STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 NATIONAL DRIVE, P.O. BOX 9583
LITTLE ROCK, ARKANSAS 72209

PHONE: (501) 562-7444

September 26, 1985

Mr. Jim Peronto
U.S. Environmental Protection Agency
Superfund Technical Section
InterFirst Two Building, Room 2841
1201 Elm Street
Dallas, TX 75270

Re: Final Work Plan
Old Midland RI/FS

Dear Jim:

We have enclosed two (2) copies of the final version of the Old Midland RI/FS Work Plan for your review and approval. In relation to your comments dated September 16, 1985, we have included essentially all the specific comments, however, relative to the General Comment we have provided the following requirement:

> Section 3.1 - Sampling and Analysis Plan.....The Contractor shall provide full organic scan analysis for 10% of all samples collected (excluding composites). In addition, he will provide an additional 10% of the samples described in the Work Plan activities for QA/QC.

We hope we have reached another happy median. The first advertisement for proposals is September 29, 1985 for a proposal closing date of October 30, 1985. Please refer to copies of the RFP and advertisement which have been mailed to Ms. Ellen Greeney concurrently with this submittal.

Please call should you have any questions.

Sincerely,

Vince Blubaugh

Vince Blubaugh, Chief
Solid & Hazardous Waste Division

Enclosure: Final RI/FS Work Plan for Old Midland (2)

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FINAL WORK PLAN
FOR

OLD MIDLAND PRODUCTS COMPANY
YELL COUNTY, ARKANSAS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SEPTEMBER, 1985

PREPARED BY:

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 NATIONAL DRIVE
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INTRODUCTION

1. Remedial Investigation/Feasibility Study Work Plan

The purpose of this document is to define the activities necessary for the completion of the Remedial Investigation/Feasibility Study (RI/FS) of Remedial Action at Old Midland Products in Ola, Arkansas. This Work Plan defines the activities to be performed by the Arkansas Department of Pollution Control and Ecology (ADPC&E) and its Contractor.

The objective of the Remedial Investigation is to determine the nature and extent of the problem at the Site and to gather all necessary data to support the Feasibility Study which consists of the development and evaluation of remedial alternatives. Reference is made to Sections 11 and 12 concerning costs and schedules to develop the RI/FS according to this Work Plan in support of timely reporting and final submissions. In addition, all activities performed by the selected Contractor shall conform to the publications "Guidance on Remedial Investigations Under CERCLA" of May, 1985, and "Guidance on Feasibility Studies Under CERCLA" of April, 1985. Hereafter, these documents shall be referred to only as the RI Guidance or the FS Guidance, respectively.

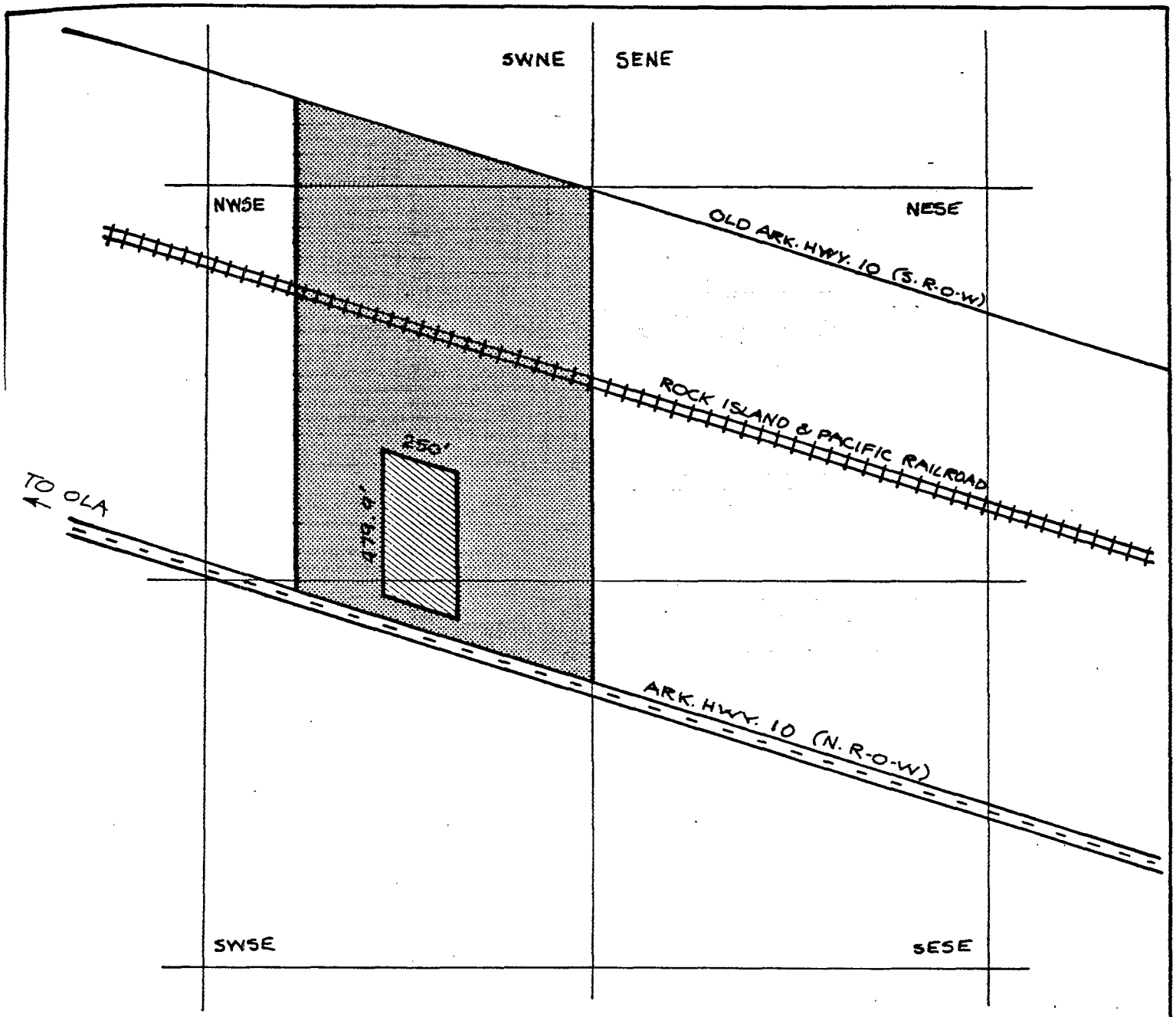
2. Description of Current Situation

2.1 Site Background

2.1.1 Site Location

Old Midland Products, bounded by a barbed wire fence, is located 1/2 mile east of Ola, Arkansas, just north of Highway 10 within Yell County. It encompasses approximately two acres and is located 35° 01' 31" N latitude and 93° 12' 16" W longitude, hereafter referred to as the plant. The area surrounding the plant, and bounded partially by a chain link fence, encompasses approximately an additional 35 acres. The plant and area surrounding the plant both described herein, shall hereafter be referred to as the "Site."The Site is as described in the Warranty Deed presented as Appendix A, and the Site Map presented as Figure 1. A brushy field lies in the north area of the Site and an inactive wood chipping plant occupies the area east of the plant.

The Site is located on the 7.5 minute "quad" (AMS 7354 11SW-Series V884) published by the USGS in 1972, and presented as Figure 2. A Site sketch compiled from sketches by Ecology and Environment, Inc., EPA's Field Investigation Team (FIT) contractor, and the ADPC&E is also included as Figure 3.



PRIMARILY THE SE 1/4 SEC 2, T4N, R 21W

SCALE: 1" = 500'

N

TRACT 1: LAND OWNED BY PLAINVIEW-OLA ECONOMIC TRUST, INC. (TRUST)

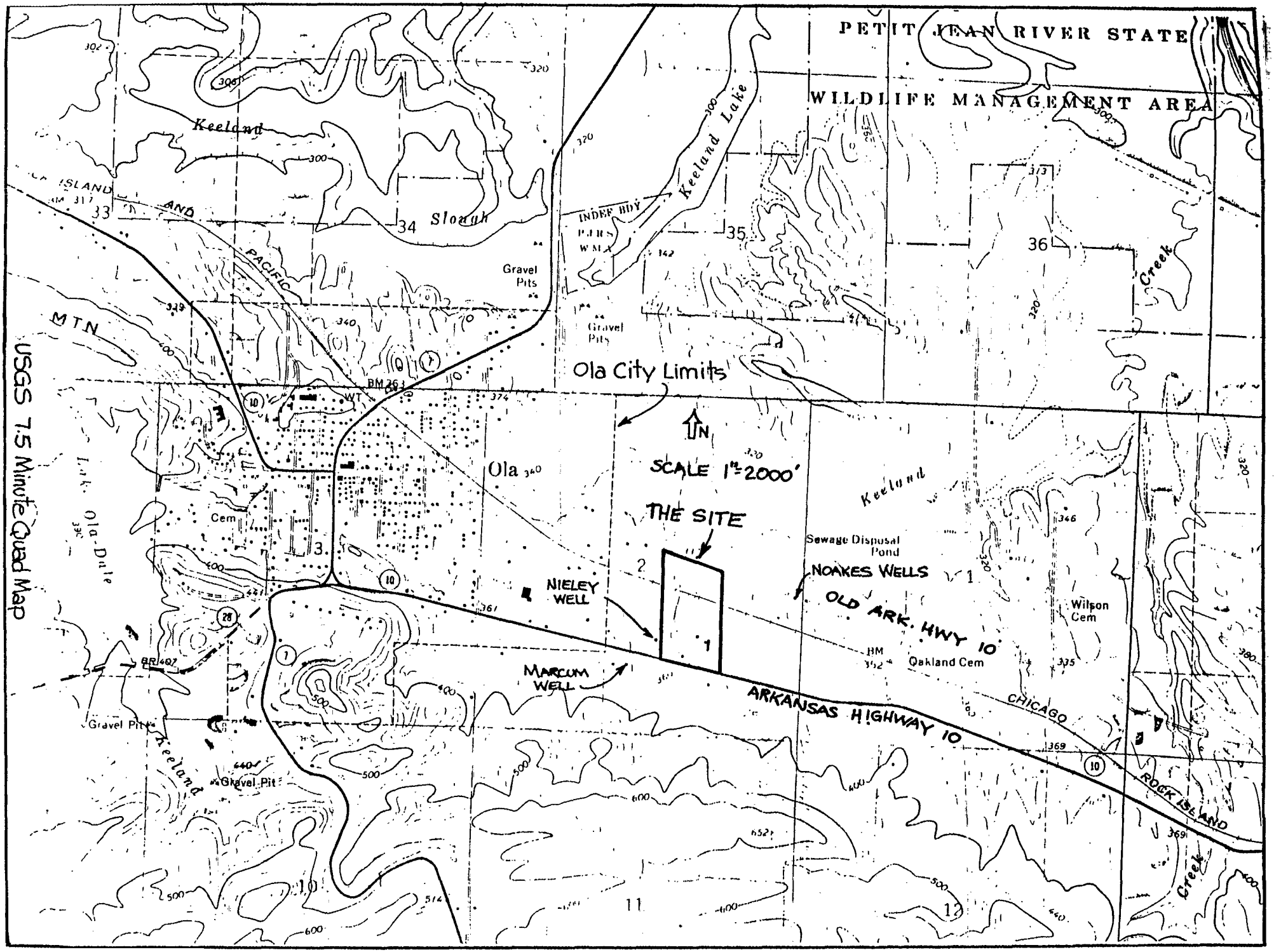
TRACT 2: LAND OWNED BY W.E. MULLINAX (PLANT)

} SITE

SITE MAP

000228

FIGURE 1


USGS 7.5 Minute Quad Map
PETIT JEAN RIVER STATE
WILDLIFE MANAGEMENT AREA
Keeland
Slough
Keeland Lake
INDEF BDY
PJRS WMA
PACIFIC
MTN
Gravel Pits
Ola City Limits
Ola
SCALE 1"=2000'
THE SITE
Sewage Disposal Pond
NOAKES WELLS
NIELEY WELL
MARCUM WELL
OLD ARK. HWY 10
ARKANSAS HIGHWAY 10
CHICAGO
ROCK ISLAND
Oakland Cem
Wilson Cem
Cem
Ola Dale
Creek
33
34
35
36
1
2
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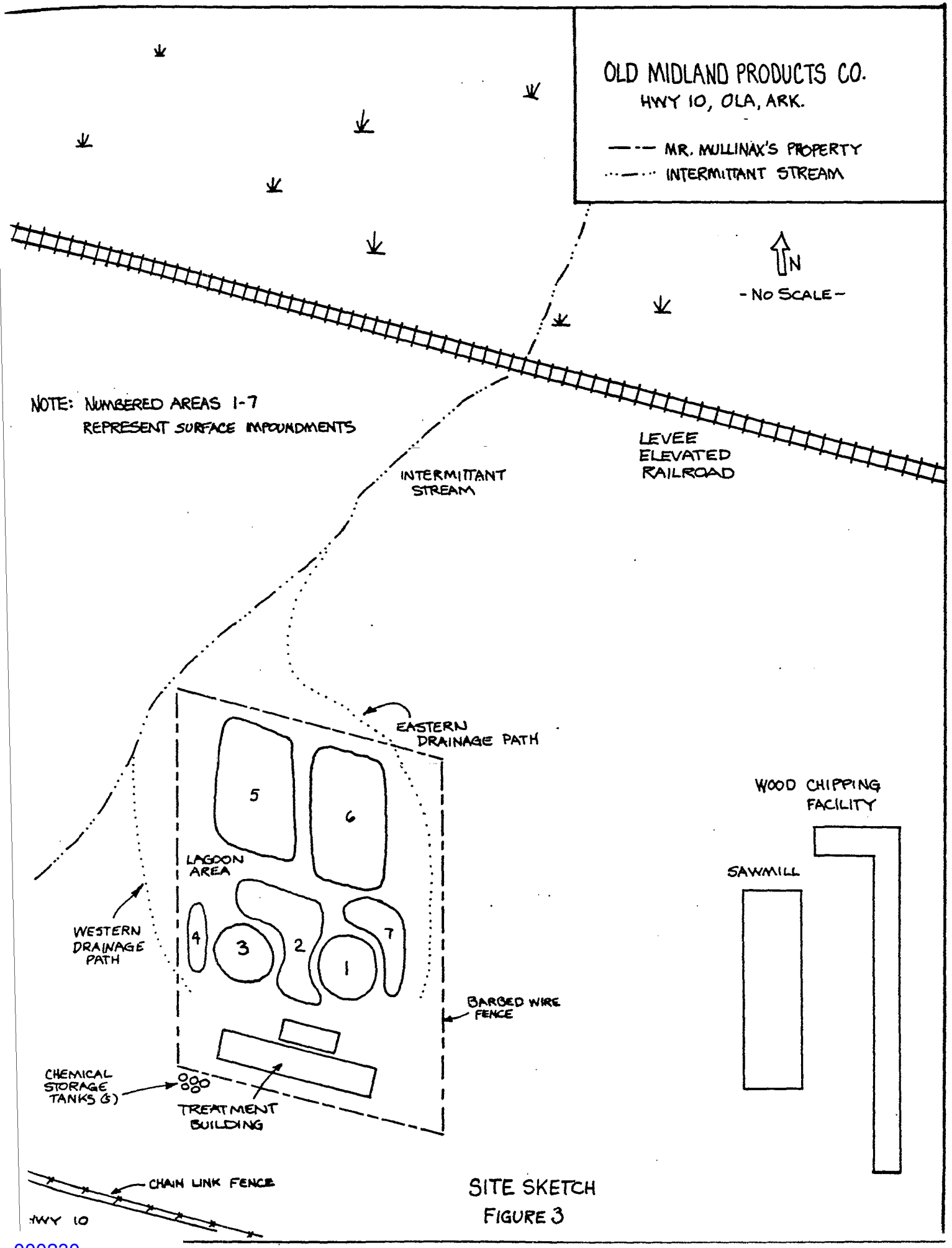
10
11
12



SITE SKETCH
FIGURE 3

2.1.2 Site History

Old Midland Products Company was a combination sawmill/wood preservative processing plant operating between the years of 1969 and 1979. Mr. W. E. Mullinax, ex-President of the company, was the owner of the Site on which the lagoons are located. All land then owned by Old Midland Products Company, less the area on which the plant is located, was sold to the Plainview - Ola Economic Development Trust, Inc. (Trust). Mr. John Clement, President of the First State Bank of Plainview, is a trustee of the Trust. The First State Bank of Plainview is also the lien holder for the Old Midland Products Company.

The Trust has leased, with an option to buy, a portion of the property adjoining the lagoons to Mr. Jay Speck. Mr. Speck resides in Ola.

On March 5, 1981 ADPC&E hazardous waste inspector Mr. Mike Bates accompanied Mr. Jerome Alford of Bond Consulting Engineers, Inc. to the Site for an inspection. Water and sediment samples were taken from the lagoons which indicated large concentrations of creosote and pentachlorophenol (PCP).

As a result of findings from this inspection, more extensive sampling missions were planned. Results from the March 5, 1981 sampling are listed in Section 2.2.1 - Lagoons found later in this Work Plan.

On March 9, 1981, EPA completed a Preliminary Assessment (potential hazardous waste site identification) and the Site was assigned the identification number AR01902.

On October 23, 1981 the FIT reviewed an initial ranking package which did not include air monitoring data. (The Hazardous Ranking System (HRS) package was later revised and scored at 30.77 on July 16, 1984, with addition of air data, and the Site was then included on the National Priorities List).

On June 24, 1982, the FIT conducted their first sampling visit of the Site, of which analysis of a soil sample showed five priority pollutants with PCP at 5.8 ppm and Beryllium at 3.2 ppm being the greatest. The FIT later conducted a sampling visit at the Site on January 26, 1983. Analytical results from the January, 1983 sampling mission identified 22 priority pollutants at concentrations greater than the parts per million level (Refer to Appendix B for complete Organic and Inorganic Summaries of this analysis). Based in part on this data and on the previous June 24, 1982 Site inspection, EPA proposed a drilling and monitor well plan designed to determine the presence of any groundwater contamination. (This plan was delayed, but later proposed again on June 1, 1984. The four sets of wells were finally installed between January 28 - February 7, 1985).

On December 10, 1983 the Site was ranked by EPA, Region VI, and ADPC&E staff for consideration as a Superfund Site.

On March 2, 1984, the Site was visited by personnel from EPA's Emergency Response Branch and ADPC&E. Inspection and analysis of the Site at this time concluded that waste was not migrating off-site through surface runoff. Further, based upon available information, an immediate removal plan was not recommended at that time. (NOTE: Two samples were taken, but results are not offered at this time. If desired, they can be reviewed at the office of ADPC&E.)

On March 14, 1984, ADPC&E took samples from two of the five chemical storage tanks and found various constituents common to the other contaminants on-site. Results from the analysis of these samples are presented in Section 2.2.4 - Equipment of this Work Plan.

On March 16, 1984, EPA's Emergency Response Team implemented an air sampling program which revealed that numerous contaminants are volatilizing from the surface of the Site. Results from this effort are reported in Section 2.2.6 - Ambient Air of this Work Plan.

On April 13, 1984, the ADPC&E took two residential well samples from wells at Mr. Noake's home, located to the northeast portion of the Site on old Arkansas Highway 10. Results of these samples are indicated in Section 2.2.3- Groundwater of this Work Plan.

2.1.3 Site Physiography

The Site lies within the Arkansas Valley physiographic province and is located near the north edge of Ola Mountain which rises up to 450 feet just south of the Site. The Site is on a flat area with a uniform gentle slope (2-3%) toward the north-northwest. The plant is drained by two pathways, one on the east side and one on the west side (see Figure 3), both of which flow under the fence and onto the adjacent Trust property and join just north of the plant. The flow proceeds from there for one-half mile to Keeland Creek*, a perennial stream, thence for three miles to the Petit Jean River. Enroute it passes through the Petit Jean River State Wildlife Management Area.

*Keeland Creek and the Petit Jean River are designated as having the following beneficial uses:

1) warm water fisheries
2) primary contact recreation
3) secondary contact
4) public water supply
5) industrial water supply
6) agricultural water supply

2.1.4 Geology

2.1.4.1 General[1]

The Site is located in the lower Atoka of Pennsylvanian Age which consists mainly of alternating beds of very thin to occasionally thick bedded brownish gray sandstone and silty, gray/black shale. At the Site, this formation is probably two to three miles thick.

The Site is near the area of the major break between the Arkansas Valley province and the frontal Ouachita Province which is characterized by numerous thrust faults. In general, the faults dip 55 to 65 degrees to the south and have a displacement of approximately 10,000 feet.

The lower Atoka is characterized by numerous fractures and joints at shallow depths.

2.1.4.2 Site Geology

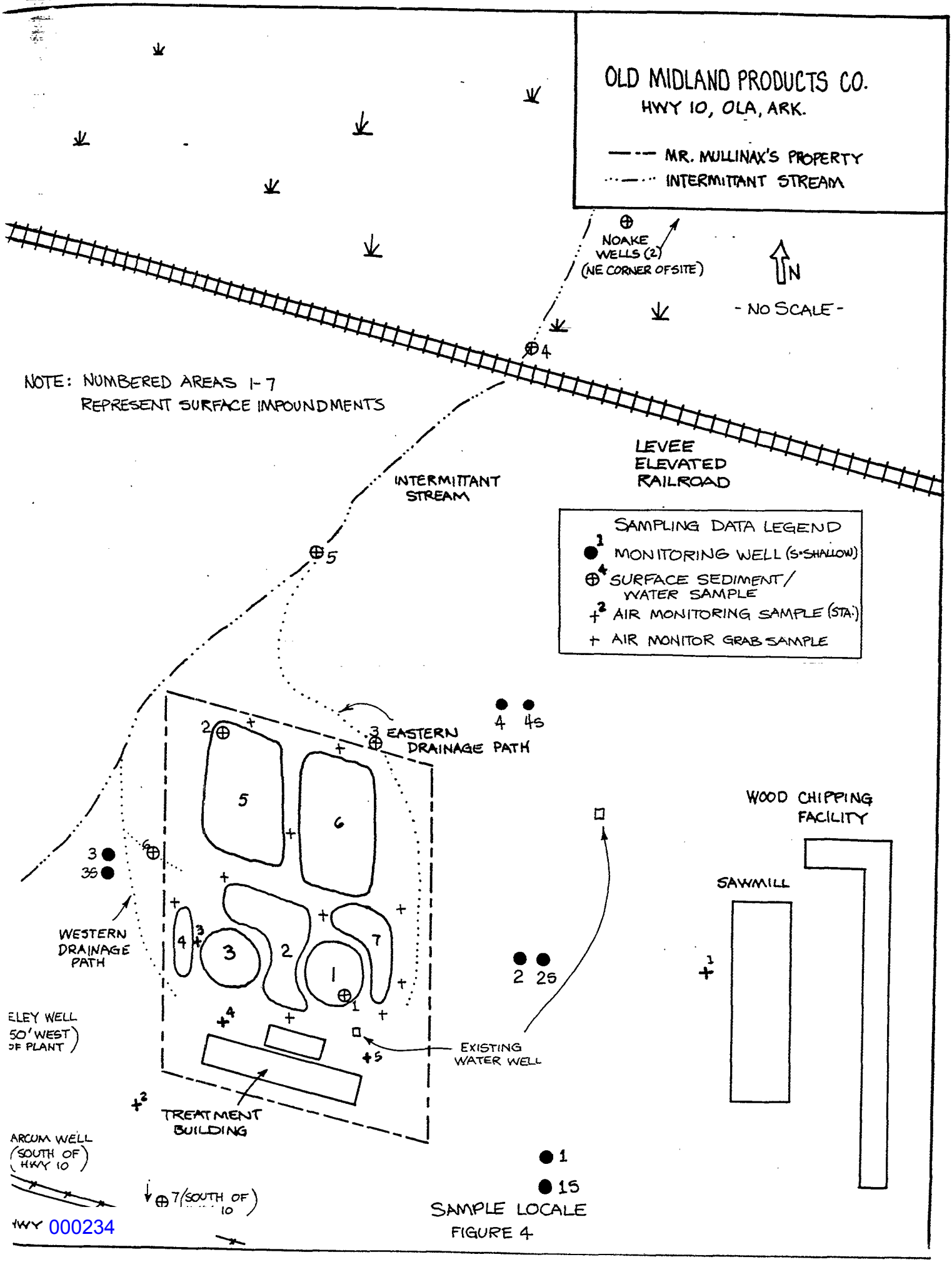
Four pairs of well holes have been drilled on-site (see Figure 4 for general location and Appendix C for construction as-builts) which is located on the southern edge of a broad valley of old stream terraces. The soils were probably derived from this material as well as some colluvial material from the adjacent mountain to the south and the weathering of the underlying shale. The drilling logs indicate an upper soil thickness of clays varying from four to eight feet underlain by the weathered shale with a few thin beds of sandstone. The weathered shale extends to a depth of eighteen feet except for well hole #2 where it is relatively shallow (Refer to Appendix D for Well Drilling Logs).

The Site is bounded by east-west trending faults 2,300 feet to the north and 1,500 feet to the south. It is located in the area of a syncline which plunges easterly. The nearest dip and strike reading, N38^{o} W-54^{o} east, is 3,200 feet east of the Site.

2.1.5 Hydrology

For discussion purposes, the groundwater occurrence is divided into an upper zone (1) consisting of soils and weathered bedrock, and a lower zone (2) consisting of unweathered bedrock. For the general distinction made for this Work Plan, "weathered bedrock" is removable by means of hydraulic excavating equipment and "unweathered bedrock" is not. The groundwater in zone (1) probably follows the flow of the northward trending surface drainage and occurs very near the surface during the wet season.

[1]Re: Mr. Charles Stone, Arkansas Geological Commission.



SAMPLE LOCALE

FIGURE 4

Groundwater occurrence in zone (2) is closely associated with the joints and fractures in the bedrock. These influence the direction and rate of flow in addition to some influence from the bedding planes. The joints and fractures close with depth and generally do not extend beyond a depth of approximately 150 feet. Water wells in the lower Atoka generally yield from three to five gallons per minute[2].

The adjacent private wells are reportedly 80 feet deep which would place them in zone (2).

For reference, mean annual precipitation vs. average annual lake evaporation for the statewide area is given as Figure 5.

2.1.6 Site Layout/Construction

There are seven process lagoons located on the Site contaminated with creosote, PCP and polychlorinated biphenyls (PCB's). For reference purposes these lagoons are numbered clockwise starting with the southeastern most lagoon (see Figure 4). All the lagoons are constructed of inconsistent inner and outer side slopes (generally 3 horizontal to 1 vertical) with maximum interior depths of 3.5 feet (lagoon #'s 1, 2, 3, 4 and 7) and 6 feet (lagoon #'s 5 and 6). Liquid surface areas range from 125 square feet (approximately) in the smallest lagoon (#4) to 7,200 square feet (approximately) in each of the largest lagoons (#'s 5 and 6). Embankment material for the lagoon dikes was presumably obtained from two sources on-site. One source was from the excavation of the two largest lagoons (#'s 5 and 6) and the second presumed source is the northwestern corner of the Site in and around the intermittent stream. The embankment materials appear to consist of fairly good clays with moderate to low permeability. None of the dikes appear to be leaking, however, the lagoons are unlined and have a potential to release waste.

In addition, there are five steel storage tanks (one 23,700 gallon and four 13,500 gallon approximate capacities) on the Site and a treatment building on concrete slab with sheet metal walls and roof which house the mechanical treatment equipment, all of which are obviously contaminated with process waste.

The treatment building is located in the southwest portion of the Site. The lagoons are immediately north of the treatment building. The general Site slope is 2-3% to the north-northwest with two runoff paths from the lagoons which feed into an intermittent stream on the property.

[2]Re: Mr. A. H. Ludwig, U.S. Department of Interior Geological Survey.

MEAN ANNUAL PRECIPITATION, Inches (Solid Lines) VS. AVERAGE ANNUAL LAKE EVAPORATION, Inches (Dashed Lines)

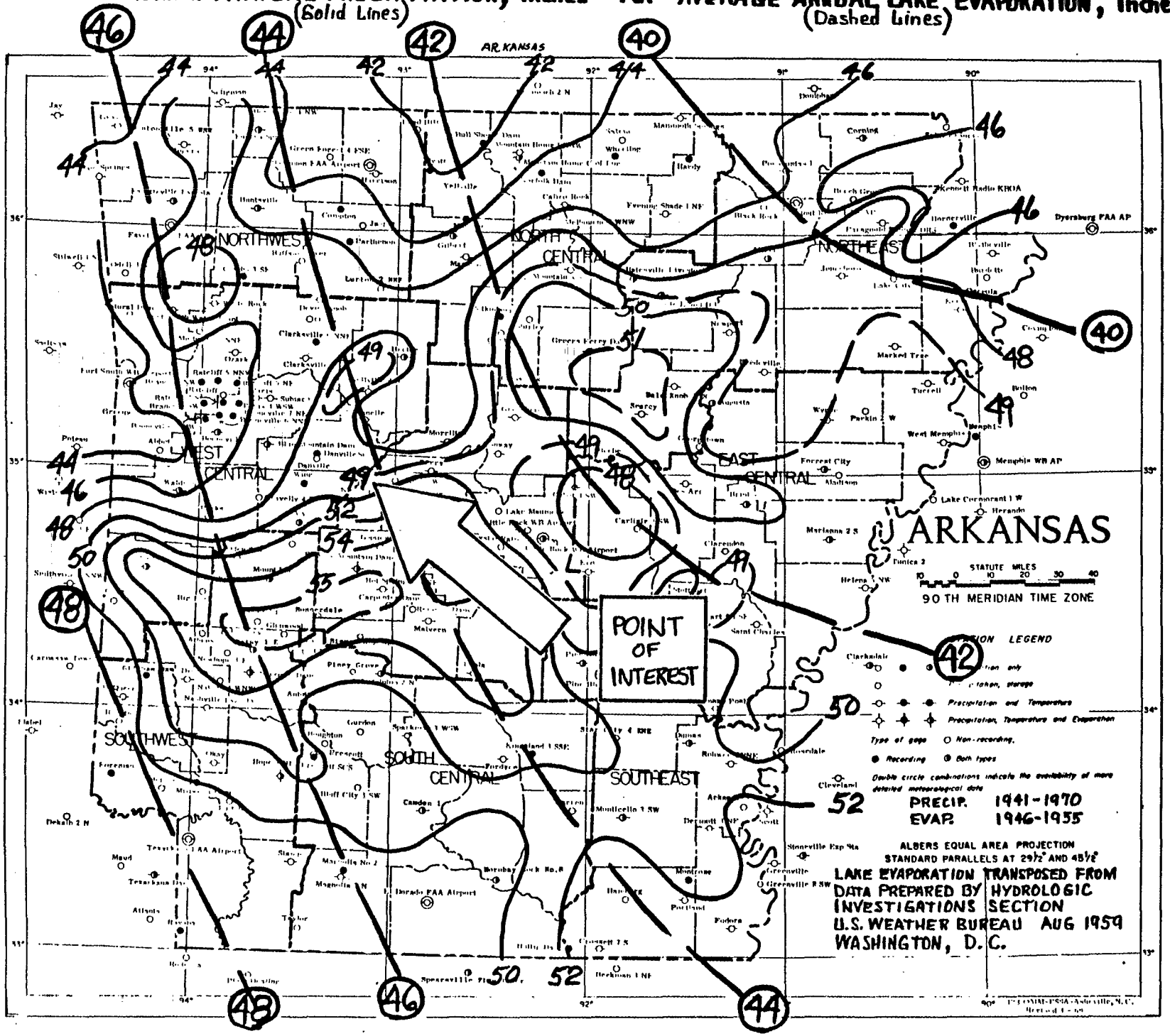


FIGURE 5

2.2 Nature and Extent of Problem

2.2.1 Lagoons

Review of the preliminary testing program by the FIT and ADPC&E has indicated that the seven process lagoons are the primary source of priority pollutant contamination.

APDC&E sampling efforts from March 5, 1981 revealed the following results:

Lagoon #	Sample Type	Creosote	PCP
1	Water	18.0	23.0
	Sediment	16,100.0	20,000.0
3	Water	7.5	<5.0
	Sediment	19,000.0	17,000.0
5	Water	7.5	<5.0
	Sediment	212.0	13,000.0
6	Water	7.5	<5.0
	Sediment	5,330.0	4,900.0

NOTE: 1) All values listed in ppm.
2) Refer to Figure 3 for lagoon locations and numbers.

Results of a more comprehensive analysis of two sediment samples taken during the FIT investigation of January 26, 1983 of the lagoons indicated the presence of the following pollutants:

Priority Pollutant	Sample (1) Southeast Edge of Lagoon #1	Sample (2) Northwest Edge of Lagoon #5
Acenaphthene	30,668.0	89.0
Acenaphthylene	108.0	21.1
Anthracene	9,471.0	4,335.0
Benzo(a)anthracene	631.0	79.0
Benzo(a)pyrene	207.0	ND
Benzo(B)fluoranthene	451.0	ND
Benzo(g)perylene	68.0	10.02
Benzo(K)fluoranthene	451.0	ND
Chrysene	586.0	484.5
Dibenzofuran	3,067.0	145.0
Fluoranthene	39,688.0	2,805.0
Fluorene	2,886.0	ND
Indeno(1,2,3-cd)pyrene	77.0	ND
2-Methylnaphthalene	3,067.0	30.6
Naphthalene	7,216.0	ND
Pentachlorophenol	58,630.0	74.0
Phenanthrene	9,471.0	ND
PCB 1242	ND	831.3
Pyrene	3,247.0	841.5

VOLATILES

Acetone	ND	0.6375
Ethyl Benzene	0.22	ND
Ethyl Ether	0.0024	0.009
Fluorotrichloromethane	ND	0.00765
(in water)	ND	0.0055
Hexane	0.0045	0.0054
Methyline Chloride	0.325	0.181
(in water)	0.017	0.056
O-xylene	0.068	ND
Styrene	0.0033	ND
Toluene	0.029	ND
2,6,6-Trimethylbicyclo [3.1.1] -Hept-2-ene	0.280	ND

NOTE: 1) All values listed in ppm.
2) Refer to Figure 4 for sampling locations.
3) "ND" indicates None Detected and reported by the FIT.
4) Organic & Inorganic Analysis Summaries are attached as Appendix B.

Rough estimation of total waste volume in the lagoons yields 303,000 gallons with sludge volume comprising 199,000 gallons of the total. Liquid color ranges from clear to light brown to black. The embankment soils are saturated with creosote and oil mixtures as evidenced by breaking apart of the surface crust which has formed around the lagoon perimeters. Sawdust was transported to the northeast lagoon (#6) overflow to aid in absorption of oily surface overflow and hence is also saturated with contaminants.

2.2.2 Soils

It is apparent that the entire work perimeter within and surrounding the plant has become directly contaminated with priority pollutants at some time or another. The storage areas surrounding the wood chipping facility may be no exception to this as treated wood was stored in these areas after processing.

Limited subsurface sampling and analysis of soils was performed by the FIT during installation of the four pairs of groundwater monitoring wells between January 28 and February 7, 1985. Summaries of these analysis are provided as Appendix E. Infiltration of rainwater as well as infiltration of the various chemical solutions has apparently contributed to subsurface migration of contaminants to the soil below. Soil has been contaminated around the entire treatment area from chemical storage delivery/spillage, process leakage/drainage and processed wood drippings, all of which has contributed to the soil stains throughout the area.

2.2.3 Groundwater

Initial sampling of groundwater has indicated that contamination of the shallow water table does exist, however the extent of the contamination is unknown and information is very limited, particularly to the west and north of the Site, as well as in the deep strata. There have been three deep (35-42 ft.) and three shallow (15-20 ft.) monitoring wells installed along the east side of the plant, which have not yet been used for sampling of groundwater (See Figure 4 for well locations). Also, no sampling of deep well #3 installed west of lagoon #4 has been performed yet, however, the corresponding shallow well #3s sampled by ADPC&E on April 30, 1985, has indicated a 1/4" oily layer atop the water table which was two feet or less below the surface at the time of sampling. Laboratory testing of the oily layer reveals PCP comprising approximately one percent of the oily layer and PCB concentrations of 10 ppm (Sampling and analysis of all installed wells was performed during July, 1985, by the FIT and assays from this task will be available at a later date).

In addition to the above on-site wells, four off-site water wells were tested for organic priority pollutants. These wells belong to Nieley, (80 feet deep and 450 feet west of lagoons), Marcum, (80 ft. deep and south of Highway 10) and Noakes (one agricultural well, for livestock and poultry, 265 feet deep and one residential well 80 feet deep which are northeast of Old Midland Products on old Highway 10). The Nieley and Marcum well samples taken from the January 26, 1983, sampling expedition and presented in Appendix B, revealed no apparent contamination. The residential well on Mr. Noake's property was sampled by ADPC&E on April 13, 1984. Tests indicated .013 ppm methylbenzene, and an unknown at .072 ppm. The agricultural well, also sampled at this time, showed chloroform at .010 ppm, and two unknowns at .044 and .078 ppm. (Refer to Figure 2 for general locations of these residential water wells).

Infiltration as well as the constant pressure from lagoon liquid is believed to produce the major pollutant loads on the groundwater system, the extent of which is not adequately known at this time.

It should be noted that during monitoring well construction, the FIT dug a test borehole approximately 10 feet north of well #3 and then after capping with bentonite grout, sometime later the hole settled to approximately 1.7 feet below surrounding grade. This allowed the hole to flood with surface runoff and possibly contaminate below surface grade. The hole was later capped by ADPC&E and can easily be seen in the field.

2.2.4 Equipment

All process equipment, buildings, storage tanks, pumps, hoses and conveyance equipment are contaminated with various priority pollutant compounds ranging in concentrations and composition. Two of the five storage tanks were sampled by ADPC&E on March 14, 1984, and lab results indicated the following:

	Tank #1		Tank #2
Priority Pollutant	Initial	Duplicate	Single
Phenanthrene	4.7	8.5	12.6
Fluoranthene	2.3	5.1	3.2
Naphthalene	2.1	2.6	1.7
Anthracene	1.2	8.6	12.4
Fluorene	1.3	1.7	5.0
Benzo(a)anthracene	0.3	0.6	0.8
Pentachlorophenol	1360 ppm	1100 ppm	<10 ppm

Note: 1) All values listed as percent of total volume except pentachlorophenol.
2) Tank identifications do not exist - numbering of tanks provided for difference in tank samples only. Samples taken at tank ports.

Since it is believed that the storage tanks contained the predominance of the chemicals used in the wood treating process, it is reasonable to assume that all of the contaminants found crusted over or adhering to the process equipment is quite similar to the above. Indicative of the contaminated equipment is the following:

1. A pair of wood pole, steam compression tubes and accompanying conveyance rail system;
2. One combination boiler/compressor;
3. Entire treatment building on concrete slab including operators' quarters;
4. Five chemical storage tanks;
5. Various-sized process tubing strewn throughout the lagoon area with portable gasoline pumps at the lagoons;
6. Various small structures around the lagoon areas;
7. Existing water well house and appurtenances.

2.2.5 Sediment and Surface Water

Preliminary investigations of sediment migration and surface contamination along runoff paths indicate accumulations of some priority pollutants moving downgrade to the north and northwest. Since laboratory testing of samples collected at all points downgrade indicated some degree of contamination, it is not known

just how far this off-site migration has occurred. Complete sample analysis (Table I, Inorganic and Table II, Organic) summaries from samples taken January 26, 1983 by the FIT are attached as Appendix B. Also refer to Figure 4 for sample point locations.

Of major interest concerning surface runoff and contaminant mixing with surface sediment is the area along the west side of lagoon #'s 2 and 4 where rain induced runoff apparently carries the highest concentration of organics off-plant. Sediment carried into the western drainage path is highly odorous and highly stained. Also of major interest is the northeast corner of lagoon #'s 5 and 6 where stains are less apparent yet obviously occur due to overtopping of the dike along that side.

2.2.6 Ambient Air

Air samples taken by EPA's Emergency Response Team (ERT), on May 16, 1984, identified concentrations of various polynuclear aromatic hydrocarbons (PAH's), long-chain aliphatic hydrocarbons and other potentially hazardous compounds. The sampling methodology consisted of utilizing low flow air sampling pumps (100 cc/min), to draw air through several different types of collection media, at each station, near ground level. The only media which revealed concentrations of compounds at or above the detection limit was the ERT 2-stage (Tenax/Chromosorb 102) thermal desorption tubes. Other media used and their associated NIOSH Analytical Methods are:

1) Silica gel (3-stage) tubes-NIOSH P&CAM 168 (aromatic amines)
2) 150 mg carbon tubes-NIOSH P&CAM 127 (organic vapors scan)
3) 150 mg florisil tubes - NIOSH P&CAM 253 (PCB's and chlorinated organics scan)

The Site was also surveyed with a portable Real-Time Aerosol Monitor (mini-RAM). Particulate concentrations were not found exceeding background concentrations, which changed from 0.0-0.91 mg/m^3.

The types of compounds detected are generally those one would expect to find associated with pentachlorophenol/creosote wood treating operations. The number of identified contaminants is somewhat surprising, given the low vapor pressure of these compounds at ambient temperatures. Sampling conditions were as follows: east southeast wind at 5-10 mph, temperature 75-80^{o} F. Since sampling was not performed in the breathing zone, the data shows, at best, that these compounds are volatilizing from the undisturbed surface of the Site. While the real time particulate

monitor failed to show any particulate dispersion, any site activities which disturb the surface could result in the generation of airborne particulate contaminants, as well as increase the generation rate of the volatile organic compounds identified in this survey. Different atmospheric conditions (pressure, humidity, wind, temperature) would also have an effect on the concentrations of contaminants emitted. The results of the May 16, 1984, ERT sampling are attached in Appendix F, with the monitoring stations located in Figure 4.

Only eight of the compounds identified in the air sampling mission have OSHA TLV's (threshold limit values). These are anthracene, biphenyl, hexane, indene, methylstyrene, naphthalene, phenanthrene and phenol. The concentrations of these compounds found in the sampling effort do not approach the OSHA 8-hour TWA (time weighted average) or the OSHA 15-minute STEL (short term exposure limit). A comparison of the concentrations found on-site vs. permissible and threshold limits are provided in Table 1 on the following page.

2.2.7 Pathways of Exposure

From the data discussed previously, it is apparent that pathways of exposure exist both on-site and off-site, the degree of which will vary widely. Of these, the following should be considered as the most likely general avenues:

- Ingestion of contaminated groundwater and surface water
- Ingestion of vegetation irrigated with contaminated groundwater or grown in contaminated soils
- Dermal contact with contaminated groundwater and surface water
- Ingestion of contaminated sediments and surface soils
- Dermal contact with contaminated sediments and surface soils
- Inhalation and ingestion of contaminated particles and vapors
- Dermal contact with contaminated equipment and structures
- Ingestion of or by wildlife

While migration of contaminants to Keeland Creek has not yet been documented, it must be considered a possibility that this has occurred. If so, the pathways should be expanded to include this variable (e.g., ingestion of aquatic organisms).

	Highest Concentration Found	* OSHA PEL	** ACGIH TLV
Anthracene	80.0ug/m^3	200 ug/m^3	200 ug/m^3 (CTPV's)
Biphenyl	0.02 ppm	0.2 ppm	0.2 ppm
Hexane	0.003ppm	500 ppm	50 ppm
Indene	0.03 ppm	N/A	10 ppm
Methyl Styrene	0.005ppm	100 ppm	50 ppm
Naphthalene	0.03 ppm	10 ppm	10 ppm
Phenanthrene	0.01 ppm (80 ug/m^3)	200 ug/m^3	200 ug/m^3 (CTPV's)
Phenol	0.002ppm	5 ppm	5 ppm

N/A = Not Applicable

*OSHA PEL's (Permissible Exposure Limits) are 8-hour time weighted average exposure levels which must be met for compliance with CFR 1910.1000 (Tables 2-1, 2-2, and 2-3).

**The ACGIH TLV's (American Conference of Governmental Industrial Hygienists Threshold Limit Values) are limits which are revised yearly, and provide the most up-to-date recommendations for allowable exposures to workers. The OSHA PEL's were extracted from the 1968 ACGIH TLV's, thus, the limits may not be adequately protective from exposure to some agents. The air sampling conducted by the ERT identified many compounds for which there is no regulatory OSHA limit or ACGIH recommended TLV. Consequently, adequate protection of workers and the surrounding community must be achieved through a thorough review of existing toxicological and industrial hygiene data, further air monitoring, and implementation of work practices, as necessary to mitigate harmful exposures to substances released from the Site and as discussed previously.

Table 1

3. Additional Information Needs

3.1 Sampling and Analysis Plan

A Sampling and Analysis Plan must be developed to detail the methodology and direction of activities required for complete investigation coverage of the areas indicated herein. Adequate background information must be established to provide an information baseline for definition of cleanup levels of the Site. Activity objectives must also be established to define the boundaries and levels of contamination in existence at the Site. The plan must be developed in correlation with the requirements of Section 4.2.6 - Sampling and Analysis Plan and Implementation.

Sampling to date indicates Site contaminants of PCP, PCB and creosote components. Analyses of all creosote compounds will not be made in this Remedial Investigation except as noted. The samples will be analyzed for only the creosote indicator parameters, i.e., carbazole and phenanthrene [Note: Paragraph 161:1866, Appendix III - Chemical Analysis Test Methods (Revised by 48 FR 14153, April 1, 1983) states that creosote should be considered present if analysis indicates that phenanthrene and carbazole are present at a ratio between 1.4:1 and 5:1]. EPA approved analytical procedures will be used for analysis and collection of all samples, including chain of custody and quality assurance/quality control.

All samples will be analyzed for PCP, PCB and the two creosote indicators unless otherwise noted. In addition, ten percent (10%) of all samples (excluding composite samples) will be analyzed for full scans of organic priority pollutants. The specific sampling strategy in selecting the samples to analyze for full organic scans will be an integral part of the Sampling and Analysis Plan. (Refer to Section 4.2.7 - Public Health Evaluation for additional requirements which may become evident during the public health evaluation.)

The Contractor will also provide duplicate samples to check Quality Assurance/Quality Control for ten percent (10%) of all samples (excluding composite samples). Refer to Section 4.2.6 - Sampling and Analysis Plan and Implementation for more information.

The overall objective of this plan is to determine the vertical and horizontal extent of the occurrence and concentration of contaminants both on and off-site and the direction and rate of migration. This will involve sampling and analysis for development of concentration (per contaminant) contour maps per vertical and horizontal distribution in support of remediation alternative development. Tables indicating maximum, minimum and average concentrations per zone, etc. will also be developed as well as graphs as needed.

The identification system for samples, wells, trenches and piezometers will be according to the following:

1. Monitoring wells will be numbered beginning with #5 and continuing sequentially. The shallow well in each set will be designated "S". The deep well will be designated "D". The monitoring well numbers will be prefaced by the capital letters M.W.; an example would be:

   MIDLAND
   M.W. 5-S
   Sample #1, Soil
   From 0.0' to 0.5'
   Date: _____

2. The trenches will be numbered by beginning with #1 and continuing sequentially, using the preface TR. This shall be shown on maps in accordance with the coordinate system established herein.

3. Surface and subsurface soil samples will be assigned North and East coordinate numbers to identify their location. These numbers will be determined in the field by measuring from previously set coordinate control stakes. (See Section 4.2.4) They will also be identified according to depth in increments of three (3) inches.

4. Piezometers will be numbered by beginning with #1 and continuing sequentially. The numbers will be prefaced by the letter P.

5. Surface water samples will be identified according to the coordinate system established herein. (Except lagoons). These samples will be taken primarily from the drainage pathways and streams.

6. Lagoons will be identified according to the previously assigned numbers 1-7 for the lagoons. The numbers will be prefaced by the capital letter "L" and the sample tag will indicate water, sediment, crust or oil. Samples shall also be identified according to the coordinate system established herein.

7. Surface sediment samples shall essentially be defined as transported soil deposited in the drainage pathways. The coordinate system will be used for sample identification and location.

In general, all core and split spoon samples such as those from monitoring wells, trenches and boreholes will be called "core" samples. Soil samples within the top six (6) inches of the surface will be called "surface soil". Soil samples obtained between six (6) inches and twelve (12) inches beneath the surface will be called "subsurface soil".

Should it become necessary to take surface samples beyond the coordinate system control, a stake will be driven into the ground at the point of sampling and marked with the date, sample number and type of sample. It shall later be identified for reporting purposes in accordance with the previously developed coordinate system.

All sample collection tags will bear the property name "Midland" and have corresponding spaces for chain of custody forms.

3.1.1 Surface Soils

This sampling will include all of the initial investigation area. This is necessary because products were stored on-site in front of the old plant and probably other unknown areas. Also, vehicles have probably tracked contaminants across the Site. This task might indicate other areas of concern. A maximum of 100 surface soil samples will be taken during this initial investigation to determine the horizontal extent of contamination and concentrations of parameters. A surface concentration contour map of parameters relative to topography of the entire contaminated on-site and adjacent area is to be developed from surface soil sampling.

3.1.2 Subsurface Soils

This sampling will include the same general areas as the surface soil investigation, and will be developed to indicate the vertical extent of leaching that may have occurred. A maximum of 50 subsurface soil samples will be taken during this initial investigation to determine the horizontal and vertical extent of contamination and concentrations of parameters. Concentration contour maps will be prepared in conjunction with those prepared for surface soils.

3.1.3 Cores

During the installation of four new deep monitoring wells, and three new shallow monitoring wells (to be installed by the railroad tracks) (Refer to Section 3.1.6 - Groundwater), a maximum of 55 core samples will be selected for obtaining analysis. In addition, two other points of interest will also be selected for obtaining an additional 20 core samples. These will be collected by providing two 40 foot deep boreholes. Refer to Section 3.1.6.2 - Core Sampling for sample selection methodology in developing vertical extent of parameter migration for concentration contour mapping.

3.1.4 Lagoons

Two composite sediment/sludge samples and two composite water samples will be taken of each lagoon # 1, 2, 3, 4, 5, 6 and 7. The effort shall be oriented toward quantification of contamination per parameter in each lagoon medium.

In addition to the laboratory analysis of the indicator parameters, additional analysis of lagoon waste characteristics will be performed as follows:

1. One composite sediment/sludge sample from each lagoon will be selected for laboratory determination of % chloride, % hydrocarbons, % nitrogen, % sulfur, % ash content, flash point, and heat value (BTU/lb) to aid in the analysis of incineration as a disposal alternative.

2. The second composite sediment/sludge sample from each lagoon will be used for laboratory determination of % fly ash, % kiln dust and % lime required for solidification and stabilization as a disposal alternative. % organic content will be determined also.

3. A headspace analysis will be performed at the Site on sludge samples from each lagoon to better estimate the risk to workers and the community from volatilization of chemical constituents of the sludge..

4. A composite water sample from each lagoon will be selected for laboratory determination of volatility, carbon adsorption capacity, and carbon adsorption isotherms coefficient to aid in the analysis of carbon adsorption treatment and air stripping as disposal alternatives. The pilot carbon column tests shall be adequately documented with charts and graphs.

3.1.5 Drainage Pathways

There are two drainage pathways flowing away from the lagoons and contaminated areas. They join an intermittent stream just north and west of the Plant. The sediment in these ditches will be sampled to the railroad track and water samples will be taken from the main stream. There will be a maximum of 10 sediment samples and three surface water samples taken during the initial investigation. In addition, there will be four (4) sediment samples and two (2) water samples taken at intermediate points between the railroad tracks north to the property line in the stream bed for detection of indicator parameter contaminants. The purpose of sampling and analysis shall be oriented toward quantification of contamination per parameter, extent of migration, degree of risk and support of remediation alternatives.

3.1.6 Groundwater

Four pairs of monitoring wells have been installed previously, generally located as shown in Figure 4.

A maximum of four additional pairs of monitoring wells will be drilled during this initial investigation to obtain additional information on groundwater contamination. Each set will have a shallow hole and a deep hole with approximate depths of 20 feet

and 40 feet, drilled no closer than 5 feet but within 10 feet of each other. Also, three shallow monitoring wells (20 foot depth) will be installed in the general location along the south side of the railroad tracks to monitor the shallow groundwater for contaminants.

The monitoring wells will be designed, constructed, developed and sampled pursuant to EPA regulations, guidance and procedures with possible modification for capturing the organic surface layer floating atop the water table (See Sections 3.1.6.3, 3.1.6.4, 3.1.6.5, 3.1.6.6, 3.1.6.7 and 3.1.6.8 for specific details.)

A maximum of forty-two (42) groundwater well samples will be taken during this initial investigation to determine vertical and horizontal extent of groundwater contamination. This includes sampling and analysis of the existing "Plant" water well.

A maximum of 6 sets of piezometers (two holes for each set) will be installed. They will be designed and constructed pursuant to EPA regulations. In general there will be a shallow hole, approximately 20 feet deep and a deep hole approximately 40 feet deep. Each pair of deep and shallow wells shall be installed no closer than 5 feet and no further than 10 feet apart.

A maximum of 600 feet of trenches will be excavated east of the lagoon area. Their width will be a minimum of three feet and a maximum depth of 20 feet. Special attention shall be paid to necessary safety precautions, to be defined in the Site Safety Plan, when excavating and working in and around trenches, which will include activity provisions in the case of discovering unsuspected conditions upon trench construction.

3.1.6.1 Geohydrology

A geohydrologist will be on-site at all times during the trenching and during the construction of the monitoring wells and piezometers. His overall objective will be to observe, record and report those characteristics of the soils, geology, hydrology and groundwater in order for the Consultant to determine the location, dispersivities, transmissivities, direction and rate of contaminant migration. Toward that end he will perform the following task:

1. Supervise the installation of all piezometers and monitoring wells for proper construction and make geologic field logs and field maps.

2. Select well screen intervals and determine the final depth of monitoring wells and piezometers when necessary in the field.

3. Supervise or perform sampling for physical and chemical testing.

4. Conduct field permeability tests implementing slug test method only, on all boreholes for wells, piezometers, etc. unless otherwise instructed by ADPC&E. The tests shall be performed in the zone (1) groundwater occurrence and the zone (2) groundwater occurrence in the level of greatest influence.

5. Prepare a geologic map of the Site (paying particular attention to the area south of the railroad tracks) especially noting areas of discharge and recharge of groundwater.

6. Measure and record groundwater elevations monthly.

7. Map the sides and bottom of the trenches to obtain the following details of subsurface characteristics:

   a) Dip and strike of the underlying bedrock formation.
   b) Positive identification of the formation and rock types.
   c) Degree, location and extent of fractures and joints.
   d) Configuration of the weathered and unweathered bedrock surface.
   e) Width of fracture and joint openings.
   f) Degree and nature of secondary mineralization especially regarding healing in fractures and joints.
   g) Location, dip and strike of any faults especially noting their characteristics regarding fluid flow.
   h) Occurrence, location and characteristics of the soils and formations, especially regarding groundwater flow and contaminant migration.

The information obtained from the trenches will be used to determine the location, depth and screened intervals of the deep (zone 2) wells and the piezometers as well as the shallow holes (zone 1) to some degree. A maximum of six (6) core samples will be taken during trenching as needed for laboratory analysis of indicator parameters at the geohydrologist's discretion.

A maximum of twenty-three (23) field permeability tests (falling head) will be made during the installation of each monitoring well and each piezometer. They shall be performed in an effort to characterize both the zone (1) and zone (2) groundwater occurrences.

A maximum of fifteen (15) permeability tests and a maximum of 25 particle size distribution determinations will be performed in the lab on samples selected by the geohydrologist which will best determine the various site characteristics. All tasks shall be subject to the approval of ADPC&E; informal approval of well screen intervals and depth of monitoring wells and piezometers is required prior to construction. Final depths shall be dependent on actual coring information and determined by the geohydrologist.

In addition, the following items will be summarized by the geohydrologist for the site area south of the railroad:

1. Contour maps of the piezometric surface drawn monthly for upper groundwater zone (1) and lower groundwater zone (2).
2. Contour map of the top of weathered bedrock.
3. Contour map of the top of unweathered bedrock.
4. Geologic cross sections. (The number of sections and their location will be determined after completion of the trenching. One set will probably be parallel to the strike with a second set perpendicular to the first).

After completion of the trenches, piezometer and monitor wells they will be surveyed to determine their locations and mean sea level (MSL) elevations. After mapping and recording by the geohydrologist, the Contractor will refill the trenches with the excavated material, taking care to compact the refill adequately to allow unimpeded travel through the area.

Special Note: All trench work will be performed with the necessary precautions identified and outlined in the Site Safety Plan. Also, all trench work shall be performed, and all subsurface mapping information summarized along with site mapping for decision making in locating piezometers and wells in the proper locations. Existing monitoring wells will be used initially for piezometric surface readings to develop monthly contour maps until the new piezometers and monitoring wells are installed. Then, readings and maps will be made of all available locations on the Site for the duration of the Contract.

3.1.6.2 Core Sampling

The subcontractor will obtain representative samples of soil at the beginning of every change of stratum and at intervals not exceeding 5 feet, unless otherwise instructed. Samples will be representative of the material encountered and spoon samples will be obtained by driving a 2-inch OD sample spoon with a 140-pound weight free-falling 30 inches. The driving resistance will be recorded for each 6-inch increment sampled with the split spoon. All measurements of strata and sample intervals will be in feet and tenths of feet.

The geohydrologist will select certain split-spoon samples for eventual chemical analysis. In general, all drilling and sampling operations will conform to American Society for Testing and Materials (ASTM) standards unless otherwise designated.

3.1.6.3 Monitoring Well and Piezometer Construction and Installation

Construction of the wells and piezometers will be in accordance with standard procedures. The monitoring well casing will be PVC or Stainless Steel with a nominal inside diameter (ID) of two inches. The pipe will extend 2.5 feet above ground level. The pipe will have threaded flush joints and be equivalent to Schedule 80 ASTM standards in the case of PVC, and 316 pipe in the case of Stainless Steel. No solvents will be used as joining compounds.

The casing will terminate in a factory-slotted PVC or Stainless Steel well screen with a slot size of 0.010 inches. Screens will be continuously slotted or slotted in three rows placed at 120° intervals around the circumference of the pipe. Caps of the same material as the well screen will be threaded onto the bottom of each well screen to prevent the intrusion of filter material.

In constructing piezometers and monitoring wells, the Contractor shall be required to install two (2) of the shallow monitoring wells (20 ft. depth) with 316 Stainless Steel material as stated above. All other monitoring wells and piezometers will be installed with PVC material as stated above. The particular location of monitoring wells to be installed with Stainless Steel will be selected by ADPC&E prior to installation.

In the case of drilling locations where the oily layer is present atop the groundwater, the oily layer must be separated from the drilling fluids during well and piezometer construction. The Contractor will detail a method for this oil removal prior to drilling monitoring wells and piezometers and submit to ADPC&E for approval.

3.1.6.4 Backfilling

The annular space of the monitoring wells will have a minimum thickness of 1.5 inches and will be backfilled with a suitable grade of Ottawa sand or similar medium-grain clean sand to a level approximately 1 foot above the top of the screen.

All backfilling will be done in 2-foot increments or less as the casing or augers are withdrawn to keep the hole from collapsing around the well point before the sand chamber is established.

A 2-foot seal of bentonite pellets will be placed above the sand chamber. Special care will be exercised to obtain an adequate bentonite seal as casing or augers are withdrawn.

A lean concrete/natural bentonite grout will be tremie placed to within two feet of the ground surface or as otherwise specified. The lean concrete and natural bentonite will be combined in a proportion of approximately 12 pounds of bentonite per bag (94 pounds) of Type I Portland cement. The consistency of the grout will be approved by the geohydrologist in the field prior to tremie placement. The last two feet shall then be grouted with concrete after placement of well security as stated below.

3.1.6.5 Well Security

To provide well security, a 4-inch nominal diameter steel casing five feet in length will be placed around the PVC casing and set into a 2-foot depth of concrete. The top of the steel casing will extend above the inner casing and will be fitted with a cap. A hardened steel hasp will be welded on one side of each casing and

cap so that a hardened steel lock may be attached. All hardware including the hardened steel locks will be provided by the Contractor. Four small vent holes are to be drilled in each monitoring well pipe and in the protective casing to allow ventilation of any vapors which may build up in the wells.

3.1.6.6 Well Development - Organic Layer Sampling

Upon completion of monitoring well installation, each well is to be developed by bailing until the fluid runs clear. However, due to the nature of the oily layer and its tendency to float atop the groundwater, the following steps at a minimum shall be followed prior to full development of each well:

1. Measure water level,

2. Check the end of the tape line for any evidence of organics,

3. If organic layer is present, lower bottom of bailer to a point 8" below the water level,

4. Withdraw bailer and measure thickness of organic layer,

5. Additional bailing will be used for obtaining more organic layer for sampling.

6. pH and conductance will be stabilized prior to taking a water sample.

The geohydrologist will determine when the well is properly developed.

3.1.6.7 Decontamination

Prior to the mobilization of the drill rig on-site, the rig and all associated equipment will be thoroughly cleaned to remove all oil, grease, mud, tar, etc. This cleaning process will consist of 1) a high pressure hot water cleaning of the drilling equipment, 2) rinsing the equipment with methanol, and 3) a high pressure hot water final rinse. The Contractor must provide all equipment necessary for this cleaning process. This equipment may include clean water, methanol and a mobile high pressure hot water rinse.

Unless otherwise specified by the geohydrologist on-site coordinator, all sampling equipment must be cleaned between samples with methanol and clean water rinse in order to minimize contamination. All water used for washing, cleaning, mud pits, etc. and slug tests will come from local city water supplies, if not distilled/deionized. Before drilling each boring, the

augers, cutting bits and drilling rods shall be cleaned with pressurized water and rinsed with methanol and clean water. Special attention must be given to the thread section of the casing and to drill rods. Petroleum-based lubricants will not be used to prevent binding. The Contractor will be responsible for providing a means for collecting contaminated solvents, wash water and related materials.

3.1.6.8 Waste Disposal of Contaminated Soil and Wash Water

All drilling spoils or well development fluid remaining after each well installation will be considered a hazardous waste until determined by ADPC&E to be otherwise. Wash water and solutions remaining after decontamination of drilling equipment will also be considered a hazardous waste until determined by ADPC&E to be otherwise. The Contractor will be required to containerize waste in sealed 55-gallon drums and remove them to an area designated on-site. The Contractor is required to provide the 55-gallon drums as necessary to containerize any hazardous material. Drums are to be itemized and marked in accordance with type of waste, where originated, etc., such that upon determination of the actual contents, each barrel may be disposed of appropriately. The Contractor does not have to assume the role of hazardous waste generator in order to containerize the wastes and remove them to the designated area.

3.1.7 Air

The air monitoring results from the May 16, 1984 investigation demonstrated the presence of airborne contaminants. An air monitoring survey plan, detailing equipment, analysis and methodology to be used, will be submitted for approval by ADPC&E and EPA. The objective of this survey will be to determine if air contaminants are leaving the Site, to accurately determine the risk of exposure to workers and community, and to assess the degree of personal protective equipment necessary to protect workers engaged in any Site investigation activities. The ambient air sampling program will also provide sufficient information to conduct a thorough Public Health Evaluation, as discussed in Section 4.2.7.Monitoring shall be carried on throughout the on-site investigation activities.

The Contractor will provide an on-site meteorological station capable of measuring and recording wind velocity, wind direction, air temperature and relative humidity. A rain gauge will also be provided and utilized. Four (4) high volume samplers will be placed in locations surrounding the Plant area (or as determined) for the measurement of particulate emissions resulting from on-site activities. (Refer to Federal Register Volume 47, No. 234, Appendix B - Monday, December 6, 1982 for procedures). Also, four (4) organic vapor monitors will be utilized for the purpose of characterizing any hydrocarbon releases which occur during site activities. The samples and monitors must be operated

during all site activities, including but not limited to drilling, trenching, fencing, etc., which may result in the dispersion of particulates or the release of organic vapors. (Of particular interest is the estimation of the generation rates of organic vapors from the lagoon sludge.) Methods such as those employed by EPA's Emergency Response Team as referenced in Section 2.2.6 - Ambient Air, or equal, are recommended. At a minimum, laboratory analysis will be done for the contaminants listed in Table 1 on page 17. The detection limits must reach the concentrations found in Table 1. Combinations of the above techniques with a head-space analysis of sludge samples may provide the necessary information.

The Contractors shall be required to supply all power required for operation of sampling equipment. Further, particulate samples will be analyzed over 24 hour periods (minimum) during site activities, while organic vapor samples will be analyzed over seven (7) day periods (minimum). Quality control criteria shall conform to 40 CFR Part 136, Method 625 of Friday, October 26, 1984.

For the purposes of providing a satisfactory personnel safety monitoring system, the Contractor shall provide at a minimum three (3) battery-powered portable air monitoring devices capable of displacing air in a variable range of zero to four (0-4) liters per minute for eight hours of continuous operation. One device shall be provided for sampling of particulates (2-4 liters/minute) and one device shall be provided for sampling of organic vapors (0-2 liters/minute). The third device will be on hand as a spare. The devices will equal or exceed the characteristics of a DuPont Alpha 1 sampler. Colorimetric tubes shall be used for screening of organic releases. If positive results are indicated, further investigations will be performed indicating the source and nature of the release. More personnel safety shall be provided as indicated.

4. Remedial Investigation Scope of Work

4.1 ADPC&E Activities

4.1.1 Community Relations Plan

The ADPC&E will be responsible for implementing the Community Relations Plan as approved by the EPA. The Community Relations Plan is attached as Appendix D for Contractor's use and information.

4.2 Contractor Activities

4.2.1 Sampling and Analysis QA/QC

In order to ensure that the data generated is scientifically accurate and legally defensible, rigorous quality assurance/quality control (QA/QC) procedures must be enforced for elements of analytical work from sampling design and collection, to data delivery. The overall quality assurance protocol must include a description of sampling equipment, detailed field procedures, decontamination procedures, chain of custody maintenance, use of field blanks, and other elements identified in the EPA Interim Guidelines and Specifications for preparing Quality Assurance Project Plans and ADPC&E QA/QC Plan. This QA/QC plan must be prepared, submitted and approved by ADPC&E and EPA prior to the initiation of any sampling work done on the project.

4.2.2 Health and Safety Plan

The Contractor must prepare a Health and Safety Plan to address hazards to the investigation team and the surrounding community from investigation activities. The Plan should address all applicable regulatory requirements and detail personnel responsibilities, protective equipment, procedures and protocols, decontamination, training and medical surveillance. The plan should identify problems or hazards that may be encountered and their solutions. Procedures for protecting third parties such as visitors or the surrounding community will also be provided.

The Safety Plan must be consistent with Section 104 (f) of CERCLA, EPA Order 1440.3, and the EPA Occupational Health and Safety Manual. It will be a condition of the contract that all Contractors and Subcontractors comply with the Safety Plan. The Site Safety Plan must be approved by a certified industrial hygienist prior to submittal to ADPC&E for approval.

As more information about the Site is gained or as the scope of work changes, it may be necessary to modify the Health and Safety Plan. The Contractor will be responsible for any necessary modifications, which must be approved by ADPC&E prior to implementing unless emergency situations/conditions shall govern, at which case ADPC&E shall be notified promptly.

The Contractor should use as a guide the following outline developing specifications for the Site Safety Plan, to ensure consistency with the appropriate EPA, OSHA, and State health and safety requirements. The following reference list should be used as guidance in developing the Site Safety Plan. The Site Safety Plan must be submitted and approved by ADPC&E and EPA prior to initiation of any on-site activities.

- CERCLA Sections 104(f) and 111(c)(6)

- EPA Order 1440.2 - Health and Safety Requirements for Employees Engaged in Field Activities

- EPA Order 1440.1 - Respiratory Protection

- EPA Occupational Health and Safety Manual

- EPA Standard Operating Safety Guide (November, 1984)

- Part 1910 of 29 CFR revised 1 July 1982, OSHA Standards for General Industry

- NIOSH, (National Institute of Occupational Safety and Health) Manual of Analytical Methods, Volumes I-VII

- Threshold Limit Values (TLV) for Chemical Substances and Physical Agents in the Work Environment with Intended Changes Adopted by ACGIH (American Conference of Governmental Industrial Hygienists), latest edition

- ANSI Z 88.2 - 1980, American National Standard, Practices for Respiratory Protection

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Outline for Site Safety Plan

1. The purpose of this section is to describe the information that should be addressed in each SSP and tailored, to the extent information is available, to each site.

2. Describe the Site and known hazards and risks
   - (same as existing discussion)
   - identify general quantities
   - emphasize the importance of Site description
   - include toxicology information

3. Delineate work areas
   - designate where work functions occur narratively and with Site map
   - define limitation to work areas (i.e., tools, equipment that is not appropriate for use in IDLH atmospheres)

4. Identify Site control procedures
   - identify procedures to control Site access for non-work party members
   - describe (include map) work zones

5. Describe air surveillance procedures
   - describe procedures and instrumentation use to monitor for worker and community safety
   - (air surveillance strictly for Site characterization should be described in a site study plan)

6. Designate levels of protection
   - describe it for each specific work function
   - explain why level selected
   - describe any modifications, supplements to selected levels and contingency measures

7. Describe decontamination procedures
   - for people, sample bottles, field equipment, cars/drill rigs
   - describe what will be done with spent decon solutions

8. Discuss procedures, arrangement for weather-related problems
   - discuss provisions for dealing with heat, cold, storms, etc.
   - discuss provisions for shelters, rest areas, fluid rejuvenation, etc.

9. Describe action plan for a Site emergency
   - persons to contact
   - location and map to nearest phone
   - location and map to nearest hospital, doctor, and poison control center
   - phone numbers of emergency contacts (rescue, police, fire, explosive experts, etc.)
   - how to rapidly evacuate workers
   - how to rapidly evacuate nearby residents
   - situation when emergency procedures become applicable (include here a reference to the example in threshold for response)

10. Identify responsibilities for implementing SSP
   - Contractor's responsibilities
   - Construction Inspector's responsibilities
   - Site Safety Officer's responsibilities

4.2.3 Data Management Plan

All data collected from investigations of the Site will be included in the monthly project status reports, as described in Section 5 - Remedial Investigation Reports. Laboratory analytical data will be summarized by the Contractor, prior to submittal to ADPC&E.

4.2.4 Site Mapping

Topographic maps of the Site shall be prepared as reproducible mylar base maps in adequate fashion to provide other reproducibles from the originals. Base maps will show legal boundaries, surface physical features and any overhead or buried utility systems of the pertinent tracts in the Warranty Deed and establish permanent baseline and coordinate system (50 foot grid system) for use in itemization of sampling and testing point identification. Contour

interval shall be one foot in accordance with mean sea level. Include monitoring well elevation data to the nearest one-hundredth of a foot for use in field monitoring. Also, provide lagoon bottom/sludge/liquid level sounding (as related to Section 3.1.3 - Lagoons for quantification of indicator parameters per concentration range). The following scale maps shall be provided on 36" X 24" plan sheets:

A. Horizontal scale of 1 inch equals 20 feet of the lagoon and treatment area (Tract 2, or plant).

B. Horizontal scale of one inch equals 100 feet or less of all boundaries described as in the Warranty Deed. Topographic contouring need not surpass the Rock Island and Pacific Railroad to the north except that intermittent stream channel alignment and contours shall be shown to Warranty Deed boundary.

Include 100 feet beyond legal boundaries for topographic level work, except as described in B above.

Coordinate stakes are to be left in place at the Site at minimum 150 foot intervals on grid. They shall be marked to indicate the location in the grid system for sampling point control.

Survey crews shall also be required at various times during site investigations for miscellaneous activities such as monitoring well and piezometer level work, etc., and any feasibility study information required.

All boundary surveys and coordinate systems will be prepared with the assistance of and approval by a State of Arkansas Registered Land Surveyor.

Reductions in maps and plans shall be provided for inclusion in the final reports as an aide to visual representation.

Special Scheduling Notice: Map work is of top priority as specific trenching, monitoring well, sampling point, etc. coordinates are to be based on the specifics of the terrain indicated. Submit eight (8) blueprints of each map to ADPC&E for approval and mark-up of preferred locations. At least five of each will be marked up by the Consultant for draft sampling plan; one will be returned to the Consultant with final adjustments. The Consultant will then resubmit two amended plans of each final to ADPC&E for records. Also, enclose one copy of all field survey notes, which shall be deemed the property of ADPC&E. The Contractor should make note of Section 4.2.2-Health and Safety Plan requirements prior to sending field crews on-site. A site safety plan relevant to field surveying will be necessary for this purpose.

4.2.5 Site Securement

Restricted access and securement of the Site shall be provided by the Contractor through the use of new gates and fencing installed in a manner consistent with reusing satisfactory existing chain link, or chain link and barbed wire fencing already in place at the Site. Upon completion of Site mapping and contouring, Contractor shall provide recommended installation alignment and gate location to ADPC&E along with initial blueprint submittals for review and comment. Contractor shall then install all materials, to the approval of ADPC&E, including 750 lineal feet + or - of six foot tall galvanized steel chain link fencing, with steel cable in top and bottom chain, two 12 foot wide gates, and adequate cross-bracing in all fence direction changes and gate support sections.

The Contractor shall be responsible for structural integrity of all components. Submit standard construction guidelines and materials installation instructions (including materials lists) to ADPC&E for approval prior to fabrication.

4.2.6 Sampling and Analysis Plan and Implementation

The Contractor shall detail the Sampling and Analysis Plan for review and approval by ADPC&E and EPA. The plan will correlate the details of sampling frequencies per zoned work area with Section 3 - Additional Information Needs in this Work Plan. In addition, specific QA/QC procedures and protocol shall be referenced concerning the needs and specific equipment required in each work zone, type of media sampled, and detection limits (if applicable). The Sampling and Analysis Plan will be initiated based on a two phase sampling program. The Contractor will select approximately 60% of all surface and subsurface soils and sediments for phase one sampling and analysis in an attempt to delineate the areas of contamination occurrance. The resulting information will be used to indicate areas for additional sampling needs. All other sampling and analysis is independent of the phased sampling, except that 50% of the groundwater samples will be taken during each sampling visit. In addition to the maximum number of samples to be collected and analyzed as described previously in this Work Plan, an additional 10% of all sampling and analysis performed will be duplicate samples for QA/QC. Also, data must show results of laboratory spiked samples on at least 10% of all samples submitted for analysis. Spikes recovery must be within method tolerances or the samples will not be accepted nor payment made by ADPC&E for said samples. All test procedures will be in accordance with 40 CFR Part 136 of October 26, 1984. ADPC&E will reserve the right to require additional replacement samples for others incorrectly processed by the Contractor. The laboratory will retain all samples (except water) for at least 30 days beyond ADPC&E receipt of laboratory data reports. After this period, all samples will be shipped to and become the property of ADPC&E.

The Contractor's methodology shall be included and categorized as to the reasoning behind certain sampling stratagy, for instance random sampling in certain work zones versus systematic sampling in others. Screening methodology shall be itemized to indicate a practical approach for determining samples to submit for laboratory analysis. The background sampling strategy will be an integral part of the sampling plan and detailed to indicate baseline data determinations.

Finally, Contractor must submit the site maps prepared as specified in Section 4.2.4 - Site Mapping, showing a visualized depiction of the Contractor's sampling plan approach including trenches, monitoring wells (after trench completion), sample points, etc. Contractor should include any recommended data needs for ADPC&E and EPA consideration.

Upon written approval from ADPC&E the Contractor shall implement the approved Sampling and Analysis Plan, according to the timetables set in Section 12 and as negotiated prior to contract award.

4.2.7 Public Health Evaluation

The Contractor will perform a public health evaluation which will direct development of RI sampling strategy, then evaluate the full range of proposed remedial action alternatives in the FS to minimize risk to the public health and environment. In addition to the RI and FS Guidance documents referenced in Section 1, the Draft "Superfund Health Assessment Manual" of May 22, 1985 must be used in conducting the public health evaluation. When this document becomes a final, the Consultant will be expected to use the final version. All terminology used below comes from the draft "Manual".

4.2.7.1 Baseline Site Evaluation

The Contractor will perform a Baseline Site Evaluation consisting of a Level 1 Assessment and, where indicated, a Level 2 Assessment of the no-action alternative. The Level 1 assessment will provide a qualitative review and analysis of exposure pathways and potential for exposure to determine the level of detail which is appropriate. If the Level 1 assessment is determined as adequate, the Contractor will proceed to Section 4.2.7.2 - Development of Risk-Based Goals for Remedial Alternatives. If it is determined that complete pathways exist, and the potential for human exposure is likely, a Level 2 assessment will be performed to provide a quantitative review and analysis. (Note: The Level 2 assessment will analyze the exposure pathways identified in Level 1). The Level 2 assessment, if indicated, will be performed in five general analytical steps as follows:

1. Select additional indicator parameters representing the most toxic, mobile and persistent chemicals common to the Site (if necessary, a maximum of four (4) additional parameters will be selected, and further analysis performed);

2. Estimate the exposure point concentrations of the indicator parameters through site monitoring data and environmental transport modelling, and compare the estimates to relevant/ applicable standards (the exact methods of environmental transport modelling will be as approved by ADPC&E);

3. Estimate the daily chemical intakes, per pathway, for both short term (10-90 days) and long term (70 years) exposures;

4. Assess the toxicity of the indicator chemicals for both chronic and subchronic acceptable intakes;

5. Characterize the risks associated with both potential carcinogens and noncarcinogens.

Note: While the results of the no-action alternative assessment may not be taken as a characterization of absolute risk, it will highlight sources of risk, so that they may be effectively dealt with. Also for the purposes of setting the level of effort for the Level 2 Assessment, if indicated, the groundwater occurrence in the lower zone (2) (Re: 2.1.5 - Hydrology) and below, if contamined, as well as air will not be analyzed by means of environmental transport modelling in this RI/FS. However, exposure pathways and potentials for exposure will be identified.

4.2.7.2 Development of Risk-Based Goals for Remedial Alternatives

The Contractor will develop design goals utilizing the information developed during the assessment of the no-action alternative. For source control alternatives, relevant/applicable standards for the indicator parameters and best engineering judgement will be used for developing target concentrations. For design of management of migration alternatives, health risk at population exposure points will be used for design goals. The process of developing design goals will consist of reviewing indicator parameters (in terms of treatability and adequacy), identifying exposure pathways, release sources, and human exposure points, developing target concentrations (per media), and assessing the potential short-term health risk of implementation and potential effects of failure, for each alternative.

The public health evaluation must be presented as a chapter in the Feasibility Study Report, and must include completed worksheets from the Superfund Health Assessment Manual (or equivalent) and summary exhibits for both the no-action alternative and remedial alternatives. The Level 2 Assessment of the No-Action Alternative must include the summary exhibits and the following worksheets:

1) Concentrations in Various Media
2) Evaluation of Exposure Factors
3) Matrix of Potential Exposure Pathways
4) Contaminant Concentrations at Exposure Points
5) Comparison of Appropriate Standards to Estimated Exposure Point Concentrations
6) Identify Pathways Contributing to Total Exposure
7) Total Subchronic Daily Intake (SDI) Calculation
8) Total Chronic Daily Intake (CDI) Calculation
9) Calculation of Subchronic Hazard Index
10) Calculation of Chronic Hazard Index
11) Calculation of Risk from Potential Carcinogens
12) Calculation of Target Surface Water Concentrations Based on Fish Ingestion
13) Summary of Exposure Pathways, Exposure Points, and Target Concentrations
14) Long-Term Target Releases
15) Summary Table: Chronic Intakes and Risks from Noncarcinogens

The remainder of the worksheets and summary exhibits should be included in the feasibility study appendices. The narrative report must identify sources of uncertainty and explain assumptions used in the risk assessment. The public health evaluation will be used by ADPC&E and EPA, along with other feasibility study elements, to select the appropriate remedial action alternative.

All activities conducted during the public health evaluation will be in accordance with ADPC&E approval and direction. The Contractor will provide adequate and necessary data and information for ADPC&E and EPA determination of needs and objectives.

5. Remedial Investigation Reports

5.1 Monthly Progress Report

A monthly report shall be required from the Contractor listing the following technical and financial items:

5.1.1 Identification of Site and Activity
5.1.2 Status of Work and Progress to Date including all Data Generated during the Previous Month
5.1.3 Percentage of Completion and Schedule Status
5.1.4 Difficulties Encountered During the Reporting Period
5.1.5 Actions Taken to Rectify Problems
5.1.6 Activities Planned for the Next Month
5.1.7 Changes in Personnel and documentation of their safety training
5.1.8 Actual expenditures (including fee) and direct labor hours per technical level for the reporting period

5.1.9 Cumulative expenditures (including fee) and cumulative direct labor hours per technical level for the project
5.1.10 Projection of expenditures, for completing the project, including an explanation of any significant variances from original targets
5.1.11 A graphic representation (plus fee) and comparison of actual versus target direct labor hours per technical level. A projection to completion will be made for both

The monthly report will list target and actual completion dates for each element of activity, including project completion, and provide an explanation if any deviation is actually incurred or expected from the milestones in the work plan schedule.

5.2 Final RI Reports

The Contractor shall prepare a final report covering the remedial investigations and submit six copies to the ADPC&E. The report shall include the information given in Section 1 through 3 of this Work Plan in addition to the results of Sections 3 and 4. The report shall be structured to enable readers ease in cross-referencing through the use of tabs, appendices, charts, reduced maps, etc.

6. Feasibility Study

The purpose of the Feasibility Study (FS) is to develop and evaluate remedial action alternatives for the containment and/or cleanup of Site contamination. The FS will use the data acquired during all previous investigations, the Remedial Investigation and other technical and applicable literature to develop and screen appropriate remedial actions. The screened alternatives will be assessed using detailed engineering, economic and environmental criteria, thus resulting in the development of the most implementable and cost-effective, socially acceptable and environmentally sound alternatives for review and selection of the final alternative by the ADPC&E and EPA. The FS will be conducted by the ADPC&E's Contractor, and will commence after official notification by letter from ADPC&E.

Specific reference is made to the Feasibility Study overall approach concerning alternative development and screening discussed in the FS Guidance, Chapter 2.1. This is the desired criteria for alternative development and screening to be used by the Contractor.

6.1 Description of Current Situation

The Contractor will update the information given in Section 2 as well as other information which may be provided by ADPC&E to include in the findings of the Remedial Investigation.

7. Develop List of Remedial Alternatives

7.1 Define Remedial Action Objectives

Specific remedial action objectives for contamination cleanup based on the information collected during the Remedial Investigation will be defined. Basic considerations will include: (a) the existing and potential hazards to public health and the environment; (b) the geographical extent of the hazardous substances, both lateral and vertical; and (c) the major pathways of off-site migration.

7.2 Identify and Screen Remedial Technologies

Appropriate remedial technologies to use as a basis in developing remedial alternatives will be identified. Proven technologies for contamination handling, disposal, control, containment and treatment that have been successfully implemented in similar instances will be considered. The Contractor is referred to the FS Guidance Chapter 2.3, and Tables 2-1 and 2-2 for reference during this initial identification and screening of remedial technologies.

7.3 Develop List of Remedial Alternatives

Site-specific remedial alternatives using the appropriate remedial technologies will be developed. As part of the FS, at least one alternative for each of the following must, at a minimum, be evaluated within the requirements of the FS Guidance and presented to the decisionmaker (the FS report should discuss those situations where no feasible alternative can be identified for a given category):

a) Alternatives for treatment or disposal at an off-site facility approved by EPA (including RCRA, TSCA, CWA, CAA, MPRSA, and SDWA approved facilities), as appropriate:

b) Alternatives which attain applicable and relevant Federal public health or environmental standards;

c) As appropriate, alternatives which exceed applicable and relevant public health or environmental standards;

d) Alternatives which do not attain applicable or relevant public health or environmental standards but will reduce the likelihood of present or future threat from the hazardous substances. This must include an alternative which closely approaches the level of protection provided by the applicable or relevant standards and meets CERCLA's objective of adequately protecting public health, welfare, and environment.

e) A no action alternative.

The alternatives will also meet the defined objectives in 7.1. The National Contingency Plan specifies that remedial alternatives, besides filling each of the categories, should be classified either as source control [40 CFR 300.68(e)(2)] or off-site (management of migration) remedial actions [40 CFR 300.68(e)(3)], or both. A basic list of alternatives considering on-site containment, on-site treatment, containment removal, off-site disposal and dredging will be developed (Reference: Table 2-1 of the FS Guidance).

For example, on-site containment would entail the evaluation of the existing subsurface strata to preclude migration of hazardous materials from the Site, the potential for using groundwater cutoff walls (e.g., slurry walls) and impermeable surface capping (e.g., clay caps or impermeable membranes according to RCRA standards). On-site treatment could include groundwater pumping, possibly in conjunction with a groundwater cutoff wall, in addition to physical treatment (e.g., carbon adsorption), incineration, and on-site stabilization. Off-site disposal would include developing an inventory of disposal facilities suited to handle the contaminated materials (e.g., incinerators or landfill), their locations and associated removal and transport requirements. Dredging alternatives would include hydraulic and mechanical methods. No-action alternatives may be considered if: (1) the other remedial actions present a greater health or environmental danger than no action; (2) the results of the RI indicate no existing or potential adverse public health or environmental effects; (3) the costs to implement the remedy is substantially greater than the resulting benefits; (4) an appropriate remedy is technically unfeasible. It is not the intention to remove the No action alternative from consideration due to definitive needs, as it is required for final consideration in the final listing of remedial action alternatives.

Special Note: Since groundwater contamination is the most frequent type of problem at NPL sites, the corrective action requirements of Subpart F of the RCRA regulations (40 CFR Part 264) will be applicable or relevant in many cases and should be included in alternatives developed under category (b).

8. Screen Alternatives

8.1 Develop Assessment Criteria

Technical, environmental and economic criteria to assist in performing an initial review of the remedial alternatives will be developed. Basic criteria will include: 1) order-of-magnitude cost estimates consisting of capital and lifetime operational and maintenance costs and the present-worth value of these costs; 2) resulting adverse public health or environmental effects from implementation of the alternative; 3) reliability, effectiveness, implementability (including public acceptance, legal and institutional issues), and technical feasibility in meeting the

defined objectives. On-site options will also include consideration of all permits and other requirements for a RCRA approved disposal site. The objectives defined in 7.1, the screening process and the criteria developed here will be summarized.

8.2 Screen Alternatives

The screening process applying the criteria in 8.1 will be initiated. Alternatives costing substantially more than others, those which pose significant public health or environmental problems and those determined to be unreliable, ineffective, not implementable or technically infeasible, and those requiring inordinant maintenance and monitoring requirements will be eliminated from further consideration.

8.3 Prepare Task Memo

A Task Memo presenting the method used in the screening process, results of the initial screening, reasons for the elimination of alternatives and a list of remaining alternatives will be presented to ADPC&E and EPA for their review and comment.

9. Evaluate Remaining Alternatives

Those alternatives not eliminated during the screening process will be developed and evaluated in greater detail as follows.

9.1 Develop Alternatives

Each remaining alternative will be developed in sufficient detail to allow comparative technical assessment. This task includes the following components: 1) refine the alternatives and specify major logistic, equipment and utility requirements. Use of established technologies will be emphasized; 2) prepare a basic component diagram; 3) define operation and maintenance/monitoring requirements; 4) define implementation requirements including safety considerations, regulatory and permit requirements, temporary storage, off-site disposal and transportation; 4) prepare a conceptual Site layout drawing; 5) develop a schedule for implementation and address phasing and segmenting options; 6) list potential adverse environmental impacts, describe methods to mitigate those impacts and costs of mitigation; 7) prepare a preliminary opinion of probable costs associated with the alternative including distribution of costs over time.

9.2 Perform Detailed Technical Assessment of Alternatives

A comparative technical assessment of each alternative will be performed based on accepted engineering, economic and environmental criteria. The engineering implementability will be

determined in terms of: 1) reliability; 2) established technology; 3) suitability to effectively control the site specific problem; 4) constructability and operability under Site conditions; 5) on-site/off-site disposal capacity; 6) transportation.

The environmental ramifications will be determined in terms of: 1) adverse impacts; 2) effectiveness of mitigation measures; 3) adequacy of source control measures; 4) effectiveness of off-site control measures; 5) institutional and legal constraints; 6) health and safety requirements.

The economic viability will be evaluated in terms of: 1) construction cost; 2) operation and maintenance/monitoring cost; 3) health and safety requirement costs; 4) potential for cost escalation; 5) present-worth analysis.

9.3 Prepare Preliminary FS Report

An outline of the FS report will be prepared by the Contractor for review and comment by the ADPC&E and the EPA. Preliminary sections of the report will be drafted as in-house working documents for internal review and review by ADPC&E and EPA. The report will follow this task outline and document the FS procedure and technical development of alternatives.

In addition, the format for the Feasibility Study Report shall follow the recommended format from the FS Guidance, Chapter 9.

9.4 Prepare and Submit Draft Report

A draft report that defines the cost effective alternatives for consideration in the conceptual design will be prepared. The report will summarize the information developed during the evaluation and assessment of alternatives and will document that process. The report will incorporate the review comments from ADPC&E and EPA, and Contractor's responses as promulgated under Section 9.3.

9.5 Prepare Final F.S. Report

The results of the FS review process will be included. The report will incorporate review comments from ADPC&E and EPA along with those issues arising from public involvement. The report will document the decision process used by ADPC&E and EPA for selection of the final alternative. A summary of the decision process will be provided to the Contractor by ADPC&E. Ten copies and one reproducible will be provided to ADPC&E.

10. Feasibility Study Reports

10.1 Monthly Progress Reports

During the FS, the Contractor shall report to ADPC&E the following information on a monthly basis:

10.1.1 Identification of Site
10.1.2 Status of work (by task number)
10.1.3 Percentage completion and schedule status
10.1.4 Difficulties encountered
10.1.5 Actions to rectify problem
10.1.6 Next month's planned activities
10.1.7 Changes in Personnel and documentation of their safety training
10.1.8 Actual expenditures (including fee) and direct labor hours per technical level for reporting period
10.1.9 Cumulative expenditures (including fee) and cumulative direct labor hours per technical level
10.1.10 Projection of expenditures for completing the project, including an explanation of any significant variation from forecasted target
10.1.11 A graphic representation of proposed versus actual expenditures (plus fee) and a comparison of actual versus target direct labor hours per technical level. A projection to completion will be made for both.

12. RI/FS Schedule

Contractor	Task #	Start	Finish
A. Contract award RI/FS			
Sampling and Analysis QA/QC	4.2.1		
Health and Safety Plan	4.2.2		
Data Management Plan	4.2.3		
Site Mapping	4.2.4		
Site Securement	4.2.5		
Sampling and Analysis Plan and Implementation	4.2.6		
Public Health Evaluation	4.2.7		
Final RI Report	5.2		
B. Approval from ADPC&E and EPA to Begin FS			
Develop List of Remedial Alternatives	7.0		
Screen Alternatives	8.0		
Evaluate Remaining Alternatives	9.0		
Prepare Preliminary FS Report	9.3		
Prepare Final FS Report	10.3		

ADPC&E

A. Contract award RI/FS			
Ongoing Community Relations	4.1.1		

APPENDIX A

WARRANTY DEED
(Corporation)

*****

KNOW ALL MEN BY THESE PRESENTS:

That MIDLAND SUPPLY COMPANY, a corporation organized under the laws of the State of Arkansas, Grantor, by its President and Secretary, duly authorized by proper resolution of its Board of Directors, for the consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration, in hand paid by PLAINVIEW-OLA ECONOMIC DEVELOPMENT TRUST, INC., Grantee, the receipt of which is hereby acknowledged, does grant, bargain, sell and convey unto the said Grantee and unto its successors and assigns forever the following described land situated in Yell County, Arkansas:

TRACT ONE

The East 3/4 of the NW¼ of the SE¼ containing 30 acres, more or less, Section 2, Township 4 North, Range 21 West, Dardanelle District of Yell County, Arkansas. Also a parcel of land carved out of the SW¼ of SE¼, Section 2, Township 4 North, Range 21 West, more particularly described as follows: Begin at the Northwest corner of said forty are tract and run thence East on the North line thereof a distance of 330 feet for a point of beginning, thence South to the right-of-way of State Highway #10, thence Southeasterly along the North side of the right-of-way of State Highway #10 to the East boundary line of said forty to the Northeast corner of said SW¼ of SE¼, Section 2, Township 4 North, Range 21 West, thence West along the North boundary line of said forty to the place of beginning, containing 5 acres, more or less and being all that part of the East 3/4 of said forty which lies North of State Highway #10.

Also

A parcel of land carved out of the Southwest Quarter of the Northeast Quarter of Section 2, Township 4 North, Range 21 West, Yell County, Arkansas, being more particularly described as follows: Starting at the center of Section 2 of said Township 4 North, Range 21 West, run East 330 feet for a point of beginning, thence North 335 feet to the South right-of-way of Old Highway #10, thence Southeasterly with the South right-of-way of Old Highway #10 to a point 20 feet North of the Southeast corner of the Southwest Quarter of the Northeast Quarter of Section 2, Township 4 North, Range 21 West, Yell County, Arkansas, thence South 20 feet to said corner, thence 990 feet West to the point of beginning, containing 3.16 acres, more or less.

TRACT TWO

LESS AND EXCEPT:

Part of the W½ of the SE¼, Section 2, Township 4 North, Range 21 West; more particularly described as follows: Commencing at the Southeast Corner of the NW¼ of the SE¼ of said Section 2; thence South 89.60 feet; thence West 481.00 feet to the true point of beginning; thence North 76 degrees 24 minutes 32 seconds West

250.00 feet; thence North 4 degrees 26 minutes 28 seconds East 479.90 feet; thence South 76 degrees 24 minutes 32 seconds East 250.00 feet; thence South 4 degrees 26 minutes 28 seconds West 479.90 feet to the point of beginnng and containing 2.27 acres, more or less, in Yell County, Arkansas.

TRACT TWO, CONT.

TO HAVE AND TO HOLD the same unto the said Grantee, PLAINVIEW-OLA ECONOMIC DEVELOPMENT TRUST, INC. and unto its successors and assigns forever, with all appurtenances thereunto belonging. And Grantor hereby covenants with the Grantee that it will forever warrant and defend the title to the said lands against all claims whatever.

IN TESTIMONY WHEREOF, the name of the grantor is hereunto affixed by its President and attested and its seal affixed by its Secretary, this 13th day of October, 1981.

MIDLAND SUPPLY COMPANY

By W.E. Mullinax
President

Attest:

Secretary

STATE OF ARKANSAS)
) ss.
COUNTY OF Yell)

ACKNOWLEDGMENT

On this day, before me personally appeared W.E. Mullinax and _____ to me personally well known, who acknowledged that they were the President and Secretary of Midland Supply Company, a corporation, and that they, as such officers, being authorized so to do, had executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves as such officers.

WITNESS my hand and official seal as such Notary Public, on this 13 day of October, 1981.

Edna M. Yates
NOTARY PUBLIC

My Commission Expires:

7-14-84

This instrument prepared by:

THURMAN & CAPPS, LTD.
Attorneys at Law
2504 McCain Place, Suite 201
North Little Rock, AR 72116

000272

APPENDIX B

TABLE I. INORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

Date: January 26,1983

SITE NAME/CODE: Old Midlands Products (AR1902)

CONCENTRATIONS (ppm)

	PARAMETER	EPA Sample Numbers								Mean Ambient Background 1.	
		2 MF 9199	4 MF 9200	1 MF 9201	1 MF 9202	2 MF 9203	3 MF 9204	3 MF 9205	4 MF 9206	Western U. S. 2.	Eastern U. S. 2.
	Matrix Type	Soil	Soil	liquid	Soil	liquid	liquid	Soil	liquid		
Task 1	Aluminum	2950	2290	0.241	4570	.436	12.6	4040	7.76		
	Chromium	11.5	3.9		12.4		.039	20.0	.047		
	Barium	60.4	31.3		51.8		.175	73.2		560	500
	Beryllium				0.4			0.3		0.6	0.6
	Cobalt				13.0			7.6		8	7
	Copper	3.2	3.9		10.4			6.5		21	14
	Iron	12,600	7520	2.17	18,200	1.040(s)	27.7	16,500	13.1	20,000	15,000
	Nickel				22.3					16	13
	Manganese	225	79.3	0.298	383	4.730(s)	1.12	313	.643	390	290
	Zinc	10.2	15.2	0.058	50.0	0.064	.124	43.8	.058	51	36
	Boron	11.1	5.4	0.125	13.7			13.9		22	32
	Vanadium	11.3			13.7			14.2		66	46
	Silver									-	-
Task 2	Arsenic	5.8	3.9		8.7		.040	13		6.1	5.4
	Antimony									150	-
	Selenium									0.25	0.39
	Thallium	1.4	1.7		2.3					-	-
	Mercury	5.6	3.5	0.011	3.9		.0099	4.2		0.055	0.096
	Tin				1.6			1.6		10	10
	Cadmium									1	1
	Lead	19	8.1		16.8		.018	20		18	14
Task 3	Ammonia									-	-
	Cyanide									-	-
	Sulfide									-	-
Sample Station Number		2	4	1	1	2	3	3	4		
Sample Station Location		NW Lagoon NW Side	Path for down-stream runoff	SE Lagoon SE Side	SE Lagoon SE Side	NW Lagoon NW Side	NE Runoff Path	NE Runoff Path	Path for Down-stream Runoff		

1. Ambient background concentrations apply only to soil matrix samples. Values obtained from "Geochemistry of Some Rocks, Soils, Plant and Vegetables in the Contermious United States" Geological Surve Professional Pape .4 F 1975.

2, Reference for East/West Division is the 97° W longitudinal line which bisects Region VI.

TABLE I. INORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

Date: January 26, 1983

SITE NAME/CODE: Old Midlands Products AR 1902

CONCENTRATIONS (ppm)

PARAMETER		EPA Sample Numbers								Mean Ambient Background 1.	
		5 MF9207	5 MF9208	6 MF9209	6 MF9210	7 MF9211	7 MF9212	MF9213	9 MF9214	Western U. S. 2.	Eastern U. S. 2.
	Matrix Type	Soil	Liquid	Soil	Liquid	Soil	Liquid	Blank	Liquid	Soil	Soil
Task 1	Aluminum	2910	5.26	3500(s)	1.97	1420	1.96	.135		5.4	3.3
	Chromium	7.7	.019	10.4		6.2	.023			38	36
	Barium	25.9		48.0		30.3			.229	560	500
	Beryllium			0.3						0.6	0.6
	Cobalt									8	7
	Copper	3.6		4.7	.089	4.2				21	14
	Iron	9790	9.44	15100(s)	3.43	7220	3.600	.147	4.830	20,000	15,000
	Nickel									16	13
	Manganese	172	.274	327	.828	156	.068		1.010	390	290
	Zinc	13.5	.059	19.6(s)	.102	10.9	.076	.019	.044	51	36
	Boron	5.8		7.8						22	32
	Vanadium			11.1						66	46
	Silver							.088		-	-
Task 2	Arsenic	6.0		6.4		2.6				6.1	5.4
	Antimony									150	-
	Selenium									0.25	0.39
	Thallium									-	-
	Mercury	7.0	.012	2.1	.0078	5.3	.014		.0051	0.055	0.096
	Tin	2.3		2.4		1.5				10	10
	Cadmium									1	1
	Lead	8.1		17	.007	19	.007			18	14
Task 3	Ammonia									-	-
	Cyanide									-	-
	Sulfide									-	-
Sample Station Number		5	5	6	6	7	7	Blank	9		
Sample Station Location		Confluence of NE Runoff	Confluence of NE Runoff	West Runoff Path	West Runoff Path	Upstream Offsite	Upstream Offsite	Empty	Marcum Well		

1. Ambient background concentrations apply only to soil matrix samples. Values obtained from "Geochemistry of Some Rocks, Soils, Plant and Vegetables in the Contermious United States" Geological Survey Professional Paper 574 F 1975.

2. Reference for East/West Division is the 97° W longitudinal line which bisects Region VI.

TABLE I. INORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

Date: January 26, 1983

SITE NAME/CODE: Old Midlands Products AR 1902

CONCENTRATIONS (ppm)

PARAMETER		EPA Sample Numbers								Mean Ambient Background 1.	
		MF9215	8 MF9216							Western U. S. 2.	Eastern U. S. 2.
	Matrix Type	Blank	Liquid							Soil	Soil
	Aluminum									5.4	3.3
	Chromium	.021								38	36
	Barium									560	500
	Beryllium									0.6	0.6
	Cobalt									8	7
	Copper									21	14
Task 1	Iron	.140	2.24							20,000	15,000
	Nickel									16	13
	Manganese		.201							390	290
	Zinc	.035	.038							51	36
	Boron									22	32
	Vanadium									66	46
	Silver									-	-
	Arsenic									6.1	5.4
	Antimony									150	-
	Selenium									0.25	0.39
Task 2	Thallium									-	-
	Mercury	.0103	.0152							0.055	0.096
	Tin									10	10
	Cadmium									1	1
	Lead									18	14
	Ammonia									-	-
Task 3	Cyanide									-	-
	Sulfide									-	-
Sample Station Number		Blank	8								
Sample Station Location		Empty	Neely Well								

1. Ambient background concentrations apply only to soil matrix samples. Values obtained from "Geochemistry of Some Rocks, Soils, Plant and Vegetables in the Contermious United States" Geological Survey Professional Paper ! F 1975.

2. Reference for East/West Division is the 97° W longitudinal line which bisects Region VI.

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Date: January 26, 1983

SITE NAME/CODE: Old Midlands Products AR 1902

CONCENTRATIONS (ppm)

PARAMETER		EPA Sample Numbers								Mean Ambient Background 1.	
		MF9215	8 MF9216							☐ Western U. S. 2.	☐ Eastern U. S. 2.
	Matrix Type	Blank	Liquid							Soil	Soil
	Aluminum									5.4	3.3
	Chromium	.02J								38	36
	Barium									560	500
	Beryllium									0.6	0.6
	Cobalt									8	7
	Copper									21	14
Task 1	Iron	.140	2.24							20,000	15,000
	Nickel									16	13
	Manganese		.201							390	290
	Zinc	.035	.038							51	36
	Boron									22	32
	Vanadium									66	46
	Silver									-	-
	Arsenic									6.1	5.4
	Antimony									150	-
	Selenium									0.25	0.39
Task 2	Thallium									-	-
	Mercury	.0103	.0152							0.055	0.096
	Tin									10	10
	Cadmium									1	1
	Lead									18	14
	Ammonia									-	-
Task 3	Cyanide									-	-
	Sulfide									-	-
Sample Station Number		Blank	8								
Sample Station Location		Empty	Neely Well								

1. Ambient background concentrations apply only to soil matrix samples. Values obtained from "Geochemistry of Some Rocks, Soils, Plant and Vegetables in the Contermious United States" Geological Survey Professional Paper ! F 1975.

2. Reference for East/West Division is the 97° W longitudinal line which bisects Region VI.

TABLE I. INORGANIC ANALYSIS SUMMARY

Noak's Water Wells
4/13/84

E NUMBER: 2650

E NAME/CODE: Old Midland Products-ARO 1962

CONCENTRATIONS (ppm)

	PARAMETER	EPA Sample Numbers								Mean Ambient Background 1.	
		MF 0570	MF 0571	MF 0572						Western U. S. 2.	Eastern U. S. 2.
	Matrix Type	WATER	WATER	WATER						Soil	Soil
	Aluminum	<.200	<.200	<.200						5.4	3.3
	Chromium	<.010	<.010	<.010						38	36
	Barium	<.100	<.100	<.100						560	500
	Beryllium	<.005	<.005	<.005						0.6	0.6
	Cobalt	<.050	<.050	<.050						8	7
	Copper	.052	<.050	<.050						21	14
ask 1	Iron	<.050	.063	<.050						20,000	15,000
	Nickel	<.040	<.040	<.040						16	13
	Manganese	.097	<.010	<.010						390	290
	Zinc	.023	<.010	<.010						51	36
	Boron	-	-	-						22	32
	Vanadium	<.200	<.200	<.200						66	46
	Silver	<.010	<.010	<.010						-	-
	Arsenic	<.010	<.010	<.010						6.1	5.4
	Antimony	<.020	<.020	<.020						150	-
	Selenium	<.002	<.002	<.002						0.25	0.39
isk 2	Thallium	<.010	<.010	<.010						-	-
	Mercury	<.0002	<.0002	<.0002						0.055	0.096
	Tin	<.020	<.020	<.020						10	10
	Cadmium	<.001	<.001	<.001						1	1
	Lead	<.005	<.005	<.005						18	14
	Ammonia									-	-
ask 3	Cyanide									-	-
	Sulfide									-	-
iple	Station Number			BI							
ample	Station ocation	resi-dential well	agri-cultural well	Blank							

1. Ambient background concentrations apply only to soil matrix samples. Values obtained from "Geochemistry of Some Rocks, Soils, Plant and Vegetables in the Conterminous United States" Geological Survey Professional Pap... 574 p. 1975

Reference for East/West Division is the 97° W longitudinal line which bisects Region

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

SITE NAME/CODE: Old Midlands Products (AR 1902)

Date: January 26, 1983

CONCENTRATIONS (ppm)

PARAMETERS					EPA SAMPLE NUMBERS							
					1	1	2	2	3	3	4	4
Compound	Fraction	1 P.P.	2 S.H.S.	3 T.I.	F1605	F 1606	F 1607	F 1608	F 1609	F 1610	F 1611	F 1612
Pentachlorophenol	A	x			58630			74	.130	22.4		10.84
Acenaphthene	B/N	x			30668			89				
Fluoranthene	"	x			39688			2805		681.7		3.01
Naphthalene	"	x			7216							
Benzo (∝) anthracene	"	x			631			79		38.5		
Benzo (∝) pyrene	"	x			207					6.02		
Benzo (β) fluoranthene	"	x			451					(17.6)		3.6
Benzo (k) fluoranthene	"	x			451							
Chrysene	"	x			586			484.5		100.25		2.2
Acenaphthylene	"	x			108			21.1		33.68		
Anthracene	"	x			9471			4335		19.2		
Benzo (ghi) perylene	"	x			68					10.02		
Fluorene	"	x			2886					15.6		
Phenanthrene	"	x			9471					104.26		
Dibenzo (a,h) anthracene	"	x								6.4		
Indeno (1,2,3 - cd) pyrene	"	x			77					12.8		
Pyrene	"	x			3247			841.5		441		3.01
Dibenzofuran	"		x		3067							
2 - Methylnaphthalene	"		x		3067							
Benzene	V	x										
Ethylbenzene	"	x			.22							
Methylene Chloride	"	x			.325	.017	.056	181	.015			.018
Toluene	"	x			.029							
Styrene	"		x		.0033							
o-xylene	"		x		.068							
Cont'd on page 2												
Matrix Type					Soil	liquid	liquid	Soil	liquid	Soil	liquid	Soil
Sample Station Number					1	1	2	2	3	3	4	4
Sample Station Location					SE lagoon SE side	SE lagoon SE side	NW lagoon NW side	NW lagoon NW side	NE runoff path	NE runoff path	PATH FOR DOWNSTREAM RUNOFF	PATH FOR DOWNSTREAM RUNOFF

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

SITE NAME/CODE: Old Midlands Product (AR 1902)

Date: January 26, 1985

PARAMETERS					CONCENTRATIONS (ppm) EPA SAMPLE NUMBERS							
					1	1	2	2	3	3	4	4
Compound	Fraction	[1] P.P.	[2] S.H.S.	[3] T.I.	F 1605	F 1606	F 1607	F 1608	F 1609	F 1610	F 1611	F 161
1,1-Oxybisethane (Ethyl Ether	VOA			x	.0024			.009				
Hexane	"			x	.0045			.0054				
2,6,6-Trimethylbicyclo[3.1.1]-Hept-2-ene	"			x	.280							
2-Methylnapthalene	FSCC			x	290			30.6				
Tridecane	"			x	2200							
Fluorctrichloromethane	VOA	x					.0055	.00765				
Benzoic Acid	A		x					79				
Dibenzofuran	B/N		x					145				
Acetone	VOA		x					.6375				
PCB-1242	P	x						831.3		58.9		
1,2-Benzenedicarboxylic acid	BNA			x				255				
Hexadecane	"			x				6630		44		
Tricosane	"			x				3570				
3-Hexen-2-one	"			x				171				
Tetracosane	"			x				943.5				
Pentacosane	"			x				280.5				
2,4-dimethylheptane	BNA			x					.029	4.41		
N-(2-methylpropyl) hydroxylamine	"			x					.014			
3,5-dimethylheptane	"			x					.035			
PCB-1260	P	x								45.7		
4-Ethyl-2-methylhexane	BNA			x						5.6		.90
Tetradecane	BNA			x						12.03		
2,2-Dimethyl-3-hexene	"			x						1.20		
Pentadecane	"			x						56.1		
# of unidentified compds/sample	—				17	0	0	17	2	5	1	17
Matrix Type					Soil	liquid	liquid	Soil	liquid	Soil	liquid	Soi
Sample Station Number					1	1	2	2	3	3	4	4
Sample Station Location					SE lagoon SE side	SE lagoon SE side	NW lagoon NW side	NW lagoon NW side	NE runoff path	NE runoff path	Path for DOWNSTREAM RUNOFF	Path fo DOWNSTRE RUNOF

TABLE II. ORGANIC ANALYSIS SUMMARY

ASE NUMBER: 1514

Date: January 26, 1983

ITE NAME/CODE: Old Midlands Products (AR 1902)

PARAMETERS					CONCENTRATIONS (ppm) EPA SAMPLE NUMBERS							
					1	1	2	2	3	3	4	4
Compound	Fraction	P.P.[1]	S.H.S.[2]	T.I.[3]	F 1605	F 1606	F 1607	F 1608	F 1609	F 1610	F 1611	F 161
Undecane	ABN			x						108.3		
Heptadecane	"			x						180.4		
Eicosane	"			x						188.5		
Heneicosane	"			x						116.3		
2,3-Dimethylheptane	"			x						1.36		
2,6-Dimethylheptane	"			x						2.2		
Trichloromethane	"			x							.62	
Cyclohexane	"			x							2.8	
PCB-1254	P	x										.045
Hexane	VOA			x								.009
1-Methyl-4-(1-methylethyl)1,4-cyclohexadiene	BNA			x								2.4
Matrix Type					Soil	liquid	liquid	Soil	liquid	Soil	liquid	Soil
Sample Station Number					1	1	2	2	3	3	4	4
Sample Station Location					SE lagoon SE side	SE lagoon SE side	NW lagoon NW side	NW lagoon NW side	NE runoff path	NE runoff path	Path FOR DOWNSTREAM RUNOFF	Path DOWNSTREAM RUNOFF

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

Date: January 26, 1983

SITE NAME/CODE: Old Midlands Products (AR 1902)

PARAMETERS					CONCENTRATIONS (ppm) EPA SAMPLE NUMBERS							
					5	5	6	6	7	7		
Compound	Fraction	1 P.P.	2 S.H.S.	3 T.I.	F 1613	F 1614	F 1615	F 1616	F 1617	F 1618	F 1619	F 16
Methylene Chloride	VOA	x			.021			.0278				.0
2,4-Dimethylheptane	BNA			x	.024							.2
2,2-Dimethylbutane	"			x	.010							
3,5-Dimethylheptane	"			x	.027							.3
4-Hydroxy-4-methyl-2-pentanone	"			x	.120							
Pentachlorophenol	A	x				5.64		25.0				
Fluoranthene	B/N	x				2.8		83.4				
N-nitrosodiphenylamine	"	x				0.73						
Benzo (k) anthracene	"	x				1.06		21.6				
Benzo (b) fluoranthene	"	x				2.32		27.8				
Chrysene	"	x				1.99		30.58				
Anthracene	"	x				0.93		2.78				
Pyrene	"	x				3.32		92				
PCB - 1254	P	x				0.62	.094			0.22		
PCB - 1248	"	x				1.097				0.15		
Heptane	VOA			x		0.48						
2,4-Dimethylheptane	ABN			x		0.36						
3,5-Dimethylheptane	"			x		0.43						
4-Hydroxy-3-methoxy-benzaldehyde	"			x		0.51						
Undecane	"			x		1.8						
2,6,10,14-Tetramethylheptadecane	"			x		1.31						
2-methylundecane	"			x		2.32						
Octadecane	"			x		1.48						
Hexadecane	"			x		2.32						
2,3-Dimethylheptane	"			x			0.015					
# unidentified compds/sample					3	6	3	10	0	3	1	0
Matrix Type					liquid	Soil	liquid	Soil	liquid	Soil		
Sample Station Number					5	5	6	6	7	7	Blank	Blar
Sample Station Location					CONFLUENCE OF N.E. RUNOFF	CONFLUENCE OF N.E. RUNOFF	West runoff path	West runoff path	UPSTREAM OFFSITE	UPSTREAM OFFSITE	npty	Empty

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

Date: January 26, 1983

SITE NAME/CODE: Old Midlands Products (AR 1902)

PARAMETERS					CONCENTRATIONS (ppm) EPA SAMPLE NUMBERS							
					5	5	6	6	7	7		
Compound	Fraction	[1] P.P.	[2] S.H.S.	[3] T.I.	F 1613	F 1614	F 1615	F 1616	F 1617	F 1618	F 1619	F 16
Bis (2-ethylhexyl) phthalate	B/N	X						1.50				
Acenapthalene	"	X						1.33				
Benzo (ghi) perylene	"	X						2.67				
Phenanthrene	"	X						2.78				
Indeno (1,2,3-cd) pyrene	"	X						4.4				
2,6,10,14-Tetramethylpentadecane	"			X				24.7				
2,5 - Dimethylheptane	"			X						.64		
2,7-Dimethyloctane	"			X						.38		
Trichloromethane	"			X							.66	
Cyclohexane	"										2.7	
Fluorotrichloromethane	"	X										.0(
1,1'-oxybisethane	"			X								.01
Matrix Type					liquid	Soil	liquid	Soil	liquid	Soil		
Sample Station Number					5	5	6	6	7	7	Blank	Bla
Sample Station Location					CONFLUENCE OF N.E. RUNOFF	CONFLUENCE OF N.E. RUNOFF	West runoff path	West runoff path	UPSTREAM OFFSITE	UPSTREAM OFFSITE	Empty	Em

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 1514

SITE NAME/CODE: Old Midlands Products (AR 1902)

Date: January 26, 1983

PARAMETERS					CONCENTRATIONS (ppm) EPA SAMPLE NUMBERS							
					8	9						
Compound	Fraction	1 P.P.	2 S.H.S.	3 T.I.	F 1621	F 1622	F 1623					
PCB - 1242	P	X					*					
PCB - 1254	P	X					.178					
PCB - 1248	P	X					.078					
*- lab entry was unreadable!!!												
unidentified compds/sample					0	3	0					
Matrix Type					liquid	liquid						
Sample Station Number					8	9	Blank					
Sample Station Location					Neely Well	Marcum Well	Med. conc. blank					

TABLE II. ORGANIC ANALYSIS SUMMARY

Noake's Water Wells
4/13/85

JMBER: 2650

AME/CODE: Old Midland Products-ARO 1962

PARAMETERS						CONCENTRATIONS (ppm) EPA SAMPLE NUMBERS						
Compound	Fraction	1 P.P.	2 S.H.S.	3 T.I.	F 2870	F 2871	F 2872					
Unknown				X	.035	.044	.021					
Methyl benzene				X	.013							
Unknown				X	.072	.078	.020					
4-hydroxy-4-methyl-2-pentanone				X	.025	.025	.025					
Chloroform 67-66-3	Volatile	X				.010						
Acetone 67-64-1	"	X				.017	.037					
Methylene chloride 75-09-2	"	X					.011					
Unknown				X			.105					
Matrix Type					WATER	WATER	WATER					
Sample Station Number					1	2	B1					
Sample Station Location					residential well	agricultural well	Blank					

ority Pollutant.
ci fied Hazardous Substance.

APPENDIX C

WELL INFORMATION SHEET

Well #	Depth (ft.)	Screened Interval (ft.)	Sand (ft.)	Bentonite (ft.)	Grout (ft.)
1	40	35-40	29-40	27-29	0-27
1a	15	10-15	8-15	6-8	0-6
2	40	25-35	22-40	18-22	0-18
2a	20	10-20	8-20	6-8	0-6
3	35	25-35	25-35	23-25	0-23
3a	20	15-20	13-20	11-13	0-11
4	42	32-42	29-42	27-29	0-27
4a	15	10-15	8-15	6-8	0-6

APPENDIX D

JIM WINNEK, INC.
5018 EAST ARCHER
TULSA, OKLAHOMA 74115
(918) 835-8756

HOLE NO: 1-1S DATE: 1-29-85 DRILL NO: 4

CLIENT: ECOLOGY AND ENVIRONMENT, INC
PROJECT: OLA, ARKANSAS

DRILLER: BOB MASTEN
HELPERS: RICK REED AND NATHAN WILLIAMS

DEPTH FROM-TO	FORMATIONS	SAMPLING TYPE	DEPTH	BLOW COUNTS
0-3.0	CLAY - RED BROWN MOIST			
3.0-4.0	CLAY - BROWN GREY MOIST	SPT	5.0-6.5	50/100/106
4.0-13.0	SHALE - TAN DRY	SPT	10.0-11.5	30/52/100
13.0-13.2	SANDSTONE/CLAY - RED SOFT WATER PRESENT			
13.2-15.0	SHALE - TAN DRY			
15.0-17.5	SHALE - BLACK	SPT	15.0-16.5	60/100 REFUSED
17.5-80.0	SHALE - GREY			

WATER PRESENT AT: 36' 5 GALLONS PER MINUTE

MONITOR WELL COMPLETION DATA:

WELL #	1	1S
HOLE SIZE:	5 5/8"	5 5/8"
CASING SIZE:	2" PVC	2" PVC
TOTAL DEPTH:	40.0'	15.0'
LENGTH OF SCREEN:	5.0'	5.0'
SCREEN SLOT SIZE:	.0100	.0100
TOP OF GRAVEL PACK:	29.5'	8.5'
TOP OF BENTONITE:	27.5'	6.5'
TOP OF GROUT:	0.0	0.0
CASING PROTECTORS:	YES	YES

JIM WINNEK, INC.
5018 EAST ARCHER
TULSA, OKLAHOMA 74115
(918) 835-8756

HOLE NO: 2-2S DATE: 2-6-85 DRILL NO: 4

CLIENT: ECOLOGY AND ENVIRONMENT, INC
PROJECT: OLA, ARKANSAS

DRILLER: BOB MASTEN
HELPERS: RICK REED AND NATHAN WILLIAMS

DEPTH FROM-TO	FORMATIONS	SAMPLING TYPE	DEPTH	BLOW COUNTS
0-0.5	CLAY - BLACK WET			
0.5-4.5	CLAY - RED BROWN MOIST			
4.5-6.0	CLAY - GREY BROWN MOIST			
6.0-6.5	SANDSTONE - BROWN FRACTURED DRY			
6.5-8.0	SHALE - TAN DRY			
8.0-40.0	SHALE - GREY			

WATER PRESENT AT: 31'

MONITOR WELL COMPLETION DATA:

WELL #	2	2S
HOLE SIZE:	5 5/8"	5 5/8"
CASING SIZE:	2" PVC	2" PVC
TOTAL DEPTH:	40.0'	20.0'
LENGTH OF SCREEN:	10.0'	10.0'
SCREEN SLOT SIZE:	.0100	.0100
TOP OF GRAVEL PACK:	22.0'	8.0'
TOP OF BENTONITE:	20.0'	6.0'
TOP OF GROUT:	0.0	0.0
CASING PROTECTORS:	YES	YES

JIM WINNEK, INC.
5018 EAST ARCHER
TULSA, OKLAHOMA 74115
(918) 835-8756

HOLE NO: 3-3S DATE: 1-30-85 DRILL NO: 4

CLIENT: ECOLOGY AND ENVIRONMENT, INC
PROJECT: OLA, ARKANSAS

DRILLER: BOB MASTEN
HELPERS: RICK REED AND NATHAN WILLIAMS

DEPTH FROM-TO	FORMATIONS	SAMPLING TYPE	DEPTH	BLOW COUNTS
0-2.3	CLAY - ORANGE MOIST			
2.3-6.2	CLAY - BROWN MOIST	SPT	5.0-6.5	50/100/106
6.2-7.4	SANDSTONE - BROWN DRY	SPT	10.0-11.5	30/52/100
7.4-8.1	SHALE - TAN DRY			
8.1-18.0	SHALE - GREY			
18.0-18.3	WATER WITH CREOSOTE SMELL	SPT	15.0-16.5	60/100 REFUSED
18.3-29.0	SHALE - GREY			
29.0-33.0	SHALE - GREY FRACTURED			
33.0-72.0	SHALE - GREY			

MONITOR WELL COMPLETION DATA:

WELL #	3	3S
HOLE SIZE:	5 5/8"	5 5/8"
CASING SIZE:	2" PVC	2" PVC
TOTAL DEPTH:	35.0'	20.0'
LENGTH OF SCREEN:	10.0'	5.0'
SCREEN SLOT SIZE:	.0100	.0100
TOP OF GRAVEL PACK:	25.0'	13.5'
TOP OF BENTONITE:	23.0'	11.5'
TOP OF GROUT:	0.0	0.0
CASING PROTECTORS:	YES	YES

JIM WINNEK, INC.
5018 EAST ARCHER
TULSA, OKLAHOMA 74115
(918) 835-8756

HOLE NO: 4-4S DATE: 2-5-85 DRILL NO: 4

CLIENT: ECOLOGY AND ENVIRONMENT, INC
PROJECT: OLA, ARKANSAS

DRILLER: BOB MASTEN
HELPERS: RICK REED AND NATHAN WILLIAMS

DEPTH FROM-TO	FORMATIONS	SAMPLING TYPE	DEPTH	BLOW COUNTS
0-2.0	CLAY - BROWN SILTY			
2.0-8.0	CLAY - RED BROWN MOIST			
8.0-18.5	SHALE - TAN			
18.5-42.0	SHALE - GREY			

WATER PRESENT AT: 36'

MONITOR WELL COMPLETION DATA:

WELL #	4	4S
HOLE SIZE:	5 5/8"	5 5/8"
CASING SIZE:	2" PVC	2" PVC
TOTAL DEPTH:	42.0'	15.0'
LENGTH OF SCREEN:	10.0'	5.0'
SCREEN SLOT SIZE:	.0100	.0100
TOP OF GRAVEL PACK:	29.5'	8.0'
TOP OF BENTONITE:	27.0'	6.0'
TOP OF GROUT:	0.0	0.0
CASING PROTECTORS:	YES	YES

APPENDIX E

ASE NUMBER: 3880

ITE NAME/CODE: Midland Products AR1902

TABLE I - INORGANIC ANALYSIS SUMMARY
SUBSURFACE SOIL

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF1964	MF1965	MF1982	MF1983	MF1997	MF1998	MF1985	MF1996	MF1984	MF1999	Western U.S. 2.	Eastern U.S. 2.
atrix Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Blank	Blank	Soil	Soil
uminum	15017	16808	15763	11667	20109	20595	20406	16648	54	40	58,000	33,000
ntimony											.47	.52
rsenic	17	13	9.4	21	21		29	15			5.5	4.8
arium	52	58	61	50	98	68	114	62			580	290
eryllium											0.68	0.55
admium	6.5	8.2	6.5	5.4							<1	<1
hromium	35	40	36	30	37	35	32	32			41	33
obalt	17	17	13		23	23	23	14			7.1	5.9
opper	27	28	24	15	28	27	25	29			21	13
ron	59865	53989	46576	35179	49443	37373	47442	37668	43	73	21,000	14,000
ead	21	24	20	23	10	46	13	8.7	4.9		17	14
anganese	716	1420	845	658	1752	570	1628	789			380	260
ercury											0.046	0.081
ickel	49	57	50	42	51	49	54	49			15	11
elenium											.23	.30
ilver											-	-
hallium											9.1	7.7
in					454	297	394	435		620	.90	.96
anadium	39	41	37	28	52	48	52	41			70	43
inc	173	156	145	106	145	127	131	113	8.5		55	40
yanide												
alcium	1100	3207	1505	1836	1757	2141	1290	2149	173			
agnesium	3982	7145	4748	4647	5036	6487	4117	5632				
otassium	677	969	939	901	1505	1943	1632	1294				
odium					1068	1053	1043	807		530		
ation No.	01	01	03	03	02	02	04	04				
mple Station cation	Well 1 10-15'	Well 1 40-42'	Well 3 10-12'	Well 3 30-32'	Well 2 10-12'	Well 2 30-32'	Well 4 10-12'	Well 4 40-42'	Blank	Blank		

1. Values obtained from "Element Concentrations in Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270.

2. Reference for East/West Division is the 96°W longitudinal line which bisects Region VI.

TABLE II - ORGANIC ANALYSIS SUMMARY
SUBSURFACE SOIL

CASE NUMBER: 3880

SITE NAME/CODE: Midland Products/AR1902

PARAMETERS				CONCENTRATIONS (ppb) EPA SAMPLE NUMBERS								
Compound		Fraction	Class	FA395	FA396	FB013	FB014	FB033	FB034	FB016	FB032	FB015
Methylene chloride		VOA	1	7B	12B	9B	8B	180B	280B	590B	100B	7B
Hexane	329	VOA	3						30	200		
Toluene		VOA	1					11J				
Di-n-butyl phthalate		ABN	1	44J	62J	71J	33J			35J		
Bis (2-ethyl hexyl) phthalate		ABN	1	207J				27J	P	37J	47J	
1,1,2-trichloroethane	211	ABN	3							80	200	
1,1,2,2-tetrachloroethane	437	ABN	3					100B	100B	200B	600B	
Unknown	1862	ABN	3							100		
Pyrene		ABN	1					27J				
Chloroform		VOA	1	3JB	3JB	4JB	4JB					3JB
Di-n-octyl phthalate		ABN	1	107J	892	793						
Beta BHC		PEST	1		36	14	37					40
Phenanthrene		ABN	1			394	257J					
Anthracene		"	1			83J						
Pyrene		"	1			120J	80J					
Naphthalene		"	1			85J	70J					
Di benzo furan		"	2			101J	46J					
2-methyl naphthalene		"	2			163J	106J					
Acenaphthene		"	1			177J	118J					
Fluorene		"	1			95J	63J					
Fluoranthene		"	1			149J	99J					
4,4'-DDT		PEST	1				94					
Methyl pentanone	206	ABN	3	880	1500		1700					940
4-hydroxy-4-methyl-2-pentanone	308	ABN	3	5600B	6400B	6400B	5800B					3800B
Cyclohexane oxide	326	ABN	3	840B	1000B	650B	760B					
Toluene	321	ABN	3		530	550						370
Matrix Type				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Sample Station Number				01	01	03	03	02	02	04	04	
Sample Station Location				Well 1 10'-15'	Well 1 40-42'	Well 3 10-12'	Well 3 30-32'	Well 2 10-12'	Well 2 30-32'	Well 4 10-12'	Well 4 40-42'	Blank

1 Priority Pollutant.
2 Specified Hazardous Substance.
3. Tentatively Identified.

B - The analyte is found in the lab blank.
J - Indicates an estimated value for tententatively identified compounds or for compounds found below detection limit.
P - Present in sample, but not reported by lab.

1/30/85

TABLE II - ORGANIC ANALYSIS SUMMARY
subsurface soil

CASE NUMBER: 3880

SITE NAME/CODE: Midland Products/AR1902

CONCENTRATIONS (ppb)

PARAMETERS				EPA SAMPLE NUMBERS								
Compound		Fraction	Class		FA396	FB013						FB015
Unknown phthalate	1950	ABN	3		440	560						
Unknown phthalate	1605	ABN	3			710						
Unknown phthalate	1859	ABN	3			410						
Alkne	263	ABN	3				520					
Unknown	510	ABN	3									810
Matrix Type												
Sample Station Number												
Sample Station Location												

1. Priority Pollutant.
2. Specified Hazardous Substance.
3. Tentatively Identified.

B - The analyte is found in the lab blank.
J - Indicates an estimated value for tententatively identified compounds or for compounds found below detection limit.
P - Present in sample, but not reported by lab.

1/30/85

APPENDIX F

Date: May 16, 1984

EPA's ERT Air Sampling Investigation

MIDLAND PRODUCTS OLA, AK

TABLE # 1

COMPOUND	DATE	STAT #	SAMP #	ERT-2	ERT-2 UG/M3	P&CAM	P&CAM MG/M3
ACETOPHENONE	05/16/84	1	856-21	.001	7		
BENZOIC ACID	05/16/84	1	856-21	.006	30		
ACENAPHTHALENE	05/16/84	2	883-23	.004	30		
ACENAPHTHALENE	05/16/84	2	883-23	.02	100		
ACETOPHENONE	05/16/84	2	883-23	.03	200		
ALKYL STYRENE	05/16/84	2	883-23	.002	9		
ALKYLBENZENE	05/16/84	2	883-23	.002	9		
ANTHRACENE	05/16/84	2	883-23	.01	80		
BENZALDEHYDE	05/16/84	2	883-23	..002	10		
BENZOFURAN	05/16/84	2	883-23	.002	10		
BIPHENYL	05/16/84	2	883-23	.02	100		
C10H12 ALKYLSTYRENE	05/16/84	2	883-23	.002	10		
C10H12 ALKYLSTYRENE	05/16/84	2	883-23	.004	20		
C10H14 ALKYLBENZENE	05/16/84	2	883-23	.001	7		
C13H12 METHYLBIPHENYL	05/16/84	2	883-23	.003	20		
DIBENZOFURAN	05/16/84	2	883-23	.01	80		
DIMETHYL NAPHTHALENE	05/16/84	2	883-23	.01	60		
DIMETHYL NAPHTHALENE	05/16/84	2	883-23	.003	20		
ETHYL NAPHTHALENE	05/16/84	2	883-23	.006	40		
FLUORENE	05/16/84	2	883-23	.01	100		
HEXANE	05/16/84	2	883-23	.003	10		
INDENE	05/16/84	2	883-23	.03	200		
METHYL NAPHTHALENE	05/16/84	2	883-23	.06	400		
METHYL NAPHTHALENE	05/16/84	2	883-23	.02	100		
METHYL STYRENE	05/16/84	2	883-23	.005	30		
METHYLBENZOFURAN	05/16/84	2	883-23	.006	30		
NAPHTHALENE	05/16/84	2	883-23	.03	100		
PHENANTHRENE	05/16/84	2	883-23	.01	80		
PHENOL	05/16/84	2	883-23	.002	8		
PHENYLBENZALDEHYDE	05/16/84	2	883-23	.001	9		
QUINOLINE	05/16/84	2	883-23	.008	40		
TETRAHYDRONAPHTHALENE	05/16/84	2	883-23	.005	30		
ACENAPHTHALENE	05/16/84	3	5407-17	.005	30		
ACETOPHENONE	05/16/84	3	5407-17	.002	10		
ALKYLNAPHTHALENE	05/16/84	3	5407-17	.001	10		
ALKYLNAPHTHALENE	05/16/84	3	5407-17	.003	20		
ALKYLNAPHTHALENE	05/16/84	3	5407-17	.007			
ANTHRACENE	05/16/84	3	5407-17	.003	20		
BENZALDEHYDE	05/16/84	3	5407-17	.002	7		
BENZOIC ACID	05/16/84	3	5407-17	.004	20		
BIPHENYL	05/16/84	3	5407-17	.001	8		
C13 HYDROCARBON	05/16/84	3	5407-17	.001	8		
C15 HYDROCARBON	05/16/84	3	5407-17	.004	30		
C16 HYDROCARBON	05/16/84	3	5407-17	.005	28		
C17 HYDROCARBON	05/16/84	3	5407-17	.0029	29		
C18 HYDROCARBON	05/16/84	3	5407-17	.002	20		

Date: May 16, 1984

EPA's ERT Air Sampling Investigation
MIDLAND PRODUCTS OLA, AK

TABLE # 1

COMPOUND	DATE	STAT #	SAMP #	ERT-2	ERT-2 UG/M3	P&CAM	P&CAM MG/M3
DIBENZOFURAN	05/16/84	3	5407-17	.002	20		
DIMETHYL NAPHTHALENE	05/16/84	3	5407-17	.023	170		
FLUORENE	05/16/84	3	5407-17	.003	20		
HEPTADECANE	05/16/84	3	5407-17	.005	50		
HEXADECANE	05/16/84	3	5407-17	.004	7		
METHYLNAPHTHALENE	05/16/84	3	5407-17	.015	90		
NAPHTHALENE	05/16/84	3	5407-17	.003	10		
NONADECANE	05/16/84	3	5407-17	.0009	10		
OCTADECANE	05/16/84	3	5407-17	.0008	8		
PALMITIC ACID	05/16/84	3	5407-17	.001	10		
PENTADECANE	05/16/84	3	5407-17	.004	40		
PHENANTHRENE	05/16/84	3	5407-17	.003	20		
PHENYLBENZENALDEHYDE	05/16/84	3	5407-17	.0009	7		
TETRADECANE	05/16/84	3	5407-17	.009	70		
ACENAPHTHALENE	05/16/84	4	876-19	.003	20		
ACETOPHENONE	05/16/84	4	876-19	.002	9		
ANTHRACENE	05/16/84	4	876-19	.003	20		
BENZALDEHYDE	05/16/84	4	876-19	.003	10		
BENZOIC ACID	05/16/84	4	876-19	.008	40		
C16 HYDROCARBON	05/16/84	4	876-19	.002	20		
C17 HYDROCARBON	05/16/84	4	876-19	.001	10		
C18 HYDROCARBON	05/16/84	4	876-19	.008	8		
C19 HYDROCARBON	05/16/84	4	876-19	.001	10		
DIBENZOFURAN	05/16/84	4	876-19	.002	10		
DIBENZOTHIOPHENE	05/16/84	4	876-19	.0009	7		
DIMETHYL NAPHTHALENE	05/16/84	4	876-19	.001	7		
DIMETHYLNAPHTHALENE	05/16/84	4	876-19	.002	3		
FLUORENE	05/16/84	4	876-19	.002	10		
HEPTADECANE	05/16/84	4	876-19	.003	30		
HEXADECANE	05/16/84	4	876-19	.002			
METHYL NAPHTHALENE	05/16/84	4	876-19	.003	17		
NAPHTHALENE	05/16/84	4	876-19	.002	9		
PENTADECANE	05/16/84	4	876-19	.001	10		
PHENANTHRENE	05/16/84	4	876-19	.003	20		
TETRADECANE	05/16/84	4	876-19	.001	9		

Date: May 16, 1984

EPA's ERT Air Sampling Investigation

MIDLAND PRODUCTS OLA, AK

TABLE #2

COMPOUND	STAT #	SAMP #	TLV/PPM	PSF	ERT-2	PSCAM
ACETOPHENONE	1	856-21	NOT FOUND IN REFERENCE DATA BASE			
BENZOIC ACID	1	856-21	NOT FOUND IN REFERENCE DATA BASE			
BENZALDEHYDE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
ALKYLBENZENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
BENZOFURAN	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
INDENE	2	883-23	10	0.0227	.03	
ACETOPHENONE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
ALKYL STYRENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
METHYLBENZOFURAN	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
C10H14 ALKYLBENZENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
C10H12 ALKYLSTYRENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
C10H12 ALKYLSTYRENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
TETRAHYDRONAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
NAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
QUINOLINE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
METHYL NAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
METHYL NAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
BIPHENYL	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
ETHYL NAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
DIMETHYL NAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
DIMETHYL NAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
ACENAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
ACENAPHTHALENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
DIBENZOFURAN	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
FLUORENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
C13H12 METHYLBIPHENYL	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
PHENYLBENZALDEHYDE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
ANTHRACENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
PHENANTHRENE	2	883-23	NOT FOUND IN REFERENCE DATA BASE			
BENZALDEHYDE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
ACETOPHENONE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
BENZOIC ACID	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
NAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
METHYLNAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
C13 HYDROCARBON	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
BIPHENYL	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
TETRADECANE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
DIMETHYL NAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
C15 HYDROCARBON	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
ACENAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
PENTADECANE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
ALKYLNAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
DIBENZOFURAN	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
ALKYLNAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
C16 HYDROCARBON	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
ALKYLNAPHTHALENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
FLUORENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
HEXADECANE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
PHENYLBENZENALDEHYDE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
C17 HYDROCARBON	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			

Date: May 16, 1984

EPA's ERT Air Sampling Investigation

MIDLAND PRODUCTS OLA, AK

TABLE #2

COMPOUND	STAT #	SAMP #	TLV/PPM	PSF	ERT-2	P&CAM
HEPTADECANE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
ANTHRACENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
PHENANTHRENE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
C18 HYDROCARBON	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
OCTADECANE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
NONADECANE	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
PALMITIC ACID	3	5407-17	NOT FOUND IN REFERENCE DATA BASE			
BENZALDEHYDE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
ACETOPHENONE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
NAPHTHALENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
BENZOIC ACID	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
METHYL NAPHTHALENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
TETRADECANE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
DIMETHYL NAPHTHALENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
DIMETHYLNAPHTHALENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
ACENAPHTHALENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
PENTADECANE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
DIBENZOFURAN	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
FLUORENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
HEXADECANE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
C17 HYDROCARBON	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
HEPTADECANE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
DIBENZOTHIOPHENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
ANTHRACENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
PHENANTHRENE	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
C16 HYDROCARBON	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
C18 HYDROCARBON	4	876-19	NOT FOUND IN REFERENCE DATA BASE			
C19 HYDROCARBON	4	876-19	NOT FOUND IN REFERENCE DATA BASE			

APPENDIX G

COMMUNITY RELATIONS PLAN FOR
OLD MIDLAND PRODUCTS COMPANY, OLA, ARKANSAS

August, 1985

I. Background and History

B. Site Background

Old Midland Products Company was a combination sawmill/wood preservative processing plant operating between the years of 1969-1979. It is located 1/2 mile east of Ola, Arkansas, just north of Highway 10 within Yell County. It presently encompasses approximately two acres and is located 35° 01' 31" N latitude and 93° 12' 16" W longitude, and is referred to as the plant. The area surrounding the plant, and bounded partially by a chain link fence, encompasses approximately an additional 35 acres. the plant and area surrounding the plant described above, are referred to as the "Site." A brushy field lies in the north and west area of the Site and an inactive wood chipping plant occupies the area east of the plant.

During the years of operation, various chemicals were used for heat and pressure injection of wood such as creosote, pentachlorophenol (PCP), etc. In conjunction with this process, waste chemical were stored in the lagoons located in the plant area for either reprocessing or disposal. This chemical process is the major cause of environmental concern found in conjunction with the plant.

A. Site History

Mr. W. E. Mullinax, ex-President of the company, was the owner of the Site on which the lagoons are located. All land then owned by Old Midland Products Company, less the area on which the plant is located, was sold to the Plainview - Old Economic Development Trust, Inc., (Trust). Mr. John Clement, President of the First State Bank of Plainview, is a trustee of the Trust. The First State Bank of Plainview is also the lien holder for the Old Midland Products Company.

The Trust has leased, with an option to buy, a portion of the property adjoining the lagoons to Mr. Jay Speck. Mr. Speck resides in Ola.

On March 5, 1981, ADPC&E hazardous waste inspector, Mr. Mike Bates accompanied Mr. Jerome Alford of Bond Consulting Engineers, Inc., to the Site for an inspection. Water and sediment samples were taken from the lagoons which indicated large concentrations of creosote and PCP. As a result of findings from this inspection, more extensive sampling missions were planned.

On March 9, 1981, EPA completed a Preliminary Assessment (potential hazardous waste site identification) and the Site was assigned the identification number AR 01902. Later on October 23, 1981, EPA's Field Investigation Team (FIT), Ecology and Environment, Inc., reviewed an initial ranking package which did not include air monitoring data.

On June 24, 1982, the FIT conducted their first sampling visit of the Site, of which analysis showed five priority pollutants with PCP at 5.8 parts per million (ppm) and Beryllium at 3.2 ppm being the greatest. The FIT later conducted a sampling visit at the Site on January 26, 1983. Analytical results from the January, 1983 sampling mission identified 22 priority pollutants at concentrations greater than the ppm level. Based in part on this data and on the previous June 24, 1982 Site inspection, EPA proposed a drilling and monitoring well plan designed to determine the presence of any groundwater contamination. (This plan was delayed, but later proposed again on June 1, 1984. The four sets of wells were finally installed between January, 1985 - February 7, 1985).

On December 10, 1983, the Site was ranked by EPA, Region VI and ADPC&E staff for consideration as a Superfund Site.

On March 2, 1984, the Site was visited by personnel from EPA's Emergency Response Branch and ADPC&E. Inspection and analysis of the Site at this time concluded that waste was not migrating off-site through surface runoff. Further, based on available information, an immediate removal plan was not recommended at that time.

Personnel from ADPC&E performed follow-up sampling visits on March 14, 1984 and April 13, 1984 of the chemical storage tanks which were contaminated with various similar contaminants as described previously and residential water wells found northeast of and, adjacent to the Site on Old Arkansas Highway 10, respectively. While slight concentrations of chemical constituents such as methylbenzene and chloroform did appear in the water well samples upon analysis, these are common laboratory contaminants and it is probable that this is where they originated.

Finally, on May 16, 1984, EPA's Emergency Response Team implemented an air sampling program which revealed that numerous contaminants are volatilizing from the surface of the Site.

The final Hazardous Ranking System (HRS) package was assembled with all necessary information, scored at 30.77 on July 16, 1984, and included on the National Priorities List (NPL). The NPL contains those sites nationwide which scored above 28.5 under the ranking system and are therefore, eligible for action through the use of Superfund monies. The ranking system takes into consideration a standard set of factors related to risks from potential or actual migration of substances through groundwater, surface water, and air. The ranking serves both as an information and management tool allowing EPA and the state to decide which sites warrant detailed investigation to determine what, if any, response is needed.

C. COMMUNITY RELATIONS HISTORY

The following community relations activities have been conducted by the State to date. Community relations issues, concerns and participants are discussed in Sections D and E below.

In June, 1984 the National Campaign Against Toxic Hazards, listed the Midland Products site as a site that should have been eligible for the Superfund.

Three months later in, September, 1984 Representative James J. Florio of New Jersey listed the Ola site among those he said posed a public hazard.

In November, 1984 EPA authorized $820,000 expenditure for study of the Ola site. The state was designated as lead agency for cleanup procedures.

On March 27, 1985 a Cooperative Agreement between EPA and ADPC&E was awarded to the State of Arkansas under Assistance ID No. V-006462-01-0. ADPC&E has prepared a Work Plan in conjunction with this Community Relations Plan for contract services of a Remedial Investigation/Feasibility Study for cleanup of the Site, in accordance with the State/Federal Agreement.

On June 6, 1985, staff of the Department of Pollution Control and Ecology and EPA staff discussed the Site with key citizens in Ola to determine issues and concerns.

D. KEY PARTICIPANTS

1. There are approximately 1,120 residents in Ola, which is within 3/4 mile of the Site. They will be kept informed of major activities and findings.

2. Two primary local government groups have been identified. Personal contact will be maintained with these groups through their spokespersons as identified below:

   a. County Judge and Quorum Court, Judge James Lee Witt, spokesperson; This group consists of 10 persons. The chief concern of the citizens is the fact that the site is not adequately fenced. They fear that children may try to swim in the contaminated lagoons.

   b. City of Ola and City Council, Mayor James O. Pennington, M.D., spokesperson; The Mayor's only concern was site security. He felt that the Site should be fenced immediately to prevent children from playing in the contaminated water. He wanted signs posted to warn of the danger. The Mayor also wondered if the Site could be re-opened to treat poles. He asked if the surrounding site could be used for industrial purposes or if the runoff precluded this use.

3. The local press, the Yell County Record, and the Dardanelle Post Dispatch and the state-wide newspapers, The Arkansas Gazette and The Arkansas Democrat have been giving some coverage to events at Superfund sites. The coverage of this Site has been modest, compared to other Superfund sites in the state. There has been fair coverage but local media has had very little coverage.

4. Local, State and Federal Officials: Congressman Tommy Robinson has been actively involved in hazardous waste issues as has State Representative Lloyd George and State Senator Luther Hardin, who represent the citizens in this area. Lloyd George was critical of the amount of funds ($820,000) allocated for cleanup study as being excessive. No other comments on this Site have been noted by the Arkansas Department of Pollution Control and Ecology staff from other officials.

E. KEY ISSUES AND CONCERNS

1. Inadequate Fencing. The citizens fear that children can enter the Site and swim in the contaminated lagoons. They also want signs posted warning of the danger.

2. Remedial Action and Cleanup. The county judge wants to know what will happen to the contaminated dirt and liquid and what the lagoons will be filled with. The Mayor would like to know if the surrounding Site can be used for industrial purposes. After cleanup, he would like to know if the site can be reopened to treat poles.

3. George Bean, an employee of the City of Ola and former foreman at Old Midland, discussed Old Midland in an on-site visit with EPA and Department staff in June, 1985. He said that no one had ever asked the city about the Site. He felt that the PCP had already "run off" the Site and suggested that the appropriate remedy was to pump the contaminated water out and haul off the surface dirt. He said that he personally was allergic to PCP and often blistered while on-Site. He was concerned because in May he had observed children on-Site playing around the old shed. He wanted to know what would happen to the contaminated dirt and liquid and if the ponds were to be filled. He wondered what filling material would be used in the ponds.

F. PROPOSED REMEDIAL ACTIONS AND SCHEDULE

The activities described below will be conducted pursuant to a written contract between the Arkansas Department of Pollution Control and Ecology and a Contractor. The contract will define the responsibility of the Department and provide for funding of the proposed action. The Arkansas Department of Pollution Control and Ecology is the lead agency and will be responsible for performing all activities at the Site.

1. Remedial Investigations. The contractor will post warning signs around Old Midland Products. Additional soil samples will be collected and analyzed to accurately define the contaminated area. A hydrogeological study will be conducted to provide information about the geology and groundwater in the area.

2. Feasibility Study. A preliminary screening of alternatives will be conducted to arrive at a permanent remedy based on costs, environmental effects, environmental protection and engineering feasibility. A more detailed evaluation will then be made of those alternatives which appear feasible. A selection of the most appropriate site-specific alternative will then be made. Citizen input will be solicited before the selection of the final remedy. Easily accessible repositories will be provided through which the public may review the results of the remedial investigation and the alternatives developed during the feasibility study. A public meeting will be held at the end of the feasibility study to discuss and receive comments on the remedial alternatives developed and presented in the feasibility study. This phase will encompass a three week period for public comment preceded by a two week notice to the public via a press release. A public meeting will be held during the public comments period.

II. OBJECTIVES OF THE COMMUNITY RELATIONS PLAN

1. Ensure that local residents and federal, state and local officials are kept informed of possible actions under consideration and the reasons for those actions.

2. Ensure that local residents, state and local officials and concerned groups are notified of major findings, activities and decisions in a timely and effective way. Notify key officials before notice is given to the media.

3. Provide the media with timely, detailed, accurate information about the initial response, remedial investigation and feasibility study.

4. Effectively address citizen inquiries and concerns; ensure that the best possible information is provided. Provide a central, consistent source for people to contact.

5. Provide local residents and state and local officials with the opportunity to comment on remedial action alternatives identified during the feasibility study, before final selection of a remedy.

6. Provide formal comment period: 1) press release to be issued; 2) two weeks later public comment period to commence; 3) three weeks later, public comment period ends; 4) public meeting to be held in the area of the Site during the public comment period to present alternatives and receive comments.

7. Provide formal meeting organized by EPA and the State and open to the public. This is to provide an opportunity for formal comment, testimony or questions on proposed remedial alternatives. This public meeting should be scheduled during the second week of the formal comment period.

8. Use identified public concerns as one citizen for the evaluation of alternatives during the feasibility study.

9. Keep aware of changes in community concerns, information needs, and activities, and modify this community relations plan as necessary to address these changes.

III. TECHNIQUES TO BE USED TO MEET OBJECTIVES.

The following community relations techniques fulfill the objectives listed above. The purpose of each technique and its application at certain stages of the technical work are discussed. The workplan and schedule in Section IV shows these community relations techniques in relation to technical milestones.

Technique	Objective
1. Personal contact with residents.	To inform target residents such as spokespersons for community groups of major findings, activities and decisions. This should occur before fact sheets or other public information is released.
2. Briefing of local and state officials.	Inform appropriate officials of plans and developments on a continuing basis.

3.	Public consultations.	Informal discussions with small groups of concerned citizens to review issues and answer questions. Provide experts as appropriate. Schedule meeting during the feasibility study to present the the alternatives and solicit input; also schedule meetings upon request.
4.	Fact sheets and updates.	To be distributed to households in Ola as a source of accurate information concerning findings, plans, activities. Also to be distributed at meetings, to the media, and to appropriate parties (such as active environmental groups). Coordinate distribution with other information releases. Invite comments and provide further sources of information where appropriate.
5.	Press releases.	To announce milestones in activities or impart necessary information. Will be concise timely and accurate. Dates of release will be strategically planned so release doesn't precede appropriate local notification.
6.	Press conferences.	May be conducted to announce important findings or actions. High level state and federal officials may participate.
7.	EPA telephone line (214) 767-9801, (Project Officer, EPA Region VI, Dallas, Texas).	To provide a direct line of communication for inquiries and concerns. Number should be included in fact sheets or otherwise be made known to local residents and officials.
8.	State information office (Arkansas Department of Pollution Control and Ecology).	To provide a source of information when controversial findings are released or when a great deal of public interest is anticipated.

9.	Summary of public concerns.	For use by EPA staff and state staff during feasibility study; public concerns are to be used as one criterion for the evaluation of alternatives.
10.	Interim report.	To provide EPA Region VI with a summary of public inquiries and concerns, the responses provided and the community relations activities conducted.

MILESTONE SCHEDULE

Remedial Planning, Remedial Investigation and Feasibility Study Schedule

A	Grant Award
A + 60	Community Relations Plan and RI/FS Detailed Work Plan and budget submitted to EPA
B	EPA approves detailed Work Plan
B + 15	Submit RFP Advertisement and draft contract to EPA
C	EPA approves RFP Advertisement and draft contract
C + 10	Advertise for RFP's. Press release announcing initiation of project. Schedule initial public meeting to provide two weeks notification.
C + 40	Advertisement ends. Initial briefing for state, county and local officials and interest groups. Initial briefing of interested public and officials and discussion of local concerns.
C + 70	RI/FS contract awarded.
C + 115	Safety and QA/QC plans submitted to EPA.
D	EPA approves Safety and QA/QC plans - RI Notice to proceed issued to contractor.
D + 120	Draft Phase I, R.I. Report submitted to State and EPA.
D+ 180	Draft Phase II, R.I. Report submitted to State and EPA (if necessary).

E	EPA approves R.I. Report - F.S. Notice to proceed issued to contractor.
E + 90	Draft F.S. submitted to State and EPA.
F	Draft F.S. submitted to repositories for public review.
F + 14	Public Comment period begins.
F + 25	Public meeting to discuss on alternatives.
F + 35	Public comment period ends. Respond to media, citizens and elected and appointed officials who call.
F + 90	Public participation complete.

REMEDIAL RESPONSE AND COMMUNITY RELATIONS ACTIVITIES

STEP	COMMUNITY RELATIONS ACTIVITY
Remedial Investigation	Fact sheet, progress report, Briefings, workshops and public information meeting News conference Information repository
Feasibility Study	News release Fact sheet, progress report Public consultation Briefing and public information meeting Information repository 3-week comment period
Remedial Design	Fact sheet, progress report News release Small meeting or workshop Information repository
Remedial Construction	News release Fact sheet, progress report Site tours Information repository
Post Cleanup Documentation	Small meeting or briefing

V. BUDGET AND STAFFING PLAN

The following budget for the development of the Community Relations Plan was submitted to EPA and approved by EPA for the Development of the Community Relations Plan:

ext Page)

January, 1985

Phase 1. Remedial Planning

Task 1. Development of Community Relations Plan

A. PERSONNEL

TITLE	ANNUAL SALARY	TASK	MAN YEAR	COST (DOLLARS)
Public Information Officer	16,120	Development of Plan	.10	1,612
Chief, Solid & Hazardous Waste	24,804	Administration & Technical Review	.02	496
Secretary II	9,490	Typing	.05	475
		Personnel Costs		2,583
		Fringe Benefits @ 21%		542
		Indirect Costs @ 61%		1,576
		PERSONNEL SUBTOTALS		4,701

B. TRAVEL

TITLE	PURPOSE	NUMBER OF TRIPS	COST WITH PER DIEM
Public Information Officer	EPA Coordination	1	200
Chief of Solid & Hazardous Waste	Site Visit, Press Conf.	2	80
	Site Visit, Community Concerns	2	80
	TRAVEL SUBTOTALS		360

C. EQUIPMENT (NONE)

D. SUPPLIES Printing, Paper, Office Supplies 250

Total Cost of Task 1. Development of Community Relations Plan 5,311

APPENDIX: NOTIFICATION LIST (Available Upon Request)

A. Local Officials

Judge James Lee Witt
Yell County Courthouse
Post Office Box 219
Danville, AR 72833
Phone: 495-2630

Mayor James O. Pennington
Ola City Hall
Ola, AR 72853
Phone: 489-5241

B. Interested or affected parties and organizations

John Clement
First State Bank
Plainview, AR 72857

Vester Neeley
Rt. 1, Box 90
Ola, AR 72853
(No Phone)

Vince Blubaugh, Chief
Solid & Haz Waste Div
AR Dept of Pol Cntrl
and Ecology
8001 National Drive
Little Rock, AR 72209
(501) 562-7444

George Bean
P.O. Box 114
Ola, AR 72853
Phone: 489-5720

Project Officer
State Programs Section
U.S. E.P.A., Region VI
1201 Elm Street
Dallas, TX 75270
(214) 767-9801

Charles Sloan
P.O. Box 172
Ola, AR 72853
Phone: 489-5280

Mrs. Duma Marcum
Route 1, Box 91BB
Ola, AR 72853
(501) 489-5586

Mr. Jack Noakes
Route 1, Box 11
Ola, AR 72853
(501) 489-5743

Mr. David Hale, Attorney
1910 North Grant, Suite 200
Little Rock, AR 72207
(501) 661-1142

C. Media

News Editor
Dardanelle Post-Dispatch
Post Office Box 270
Dardanelle, AR 72834
Phone: 229-2250

News Editor
Yell County Record
Post Office Box 188
Danville, AR 72833
Phone: 495-2354

State Editor
Arkansas Democrat
Post Office Box 2221
Little Rock, AR 72203
Phone: 378-3400

State Editor
Arkansas Gazette
Post Office Box 1821
Little Rock, AR 72203
Phone: 371-3700

News Editor
KARV Radio
Post Office Box 190
Russellville, AR 72801
Phone: 968-1184

D. Legislative Officials

Congressman, District 2

The Hon. Tommy R. Robinson
U.S. Representative
1527 Federal Building
700 West Capitol
Little Rock, AR 72201
(501) 378-5941

Senators, U.S.

The Hon. Dale Bumpers
U.S. Senator
2527 Federal Building
700 W. Capitol
Little Rock, AR 72201
(501) 378-6286

The Hon. David Pryor
U.S. Senator
3030 Federal Building
700 W. Capitol
Little Rock, AR 72201
(501) 378-6336

State Senator

The Hon. Luther Hardin
2505 W. Second Court
Russellville, AR 72801
(501) 968-1426

State Representative

The Hon. Lloyd R. George
P.O. Box 847
Danville, AR 72833
(501) 489-5641