - Method 8270	Solids	40%	40%	90%
Benzo(b)Fluoranthene	SW/846 - Method 8270	Water	25%	25%	90%
Benzo(b)Fluoranthene	SW/846 - Method 8270	Solids	40%	40%	90%
Benzo(k)Fluoranthene	SW/846 - Method 8270	Water	30%	30%	90%
Benzo(k)Fluoranthene	SW/846 - Method 8270	Solids	40%	40%	90%
Benzo(g,h,i)Perylene	SW/846 - Method 8270	Water	50%	50%	90%
Benzo(g,h,i)Perylene	SW/846 - Method 8270	Solids	60%	60%	90%
Benzo(a)Pyrene	SW/846 - Method 8270	Water	25%	25%	90%
Benzo(a)Pyrene	SW/846 - Method 8270	Solids	40%	40%	90%
Benzidine	SW/846 - Method 8270	Water	60%	60%	90%
Benzidine	SW/846 - Method 8270	Solids	75%	75%	90%
Butyl Benzyl Phthalate	SW/846 - Method 8270	Water	45%	45%	90%
Butyl Benzyl Phthalate	SW/846 - Method 8270	Solids	60%	60%	90%
Alpha-BHC	SW/846 - Method 8270	Water	25%	25%	90%
Alpha-BHC	SW/846 - Method 8270	Solids	30%	30%	90%
Beta-BHC	SW/846 - Method 8270	Water	25%	25%	90%
Beta-BHC	SW/846 - Method 8270	Solids	30%	30%	90%
Beta-BHC	SW/846 - Method 8270	Water	25%	25%	90%
Beta-BHC	SW/846 - Method 8270	Solids	30%	30%	90%
Gamma-BHC	SW/846 - Method 8270	Water	25%	25%	90%
Gamma-BHC	SW/846 - Method 8270	Solids	30%	30%	90%
Bis(2-chloroethyl)Ether	SW/846 - Method 8270	Water	40%	40%	90%
Bis(2-chloroethyl)Ether	SW/846 - Method 8270	Solids	50%	50%	90%
Bis(2-chlorothoxy)Methane	SW/846 - Method 8270	Water	75%	75%	90%
Bis(2-chlorothoxy)Methane	SW/846 - Method 8270	Solids	80%	80%	90%
Bis(2-ethyl hexyl)Phthalate	SW/846 - Method 8270	Water	70%	70%	90%
Bis(2-ethyl hexyl)Phthalate	SW/846 - Method 8270	Solids	80%	80%	90%
Bis(2-chloro isopropyl)Ether	SW/846 - Method 8270	Water	40%	40%	90%
Bis(2-chloro isopropyl)Ether	SW/846 - Method 8270	Solids	50%	50%	90%
4-Bromophenyl Phenyl Ether	SW/846 - Method 8270	Water	25%	25%	90%
4-Bromophenyl Phenyl Ether	SW/846 - Method 8270	Solids	40%	40%	90%
Chlordane	SW/846 - Method 8270	Water	50%	50%	90%
Chlordane	SW/846 - Method 8270	Solids	60%	60%	90%
2-Chloronaphthalene	SW/846 - Method 8270	Water	30%	30%	90%
2-Chloronaphthalene	SW/846 - Method 8270	Solids	40%	40%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

PURGEABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
1,1,2,2-Tetrachloroethane	SW/846 Method 8240	Water	20%	20%	90%
1,1,2,2-Tetrachloroethane	SW/846 Method 8240	Solids	25%	25%	90%
Tetrachloroethene	SW/846 Method 8240	Water	20%	20%	90%
Tetrachloroethene	SW/846 Method 8240	Solids	25%	25%	90%
Toluene	SW/846 Method 8240	Water	20%	20%	90%
Toluene	SW/846 Method 8240	Solids	25%	25%	90%
1,1,1-Trichloroethane	SW/846 Method 8240	Water	20%	20%	90%
1,1,1-Trichloroethane	SW/846 Method 8240	Solids	25%	25%	90%
1,1,2-Trichloroethane	SW/846 Method 8240	Water	20%	20%	90%
1,1,2-Trichloroethane	SW/846 Method 8240	Solids	25%	25%	90%
Trichloroethene	SW/846 Method 8240	Water	20%	20%	90%
Trichloroethene	SW/846 Method 8240	Solids	25%	25%	90%
Trichlorofluoromethane	SW/846 Method 8240	Water	25%	25%	90%
Trichlorofluoromethane	SW/846 Method 8240	Solids	30%	30%	90%
Vinyl Chloride	SW/846 Method 8240	Water	30%	30%	90%
Vinyl Chloride	SW/846 Method 8240	Solids	40%	40%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

PURGEABLE ORGANICS (GC/MS)

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Acrolein	SW/846 Method 8240	Water	25%	25%	90%
Acrolein	SW/846 Method 8240	Solids	40%	40%	90%
Acrylonitrile	SW/846 Method 8240	Water	25%	25%	90%
Acrylonitrile	SW/846 Method 8240	Solids	40%	40%	90%
Benzene	SW/846 Method 8240	Water	20%	20%	90%
Benzene	SW/846 Method 8240	Solids	25%	25%	90%
Bromodichloromethane	SW/846 Method 8240	Water	20%	20%	90%
Bromodichloromethane	SW/846 Method 8240	Solids	25%	25%	90%
Bromoform	SW/846 Method 8240	Water	20%	20%	90%
Bromoform	SW/846 Method 8240	Solids	25%	25%	90%
Bromomethane	SW/846 Method 8240	Water	20%	20%	90%
Bromomethane	SW/846 Method 8240	Solids	25%	25%	90%
Carbon Tetrachloride	SW/846 Method 8240	Water	20%	20%	90%
Carbon Tetrachloride	SW/846 Method 8240	Solids	25%	25%	90%
Chlorobenzene	SW/846 Method 8240	Water	20%	20%	90%
Chlorobenzene	SW/846 Method 8240	Solids	25%	25%	90%
Chloroethane	SW/846 Method 8240	Water	40%	40%	90%
Chloroethane	SW/846 Method 8240	Solids	50%	50%	90%
Chloloroethylvinyl Ether	SW/846 Method 8240	Water	20%	20%	90%
Chloloroethylvinyl Ether	SW/846 Method 8240	Solids	25%	25%	90%
Chloroform	SW/846 Method 8240	Water	20%	20%	90%
Chloroform	SW/846 Method 8240	Solids	25%	25%	90%
Chloromethane	SW/846 Method 8240	Water	25%	25%	90%
Chloromethane	SW/846 Method 8240	Solids	50%	50%	90%
Dibromochloromethane	SW/846 Method 8240	Water	20%	20%	90%
Dibromochloromethane	SW/846 Method 8240	Solids	25%	25%	90%
1,1-Dichloroethane	SW/846 Method 8240	Water	20%	20%	90%
1,1-Dichloroethane	SW/846 Method 8240	Solids	25%	25%	90%
1,2-Dichloroethane	SW/846 Method 8240	Water	20%	20%	90%
1,2-Dichloroethane	SW/846 Method 8240	Solids	25%	25%	90%
1,1-Dichloroethene	SW/846 Method 8240	Water	20%	20%	90%
1,1-Dichloroethene	SW/846 Method 8240	Solids	25%	25%	90%
Trans-1,2-Dichloroethene	SW/846 Method 8240	Water	20%	20%	90%
Trans-1,2-Dichloroethene	SW/846 Method 8240	Solids	25%	25%	90%
1,2-Dichloropropane	SW/846 Method 8240	Water	20%	20%	90%
1,2-Dichloropropane	SW/846 Method 8240	Solids	25%	25%	90%
Cis-1,2-Dichloropropane	SW/846 Method 8240	Water	25%	25%	90%
Cis-1,3-Dichloropropane	SW/846 Method 8240	Solids	30%	30%	90%
Trans-1,3-Dichloropropane	SW/846 Method 8240	Water	25%	25%	90%
Trans-1,3-Dichloropropane	SW/846 Method 8240	Solids	30%	30%	90%
Ethyl Benzene	SW/846 Method 8240	Water	20%	20%	90%
Ethyl Benzene	SW/846 Method 8240	Solids	25%	25%	90%
Methylene Chloride	SW/846 Method 8240	Water	40%	40%	90%
Methylene Chloride	SW/846 Method 8240	Solids	50%	50%	90%

TABLE 1 (cont'd)

ITEM 5

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

METALS ANALYSIS

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Antimony	SW/846 - Method 7040	Water	10%	10%	90%
Antimony	SW/846 - Method 7040	Solids	20%	20%	90%
Arsenic	SW/846 - Method 7060	Water	10%	10%	90%
Arsenic	SW/846 - Method 7060	Solids	20%	20%	90%
Barium	SW/846 - Method 7080	Water	10%	10%	90%
Barium	SW/846 - Method 7080	Solids	10%	10%	90%
Beryllium	EPA600/4-79-020 279.1	Water	10%	10%	90%
Beryllium	SW/846 - Method 3050	Solids	20%	20%	90%
Cadmium	SW/846 - Method 7130	Water	10%	10%	90%
Cadmium	SW/846 - Method 7130	Solids	10%	10%	90%
Calcium	EPA600/4-79-020 215.1	Water	10%	10%	90%
Calcium	SW/846 - Method 3050	Solids	10%	10%	90%
Chromium	SW/846 - Method 7190	Water	10%	10%	90%
Chromium	SW/846 - Method 7190	Solids	10%	10%	90%
Copper	EPA600/4-79-020 220.1	Water	10%	10%	90%
Copper	SW/846 - Method 3050	Solids	10%	10%	90%
Iron	EPA600/4-79-020 236.1	Water	10%	10%	90%
Iron	SW/846 - Method 3050	Solids	10%	10%	90%
Lead	SW/846 - Method 7420	Water	10%	10%	90%
Lead	SW/846 - Method 7420	Solids	10%	10%	90%
Magnesium	EPA600/4-79-020 242.1	Water	10%	10%	90%
Magnesium	SW/846 - Method 3050	Solids	10%	10%	90%
Manganese	EPA600/4-79-020 243.1	Water	10%	10%	90%
Manganese	SW846 - Method 3050	Solids	10%	10%	90%
Mercury	SW/846 - Method 7470	Water	10%	10%	90%
Mercury	SW/846 - Method 7471	Solids	10%	10%	90%
Nickel	SW/846 - Method 7520	Water	10%	10%	90%
Nickel	SW/846 - Method 7520	Solids	10%	10%	90%
Potassium	EPA600/4-79-020 258.1	Water	10%	10%	90%
Potassium	SW/846 - Method 3050	Solids	10%	10%	90%
Selenium	SW/846 - Method 7740	Water	10%	10%	90%
Selenium	SW/846 - Method 7740	Solids	20%	20%	90%
Sodium	EPA600/4-79-020 273.1	Water	10%	10%	90%
Sodium	SW/846 - Method 3050	Solids	10%	10%	90%
Silver	SW/846 - Method 7761	Water	10%	10%	90%
Silver	SW/846 - Method 7761	Solids	10%	10%	90%
Thallium	SW/846 - Method 7840	Water	10%	20%	90%
Thallium	SW/846 - Method 7840	Solids	20%	20%	90%
Zinc	SW/846 - Method 7950	Water	10%	10%	90%
Zinc	SW/846 - Method 7950	Solids	10%	10%	90%
EP Toxicity	SW/846 - Method 1310	Liquid	20%	20%	90%
EP Toxicity	SW/846 - Method 1310	Solids	20%	20%	90%

TABLE 1 (cont'd)

ITEM 3

QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

GENERAL CHEMICAL & PHYSICAL ANALYSIS

Measurement Parameter	Method Reference	Sample Type	Precision Std. Dev.	Accuracy	Completeness
Alkalinity	EPA600/4-79-020 310.2	Water	10%	10%	90%
Ammonia Nitrogen	EPA600/4-79-020 350.2	Water	10%	10%	90%
Biological Oxygen Demand	* Page 483	Water	10%	10%	90%
Calcium Hardness	EPA600/4-79-020 215.2	Water	10%	10%	90%
Chemical Oxygen Demand	EPA600/4-79-020 410.2	Water	10%	10%	90%
Chlorides	EPA600/4-79-020 325.2	Water	10%	10%	90%
Corrosivity	SW/846 - Method 9040	Liquid	—	—	90%
Corrosivity	SW/846 - Method 1110	Liquid	—	—	90%
Dissolved Oxygen	EPA600/4-79-020 360.1	Water	10%	10%	90%
Fluoride	EPA600/4-79-020 340.3	Water	10%	10%	90%
Ignitability	SW/846 - Method 1020	Liquid	—	—	90%
Kjeldahl Nitrogen	EPA600/4-79-020 351.3	Water	10%	10%	90%
Nitrate & Nitrite	EPA600/4-79-020 353.2	Water	10%	10%	90%
Oil and Grease	EPA600/4-79-020 420.1	Water	10%	10%	90%
Oil and Grease	EPA600/4-79-020 420.1	Solid	20%	20%	90%
pH	SW/846 - Method 9040	Water	10%	10%	90%
Phenols	EPA600/4-79-020 420.1	Water	10%	10%	90%
Phosphorus	EPA600/4-79-020 365.1	Water	10%	10%	90%
Specific Conductance	EPA600/4-79-020 120.1	Water	10%	10%	90%
Sulfate	EPA600/4-79-020 375.2	Water	10%	10%	90%
Suspended Solids	EPA600/4-79-020 160.2	Water	10%	10%	90%
Reactivity	40 CFR 261.23	Liquid	—	—	90%
Reactivity	40 CFR 261.23	Solid	—	—	90%
Temperature	EPA600/4-79-020 170.1	Water	10%	10%	90%
Total Cyanide	SW/846 - Method 9010	Water	10%	10%	90%
Total Hardness	EPA600/4-79-020 130.1	Water	10%	10%	90%
Total Nitrogen	Calculated	Water	15%	15%	90%
Total Organic Carbon	EPA600/4-79-020 415.1	Water	10%	10%	90%
Total Organic Carbon	EPA600/4-79-020 415.1	Solid	20%	20%	90%
Total Organic Halogen	SW/846 - Method 9020	Liquid	20%	20%	90%
Total Organic Halogen	SW/846 - Method 9020	Solid	20%	20%	90%
Turbidity	EPA600/4-79-020 180.2	Water	10%	10%	90%

* Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980; (APHA-AWWA-WPCF), Method 507.

e) Item 7 - Sample Custody

EML has written SOP and document control procedures designed to track and/or control the flow of samples through the laboratory. These procedures include: 1) detailing receipt of samples, 2) tracking samples through preparation and analysis, 3) handling and preparation procedures, 4) specific analytical methods for sample analysis, 5) reporting of data, and 6) procedures which comply with provisions (specific to individual programs or contracts) of the RCRA program and EPA. Many of the above procedures are part of any good chain of custody program. Specifically, EML maintains the following chain of custody procedures and elements.

<u>Chain of Custody Record</u> - The chain of custody record is filled out and accompanies every sample in order to establish the necessary documentation to trace sample possession from the time of collection. An example of one of EML's chain of custody records is illustrated in Figure 2. The record must contain the following minimum information: 1) collector's sample number; 2) signature of collector; 3) date and time of collection; 4) place and address of collection; 5) sample type; 6) signature of persons involved in the chain of possession; and 7) inclusive dates of possession. RSA may use its own chain of custody forms.

<u>Sample Analysis Request Sheet</u> - The sample analysis request sheet (Figure 3) is intended to accompany the sample on delivery to the laboratory and through sample analysis. The field portion of this form is completed by the person collecting the sample and should include most of the pertinent information noted in the field and sample log books. The laboratory portion of this form is intended to be completed by laboratory personnel and to include the following: 1) name of person receiving the sample; 2) laboratory (EML) sample number; 3) date of sample receipt; 4) sample allocation; and 5) analyses to be performed.

<u>Sample Delivery to the Laboratory</u> - Preferably, the sample is delivered in person to the laboratory (EML) for analysis as soon as possible (usually the same day as the sampling). Proper sample preservation procedures will be followed (EML will inform RSA of the proper procedures when applicable). The sample will be accompanied by the chain of custody record and by a sample analysis request sheet (Figure 3). The sample is delivered to the person in the laboratory authorized

ENVIROMED
LABORATORIES, INC.

BATON ROUGE, LA. 70806
(504)-928-0232

CUSTODY OF TRANSFER OF SAMPLES

Transferred to: ______________________________

Address ______________________________

Telephone ______________ Attention: ______________

Transferred by (EML person): ______________________________

Date: ______________ Shipped by: ______________

Item #	EML Sample #	Item #	EML Sample #

Samples received by: ______________________________

Condition of samples upon receipt: ______________________________

Instructions: Prepare in triplicate. Send two copies with sample. When samples are received, both copies are to be signed by receiving party, one copy retained for file and copy 2 returned to originator.

Figure 2 - Chain of Custody Record (Part 1)

ENVIROMED LABORATORIES, INC.

SAMPLE CHAIN OF CUSTODY TRANSFER FORM

Proj. No.	Project Name					No. of con-tainers						Remarks
Samplers: (Signature)												
Sta. No.	Date	Time	Comp.	Grab	Station Location							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Figure 2 - Chain of Custody Record (Part 2)

ENVIROMED
LABORATORIES, INC

ANALYTICAL REQUEST FORM

Sample #:____________________
Client:____________________
Address:____________________
____
Attention:____________________
Title:____________________
Sample Type:
Water/Soil/Sludge/Other?__________
Collection Method:
Grab/Comp Preserved?__________
Sample Source:____________________

129 Priority Pollutants
( ) Purgeables (VOA)__________
( ) Acid Extractables__________
( ) Base Neutrals__________
( ) Priority Pesticides/PCBs_____
( ) Priority Metals__________
( ) Pesticide/Herbicide__________
( ) PCBs____________________

INVOICE: Ruston____________________
Baton Rouge____________________

Date Collected:____________ Time:______
By:____________________
Samples:____________ Containers:______
Date Received:____________ Time:______
By:____________________
Sampling Witnessed By:____________
Requested By:____________________
Comments:____________________
____
____
____

Asbestos (Yes) (No)
( ) Ignitability ____________________
( ) Corrosivity____________________
( ) Reactivity____________________
( ) EP Toxicity____________________
( ) Radiological: Total Radium________
( ) Radium______ Gross Alpha________
( ) Gross Beta_____ 226 + 228

REPORT: Ruston____________________
Baton Rouge____________________

CHEMISTRY:

( ) Acidity	( ) Cyanide, T.	( ) Odor	( ) Sulphur/ Sulfate
( ) Alkalinity	( ) Dissolved Oxy	( ) TOC	( ) Sulfide
( ) Bicar. Alk.	( ) Flow (MGD)	( ) DOC	( ) Sulfate
( ) Carbonate Alk.	( ) Hardness	( ) Turb. (NTU)	( ) Solids-Tot.
( ) Fecal Coliform	( ) Oil & Grease	( ) pH	( ) Total Diss.
( ) Total Coliform	( ) Halogenated Phenols	( ) Phenols	( ) Total Susp.
( ) Temperature		( ) Total Phosphate	( ) Vola. Diss.
( ) BOD	( ) Ammonia-N	( ) Ortho Phosphate	( ) Vola. Susp.
( ) Bromide	( ) Kjelhahl-TKN	( ) Settleable Solids	( ) Fixed Diss.
( ) Chloride	( ) Nitrate-N	( ) Silica	( ) Fixed Susp.
( ) COD	( ) Nitrite-N	( ) Spec. Conductance	( ) TOX
( ) Color	( ) Organic-N	( ) Surfactants	( ) Fluoride

METALS: (Non-Priority)

( ) Aluminum	( ) Calcium	( ) Lithium	( ) Selenium
( ) Antimony	( ) Total Cr	( ) Magnesium	( ) Silver
( ) Arsenic	( ) Hexavalent Cr	( ) Manganese	( ) Sodium
( ) Barium	( ) Cobalt	( ) Mercury	( ) Strontium
( ) Beryllium	( ) Copper	( ) Molybdenum	( ) Thallium
( ) Boron	( ) Iron	( ) Nickel	( ) Tin
( ) Cadmium	( ) Lead	( ) Potassium	( ) Vanadium
			( ) Zinc

Other Tests:____________________
Authorized By:____________________ Date:____________________
Signature:____________________ Witnessed By:____________________
Samples Received By:____________ Date:____________ Time:________

Figure 3 - Sample analyses request sheet

to receive samples (the sample custodian).

When a sample is shipped to the laboratory, it must be packaged in a proper shipping container to avoid leakage and/or breakage. A cardboard box that will provide at least 4 inches of tight packing around the sample container is recommended. Acceptable packing materials include sawdust, crumpled newspapers, vermiculite, polyurethane chips, etc. Samples that require refrigeration (EML will advise RSA) are packed with reuseable plastic packs (blue ice) or cans of frozen freezing gels in molded polyurethane boxes with a sturdy fireboard protective case. The boxes are taped closed with masking tape or fiber plastic tape.

All packages must be accompanied by a sample analysis sheet and chain of custody record (to be filled out by RSA). Complete address of the sender and the receiving laboratory (EML) must legibly appear on each package. Packages sent by mail should be registered with return receipt requested. Packages sent by common carrier should have a copy of the bill of loading. Post office receipts and bill of loading copies are used as part of the chain of custody documentation.

Receipt and Log-In of Samples - Field samples are delivered to the laboratory either personally or through a public carrier. At EML, the assigned sample custodian will do the following: 1) receive the samples; 2) inspect the condition of the sample seal; 3) reconcile the information on the sample label and seal against that on the chain of custody record; 4) assign a laboratory (EML#) number; 5) log in the sample in the laboratory log book; and 6) store the sample in a secured sample storage room, cabinet, and/or refrigerator until assigned to an analyst for analysis.

The sample custodian will inspect each sample for any leakage from the container. A leaky container containing multiphase sample will not be accepted for analysis since the sample will no longer be representative of the original sample. If the sample is contained in a plastic bottle and the walls show any bulging or collapsing, the custodian will note that the sample is under pressure or releasing gases, respectively. A sample under pressure will be treated with caution, since it could be explosive or release extremely poisonous gases. The custodian will examine whether the sample seal is intact or broken, since broken seals may indicate sample tampering and would make analysis results inadmissible in court as evidence. Discrepancies between the information on the sample label and seal and that on the chain of custody record and the sample analysis request sheet will be resolved before the sample is assigned for analysis. This procedure may require communication with the sample collector (RSA personnel). Results of the sample inspection will be noted on the sample analysis request sheet and cross-checked against that on the sample label.

In most cases, the laboratory supervisor assigns the sample for analysis and reviews the information on the sample analysis request sheet (which now includes inspection notes recorded by the sample custodian). The supervisor will then decide what analyses are to be performed. The sample(s) may have to be split with other laboratories (or divisions within EML) to obtain the necessary information about the sample. The supervisor will decide on sample allocation and delineate the types of anlyses to be performed on each allocation.

At EML, the supervisor will assign the sample analysis to at least one chemist who is responsible for the care and custody of the sample once the sample is in his possession. The Sample Data Log (Figure 4) and the Sample Extraction Log (Figure 5) document the control of samples through the laboratory (part of the chain-of-custody).

f) Item 8 - Calibration Procedures and Frequency

8.1 A calibration procedure establishes the relationship between a known calibration standard and the measurement of that standard by an instrument or analytical procedure. Standards are run each time an instrument or procedure is used. Written calibration procedures are documented and indicate what tests of the calibration are applicable, the calibration procedure itself, required equipment and standards, and provide for labeling the calibration data with the appropriate dates to ensure usage of current calibration. All measurement parameters and associated instrumentation are calibrated in accordance with the procedures referenced in Item 5 and the instrument manufacturers' guidelines.

8.1.1 General Chemical Analysis

Each program has detailed requirements for equipment and supplies. Reagents, solvents, and standards with specific levels of purity are used as specified by the program. GC, GC/MS and

SAMPLE DATA LOG

PROJECT NO.____________ PLANT CODE____________

le No.	Sample Type								Rec'd-Lab	Extracted	Analyzed		Data Management			
													GC/MS			GC
	GC ONLY	GC/MS	VOL ORG BL	VOL ORG	SEMI VOL ORG BL	SEMI VOL ORG	METALS	OTHER	Date/Person	Date/Person	Date/Person	Extracted Stored In	CRN	Mag. Tape	Mt. File	File No.

SAMPLE EXTRACTION LOG

Semi-volatile Organics

PROJECT NO. ____________ PLANT CODE ____________

No.	Sample Type								Extracted		Solvent and Volumes	Dried With	K-D Evap Volume			Emulsion / Broken By	Extractor (Sep Funnel, L/L, etc)	Ready For Analysis / Date
	GC ONLY	GC/MS	SEMI VOL ORG BL	SEMI VOL ORG	BASE	BASE/NEUTRAL	ACID	ACID/NEUTRAL	Int Std Added	Date/Person			Before	After	Final			

Figure 5. Sample Extraction Log

various column materials (Florisil, silica gel), glassware, and sample-handling equipment will also be specified. The quality-control procedures for equipment and supplies generally include the following items:

a. operator checklists for required supplies
b. documentation and reporting of all deviations from specified equipment
c. procedures for testing for purity of reagents
d. tolerances for glassware, when applicable
e. purchasing high-purity diltilled-in-glass solvents in large quantities from a single lot
f. cleaning of glassware in a kiln at 450 deg. C
g. use of organic-free water prepared on site by distillation

8.1.2 Metals Analysis

All calibrations are checked every 10 samples, or after the sample set is run if the sample set is less than 10. NBS traceable standards and/or EPA check standards are purchased and verified with standards prepared in the laboratory from analytical grade reagents.

8.1.3 General Organic and Pesticide Analyses by GC

All calibrations are performed or checked at the beginning and end of each working day. Standards are prepared from analytical reference material obtained from the EPA Repository in Research Triangle Park, North Caroline (or EPA in Cincinnati) and from Supelco. The standards are prepared from these reference materials according to the referenced procedures.

8.1.4 GC/MS Analyses

EML will use fused silica capillary columns (BNA analyses) and packed columns (VOA analyses) in conjunction with GC/MS detection and quantitation. Consequently, the calibration of the GC/MS systems is extremely important. The following section explains the GC/MS calibration procedures in detail.

8.1.5 GC/MS/DS Calibration and Evaluation -- The respective GC/MS/DS systems will be checked daily by introducing the appropriate standard compounds for each GC/MS system and employing the following procedures and criteria:

The Hewlett-Packard models 5985B and 5970B mass spectrometers are both equipped with an HP-1000 computer system with a RTE-6 v/m operating system. Each instrument has a computer controlled autotune system that adjusts the electronic parameters of the respective instruments to obtain optimum sensitivity and resolution using perfluorotributyl amine (PFTBA) as a calibration standard. In addition, EML requires that GC/MS calibration for VOA (purge and trap) analyses meet the EPA ion abundance criteria for bromofluorobenzene (BFB) shown in Figure 6. EML requires that GC/MS calibration for BNA (semivolatle extractables) analyses meet the EPA ion abundance criteria for decafluorobiphenyl - phosphine (DFTPP) shown in Figure 7. Should the GC/MS tuning parameters change during the day, DFTPP or BFB will re reanalyzed to confirm GC/MS performance characteristics. A hard copy of all BFB (Figure 6) and DFTPP (Figure 7) analyses will be filed in the GC/MS calibration records.

8.1.6 Volatile Organics Analysis (VOA) -- Samples for VOA analyses will be analyzed according to EPA Method 624 for aqueous matrices and EPA Method 8240 for soil and solid waste matrices. A 5 pt calibration curve will be generated for HSL volatile compounds and a continuing calibration check standard will be run each day samples are analyzed (see Figure 8). Response factors (RF) will be calculated for each compound at each of the five concentration levels. These response factors will be averaged to generate the mean response factor for each compound over the range of the standard curve. The mean response factor (RF) will be used to calculate the sample concentration of the compound of interest. When compound responses exceed the response of the high standard, the sample will be diluted to fall within the range of the standard curve and reanalyzed. The results of the daily GC/MS standardization will be tabulated and filed with the corresponding sample analysis (see Figure 8).

Case No. ______________ Contractor ______________________ Contract No. ______________

nstrument ID ____________ Date ______________________ Time ______________

ab ID ______________ Data Release Authorized By: ______________________

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	
75	30.0 - 60.0% of the base peak	
95	Base peak, 100% relative abundance	
96	5.0 - 9.0% of the base peak	
173	Less than 1.0% of the base peak	
174	Greater than 50.0% of the base peak	
175	5.0 - 9.0% of mass 174	( )[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	( )[1]
177	5.0 - 9.0% of mass 176	( )[2]

[1]Value in parenthesis is % mass 174.
[2]Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS

Figure 6 GC/MS Tuning and Mass Calibration (BFB) 4/84

Case No. ______ Contractor ______ Contract No. ______

Instrument ID ______ Date ______ Time ______

Lab ID ______ Data Release Authorized By: ______

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	
68	less than 2.0% of mass 69	( )[1]
69	mass 69 relative abundance	
70	less than 2.0% of mass 69	( )[1]
127	40.0 - 60.0% of mass 198	
197	less than 1.0% of mass 198	
198	base peak, 100% relative abundance	
199	5.0 - 9.0% of mass 198	
275	10.0 - 30.0% of mass 198	
365	greater than 1.00% of mass 198	
441	present, but less than mass 443	
442	greater than 40.0% of mass 198	
443	17.0 - 23.0% of mass 442	( )[2]

1 Value in parenthesis is % mass 69.
2 Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS

Figure 7 GC/MS Tuning and Mass Calibration (DFTPP)

Case No: ____________________

Contractor: ____________________

Contract No: ____________________

Instrument ID: ____________________

Calibration Date: ____________________

Time: ____________________

Laboratory ID: ____________________

Initial Calibration Date: ____________________

Minimum RF for SPCC is 0.300 Maximum %D for CCC is 25%

Compound	$\overline{RF}$	RF_{50}	%D	CCC	SPCC
Chloromethane					••
Bromomethane					
Vinyl Chloride				•	
Chloroethane					
Methylene Chloride					
Acetone					
Carbon Disulfide					
1, 1-Dichloroethene				•	
1, 1-Dichloroethane					••
Trans-1, 2-Dichloroethene					
Chloroform				•	
1, 2-Dichloroethane					
2-Butanone					
1, 1, 1-Trichloroethane					
Carbon Tetrachloride					
Vinyl Acetate					
Bromodichloromethane					
1, 2-Dichloropropane				•	
Trans-1, 3-Dichloropropene					
Trichloroethene					
Dibromochloromethane					
1, 1, 2-Trichloroethane					
Benzene					
cis-1, 3-Dichloropropene					
2-Chloroethylvinylether					
Bromoform					••
2-Hexanone					
4-Methyl-2-Pentanone					
Tetrachloroethene					
1, 1, 2, 2-Tetrachloroethane					••
Toluene				•	
Chlorobenzene					••
Ethylbenzene				•	
Styrene					
Total Xylenes					

RF_{50} -Response Factor from daily standard file at 50 ug/l
$\overline{RF}$ -Average Response Factor from initial calibration Form VI

%D -Percent Difference
CCC -Calibration Check Compounds (•)
SPCC -System Performance Check Compounds (••)

Figure 8 Continuing Calibration Check for Volatile HSL Compounds

(Page 1)

Case No: ______________________ Calibration Date: ______________________

Contractor: ______________________ Time: ______________________

Contract No: ______________________ Laboratory ID: ______________________

Instrument ID: ______________________ Initial Calibration Date: ______________________

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 25%

Compound	$\overline{RF}$	RF_{50}	% D	CCC	SPCC
N-Nitrosodimethylamine					
Phenol				•	
Aniline					
bis(-2-Chloroethyl)Ether					
2-Chlorophenol					
1, 3-Dichlorobenzene					
1, 4-Dichlorobenzene				•	
Benzyl Alcohol					
1, 2-Dichlorobenzene					
2-Methylphenol					
bis(2-chloroisopropyl)Ether					
4-Methylphenol					
N-Nitroso-Di-n-Propylamine					• •
Hexachloroethane					
Nitrobenzene					
orone					
ophenol				•	
2, 4-Dimethylphenol					
Benzoic Acid					
bis(-2-Chloroethoxy)Methane					
2, 4-Dichlorophenol				•	
1, 2, 4-Trichlorobenzene					
Naphthalene					
4-Chloroaniline					
Hexachlorobutadiene				•	
4-Chloro-3-Methylphenol				•	
2-Methylnaphthalene					
Hexachlorocyclopentadiene					• •
2, 4, 6-Trichlorophenol				•	
2, 4, 5-Trichlorophenol					
2-Chloronaphthalene					
2-Nitroaniline					
Dimethyl Phthalate					
Acenaphthylene					
3-Nitroaniline					
Acenaphthene				•	
2, 4-Dinitrophenol					• •
4-Nitrophenol					• •
Dibenzofuran					

RF_{50} - Response Factor from daily standard file at concentration indicated

$\overline{RF}$ - Average Response Factor from initial calibration Form VI

%D - Percent Difference

CCC - Calibration Check Compounds (•)

SPCC - System Performance Check Compounds (••)

Figure 9 Continuing Calibration Check for Semivolátile HSL

Semivolatile HSL Compounds

(Page 2)

Case No: ____________________ Calibration Date: ____________________

Contractor: ____________________ Time: ____________________

Contract No: ____________________ Laboratory ID: ____________________

Instrument ID: ____________________ Initial Calibration Date: ____________________

Minimum RF for SPCC is 0.050 Maximum %D for CCC is 25%

Compound	$\overline{RF}$	RF_{50}	%D	CCC	SPCC
2, 4-Dinitrotoluene					
2, 6-Dinitrotoluene					
Diethylphthalate					
4-Chlorophenyl-phenylether					
Fluorene					
4-Nitroaniline					
4, 6-Dinitro-2-Methylphenol					
N-Nitrosodiphenylamine (1)				•	
4-Bromophenyl-phenylether					
Hexachlorobenzene					
Pentachlorophenol				•	
Phenanthrene					
Anthracene					
Di-n-Butylphthalate					
Fluoranthene				•	
Benzidine					
Pyrene					
Butylbenzylphthalate					
3, 3'-Dichlorobenzidine					
Benzo(a)Anthracene					
bis(2-Ethylhexyl)Phthalate					
Chrysene					
Di-n-Octyl Phthalate				•	
Benzo(b)Fluoranthene					
Benzo(k)Fluoranthene					
Benzo(a)Pyrene				•	
Indeno(1, 2, 3-cd)Pyrene					
Dibenz(a, h)Anthracene					
Benzo(g, h, i)Perylene					

RF_{50} - Response Factor from daily standard file at concentration indicated

$\overline{RF}$ - Average Response Factor from initial calibration Form VI

%D Percent Difference

CCC - Calibration Check Compounds (•)

SPCC System Performance Check Compounds (••)

(1) Cannot be separated from diphenylamine

Figure 9, Continued

8.1.7 Acid and Base Neutral Extractables Analysis (BNA) -- Samples for acid and base-neutral extractable analysis will be analyzed according to EPA Method 625 for aqueous matrices and EPA Method 8270 for soil and solid waste matrices. A 5 pt calibration curve will be generated for HSL semivolatile compounds and a continuing calibration check standard will be run each day samples are analyzed (see Figure 9). Response factors will be calculated for each of the HSL semivolatile compounds as described above for volatile compounds. The mean response factors will be used to calculate the concentration of each compound in the sample. When compound responses exceed the response of the high standard, the sample will be diluted to fall within the range of the standard curve and reanalyzed. The results of the daily GC/MS standardization for semivolatile HSL compounds will be tabulated and filed with the corresponding sample analysis (see Figure 9).

The GC/MS standardization procedures employed by EML comply with the provisions of EPA.

g. Item 9 -- Analytical Procedures - The analytical procedures to be following in this project have been previously listed in Item 5 and in the Scope of Services (Technical Approach).

h. Item 10 -- Data Reduction, Validation and Reporting

10.1 All data produced are calculated according to the referenced procedures in Item 5 and the scope of services. The data is reported in units compatible with EPA formats or according to the instructions of the prime contractor.

10.1.1 General Chemical Analysis

Data is validated as to its analytical correctness through the use of spikes duplicates, and standards which are required for each sample set at 10 sample intervals. Specifically, EML will apply precision and accuracy criteria for each parameter that is analyzed. When the analysis of a sample set is completed, the quality control data generated is reviewed and evaluated to validate the data set. The quality control data will be reviewed for the following criteria:

10.1.1.1 Reagent and Method Blanks

The reagent and/or method blank results will be evaluated for high readings characteristic of background contamination. If high blank values are observed, laboratory glassware and reagents will be checked for contamination. A high background is defined as a background value sufficient to result in a difference in the uncorrected sample value greater than or equal to smallest significant digit known to be true.

10.1.1.2 Field Blanks

The appropriate field blank results will be evaluated for high readings similar to the reagent and/or method blanks described above. If high field blank readings are encountered, the procedure for sample collection, shipment and laboratory analysis will be reviewed. If both the reagent and/or method blanks and the field blanks exhibit significant background contamination, the source of contamination is probably within the laboratory.

10.1.1.3 Daily Calibration Curves

The daily calibration curves of respective instruments will be evaluated to determine that the curves are linear through their full range and that sample values are within the range defined by the low and high standards. If the curve is not linear, sample values will be corrected for nonlinearity by deriving sample concentrations from a graph or by using an appropriate computer algorithm to fit a nonlinear curve to the standards.

10.1.1.4 Duplicate Sample Analyses

The duplicate sample analysis for the sample set will be used to determine the precision of the analytical method for the sample matrix. The duplicate results are used to calculate the precision as defined by the mean relative percent error (MR%E) or Percent Difference (PD).

10.1.1.5 Spike Sample Analyses

The spiked sample results will be used to determine the accuracy of the analytical method for the sample matrix. The observed recovery of the spike versus the theoretical spike recovery is used to calculate the accuracy as defined by the percent recovery. Figures 10 and 11 show the GC/MS spike data for water and soil samples.

10.1.1.6 Check Sample Analyses

Check samples are similar to spiked samples except the spike is added to distilled water. The results of the check samples will be used to evaluate analyst spiking techniques, quality of the spike, and the accuracy of the method and analyst. Depending upon the analysis, the concentration of the check standards (O_2) may range from 80 to 120 percent of the

WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. ______________ Contractor ______________ Contract No. ______________

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO.	1,1-Dichloroethene								14	61-145
	Trichloroethene								14	71-120
	Chlorobenzene								13	75-130
	Toluene								13	76-125
______	Benzene								11	76-127
B/N SMO SAMPLE NO.	1,2,4-Trichlorobenzene								28	39-98
	Acenaphthene								31	46-118
	2,4 Dinitrotoluene								38	24-96
	Di-n-Butylphthalate								40	11-117
	Pyrene								31	26-127
	N-Nitroso-Di-n-Propylamine								38	41-116
______	1,4-Dichlorobenzene								28	36-97
ACID SMO SAMPLE NO.	Pentachlorophenol								50	9-103
	Phenol								42	12-89
	2-Chlorophenol								40	27-123
	4-Chloro-3-Methylphenol								42	23-97
______	4-Nitrophenol								50	10-80
PEST SMO SAMPLE NO.	Lindane								15	56-123
	Heptachlor								20	40-131
	Aldrin								22	40-120
	Dieldrin								18	52-126
	Endrin								21	56-121
______	4,4'-DDT								27	38-127

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD:
- VOAs ______ out of ______; outside QC limits
- B/N ______ out of ______; outside QC limits
- ACID ______ out of ______; outside QC limits
- PEST ______ out of ______; outside QC limits

RECOVERY:
- VOAs ______ out of ______; outside QC limits
- B/N ______ out of ______; outside QC limits
- ACID ______ out of ______; outside QC limits
- PEST ______ out of ______; outside QC limits

Comments: ____

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. ____________ Contractor ____________ Contract No. ____________

Low Level ____________ Medium Level ____________

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO. ______	1,1-Dicholorethene								22	59-172
	Trichloroethene								24	62-137
	Chlorobenzene								21	60-133
	Toluene								21	59-139
	Benzene								21	66-142
B/N SMO SAMPLE NO. ______	1,2,4-Trichlorobenzene								23	38-107
	Acenaphthene								19	31-137
	2,4 Dinitrotoluene								47	28-89
	Di-n-Butylphthalate								47	29-135
	Pyrene								36	35-142
	N-Nitrosodi-n-Propylamine								38	41-126
	1,4-Dichlorobenzene								27	28-104
ACID SMO SAMPLE NO. ______	Pentachlorophenol								47	17-109
	Phenol								35	26-90
	2-Chlorophenol								50	25-102
	4-Chloro-3-Methylphenol								33	26-103
	4-Nitrophenol								50	11-114
PEST SMO SAMPLE NO. ______	Lindane								50	46-127
	Heptachlor								31	35-130
	Aldrin								43	34-132
	Dieldrin								38	31-134
	Endrin								45	42-139
	4,4'-DDT								50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs ______ out of ______; outside QC limits
B/N ______ out of ______; outside QC limits
ACID ______ out of ______; outside QC limits
PEST ______ out of ______; outside QC limits

RECOVERY: VOAs ______ out of ______; outside QC limits
B/N ______ out of ______; outside QC limits
ACID ______ out of ______; outside QC limits
PEST ______ out of ______; outside QC limits

Comments: ____

Figure 11

Case No. ______________ Contract Laboratory ______________ Contract No. ______________

Low ______________ Medium ______________

	VOLATILE			SEMI-VOLATILE								PESTICIDE
SMO TRAFFIC NO.	TOLUENE-D8 (80-100)	BFB (80-140)	1,2 DICHLORO-ETHANE-D4 (30-140)	NITRO-BENZENE-D5 (20-140)	2-FLUORO-BIPHENYL (20-140)	TERPHENYL-D14 (20-150)			PHENOL-D5 (10-140)	2-FLUORO-PHENOL (20-140)	2,4,6 TRIBROMO-PHENOL (10-140)	DIBUTYL-CHLORENDATE ** (20-150)

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: ______ out of ______; outside of QC limits

Semi-Volatiles: ______ out of ______; outside of QC limits

Pesticides: ______ out of ______; outside of QC limits

Comments: ____

Figure 12

concentration found in routine samples.

10.1.1.7 Control Limits

A minimum of ten measurements of precision and accuracy will be obtained before control limits are established. For water samples, control limits of two standard deviations shall be utilized. Analysis of other sample types will utilize three standard deviations as control limits. Once established, control limits will be updated periodically as additional precision and accurayce data become available. If precision or accuracy is found to exceed the established control limits, the analysis in question is stopped until the cause for the out-of-control situation is resolved. The tests determined to be out of control are repeated. Data must be "in control" to be considered valid. The control units for HSL compounds will be used as illustrated in Figures 10, 11 and 12 for GC/MS analyses.

10.1.1.8 Laboratory Management Review

EML laboratory management will review testing results prior to external distribution for the following items: 1) comparison of analysis performed with the proposed testing record; 2) review of results for reasonableness; 3) review of quality control date; 4) verification that all required checks were properly performed; and 5) review of sample preservation and holding time requirements.

i. Item 11 -- Internal Quality Control Checks and Frequency

This section describes all specific internal (i.e., laboratory and field activities) quality control methods which are followed by EnviroMed Laboratories, Inc. (EML).

11.1 Internal Quality Control Checks are built around spike, duplicate, and standard analyses which are required for all routine tests at a rate of one every 10 samples for the spike, duplicate, and standard analyses or each sample set where the sample set is less than 10. The results of the duplicate and spike analyses are then recorded and plotted on quality control charts and checked to see if the results have fallen within limits of the test. If the results of the checks do not fall within limits, then the analyst consults with his supervisor to determine what action is to be taken. For general organic and pesticide anaysis by GC, Internal Quality Control Checks are built around duplicate analysis, internal standards and verification of calibration standards. For GC/MS analysis, Internal Quality Control Checks are built around the use of surrogate standards, internal standards, duplicates, spikes, and a performance evaluation standard which is used daily to determine the instruments performance.

11.2 Quality control statistics are evaluated continually and new charts are constructed as additional data is collected. All old charts are constructed as additional data is collected. All old charts and statistics are maintained on file in the quality control officer's office.

The supervisors and directors compose a quality control committee which meets periodically at which time the supervisors are required to submit a report documenting the results and the maintenance of the quality control program for the previous month.

Method blanks are used in the laboratory on a routine basis to check for contamination in reagents and glassware. The use of calibration standards is outlined in Item 8.

EnviroMed participates in the EPA check sample programs both the water supply and water pollution programs. The GC/MS lab also participates in the organic hazardous waste performance evaluation studies. Additional outside "check" samples are analyzed for specific projects (PCB's, Priority Pollutants) when appropriate.

j. Item 12 - Performance and System Audits

The Laboratory QA Plan provides for performance and system audits which will be conducted to monitor the capabiltiy and performance of the total measurement system for each project EML participates in.

Audits provide an independent assessment of the capability of the environmental monitoring programs to produce data which is reliable, precise, accurate, complete and representative of the measurement objectives. Since personnel, standards and equipment involved in an audit are different from the personnel, standards and equipment involved in the routine operations of the measurement program, audits provide a means of detecting and correcting conditions that may result in loss of data or data of poor quality.

Four types of audits are typically conducted during performance of typical programs. They are:

* System Audits;
* Performance Audits;
* Data Audits;
* Instrument Audits.

The exact type and number of audits is appropriately designed for each project. System audits provide a qualitative measure of the capability of a specific program to generate data of acceptable quality by careful review and evaluation of available facilities, standard operating procedures, operator training, documentation, internal quality control and data validation and reporting. Performance audits are used to quantitatively assess data precision and accuracy using test material of known composition and concentration. Data audits are used to assess the mechanisms used to store data. Finally, instrument audits are used to provide both a qualitative assessment of instrument performance by reviewing logsheets, operating manuals and preventive maintenance procedures, and a quantitative assessment of instrument performance in terms of measurement accuracy, and precision, and instrument drift and sensitivity. The audits allow identification of those systems, or system components operating outside present limits of acceptability in order that corrective action can be implemented before valuable data are lost or erroneous data are reported.

k. Item 13 - Preventive Maintenance

13.1 Preventive maintenance of laboratory and field instrumntation is an important factor in EnviroMed Laboratories' (EML) operational procedures. These procedures help to minimize down time and to assure instrument accuracy. All instrumentation is maintained in accordance with instrument manufacturers' guidelines, including spare parts and service contracts (GC, GC/MS, and AAS).

13.1.1 Analytical Balance

All analytical balances are cleaned weekly (or after usage) and immediately after any chemical spills.

The balance table is kept neat and cleaned after any spills. Any spills which might interfere with trace analysis, such as mercury compounds, are immediately and thoroughly cleaned up.

EML analytical balances are cleaned and checked by a balance service annually or whenever a problem is found.

13.1.2 pH Meter

The pH electrodes are maintained by following the manufacturer's recommendations for electrolyte solutions and storage procedures. The following spare materials are maintained:

* glass combination electrode
* electrolyte solutions
* pH buffers at pH 4, 7 and 10

13.1.3 Water Distillation Units

The ion exchange columns and filter are changed whenever the unit indicator shows a problem. The boiler (heating elements) are cleaned following manufacturer's directions or approximately every six months.

13.1.4 Atomic Absorption Spectrophotometers

The P.E. 3030 AAS is under service contract. An adequate supply of spare parts and supplies is kept in stock at all times. The preventive maintenance schedule recommended by the manufacturer is followed.

13.1.5 Gas Chromatograph/Mass Spectrometers

The HP 5970B GC/MS, HP 5985B GC/MS, and RTE-6 v/m data sytem are under a service contract. An adequate supply of spare parts and supplies is kept for the HP 5970B, the HP 5993B, and HP 5985B GC/MS systems. Preventive maintenance schedules for both instruments are followed according to the manufacturer's recommended procedures. Records are kept in the laboratory instrument file.

13.1.6 Purge and Trap Concentrators

The Tekmar LCS-2 and CDS Model 320 purge and trap concentration systems are checked according to the recommended preventive maintenance schedules of the manufacturer.

13.1.7 Gas Chromotographs

The HP 5840 and HP 5980A are under service contracts. An adequate supply of spare parts and supplies is kept in the laboratory. an inventory of GC columns documents the suitability of each column EML uses.

1. Item 14 - Specific Routine Procedures used to assess data precision, accuracy and completeness

14.1 EnviroMed Laboratories is currently following the appropriate QA/QC procedures described in "Handbook for Analytical Quality Control in Water and Wastewater Laboratories" USEPA, March 1979. The charts and procedures described are used primarily for wet chemistry parameters. Organic analyses performed by GC and GC/MS and other techniques require project specific QA/QC protocols which are specified by each client or are specified by the EML QA/QC officer. EML will maintain protocols which comply with the EPA.

14.1.1 General Chemical Analysis

The USEPA require that standards, spikes, and duplicates be run every 10 samples. The standards are used to verify that the analytical system is still in calibration. The duplicates are used to define precision data and to verify that the precision of the method is under control. Spiked samples are run in order to gather accuracy data and to verify that the method is under control. The precision and accuracy data are plotted on quality control charts or tables at the completion of each sample set. If the data fall outside the range of the control charts or tables, the analyst consults with the EML technical director to determine what action is to be taken (depends on client specifications).

The data gathered from the analysis of spikes are used to calculate the mean recoveries and to construct accuracy control charts on a current basis for each parameter. The duplicate data are used to calculate the standard deviation on the precision and to construct quality control charts or tables on each parameter on a current basis.

The precision and accuracy range limit (objectives) are listed in Item 5 for each parameter of interest.

14.1.2 Metal Analyses

See Item 14.1.1

The precision and accuracy range limits (objectives) are listed in Item 5 for each metal of interest.

14.1.3 General Organic and Pesticide/PCB Analysis by GC

The gas chromatographic analyses (i.e., organochlorine pesticides, PCB's) do not have formal means of determining precision and accuracy, as experience has shown that precision and accuracy are sample matrix dependent. However, spikes, duplicates and standards are analyzed every 10th sample to determine the accuracy a precision of that specific sample matrix. The precision and range limits (objectives) are listed in Item 5 for each organic compound of interest.

14.1.4 GC/MS Analyses

The GC/MS analyses utilized duplicate, surrogate, and internal standards to determine precision and accuracy for the various compound analyses. However, experience has shown that precision and accuracy are sample matrix dependent. Consequently, the precision and accuracy range limits (objectives) listed in Item 5 are used as a guide in EML's QA/QC protocols. Spikes, duplicates and standards are analyzed every 10th sample to determine these statistical parameters. Generally, EML employs client specific QA/QC protocols and requirements using the organic compounds of interest. The limits and ranges specified in the spiked duplicate analyses (Figures 10 and 11) will be used for this project.

m. Item 15 - Corrective Action

EnviroMed Laboratories' standard operating procedures (SOP's) have provisions to inform responsible management of the performance of all data collection systems and the need for corrective action. These procedures include the mechanisms which are used when corrective actions are necessary.

App

Laborato

NOD
12 B

Black and Associates
Environmental Consultants, Inc.

APPENDIX D

LABORATORY DATA SHEETS

Appendix D-1	Initial Waste Characterization Activities Data Report For Impoundment Sludges
Appendix D-2	Initial Waste Characterization Activities Data Report For Composite Wastepile Materials
Appendix D-3	OSDH Inspection Data Report
Appendix D-4	Soil Chemical Characterization Data Report October, 1987 Organic Inorganic
Appendix D-5	Groundwater Quality Data Report November, 1987 Organic Inorganic
Appendix D-6	Soil Physical Characterization Data Report

APPENDIX D-1

INITIAL WASTE CHARACTERIZATION ACTIVITIES DATA REPORT FOR IMPOUNDMENT SLUDGES

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: PROGRESSIVE ENVIRONMENTAL MGT. File No. 824 Invoice: 25251
Address: 708 - 24th Ave. N.W. - #F P.O. No. Date: 1/3/86
Norman, OK 73069

Date/Time Collected: 11/27/85 1144

Attention: Mark Fuchs

Date/Time Received: 11/29/85 0800
Sample Type: Grab/Preserved Collected by: Fuchs

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
62021	LAGOON #1	Arsenic	173	<0.01	12/09 1700	12/09 1800	RA
		Barium	"	0.47	12/09 1800	12/09 2000	RA
		Cadmium	"	<0.001	12/06 1900	12/06 2000	RA
		Chromium	157/173	0.02	12/07 1300	12/07 1600	TP
		Lead	"	0.02	12/07 0900	12/07 1100	TP
		Mercury	171	<0.002	12/04 1700	12/04 2000	RA
		pH (Std. units)	429	6.6	11/29 0915	11/29 0925	RD
		Selenium	173	0.033	12/05 1300	12/05 1700	JM
		Silver	"	<0.002	12/08 1800	12/08 2000	TP
		Leachate		----	12/03 0800	12/04 0800	DH
		BN/AE		See Attached			

Stan A. Kikikis, M.S.
Certified by: Laboratory Manager

Kamal Yoosh
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 44, Tuesday, December 18, 1979. Test procedures are either from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1981, (EPA), or ASTM (Annual Book of Standards, part 31, Water, 1985).

The duplicate analyses and spiked samples for 12-9 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l or ppm.
*Indicates out of permit compliance (Regulatory agencies should be notified within 5 days of non-compliance).

ANALYTICAL REPORT

PRIORITY POLLUTANTS

ENVIROMED LABORATORIES, INC.
414 W. California • Ruston, LA 71270 • 318-255-0060
1874 Dallas Dr. • Baton Rouge, LA 70806 • 504-928-0232

SAMPLE #: 6Z021

Service to: Robert & Schornick
Address: P. O. Box 1522
Norman, OK 73070
Attention: Mr. Herschel Robert
Title:
Sample I.D.: Lagoon #1
Date Collected: 11-27-85 By: MF Time: 1144
Date Received: 12-03-85 By: RC Time: 1300
Brought In: (Yes) (No) Type: Water Soil Sludge Other
Extracted By: MG Date:

File No: Report No:
Invoice No: Date:
P. O. No: RPD:

Analyzed By		Date	Time	Column	Inj. Vol.
VOA				CW1500	
B/N	GC/MS	12-18	1700	SP2250	1ul
A/P	GC/MS	12-18	1700	SP1240	1ul
P/PCB				ov17/ov 210	2ul

Comments: *Detection Limits raised 10 times due to sample dilution and matrix.

PURGEABLE COMPOUND	Conc.	Detn. Lmt
Acrolein		0.01
Acrylonitrile		0.01
Benzene		0.01
Chlorobenzene		0.01
Ethylbenzene		0.01
Methyl Bromide		0.01
Bromoform		0.01
Methylene Chloride		0.01
Methyl Chloride		0.01
Carbon Tetrachloride		0.01
Vinyl Chloride		0.01
Chloroform		0.01
Chloroethane		0.01
1, 1-Dichloroethane		0.01
1, 2-Dichloroethane		0.01
1, 1, 2, 2-Tetrachloroethane		0.01
1, 1, 1-Trichloroethane		0.01
1, 1, 2-Trichloroethane		0.01
bis (Chloromethyl) Ether		0.01
2 Chloroethyl vinyl Ether		0.01
1, 1-Dichloroethylene		0.01
trans-1, 2 Dichloroethylene		0.01
Tetrachloroethylene		0.01
Trichloroethylene		0.01
Chlorodibromomethane		0.01
Dichlorodifluoromethane		0.01
Dichlorobromomethane		0.01
Trichlorofluromethane		0.01
1, 2-Dichloropropane		0.01
cis-1, 3-Dichloropropene		0.01
trans-1, 3 Dichloropropene		0.01
Toluene		0.01
		0.01

PESTICIDE/PCB COMPOUND	Conc.	Detn. Lmt
alpha Endosulfan		0.01
beta-Endosulfan		0.01
Endosulfan Sulfate		0.01
alpha-BHC		0.01
beta-BHC		0.01
delta-BHC		0.01
gamma-BHC		0.01
Aldrin		0.01
Dieldrin		0.01
4, 4'-DDE		0.01
4, 4'-DDD		0.01
4, 4'-DDT		0.01
Endrin		0.01
Endrin Aldehyde		0.01
Heptachlor		0.01
Heptachlor Epoxide		0.01
Chlordane		0.01
Toxaphene		0.01
Aroclor 1016		0.01
Aroclor 1221		0.01
Aroclor 1232		0.01
Aroclor 1242		0.01
Aroclor 1248		0.01
Aroclor 1254		0.01
Aroclor 1260		0.01
(TCDD) Dioxin		0.01
		0.01

BASE/NEUTRAL COMPOUND *	Conc.	*Detn. Lmt
Dimethyl Phthalate	-	0.01
Diethyl Phthalate	-	0.01
Di-N-Octyl Phthalate	-	0.01
Di-N-Butyl Phthalate	-	0.01
bis (2-Ethylhexyl) Phthalate	-	0.01
Butyl Benzyl Phthalate	-	0.01
bis (2-Chloroethyl) Ether	-	0.01
bis (2-Chloroisopropyl) Ether	-	0.01
bis (2-Chloroethoxy) Methane	-	0.01
4-Chlorophenyl Phenyl Ether	-	0.01
4-Bromophenyl Phenyl Ether	-	0.01
Hexachloroethane	-	0.01
1, 4-Dichlorobenzene	-	0.01
1, 3-Dichlorobenzene	-	0.01
1, 2-Dichlorobenzene	-	0.01
Hexachlorobutadiene	-	0.01
Hexachlorocyclopentadiene	-	0.01
2-Chloronapthalene	-	0.01
Hexachlorobenzene	-	0.01
1, 2, 4-Trichlorobenzene	-	0.01
N-Nitrosodi-n-Propylamine	-	0.01
N-Nitrosodimethylamine	-	0.01
N-Nitrosodiphenylamine	-	0.01
1, 2-Diphenylhydrazine	-	0.01
Isophorone	-	0.01
Nitrobenzene	-	0.01
2, 6-Dinitrotoluene	-	0.01
2, 4-Dinitrotoluene	-	0.01
Benzidine	-	0.01
3, 3'-Dichlorobenzidine	-	0.01
Naphthalene	5100	0.01
Acenaphthene	560	0.01
Acenaphthylene	-	0.01
Fluorene	230	0.01
Anthracene	310	0.01
Phenanthrene		0.01
Pyrene	54	0.01
Chrysene	27	0.01
Benzo (a) Anthracene		0.01
Fluoranthene	93	0.01
Benzo (b) fluoranthene	26	0.01
Benzo (k) fluoranthene		0.01
Benzo (a) Pyrene	-	0.01
Indeno (1, 2, 3-c, d) Pyrene	-	0.025
Dibenzo (a, h) Anthracene	-	0.025
Benzo (g, h, i) Perylene	-	0.025

ACID EXTRACTABLE COMPOUND **	Conc.	Detn. Lmt
2-Nitrophenol	-	0.025
2-Chlorophenol	-	0.025
Phenol	140	0.025
2, 4-Dimethylphenol	-	0.025
2, 4-Dichlorophenol	-	0.025
2, 4, 6-Trichlorophenol	-	0.025
p-Chloro-m-Cresol	-	0.025
Pentachlorophenol	140	0.025
4-Nitrophenol	-	0.025
2, 4-Dinitrophenol	-	0.05
4, 6-Dinitro-O-Cresol	-	0.05

None detected indicated by (-)

2-Methylnaphthalene = 1600 ppm

** Detection limits raised 10 times due to dilution and matrix.

METALS/CYANIDE/PHENOLS/ASBESTOS

	Conc.	Det. Limits	Date Begun	Time Begun	Date Comp.	Time Comp.	Analyst
Antimony							
Arsenic							
Beryllium							
Cadmium							
Chromium							
Copper							
Lead							
Mercury							
Nickel							
Selenium							
Silver							
Thallium							
Zinc							
Cyanide							
Phenol							
Asbestos							

Ritchie Hoffmann
Analyst(s)

Donald Lee Perry / DRN

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: PROGRESSIVE ENVIRONMENTAL MGT.
Address: 708 - 24th Ave. N.W. - #F
Norman, OK 73069

File No. 824
P.O. No.

Invoice: 25251
Date: 1/3/86

Attention: Mark Fuchs

Date/Time Collected: 11/27/85 1400

Sample Type: Grab/Preserved

Date/Time Received: 11/29/85 0800
Collected by: Fuchs

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
62022	LAGOON #2	Arsenic	173	<0.01	12/09 1700	12/09 1800	RA
		Barium	"	<0.1	12/09 1800	12/09 2000	RA
		Cadmium	"	0.025	12/06 1900	12/06 2000	RA
		Chromium	157/173	0.027	12/07 1300	12/07 1600	TP
		Lead	"	<0.01	12/07 0900	12/07 1100	TP
		Mercury	171	<0.002	12/12 1700	12/12 2000	RA
		pH (Std. units)	429	5.8	11/29 0925	11/29 0935	RD
		Selenium	173	<0.01	12/05 1300	12/05 1700	JM
		Silver	"	<0.002	12/08 1800	12/08 2000	TP
		Leachate		----	12/03 0800	12/04 0800	DH
		BN/AE		See Attached			

Stan A. Kitchin, M.S.
Certified by: Laboratory Manager

Kamal Yousef
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 44, Tuesday, December 18, 1979. Test procedures are either from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1981, (EPA), or ASTM (Annual Book of Standards, part 31, Water, 1985).

The duplicate analyses and spiked samples for 12-9 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l or ppm.
*Indicates out of permit compliance (Regulatory agencies should be notified within 5 days of non-compliance).

ANALYTICAL REPORT

PRIORITY POLLUTANTS

SAMPLE # 62022

ENVIROMED LABORATORIES, INC.

414 W. California • Ruston, LA 71270 • 318-255-0060
1874 Dallas Dr. • Baton Rouge, LA 70806 • 504-928-0232

Service to: Robert & Schornick
Address: P. O. Box 1522
Norman, OK 73070
Attention: Mr. Herschel Robert
Title:
Sample I.D.: Lagoon #2
Date Collected: 11-27-85 By: MF Time: 1400
Date Received: 12-03-85 By: RC Time: 1300
Brought In: (Yes) (No) Type: Water Soil Sludge Other
Extracted By: MG Date:

File No: Report No:
Invoice No: Date:
P. O. No: RPD:

Analyzed		Date	Time	Column	Inj. Vol.
VOA				CW1500	
B/N	GC/MS	12-18	1615	SP2250	2ul
A/P	GC/MS	12-18	1615	SP1240	2ul
P/PCB				ov17/ov 210	2ul

Comments: *Detection Limit raised 10 times due to sample dilution and matrix

PURGEABLE COMPOUND	Conc.	Detn. Lmt
Acrolein		0.01
Acrylonitrile		0.01
Benzene		0.01
Chlorobenzene		0.01
Ethylbenzene		0.01
Methyl Bromide		0.01
Bromoform		0.01
Methylene Chloride		0.01
Methyl Chloride		0.01
Carbon Tetrachloride		0.01
Vinyl Chloride		0.01
Chloroform		0.01
Chloroethane		0.01
1, 1-Dichloroethane		0.01
1, 2-Dichloroethane		0.01
1, 1, 2, 2 Tetrachloroethane		0.01
1, 1, 1-Trichloroethane		0.01
1, 1, 2-Trichloroethane		0.01
bis (Chloromethyl) Ether		0.01
2 Chloroethyl vinyl Ether		0.01
1, 1-Dichloroethylene		0.01
trans-1, 2-Dichloroethylene		0.01
Tetrachloroethylene		0.01
Trichloroethylene		0.01
Chlorodibromomethane		0.01
Dichlorodifluoromethane		0.01
Dichlorobromomethane		0.01
Trichlorofluromethane		0.01
1, 2-Dichloropropane		0.01
cis-1, 3-Dichloropropene		0.01
trans-1, 3-Dichloropropene		0.01
Toluene		0.01

PESTICIDE/PCB COMPOUND	Conc.	Detn. Lmt
alpha-Endosulfan		0.01
beta-Endosulfan		0.01
Endosulfan Sulfate		0.01
alpha BHC		0.01
beta BHC		0.01
delta BHC		0.01
gamma-BHC		0.01
Aldrin		0.01
Dieldrin		0.01
4, 4'-DDE		0.01
4, 4' DDD		0.01
4, 4' DDT		0.01
Endrin		0.01
Endrin Aldehyde		0.01
Heptachlor		0.01
Heptachlor Epoxide		0.01
Chlordane		0.01
Toxaphene		0.01
Aroclor 1016		0.01
Aroclor 1221		0.01
Aroclor 1232		0.01
Aroclor 1242		0.01
Aroclor 1248		0.01
Aroclor 1254		0.01
Aroclor 1260		0.01
(TCDD) Dioxin		0.01

BASE/NEUTRAL COMPOUND *	Conc.	Detn. Lmt
Dimethyl Phthalate	-	0.01
Diethyl Phthalate	63	0.01
Di-N-Octyl Phthalate	-	0.01
Di-N-Butyl Phthalate	-	0.01
bis (2-Ethylhexyl) Phthalate	-	0.01
Butyl Benzyl Phthalate	-	0.01
bis (2-Chloroethyl) Ether	-	0.01
bis (2-Chloroisopropyl) Ether	-	0.01
bis (2-Chloroethoxy) Methane	-	0.01
4-Chlorophenyl Phenyl Ether	-	0.01
4-Bromophenyl Phenyl Ether	-	0.01
Hexachloroethane	-	0.01
1, 4-Dichlorobenzene	-	0.01
1, 3-Dichlorobenzene	-	0.01
1, 2 Dichlorobenzene	-	0.01
Hexachlorobutadiene	-	0.01
Hexachlorocyclopentadiene	-	0.01
2-Chloronapthalene	-	0.01
Hexachlorobenzene	-	0.01
1, 2, 4-Trichlorobenzene	-	0.01
N-Nitrosodi-n-Propylamine	-	0.01
N-Nitrosodimethylamine	-	0.01
N-Nitrosodiphenylamine	-	0.01
1, 2-Diphenylhydrazine	-	0.01
Isophorone	-	0.01
Nitrobenzene	-	0.01
2, 6-Dinitrotoluene	-	0.01
2, 4-Dinitrotoluene	-	0.01
Benzidine	-	0.01
3, 3' Dichlorobenzidine	-	0.01
Naphthalene	1400	0.01
Acenaphthene	410	0.01
Acenaphthylene	-	0.01
Fluorene	370	0.01
Anthracene		0.01
Phenanthrene	570	0.01
Pyrene	180	0.01
Chrysene		0.01
Benzo (a) Anthracene	110	0.01
Fluoranthene	260	0.01
Benzo (b) fluoranthene		0.01
Benzo (k) fluoranthene	74	0.01
Benzo (a) Pyrene	91	0.01
Indeno (1, 2, 3-c, d) Pyrene	-	0.025
Dibenzo (a, h) Anthracene	-	0.025
Benzo (g, h, i) Perylene	-	0.025

ACID EXTRACTABLE COMPOUND **	Conc.	Detn. Lmt
2-Nitrophenol	-	0.025
2-Chlorophenol	-	0.025
Phenol	-	0.025
2, 4-Dimethylphenol	-	0.025
2, 4-Dichlorophenol	-	0.025
2, 4, 6-Trichlorophenol	-	0.025
p-Chloro-m-Cresol	-	0.025
Pentachlorophenol	4680	0.025
4-Nitrophenol	48	0.025
2, 4-Dinitrophenol	-	0.05
4, 6-Dinitro-O-Cresol	-	0.05

None detected indicated by (-)

~~**Detection limit raised 10 times due to sample dilution and matrix.~~

2-Methylnaphthalene = 890 ppm

METALS/CYANIDE/PHENOLS/ASBESTOS

	Conc.	Det. Limits	Date Begun	Time Begun	Date Comp.	Time Comp.	Analyst
Antimony							
Arsenic							
Beryllium							
Cadmium							
Chromium							
Copper							
Lead							
Mercury							
Nickel							
Selenium							
Silver							
Thallium							
Zinc							
Cyanide							
Phenol							
Asbestos							

Ritchie Hofmann   Donald Lee Perry / DRN

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: PROGRESSIVE ENVIRONMENTAL MGT.
Address: 708 - 24th Ave. N.W. - #F
Norman, OK 73069

File No. 824
P.O. No.

Invoice: 25251
Date: 1/3/86

Attention: Mark Fuchs

Sample Type: Grab/Preserved

Date/Time Collected: 11/27/85 1045

Date/Time Received: 11/29/85 0800
Collected by: Fuchs

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
62023	LAGOON #3	Arsenic	173	<0.01	12/09 1700	12/09 1800	RA
		Barium	"	<0.1	12/09 1800	12/09 2000	RA
		Cadmium	"	0.343	12/06 1900	12/06 2000	RA
		Chromium	157/173	0.022	12/07 1300	12/07 1600	TP
		Lead	"	0.018	12/07 0900	12/07 1100	TP
		Mercury	171	<0.002	12/04 1700	12/04 2000	RA
		pH (Std. units)	429	6.5	11/29 0935	11/29 0945	RD
		Selenium	173	<0.01	12/05 1300	12/05 1700	JM
		Silver	"	<0.002	12/08 1800	12/08 2000	TP
		Leachate		----	12/03 0800	12/04 0800	DH
		BN/AE		See Attached			
62024	SOIL SAMPLE 4A	BN/AE		See Attached			
62024B	SOIL SAMPLE 4B	BN/AE		See Attached			
62025	SOIL SAMPLE 5	BN/AE		See Attached			

Stan A. Kirkikis M.S.
Certified by: Laboratory Manager

Kamal Yacoub
Chemist

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 44, Tuesday, December 18, 1979. Test procedures are either from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1981, (EPA), or ASTM (Annual Book of Standards, part 31, Water, 1985).

The duplicate analyses and spiked samples for 12-9 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l or ppm.
*Indicates out of permit compliance (Regulatory agencies should be notified within 5 days of non-compliance).

ANALYTICAL REPORT

PRIORITY POLLUTANTS

ENVIROMED LABORATORIES, INC.

414 W. California • Ruston, LA 71270 • 318-255-0060
1874 Dallas Dr. • Baton Rouge, LA 70806 • 504-928-0232

SAMPLE #: 62023

Service to: Robert & Schornick
Address: P. O. Box 1522
Norman, OK 73070
Attention: Mr. Herschel Robert
Title:
Sample I.D.: Lagoon #3
Date Collected: 11-27-85 By: MF Time: 1045
Date Received: 12-03-85 By: RC Time: 1300
Brought In: (Yes) (No) Type: Water Soil Sludge Other
Extracted By: MG Date:

File No: Report No:
Invoice No: Date:
P. O. No: RPD.

	Analyzed By	Date	Time	Column	Inj. Vol.
VOA				CW1500	
B/N	GC/MS	12-18	2000	SP2250	2ul
A/P	GC/MS	12-18	2000	SP1240	2ul
P/PCB				ov17/ov 210	2ul

Comments: *Detection limit raised 10 times due to sample dilution and matrix.

PURGEABLE COMPOUND	Conc.	Detn. Lmt
Acrolein		0.01
Acrylonitrile		0.01
Benzene		0.01
Chlorobenzene		0.01
Ethylbenzene		0.01
Methyl Bromide		0.01
Bromoform		0.01
Methylene Chloride		0.01
Methyl Chloride		0.01
Carbon Tetrachloride		0.01
Vinyl Chloride		0.01
Chloroform		0.01
Chloroethane		0.01
1, 1 Dichloroethane		0.01
1, 2 Dichloroethane		0.01
1, 1, 2, 2-Tetrachloroethane		0.01
1, 1, 1-Trichloroethane		0.01
1, 1, 2 Trichloroethane		0.01
bis (Chloromethyl) Ether		0.01
2 Chloroethyl vinyl Ether		0.01
1, 1-Dichloroethylene		0.01
trans-1, 2-Dichloroethylene		0.01
Tetrachloroethylene		0.01
Trichloroethylene		0.01
Chlorodibromomethane		0.01
Dichlorodifluoromethane		0.01
Dichlorobromomethane		0.01
Trichlorofluromethane		0.01
1, 2-Dichloropropane		0.01
cis-1, 3-Dichloropropene		0.01
trans-1, 3-Dichloropropene		0.01
Toluene		0.01

PESTICIDE/PCB COMPOUND	Conc.	Detn. Lmt
alpha Endosulfan		0.01
beta-Endosulfan		0.01
Endosulfan Sulfate		0.01
alpha BHC		0.01
beta-BHC		0.01
delta BHC		0.01
gamma-BHC		0.01
Aldrin		0.01
Dieldrin		0.01
4, 4'-DDE		0.01
4, 4' DDD		0.01
4, 4' DDT		0.01
Endrin		0.01
Endrin Aldehyde		0.01
Heptachlor		0.01
Heptachlor Epoxide		0.01
Chlordane		0.01
Toxaphene		0.01
Aroclor 1016		0.01
Aroclor 1221		0.01
Aroclor 1232		0.01
Aroclor 1242		0.01
Aroclor 1248		0.01
Aroclor 1254		0.01
Aroclor 1260		0.01
(TCDD) Dioxin		0.01

BASE/NEUTRAL COMPOUND *	Conc.	Detn. Lmt
Dimethyl Phthalate	-	0.01
Diethyl Phthalate	-	0.01
Di-N-Octyl Phthalate	-	0.01
Di-N-Butyl Phthalate	-	0.01
bis (2-Ethylhexyl) Phthalate	-	0.01
Butyl Benzyl Phthalate	-	0.01
bis (2-Chloroethyl) Ether	-	0.01
bis (2-Chloroisopropyl) Ether	-	0.01
bis (2-Chloroethoxyl Methane	-	0.01
4-Chlorophenyl Phenyl Ether	-	0.01
4-Bromophenyl Phenyl Ether	-	0.01
Hexachloroethane	-	0.01
1, 4-Dichlorobenzene	-	0.01
1, 3-Dichlorobenzene	-	0.01
1, 2 Dichlorobenzene	-	0.01
Hexachlorobutadiene	-	0.01
Hexachlorocyclopentadiene	-	0.01
2-Chloronapthalene	-	0.01
Hexachlorobenzene	-	0.01
1, 2, 4-Trichlorobenzene	-	0.01
N-Nitrosodi-n-Propylamine	-	0.01
N-Nitrosodimethylamine	-	0.01
N-Nitrosodiphenylamine	-	0.01
1, 2-Diphenylhydrazine	-	0.01
Isophorone	-	0.01
Nitrobenzene	-	0.01
2, 6-Dinitrotoluene	-	0.01
2, 4-Dinitrotoluene	-	0.01
Benzidine	-	0.01
3, 3'-Dichlorobenzidine	-	0.01
Naphthalene	2100	0.01
Acenaphthene	570	0.01
Acenaphthylene	-	0.01
Fluorene	500	0.01
Anthracene		0.01
Phenanthrene	530	0.01
Pyrene	180	0.01
Chrysene		0.01
Benzo (a) Anthracene	110	0.01
Fluoranthene	270	0.01
Benzo (b) fluoranthene		0.01
Benzo (k) fluoranthene	100	0.01
Benzo (a) Pyrene	170	0.01
Indeno (1, 2, 3-c, d) Pyrene	-	0.025
Dibenzo (a, h) Anthracene	-	0.025
Benzo (g, h, i) Perylene	-	0.025

ACID EXTRACTABLE COMPOUND	Conc.	Detn. Lmt
2-Nitrophenol	-	0.025
2-Chlorophenol	-	0.025
Phenol	-	0.025
2, 4-Dimethylphenol	-	0.025
2, 4-Dichlorophenol	-	0.025
2, 4, 6-Trichlorophenol	-	0.025
p-Chloro-m-Cresol	-	0.025
Pentachlorophenol	580	0.025
4-Nitrophenol	39	0.025
2, 4-Dinitrophenol	-	0.05
4, 6-Dinitro-O-Cresol	-	0.05
None detected indicated by (-)	-	

2-Methylnaphthalene = 1100 ppm

METALS/CYANIDE/PHENOLS/ASBESTOS

	Conc.	Det. Limits	Date Begun	Time Begun	Date Comp.	Time Comp.	Analyst
Antimony							
Arsenic							
Beryllium							
Cadmium							
Chromium							
Copper							
Lead							
Mercury							
Nickel							
Selenium							
Silver							
Thallium							
Zinc							
Cyanide							
Phenol							
Asbestos							

Ritchie Hoffman

Donald Lee Perry / DLP

APPENDIX D-2

INITIAL WASTE CHARACTERIZATION ACTIVITIES DATA REPORT FOR COMPOSITE WASTEPILE MATERIALS

ENVIRO-MED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: S & S ENVIRONMENTAL File No. 535 Invoice No. 23270

Address: 2324 S. PORTLAND P.O. No. Date: 6/6/85
OKLAHOMA CITY OK 73108
Attention: MARK FUCHS
Title: PRESIDENT

Sample type: COMP Preserved: NO
Date collected: 4/29/85 Time: 1400
Date received: 5/1/85 Time: 1330
Collected by: MF Brought in:

MISCELLANEOUS CHARGES:
1. Total miles 0 at 0 c/mile= $0.00
2. Labor Time 0 at $0.00 /hr= $0.00
3. Shipping charges (bus): $0.00
Logged in by: RG
Comments:

EML No. 57000 Source: OIL DISPOSAL AREA MIXON BROTHERS No. 001

Parameter	(#) Pg. Ref	Conc.	Lbs. Per Day	Date Begun	Time Begun	Date Completed	Time Completed	Analyst
ARSENIC	242	<0.01		05/08	0200	05/08	0300	TP
BARIUM	144	0.33		05/07	1300	05/07	1500	JM
CADMIUM	144	<0.001		05/07	1500	05/07	1600	JM
CHROMIUM		<0.003		05/07	1000	05/07	1200	KM
LEAD	181	<0.01		05/08	0000	05/08	0200	TP
MERCURY	156	<0.002		05/08	1000	05/08	1200	KM
SELENIUM	159	<0.01		05/08	1400	05/08	1600	KM
SILVER	148	0.0035		05/06	1500	05/06	1600	JM
IGNITABILITY		>212°F		05/08	1400	05/08	1430	RE
CORROSIVITY		NON-CORROSIVE		05/02	1400	05/02	1415	DH
pH		6.7		05/02	1400	05/02	1415	DH
LEACHATE		----		05/02	1400	05/03	1400	DH
REACT.-CYANIDE		<0.01		05/16	1700	05/17	0930	RM
REACT.-SULFIDE		12.8		05/16	1700	05/17	0930	RM
PEST/HERB		SEE ATT						

Raymond Germany
Certified by, Laboratory Manager

Kamal Maali
Chemist

Analysis conducted in accordance with the List of Approved Test Procedures, published in Federal Register, Vol. 44, No. 244, Tuesday, December 18, 1979. Test procedures are either from the 15th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1981, (EPA), or ASTM (Annual Book of Standards, part 31, Water, 1980).

The duplicate analysis and spiked samples for 5-8 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data

APPENDIX D-3

OSDH INSPECTION DATA REPORT

SAMPLE NUMBER 106019 CWRB NUMBER 08343
DATE COLLECTED 10/04/83 TIME 13:15
DATE RECEIVED 10/07/83
DATE COMPLETED 11/28/83
STATION
COLLECTED BY JJB

OKLAHOMA STATE DEPARTMENT
STATE WATER QUALITY LABOR
WATER ANALYSIS REPORT

WATER QUALITY DIVISION
OKLAHOMA WATER RESOURCES BOARD
OSDH BLDG. 12TH FLOOR
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES

PARAMETER		VALUE	UNITS	PARAMETER		VALUE	UNITS
CHEMICAL OXY DMD SED		118	MG/KG	PH (LAB)		5.80	SI
PHOSPHOURS,TOT SED		136.1	MG/KG	ARSENIC IN SEDIMENT		31.00	MG
CADMIUM IN SEDIMENT	<	1.03	MG/KG	CHROMIUM IN SEDIMENT		15.00	MG
COPPER IN SEDIMENT		24.00	MG/KG	LEAD IN SEDIMENT		13.00	MG.
ZINC IN SEDIMENT		77.00	MG/KG	OIL & GREASE IN SED		86760.00	MG/
TOTAL PHENOLS IN SED		2.18	MG/KG	PESTICIDE SCAN	N		UG/
PENTACHLOROPHENOL SD	<	0.500	MG/KG				

REMARK CODE EXPLANATIONS

< LESS THAN DETECTION LIMIT
N NOT DETECTED

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGN...

SOURCE MIXON BROS WOOD PRES IDABELL
PROGRAM OKLA WATER RESOURCE
COUNTY MCCURTAIN

LEGAL
¼ NE ¼ NW ¼ SEC 31 T 07S R 24E IM

SAMPLERS COMMENTS WASTE MOTOR OIL SOLIDS/ DISPOSAL AREA ON WEST SIDE OF FACILITY SAMPLE SITE 3. SEDIMENT.

ANALYSTS COMMENTS

OHD FORM ... REQUISITIONER COPY ANALYST [signature]

SAMPLE NUMBER 106021 CWRB NUMBER 08412
DATE COLLECTED 10/04/83 TIME 13:25
DATE RECEIVED 10/07/83
DATE COMPLETED 11/14/83
STATION
COLLECTED BY JJB

OKLAHOMA STATE DEPARTMENT OF HEALTH
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUALITY DIVISION
OKLAHOMA WATER RESOURCES BOARD
OSDH BLDG. 12TH FLOOR
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

CHEMICAL OXY DMD SED	78950 MG/KG	PH (LAB)	6.10 STD UN
PHOSPHOURS,TOT SED	366.3 MG/KG	ARSENIC IN SEDIMENT	19.00 MG/KG
CADMIUM IN SEDIMENT	2.00 MG/KG	CHROMIUM IN SEDIMENT	68.00 MG/KG
COPPER IN SEDIMENT	26.00 MG/KG	LEAD IN SEDIMENT	251.00 MG/KG
ZINC IN SEDIMENT	680.00 MG/KG	OIL & GREASE IN SED	124300.0 MG/KG
TOTAL PHENOLS IN SED	0.74 MG/KG	PESTICIDE SCAN	N UG/L
PENTACHLOROPHENOL SD <	0.500 MG/KG		

REMARK CODE EXPLANATIONS

< LESS THAN DETECTION LIMIT
N NOT DETECTED

SEE REVERSE SIDE FOR WATER QUALITY REPORT EXPLANATION

SOURCE MIXON BROS WOOD PRES IDABELL
PROGRAM OKLA WATER RESOURCE
COUNTY MCCURTAIN

LEGAL
¼ NW ¼ NW ¼ SEC 31 T 07S R 24E IM

SAMPLERS COMMENTS SAMPLE SITE 5. MOTOR OIL . SEDIMENT SURROUNDING AREA/DISPOSAL.

ANALYSTS COMMENTS

ODH FORM NO. 814

REQUISITIONER COPY

ANALYST Dicky McElvany

LAB NUMBER 125658 00000
DATE COLLECTED 09/05/85 TIME 14:30
DATE RECEIVED 09/09/85
DATE COMPLETED 10/09/85
STATION
COLLECTED BY TN

OKLAHOMA STATE DEPARTMENT OF HEALTH
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

RECEIVED
OCT 16 1985
Waste Management Service

DWAIN FARLEY, CHIEF
WASTE MANAGEMENT SERVICE
OSDH ROOM 803
OKLAHOMA CITY OK 73152

GENERAL PROJECTS

CONCENTRATION IN SAMPLE

245-TRICHLROPHENOL W N		UG/KG	BENZOIC ACID SED N		UG/KG
ANALINE IN SED N		UG/KG	BENZYL ALCOHOL SED N		UG/KG
4-CHLOROANALINE SED N		UG/KG	2-NITROANALINE SED N		UG/KG
3-NITROANALINE SED N		UG/KG	4-NITROANALINE SED N		UG/KG
DIBENZOFURAN IN SED	320.000	UG/KG	PHENOL IN SEDIMENT N		UG/KG
2-CHLOROPHENOL SED N		UG/KG	2,4-DIMETHLYPHENOL S N		UG/KG
2-NITROPHENOL SED N		UG/KG	2,4-DICHLOROPHENOL S N		UG/KG
P-CHLORO-M-CRESOL SD N		UG/KG	246-TRICHLROPHENOL S N		UG/KG
4-NITROPHENOL SED N		UG/KG	2,4-DINITROPHENOL SD N		UG/KG
46DINITRO-O-CRESOL S N		UG/KG	PENTACHLOROPHENOL SD	335000.0	UG/KG
BIS2CHLRMTHYL-ETHR S N		UG/KG	1,4-DICHLROBENZENE S N		UG/KG
BIS2CLROISOPYLETH S N		UG/KG	NITROBENZENE IN SED N		UG/KG
DIMETHYL PHTHALATE S N		UG/KG	2,6-DINITROTOLUENE S N		UG/KG
ACENAPHTHYLENE IN S	1700.000	UG/KG	4-BROMOPHPHETHER SED N		UG/KG
DI-N-BUTYLPHTHALTE S N		UG/KG	3,3'-DICLROBENZDINE S N		UG/KG
BIS2ETHLHXLPHTHLTE S N		UG/KG	BNZO(B)FLURANTHENE S	16000.00	UG/KG
1,2-DICHLROBENZENE S N		UG/KG	1,3-DICHLROBENZENE S N		UG/KG
BIS2CLROETHXYMTHNE S N		UG/KG	NAPTHALAENE IN SED	850.000	UG/KG
HEXACHLROBUTADIENE S N		UG/KG	ACENAPHTHENE IN SED	11000.00	UG/KG
DIETHYL PHTHALATE S N		UG/KG	FLUORENE IN SEDIMENT	6600.000	UG/KG
HEXACHLOROBENZENE S N		UG/KG	ANTHRACENE IN SEDMNT	6800.000	UG/KG
PYRENE IN SEDIMENT	140000.0	UG/KG	CHRYSENE IN SEDIMENT	23000.00	UG/KG
BENZO(A)ANTHRACENE S	25000.00	UG/KG	2,4-DINITROTOLUENE S N		UG/KG
DIBENZO(AH)ANTHRACE S	1600.000	UG/KG	NTROSODINPRPYLAMNE S N		UG/KG
HEXACHLOROETHANE S N		UG/KG	ISOPHORONE S N		UG/KG
124-TRICHLROBENZNE S N		UG/KG	HXACLROCYCLOPNTDNE S N		UG/KG
2-CHLRONAPHTHALENE S N		UG/KG	NTROSODIPHNYLAMNE S N		UG/KG
1,2-DIPHNYLHYDRZNE S N		UG/KG	PHENANTHRENE SED	25000.00	UG/KG
FLUORANTHENE IN SED	165000.0	UG/KG	BTYLBENZYLPHTHALATE S N		UG/KG
4-CHLOROPHPHETHER S N		UG/KG	BENZIDINE IN SED N		UG/KG
DI-N-OCTYLPHTHALTE S N		UG/KG	BENZO(A)PYRENE S	9100.000	UG/KG
BENZO(K)FLURANTHENE S	1200.000	UG/KG	BENZO(GHI)PERYLENE S	2200.000	UG/KG

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

SOURCE MIXON BROS #3 SURFACE
PROGRAM WASTE MGMNT SER(GENERAL PROJ) CITY IDABEL
COUNTY MCCURTAIN

LEGAL

SAMPLERS COMMENTS #3 TAKEN FROM WASTE PILE AND SURROUNDINGS

ANALYSTS COMMENTS SEE ATTACHED GC/MS REPORT.

HD FORM NO. 614 (8-77)

REQUISITIONER COPY

ANALYST Bill Batten

SAMPLE NUMBER 125698 00000
DATE COLLECTED 09/05/85 TIME 14:30
DATE RECEIVED 09/09/85
DATE COMPLETED 10/09/85
STATION
COLLECTED BY TM

OKLAHOMA STATE DEPARTMENT OF HEALTH
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

DWAIN FARLEY, CHIEF
WASTE MANAGEMENT SERVICE
OSDH ROOM 803
OKLAHOMA CITY OK 73152

COPY

GENERAL PROJECTS

CONCENTRATION IN SAMPLE

INDENO(123CD)PYRNE S 2000.000 UG/KG

RECEIVED
OCT 16 1985
Waste Management Service

REMARK CODE EXPLANATIONS

N NOT DETECTED

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

SOURCE MIXON BROS #3 SURFACE CITY IDABEL
PROGRAM WASTE MGMNT SER(GENERAL PROJ)
COUNTY MCCURTAIN

LEGAL
1/4 1/4 SEC T R M

SAMPLER'S COMMENTS #3 TAKEN FROM WASTE PILE AND SURROUNDINGS

ANALYST'S COMMENTS SEE ATTACHED GC/MS REPORT.

ODH FORM NO. 814 (8-77) REQUISITIONER COPY

ANALYST Bill Batten

STATE ENVIRONMENTAL LABORATORY
GC/MS REPORT

SAMPLE # : 125698 DATE COLLECTED : 9/ 5/85 REPORT DATE : 10/ 2/85

PROJECT : MIXON BROTHERS CODE : PSE

SAMPLE DISCRIPTION : #3 FROM WASTE PILE AND SURROUNDING SOIL

COMPOUND	PPB
(39061) PENTACHLOROPHENOL	335,000
(34203) ACENAPHTHYLENE	1700
(34233) BENZO [b] FLUORANTHENE	16,000
(34445) NAPHTHALENE	890
(34208) ACENAPHTHENE	11,000
(34384) FLUORENE	6600
(34223) ANTHRACENE	8800
(34472) PYRENE	140,000
(34323) CHRYSENE	230,00
(34529) BENZO [a] ANTHRACENE	25,000
(34529) DIBENZ [ah] ANTHRACENE	1600
(34464) PHENANTHRENE	25,000
(34379) FLUORANTHENE	165,000
(34250) BENZO [a] PYRENE	9100
(34245) BENZO [k] FLUORANTHENE	1200
(34524) BENZO [ghi] PERYLENE	2200
(34406) INDENO [123cd] PYRENE	2000
(76619) DIBENZOFURAN	320
2-METHYLNAPHTHALENE	1,000

RECEIVED
OCT 16 1985
State Hazardous Waste Management Service

INDICATES COMPOUND IS TENTATIVELY IDENTIFIED BY NBS LIBRARY SEARCH !

ANALYSTS COMMENTS :

ANALYST Bill Battey

APPENDIX D-4

SOIL CHEMICAL CHARACTERIZATION DATA REPORT

INORGANIC DATA

October, 1987

ANALYTICAL REPORT

Service to: Roberts/Schornick & Assoc. File No. 18680 Invoice: 12463
Address: 860 Copperfield Drive, Suite A P.O. No. Date: Nov. 11, 1987
Norman, OK 73072

Attention: Herschel Robert Date, Time Collected: (Listed with Source)

Date, Time Received: 10/30/87, 1247-1329
Sample Type: Comp/Preserved Collected by: M.T.

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
01131	2-1.1-1.6 (10/20,1500)	T.Chromium	157/173	12.5	11/05 1600	11/05 2000	VC
01132	2-1.6-2.1 (10/20,1500)	T.Chromium	157/173	16.5	11/05 1600	11/05 2000	VC
01133	4B-1.15-1.65 (10/20,1500)	T.Chromium	157/173	13.3	11/05 1600	11/05 2000	VC
01134	4B-1.7-2.3 (10/20,1520)	T.Chromium	157/173	27.7	11/05 1600	11/05 2000	VC
01135	6-00-0.5 (10/20,1540)	T.Chromium	157/173	26.2	11/05 1600	11/05 2000	VC
01136	6-0.5-1.0 (10/20,1540)	T.Chromium	157/173	10.0	11/05 1600	11/05 2000	VC
01137	19-1.0-1.5 (10/20,1420)	T.Chromium	157/173	26.9	11/05 1600	11/05 2000	VC
01138	19-1.5-2.0 (10/20,1420)	T.Chromium	157/173	9.0	11/05 1600	11/05 2000	VC
01141	PZ1-0.0-0.5 (10/20,1500)	T.Chromium	157/173	12.9	11/05 1600	11/05 2000	VC
01142	33-0.0-0.5 (10/20,1740)	T.Chromium	157/173	8.0	11/05 1600	11/05 2000	VC
01143	BG-0.0-0.5 (10/20,1900)	T.Chromium	157/173	13.5	11/05 1600	11/05 2000	VC
01144	BG-0.0-2.0 (10/20,1900)	T.Chromium	157/173	12.0	11/05 1600	11/05 2000	VC
01145	BG-2.0-4.0 (10/20,1900)	T.Chromium	157/173	20.9	11/05 1600	11/05 2000	VC
01146	BG-4.0-6.0 (10/20,1900)	T.Chromium	157/173	23.7	11/05 1600	11/05 2000	VC
01147	29B-0.0-0.5 (10/20,1400)	T.Chromium	157/173	29.8	11/05 1600	11/05 2000	VC

Certified by: Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, Part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/05 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days

NOV 16 1987

ANALYTICAL REPORT

Service to: Roberts/Schornick & Assoc.
Address: 860 Copperfield Drive, Suite A
Norman, OK 73072

File No. 18680
P.O. No.

Invoice: 12463
Date: Nov. 11, 1987

Attention: Herschel Robert

Date, Time Collected: (Listed with Source)

Date, Time Received: 10/30/87, 1329-1342
Collected by: M.T.

Sample Type: Comp/Preserved

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
01148	Trip Blank (10/20,1340)	T.Chromium	157/173	0.05	11/05 1600	11/05 2000	VC
01149	32-0.0-2.0 (10/20,1420)	T.Chromium	157/173	17.0	11/04 1700	11/04 1900	VC
01150	32-2.0-3.8 (10/20,1655)	T.Chromium	157/173	8.9	11/05 1600	11/05 2000	VC
01151	32-5.0-7.0 (10/20,1655)	T.Chromium	157/173	9.4	11/05 1600	11/05 2000	VC
01152	32-7.0-9.0 (10/20,1655)	T.Chromium	157/173	18.4	11/05 1600	11/05 2000	VC
01153	32-9.0-11.0 (10/20,1655)	T.Chromium	157/173	14.9	11/05 1600	11/05 2000	VC
01154	40-0.0-2.0 (10/20,1230)	T.Chromium	157/173	10.4	11/05 1600	11/05 2000	VC
01155	40-2.0-4.0 (10/20,1230)	T.Chromium	157/173	8.5	11/05 1600	11/05 2000	VC
01156	40-4.3-4.8 (10/20,1230)	T.Chromium	157/173	12.2	11/05 1600	11/05 2000	VC
01157	40-5.0-5.5 (10/20,1230)	T.Chromium	157/173	8.5	11/05 1600	11/05 2000	VC
01158	42B-0.0-0.5 (10/20,1800)	T.Chromium	157/173	13.7	11/05 1600	11/05 2000	VC
01159	43-0.0-2.0 (10/20,1205)	T.Chromium	157/173	10.3	11/05 1600	11/05 2000	VC
01160	43-2.3-2.8 (10/20,1205)	T.Chromium	157/173	18.2	11/05 1600	11/05 2000	VC
01161	43-2.8-3.3 (10/20,1205)	T.Chromium	157/173	9.2	11/05 1600	11/05 2000	VC
01162	52-0.9-1.5 (10/20,1120)	T.Chromium	157/173	26.9	11/05 1600	11/05 2000	VC

Certified by: Laboratory Manager

PROJECT
PROJECT NO.
FILE NO.

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/05 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).

ENVIRONMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: Roberts/Schornick & Assoc. File No. 18680 Invoice: 12463
Address: 860 Copperfield Drive, Suite A P.O. No. Date: Nov. 11, 1987
Norman, OK 73072

Attention: Herschel Robert Date, Time Collected: (Listed with Source)

Date, Time Received: 10/30/87, 1343-1353
Sample Type: Comp/Preserved Collected by: M.T.

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
01163	52-1.5-2.0 (10/20,1120)	T.Chromium	157/173	10.0	11/05 1600	11/05 2000	VC
01164	55-0.0-0.5 (10/20,0940)	T.Chromium	157/173	11.5	11/05 1600	11/05 2000	VC
01165	59-0.0-0.5 (10/20,1100)	T.Chromium	157/173	9.9	11/05 1600	11/05 2000	VC
01166	59-1.7-2.2 (10/20,1100)	T.Chromium	157/173	7.5	11/05 1600	11/05 2000	VC
01167	60B-0.0-0.5 (10/20,1030)	T.Chromium	157/173	31.5	11/05 1600	11/05 2000	VC
01168	60B-1.5-2.0 (10/20,1030)	T.Chromium	157/173	11.5	11/05 1600	11/05 2000	VC
01169	W38-0.0-0.5 (10/21,1225)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	38.0	11/05 1600	11/05 2000	VC
01170	W38-0.5-1.0 (10/21,1225)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	31.7	11/04 1600	11/04 1800	VC
01171	W6-0.8-1.3 (10/21,0815)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	56.7	11/04 1600	11/04 1800	VC
01172	W6-0.2-0.8 (10/21,0815)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	31.5	11/04 1600	11/04 1800	VC

Certified by: Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/01 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: Roberts/Schornick & Assoc.
Address: 860 Copperfield Drive, Suite A
Norman, OK 73072

File No. 18680
P.O. No.

Invoice: 12463
Date: Nov. 11, 1987

Attention: Herschel Robert

Date,Time Collected: (Listed with Source)

Date,Time Received: 10/30/87,1353-1406
Collected by: M.T.

Sample Type: Comp/Preserved

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
01173	W11B-0.0-2.0 (10/21,0855)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	25.2	11/04 1600	11/04 1800	VC
01174	W11B-2.0-4.0 (10/21,0855)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	23.6	11/04 1600	11/04 1800	VC
01175	W11B-5.0-5.2 (10/21,0855)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	26.6	11/04 1600	11/04 1800	VC
01176	W11B-5.2-5.7 (10/21,0855)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	25.3	11/04 1600	11/04 1800	VC
01177	W13-0.8-1.3 (10/21,1200)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	39.7	11/04 1600	11/04 1800	VC
01178	W13-0.3-0.8 (10/21,1200)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	28.6	11/04 1600	11/04 1800	VC

Certified by: Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/04 indicate all methodologies are in control.

Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.

*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).

**Past Holding Time

ENVIROMED LABORATORIES, INC.
ANALYTICAL REPORT

Service to: Roberts/Schornick & Assoc. File No. 18680 Invoice: 12463
Address: 860 Copperfield Drive, Suite A P.O. No. Date: Nov. 11, 1987
Norman, OK 73072

Attention: Herschel Robert Date, Time Collected: (Listed with Source)

Date, Time Received: 10/30/87, 1409-1414
Sample Type: Comp/Preserved Collected by: M.T.

EML #	SOURCE	PARAMETER	PG.#	CONC.	BEGUN	ENDED	ANAL.
01179	W15-0.2-0.5 (10/21,1125)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	24.4	11/04 1600	11/04 1800	VC
01180	W15-0.5-1.0 (10/21,1125)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	24.5	11/04 1700	11/04 1900	VC
01182	W15B-3.0-3.5 (10/21,1155)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	23.7	11/04 1700	11/04 1900	VC
01183	W23B-0.0-0.5 (10/21,0930)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	32.1	11/04 1700	11/04 1900	VC
01184	W24-0.0-0.5 (10/21,1010)	T.Mercury	171	<0.2	11/01 0800	11/01 1400	RD
		T.Chromium	157/173	33.7	11/04 1700	11/04 1900	VC

Certified by: Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in Federal Register, Vol. 51, Monday, June 30, 1986. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/04 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.
*Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
**Past Holding Time

ENVIROMED LABORATORIES, INC.
414 WEST CALIFORNIA AVE.
RUSTON, LA 71270

DATE
01/12/88

EML # BATCH #
01181

CUSTOMER:
ROBERTS/SCHORNICK_&_ASSOC. 000210
860 COPPERFIELD DR. SUITE A
ATTN: HERSCHEL ROBERTS
NORMAN, OK 73072
(000) 000-0000

SAMPLE--(G)rab/(C)omp :C:
DATE COLLECTED :10/21/87:
DATE RECEIVED :10/30/87:
COLLECTED BY :MT

PRESERVED? :Y:
TIME COLLECTED :1155:
TIME RECEIVED :1411:
: BROUGHT IN BY--(E)ML/(C)lient :C:

SOURCE: W15B-2.5-3.0

PARAMETER	CONC.	--BEGIN-- DATE	TIME	---END--- DATE	TIME	ANLST	PAGE #
BASE NEUTRAL	0.0	1105	0800	1105	0800	BR	EPA
T. MERCURY	<0.2	1101	0800	1101	1400	RD	171
PENTACHLOROPHENOL	0.0	1105	0800	1105	0800	BR	EPA
T. CHROMIUM	19.4	1104	1700	1104	1900	VC	157/173

Douglas W. Hensley, Ph.D.
Certified by Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in 40 CFR--Parts 60, 136, and 261. Test procedures are from the 16th edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1983), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/01 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reported in units of mg/l.

BOD std. N/A
* Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
** Past Holding Time

ENVIROMED LABORATORIES, INC.
414 WEST CALIFORNIA AVE.
RUSTON, LA 71270

DATE
01/12/88

EML # BATCH #
01139

CUSTOMER:
ROBERTS/SCHORNICK_&_ASSOC. 000210
860 COPPERFIELD DR. SUITE A
ATTN: HERSCHEL ROBERTS
NORMAN, OK 73072
(000) 000-0000

SAMPLE--(G)rab/(C)omp :C:
DATE COLLECTED :10/20/87:
DATE RECEIVED :10/30/87:
COLLECTED BY :MT

PRESERVED? :Y:
TIME COLLECTED :1340:
TIME RECEIVED :1314:
: BROUGHT IN BY--(E)ML/(C)lient :C:

SOURCE: FIELD BLANK

PARAMETER	CONC.	--BEGIN-- DATE	TIME	---END--- DATE	TIME	ANLST	PAGE #
BASE NEUTRAL	0.0	1105	0800	1105	0800	BR	EPA
PENTACHLOROPHENOL	0.0	1105	0800	1105	0800	BR	EPA
T. CHROMIUM	0.06	1105	1600	1105	2000	VC	157/173
T. MERCURY	<0.002	1116	1500	1116	1800	RB	171

Douglas W. Hensley, PhD
Certified by Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in 40 CFR--Parts 50, 136, and 261. Test procedures are from the 16 edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annual Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/16 indicate all methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is reporte in units of mg/l.

BOD std. N/A
* Indicates out of permit compliance (regulatory agencies should be notified within 5 days of non-compliance conditions).
** Past Holding Time

ENVIROMED
LABORATORIES, INC.

414 WEST CALIFORNIA AVE. • RUSTON, LOUISIANA 71270
1874 DALLAS DRIVE • BATON ROUGE, LA 70806
1813 LOIS LANE • BOSSIER CITY, LOUISIANA 71111

ANALYTICAL REQUEST FORM

ple # ____________

Client: ROBERTS/SCHORNICK & ASSOC — Date Collected: 10/19-10/21 Time: ____ By: BS/MT

Address: 860 Copperfield — Samples 54 — Containers: 54

NORMAN OK — Date Received: ____ Time: ____ By: ____

ention: BERT SMITH — Sampling Witnessed By: MARK THOMPSON

Title: HYDROGEOLOGIST — Requested By: MIKE SCHORNICK

ple Type: Water-Soil-Sludge-Other ____

lection Method: Grab/Comp Preserved? ____

ple Source: ALL SAMPLES

Comments: ALL SAMPLES: TOTAL CHROMIUM, PENTACHLOROPHENOL, BASE NEUTRAL EXTRACTABLES; AND MERCURY FOR "W"-PREFIX SAMPLES ONLY

129 Priority Pollutants
( ) Purgeables (VOA) ____
( ) Acid Extractables ____
(X) Base Neutrals ____
( ) Priority Pesticides/PCBs ____
( ) Priority Metals ____
( ) Pesticide/Herbicide ____
~~( ) DBCP~~ ____

Asbestos (Yes) (No)
( ) Ignitability ____
( ) Corrosivity ____
( ) Reactivity ____
( ) EP Toxicity ____
( ) Radiological: Total Radium ____ Radium 226 + 228
Gross Alpha ____ Gross Beta ____

INVOICE: Ruston ____ Baton Rouge ____
REPORT: Ruston ____ Baton Rouge ____

CHEMISTRY:

( ) Acidity	( ) Cyanide, T.	( ) Odor	( ) Sulphur-Sulfate
( ) Alkalinity	( ) Dissolved Oxy	( ) TOC	( ) Sulfide
( ) Bicarb. Alk.	( ) Flow (MGD)	( ) DOC	( ) Sulfate
( ) Carbonate Alk.	( ) Hardness	( ) Turb.(NTU)	( ) Solids-Tot.
( ) Fecal Coliform	( ) Oil & Grease	( ) pH	( ) Total Diss.
( ) Total Coliform	( ) Halogenated Phenols	( ) Phenols	( ) Total Susp.
( ) Temperature		( ) Total Phosphate	( ) Vola. Diss.
( ) BOD_5	( ) Ammonia-N	( ) Ortho. Phosphate	( ) Vola. Susp.
( ) Bromide	( ) Kjelhahl-TKN	( ) Settleable Solids	( ) Fixed Diss.
( ) Chloride	( ) Nitrate-N	( ) Silica	( ) Fixed Susp.
( ) COD	( ) Nitrite-N	( ) Spec. Conductance	( ) TOX
( ) Color	( ) Organic-N	( ) Surfactants	( ) Fluoride

ALS: (Non-Priority)

( ) Aluminum	( ) Calcium	( ) Lead	( ) Potassium	( ) Vanadium
( ) Antimony	X Chromium	( ) Lithium	( ) Selenium	( ) Zinc
( ) Arsenic	( ) Total	( ) Magnesium	( ) Silver	
( ) Barium	( ) Hexavalent	( ) Manganese	( ) Sodium	
( ) Beryllium	( ) Cobalt	( ) Mercury	( ) Strontium	
( ) Boron	( ) Copper	( ) Molybdenum	( ) Thallium	
( ) Cadmium	( ) Iron	( ) Nickel	( ) Tin	

Other Tests: PENTACHLOROPHENOL, PLUS Hg FOR "W"-PREFIX SAMPLES

Authorized by: ____________ Date: ____________

Signature: Mark E Thompson 10/29/87 Witnessed by: ____________

Samples received by: ____________ Date: ____________ Time: ____________

RECEIVED NOV 12 1987

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA
WOOD PRESERVE Co, IDABEL

Samplers: (signatures)

Number of Containers
18

Remarks:
P.O.# LB46

ANALYSES
TOTAL CHROMIUM,
PENTACHLOROPHENOL,
BASE NEUTRAL EXTRACTABLE

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1131	10/20/87	3 00 pm	✓		2-1.1-1.6	✓
1132	10/20/87	3 00 pm	✓		2-1.6-2.1	✓
1133	10/20/87	3 20 pm	✓		4B-1.15-1.65	✓
1134	10/20/87	3 20 pm	✓		4B-1.7-2.3	✓
1135	10/20/87	3 40 pm	✓		6-0.0-0.5	✓
1136	10/20/87	3 40 pm	✓		6-0.5-1.0	✓
1137	10/20/87	2 20 pm	✓		19-1.0-1.5	✓
1138	10/20/87	2 20 pm	✓		19-1.5-2.0	✓
1139	10/20/87	1 45 pm	✓		FIELD BLANK	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29/3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by: | Date/Time

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #	Project Name: RSA WOOD PRESERVE CO, IDABEL	Number of Containers	Remarks:
Samplers: (signatures)		18 (cont')	P.O.# LB 46

ANALYSES: TOTAL CHROMIUM; PENTACHLOROPHENOL; BASE NEUTRAL EXTRACTABL

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1140	10/19/87	10⁴⁵ AM	X		PZ4-0.0-0.5	✓
1141	10/19/87	3⁰⁰ pm	X		PZ1-0.0-0.5	✓
1142	10/20/87	5⁴⁰ pm	X		33-0.0-0.5	✓
1143	10/20/87	7⁰⁰ pm	X		BG-0.0-0.5	✓
1144	10/20/87	7⁰⁰ pm	X		BG-0.0-2.0	✓
1145	10/20/87	7⁰⁰ pm	X		BG-2.0-4.0	✓
1146	10/20/87	7⁰⁰ pm	X		BG-4.0-6.0	✓
1147	10/20/87	2⁰⁰ pm	X		29B-0.0-0.5	✓
1148	10/20	1⁴⁰	X		TRIP BLANK	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 / 3³⁰				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		
Received for Laboratory by:		Date/Time			

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #	Project Name: RSA WOOD PRESERVE CO, IDABEL	Number of Containers	Remarks:
Samplers: (signatures)		18	P.O. # LB46

ANALYSES: TOTAL CHROMIUM, PENTACHLOROPHENOL, BASE NEUTRAL EXTRACTABLES

EML Number	Date	Time	Composite	Grab	Station Location	Client Number						
1149	10/20/87	4 55 pm	x		32-0.0-2.0	✓						
1150	10/20/87	4 55 pm	x		32-2.0-3.8	✓						
1151	10/20/87	4 55	x		32-5.0-7.0	✓						
1152	10/20/87	4 55	x		32-7.0-9.0	✓						
1153	10/20/87	4 55	x		32-9.0-11.0	✓						
1154	10/20/87	12 30	x		40-0.0-2.0	✓						
1155	10/20/87	12 30	x		40-2.0-4.0	✓						
1156	10/20/87	12 20	x		40-4.3-4.8	✓						
1157	10/20/87	12 30	x		40-5.0-5.5	✓						

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thomason	10-29 / 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		
Received for Laboratory by:		Date/Time			

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA
WOOD PRESERVE CO, IDABEL, OK

Samplers: (signatures)

Number of Containers
18 (cont')

Remarks:
P.O# LB 4L

ANALYSES
TOTAL CHROMIUM
PENTACHLOROPHENOL
BASE NEUTRAL EXTRACTABL

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1158	10/29/87	6:00 pm	X		428-0.0-0.5	✓
1159	10/20/87	12:05	X		43-0.0-2.0	✓
1160	10/20/87	12:05	X		43-2.3-2.8	✓
1161	10/20/87	12:05	X		43-2.8-3.3	✓
1162	10/20/87	11:20	X		52-0.9-1.5	✓
1163	10/20/87	11:20	X		52-1.5-2.0	✓
1164	10/20/87	9:40	X		55-0.0-0.5	✓
1165	10/20/87	11:00	X		59-0.0-0.5	✓
1166	10/20/87	11:00	X		59-1.7-2.2	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 / 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by:

Date/Time

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA
WOOD PRESERVE CO., IDABEL OK

Samplers: (signatures)
Mark E. Thompson

Number of Containers
18

Remarks:
P.O. # L846

EML Number	Date	Time	Composite	Grab	Station Location	Client Number	Analyses
1167	10/20/87	10:30 AM	x	x	60B-0.0-0.5	✓	TOTAL CHROMIUM, PENTACHLOROPHENOL
1168	10/20/87	10:30 AM	x		60B-1.5-2.0	✓	BASE NEUTRAL EXTRACTABLE ↓
1169	10/21/87	12:25	x		W 38-0.0-0.5	✓	
1170	10/21/87	12:25	x		W 38-0.5-1.0	✓	ALL SAMPLE I.D.S PRECEEDED BY "W" ANALYZE FOR
1171	10/21/87	8:15 AM	x		W 6-0.8-1.3	✓	TOTAL CHROMIUM PENTACHLOROPHENOL
1172	10/21/87	8:15 AM	x		W 6-0.2-0.8	✓	BASE NEUTRAL EXTRACTABLE AND MERCURY
1173	10/21/87	8:55	x		W 11B-0.0-2.0	✓	
1174	10/21/87	8:55	x		W 11B-2.0-4.0	✓	↓
1175	10/21/87	8:55	x		W 11B-4.0-5.2	✓	

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E. Thompson	10/29 / 330				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by:	Date/Time

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA
WOOD PRESERVE CO., IDABEL, OK

Samplers: (signatures)
Mark E Thompson

Number of Containers

Remarks:
P.O.# LB46

ANALYSES
TOTAL CHROMIUM
PENTA CHLOROPHENOL
BASE NEUTRAL EXTRACTABL
MERCURY

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1176	10/21/87	8 55 AM	X	W	11B - 5.2-5.7	✓
1177	10/21/87	12 00	X	W	~~11B - 5.2~~ 13 - 0.8 - 1.3	✓
1178	10/21/87	12 00	X	W	~~11B-5.2-5.7~~ 13-0.3-0.8	✓
1179	10/21/87	11 25	X	W	15-0.2-0.5	✓
1180	10/21/87	11 25	X	W	15-0.5-1.0	✓
1181	10/21/87	11 55	X	W	15B-2.5-3.0	✓
1182	10/21/87	11 55	X	W	15B-3.0-3.5	✓
1183	10/21/87	9 30	X	W	23B-0.0-0.5	✓
1184	10/21/87	10 10	X	W	24-0.0-0.5	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29/ 3 30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by:

Date/Time

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. RSA　　Contractor EML　　Contract No. Nov/Dec 1987

Low Level ______　　Medium Level X

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO.	1,1-Dicholorethene								22	59-172
	Trichloroethene								24	62-137
	Chlorobenzene								21	60-133
	Toluene								21	59-139
	Benzene								21	66-142
B/N SMO SAMPLE NO. 01183	1,2,4-Trichlorobenzene	3.1	.51	8.51	258**	8.32	251**	3	23	38-107
	Acenaphthene		1.77	12.83	356**	13.12	366**	3	19	31-137
	2,4 Dinitrotoluene		1.19	9.98	283**	8.67	241**	16	47	28-89
	Di-n-Butylphthalate		3.78	21.93	585**	20.95	553**	54	47	29-135
	Pyrene		5.06	19.35	177	20.95	193	9	36	35-142
	N-Nitrosodi-n-Propylamine		.81	10.27	305**	10.70	319**	4	38	41-126
	1,4-Dichlorobenzene		.35	4.98	149	5.08	152	2	27	28-104
ACID SMO SAMPLE NO. 01183	Pentachlorophenol	6.2	46.46	92.10	736**	78.05	509**	36	47	17-109
	Phenol		2.19	42.07	643**	44.49	327**	65	35	26-90
	2-Chlorophenol		1.86	19.42	297**	18.48	268**	10	50	25-102
	4-Chloro-3-Methylphenol		4.39	30.37	419**	28.91	395**	6	33	26-103
	4-Nitrophenol		1.42	1.86	7	—	—	—	50	11-114
PEST SMO SAMPLE NO.	Lindane								50	46-127
	Heptachlor								31	35-130
	Aldrin								43	34-132
	Dieldrin								38	31-134
	Endrin								45	42-139
	4,4'-DDT								50	23-134

ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD:		RECOVERY:	
VOAs ____ out of ____;	outside QC limits	VOAs ____ out of ____;	outside QC limits
B/N ____ out of ____;	outside QC limits	B/N ____ out of ____;	outside QC limits
ACID ____ out of ____;	outside QC limits	ACID ____ out of ____;	outside QC limits
PEST ____ out of ____;	outside QC limits	PEST ____ out of ____;	outside QC limits

Comments: ** Matrix interferences with internal standard resulted in high recoveries, otherwise spiked recoveries are acceptable

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01183 (spike)
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr. Suite A Norman, OK 73072
Collected: 10-21-87 By: MT Time: 0930
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 12-02-87
Sample I.D.: W 23 B - 0.0-0.5
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 31.9 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	42	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	19.4	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	4.98	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	10.2	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	8.5	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	30.3	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

D26-RSA1183

Form - #6	Sample No. - 01183 (spike)	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	12.8	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	1.86	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	9.9	0.33
606-20-2		2,6-Dinitrotoluene	21.9	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	92	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	19	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	2.5	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
nalyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01183 (dup spike)
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W 23 B - 0.0-0.5
P. O. No.: ____________

Collected: 10-21-87 By: MT Time: 0930
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 12-02-87
Sample Type: Soil
Sample Volume or Weight: 31.9 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	44.5	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	18.5	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	5.0	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	10.7	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	8.32	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	28.9	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	13.0	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	ND	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	8.67	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	78	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	20.95	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	20	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.0	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

SOIL MATRIX SPIKE/MATRIX IKE DUPLICATE RECOVERY

Case No. RSA Contractor EML Contract No. Nov/Dec 1987

Low Level ____ Medium Level X

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO.	1,1-Dicholorethene								22	59-172
	Trichloroethene								24	62-137
	Chlorobenzene								21	60-133
	Toluene								21	59-139
	Benzene								21	66-142
B/N SMO SAMPLE NO.	1,2,4-Trichlorobenzene	3.3	ND	1.87	57				23	38-107
	Acenaphthene		.13	2.68	77				19	31-137
	2,4 Dinitrotoluene		ND	2.75	83				47	28-89
	Di-n-Butylphthalate		.82	2.88	61				47	29-135
	Pyrene		.74	2.05	40				36	35-142
	N-Nitrosodi-n-Propylamine		ND	3.56	107				38	41-126
01170	1,4-Dichlorobenzene		0.04	1.0	29				27	28-104
ACID SMO SAMPLE NO.	Pentachlorophenol	6.6	5.65	13.13	128				47	17-109
	Phenol		ND	4.32	65				35	26-90
	2-Chlorophenol		ND	5.13	77				50	25-102
	4-Chloro-3-Methylphenol		ND	5.98	91				33	26-103
01170	4-Nitrophenol		.07	0.08					50	11-114
PEST SMO SAMPLE NO.	Lindane								50	46-127
	Heptachlor								31	35-130
	Aldrin								43	34-132
	Dieldrin								38	31-134
	Endrin								45	42-139
	4,4'-DDT								50	23-134

ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD:
VOAs ____ out of ____ ; outside QC limits
B/N ____ out of ____ ; outside QC limits
ACID ____ out of ____ ; outside QC limits
PEST ____ out of ____ ; outside QC limits

RECOVERY:
VOAs ____ out of ____ ; outside QC limits
B/N ____ out of ____ ; outside QC limits
ACID ____ out of ____ ; outside QC limits
PEST ____ out of ____ ; outside QC limits

Comments: ____

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01170 (spike)

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W38 - 0.5-1.0
P. O. No.:

Collected: 10-21-87 By: MT Time: 1225
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-24-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	4.3	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	5.1	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	1.0	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	3.56	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	1.87	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	5.98	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6 Sample No. - 01170 (spike)

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	2.7	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	0.08	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	2.75	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	13.7	1.60
85-01-8		Phenanthrene	0.60	0.33
120-12-7		Anthracene	0.40	0.33
84-74-2		Di-n-Butylphthalate	2.88	0.33
206-44-0		Fluoranthene	1.4	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	2.5	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.4	0.33
218-01-9		Chrysene	0.70	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	*0.37	0.33
207-08-9		Benzo(k)Fluoranthene	*0.37	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.
 * - Benzo(b) and Benzo(k) Fluoranthene coeluted.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. RSA Contract Laboratory EML Contract No. Nov/Dec. 1987

Low ____ Medium X

SMO TRAFFIC NO.	VOLATILE			SEMI-VOLATILE								PESTICIDE
	TOLUENE-D8 (50-160)	BFB (50-160)	1,2 DICHLOROETHANE-D4 (50-160)	NITROBENZENE-D5 (20-140)	2-FLUOROBIPHENYL (20-140)	TERPHENYL-D14 (20-150)			PHENOL-D5 (20-140)	2-FLUOROPHENOL (20-140)	2,4,6 TRIBROMOPHENOL (10-140)	** DIBUTYLCHLORENDATE (20-150)
01146				55	45	73			57		85	
01147				67	52	75			37		61	
01148				64	59	82			67		101	
01149				39	45	51			20		36	
01150				42	47	55			25		67	
01151				92	81	115			100		125	
01152				117	90	119			110		130	
01153				120	115	119			103		127	
01154				45	44	73			64		125	
01155				112	38	56			47		130	
01156				131	63	55			100		74	
01157				105	99	47			108		79	
01158				113	85	40			112		81	
01159				91	46	115			41		130	
01160				73	47	35			70		135	
01161				109	55	118			112		105	
01162				71	48	57			97		112	
01163				91	66	100			47		88	
01164				90	93	88			102		115	
01165				78	79	60			59		109	
01166				71	98	93			71		113	
01167				100	93	85			93		89	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: — out of — ; outside of QC limits
Semi-Volatiles: 0 out of 110 ; outside of QC limits
Pesticides: — out of — ; outside of QC limits

Comments: Surrogate recoveries are acceptable

FORM II

Rev: 9/84

SOIL SURROGATE PERCE... RECOVERY SUMMARY

EML# ______ CLIENT RSA ______ CONTRACT LABORATORY EML ______ DATE Nov/Dec 1987

	Volatile			Semi-Volatile						Pesticide		
EML#	Toluene D8 (90-119)	BFB (83-124)	1,2-Dichloroethane-D_4 (77-120)	Nitrobenzene D8 (41-120)	2-Fluoro-biphenyl (44-118)	Terphenyl D-14 (33-120)	Phenol-D8 (19-103)	2-Fluoro phenol (23-121)	2,4,6-Tri-bromophenol (10-130)	2,4,5-T (58-130)	Aldrin (75-110)	Dibutyl Chlorendate (45-150)
1131				131	97	124	110		130			
1132				105	45	108	75		125			
1133				45	15 *	21	10 *		34			
1134				105	75	122	78		110			
1135				63	18 *	28	9 *		40			
1136				99	55	110	77		120			
1137				41	14 *	23	9 *		23			
1138				125	120	122	100		129			
1139				45	45	81	50		106			
1140				41	62	111	41		18			
1141				56	10 *	28	56		45			
1142				47	74	15	64		24			
1143				29	54	16 *	41		24			
1144				48	79	21 *	62		33			
1145				140	71	134	67		133			

* Values are outside of contract required QC limits
** Advisory limits only

Volatiles: – out of – : Outside of QC limits
Semi-Volatiles: 9* out of 75 : outside of QC limits
Pesticides: – out of – : outside of QC limits

Comments: Surrogate recoveries are acceptable; * internal standard had poor recoveries - matrix interferences and adsorption to soil.

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. ______ Contract Laboratory EML Contract No. Nov/Dec 1987

Low ______ Medium X

EPA Traffic No.	VOLATILE: Toluene-D8 (30-100)	VOLATILE: BFB (50-100)	VOLATILE: 1,2 Dichloro-ethane-D4 (50-160)	SEMI-VOLATILE: Nitro-benzene-D5 (20-140)	SEMI-VOLATILE: 2-Fluoro-biphenyl (20-140)	SEMI-VOLATILE: Terphenyl-D14 (20-130)	SEMI-VOLATILE	SEMI-VOLATILE	SEMI-VOLATILE: Phenol-D5 (20-140)	SEMI-VOLATILE: 2-Fluoro-phenol (20-140)	SEMI-VOLATILE: 2,4,6 Tribromo-phenol (10-140)	PESTICIDE: Dibutyl-chlorendate ** (20-150)
01168				140	110	85			96		104	
01169				141	119	117			108		113	
01170				140	139	142*			79		97	
01171				140	140	135			99		57	
01172				92	100	101			36		65	
01173				130	50	86			46		86	
01174				107	129	117			29		121	
01175				75	116	96			38		112	
01176				140	122	130			105		140	
01177				84	116	125			42		99	
01178				58	89	32			32		73	
01179				110	111	135*			46		86	
01180				100	105	42			34		85	
01181				130	126	110			49		140	
01183				66	92	51			61		92	
01184				135	140	129			57		115	
01182				85	132	133*			51		118	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: — out of — ; outside of QC limits

Semi-Volatiles: 3 out of 85 ; outside of QC limits

Pesticides: — out of — ; outside of QC limits

Comments: Surrogate recoveries are acceptable

FORM II

Rev: 9/84

WATER SURROGATE PERCENT RECOVERY SUMMARY

EML#______ CLIENT RSA CONTRACT LABORATORY EML DATE Nov/Dec 1987

	Volatile			Semi-Volatile						Pesticide		
EML#	Toluene D8 (90-119)	BFB (83-124)	1,2-Dichloro ethane-D_4 (77-120)	Nitrobenzene D8 (41-120)	2-Fluoro-biphenyl (44-118)	Terphenyl D-14 (33-120)	Phenol-D8 (19-103)	2-Fluoro phenol (23-121)	2,4,6-Tri-bromophenol (10-130)	2,4,5-T (58-130)	Aldrin (75-110)	Dibutyl Chlorendate (45-150)
1649				101	103	127*	42		51			
1650				40	70	93	19		52			
1651				99	104	55	35		42			
1652				52	78	119	40		65			
1653				42	52	57	20		35			
1654				59	62	90	30		37			
1655				53	55	95	18		89			

* Values are outside of contract required QC limits
** Advisory limits only

Volatiles: — out of — : Outside of QC limits
Semi-Volatiles: 1 out of 35 : outside of QC limits
Pesticides: — out of — : outside of QC limits

Comments: Surrogate recoveries are acceptable

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA
WOOD PRESERVE CO., IDABEL OK

Number of Containers: 18

Samplers: (signatures) Mark E Thompson

Remarks:
P.O. # L846

EML Number	Date	Time	Composite	Grab	Station Location	Client Number						Remarks
1167	10/20/87	10:30 AM	X	X	60B-0.0-0.5	✓						ANALYSES TOTAL CHROMIUM, PENTACHLOROPHENOL
1168	10/20/87	10:30 AM	X		60B-1.5-2.0	✓						BASE NEUTRAL EXTRACTABL
1169	10/21/87	12:25	X		W 3B-0.0-0.5	✓						ALL SAMPLE I.D.S
1170	10/21/87	12:25	X		W 3B-0.5-1.0	✓						PRECEEDED BY "W" ANALYZE FOR
1171	10/21/87	8:15 AM	X		W 6-0.8-1.3	✓						TOTAL CHROMIUM PENTACHLOROPHENOL
1172	10/21/87	8:13 AM	X		W 6-0.2-0.8	✓						BASE NEUTRAL EXTRACTABL AND MERCURY
1173	10/21/87	8:53	X		W 11B-0.0-2.0	✓						
1174	10/21/87	8:35	X		W 11B-2.0-4.0	✓						
1175	10/21/87	8:55	X		W 11B-4.0-5.2	✓						

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 / 330				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by: | Date/Time

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #	Project Name: RSA WOOD PRESERVE CO., IDABEL, OK	Number of Containers	Remarks: P.O.# LB46
Samplers: (signatures) Mark E Thompson			ANALYSES: TOTAL CHROMIUM; PENTA CHLOROPHENOL; BASE NEUTRAL EXTRACTABLE; MERCURY

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1176	10/21/87	8:55 AM	X		W 11B - 5.2-5.7	✓
1177	10/21/87	12:00	X		W 13 - 0.8 - 1.3	✓
1178	10/21/87	12:00	X		W 13 - 0.3 - 0.8	✓
1179	10/21/87	11:25	X		W 15 - 0.2 - 0.5	✓
1180	10/21/87	11:25	X		W 15 - 0.5 - 1.0	✓
1181	10/21/87	11:55	X		W 15B - 2.5 - 3.0	✓
1182	10/21/87	11:55	X		W 15B - 3.0 - 3.5	✓
1183	10/21/87	9:30	X		W 23B - 0.0 - 0.5	✓
1184	10/21/87	10:10	X		W 24 - 0.0 - 0.5	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by: | Date/Time

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #	Project Name: RSA WOOD PRESERVE CO, IDABEL, OK	Number of Containers 18 (cont')	Remarks: P.O. # LB 42
Samplers: (signatures)			

EML Number	Date	Time	Composite	Grab	Station Location	Client Number	ANALYSES: TOTAL CHROMIUM / PENTACHLOROPHENOL / BASE NEUTRAL EXTRACTABL
1158	10/20/87	6:00 pm	X		428-0.0-0.5	✓	
1159	10/20/87	12:05	X		43-0.0-2.0	✓	
1160	10/20/87	12:05	X		43-2.3-2.8	✓	
1161	10/20/87	12:05	X		43-2.8-3.3	✓	
1162	10/20/87	11:20	X		52-0.9-1.5	✓	
1163	10/20/87	11:20	X		52-1.5-2.0	✓	
1164	10/20/87	9:40	X		55-0.0-0.5	✓	
1165	10/20/87	11:00	X		59-0.0-0.5	✓	
1166	10/20/87	11:00	X		59-1.7-2.2	✓	

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 / 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		
Received for Laboratory by:		Date/Time			

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #	Project Name: RSA WOOD PRESERVE CO, IDABEL	Number of Containers	Remarks:
Samplers: (signatures)		18	P.O. # LB46

ANALYSES: TOTAL CHROMIUM; PENTACHLOROPHENOL; BASE NEUTRAL EXTRACTABLES

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1149	10/20/87	4 55 pm	X		32-0.0-~~2.0~~ 2.0	✓
1150	10/20/87	4 55 pm	X		32-2.0-~~4.0~~ 3.8	✓
1151	10/20/87	4 55	X		32-~~4.0-6.0~~ 5.0-7.0	✓
1152	10/20/87	4 55	X		32-7.0-9.0	✓
1153	10/20/87	4 55	X		32-9.0-11.0	✓
1154	10/20/87	12 30	X		~~32~~ 40-0.0-2.0	✓
1155	10/20/87	12 30	X		40-2.0-4.0	✓
1156	10/20/87	12 30	X		40-4.3-4.8	✓
1157	10/20/87	12 30	X		40-5.0-5.5	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10-29 / 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		
Received for Laboratory by:		Date/Time			

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA
WOOD PRESERVE CO, IDABEL

Samplers: (signatures)

Number of Containers: 18 (cont')

Remarks: P.O. # LB46

ANALYSES: TOTAL CHROMIUM; PENTACHLOROPHENOL; BASE NEUTRAL EXTRACTABLE

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1140	10/19/87	1045 AM	X		PZ4-0.0-0.5	✓
1141	10/19/87	3:00 pm	X		PZ1-0.0-0.5	✓
1142	10/20/87	5:40 pm	X		33-0.0-0.5	✓
1143	10/20/87	7:00 pm	X		BG-0.0-0.5	✓
1144	10/20/87	7:00 pm	X		BG-0.0-2.0	✓
1145	10/20/87	7:00 pm	X		BG-2.5-4.0	✓
1146	10/20/87	7:00 pm	X		BG-4.0-6.0	✓
1147	10/20/87	2:00 pm	X		29B-0.0-0.5	✓
1148	10/20	1:40	X		TRIP BLANK	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 / 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		
Received for Laboratory by:		Date/Time			

RECEIVED NOV 1 2 1987

EnviroMed Laboratories, Inc.
Chain-of-Custody Document

Project #

Project Name: RSA WOOD PRESERVE Co, IDABEL

Number of Containers: 18

Samplers: (signatures)

Remarks: P.O.# LB46

ANALYSES: TOTAL CHROMIUM, PENTACHLOROPHENOL, BASE NEUTRAL EXTRACTABLE

EML Number	Date	Time	Composite	Grab	Station Location	Client Number
1131	10/20/87	3 00 pm	✓		2-1.1-1.6	✓
1132	10/20/87	3 00 pm	✓		2-1.6-2.1	✓
1133	10/20/87	3 20 pm	✓		4B-1.15-1.65	✓
1134	10/20/87	3 20 pm	✓		4B-1.7-2.3	✓
1135	10/20/87	3 40 pm	✓		6-0.0-0.5	✓
1136	10/20/87	3 40 pm	✓		6-0.5-1.0	✓
1137	10/20/87	2 20 pm	✓		19-1.0-1.5	✓
1138	10/20/87	2 20 pm	✓		19-1.5-2.0	✓
1139	10/20/87	1 40 pm	✓		FIELD BLANK	✓

Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Mark E Thompson	10/29 / 3:30				
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time	Received by:	Relinquished by:	Date/Time	Received by:
Relinquished by:	Date/Time		Remarks: (shipping instructions)		

Received for Laboratory by: | Date/Time

EML #	CLIENT		SOURCE	COLLECTED Date	COLLECTED Time	Collected By	Logged by
1132 ✓	Robert	Schornick	2-1.6-2.1 ok	''	''	MT	LW
1133 ✓	''	''	4B-1.15-1.65	''	1520	''	''
1134 ✓	''	''	4B-1.7-2.3 ok	''	''	''	''
1135 ✓	''	''	6-0.0-0.5	''	1540	''	''
1136 ✓	''	''	6-0.5-1.0 ok	''	''	''	''
1137 ✓	''	''	19-1.0-1.5	''	1420	''	''
1138 ✓	''	''	19-1.5-2.0 -ok	''	''	''	''
1139	''	''	Field Blank 2.7ppm check with	''	1340	''	''
do not analyze 1140	''	''	P24-0.0-0.5	10/19/87	1045	''	''
do not analyze 1141	''	''	PZ1-0.0-0.5	''	1500	''	''
1142 ✓	''	''	33-0.0-0.5	10/20/87	1740	''	''
1143 ✓	''	''	BG-0.0-0.5	''	1900	''	''
1144 ✓	''	''	BG-0.0-2.0	''	''	''	''
1145 ✓	''	''	BG-2.0-4.0	''	''	''	''
1146 ✓	''	''	BG-4.0-6.0	''	''	''	''
1147 ✓	''	''	29B-0.0-0.5	''	1400	''	''
1148 ✓	''	''	Trip Blank water	''	1340	''	''
1149 ✓	''	''	32-0.0-2.0	''	1655	''	''
1150 ✓	''	''	32-2.0-3.8	''	1655	''	''
1151 ✓	''	''	32-5.0-7.0	''	''	''	''
1152 ✓	''	''	32-7.0-9.0	''	''	''	''
1153 ✓	''	''	32-9.0-11.0 cont	''	''	''	''
1154 ✓	''	''	40-0.0-2.0	''	1230	''	''
1155 ✓	''	''	40-2.0-4.0	''	''	''	''
1156 ✓	''	''	40-4.3-4.8	''	''	''	''
1157 ✓	''	''	40-5.0-5.5 ok	''	''	''	''
1158 ✓	''	''	42B-0.0-0.5 ok	''	1800	''	''
1159 ✓	''	''	43-0.0-2.0	''	1205	''	''
1160 ✓	''	''	43-2.3-2.8	''	''	''	''
1161 ✓	''	''	43-2.8-3.3 cont	''	''	''	''
1162 ✓	''	''	52-0.9-1.5	''	1120	''	''
1163 ✓	''	''	52-1.5-2.0	''	''	''	''

Date	Eml#	Client		Source	Collected Date	Collected Time	Collected By	Logged By
10/30/87	1164 ✓	Roberts	Schornick	55-0.0-0.5 ok	10/20/87	0940	MT	[illegible]
✓	~~1165~~ ✓	"	"	~~59-0.0-0.5~~	"	1100	"	"
✓	~~1166~~ ✓	"	"	~~59-1.0-2.0~~ ok	"	"	"	"
✓	~~1167~~	"	"	~~60B-0.0-0.5~~	"	1030	"	"
✓	~~1168~~	"	"	~~60B-1.5-2.0~~	"	"	"	"
✓	~~1169~~ ✓	"	"	Hg → ~~W28-0.0-0.5~~	10/21/87	1225	"	"
✓	~~1170~~ ✓	"	"	Hg — ~~W28-0.5-1.0 cont~~	"	"	"	"
✓	1171 ✓	"	"	Hg — W6-0.8-1.3	"	0815	"	"
✓	1172 ✓	"	"	Hg — W6-0.2-0.8 cont	"	"	"	"
✓	1173	"	"	Hg — ~~W11B-0.0-2.0~~	"	0855	"	"
✓	1174	"	"	Hg — ~~W11B-2.0-4.0~~	"	"	"	"
✓	1175	"	"	Hg — ~~W11B-4.0-5.2~~	"	"	"	"
✓	1176 ✓	"	"	Hg — ~~W11B-5.2-5.9 cont~~	"	"	"	"
✓	~~1177~~	"	"	Hg — ~~W13-0.8-1.3 cont~~	"	1200	"	"
✓	~~1178~~	"	"	Hg — ~~W13-0.3-0.8~~	"	"	"	"
✓	1179	"	"	Hg — W15-0.2-0.5	"	1125	"	"
✓	1180	"	"	Hg — W15-0.5-1.0	"	"	"	"
✓	1181	"	"	Hg — W15B-2.5-3.0	"	1155	"	"
✓	1182	"	"	Hg — W15B-3.0-3.5 -ok	"	"	"	"
✓	~~1183~~	"	"	Hg — ~~W23B-0.0-0.5~~	"	0930	"	"
[illegible]	1184	"	"	Hg — [illegible]-0.5 ok	"	1010	"	"

APPENDIX D-5

GROUNDWATER QUALITY DATA REPORT

October, 1987

ORGANIC DATA

October, 1987

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA 70806
(504) 928-0232
FACSIMILE #:
504-926-2108

DECEMBER 16, 1987

SAMPLE DATA PACKAGE

ANALYTICAL SERVICES FOR

ROBERTS/SCHORNICK AND ASSOCIATES

(Wood Preserving Company Project)

Prepared for:

Roberts/Schornick and Associates
860 Copperfield Drive, Suite A
Norman, Oklahoma 73072

Submitted by:

EnviroMed Laboratories, Inc.

Donald Lee Perry

Donald Lee Perry, Ph.D.
Technical Director

TABLE OF CONTENTS

ENVIROMED
LABORATORIES, INC.

1874 DALLAS DRIVE
BATON ROUGE, LA 70806
(504) 928-0232
FACSIMILE #:
504-926-2108

December 16, 1987

Mr. Mark Thompson
ROBERTS/SCHORNICK & ASSOCIATES
860 Copperfield Dr., Suite A
Norman, Oklahoma 73072

RE: Analytical Results for RSA Wood Preserve Co. Project (P. O. #LB46)

Dear Mr. Thompson:

On November 5, 1987, EnviroMed Laboratories (EML) received a total of 54 samples (EML #01131 to 01184) collected by RSA personnel on October 19-20, 1987. Included in the samples were a water field blank (#01139) and a water trip blank (#01148). The other 52 samples were soil samples. On November 12, 1987, EML received a total of 7 water samples (EML #01649 to 01655) including field blank (#01654) and trip blank (01655).

All samples were analyzed for pentachlorophenol (PCP), base-neutral extractable compounds (BN), and total chromium. Samples with a RSA prefix of "W" in the Sample I.D. were also for mercury (see chain-of-custody forms).

Sample Preparation and Analysis

All soil samples were extracted using EPA Method 3550 (sonication of soil samples). The water samples, including the trip and field blanks, were extracted using EPA Method 3520 (continuous liquid/liquid extractors). The respective concentrated organic extracts from both the water and soil samples were quantitated for the specified organic compounds using EPA Method 8270. The EPA Methods listed above are described in Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, EPA SW-846, 2nd Edition.

Results and Discussion

The respective Organic Analyses Report Forms list the concentrations of PCP and BN compounds detected in each of the soil or water samples. Selected samples were chosen to analyze in duplicate and spiked duplicates to determine the degree of interferences of GC/MS quantitation in the employed analytical procedures. The following samples were analyzed as follows:

1. EML #01178 in duplicate
2. EML #01165 in duplicate
3. EML #01150 in spiked duplicate
4. EML #01160 in spiked duplicate
5. EML #01183 in spiked duplicate
6. EML #01170 in one spiked replicate

The results of the duplicate analyses (samples #01165 and 01178) indicated good precision within each analysis set except for PCP and bis(2-Ethylhexyl)Phthalate in sample #01178. The reason for these differences in compound concentrations is that the internal quantitation standard was adversely affected by the sample matrix. The large amount of these two compounds detected in each sample also made the duplicate differences greater than those differences observed for the other compounds detected in the two samples (01165 and 01178).

The Soil Matrix Spike/Matrix Spike Duplicate Recovery Forms list the results of spiked sample sets. The spike and duplicate spike analyses generally were good, especially in those samples containing small amounts of organic compounds. Again, the matrix interferences on the internal quantitation standards led to spiked recoveries from over 100% to 500% for some compounds. This high positive bias was only observed in those samples already containing high levels of organics (i.e., PCP and BN's); consequently the accuracy of the method becomes greater at low concentration levels for PCP and the base/neutral extractable compounds. The relative percent differences between respective sets (01150, 01160, 01183) were good. These observations confirm that the reproducibility of the extraction and GC/MS quantitation methodologies for this project is good.

The original chain-of-custody forms were sent to RSA with the metals data (from the Ruston Laboratory). Chain-of-custody forms included in this report are for reference purposes only. If you have any questions concerning the data in these reports, please call me. EML is happy to be of service to you in the completion of this project.

Sincerely,

Donald Lee Perry

Donald Lee Perry, Ph.D.
Technical Director

DLP/clc

enclosure

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1131
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr. Suite A Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1500
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-11-87
Sample I.D.: 2-1.1-1.6
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 34.4 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample I.D.: 1131	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	0.53	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.1	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1132

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 2 - 1.6-2.1
P. O. No.:

Collected: 10-20-87 By: MT Time: 1500
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-11-87
Sample Type: Soil
Sample Volume or Weight: 30.4 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

NOD 12B

2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1133
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 4B - 1.15-1.65
P. O. No.:

Collected: 10-20-87 By: MT Time: 1520
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-12-87
Sample Type: Soil
Sample Volume or Weight: 30.1gms;1/10 dil

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	130	1.60
85-01-8		Phenanthrene	5.8	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

* - Detection limits raised 10 x due to sample matrix and dilution.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1134
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr. Collected: 10-20-87 By: MT Time: 1520
Suite A Received: 11-05-87 By: RC Time: 0930
Norman, OK 73072 GC/MS Analysis Date: 11-11-87
Sample I.D.: 4B - 1.7-2.3 Sample Type: Soil
P. O. No.: Sample Volume or Weight: 33 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6 Sample I.D.: 1134

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	2.9	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1135
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 6 - 0.0-0.5
P. O. No.:

Collected: 10-20-87 By: MT Time: 1540
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-12-87
Sample Type: Soil
Sample Volume or Weight: 35gms;1/10 dil

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	31.3	1.60
85-01-8		Phenanthrene	**ND	0.33
120-12-7		Anthracene	3.8	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	**ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	**ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.71	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

* - Detection limits raised 10 x due to sample matrix and dilution.
** - Trace amount detected.

Brahm Bakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1136
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 6 - 0.5-1.0
P. O. No.:

Collected: 10-20-87 By: MT Time: 1540
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-11-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gms

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	1.6	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 1137
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Collected: 10-20-87 By: MT Time: 1420
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-12-87
Sample I.D.: 19 - 1.0-1.5
Sample Type: Soil
P. O. No.:
Sample Volume or Weight: 30.3gms; 1/10 di

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6 Sample I.D.: 1137

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	ND	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	ND	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Ed. 1982.

* Detection limits raised 10 X due to sample matrix and dilution.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01165 (duplicate) Page 1 of 2
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 59 - 0.0-0.5 (DUP)
P. O. No.: ______

Collected: 10-20-87 By: MT Time: 0940
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 12-04-87
Sample Type: Soil
Sample Volume or Weight: 30 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample No. - 01165 (duplicate)	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	ND	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	295	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	9.0	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	82	0.33
5-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	**460	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.
 * - Detection limit raised 10 x due to sample matrix and dilution.
** - Matrix interference with internal standard.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Bakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01178 (duplicate)

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: W 13 - 0.3-0.8 (DUP)
P. O. No.:

Collected: 10-21-87 By: MT Time: 1200
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 12-04-87
Sample Type: Soil
Sample Volume or Weight: 31.2 gm;1/100 dil

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	NA	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	NA	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	NA	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	NA	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample No. - 01178 (duplicate)	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	4.8	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	ND	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	4.8	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	440	1.60
85-01-8		Phenanthrene	32	0.33
120-12-7		Anthracene	11	0.33
84-74-2		Di-n-Butylphthalate	ND	0.33
206-44-0		Fluoranthene	87	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	82	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	400	0.33
218-01-9		Chrysene	19	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	**5.8	0.33
207-08-9		Benzo(k)Fluoranthene	**5.8	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.
* - Detection limit raised 10 x due to sample matrix and dilution.
** - Benzo(b) and Benzo(k) Fluoranthene coeluted.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. RSA Contractor EML Contract No. Nov/Dec 1987

Low Level ______ Medium Level X

FRACTION	COMPOUND	CONC. SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA	1,1-Dicholorethene								22	59-172
SMO	Trichloroethene								24	62-137
SAMPLE NO.	Chlorobenzene								21	60-133
	Toluene								21	59-139
	Benzene								21	66-142
B/N	1,2,4-Trichlorobenzene	3.33	ND	5.95	178**	6.09	182**	2	23	38-107
SMO	Acenaphthene	3.33	16.83	11.63	156	11.98	145	6	19	31-137
SAMPLE NO.	2,4 Dinitrotoluene	3.33	1.70	4.91	96	4.26	77	22	47	28-89
	Di-n-Butylphthalate	3.33	ND	10.71	321**	11.30	339**	5.4	47	29-135
	Pyrene	3.33	34.89	15.91	—	17.16	—	-	36	35-142
01150	N-Nitrosodi-n-Propylamine	3.33	ND	19.40	580**	16.08	480**	19	38	41-126
	1,4-Dichlorobenzene	3.33	ND	4.75	142	4.69	140	1	27	28-104
ACID	Pentachlorophenol	6.66	187.11	80.64	—	79.69	—	-	47	17-109
SMO	Phenol		ND	11.94	165**	12.65	189**	14	35	26-90
SAMPLE NO.	2-Chlorophenol		ND	13.35	195**	13.35	200**	2.5	50	25-102
	4-Chloro-3-Methylphenol		ND	16.96	254**	16.93	254**	0	33	26-103
01150	4-Nitrophenol		13.90	3.41	—	3.61	—	-	50	11-114
PEST	Lindane								50	46-127
SMO	Heptachlor								31	35-130
SAMPLE NO.	Aldrin								43	34-132
	Dieldrin								38	31-134
	Endrin								45	42-139
	4,4'-DDT								50	23-134

ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST ____ out of ____; outside QC limits

RECOVERY: VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST ____ out of ____; outside QC limits

Comments: ** Matrix interferences with internal standard resulted in high recoveries, otherwise spiked recoveries are acceptable

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01150 (spike)
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 32 - 2.0-3.8
P. O. No.:

Collected: 10-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 0100
GC/MS Analysis Date: 11-16-87
Sample Type: Soil
Sample Volume or Weight: 30 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	12.6	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	13.3	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	ND	0.33
100-51-6	Benzyl Alcohol	ND	0.33
5-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	19.4	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	6.0	0.33
01-20-3	Naphthalene	6.5	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	16.9	0.33
91-57-6	2-Methylnaphthalene	4.4	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
08-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

Form - #6	Sample No. - 01150 (spike)	Page 2 of 2

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	11.9	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	3.6	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	4.9	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	6.5	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	79.6	1.60
85-01-8		Phenanthrene	22	0.33
120-12-7		Anthracene	4.2	0.33
84-74-2		Di-n-Butylphthalate	10.7	0.33
206-44-0		Fluoranthene	11	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	17.1	0.33
5-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	17	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.
* - Detection limit raised 10 x due to sample matrix and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01150 (dup spike)
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 32 - 2.0-3.8
P. O. No.: ______________

Collected: 11-20-87 By: MT Time: 1655
Received: 11-04-87 By: RC Time: 1000
GC/MS Analysis Date: 11-16-87
Sample Type: Soil
Sample Volume or Weight: 30 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	11.94	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	13.4	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	4.7	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	16	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	5.9	0.33
01-20-3	Naphthalene	6.6	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	16.9	0.33
91-57-6	2-Methylnaphthalene	4.3	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg*
83-32-9		Acenaphthene	11.9	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	3.4	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	4.2	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	6.1	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	80.6	1.60
85-01-8		Phenanthrene	21	0.33
120-12-7		Anthracene	4.1	0.33
84-74-2		Di-n-Butylphthalate	11.3	0.33
206-44-0		Fluoranthene	10.4	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	16	0.33
35-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	ND	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.
* - Detection limit raised 10 x due to sample matrix and dilution.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. RSA Contractor EML Contract No. Nov/Dec 1987

Low Level ____ Medium Level X

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA	1,1-Dicholorethene								22	59-172
SMO	Trichloroethene								24	62-137
SAMPLE NO.	Chlorobenzene								21	60-133
	Toluene								21	59-139
	Benzene								21	66-142
B/N	1,2,4-Trichlorobenzene	3.3	ND	2.38	72	4.26	129	57	23	38-107
SMO	Acenaphthene		0.17	2.19	61	4.06	117	63	19	31-137
SAMPLE NO.	2,4 Dinitrotoluene		ND	2.04	62	3.70	112	57	47	28-89
	Di-n-Butylphthalate		.11	2.25	65	3.04	92	35	47	29-135
	Pyrene		.07	2.32	68	4.34	121	56	36	35-142
	N-Nitrosodi-n-Propylamine		ND	0.10	3	0.27	8	90	38	41-126
01160	1,4-Dichlorobenzene		0.03	1.73	52	2.73	81	43	27	28-104
ACID	Pentachlorophenol	6.6	0.41	15.36	226	30.73	459	68	47	17-109
SMO	Phenol		ND	1.37	21	2.47	37	55	35	26-90
SAMPLE NO.	2-Chlorophenol		ND	5.79	87	8.79	133	42	50	25-102
	4-Chloro-3-Methylphenol		ND						33	26-103
01160	4-Nitrophenol		0.11	1.86	28	0.04	6	129	50	11-114
PEST	Lindane								50	46-127
SMO	Heptachlor								31	35-130
SAMPLE NO.	Aldrin								43	34-132
	Dieldrin								38	31-134
	Endrin								45	42-139
	4,4'-DDT								50	23-134

ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD:
VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST ____ out of ____; outside QC limits

RECOVERY:
VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST ____ out of ____; outside QC limits

Comments: ____

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01160 (spike)
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 43 - 2.3-2.8
P. O. No.:

Collected: 10-20-87 By: MT Time: 1205
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 11-24-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	1.4	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	5.8	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	1.7	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	0.1	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	2.3	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	ND	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	2.1	0.33
51-28-5		2,4-Dinitrophenol	NA	1.60
100-02-7		4-Nitrophenol	1.9	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	2.0	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	15.4	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	2.3	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	2.0	0.33
85-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	135	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #6

EML SAMPLE NO. 01160 (dup spike)

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: 43 - 2.3-2.8
P. O. No.:

Collected: 10-20-87 By: MT Time: 1205
Received: 11-05-87 By: RC Time: 0930
GC/MS Analysis Date: 12-02-87
Sample Type: Soil
Sample Volume or Weight: 30.1 gm

CAS Number	Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
62-75-9	N-Nitrosodimethylamine	ND	0.33
108-95-2	Phenol	2.47	0.33
62-53-3	Aniline	ND	0.33
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.33
95-57-8	2-Chlorophenol	8.8	0.33
541-73-1	1,3-Dichlorobenzene	ND	0.33
106-46-7	1,4-Dichlorobenzene	2.7	0.33
100-51-6	Benzyl Alcohol	ND	0.33
95-50-1	1,2-Dichlorobenzene	ND	0.33
95-48-7	2-Methylphenol	NA	0.33
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.33
106-44-5	4-Methylphenol	NA	0.33
621-64-7	N-Nitroso-Di-n-Propylamine	0.27	0.33
67-72-1	Hexachloroethane	ND	0.33
98-95-3	Nitrobenzene	ND	0.33
78-59-1	Isophorone	ND	0.33
88-75-5	2-Nitrophenol	NA	0.33
105-67-9	2,4-Dimethylphenol	ND	0.33
65-85-0	Benzoic Acid	NA	1.60
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.33
120-83-2	2,4-Dichlorophenol	NA	0.33
120-82-1	1,2,4-Trichlorobenzene	4.3	0.33
01-20-3	Naphthalene	ND	0.33
106-47-8	4-Chloroaniline	ND	0.33
87-68-3	Hexachlorobutadiene	ND	0.33
59-50-7	4-Chloro-3-Methylphenol	ND	0.33
91-57-6	2-Methylnaphthalene	ND	0.33
77-47-4	Hexachlorocyclopentadiene	ND	0.33
88-06-2	2,4,6-Trichlorophenol	NA	0.33
95-95-4	2,4,5-Trichlorophenol	NA	1.60
91-58-7	2-Chloronaphthalene	ND	0.33
88-74-4	2-Nitroaniline	ND	1.60
131-11-3	Dimethyl Phthalate	ND	0.33
208-96-8	Acenaphthylene	ND	0.33
99-09-2	3-Nitroaniline	ND	1.60

CAS Number		Compound	Concentration mg/Kg (ppm)	Method Det Lmt. mg/Kg
83-32-9		Acenaphthene	4.1	0.33
51-28-5		2,4-Dinitrophenol	3.7	1.60
100-02-7		4-Nitrophenol	NA	1.60
32-64-9		Dibenzofuran	ND	0.33
121-14-2		2,4-Dinitrotoluene	3.7	0.33
606-20-2		2,6-Dinitrotoluene	ND	0.33
84-66-2		Diethylphthalate	ND	0.33
7005-72-3		4-Chlorophenyl-phenylether	ND	0.33
86-73-7		Fluorene	ND	0.33
100-01-6		4-Nitroanialine	ND	1.60
534-52-1		4,6-Dinitro-2-Methylphenol	NA	1.60
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.33
101-55-3		4-Bromophenyl-phenylether	ND	0.33
118-74-1		Hexachlorobenzene	ND	0.33
87-86-5	(PCP)	Pentachlorophenol	30.7	1.60
85-01-8		Phenanthrene	ND	0.33
120-12-7		Anthracene	ND	0.33
84-74-2		Di-n-Butylphthalate	3.0	0.33
206-44-0		Fluoranthene	ND	0.33
92-87-5		Benzidine	ND	0.33
129-00-0		Pyrene	4.0	0.33
35-68-7		Butylbenzylphthalate	ND	0.33
91-94-1		3,3,-Dichlorobenzidine	ND	0.66
56-55-3		Benzo(a)Anthracene	ND	0.33
117-81-7		bis(2-Ethylhexyl)Phthalate	3.0	0.33
218-01-9		Chrysene	ND	0.33
117-84-0		Di-n-Octyl Phthalate	ND	0.33
205-99-2		Benzo(b)Fluoranthene	ND	0.33
207-08-9		Benzo(k)Fluoranthene	ND	0.33
50-32-8		Benzo(a)Pyrene	ND	0.33
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.33
53-70-3		Dibenz(a,h)Anthracene	ND	0.33
191-24-2		Benzo(g,h,i)Perylene	ND	0.33

(1) - Cannot be separated from diphenylamine.
ND - Not Detected; NA - Not Analyzed.

Samples were analyzed using EPA Method 3550 (sonication) and 8270 (GC/MS) listed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods EPA-SW 846, 2nd Edition 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

INORGANIC DATA

November, 1987

ENVIROMED LABORATORIES, INC.
414 WEST CALIFORNIA AVE.
RUSTON, LA 71270

JAN 25 1988

DATE
12/18/87

BATCH #
00212

CUSTOMER:
ROBERTS/SCHORNICK_&_ASSOC. 000210 PROJECT
860 COPPERFIELD DR. SUITE A
ATTN: HERSCHEL ROBERTS PROJECT NO.
NORMAN, OK 73072 SUB FILE NO.
(000) 000-0000

EML #	SOURCE	PARAMETER	SAMPL CONC.	--BEGIN-- DATE	TIME	---END--- DATE	TIME	ANLST	PAGE #	COLLECTED DATE	TIME
01649	PZ-1	CHLORIDE	198.9	1111	1000	1111	1100	SJ	288	1105	0830
		T. CHROMIUM	0.004	1110	2030	1110	2300	RB	157/173		
		IRON	0.66	1110	1700	1110	2000	VC	157		
		MANGANESE	0.33	1110	1600	1110	2000	VC	157		
		SODIUM	199.4	1110	1600	1110	2090	VC	157		
		PHENOLS	(0.05	1111	1000	1111	1530	ERP	556		
		SULFATE	48.9	1111	0900	1111	1300	GB	467		
01650	PZ-1B	CHLORIDE	214.6	1111	1000	1111	1100	SJ	288	1105	0830
		T. CHROMIUM	0.005	1110	2030	1110	2300	RB	157/173		
		IRON	0.81	1110	1600	1110	2000	VC	157		
		MANGANESE	0.27	1110	1600	1110	2000	VC	157		
		SODIUM	224.7	1110	1600	1110	2000	VC	157		
		PHENOLS	(0.05	1111	1000	1111	1530	ERP	556		
		SULFATE	46.7	1111	0900	1111	1300	GB	467		
01651	PZ-2	CHLORIDE	916.0	1111	1000	1111	1100	SJ	288	1105	1530
		T. CHROMIUM	0.016	1110	2030	1110	2300	RB	157/173		
		IRON	1.06	1110	1600	1110	2000	VC	157		
		MANGANESE	0.91	1110	1600	1110	2000	VC	157		
		SODIUM	541.0	1110	1600	1110	2000	VC	157		
		PHENOLS	(0.05	1111	1000	1111	1530	ERP	556		
		SULFATE	320.0	1111	0900	1111	1300	GB	467		

ENVIROMED LABORATORIES, INC.
414 WEST CALIFORNIA AVE.
RUSTON, LA 71270

DATE
12/18/87

BATCH #
00213

CUSTOMER:
ROBERTS/SCHORNICK_&_ASSOC. 000210
860 COPPERFIELD DR. SUITE A
ATTN: HERSCHEL ROBERTS
NORMAN, OK 73072
(000) 000-0000

EML #	SOURCE	PARAMETER	SAMPL CONC.	--BEGIN-- DATE	TIME	---END--- DATE	TIME	ANLST	PAGE #	COLLECTED DATE	TIME
01652	PZ-3	CHLORIDE	319.3	1111	1000	1111	1100	SJ	288	1105	1630
		T. CHROMIUM	0.015	1110	2030	1110	2300	RB	157/173		
		IRON	0.47	1110	1600	1110	2000	VC	157		
		MANGANESE	0.08	1110	1600	1110	2000	VC	157		
		SODIUM	180.4	1110	1600	1110	2000	VC	157		
		PHENOLS	<0.05	1111	1000	1111	1530	ERP	556		
		SULFATE	306.7	1111	0900	1111	1300	GB	467		
01653	PZ-4	CHLORIDE	1052.0	1111	1000	1111	1100	SJ	288	1105	1730
		T. CHROMIUM	0.005	1110	2030	1110	2300	RB	157/173		
		IRON	0.69	1110	1600	1110	2000	VC	157		
		MANGANESE	0.17	1110	1600	1110	2000	VC	157		
		SODIUM	300.6	1110	1600	1110	2000	VC	157		
		PHENOLS	<0.05	1111	1000	1111	1530	ERP	556		
		SULFATE	813.3	1111	0900	1111	1300	GB	467		
01654	FIELD BLANK	CHLORIDE	20.9	1111	1000	1111	1100	SJ	288	1105	1430
		T. CHROMIUM	0.004	1110	2030	1110	2300	RB	157/173		
		IRON	0.34	1110	1600	1110	2000	VC	157		
		MANGANESE	0.05	1110	1600	1110	2000	VC	157		
		SODIUM	3.2	1110	1600	1110	2000	VC	157		
		PHENOLS	<0.05	1111	1000	1111	1530	ERP	556		
		SULFATE	13.3	1111	0900	1111	1300	GB	467		

ENVIROMED LABORATORIES, INC.
414 WEST CALIFORNIA AVE.
RUSTON, LA 71270

DATE
12/18/87

BATCH #
00214

CUSTOMER:
ROBERTS/SCHORNICK_&_ASSOC. 000210
860 COPPERFIELD DR. SUITE A
ATTN: HERSCHEL ROBERTS
NORMAN, OK 73072
(000) 000-0000

EML #	SOURCE	PARAMETER	SAMPL CONC.	--BEGIN-- DATE TIME	---END--- DATE TIME	ANLST	PAGE #	COLLECTED DATE TIME
01655	TRIP BLANK	CHLORIDE	10.5	1111 1000	1111 1100	SJ	288	1105 1445
		T. CHROMIUM	0.018	1110 2030	1110 2300	RB	157/173	
		IRON	0.56	1110 1600	1110 2000	VC	157	
		MANGANESE	0.07	1110 1600	1110 2000	VC	157	
		SODIUM	4.3	1110 1600	1110 2000	VC	157	
		PHENOLS	(0.05	1111 1000	1111 1530	ERP	556	
		SULFATE	2.22	1111 0900	1111 1300	GB	467	

Douglas W. Hensley, Ph.D.
Certified by Laboratory Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in 40 CFR--Parts 60, 136, and 261. Test procedures are from the : edition of Standard Methods for the Examination of Water and Wastewater(#), Methods for Chemical Analysis of Water and Wastes, 1979, (EPA), ASTM (Annua: Book of Standards, part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and spiked samples for 11/10 indicate a: methodologies are in control.
Retain records for three years. Unless otherwise stated, all data is report in units of mg/l.

BOD std. ________________
* Indicates out of permit compliance (regulatory agencies should be notifie within 5 days of non-compliance conditions).
** Past Holding Time

CHAIN OF CUSTODY RECORD-Environmental Samples

PROJECT	SAMPLING FIRM	SAMPLE
Name MIKON BROS	Name Roberts/Schornick & Assoc., Inc.	☐ Soil ☒ Groundwater
Address IDABEL, OK	Address 860-A Copperfield Dr. Norman, OK	☐ Waste ☐ Surface Water
	Signature Mark E Thompson	☐

P.O. # - LB 50

SAMPLE I.D.	DESCRIPTION	DATE	TIME	WEATHER TEMP	WEATHER PREC	COMP	GRAB	OTHER	MAN	NO. OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
	Trip Blank	11/5	1445	80°	O		✓		/	/	see Analytical Request	
	PZ-1	11/5	0930	"	"		"		/	/		
	PZ-2	11/5	1530	"	"		"		/	/		
	PZ-1B	11/5	0935	"	"		"		/	/		
	PZ-3	11/5	1630	"	"		"		/	/		
	PZ-4	11/5	1730	"	"		"		/	/		
	Field Blank	11/5	1430	"	"		"		/	/		
	Trip Blank	11/5	1415	"	"		"		/	/		
	Field Blank	11/5	1430	"	"		"		/	/		
	PZ-1	11/5	0930	"	"		"		/	/		
	PZ-1-B	11/5	0930	"	"		"		/	/		

RELINQUISHED BY (SIGNATURE)	RELINQUISHED TO	DATE	TIME	ADDITIONAL REMARKS
Mark E Thompson	Dianne Rutan	11/9/87		
RELINQUISHED BY (SIGNATURE) Dianne Rutan	RELINQUISHED TO	DATE 11-10-87	TIME 1730	
RELINQUISHED BY (SIGNATURE)	RELINQUISHED TO	DATE	TIME	

DISPATCHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY (SIGNATURE)	DATE	TIME	LAB PO #
CARRIER			LABORATORY			PO # AND SAMPLE I.D. #'S MUST BE ON THE LAB INVOICE
ADDRESS			ADDRESS			ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES
METHOD OF SHIPMENT						☐ Yes ☐ No. explain above

CHAIN OF CUSTODY RECORD-Environmental Samples

PROJECT	SAMPLING FIRM	SAMPLE
Name MIKON BROS	Name Roberts/Schornick & Assoc., Inc.	☐ Soil ☒ Groundwater
Address IDABEL, OK	Address 860-A Copperfield Dr. Norman, OK	☐ Waste ☐ Surface Water
	Signature Mark E Thompson	☐

P.O. # LB. 50

SAMPLE I.D.	DESCRIPTION	DATE	TIME	WEATHER TEMP	WEATHER PREC	COMP	GRAB	OTHER	MAN	NO. OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
	PZ-2	11/5	1530	80	0		✓		1	1	See Firm Analytical Request	
	PZ-3	11/5	1630	"	"		"		1	1		
	PZ-4	11/5	1730	"	"		"		1	1		
	Field Blank	11/5	1430	"	"		"		1	1		
	Trip Blank	11/5	1445	"	"		"		1	1		
	PZ-1	11/5	0930	"	"		"		1	1		
	PZ-1B	11/5	0930	"	"		"		1	1		
	PZ-2	11/5	1530	"	"		"		1	1		
	PZ-3	11/5	1630	"	"		"		1	1		
	PZ-4	11/5	1730	"	"		"		1	1		
	Field Blank	11/5	1430	"	"		"		1	1		

RELINQUISHED BY (SIGNATURE)	RELINQUISHED TO	DATE	TIME	ADDITIONAL REMARKS
Mark E Thompson	Dianne Ruter	11/9/87		
RELINQUISHED BY (SIGNATURE) Dianne Ruter	RELINQUISHED TO	11-10-87	17:30	
RELINQUISHED BY (SIGNATURE)	RELINQUISHED TO	DATE	TIME	
DISPATCHED BY (SIGNATURE) DATE TIME	RECEIVED FOR LABORATORY (SIGNATURE)	DATE	TIME	LAB PO #
CARRIER	LABORATORY			PO # AND SAMPLE I.D. #'S MUST BE ON THE LAB INVOICE
ADDRESS	ADDRESS			ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES
METHOD OF SHIPMENT				☐ Yes ☐ No. explain above

CHAIN OF CUSTODY RECORD-Environmental Samples

PROJECT	SAMPLING FIRM	SAMPLE
Name MIXON BROS	Name Roberts/Schornick & Assoc., Inc.	☐ Soil ☒ Groundwater
Address IDABEL, OK	Address 860-A Copperfield Dr. Norman, OK	☐ Waste ☐ Surface Water
	Signature	☐

P.O.# LB 50

SAMPLE I.D.	DESCRIPTION	DATE	TIME	WEATHER TEMP	WEATHER PREC	COMP	GRAB	OTHER	MAN	NO. OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
	Trip BLANK	11/5	1415	50	0		✓		/	/	see Analytical Request Form	
	PZ-1	11/5	0830	"	"		"		/	/		
	PZ-1B	11/5	1030	"	"		"		/	/		
	PZ-2	11/5	1530	"	"		"		/	/		
	PZ-3	11/5	1630	"	"		"		/	/		
	PZ-4	11/5	1730	"	"		"		/	/		

RELINQUISHED BY (SIGNATURE) Mark E Thompson	RELINQUISHED TO Dianne Ruten	DATE 11/9/87	TIME	ADDITIONAL REMARKS
RELINQUISHED BY (SIGNATURE) Dianne Ruten	RELINQUISHED TO	DATE 11-10-87	TIME 12:30	
RELINQUISHED BY (SIGNATURE)	RELINQUISHED TO	DATE	TIME	
DISPATCHED BY (SIGNATURE) DATE TIME	RECEIVED FOR LABORATORY (SIGNATURE)	DATE	TIME	LAB PO #
CARRIER	LABORATORY			PO # AND SAMPLE I.D. #'S MUST BE ON THE LAB INVOICE
ADDRESS	ADDRESS			ALL ANALYSIS PERFORMED BY EPA APPROVED PROCEDURES
METHOD OF SHIPMENT				☐ Yes ☐ No. explain above

ORGANIC DATA

November, 1987

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1649

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: PZ - 1
P. O. No.:

Collected: 11-05-87 By: MT Time: 0830
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	4.49	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	0.01	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1650
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: PZ - 1B
P. O. No.:

Collected: 11-05-87 By: MT Time: 0830
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
)5-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
:08-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

'orm - #5 Sample No.: 1650

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	4.34	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1651
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: PZ - 2
P. O. No.:

Collected: 11-05-87 By: MT Time: 1530
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	1.46	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1652

Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: PZ - 3
P. O. No.:

Collected: 11-05-87 By: MT Time: 1630
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	4.24	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1653
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: PZ - 4
P. O. No.:

Collected: 11-05-87 By: MT Time: 1730
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

Form - #5	Sample No.: 1653	Page 2 of 2

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	2.13	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1654
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: Field Blank
P. O. No.:

Collected: 11-05-87 By: MT Time: 1430
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

Form - #5	Sample No.: 1654	Page 2 of 2

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	1.66	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

ENVIROMED LABORATORIES, INC.
1874 DALLAS DRIVE
BATON ROUGE, LOUISIANA 70806
(504) 928-0232

ORGANIC ANALYSES REPORT FORM - #5

EML SAMPLE NO. 1655
Client: ROBERTS, SCHORNICK & ASSC.
Address: 860 Copperfield Dr.
Suite A
Norman, OK 73072
Sample I.D.: Trip Blank
P. O. No.:

Collected: 11-05-87 By: MT Time: 1430
Received: 11-12-87 By: RC Time: 0915
GC/MS Analysis Date: 12-01-87
Sample Type: Water
Sample Volume or Weight: 1000 ml

CAS Number	Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
62-75-9	N-Nitrosodimethylamine	ND	0.010
108-95-2	Phenol	NA	0.010
62-53-3	Aniline	ND	0.010
111-44-4	bis(-2-Chloroethyl)Ether	ND	0.010
95-57-8	2-Chlorophenol	NA	0.010
541-73-1	1,3-Dichlorobenzene	ND	0.010
106-46-7	1,4-Dichlorobenzene	ND	0.010
100-51-6	Benzyl Alcohol	ND	0.010
95-50-1	1,2-Dichlorobenzene	ND	0.010
95-48-7	2-Methylphenol	NA	0.010
39638-32-9	bis(2-chloroisopropyl)Ether	ND	0.010
106-44-5	4-Methylphenol	NA	0.010
621-64-7	N-Nitroso-Di-n-Propylamine	ND	0.010
67-72-1	Hexachloroethane	ND	0.010
98-95-3	Nitrobenzene	ND	0.010
78-59-1	Isophorone	ND	0.010
88-75-5	2-Nitrophenol	NA	0.010
105-67-9	2,4-Dimethylphenol	ND	0.010
65-85-0	Benzoic Acid	NA	0.050
111-91-1	bis(2-Chloroethoxy)Methane	ND	0.010
120-83-2	2,4-Dichlorophenol	NA	0.010
120-82-1	1,2,4-Trichlorobenzene	NA	0.010
01-20-3	Naphthalene	ND	0.010
106-47-8	4-Chloroaniline	ND	0.010
87-68-3	Hexachlorobutadiene	ND	0.010
59-50-7	4-Chloro-3-Methylphenol	NA	0.010
91-57-6	2-Methylnaphthalene	ND	0.010
77-47-4	Hexachlorocyclopentadiene	ND	0.010
88-06-2	2,4,6-Trichlorophenol	NA	0.010
95-95-4	2,4,5-Trichlorophenol	NA	0.050
91-58-7	2-Chloronaphthalene	ND	0.010
88-74-4	2-Nitroaniline	ND	0.050
131-11-3	Dimethyl Phthalate	ND	0.010
208-96-8	Acenaphthylene	ND	0.010
99-09-2	3-Nitroaniline	ND	0.050

CAS Number		Compound	Concentration mg/L (ppm)	Method Det Lmt. mg/L
83-32-9		Acenaphthene	ND	0.010
51-28-5		2,4-Dinitrophenol	NA	0.050
100-02-7		4-Nitrophenol	NA	0.050
32-64-9		Dibenzofuran	ND	0.010
121-14-2		2,4-Dinitrotoluene	ND	0.010
606-20-2		2,6-Dinitrotoluene	ND	0.010
84-66-2		Diethylphthalate	ND	0.010
7005-72-3		4-Chlorophenyl-phenylether	ND	0.010
86-73-7		Fluorene	ND	0.010
100-01-6		4-Nitroanialine	ND	0.050
534-52-1		4,6-Dinitro-2-Methylphenol	NA	0.050
86-30-6		N-Nitrosodiphenylamine(1)	ND	0.010
101-55-3		4-Bromophenyl-phenylether	ND	0.010
118-74-1		Hexachlorobenzene	ND	0.010
87-86-5	(PCP)	Pentachlorophenol	ND	0.050
85-01-8		Phenanthrene	ND	0.010
120-12-7		Anthracene	ND	0.010
84-74-2		Di-n-Butylphthalate	ND	0.010
206-44-0		Fluoranthene	ND	0.010
92-87-5		Benzidine	ND	0.010
129-00-0		Pyrene	ND	0.010
85-68-7		Butylbenzylphthalate	ND	0.010
91-94-1		3,3,-Dichlorobenzidine	ND	0.020
56-55-3		Benzo(a)Anthracene	ND	0.010
117-81-7		bis(2-Ethylhexyl)Phthalate	2.3	0.010
218-01-9		Chrysene	ND	0.010
117-84-0		Di-n-Octyl Phthalate	ND	0.010
205-99-2		Benzo(b)Fluoranthene	ND	0.010
207-08-9		Benzo(k)Fluoranthene	ND	0.010
50-32-8		Benzo(a)Pyrene	ND	0.010
193-39-5		Indeno(1,2,3-cd)Pyrene	ND	0.010
53-70-3		Dibenz(a,h)Anthracene	ND	0.010
191-24-2		Benzo(g,h,i)Perylene	ND	0.010

(1) - Cannot be separated from diphenylamine.
ND - Not Detected.
NA - Not Analyzed.

Samples were analyzed using EPA Method 624/or 625 listed in Manual of Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-81-057, July 1982.

Brahm Prakash, M.S.
Analyst

Donald Lee Perry
Donald Lee Perry, Ph.D.
Technical Director

APPENDIX D-6

SOIL PHYSICAL CHARACTERIZATION

DATA REPORT

NOV 30 1987

LAW ENGINEERING

GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

November 21, 1987

PROJECT Mixon
PROJECT NO. 87014
SUB FILE NO. 12.5

Roberts/Schornick & Associates Inc.
860 Copperfield Drive
Suite A
Norman, Oklahoma 73072

ATTENTION: Mr. Mark Thompson

SUBJECT: Geotechnical Laboratory Testing
Roberts/Schornick & Assoc. Job Name: Mixon
Law Engineering Job No. HT-1713, Task 6

Gentlemen:

Law Engineering is pleased to present to you the results of the falling head permeability tests. The testing was performed in accordance with ASTM STP 479 "Suggested Method of Test for Coefficient of Permeability of Soils with Values Less Than One Foot Per Day." The results are presented below:

CLIENT'S ID	DESCRIPTION OF SOIL
B-6, 4.0-6.0 ft.	Gray and Yellowish Orange Silty CLAY with a trace of gravel
B-55, 4.0-6.0 ft.	Yellowish Brown and Orange Silty CLAY
W-24, 4.0-6.0 ft.	Light Gray and Dark Reddish Orange Silty CLAY
Bkgd.No.1, 4.0 - 6.0 ft.	Pale Gray and Yellowish Orange slightly Sandy Silty CLAY with a trace of gravel

CLIENT'S ID	NATURAL MOISTURE (%)	DRY DENSITY (PCF)	COEFFICIENT OF PERMEABILITY (CM/SEC.)
B-6, 4.0-6.0 ft.	22.4	102.3	8.6×10^{-10}
B-55, 4.0-6.0 ft.	14.4	105.7	3.6×10^{-9}
W-24, 4.0-6.0 ft.	21.4	105.2	2.8×10^{-9}
Bkgd. No.1, 4.0 - 6.0 ft.	15.0	108.0	1.1 x 10-9

The scope of work included performing classification tests on the soil samples sent to our laboratory. These tests consisted of Atterberg Limits and grain size analysis by wash 200 with sieve and hydrometer methods. These tests were performed in accordance with applicable ASTM procedures.

Please find enclosed the lab results and corresponding graphical presentation.

We appreciate this opportunity to be of service to you. If you have any questions concerning this project, please contact us at your convenience.

Very truly yours,

LAW ENGINEERING

William F. Hillman III

William F. Hillman III
Laboratory Supervisor

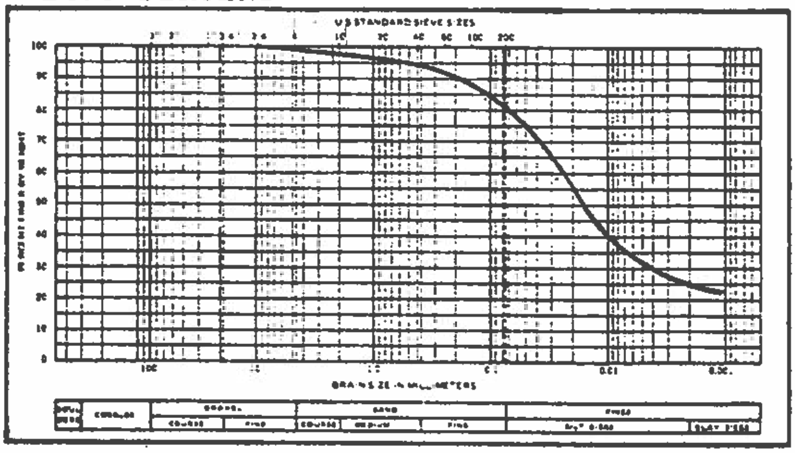
WFH/cnb

Enclosures

LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS B-6, JAR SAMPLE, 0.0 - 2.0 FT.
SAMPLE IDENTIFICATION IS PALE YELLOWISH AND BROWN SLIGHTLY SANDY SILTY CLAY WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 24.8 PERCENT



SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	.4	99.4
10	1.7	97.0
20	2.6	95.6
40	3.3	94.3
60	4.9	91.6
100	7.2	87.7
140	8.8	84.9
200	9.9	83.1

HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	55.0	48.3	23.	.0498	79.2
1.0	48.0	41.3	23.	.0379	67.8
2.0	43.0	36.3	23.	.0280	59.6
5.0	39.0	32.3	23.	.0184	53.0
15.0	32.5	25.8	23.	.0112	42.4
30.0	29.0	22.3	23.	.0081	36.6
60.0	27.0	20.3	23.	.0058	33.3
519.0	21.5	15.3	24.	.0020	25.0
1437.0	20.5	13.4	22.	.0013	22.0

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	34
PLASTIC LIMIT IS	17
PLASTICITY INDEX IS	17

GRAIN SIZE DISTRIBUTION
.6% GRAVEL 16.3% SAND 58.2% SILT 25.0% CLAY

UNIFIED SOIL CLASSIFICATION IS CL

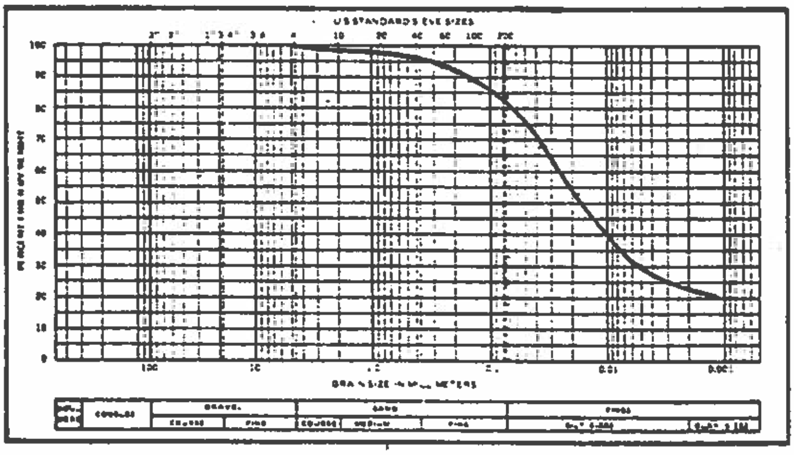
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS B-6, JAR SAMPLE, 2.0 - 3.6 FT.
SAMPLE IDENTIFICATION IS PALE BROWN SLIGHTLY SANDY SILTY CLAY

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 22.9 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
4	.0	100.0
10	.8	98.6
20	1.5	97.4
40	2.2	96.3
60	3.7	93.7
100	6.2	89.6
140	7.8	86.8
200	9.2	84.6



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	53.0	46.3	23.	.0509	76.2
1.0	48.0	41.3	23.	.0379	68.0
2.0	44.0	37.3	23.	.0278	61.4
5.0	39.0	32.3	23.	.0184	53.2
15.0	32.0	25.3	23.	.0112	41.7
30.0	28.5	21.8	23.	.0081	35.9
60.0	25.5	18.8	23.	.0059	31.0
526.0	20.5	14.3	24.	.0020	23.5
1440.0	19.5	12.4	22.	.0013	20.4

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS 32
PLASTIC LIMIT IS 18
PLASTICITY INDEX IS 14

GRAIN SIZE DISTRIBUTION
.0% GRAVEL 15.4% SAND 61.2% SILT 23.4% CLAY

UNIFIED SOIL CLASSIFICATION IS CL

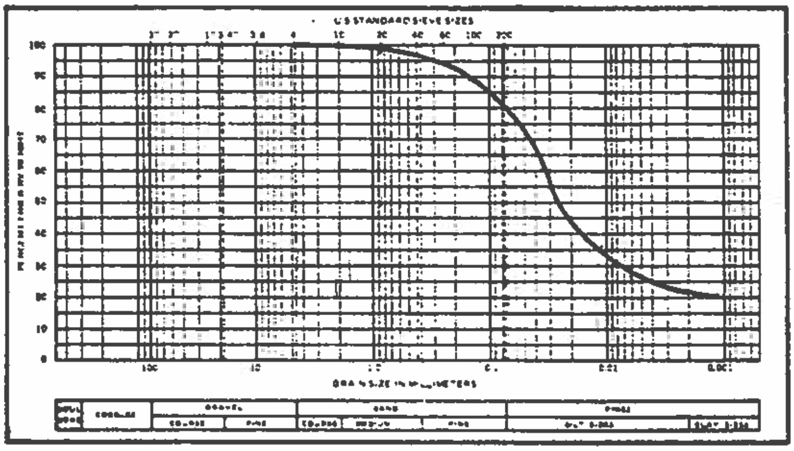
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS B-6, JAR SAMPLE, 5.0 - 6.0 FT.
SAMPLE IDENTIFICATION IS PALE BROWN SLIGHTLY SANDY SILTY CLAY

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 19.6 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
4	.0	100.0
10	.6	99.1
20	1.1	98.1
40	1.7	97.2
60	3.2	94.6
100	6.2	89.6
140	8.3	86.0
200	9.9	83.4



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	52.0	45.3	23.	.0514	74.8
1.0	43.5	36.8	23.	.0395	60.7
2.0	40.5	33.8	23.	.0287	55.8
5.0	31.5	24.8	23.	.0195	41.0
15.0	28.5	21.8	23.	.0115	36.0
30.0	25.5	22.0	23.	.0088	31.5
60.0	23.0	16.3	23.	.0060	26.9
523.0	20.0	13.8	24.	.0020	22.7
1440.0	19.5	12.4	22.	.0013	20.4

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	26
PLASTIC LIMIT IS	19
PLASTICITY INDEX IS	7

GRAIN SIZE DISTRIBUTION
.0% GRAVEL 16.6% SAND 60.8% SILT 22.6% CLAY

UNIFIED SOIL CLASSIFICATION IS CL

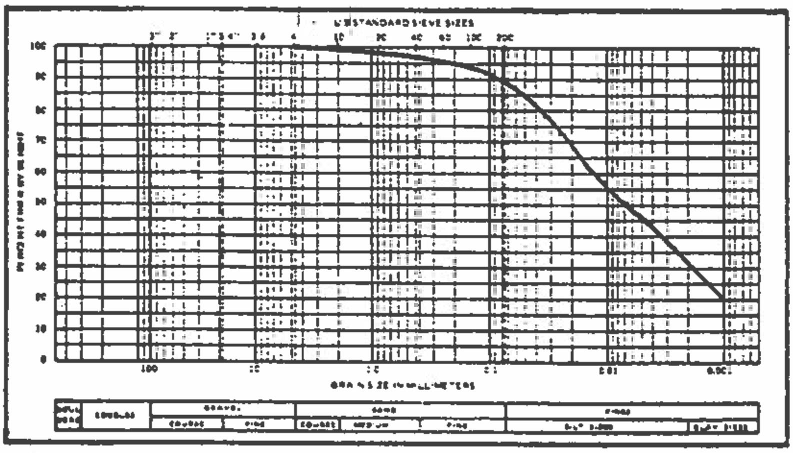
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS B-55, JAR SAMPLE, 0.5 - 2.0 FT.
SAMPLE IDENTIFICATION IS PALE BROWN AND REDDISH ORANGE SLIGHTLY SANDY SILTY CLAY

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 24.1 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
4	.0	100.0
10	.4	99.3
20	1.0	98.4
40	1.4	97.7
60	2.4	95.9
100	4.2	93.0
140	5.2	91.1
200	6.1	89.7



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	58.0	51.3	23.	.0480	85.6
1.0	53.0	46.3	23.	.0360	77.2
2.0	50.0	43.3	23.	.0262	72.2
5.0	45.0	38.3	23.	.0174	63.9
15.0	41.0	34.3	23.	.0104	57.2
30.0	37.0	30.3	23.	.0076	50.6
60.0	34.0	27.3	23.	.0055	45.6
529.0	28.0	21.8	24.	.0019	36.3
1440.0	19.5	12.4	22.	.0013	20.7

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS 32
PLASTIC LIMIT IS 18
PLASTICITY INDEX IS 14

GRAIN SIZE DISTRIBUTION
.0% GRAVEL 10.3% SAND 51.5% SILT 38.2% CLAY

UNIFIED SOIL CLASSIFICATION IS CL

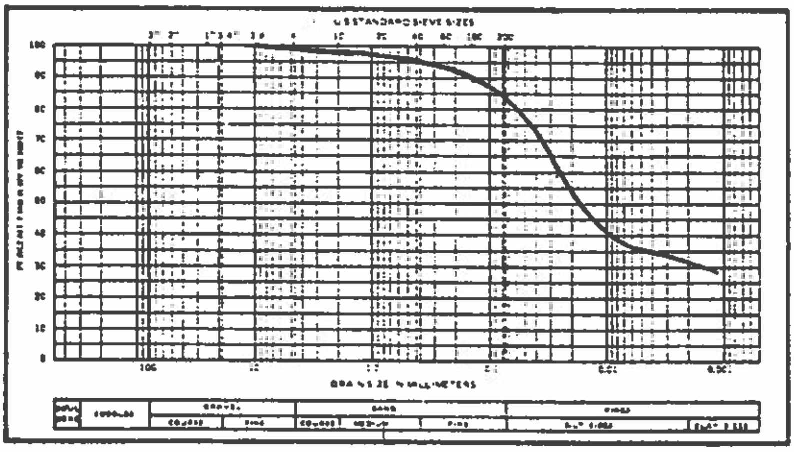
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS B-55, JAR SAMPLE, 2.0 - 2.8 FT.
SAMPLE IDENTIFICATION IS PALE GRAY AND REDDISH ORANGE FINE SANDY SILTY CLAY WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 14.0 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	.4	99.4
10	1.2	98.0
20	2.1	96.4
40	2.7	95.5
60	3.8	93.5
100	6.0	89.8
140	7.6	87.1
200	8.8	85.1



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	56.0	49.3	23.	.0492	80.9
1.0	50.0	43.3	23.	.0371	71.1
2.0	43.0	36.3	23.	.0280	59.6
5.0	38.0	31.3	23.	.0185	51.4
15.0	33.0	26.3	23.	.0111	43.2
30.0	30.5	23.8	23.	.0080	39.1
62.0	29.0	22.3	23.	.0056	36.6
511.0	25.5	19.3	24.	.0020	31.6
1429.0	24.5	17.4	22.	.0012	28.5

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS 33
PLASTIC LIMIT IS 17
PLASTICITY INDEX IS 16

GRAIN SIZE DISTRIBUTION
.6% GRAVEL 14.3% SAND 53.5% SILT 31.7% CLAY

UNIFIED SOIL CLASSIFICATION IS CL

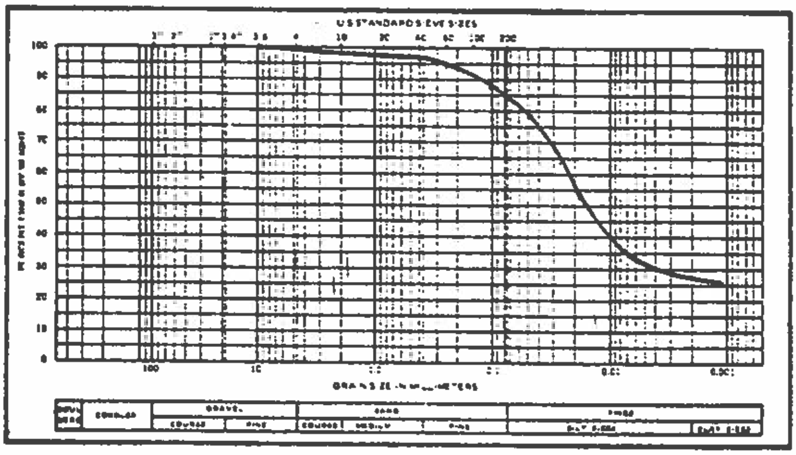
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS B-55, JAR SAMPLE, 5.0 - 6.0 FT.
SAMPLE IDENTIFICATION IS PALE BROWN SLIGHTLY SANDY SILTY CLAY WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 16.5 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	.2	99.7
10	1.1	98.1
20	1.6	97.2
40	2.1	96.4
60	3.3	94.5
100	5.7	90.3
140	7.5	87.3
200	9.1	84.5



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	55.0	48.3	23.	.0498	79.4
1.0	51.0	44.3	23.	.0367	72.9
2.0	46.0	39.3	23.	.0273	64.6
5.0	38.5	31.8	23.	.0184	52.3
15.0	32.0	25.3	23.	.0112	41.6
32.0	29.0	22.3	23.	.0078	36.7
60.0	26.5	19.8	23.	.0058	32.6
360.0	23.0	17.2	25.	.0024	28.3
1452.0	22.5	15.8	23.	.0012	26.0

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	33
PLASTIC LIMIT IS	17
PLASTICITY INDEX IS	16

GRAIN SIZE DISTRIBUTION
.3% GRAVEL 15.2% SAND 57.0% SILT 27.6% CLAY

UNIFIED SOIL CLASSIFICATION IS CL

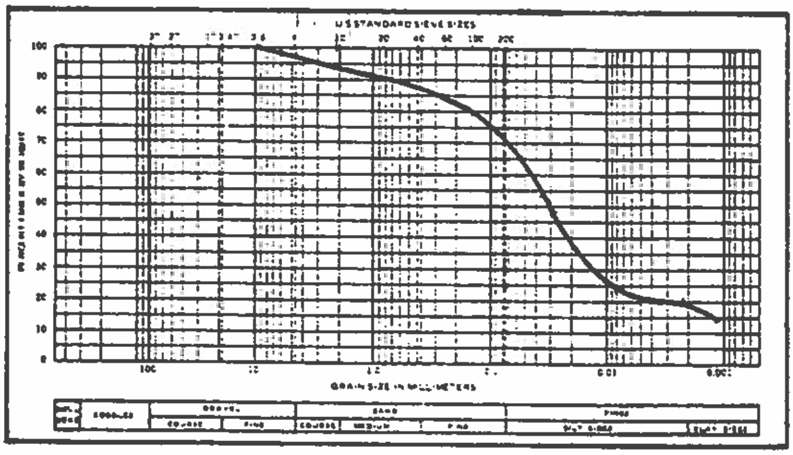
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713,TASK 6
BORING NUMBER IS W-24, JAR SAMPLE, 0.0 - 2.0 FT.
SAMPLE IDENTIFICATION IS LIGHT YELLOWISH BROWN CLAYEY FINE
SANDY SILT WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 16.2 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	1.2	98.0
10	3.8	93.5
20	5.8	90.2
40	6.8	88.6
60	8.7	85.3
100	12.3	79.3
140	14.7	75.3
200	16.4	72.3



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	48.0	42.2	25.	.0523	65.8
1.0	40.0	34.2	25.	.0398	53.3
2.0	37.0	31.2	25.	.0288	48.6
5.0	29.0	23.2	25.	.0194	36.2
15.0	23.0	17.2	25.	.0116	26.8
30.0	21.0	15.2	25.	.0083	23.7
60.0	20.0	14.2	25.	.0059	22.2
388.0	19.5	13.7	25.	.0023	21.4
1439.0	17.0	9.4	21.	.0013	14.7

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	25
PLASTIC LIMIT IS	18
PLASTICITY INDEX IS	7

GRAIN SIZE DISTRIBUTION
2.0% GRAVEL 25.7% SAND 53.1% SILT 19.2% CLAY

UNIFIED SOIL CLASSIFICATION IS CL-ML

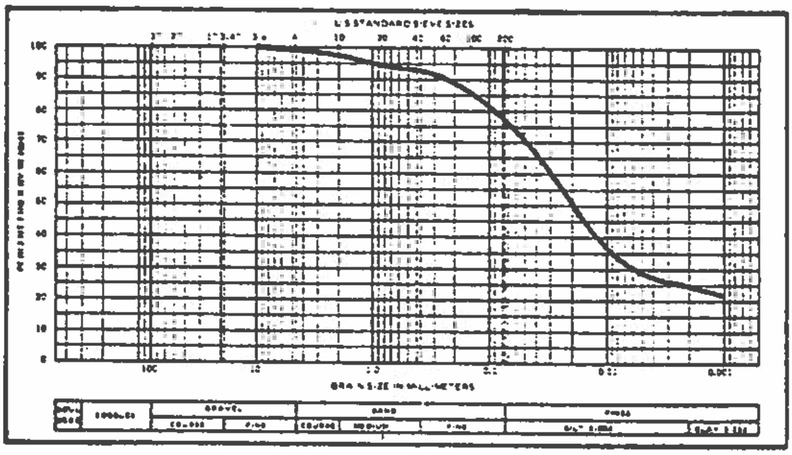
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS W-24, JAR SAMPLE, 2.0 - 4.0 FT.
SAMPLE IDENTIFICATION IS PALE YELLOWISH ORANGE AND RED FINE SANDY CLAYEY SILT WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 20.5 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	.5	99.2
10	1.5	97.4
20	3.0	94.9
40	3.6	93.8
60	5.3	91.0
100	8.3	86.0
140	10.5	82.3
200	12.0	79.7



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	50.0	44.2	25.	.0513	72.1
1.0	44.0	38.2	25.	.0384	62.3
2.0	41.5	35.7	25.	.0278	58.2
5.0	34.0	28.2	25.	.0187	46.0
15.0	30.0	24.2	25.	.0111	39.5
30.0	26.0	20.2	25.	.0081	33.0
60.0	24.0	18.2	25.	.0058	29.7
391.0	22.0	16.2	25.	.0023	26.4
1440.0	21.0	13.4	21.	.0013	21.9

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	35
PLASTIC LIMIT IS	18
PLASTICITY INDEX IS	17

GRAIN SIZE DISTRIBUTION
.8% GRAVEL 19.5% SAND 54.6% SILT 25.1% CLAY

UNIFIED SOIL CLASSIFICATION IS CL-ML

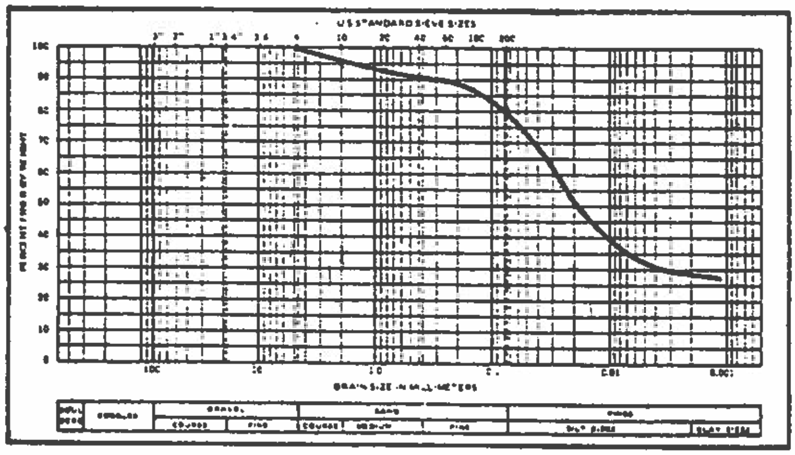
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS BACKGROUND, JAR SAMPLE, 4.0 - 6.0 FT.
SAMPLE IDENTIFICATION IS LIGHT GRAY AND YELLOWISH ORANGE
FINE SANDY CLAYEY SILT

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 15.2 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
4	.0	100.0
10	3.0	94.8
20	4.2	93.0
40	4.8	91.9
60	6.0	89.8
100	8.1	86.2
140	9.6	83.7
200	10.8	81.6



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	52.0	46.2	25.	.0502	73.5
1.0	47.0	41.2	25.	.0374	65.6
2.0	41.0	35.2	25.	.0279	56.0
5.0	37.0	31.2	25.	.0182	49.7
15.0	32.0	26.2	25.	.0109	41.7
30.0	29.0	23.2	25.	.0079	36.9
60.0	27.0	21.2	25.	.0057	33.8
382.0	24.0	18.2	25.	.0023	29.0
1433.0	24.0	16.4	21.	.0012	26.2

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	47
PLASTIC LIMIT IS	18
PLASTICITY INDEX IS	29

GRAIN SIZE DISTRIBUTION
.0% GRAVEL 18.4% SAND 53.4% SILT 28.2% CLAY

UNIFIED SOIL CLASSIFICATION IS CL-ML

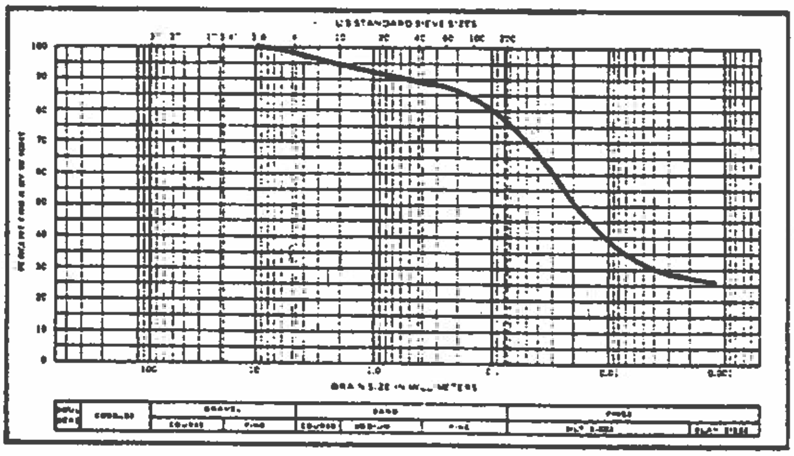
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713,TASK 6
BORING NUMBER IS W-24, JAR SAMPLE, 4.0 - 6.0 FT.
SAMPLE IDENTIFICATION IS LIGHT GRAY AND REDDISH ORANGE FINE SANDY CLAYEY SILT WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 20.5 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	1.0	98.3
10	3.8	93.6
20	5.2	91.2
40	6.1	89.6
60	7.6	87.1
100	10.0	82.9
140	11.8	80.0
200	13.1	77.8



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	53.0	47.2	25.	.0497	74.3
1.0	47.0	41.2	25.	.0374	64.8
2.0	41.5	35.7	25.	.0278	56.2
5.0	37.5	31.7	25.	.0182	49.9
15.0	31.0	25.2	25.	.0110	39.7
15.0	29.5	23.7	25.	.0111	37.3
32.0	27.0	21.2	25.	.0078	33.4
358.0	24.5	18.7	25.	.0024	29.4
1411.0	23.5	15.9	21.	.0013	25.1

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS 43
PLASTIC LIMIT IS 22
PLASTICITY INDEX IS 21

GRAIN SIZE DISTRIBUTION
1.7% GRAVEL 20.5% SAND 49.7% SILT 28.0% CLAY

UNIFIED SOIL CLASSIFICATION IS CL-ML

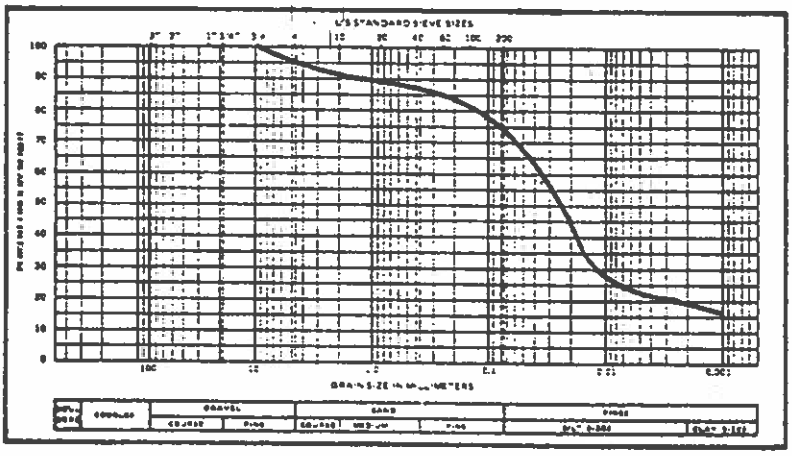
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS BACKGROUND, JAR SAMPLE, 0.0 - 2.0 FT.
SAMPLE IDENTIFICATION IS PALE YELLOW CLAYEY FINE SANDY SILT
WITH A TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 11.1 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	2.1	96.5
10	4.8	91.9
20	6.3	89.4
40	7.1	88.0
60	8.7	85.3
100	11.5	80.6
140	13.4	77.4
200	14.7	75.1



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	50.0	44.2	25.	.0513	67.8
1.0	43.0	37.2	25.	.0388	57.1
2.0	39.0	33.2	25.	.0284	51.0
5.0	30.0	24.2	25.	.0192	37.2
15.0	25.0	19.2	25.	.0115	29.5
30.0	23.0	17.2	25.	.0082	26.4
60.0	21.5	15.7	25.	.0059	24.1
375.0	19.0	13.2	25.	.0024	20.3
1427.0	17.5	9.9	21.	.0013	15.3

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	30
PLASTIC LIMIT IS	18
PLASTICITY INDEX IS	12

GRAIN SIZE DISTRIBUTION
3.5% GRAVEL 21.3% SAND 56.6% SILT 18.5% CLAY

UNIFIED SOIL CLASSIFICATION IS CL-ML

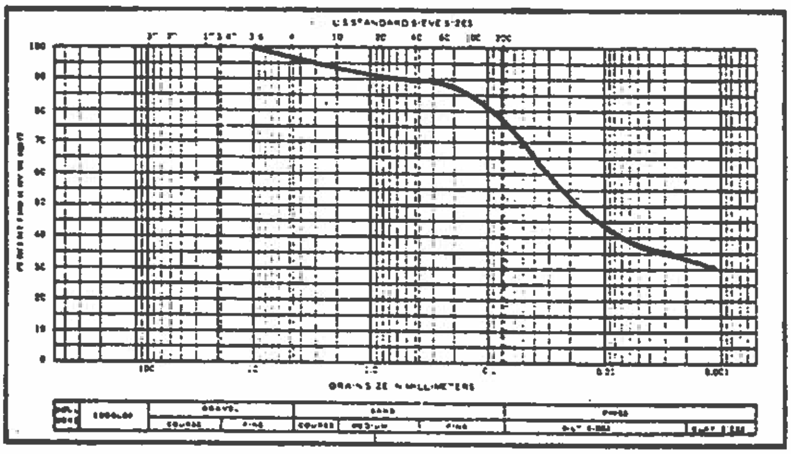
LAW ENGINEERING
SOIL SAMPLE DATA

PROJECT NAME & NO. ARE ROBERTS/SCHORNICK AND ASSOC., HT-1713, TASK
BORING NUMBER IS BACKGROUND, JAR SAMPLE, 2.0 - 4.0 FT.
SAMPLE IDENTIFICATION IS LIGHT GRAY AND REDDISH ORANGE
FINE SANDY CLAYEY SILT WITH A
TRACE OF GRAVEL

SPECIFIC GRAVITY = 2.70 (ASSUMED VALUE)
NATURAL MOISTURE CONTENT = 17.6 PERCENT

SIEVE ANALYSIS

SIEVE NUMBER	#CUM WT RETAINED	PERCENT FINER
3/8	.0	100.0
4	2.7	95.4
10	4.3	92.7
20	5.3	91.0
40	5.8	90.1
60	6.9	88.3
100	8.8	85.1
140	10.0	82.9
200	11.1	81.2



HYDROMETER ANALYSIS ON SOIL PASSING NO. 10 SIEVE

ELAPSED TIME	HYDRO READING	CORR HYDRO	TEMP	DIA IN MM	PERCENT FINER
.5	50.0	44.2	25.	.0513	68.9
1.0	46.0	40.2	25.	.0377	62.7
2.0	43.5	37.7	25.	.0273	58.8
5.0	39.0	33.2	25.	.0179	51.8
15.0	34.5	28.7	25.	.0107	44.8
30.0	32.0	26.2	25.	.0077	40.9
60.0	30.5	24.7	25.	.0055	38.5
370.0	28.0	22.2	25.	.0023	34.6
1423.0	27.0	19.4	21.	.0012	30.3

PLASTICITY PROPERTIES OF MAT. PASSING NO. 40 SIEVE

LIQUID LIMIT IS	40
PLASTIC LIMIT IS	19
PLASTICITY INDEX IS	21

GRAIN SIZE DISTRIBUTION
4.6% GRAVEL 14.2% SAND 47.7% SILT 33.5% CLAY

UNIFIED SOIL CLASSIFICATION IS CL-ML