SCREENING SITE INSPECTION REPORT
FOR
HIGHLAND PARK LANDFILL
HIGHLAND PARK, ILLINOIS
U.S. EPA ID: ILD981795479
SS ID: NONE
TDD: F05-8804-015
PAN: FIL0642SB

JANUARY 13, 1989

EPA Region 5 Records Ctr.
328205

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International Specialists in the Environment
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SIGNATURE PAGE
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1. INTRODUCTION

Ecology and Environment, Inc. (E & E), Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a screening site inspection (SSI) of the Highland Park Landfill (HPLF) site under contract number 68-01-7347.

The site was discovered by the Lake County Health Department (LCHD) in June 1986. The site was included in an "Environmental Assessment of Fifteen Closed Landfills in Lake County," an annual report covering the period of October 1, 1984, to September 30, 1985, published by LCHD. The site was evaluated in the form of a preliminary assessment (PA) that was submitted to U.S. EPA. The PA was prepared by Kenneth Corkill of the Illinois Environmental Protection Agency (IEPA). The PA is dated December 30, 1987.

FIT prepared an SSI work plan for the HPLF site under technical directive document (TDD) F05-8804-015, issued on April 14, 1988. The SSI work plan was approved by U.S. EPA on May 20, 1988. The SSI of the HPLF site was conducted on May 31 and June 1, 1988, under TDD F05-8804-015, issued on May 20, 1988.

The FIT SSI included an interview with a site representative, a reconnaissance inspection of the site, and the collection of a total of 12 soil and sediment samples and four surface water samples.

The purposes of an SSI have been stated by U.S. EPA in a directive outlining Pre-Remedial Program strategies. The directive states:

> All sites will receive a screening SI to 1) collect additional data beyond the PA to enable a more refined

> preliminary HRS [Hazard Ranking System] score, 2) establish priorities among sites most likely to qualify for the NPL [National Priorities List], and 3) identify the most critical data requirements for the listing SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the refined preliminary HRS score and other technical judgement factors, the site will then either be designated as NFRAP [no further remedial action planned], or carried forward as an NPL listing candidate. A listing SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA [Resource Conservation and Recovery Act].... Sites that are designated NFRAP or deferred to other statutes are not candidates for a listing SI.
>
> The listing SI will address all the data requirements of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive a listing SI. (U.S. EPA 1988)

U.S. EPA Region V has also instructed FIT to identify sites during the SSI that may require removal action to remediate an immediate human health and/or environmental threat.

2. SITE BACKGROUND

2.1 INTRODUCTION

This section includes information obtained from SSI work plan preparation and from the site representative interview.

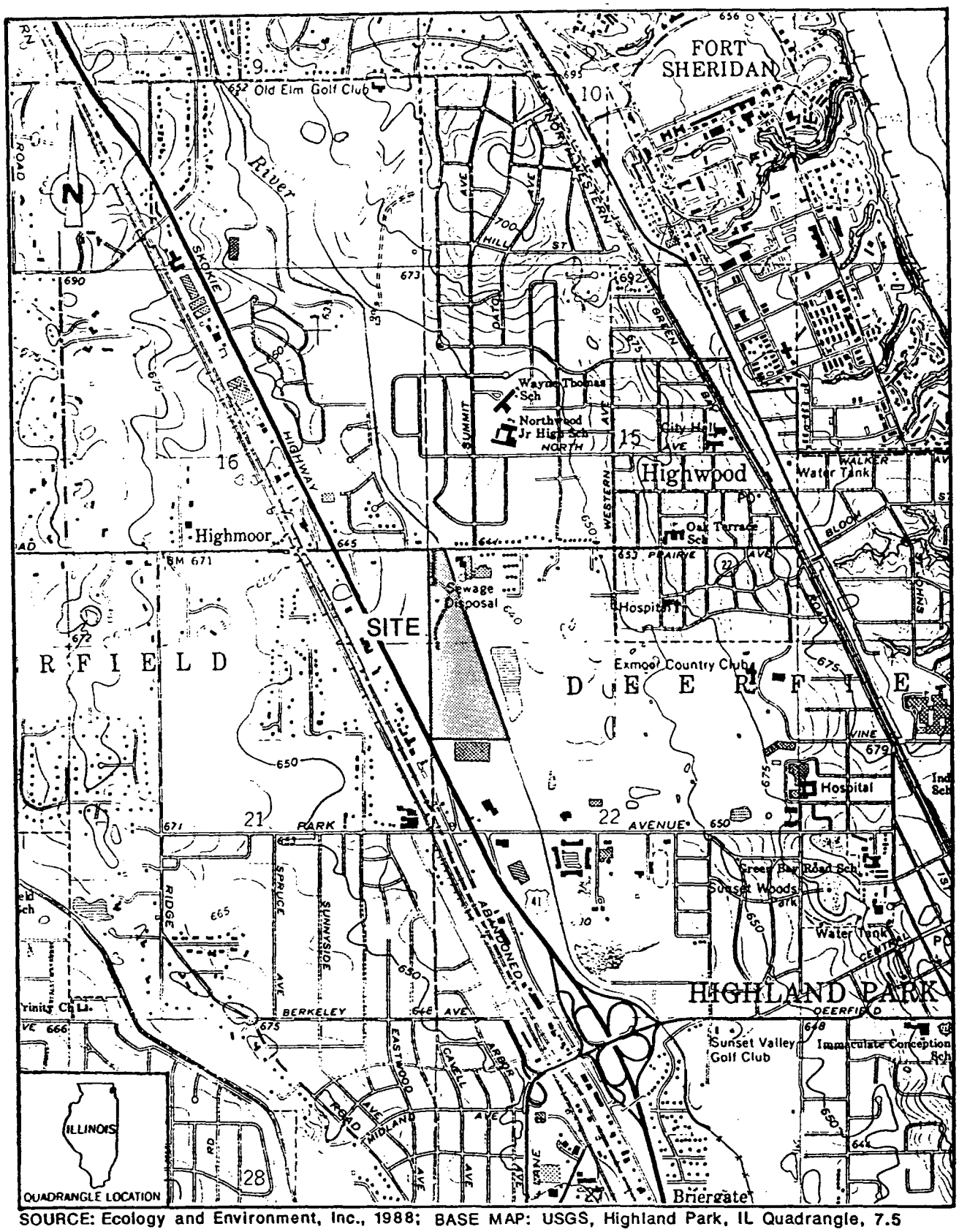
2.2 SITE DESCRIPTION

The HPLF site is a closed and covered landfill that had accepted industrial, residential, and municipal refuse, as well as sewage treatment sludge (LCHD 1986). The site is located on an approximately 80-acre parcel of land in a mixed residential and commercial area in north-central Highland Park, Illinois (secs. 15 and 22, T.43N., R.12E.). The landfill is situated at the southeast corner of the intersection of Halfday Road (Illinois Route 22) and U.S. Route 41 (see Figure 2-1). A 4-mile radius map of the HPLF site is provided in Appendix A.

2.3 SITE HISTORY

The site property, currently owned by three owners as three separate parcels of land, is in the process of being sold to Spatz & Company, a Northbrook-based real estate development firm. Spatz & Company is planning to develop the property for a commercial and residential complex. The complex is slated to include single-family homes and townhomes, condominiums, upscale shopping facilities, a 28-acre lake, tennis courts, and possibly a hotel. The construction is projected to begin in fall 1989 (Hornung 1988).

Present owners of the site include the Highland Park County Club (HPCC), the North Shore Sanitary District (NSSD), and the City of



SOURCE: Ecology and Environment, Inc., 1988; BASE MAP: USGS, Highland Park, IL Quadrangle, 7.5 Minute Series, 1963.

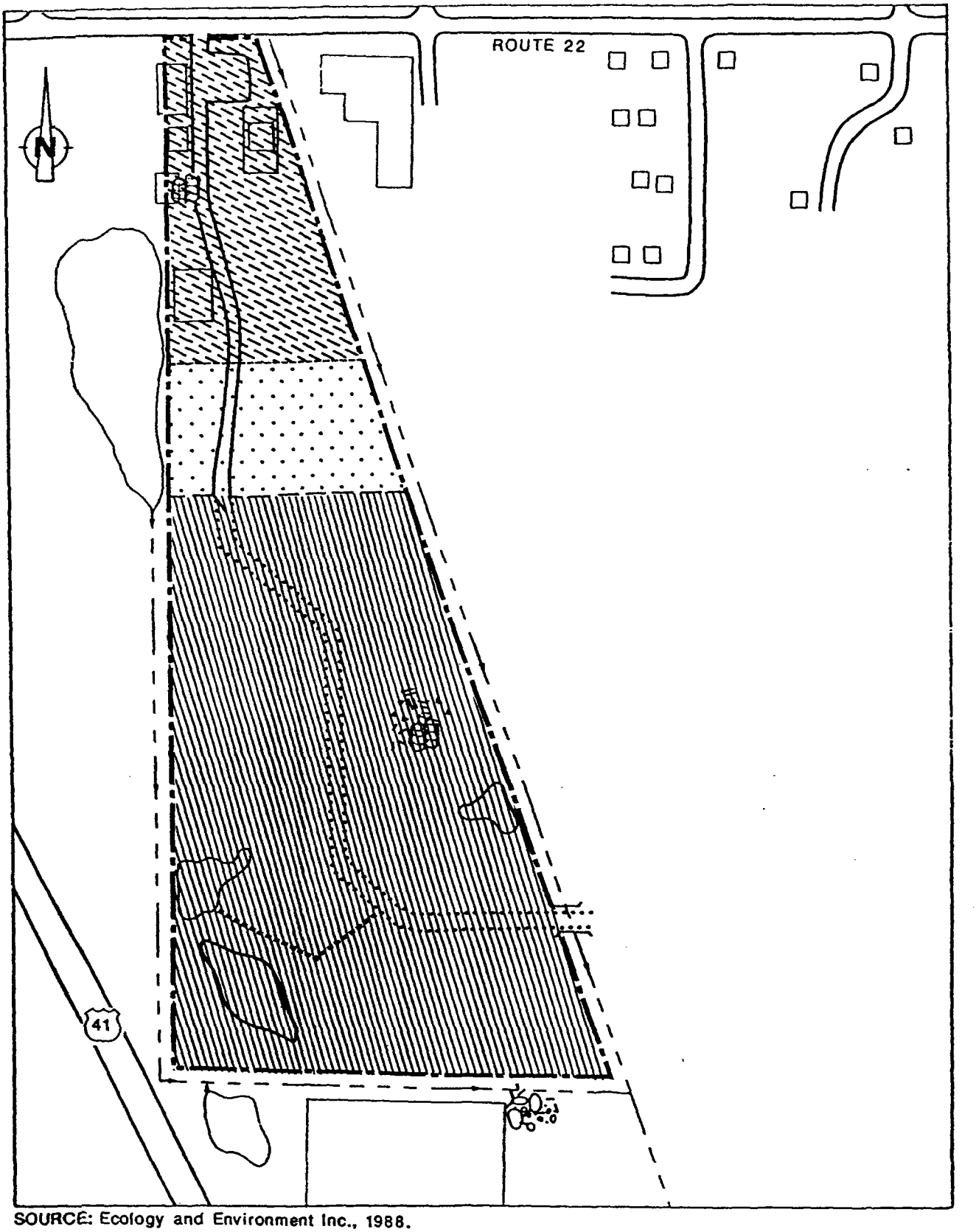
SCALE
0 0.5 1 MILE

FIGURE 2-1 SITE LOCATION

Highland Park. HPCC owns the southern half of the site property, NSSD owns the one-fourth of the property to the north of the HPCC property, and the City of Highland Park owns the one-fourth of the site property north of the NSSD property. (See Figure 2-2 for approximate locations of ownership boundaries).

Since approximately 1973, HPCC has used the southern half of the site as grounds for a private golf course. Three golf greens and fairways are situated on the closed landfill. The remaining fifteen holes of the course are located on property adjacent to the site on the east. HPCC is owned and managed by Brickman Ltd. of Highland Park. The southern portion of the site, where HPCC is located, was originally excavated for fill that was used to construct the Deerfield Road overpass in 1963. Three 30-foot-deep by approximately 300-foot-long trenches were left as a result of the excavation. The trenches were subsequently used for a municipal landfill by the City of Highland Park, which owned the property prior to 1973. As the trenches were filled, nearby residents complained of "a putrid odor of stagnant water" (Luomola 1963), but landfilling continued at the site until the early 1970s, when the landfill was closed and covered (Robinson 1988). An HPCC representative indicated that the southern property is subject to severe subsidence and that cover material has been added on a semi-regular basis. Also, the representative stated that concrete, tires, and other debris occasionally protrude through the ground surface, that some areas do not support vegetation, and that odors and garbage have been detected during sand-trap excavation.

The middle quarter of the property, presumably owned by NSSD since the early 1970s, is presently used for a tree nursery. Although the property is owned by NSSD, the nursery is maintained by the City of Highland Park. According to site representatives, NSSD owns the property because it maintains a sanitary sewer interceptor pipe that runs across the site. In addition, during the period of landfilling, the eastern portion of the NSSD property may have housed a teepee burner-type incinerator where landscaping and conventional refuse were burned (Dittmar 1988). It is believed that this portion of the landfill began operation by the City of Highland Park sometime during the period between 1930 and 1963, and closed in the early 1970s. No details con-



SOURCE: Ecology and Environment Inc., 1988.

SCALE
0 500 1000 FEET

LEGEND

HIGHLAND PARK COUNTRY CLUB PROPERTY

NORTH SHORE SANITARY DISTRICT PROPERTY

CITY OF HIGHLAND PARK PROPERTY

FIGURE 2-2 APPROXIMATE LOCATIONS OF OWNERSHIP BOUNDARIES

cerning the operation have been reported (Dittmar 1988). The northern quarter of the site, owned by the City of Highland Park, is presently being used for a public works facility. The facility includes a fire tower, a road salt storage shed, an empty drum storage pile, miscellaneous equipment storage areas, and a construction debris garbage transfer area. This property, as indicated by site representatives, may also have been used for an on-site sewage treatment plant operated by the City of Highwood. Therefore, it is believed that sewage treatment sludge was disposed of on-site (Kristiansen 1988). The northern area is alleged to be the original fill area, having begun in the early 1930s as a municipal landfill under the ownership of the City of Highwood. It is unclear when the northern portion was sold to Highland Park or when the landfill there was closed (Corkill 1987, Dittmar 1988).

The site received an operating license (to permit at least the southern half of the property to operate as a landfill) in 1963, issued by LCHD. No records indicate any formal violations issued against the landfill; however, complaints regarding ponded water, leachate seeps, odors, and rats have been reported by LCHD. Unspecified remaining fill areas were inspected by IEPA on October 18, 1976. As of that date, the site was reported to be satisfactorily closed and covered (LCHD 1986, IEPA 1976).

3. SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

3.1 INTRODUCTION

This section outlines procedures and observations of the SSI of the HPLF site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific FIT activities are also provided. The SSI was conducted in accordance with the U.S. EPA-approved work plan.

The U.S. EPA Potential Hazardous Waste Site Inspection Report (Form 2070-13) for the HPLF site is provided in Appendix B, and the U.S. EPA Immediate Removal Action Checksheet for the HPLF site is provided in Appendix C.

3.2 SITE REPRESENTATIVE INTERVIEW

Ted Wolff, FIT team leader, conducted an interview with Tom Robinson, Golf Course Superintendent, Highland Park County Club. The interview was conducted on May 31, 1988, at 8:15 a.m. on the golf cart path adjacent to the Skokie Drainage Ditch. In addition, Jim Kristiansen, Director of Public Works, City of Highland Park, and Phil Dittmar, City Engineer, City of Highland Park, were also interviewed. The interview with Kristiansen and Dittmar was conducted on June 1, 1988, at 2:00 p.m. at the public works building at 1150 Halfday Road. Mike McAteer and Andrea Davis of FIT were also in attendance during each of the interviews.

3.3 RECONNAISSANCE INSPECTION

Following the site representative interview, FIT conducted a

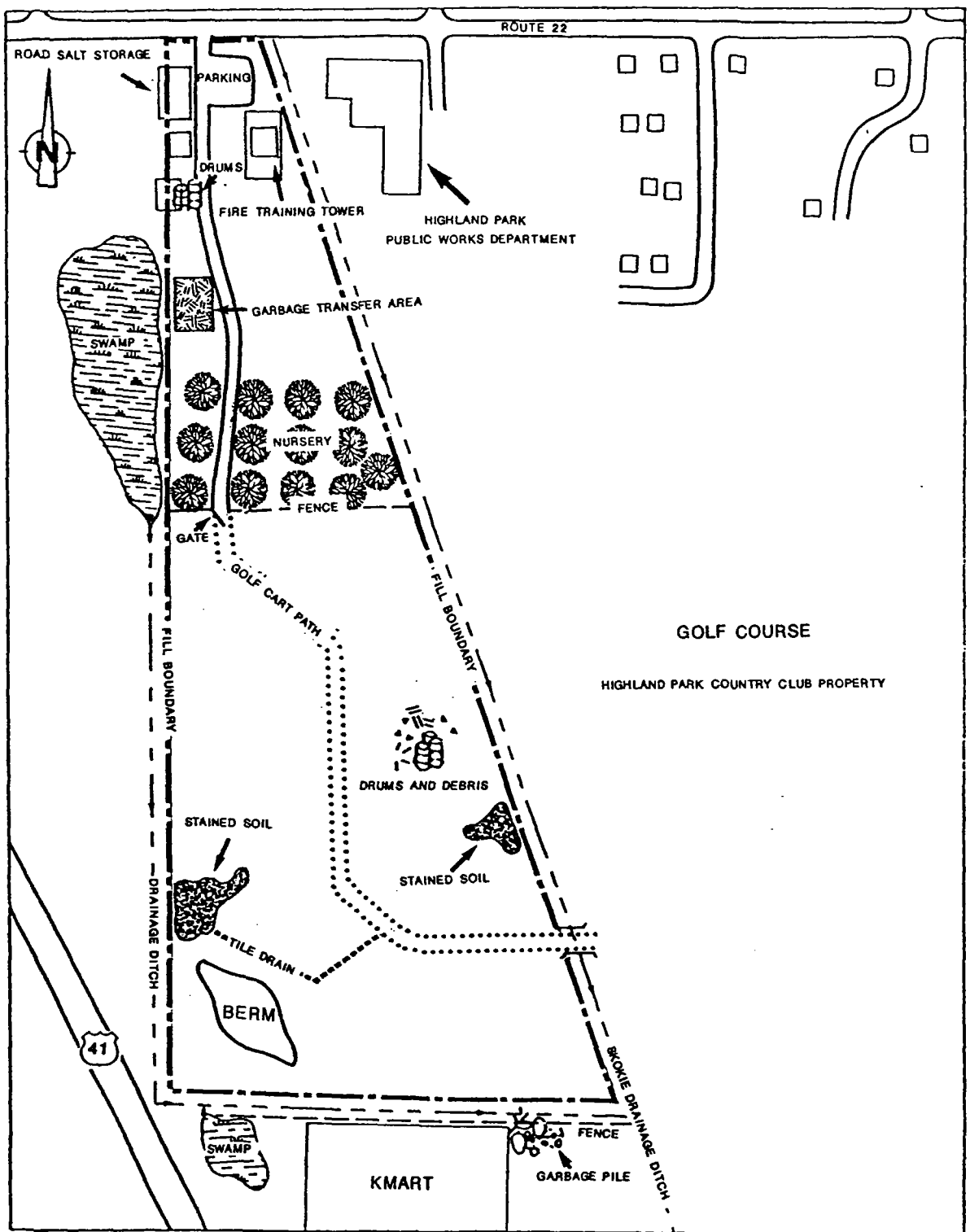
reconnaissance inspection of the HPLF site and surrounding area in accordance with E & E Health and Safety guidelines. The reconnaissance inspection included a walk-through of the site to determine appropriate health and safety requirements for conducting on-site activities and to make observations to aid in characterizing the site. FIT also determined exact sampling locations during the reconnaissance inspection.

The reconnaissance inspection was begun on May 31, 1988, at 9:00 a.m. Site representatives did not accompany FIT during the reconnaissance inspection.

Reconnaissance Inspection Observations. The HPLF site is located in a mixed residential and commercial area of Highland Park, a northern suburb of Chicago. The properties surrounding the site are developed as shopping areas, recreational facilities, residences, and wholesale/retail operations. The landscape in the vicinity of the site is primarily covered with brush and a few wooded areas. Several marshy areas exist, but much of the land is developed and revegetated with introduced flora. The topography of the site area is generally flat with a slight (less than 1%) slope to the southeast.

The site is bordered to the north by Halfday Road (Illinois Route 22), a residential highway (see Figure 3-1 for locations of site features). To the west lies U.S. Highway 41, which is separated from the site by marshy wetlands. Highway 41 is built up with restaurants, gasoline stations, and industrial and commercial facilities. The south side of the facility is bordered by a K-mart store, and the east side is bordered by the Highland Park County Club Golf Course.

Running along the east side of the site is the Skokie Drainage Ditch. The ditch is approximately 20 feet wide and 1 foot deep. Although the Skokie Drainage Ditch was shallow during the site inspection, it has flooded four times since 1983 (Robinson 1988). The ditch has been made into a channel to assist in flood control. It empties approximately 5 miles downstream into the Skokie Lagoons on the North Branch of the Chicago River, and originates from tributaries in Lake Bluff (Axelrod 1988). The ditch is also fed by a shallow drainage ditch that runs from a marsh area on the west side of the site, along the south side of the site, and into the Skokie Drainage Ditch at the southeast corner of the site. Ducks were observed in the Skokie



SOURCE: Ecology and Environment Inc., 1988.

SCALE
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FIGURE 3-1 SITE FEATURES

Drainage Ditch, as was a small school of minnows.

The site terrain is rolling on the southern golf course portion, and a large berm is built up in the southwest corner. The northern half of the site is predominantly flat, and a marshland approximately 200 feet by 70 feet exists in a low area just west of the northwest corner of the site. With the exception of the north boundary, the site boundaries are steeply sloped into the drainage ditches.

The site is covered with vegetation. The golf course grass and trees appeared healthy, although several spots around the fairway borders were without grass growth. These spots also were stained, as if a liquid had flowed downhill from them. The site representative suggested that these were areas of possible leachate seeps. No distressed vegetation was noted at either the nursery or public works portions of the site; however, most of the public works portion of the property was covered by gravel and dirt roads.

Other observations recorded at the site are as follows.

- Large holes were observed where trees had been removed from the nursery. The bottom of these holes contained refuse pushing up from below the ground.

- A refuse transfer station was being operated on the western part of the public works property. This area consisted of a pile of demolition debris and discarded furniture.

- A pile of tires was being stacked north of the transfer station.

- Approximately one dozen empty drums labeled "Potassium Permanganate" were piled near the tires.

- Miscellaneous machine parts were scattered around the public works property.

- A dump, including drums of oily waste, brush and wood chips, and a variety of machinery, was observed along the east-central

portion of the golf course.

The site was bisected into north and south portions by a fence with a secured gate. A fence also ran along the southern boundary, south of the ditch and north of K-Mart. No other site fencing or security exists (Robinson 1988, Dittmar 1988).

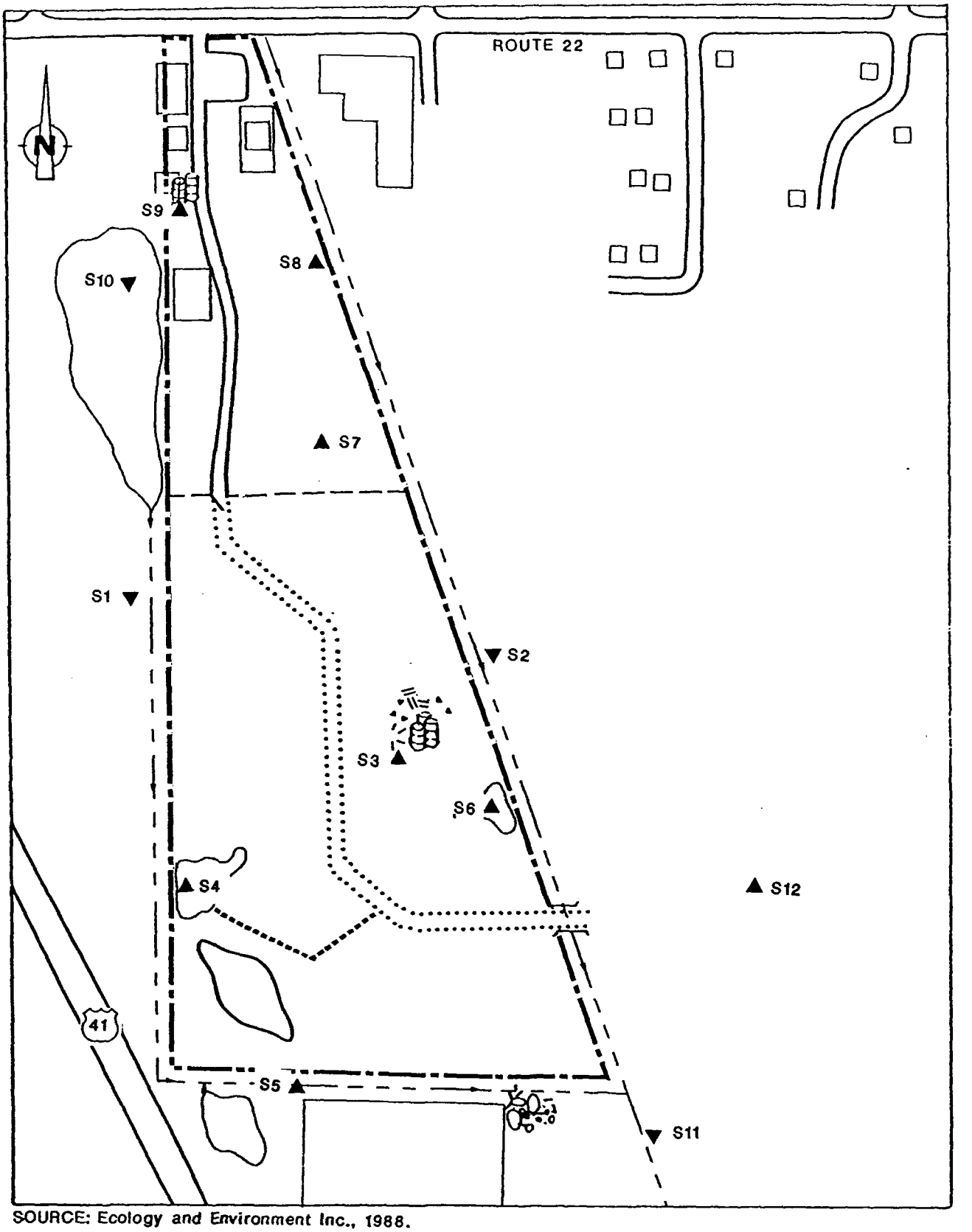
3.4 SAMPLING PROCEDURES

Samples were collected by FIT at locations determined during the reconnaissance inspection to determine levels of U.S. EPA Target Compound List (TCL) compounds and U.S. EPA Target Analyte List (TAL) analytes present at the site. The TCL and TAL are provided in Appendix E.

On May 31, 1988, FIT collected seven surface soil, four sediment, and one potential background soil sample. On June 1, 1988, FIT collected three surface water and one potential background surface water sample. Portions of samples were not provided to the site representatives.

Soil Sampling Procedures. Sediment samples S1, S2, S10, and S11 were collected in drainage ditches and marsh areas to determine whether TCL compounds and/or TAL analytes may have migrated into adjacent surface water surrounding the site. Sample S10 was collected at the northern edge of the marsh, west of the site (see Figure 3-2 for soil and sediment sampling locations). Sample S1 was collected in the drainage ditch south of the marsh. No water was present in the ditch at the sample location. Sample S2 was collected in the Skokie Drainage Ditch east of the site, at the base of an erosion gulley leading from the site to the ditch. Sample S11 was collected from Skokie Drainage Ditch sediments, approximately 100 feet downstream of the southeastern corner of the site. No upstream sediment sample was collected because sediment samples were collected only to attempt to detect waste characteristics, not a release to surface water.

Soil sample S3 was collected near pile of drums and debris on the golf course, and S9 was collected near a pile of drums on the public works portion of the property to determine whether potential hazardous



SOURCE: Ecology and Environment Inc., 1988.

SCALE
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FIGURE 3-2 SOIL AND SEDIMENT SAMPLING LOCATIONS.

contents may have leaked from the drums. Samples S4 and S6 were collected in areas of distressed vegetation on the west and east sides of the golf course portion of the site, respectively, to determine whether TCL compounds and/or TAL analytes may be responsible for the stressed vegetation. Samples S5 and S8 were collected in erosion gullies on the south and east sides, respectively, to determine whether TCL compounds and/or TAL analytes have entered potential surface water migration pathways. Sample S7 was collected at the bottom of a hole left by the removal of a tree in the nursery to determine whether TCL compounds and/or TAL analytes were present at depth. Sample S12 was collected as a potential background sample approximately 500 feet off-site, beneath a tree near the tenth fairway of the HPCC. Sample 12 was collected to characterize natural soil constituents in the site area.

All of the soil and sediment samples were collected using E & E standard operating procedures (E & E 1987). These procedures are outlined below:

- The ground surface was cleared of vegetation, stones, twigs, and other foreign matter, using a hand trowel;
- Surface soils and sediments were scooped up using the hand trowel, and were placed into a stainless steel bowl; and
- A spoon was used to transfer the media to sample bottles.

Standard E & E decontamination procedures were also adhered to: These procedures are outlined below:

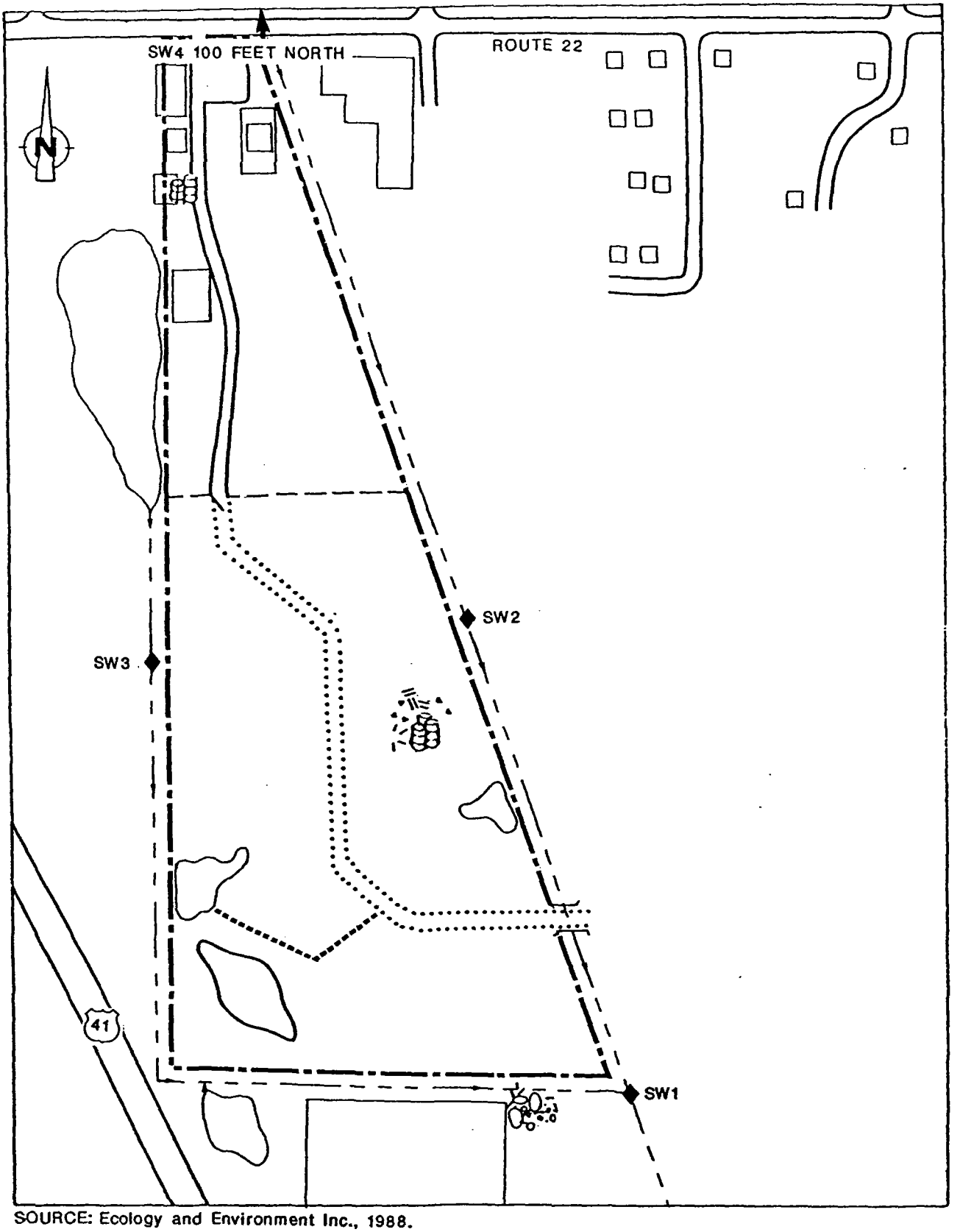
- All equipment was scrubbed using a solution of Alconox and distilled water;
- Equipment was triple rinsed using distilled water; and
- This procedure was repeated prior to each sample collection (E & E 1987).

Surface water samples SW1, SW2, SW3, and SW4 were collected from the drainage ditches surrounding the facility. SW1, SW2, and SW3 were collected in an attempt to document an observed release to surface water. SW1 was collected downstream from the site where the ditch draining the west and south sides of the site intersects the Skokie Drainage Ditch on the southeastern corner of the site (see Figure 3-3 for surface water sampling locations). A duplicate sample was collected at location SW1. Sample SW2 was collected in the middle of the Skokie Drainage Ditch approximately halfway between the northern and southern boundaries of the site. Sample SW3 was collected from a stagnant pond approximately 100 feet south of the marsh area on the west side of the site. Sample SW4 was collected as a potential upgradient sample (to determine natural surface water constituents in the area of the site), approximately 100 feet upstream of Halfday Road beyond the site's northern boundary. A field blank was also collected using distilled water. The surface water samples were collected to determine whether any substances on-site have migrated to surface water.

Surface water samples were collected as follows:

- Samples were collected moving downstream to upstream;
- Samples were collected by submersing the sample bottle in the water to a middle depth; and
- Sample bottles were capped and rinsed with distilled water.

All soil, sediment, and surface water samples were packaged and shipped in accordance with U.S. EPA-required procedures. As directed by U.S. EPA, all samples were analyzed for TCL compounds by Southwest Laboratory of Oklahoma, Inc., of Tulsa, Oklahoma, and for TAL analytes by Versar, Inc., of Springfield, Virginia.



SOURCE: Ecology and Environment Inc., 1988.

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FIGURE 3-3 SURFACE WATER SAMPLING LOCATIONS

4. ANALYTICAL RESULTS

4.1 INTRODUCTION

This section includes results of chemical analysis of FIT-collected soil, sediment, and surface water samples for TCL compounds and TAL analytes.

4.2 RESULTS OF CHEMICAL ANALYSIS OF FIT-COLLECTED SAMPLES

Soil Sample Analysis Results. Analysis of FIT-collected soil and sediment samples revealed substances from the following groups of TCL compounds and TAL analytes: aromatic hydrocarbons, ketones, chlorinated hydrocarbons, phenols, polyaromatic hydrocarbons (PAHs), phthalates, pesticides, PCBs, metals, common soil constituents, and common laboratory artifacts (see Table 4-1 for complete soil and sediment sample chemical analysis results).

Surface Water Sample Analysis Results. Analysis of FIT-collected surface water samples revealed substances from the following groups of TCL compounds and TAL analytes: metals, common surface water constituents, and common laboratory artifacts (see Table 4-2 for complete surface water sample chemical analysis results).

Laboratory analytical data of soil and sediment sample analysis and surface water sample analysis are provided in Appendix E. Contract Laboratory Program (CLP) quantitation/detection limits are also provided in Appendix E.

Table 4-1
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL AND SEDIMENT SAMPLES

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
Date	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88	5/31/88
Time	1115	1130	1200	1210	1250	1310	1515	1530	1540	1600	1615	1320
Organic Traffic ReportNumber	EAA341	EAA342/342RE†-	EAA343	EAA344	EAA345/345RE†-	EAA346	EAA347	EAA348	EAA349	EAA350	EAA351/ 351RE†-	EAA352/ 352RE†-
Inorganic Traffic Report Number	UEY891	UEY892	UEY893	UEY894	UEY895	UEY896	UEY897	UEY898	UEY899	UEY900	UEY901	UEY902
Compound Detected (values in µg/kg)												
Volatile Organics												
chloromethane	--	--	--	--	--	--	--	--	--	9J	--	--
acetone	120	33/43	--	830	/38J	930	25	--	--	100	67/66	/12BJ
carbon disulfide	--	.6J/	--	--	--	--	--	--	--	--	--	--
benzene	--	5J/5J	--	--	--	--	--	--	--	--	--	--
toluene	--	--	2BJ	200B	3BJ/	--	51B	28B	6B	3BJ	--	5BJ/
chlorobenzene	--	--	--	26J	--	--	--	--	--	--	--	--
ethylbenzene	--	--	--	67	2J	--	--	--	--	--	--	--
styrene	--	/29	--	--	--	--	--	--	--	--	--	--
xylenes (total)	--	--	4J	260	--	--	--	--	--	--	--	--
Semivolatile Organics												
1,4-dichlorobenzene	--	--	--	970JD	--	--	--	--	--	--	--	--
4-methylphenol	--	120J	--	--	--	--	--	--	--	--	--	--
naphthalene	--	--	--	--	130J	--	--	--	--	--	--	--
2-methylnaphthalene	--	--	--	--	120J	--	--	--	--	--	--	--
acenaphthylene	--	--	--	--	67J	--	--	--	--	--	--	--
acenaphthene	--	72J	--	--	280J	--	--	--	--	160JD	240J	--
4-nitrophenol	--	93J	--	--	--	--	--	--	--	--	--	--
dibenzofuran	--	--	--	--	150J	--	--	--	--	--	120J	--
fluorene	--	120J	--	--	330J	--	--	--	--	640JD	290J	--
phenanthrene	150JD	890	--	--	2,300	--	140J	--	--	6,000D	2,300	88J
anthracene	--	170J	--	--	600	--	--	--	--	1,900JD	500J	--
di-n-butylphthalate	--	--	--	--	--	--	--	--	--	100JD	--	--
fluoranthene	420JD	1,500	--	140JD	3,500	110J	360J	--	--	12,000D	4,200	250J
pyrene	330JD	1,200	--	--	2,800	76J	240J	--	--	9,200D	4,100	180J
butylbenzylphthalate	--	--	--	--	--	--	--	--	--	--	250J	110J
benzo[a]anthracene	170JD	470	--	--	1,600	--	130J	--	--	4,400D	1,800	78J
chrysene	240JD	750	--	--	1,700	--	180J	--	--	6,200D	2,500	130J
bis(2-ethylhexyl)phthalate	--	550	6,700JD	--	98J	--	--	--	--	1,600JD	870	--
di-n-octylphthalate	--	110J	--	--	94J	33J	--	--	--	--	--	100J
benzo[b]fluoranthene	210JD	670	--	--	1,800	--	170J	--	--	5,600D	2,500	--
benzo[k]fluoranthene	--	470J	--	--	730J	--	120J	--	--	3,500D	1,600	--
benzo[a]pyrene	150JD	500	--	--	1,200	--	130J	--	--	4,600D	2,000	97J
indeno[1,2,3-cd]pyrene	--	390J	--	--	870	--	91J	--	--	2,400JD	1,300	67J

Table 4-1 Cont.

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
dibenzo[a,h]anthracene	--	98J	--	--	250J	--	--	--	--	930JD	300J	--
benzo[g,h,i]perylene	--	370J	--	--	740	--	97J	--	--	--	1,200	--
Pesticides/PCBs												
4,4'-DDE	--	--	--	--	--	--	45J	27J	130J	270J	--	190
4,4'-DDD	--	--	--	--	--	--	110	85	120J	2,800J	210J	39J
4,4'-DDT	--	--	--	--	--	--	--	96	180J	--	--	45
Aroclor 1232	--	--	1,800	--	--	--	--	--	--	--	--	--
Analyte Detected (values in mg/kg)												
aluminum	7,510	3,720	11,600	8,000	8,250	7,220	13,100	10,700	5,850	11,400	7,780	10,700
arsenic	--	--	6.6JN	--	4.5JN	6.8JN	9.8JN	--	6JN	7.6JN	4.9JN	6.4JN
barium	[68]	[28]	68	66	53	1,240	104	82	48	77	[58]	86
beryllium	[0.59]	[0.37]	[0.66]	[0.56]	[0.54]	[0.42]	[0.76]	[0.74]	[0.55]	[0.86]	[0.47]	[0.81]
cadmium	--	--	[0.89]	--	--	2	--	1.2	--	--	--	[1.2]
calcium	29,400	31,300	48,500	27,400	48,100	31,200	6,980	17,800	68,000	48,600	46,100	12,000
chromium	17	12	20	14	15	16	21	19	12	26	26	59
cobalt	[7.1]	[4.8]	[11]	[7.6]	[9.8]	[7.2]	[12]	[9]	[7.6]	[11]	[10]	[7.6]
copper	24	16	22	18	20	33	26	593	36	78	40	47
iron	15,900	7,930	21,000	12,400	16,600	12,700	22,400	27,600	13,400	23,000	16,800	15,200
lead	32	46	28	25	38	1,980	22	33	68	277	101	54
magnesium	11,300	16,200	24,100	11,700	24,700	12,000	4,570	6,200	36,700	14,300	14,900	6,290
manganese	222	264	536	258	633	245	421	487	492	456	509	255
mercury	--	--	0.13	--	--	--	--	0.17	--	--	0.17	0.29
nickel	[16]	[6.6]	25	14	19	14	21	18	17	26	20	20
potassium	[877]	[918]	2,200	[945]	1,650	[779]	1,520	1,440	[865]	1,810	[1,540]	2,260
silver	--	--	--	--	--	--	--	--	--	--	[2]	[2.1]
sodium	[335]JE	[399]JE	[189]JE	[88]JE	[190]JE	[120]JE	[104]JE	[112]JE	[344]JE	[376]JE	[285]JE	[87]JE
vanadium	[23]	[9.1]	24	18	18	16	26	28	16	26	19	25
zinc	87JE	83JE	107JE	60JE	73JE	1,220JE	64JE	395JE	266JE	306JE	192JE	107JE
cyanide	--	--	--	--	--	--	--	--	--	--	--	0.74JN

-- Not detected.
†-These samples were reanalyzed for volatile organics. The values following the slash are the results of reanalysis.

Table 4-1 Cont.

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.
B	This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/ probable blank contamination and warns the data user to take appropriate action.	Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL. Data is quantitative.

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
[ ]	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.

Source: Ecology and Environment, Inc. 1988.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SURFACE WATER SAMPLES

Sample Collection Information and Parameters	Sample Number SW1	DUPLICATE	SW2	SW3	SW4	BLANK
Date	6/1/88	6/1/88	6/1/88	6/1/88	6/1/88	6/1/88
Time	0950	0950	1030	1150	1230	1030
Organic Traffic Report Number	EAA353	EAA354	EAA355	EAA356	EAA357	EAA358
Inorganic Traffic Report Number	MEY903	MEY904	MEY905	MEY906	MEY907	MEY908
Temperature (°C)	17	17	18	22	22	22
Specific Conductivity (µmhos)	610	610	640	1,000	540	0
pH7.31	7.31	7.31	7.40	7.34	7.84	7.00
Compound Detected (values in µg/L)						
Volatile Organics						
chloroform	--	--	--	--	--	0.6J
Semivolatile Organics						
benzoic acid	--	--	--	16J	--	--
Analyte Detected (values in mg/L)						
aluminum	[48]	[52]	[63]	1,970	[58]	--
arsenic	--	--	--	36	--	--
barium	[51]	[50]	[59]	743	[49]	--
calcium	91,900	90,100	86,200	124,000	90,900	[29]
chromium	[5.1]	--	--	--	--	--
cobalt	--	--	[5.4]	[16]	--	--
copper	--	--	--	[6.5]	--	--
iron	474	458	793	107,000	449	[11]

Table 4-2 Cont.

Sample Collection Information and Parameters	Sample Number					
	SW1	DUPLICATE	SW2	SW3	SW4	BLANK
lead	--	--	--	9.3	--	--
magnesium	45,900	45,100	44,400	62,400	45,600	[11]
manganese	268	261	295	2,790	284	--
potassium	[2,740]	[2,460]	[4,620]	22,000	[2,910]	--
silver	--	--	--	[5]	--	--
sodium	90.300	88,400	91,700	85,100	81,400	[46]
vanadium	--	--	--	[9.4]	--	--
zinc	[2.8]	[3]	[5.6]	50	[3.6]	--

-- Not detected.

Table 4-2 Cont.

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
[ ]	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.

Source: Ecology and Environment, Inc. 1988.

5. DISCUSSION OF MIGRATION PATHWAYS AND TARGETS

5.1 INTRODUCTION

This section discusses data and information that apply to potential migration pathways and targets of TCL compounds and TAL analytes that may be attributable to the HPLF site.

The five migration pathways and targets of concern discussed are groundwater, surface water, air, fire and explosion, and direct contact.

5.2 GROUNDWATER

No groundwater samples were collected.

The potential does exist for TCL compounds and TAL analytes to migrate from the site into the groundwater. This potential is based on the following information:

- TCL compounds and TAL analytes have been detected at the site, including aromatic hydrocarbons, chlorinated hydrocarbons, phenols, ketones, PAHs, pesticides, PCBs, and metals;

- Waste is believed to have been deposited at the site as a solid and as a sludge, and leachate has been observed (LCHD 1986); and

- The landfill is not lined, and no leachate collection system is in place (Dittmar 1988).

In addition, the potential for groundwater contamination is based on the following geological information:

- The general geology in the site area is characterized by unconsolidated glacial deposits of the Wadsworth Till Member and the Wedron Formation (Willman et al. 1975);

- These unconsolidated deposits are composed primarily of clayey tills; however, not enough well logs are available to conclude that the clay layer is continuous;

- Well logs indicate that the thickness of the drift ranges between 100 and 200 feet and water levels are as shallow as 7 to 20 feet (Mirza 1988);

- The bedrock underlying the unconsolidated zone is the Silurian dolomite and may be considered hydraulically connected with the glacial drift;

- The dolomite is found at an average depth of approximately 160 feet; and

- The glacial deposits and Silurian dolomite comprise the aquifer of concern, a shallow aquifer, while the deeper Ironton-Galesville sandstone aquifer is confined by the shales of the Maquoketa Group (Weller and Gibb 1976; Ludwigs 1988).

However, the site is situated in a depression between two moraines, the Highland Park Moraine and the Deerfield Moraine. Because of the low area, the groundwater flow is likely influenced by Lake Michigan and is directed to the east, toward the lake. Shallow groundwater flow may follow the Skokie Drainage Ditch to the southeast.

The potential targets of possible groundwater contamination include an estimated population of approximately 1,000 persons living within a 3-mile radius of the site who obtain drinking water from municipal or

residential wells cased in the drift and dolomite. These wells are between 2 and 3 miles west of the site and are probably upgradient with respect to groundwater flow.

According to village officials, portions of the villages of Bannockburn and Riverwoods are supplied with drinking water by groundwater wells. Bannockburn has a population of 1,200. Approximately 450 persons in Bannockburn receive Lake Michigan water, which leaves the remaining 750 persons to be served by groundwater. Riverwoods has a population of 2,800. Approximately 800 persons in Riverwoods receive Lake Michigan water, which leaves 2,000 persons to be served by groundwater. Only 1/7 of Riverwoods is within the 3-mile radius, which leaves approximately 285 persons as targets of concern. A total population target, therefore, is approximately 1,035 persons.

All other communities within the 3-mile radius receive drinking water from intakes in Lake Michigan (Gewalt 1988; Hoffman 1988). Several irrigation wells have been reported to exist within the 3-mile radius, and are believed to be drawing from both the Silurian dolomite and the Ironton-Galesville sandstone aquifers (Ludwigs 1988).

5.3 SURFACE WATER

TCL compounds and TAL analytes were detected in sediment and surface water samples. These substances may possibly be attributable to the HPLF facility based on the following information:

- Metals, including arsenic (36 mg/L), lead (9.8 mg/L), and zinc (50 mg/L), detected in surface water samples from the site were detected at levels greater than those in the upgradient surface water sample;

- Acetone, a ketone, was detected in on-site soil and sediment samples at levels greater than, or equal to, ten times the level of acetone that was detected in the background soil sample; and

- Polyaromatic hydrocarbons (PAHs) were detected in sediment and on-site soil samples at levels greater than those detected in the background soil sample.

All other TCL compound and TAL analyte groups were detected in potential background samples or were detected at estimated or nonqualified levels.

Also, a potential does exist for TCL compounds and TAL analytes detected on-site to reach the drainage ditches bordering the site. Substances were detected in samples collected on the ground surface, and an overland migration pathway exists via erosion gullies which were noted during the reconnaissance inspection.

The Skokie Drainage Ditch is not known to be used for irrigation or as a drinking water source, but the "Illinois Travel and Recreation Guide" indicates that it may be used for canoeing and fishing.

Lake Michigan, located 1 1/2 miles east of the site, provides a source of drinking water for most of the communities within the 3-mile radius. However, because of the slope and terrain, no overland migration route exists from the site to Lake Michigan.

5.4 AIR

A release of potential contaminants to the air was not documented during the SSI of the HPLF site. During the reconnaissance inspection, FIT site-entry instruments (flame ionization detector, radiation monitor, and explosimeter) did not detect levels above background concentrations at the site. In accordance with the U.S. EPA-approved work plan, further air monitoring was not conducted by FIT.

A potential does exist for eolian forces to carry TCL compounds and/or TAL analytes from the site.

5.5 FIRE AND EXPLOSION

Site representatives and local, state, and federal file information have indicated that there is no history of, and no apparent potential

for, fire and/or explosion at the HPLF site. FIT observations and explosimeter readings indicated that there is no apparent potential for fire and/or explosion at the site.

5.6 DIRECT CONTACT

According to local, state, and federal file information reviewed by FIT, and interviews with site representatives, there is no documentation of an incident of direct contact with TCL compounds and/or TAL analytes at the HPLF facility.

There is a potential that the public may come into direct contact with TCL compounds and/or TAL analytes detected at the site. The potential for direct contact is based on the following information:

- Access to the site is not completely restricted; fences do not surround the site and there is no security guard or other means of security utilized at the site (Robinson 1988; Dittmar 1988);

- TCL compounds and TAL analytes have been detected in surface samples at the site; and

- The site area is open to casual use as a private golf course and is subject to heavy employee traffic at the public works facility.

Based on 1980 census data for the state of Illinois, giving populations of communities within a 1-mile radius of the site, the total population within a 1-mile radius was calculated to be 18,020.

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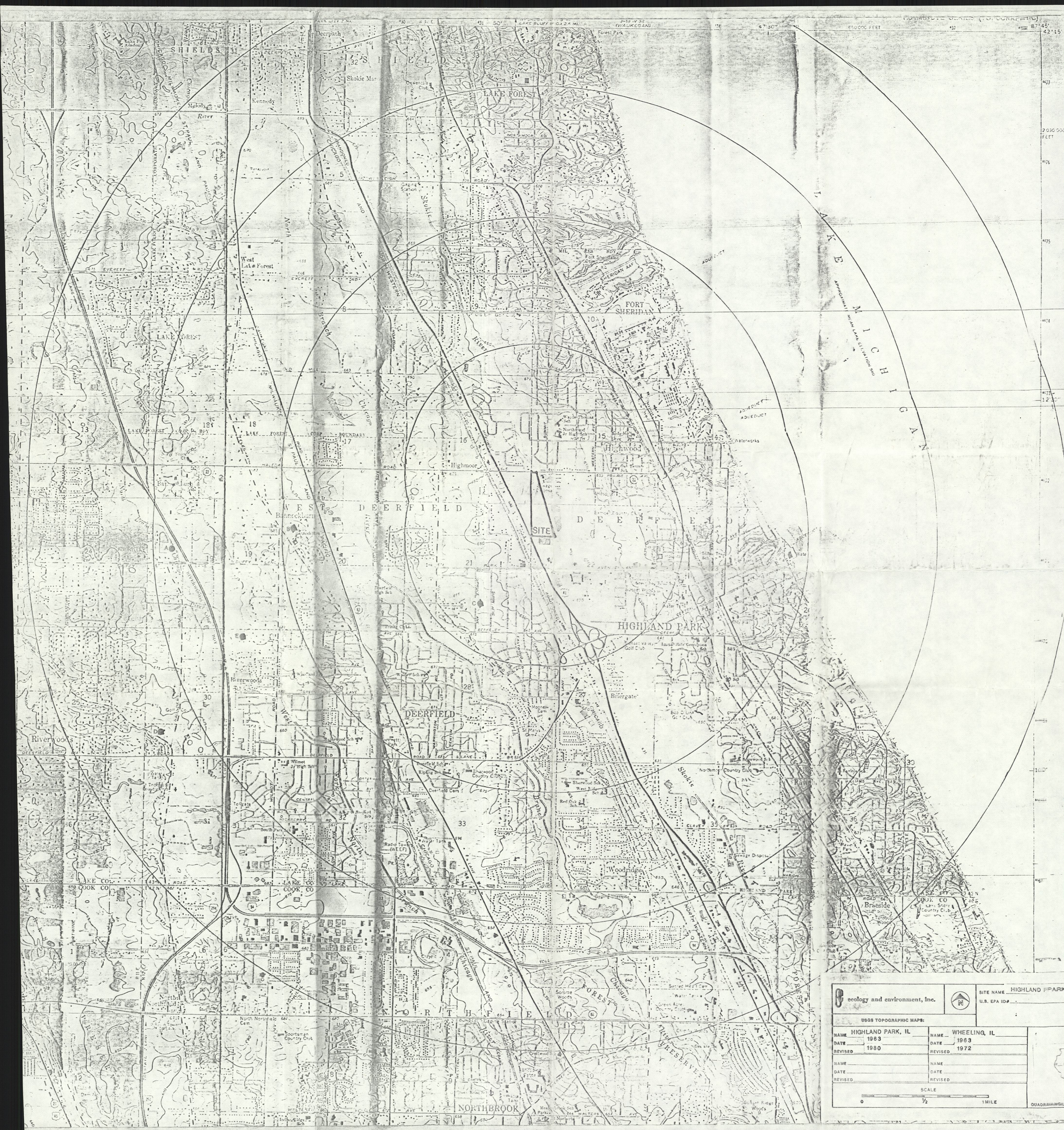
1253:3

APPENDIX A

SITE 4-MILE RADIUS MAP



ecology and environment, inc.

SITE NAME HIGHLAND PARK

U.S. EPA ID#

USGS TOPOGRAPHIC MAPS:

NAME HIGHLAND PARK, IL	NAME WHEELING, IL
DATE 1963	DATE 1963
REVISED 1980	REVISED 1972
NAME	NAME
DATE	DATE
REVISED	REVISED

SCALE

0 ½ 1 MILE

QUADRANGLE

APPENDIX B

U.S. EPA FORM 2070-13

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
HIGHLAND PARK LANDFILL	SE CORNER OF ROUTES 41 AND 22

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
HIGHLAND PARK	IL	60035	LAKE	097	10

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
42° 11' 47.0"	087° 49' 45.0"	☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION (MONTH DAY YEAR)	02 SITE STATUS	03 YEARS OF OPERATION (BEGINNING YEAR / ENDING YEAR)
5/31/88	☒ ACTIVE ☐ INACTIVE	1930's / 1970 ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☒ B. EPA CONTRACTOR E+E/FIT (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ___ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR ___ (Name of firm) ☐ G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
TED WOLFF	BIOLOGIST	E+E/FIT	(312) 663-9415

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
CRAIG CARLSON	GEOLOGIST	E+E/FIT	(312) 663-9415
MIKE MCATEER	GEOGRAPHER	E+E/FIT	(312) 663-9415
ANDREA DAVIS	GEOGRAPHER	E+E/FIT	(312) 663-9415
ROBERT SLAUGHTER	TECHNICIAN	E+E/FIT	(312) 663-9415
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
JIM KRISTIANSEN	DIRECTOR PUBLIC WORKS	1150 HALF DAY RD. H.P.	(312) 432-0800
PHIL DITTMAR	CITY ENGINEER	"	(312) 432-0800
TONY FERRARI	GEN'L. MGR	HIGHLAND PARK C.C	(312) 432-4000
TOM ROBINSON	GOLF COURSE SUPT.	"	(312) 432-3600
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	0810	SUNNY, CLEAR, LOW 90'S

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
TOM CRAUSE	IEPA	(217) 782-9848

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE (MONTH DAY YEAR)
CRAIG CARLSON	EPA	E+E/FIT	663-9415	8/8/88

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [x] A. SOLID
- [ ] B. POWDER, FINES
- [x] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [x] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS UNKNOWN
CUBIC YARDS ↓
NO. OF DRUMS ↓

03 WASTE CHARACTERISTICS (Check all that apply)

- [x] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [x] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [x] G. FLAMMABLE
- [x] H. IGNITABLE
- [x] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	UNKNOWN	UNKNOWN	WASTES ACCEPTED INCLUDED
OLW	OILY WASTE	↓	↓	INDUSTRIAL, MUNICIPAL,
SOL	SOLVENTS			RESIDENTIAL AND CONSTRUCTION
PSD	PESTICIDES			DEBRIS. IT IS POSSIBLE
OCC	OTHER ORGANIC CHEMICALS			THAT SEWAGE TREATMENT
IOC	INORGANIC CHEMICALS			SLUDGE HAS ALSO PLACED
ACD	ACIDS			IN THE LANDFILL
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	ACETONE*	67-64-1	SOIL SAMPLES	930	UG/KG
SOL	CARBON DISULFIDE	75-15-0	AND/OR SEDIMENT	0.6J	↓
SOL	BENZENE	71-43-2	SAMPLES COLLECTED	5J	
SOL	TOLUENE*	108-88-3	ON-SITE BY FIT 5/31/88	200B	
SOL	CHLOROBENZENE	108-90-7		26J	
OCC	1,4 DICHLOROBENZENE	106-46-7		970JD	
OCC	4 METHYLPHENOL	95-48-7		120J	
OCC	NAPHTHALENE	91-20-3		130J	
OCC	2 METHYLNAPTHALENE	91-57-6		120J	
OCC	ACENAPTHYLENE	208-96-8		67J	
OCC	ACENAPTHENE	83-32-9		280J	
OCC	4-NITROPHENOL	100-02-7		93J	
OCC	DIBENZOFURAN	132-64-9		150J	
OCC	FLOURENE	86-73-7		640JD	
OCC	PHENANTHRENE*	85-01-8		6000D	
OCC	ANTHRACENE	120-12-7	↓	1900JD	↓

V. FEEDSTOCKS (See Appendix for CAS Numbers) NONE

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E+E / FIT SITE INSPECTION 5/31/88
FIT FILES

* Continued from Part II, Section IV.

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)					
01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	DI-N-BUTYLPHTHALATE	84-74-2	SOIL AND/OR SEDIMENT	100 JD	UG/KG
OCC	FLUORANTHENE*	206-44-0	SAMPLES COLLECTED	12,000 D	
OCC	PYRENE*	129-00-0	ON SITE BY FIT	9200 D	
OCC	BUTYLBENZYLPHTHALATE*	85-68-7	5/31-6/1/88	250 J	
OCC	BENZO(a) ANTHRACENE*	56-55-3		4400 D	
OCC	CHRYSENE*	218-01-9		6200 D	
OCC	BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7		6700 JD	
OCC	DI-N-OCTYLPHTHALATE*	117-84-0		110 J	
OCC	BENZO(b) FLUORANTHENE	205-99-2		5600 D	
OCC	BENZO(k) FLUORANTHENE	207-08-9		3500 D	
OCC	BENZO(a) PYRENE*	50-32-8		4600 D	
OCC	INDENO(1,2,3-cd) PYRENE*	193-39-5		2400 JD	
OCC	DIBENZO(a,h) ANTHRACENE	53-70-3		930 JD	
OCC	BENZO(g,h,i) PERYLENE	191-24-2		1200	
PSD	4,4 DDE*	72-55-9		270 J	
PSD	4,4 DDD*	72-54-8		2800 J	
PSD	4,4 DDT*	50-29-3		180 J	
OCC	AROCLOR 1232	11141-16-5		1800	
MES	ALUMINUM*	7429-90-5		13100	MG/KG
MES	ARSENIC(*)	7440-38-2		9.8 JN	
MES	BARIUM*	7440-39-3		1240	
MES	BERYLLIUM*	7440-41-7		[0.86]	
MES	CADMIUM*	7440-43-9		2	
MES	CALCIUM*	7440-70-2		68,000	
MES	CHROMIUM(*)	7440-47-3		26	
MES	COBALT(*)	7440-48-4		[12]	
MES	COPPER(*)	7440-50-8		593	
MES	IRON(*)	7439-89-6		27,600	
MES	LEAD(*)	7439-92-1		1980	
MES	MAGNESIUM*	7439-95-4		36700	
MES	MANGANESE*	7439-96-5		633	
MES	MERCURY*	7439-97-6		0.17	
MES	NICKEL*	7440-02-0		26	
MES	POTASSIUM*	7440-09-7		2200	
MES	SODIUM*	7440-23-5		[3] JE	
MES	VANADIUM(*)	7440-62-2		28	
MES	ZINC*	7440-66-6		1220 JE	
MES	SILVER			[2]	
OCC	CHLOROMETHANE	74-87-3		9J	MG/KG
SOL	ETHYLBENZENE	100-41-4			
OCC	STYRENE	100-42-5			
SOL	XYLENES (TOTAL)	1330-20-7			

*DENOTES CONTAMINANT WAS ALSO DETECTED IN THE BACKGROUND SAMPLE (ALL VALUES LISTED ARE REPRESENTATIVE OF THE HIGHEST CONCENTRATION OF EACH SUBSTANCE)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981295479

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1035 — 04 NARRATIVE DESCRIPTION: THE SITE AREA IS CHARACTERIZED PRIMARILY BY CLAYEY TILLS OF THE WEDRON FORMATION. THESE ARE PLEISTOCENE DEPOSITS OF WISCONSINAN AGE. THESE DEPOSITS RANGE FROM 100 TO 200 FT THICK. THE DRIFT IS UNDERLAIN BY SILURIAN DOLOMITE. SINCE THE SITE IS UNLINED, POTENTIAL EXISTS FOR GROUNDWATER CONTAMINATION, HOWEVER, >90% OF THE POPULATION IN THE 3-MILE RADIUS OBTAINS WATER FROM LAKE MICHIGAN.

01 ■ B. SURFACE WATER CONTAMINATION — 02 X OBSERVED (DATE: 6/11/88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION
THE SKOKIE DRAINAGE DITCH LIES ADJACENT TO THE EASTERN BOUNDARY OF THE SITE AND FLOWS IN A SOUTHERLY DIRECTION. CONTAMINANTS THAT MAY BE ATTRIBUTABLE TO THE SITE WERE DETECTED IN SEDIMENT AND SURFACE WATER SAMPLES. THE DITCH IS LISTED AS USABLE FOR RECREATION - THERE IS NO MIGRATION ROUTE TO LAKE MICHIGAN.

01 ■ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~70,000 — 04 NARRATIVE DESCRIPTION
There are several areas both on the golf course and the nursery where bare soil is exposed and vegetation is lacking. Since contaminants were detected in surface soil samples there does exist the potential for contaminants to become airborne and transported via eolian processes.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION
NO FIRE OR EXPLOSIVE CONDITIONS HAVE BEEN DOCUMENTED OR OBSERVED

01 ■ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~18,000 — 04 NARRATIVE DESCRIPTION
THE SOUTHERN 2/3 OF THE OLD FILL IS NOW PART OF A COUNTRY CLUB. THREE GOLF HOLES ARE LOCATED ON THE FILL AREA. ALSO THE NORTHERN 1/3 OF THE FILL AREA IS A NURSERY AND IS FREQUENTED BY PUBLIC WORKS EMPLOYEES. GOLFERS WERE OBSERVED ON-SITE AT THE TIME OF INSPECTION. CONTAMINANTS WERE DETECTED IN SURFACE SOIL SAMPLES.

01 ■ F. CONTAMINATION OF SOIL — 02 ■ OBSERVED (DATE: 5-31-88) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: ~80 (Acres) — 04 NARRATIVE DESCRIPTION
SOIL SAMPLES SHOWED VARIED AMOUNTS OF PESTICIDES, SOLVENTS, metals, and other organic compounds. ONE SAMPLE SHOWED PCB'S WHICH WERE NOT DETECTED IN THE POTENTIAL BACKGROUND SAMPLE.

01 ■ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1035 — 04 NARRATIVE DESCRIPTION
THE VILLAGE OF BANNOCKBURN HAS ~748 PEOPLE ON PRIVATE WELLS AND THE VILLAGE OF RIVERWOODS HAS ~285 PEOPLE ON PRIVATE WELLS. THESE WELLS ARE FINISHED IN BOTH THE GLACIAL TILLS AND THE SILURIAN DOLOMITE. THE POTENTIAL FOR CONTAMINATION IS LOW BECAUSE THESE WELLS ARE LOCATED ~1.5 MILES WEST OF THE SITE, AND THE GROUNDWATER FLOW IS TO THE SOUTH OR SOUTHEAST.

01 ■ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ~20 — 04 NARRATIVE DESCRIPTION
No evidence of worker exposure or injury was discovered. However, due to the fact that contaminants were detected in surface samples, the potential does exist for contact with the substances.

01 ■ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~70,000 — 04 NARRATIVE DESCRIPTION
SEE EXPLANATION UNDER A., G., AND H. ABOVE

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ■ J. DAMAGE TO FLORA — 02 ■ OBSERVED (DATE: 5-31-88) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

THERE ARE SEVERAL AREAS OF LITTLE OR STRESSED VEGETATION. THESE AREAS SEEMED TO CONCENTRATE NEAR DRAINAGE GULLIES OFF THE SIDE OF THE FILL OR ON TOP OF THE FILL NEAR THE DRUM AND RUBBISH PILE.

01 ■ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

THERE IS POTENTIAL FOR CONTAMINATION OF FAUNA SINCE CONTAMINANTS WERE FOUND ONSITE AND AN ~ 10 ACRE MARSH / WETLAND AREA LIES ADJACENT TO THE WESTERN BOUNDARY OF THE SITE. WATERFOWL WERE OBSERVED DURING INSPECTION.

01 ■ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

A RECREATION GUIDES STATES THAT THE SPOILE DITCH MAY BE USED FOR FISHING. THE FISH MAY COME IN CONTACT WITH CONTAMINANTS AND, IN TURN, BE EATEN BY FISHERMAN.

01 ■ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ■ OBSERVED (DATE: 5-31-88) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: ~70,000 — 04 NARRATIVE DESCRIPTION REFUSE WAS OBSERVED TO BE PROTRUDING THROUGH THE LANDFILL COVER.

01 ■ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

NO PROPERTY COMES IN CONTACT WITH THE SITE OTHER THAN RTE. 22 AND THE CREEKS ADJACENT TO THE EASTERN, WESTERN, AND SOUTHERN BOUNDRIES. HOWEVER, WINDBLOWN PARTICULATES MAY CARRY CONTAMINANTS OFFSITE.

01 ■ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

THE POTENTIAL EXISTS FOR CONTAMINATION OF THE NORTH SHORE SANITARY DISTRICT INTERCEPTOR PIPE THAT RUNS ACROSS THE SITE. IF THE PIPE SHOULD CRACK CONTAMINANTS MAY ENTER THE LINE.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

IT IS NOT DOCUMENTED WHETHER THERE WERE ANY WASTES OTHER THAN RESIDENTIAL, MUNICIPAL, AND CONSTRUCTION DEBRIS DEPOSITED INTO THE FILL.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

THE PROPOSED CONSTRUCTION OF A RESIDENTIAL DEVELOPMENT MAY POSSIBLY UNEARTH POTENTIALLY HAZARDOUS WASTES.

III. TOTAL POPULATION POTENTIALLY AFFECTED: ~70,000

IV. COMMENTS

None.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E+E/FIT SITE INSPECTION 5/31/88
FIT FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				UNKNOWN
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
■ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
■ I. OTHER (Specify) LAKE COUNTY	UNKNOWN	FEB 1963	JAN 1970	
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
■ C. DRUMS, ABOVE GROUND	UNKNOWN	
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
■ F. LANDFILL	UNKNOWN	
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
■ A. INCENERATION
☐ B. UNDERGROUND INJECTION
☐ C. CHEMICAL/PHYSICAL
☐ D. BIOLOGICAL
☐ E. WASTE OIL PROCESSING
☐ F. SOLVENT RECOVERY
☐ G. OTHER RECYCLING/RECOVERY
☐ H. OTHER (Specify)

05 OTHER

■ A. BUILDINGS ON SITE
ONE

06 AREA OF SITE

~80 (Acres)

07 COMMENTS

IT IS ALLEGED THAT INCINERATION OCCURRED ON-SITE USING A WILCO BURNER ERECTED ONSITE FOR BURNING CELLULOSE MATERIAL INCLUDING TREE TRIMMINGS AND BUILDING DEMOLITION DEBRIS. YEARS OF INCINERATOR OPERATION ARE UNKNOWN.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ■ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC. THERE ARE DRUMS LOCATED ON THE FILL WHICH WERE ALLEGED TO HAVE BEEN FULL OF WASTE OIL. THE LANDFILL HAS NO KNOWN LINER AND RUBBISH IS PROTRUDING THROUGH THE CLAY COVER.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ■ YES ☐ NO

02 COMMENTS REFUSE WAS OBSERVED PROTRUDING THROUGH THE COVER OF THE FILL AND THE SIDE WALLS.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

E+E/ FIT SITE INSPECTION 5/21/88
FIT FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)	SURFACE	WELL	02 STATUS ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	A. ■	B. ☐	A. ☐	B. ☐	C. ■	A. 1.5 (mi)
NON-COMMUNITY	C. ☐	D. ■	D. ☐	E. ☐	F. ☐ UNKNOWN	B. 1.6 mi (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

■ A. ONLY SOURCE FOR DRINKING (AREA SERVED BY RESIDENTIAL WELLS DOES NOT HAVE MUNICIPAL SURFACE WATER HOOKUPS AVAILABLE)
☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 1035

03 DISTANCE TO NEAREST DRINKING WATER WELL 1.6 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
7.3 (ft)	SOUTH EASTERLY	7-20 (ft)	17,000 (gpd)	☐ YES ■ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)
THE VILLAGES OF RIVERWOODS AND BANNOCKBURN LOCATED ~2-3 MILES WEST OF THE SITE, HAVE ~1035 RESIDENTS ON PRIVATE WELLS. THESE WELLS APPEAR TO BE FINISHED AT DEPTHS BETWEEN ~150 AND 385 ft ACCORDING TO THE SMALL NUMBER OF WELL LOGS AVAILABLE. THESE WELLS ACQUIRE WATER FROM BOTH THE DRIFT AQUIFER AND THE UNDERLYING SILURIAN DOLOMITE.

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS UNKNOWN	☐ YES ☐ NO	COMMENTS UNKNOWN

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

■ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
	☐	(mi)
SKOKIE DRAINAGE DITCH	☐	0 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. ~18,020 NO. OF PERSONS	B. ~35,632 NO. OF PERSONS	C. ~58,263 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION ~200 ft (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE
CANNOT BE DETERMINED FROM THE TOPO MAP

04 DISTANCE TO NEAREST OFF-SITE BUILDING ~200 ft (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

THE SITE IS LOCATED IN THE NORTH-CENTRAL SECTION OF HIGHLAND PARK. THE AREA IS MIXED RESIDENTIAL AND COMMERCIAL WITH HOMES AND BUSINESSES LOCATED WITHIN 1000 FEET OF THE FACILITY. THE COMMUNITIES ARE PRIMARILY SUBURBAN.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

■ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ■ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
~ 158 (ft)	AT LEAST 1 (ft)	UNKNOWN

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
4.07 (in)	2.4 (in)	<1 %	PRIMARILY SOUTH	<1 %

09 FLOOD POTENTIAL SITE HAS FLOODED FOUR TIMES SINCE 1983.
SITE IS IN UNKNOWN YEAR FLOODPLAIN

10 NA ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. — (mi)

OTHER: B. 20 FT (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): >3 (mi)

ENDANGERED SPECIES: NONE

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 1/4 (mi)	B. 1000 FT (mi)	C. UNKNOWN (mi)	D. >3 mi (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

SEE APPENDIX A.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E+E / FIT SITE INSPECTION 5/31/88
FIT FILES
U.S. G.S. TOPOGRAPHIC MAP

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795429

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER	5	ORGANICS: SOUTHWEST LABS OF OKLAHOMA TULSA, OK	ON FILE
WASTE			
AIR			
RUNOFF			"
SPILL		INORGANICS: VERSAR, INC. SPRINGFIELD, VA	
SOIL	8		ON FILE
VEGETATION			
OTHER SEDIMENT	4		ON FILE

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
OVA 128	UP TO 10 ppm - DETERMINED TO BE METHANE
EXPLOSIMETER	NO READINGS ABOVE BACKGROUND
O_2 METER	" " " "
RADIATION MONITOR	" " " "

IV. PHOTOGRAPHS AND MAPS

01 TYPE ■ GROUND ☐ AERIAL

02 IN CUSTODY OF E+E / FIT FILES - CHICAGO (Name of organization or individual)

03 MAPS ■ YES ☐ NO

04 LOCATION OF MAPS E+E / FIT FILES (U.S.G.S. TOPO MAP, 7.5 MIN HIGHLAND PARK QUAD) - CHGO.

V. OTHER FIELD DATA COLLECTED *(Provide narrative description)*

SAMPLE LOCATION	TEMP (°C)	PH(")	CONDUCTIVITY (μΩ)
SW-1	17	7.31	610
SW-2	18	7.40	640
SW-3	22	7.24	1000
SW-4	22	7.84	590
SW-5	22	7.00	0

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

E+E / FIT SITE INSPECTION 5/31/88

FIT FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795479

II. CURRENT OWNER(S) PROPERTY BEING SOLD TO:

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
SPATZ AND COMPANY			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
500 SKOKIE BLVD. SUITE 270			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
NORTHBROOK	IL	60062			

PARENT COMPANY (If applicable) N/A

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER
BRICKMAN LTD	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
1201 PARK AVE W.	

05 CITY	06 STATE	07 ZIP CODE
HIGHLAND PARK	IL	60035

01 NAME	02 D+B NUMBER
CITY OF HIGHLAND PARK	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
1650 HALF DAY RD	

05 CITY	06 STATE	07 ZIP CODE
HIGHLAND PARK	IL	60035

01 NAME	02 D+B NUMBER
NORTH SHORE SANITARY DISTRICT	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable; list most recent first) N/A

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981795429

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
HIGHLAND PARK COUNTRY CLUB	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
1201 PARK AVE W.	

05 CITY	06 STATE	07 ZIP CODE
HIGHLAND PARK	IL	60035

08 YEARS OF OPERATION	09 NAME OF OWNER
MID 1972 - PRESENT	(BRICKMAN LTD.)

OPERATOR'S PARENT COMPANY (If applicable) N/A

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner) N/A

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable) N/A

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D981725479

II. ON-SITE GENERATOR N/A

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
UNKNOWN			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S) ?

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
McCRAREN - PRIVATE SCAVENGER			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT FILES

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
IL	D981795479

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NA

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
IL	D981775479

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

E+E/FIT SITE INSPECTION 5/31/88

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
IL	D981795479

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ■ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION NA

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

APPENDIX C

U.S. EPA
IMMEDIATE REMOVAL ACTION
CHECKSHEET

Immediate Removal Action Check Sheet

		High	Moderate	Low
Fire and Explosion Hazard				
Flammable Materials	N/A			
Explosives	N/A			
Incompatable Chemicals	N/A			
Direct Contact with Acutely Toxic Chemicals				
Site Security	#1		X	
Leaking Drums or Tanks	N/A			
Open Lagoons or Pits	N/A			
Materials on Surface	#2			X
Proximity of Population	#1		X	
Evidence of Casual Site Use	#1	X		
Contaminated Water Supply	N/A			
Exceeds 10 Day Snarl				
Gross Taste or Odors				
Alternate Water Available				
Potential Contamination				
Is the site abandoned, active, or inactive? SITE IS A CLOSED LANDFILL				

Comments:

#1 SITE IS OPEN FOR ACCESS TO THE PUBLIC AND IS USED CASUALLY AS A PRIVATE GOLF COURSE.

#2 ON-SITE SOIL SURFACE SAMPLES REVEALED TCL COMPOUNDS AND TAL ANALYTES

APPENDIX D

FIT SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 1 OF 26

U.S. EPA ID: ILD981795479 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1115

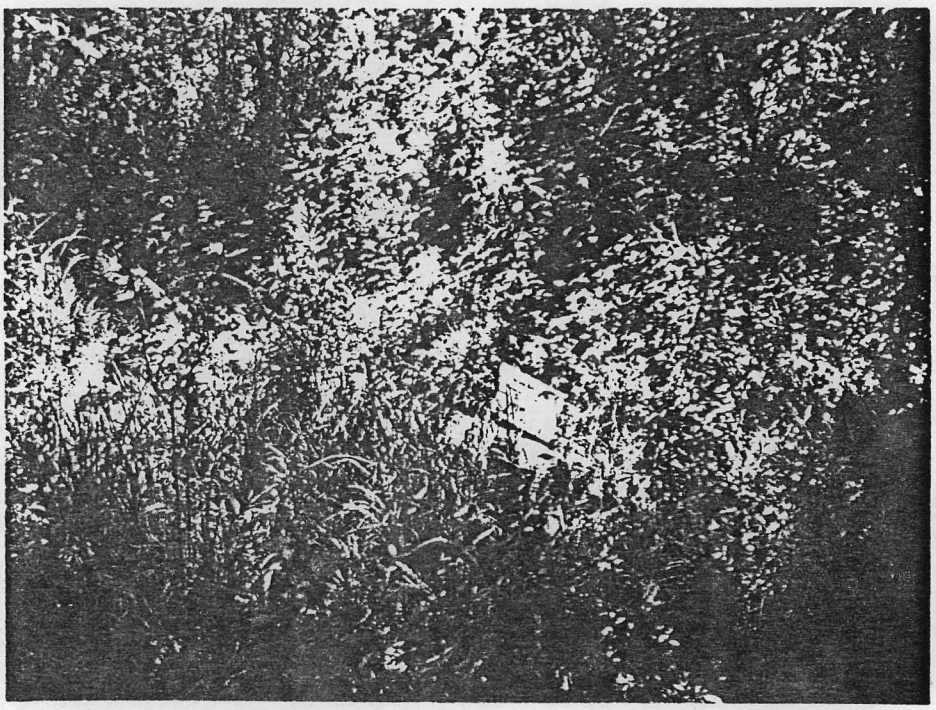
DIRECTION OF PHOTOGRAPH: > SE

WEATHER CONDITIONS: > Sunny

> High 80'S/90'S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S1



DESCRIPTION: >

> PERSPECTIVE PHOTO OF SOIL #1 NEAR SOUTH DRAINAGE DITCH.

DATE: > 5-31-88

TIME: > 1130

DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > SUNNY/High 80'S/90'S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S2

DESCRIPTION: >

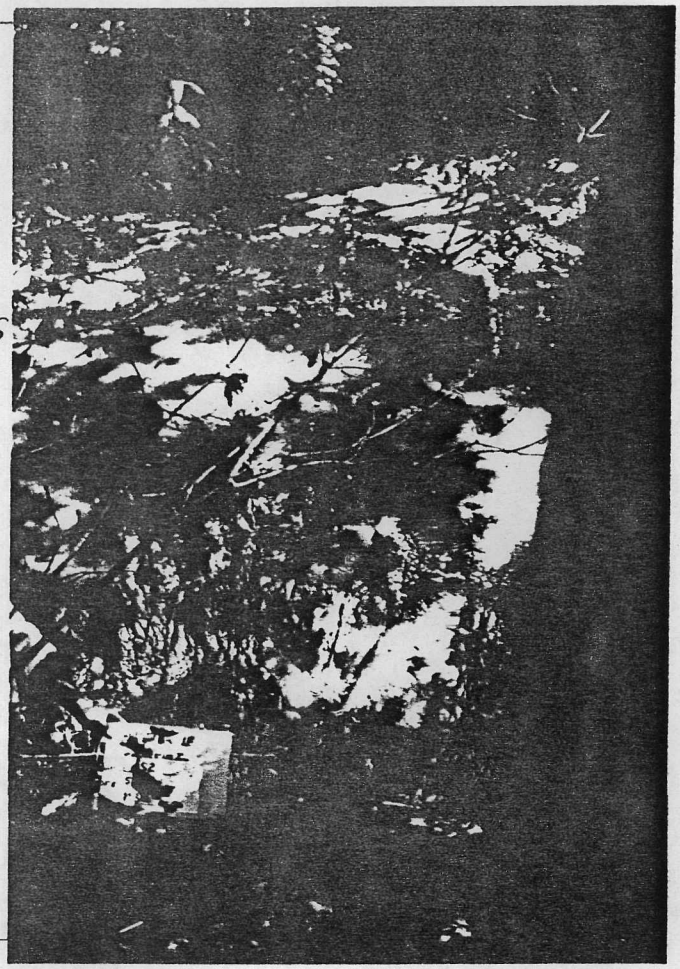
> PERSPECTIVE PHOTO OF

> SOIL #2 NEAR SKOKIE

> DRAINAGE DITCH.

>

>



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 2 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1130

DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S2

DESCRIPTION: > Close-up photo of Soil # 2 NEAR Skokie Drainage Ditch.

DATE: > 5-31-88

TIME: > 1200

DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S3

DESCRIPTION: > Close-up photo of Soil #3 looking East from middle of LANDFILL.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 4 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1210

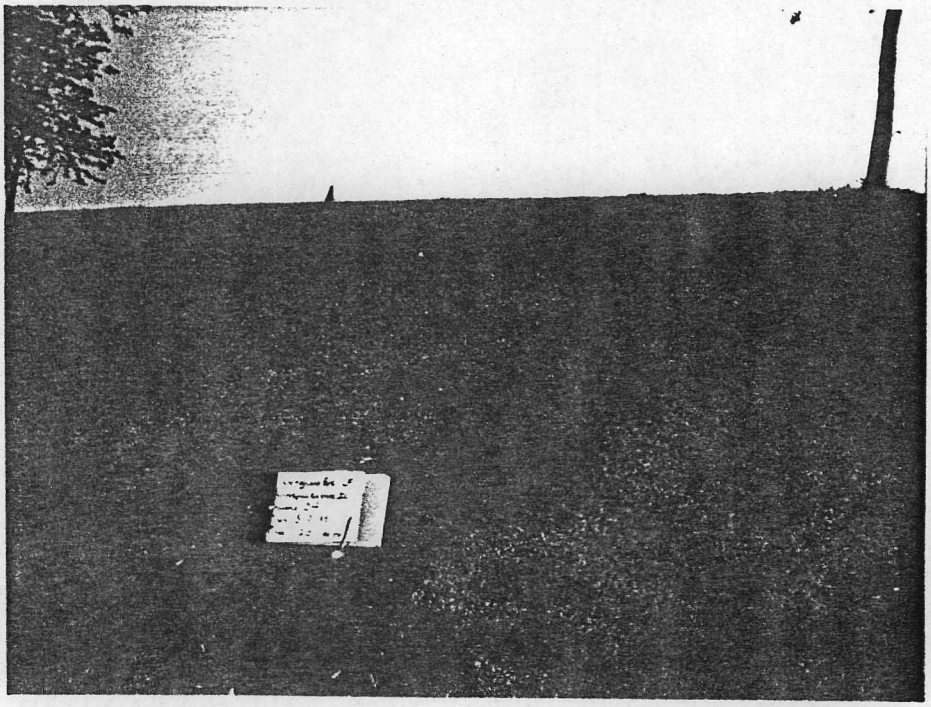
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S4



DESCRIPTION: > Perspective Photo of Soil #4 in Stained Soil on WEST bank of GOLF Course.

DATE: > 5-31-88

TIME: > 1250

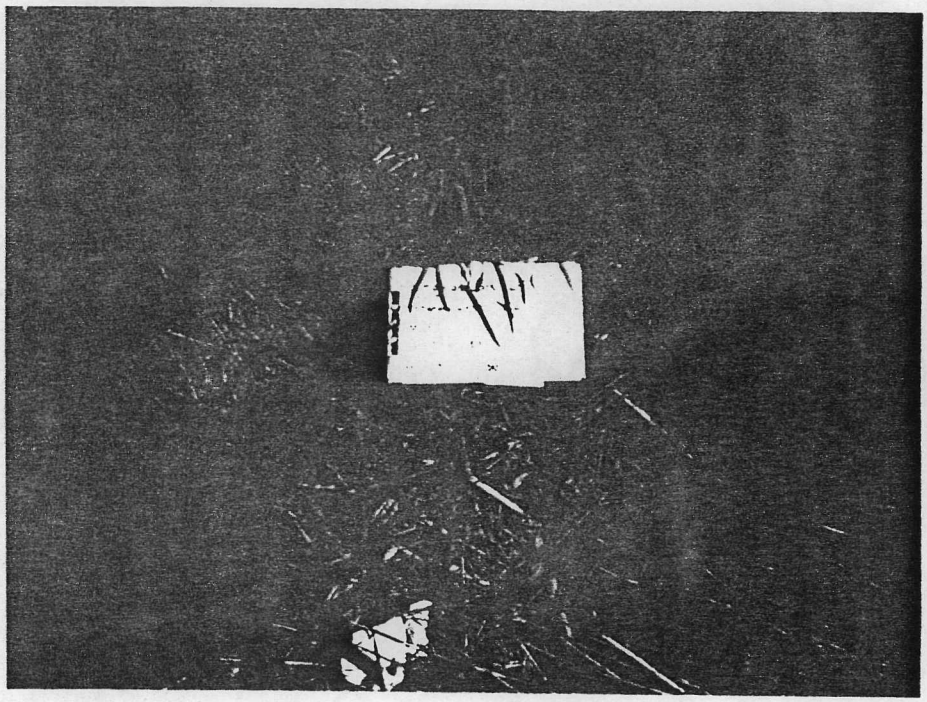
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80's/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S5



DESCRIPTION: > Close-up photo of Soil # 5 on South bank of GOLF Course Area looking North.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL

U.S. EPA ID: ILD981495449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 12:50

DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S5

DESCRIPTION: > Perspective photo of Soil #5 on South bank of Golf Course Area looking North.

DATE: > 5-31-88

TIME: > 1:10

DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S6

DESCRIPTION: > Close-Up photo of Soil # 6 Collected in Stained Soil on East Bank.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 8 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1530

DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S8

DESCRIPTION: > Perspective Photo of Soil #8 on East Bank of Skokie Drainage Ditch.

DATE: > 5-31-88

TIME: > 1545

DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80's/90s

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S9

DESCRIPTION: > Close-up Photo of Soil #9 near drums on West Side of Site.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 9 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1545

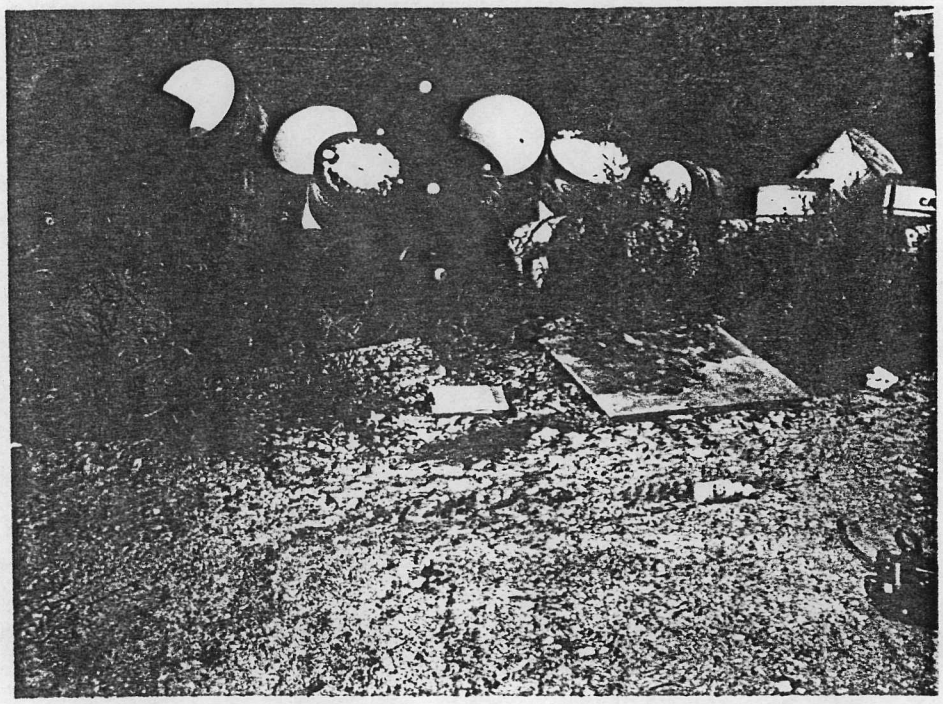
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S9



DESCRIPTION: >

> Perspective Photo of Soil #9 near drums on West Side of Site.

DATE: > 5-31-88

TIME: > 1600

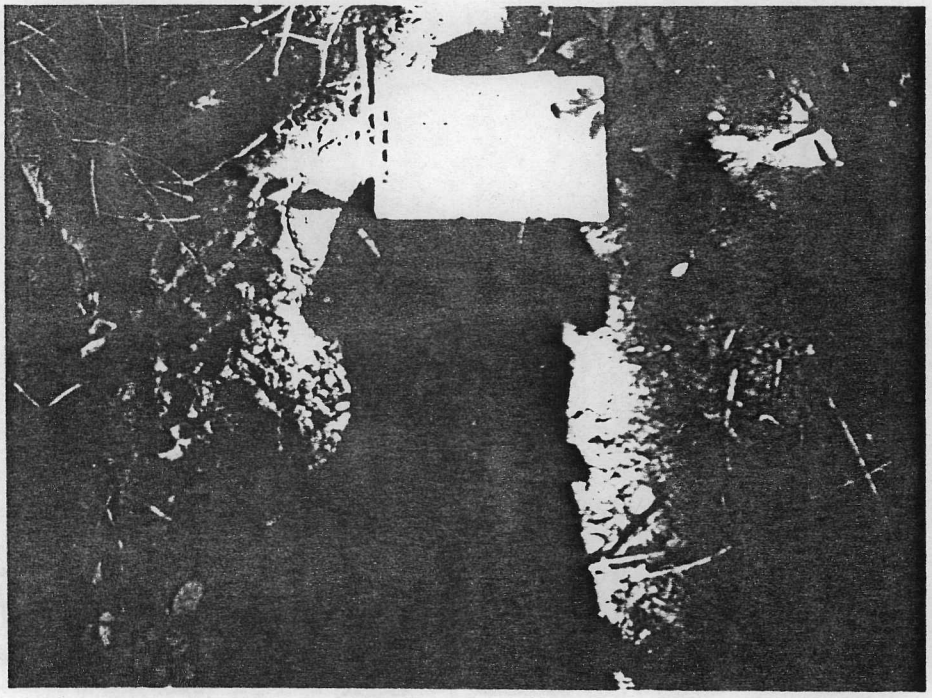
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80's/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S10



DESCRIPTION: >

> Close-up Photo of Soil #10 looking East From marsh on West Side of Site.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 10 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1600

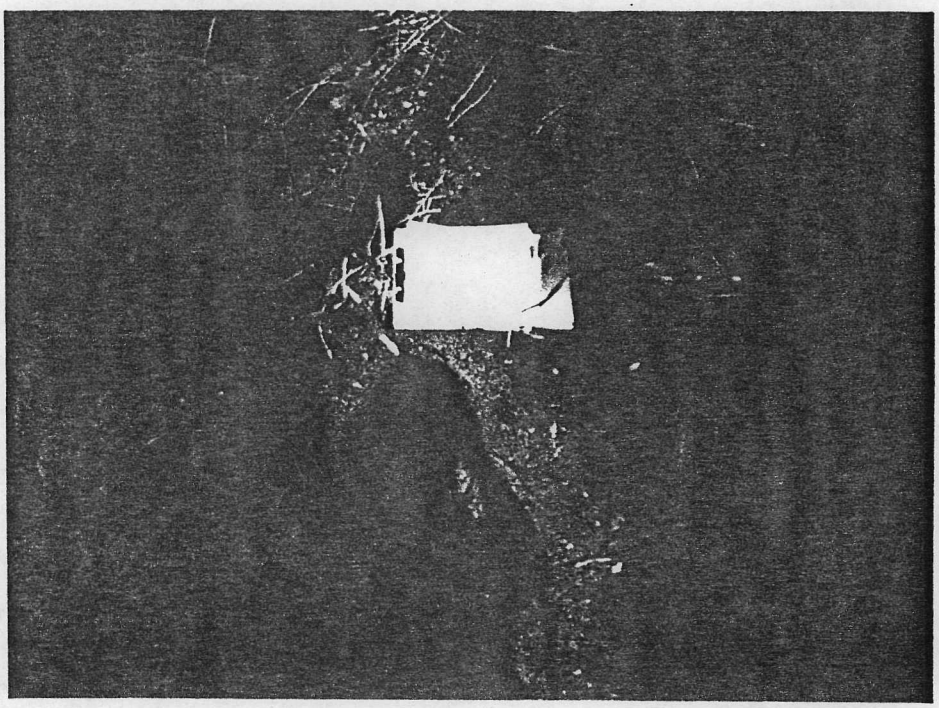
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S10



DESCRIPTION: > Persipective photo of Soil # 10 looking East from Marsh on West Side of Site.

DATE: > 5-31-88

TIME: > 1615

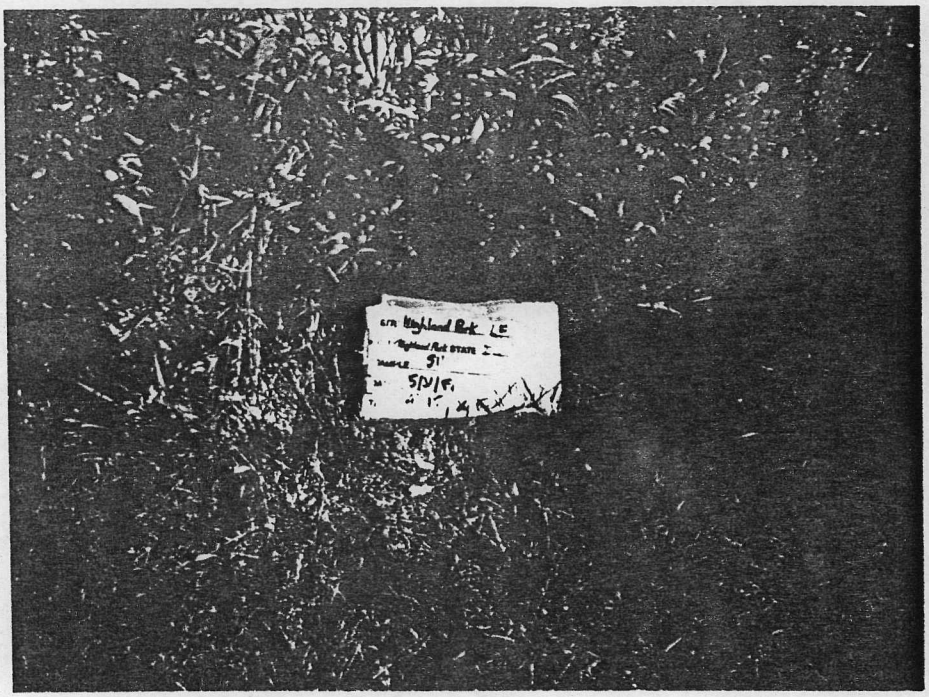
DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S11



DESCRIPTION: > Close-up photo of Soil # 11 looking West across Skokie Drainage Ditch toward golf course.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 11 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1615

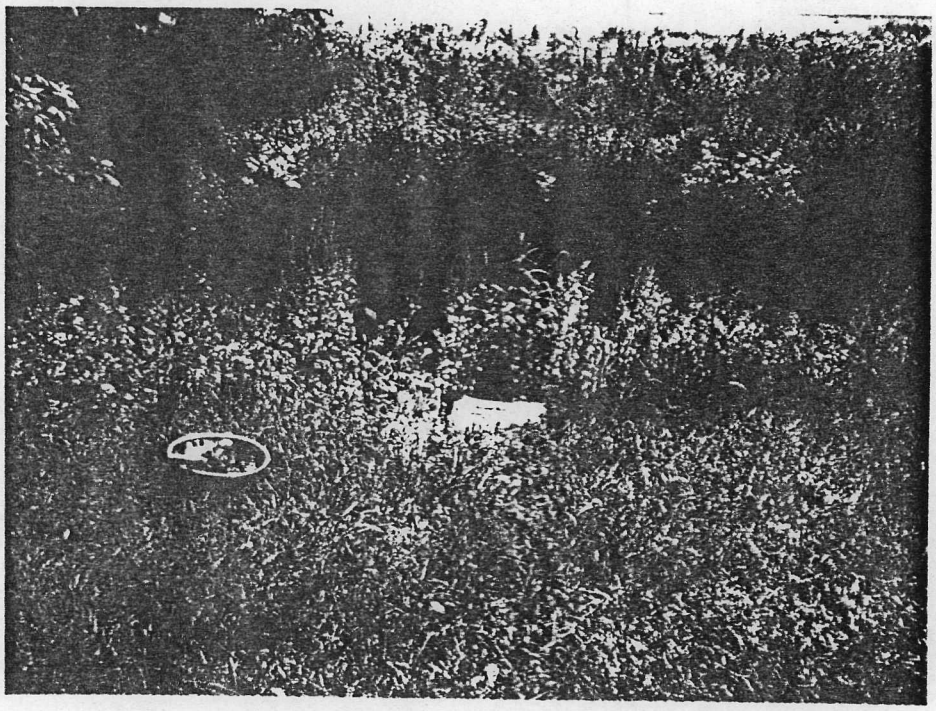
DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80s/90s

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S11



DESCRIPTION: >

> Perspective Photo Of Soil # 11 looking west across Skokie Drainage Ditch toward Golf Course.

DATE: > 5-31-88

TIME: > 1320

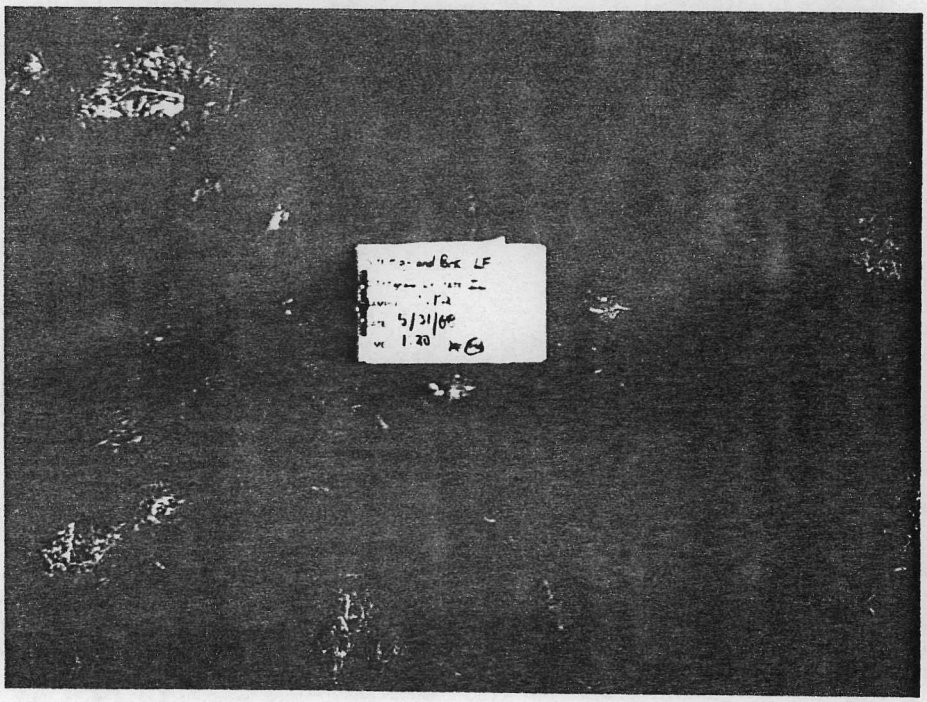
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80's/90s

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S12



DESCRIPTION: >

> Close-Up Photo of Soil # 12 looking North from Golf Course East of Landfill area.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 12 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1320

DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > S12

DESCRIPTION: > Perspective photo of Soil #12 looking North from Golf Course East of Landfill area.

DATE: > 6-1-88

TIME: > 9:50

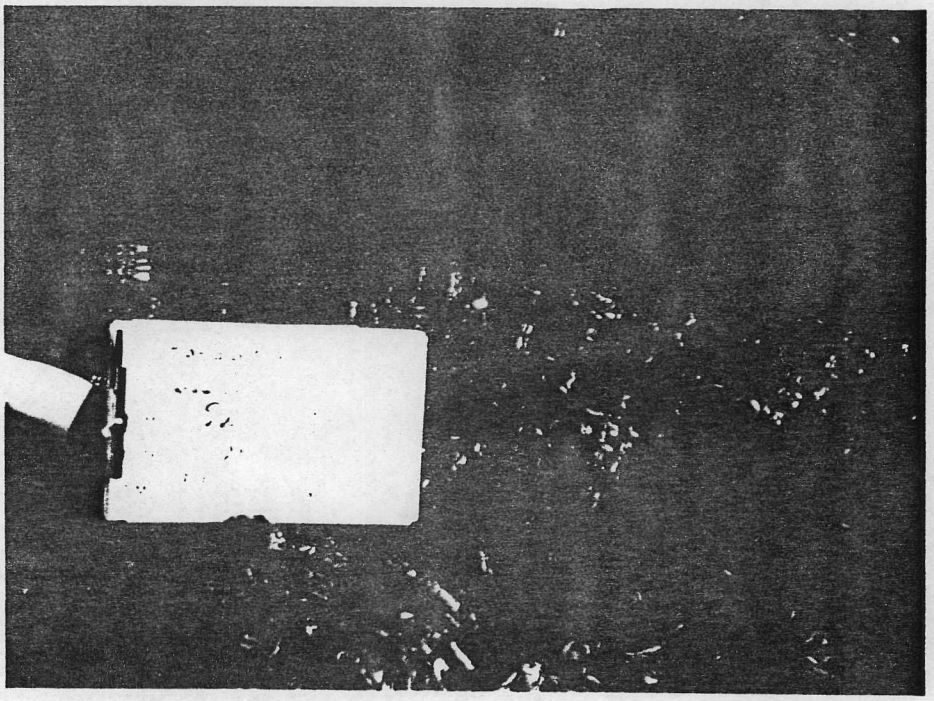
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW1 & DUPE



DESCRIPTION: > Close-up photo of Surface Water #1 and duplicate looking East across Skokie Drainage Ditch, downgradient of Site.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 13 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 6-1-88

TIME: > 9:50

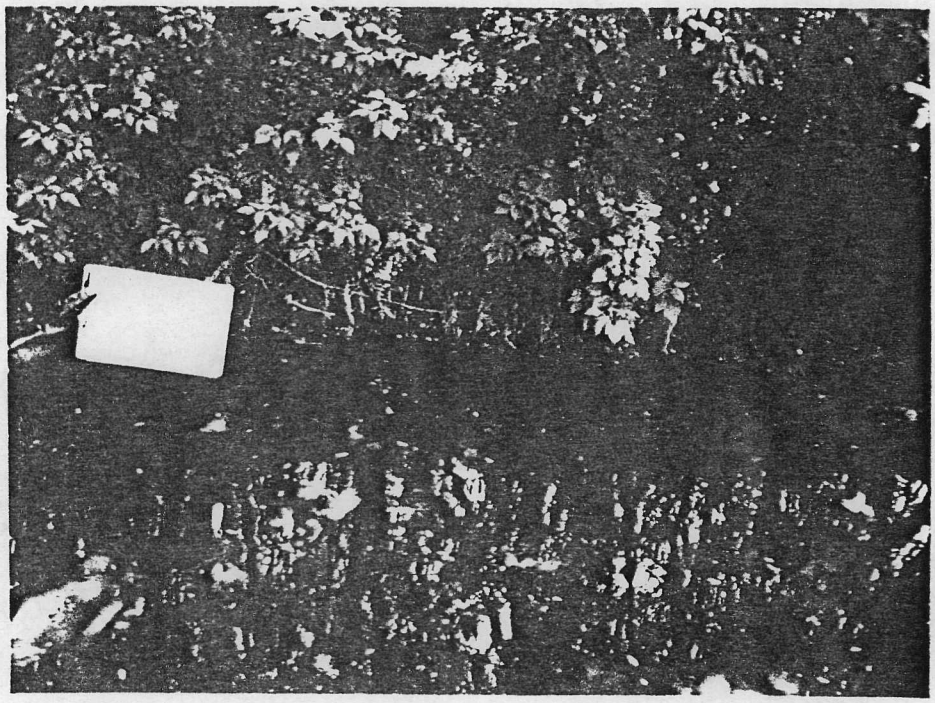
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80s/90s

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW1 & DUPE



DESCRIPTION: > Perspective photo of Surface Water #1 and duplicate looking East across Skokie Drainage Ditch, downgradient of Site.

DATE: > 6-1-88

TIME: > 1030

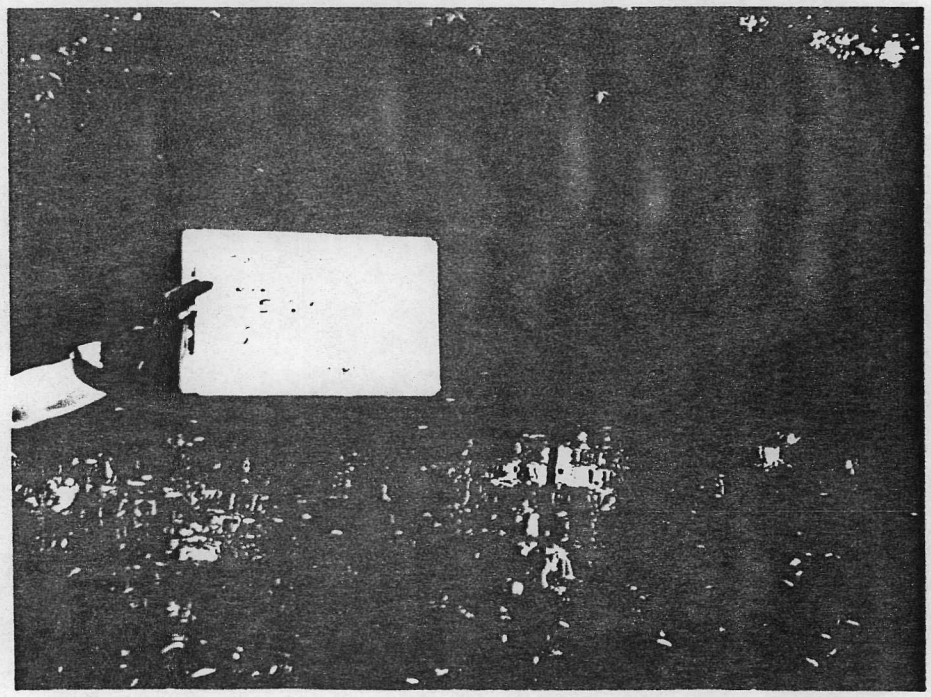
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80's/90s

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW2 & MSD



DESCRIPTION: > Close-up photo of Surface Water #2 and Matrix Spike Duplicate looking East across Skokie Drainage Ditch.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 14 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 6-1-88

TIME: > 1030

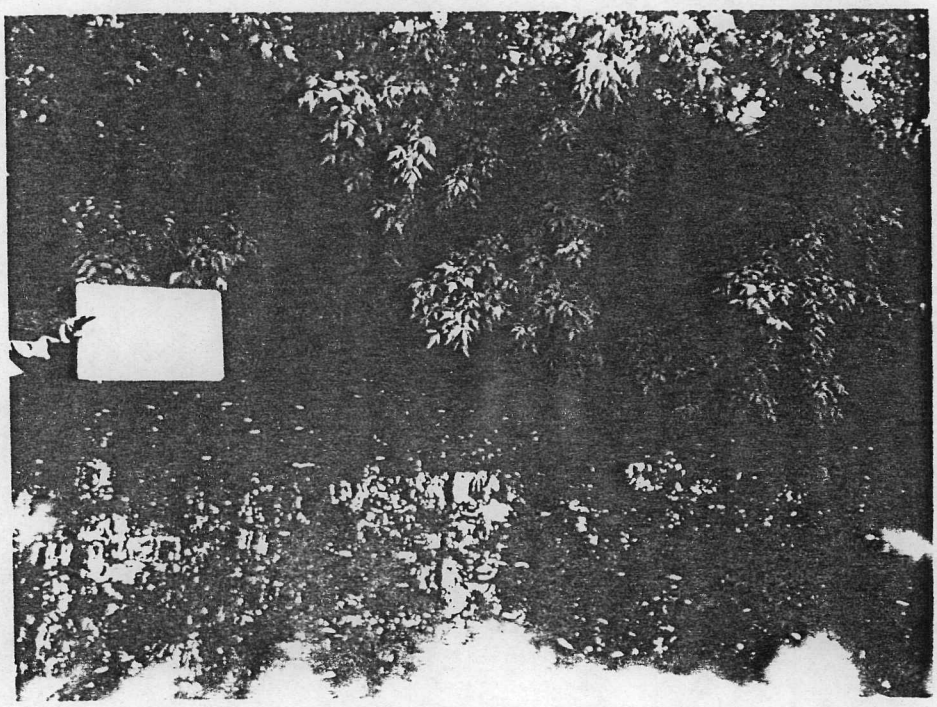
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW2 & MSD



DESCRIPTION: > Perspective photo of Surface Water # 2 and Matrix Spike Duplicate looking East across Skokie Drainage Ditch.

DATE: > 6-1-88

TIME: > 1150

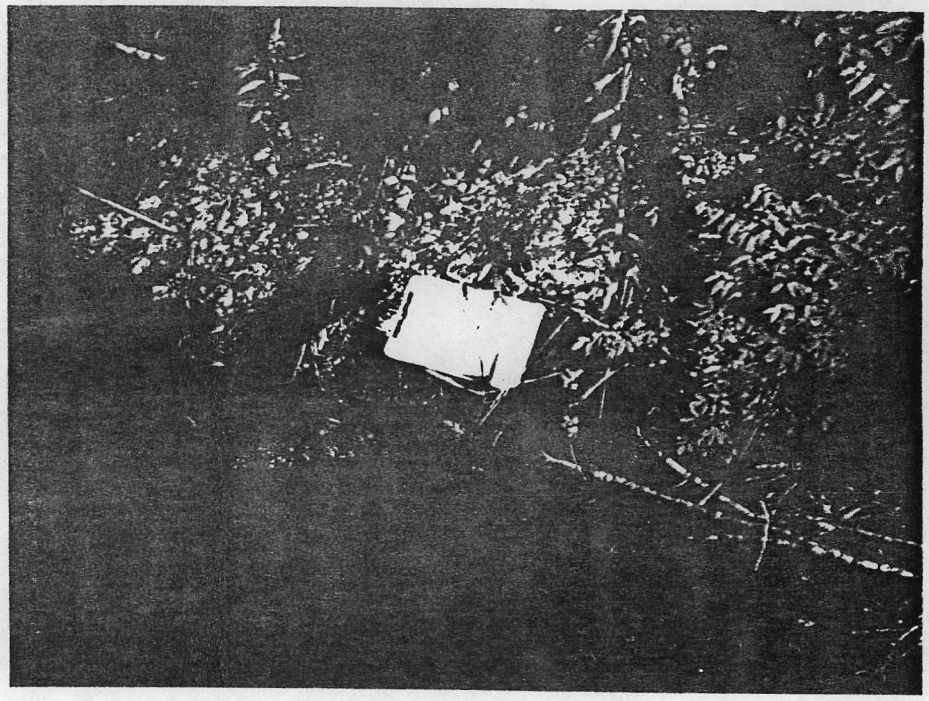
DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80's/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW3



DESCRIPTION: > Close-Up Photo of Surface Water # 3 looking West from West Marsh.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 15 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 6-1-88

TIME: > 1150

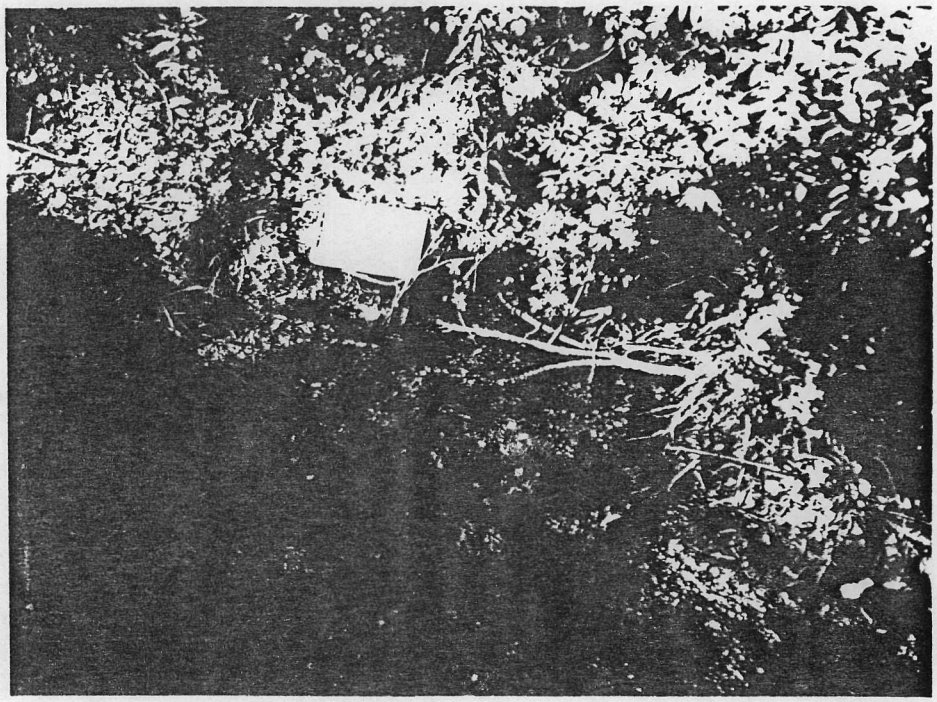
DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW3



DESCRIPTION: >

> Perspective photo of surface water #3 looking west from west marsh.

DATE: > 6-1-88

TIME: > 1230

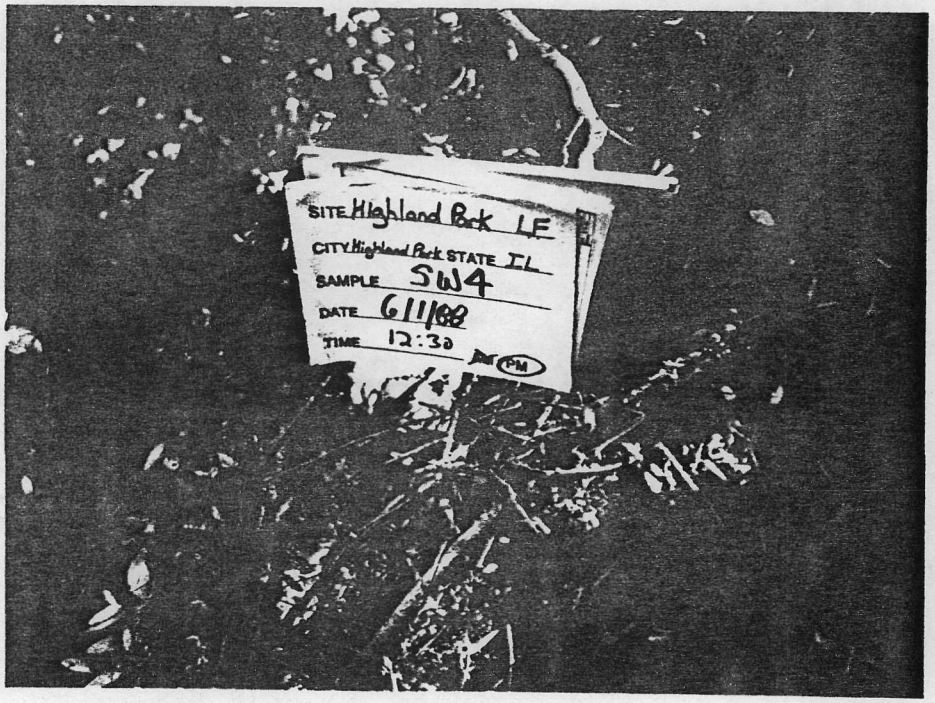
DIRECTION OF PHOTOGRAPH: > SE

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW4



DESCRIPTION: >

> Close-up photo of surface water #4 looking southeast from upgradient of site.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 16 OF 26

U.S. EPA ID: ILD981795479 TDD: F05-8804-015 PAN: FIL06425B

DATE: > 6-1-88

TIME: >

DIRECTION OF PHOTOGRAPH: >

WEATHER CONDITIONS: > Sunny

> High 80'S/90'S

No Photo

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): >

DESCRIPTION: >

>

DATE: > 6-1-88

TIME: > 1230

DIRECTION OF PHOTOGRAPH: > SE

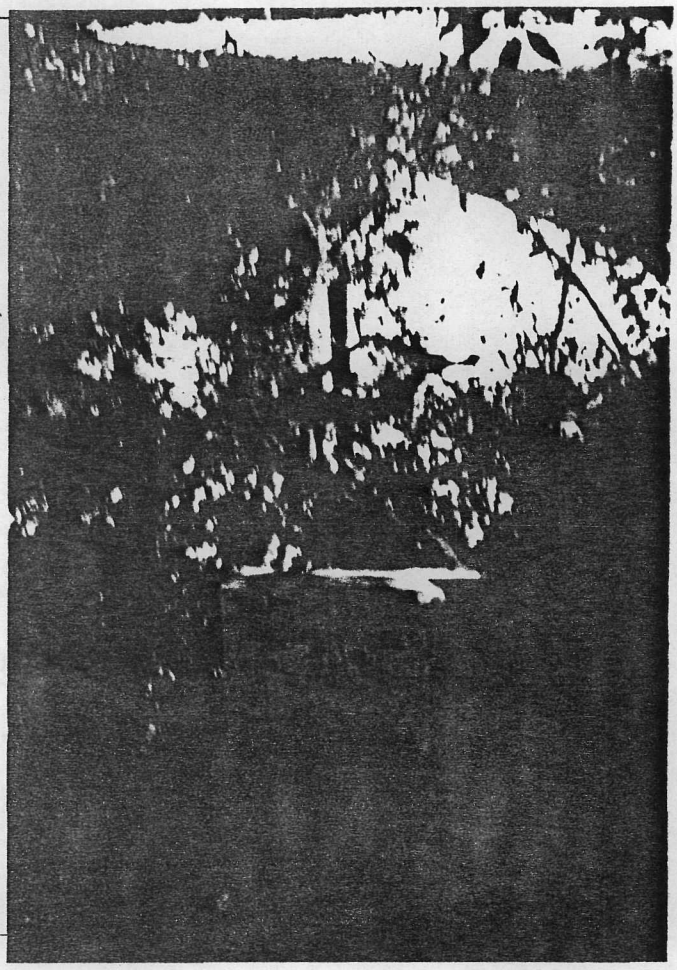
WEATHER CONDITIONS: > SUNNY/ High 80S/90'S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > SW4

DESCRIPTION: >

> Perspective Photo of
> Surface WATER #4
> looking SOUTHEAST
> from upgradient of
> Site.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 17 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 6-1-88

TIME: > 1030

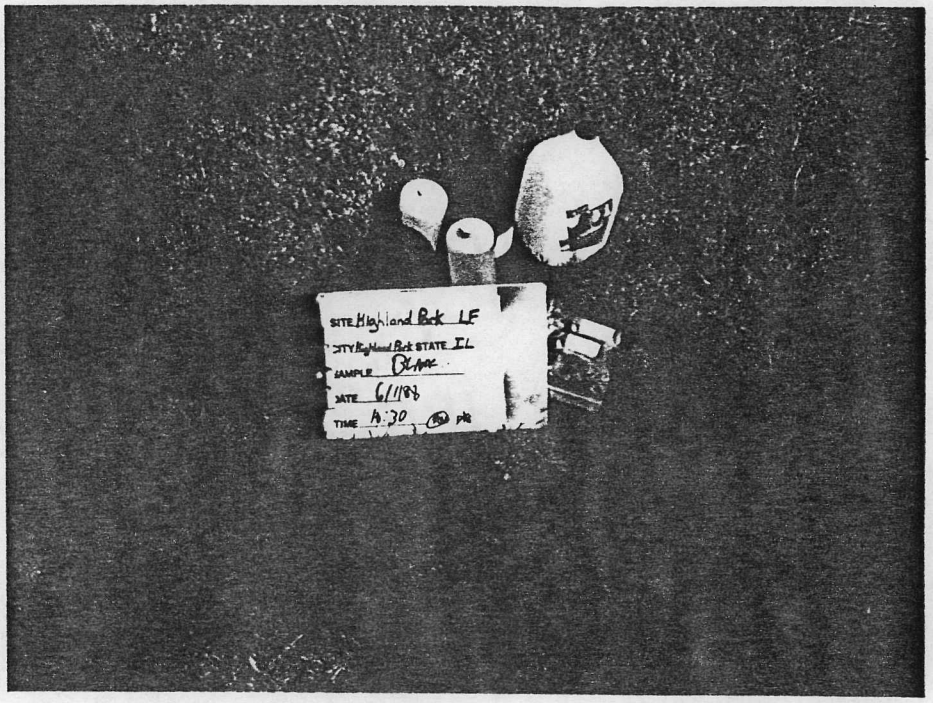
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > BLANK



DESCRIPTION: >

> Close-up photo OF BLANK looking North from Command Post.

DATE: > 6-1-88

TIME: > 1030

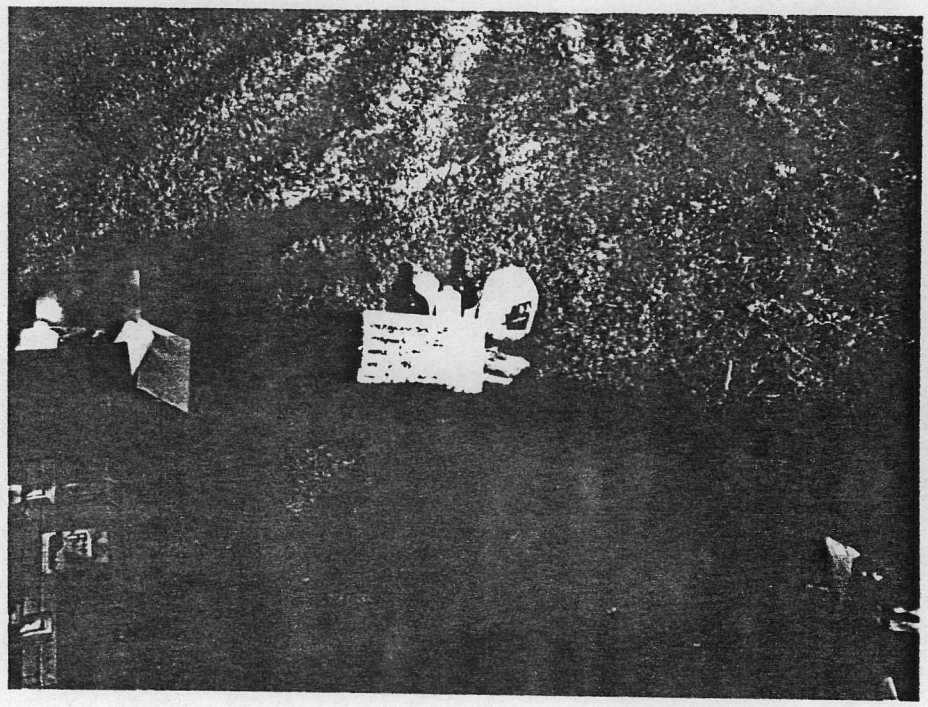
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80's/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > BLANK



DESCRIPTION: >

> Perspective Photo OF BLANK looking North from Command Post.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 18 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1148

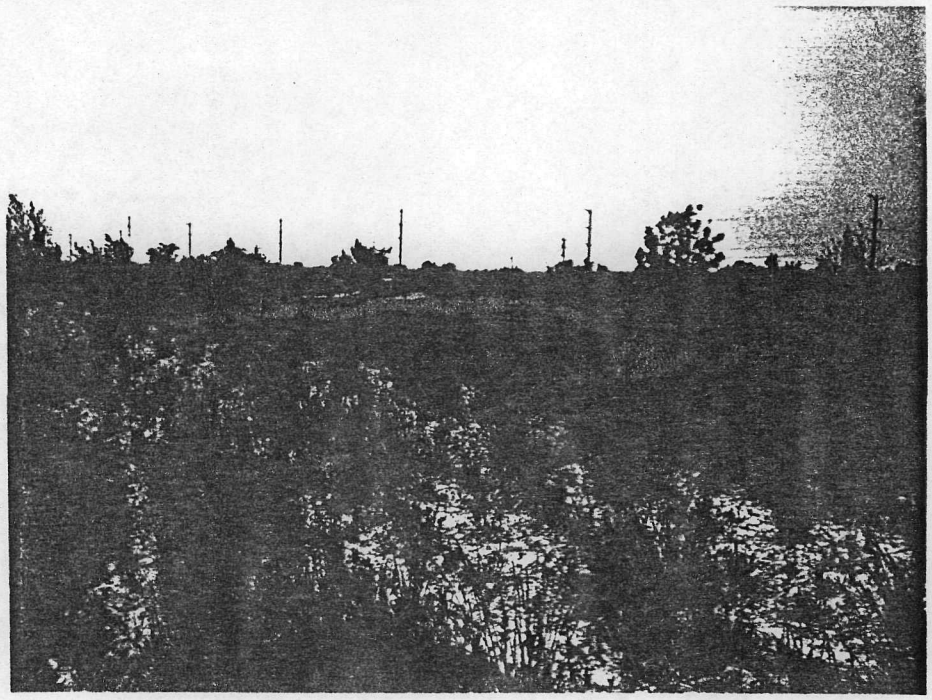
DIRECTION OF PHOTOGRAPH: > S

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > FAIRWAYS AND BACK OF K-MART looking South from NORTHEAST bank of SKOKIE Drainage Ditch.

DATE: > 5-31-88

TIME: > 1145

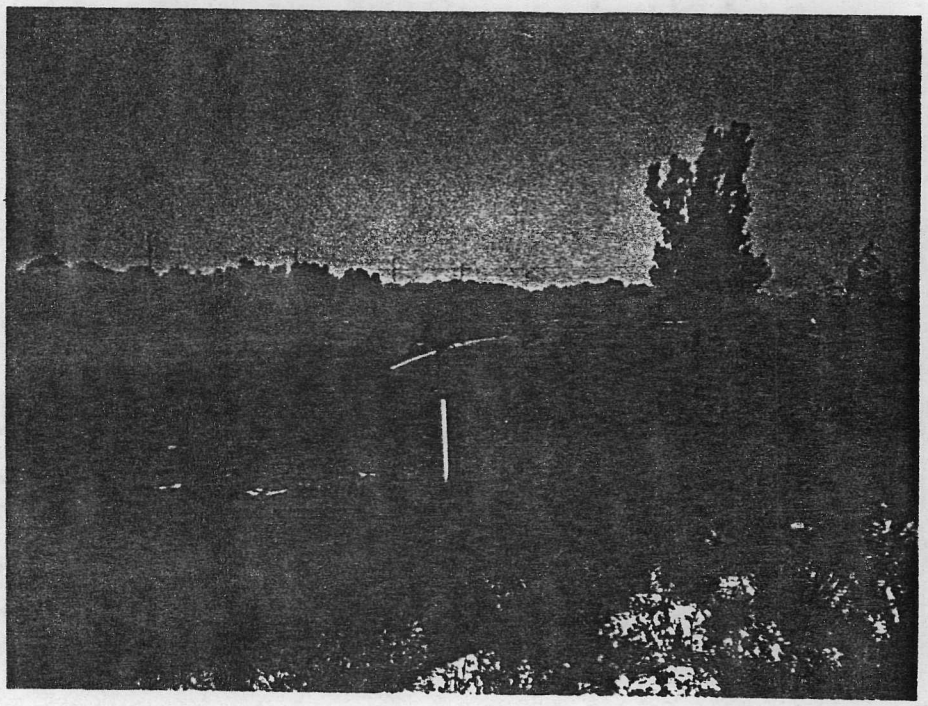
DIRECTION OF PHOTOGRAPH: > NW

WEATHER CONDITIONS: > Sunny

> High 80's/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > FAIRWAY WITH CUSHMAN CART And grounds WORKER IN middle ground. Distressed Vegetation/Soil in Right Foreground, on upper Bank OF SKOKIE Drainage Ditch.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 19 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1607

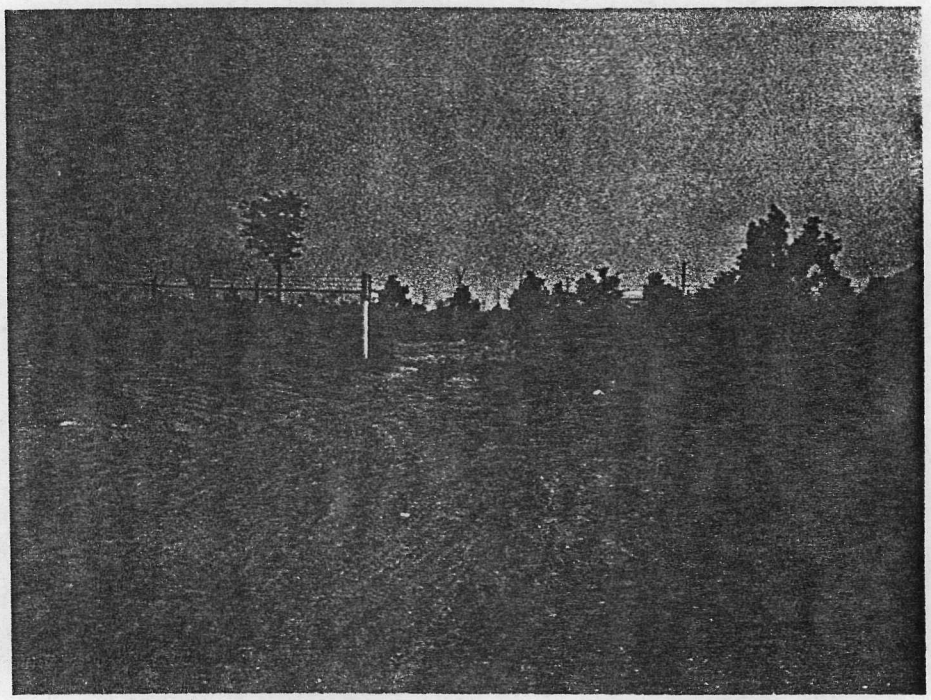
DIRECTION OF PHOTOGRAPH: > S

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: >

> GATE to GOLF COURSE; LOOKING SOUTH FROM NURSERY property. DIRT ROAD intersects NORTH with ROUTE 22.

DATE: > 5-31-88

TIME: > 1510

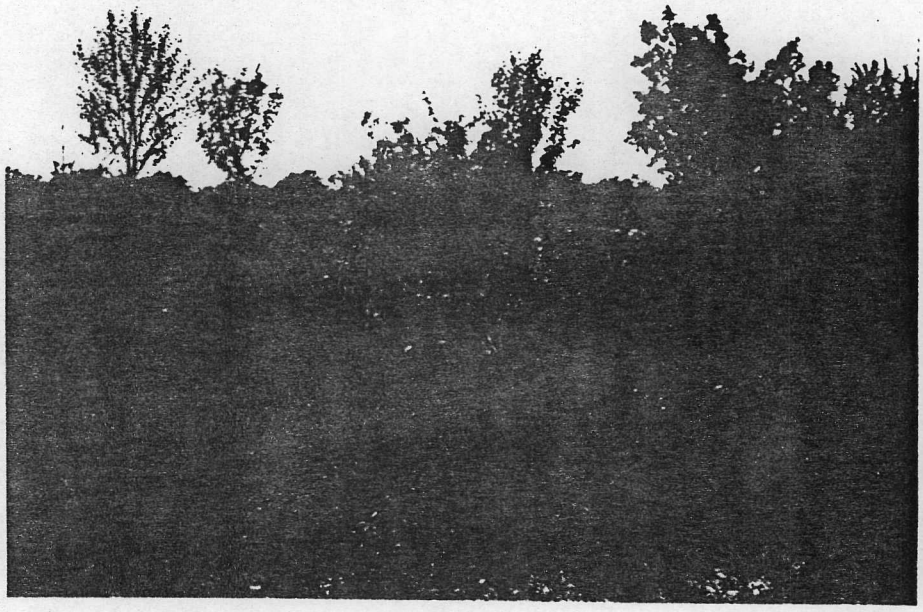
DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80'S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: >

> NURSERY AREA. Highway 41 beyond Trees in Distance.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 20 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1206

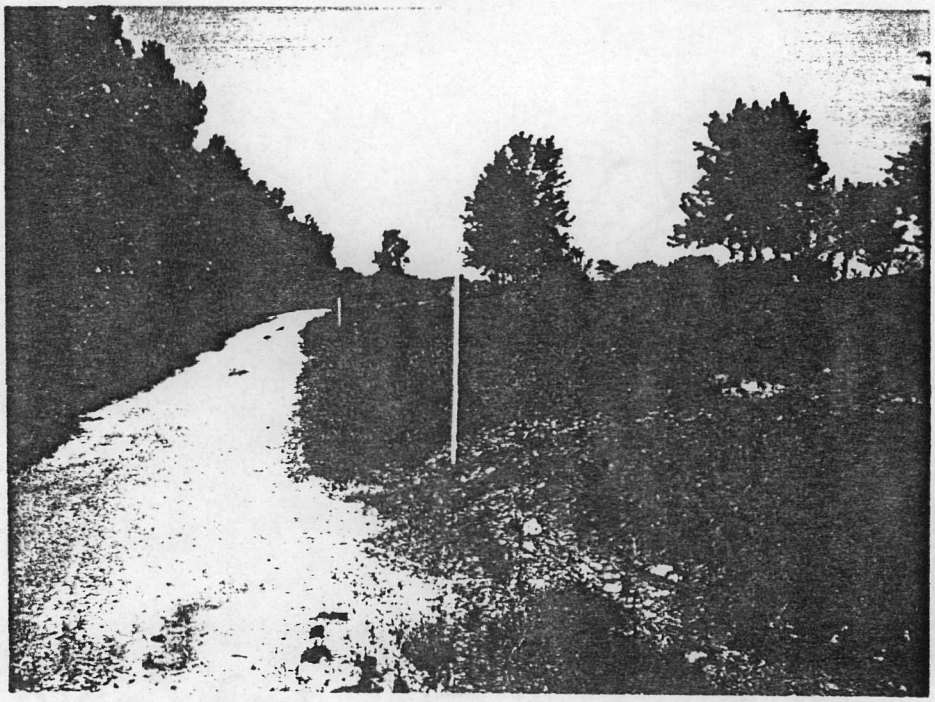
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: >

> WEST Ditch ROADWAY, looking NORTH towards Nursery. Distressed Vegetation to Right OF ROAD.

DATE: > 5-31-88

TIME: > 1259

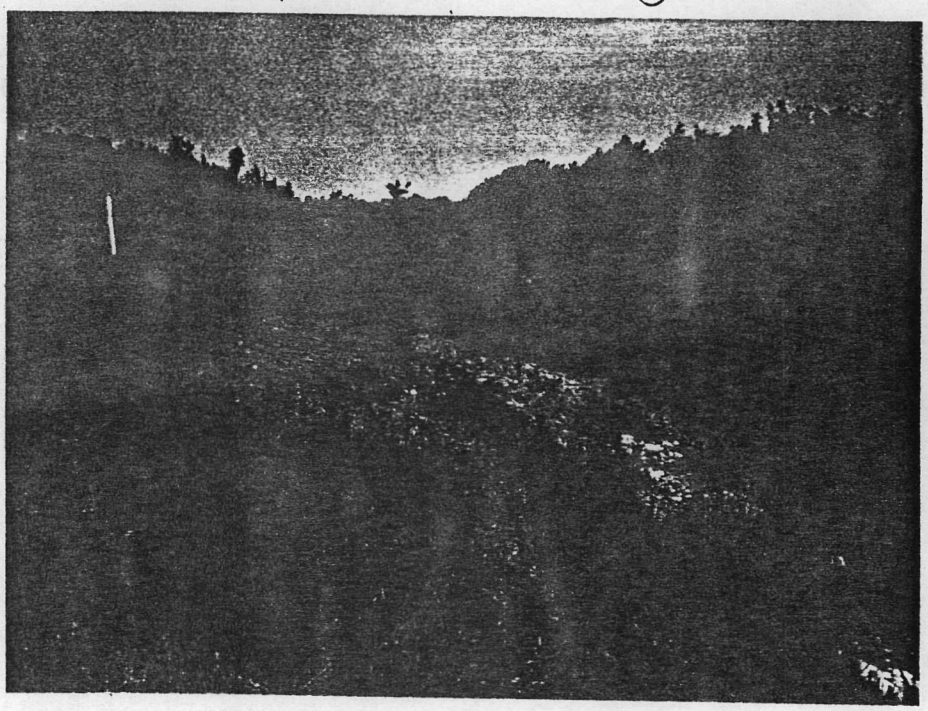
DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: >

> STAined Soil Corresponding to Soil Sample # 6. SKOKIE Drainage Ditch to Right (EAST). Fire TOWER IN DISTANCE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 21 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 6-1-88

TIME: > 1026

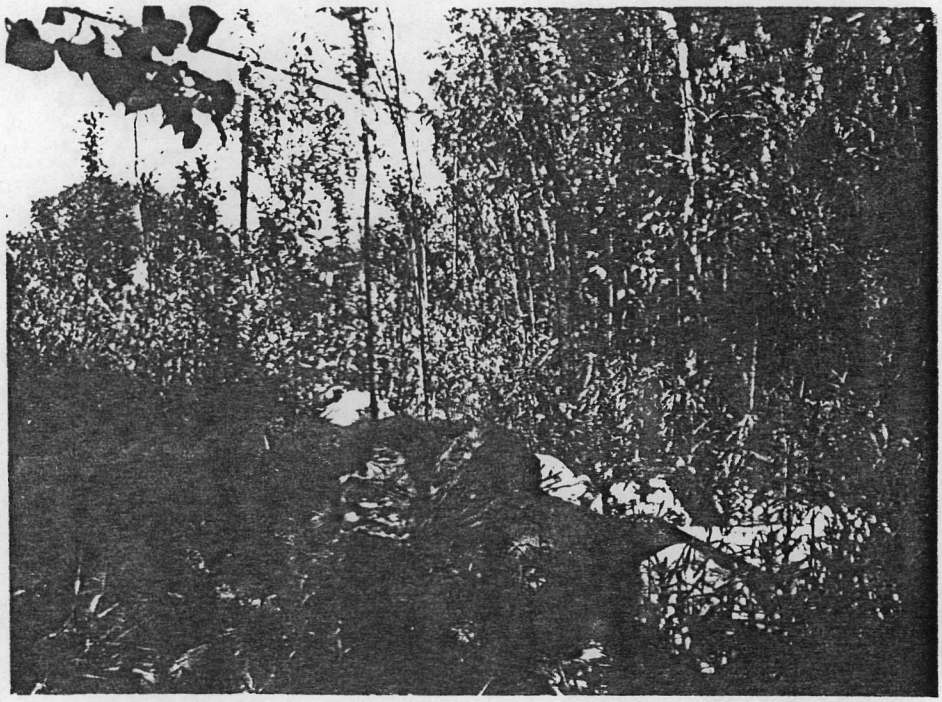
DIRECTION OF PHOTOGRAPH: > SW

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > K-MART Fence and garbage Pile. South ditch to Right.

DATE: > 5-31-88

TIME: > 1147

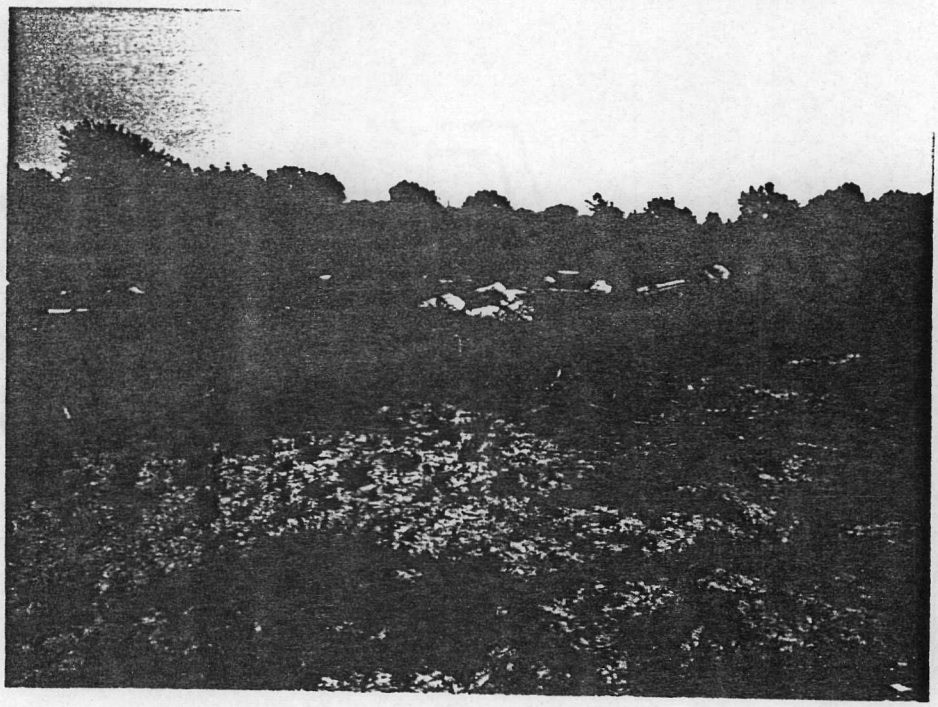
DIRECTION OF PHOTOGRAPH: > SE

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > JUNK Pile and Drums On top OF LandFill area North OF GOLF COURSE, looking SOUTHEAST ACROSS Branch pile.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 22 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1531

DIRECTION OF PHOTOGRAPH: > NW

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A

DESCRIPTION: >

> SPENT POTASSIUM PERMANGANATE drums. DIRT PILES with JUNK to SOUTH. ACCESS ROAD to EAST.

DATE: > 5-31-88

TIME: > 1542

DIRECTION OF PHOTOGRAPH: > NW

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A

DESCRIPTION: >

> TIRE Dumping; looking Northwest over gate in Background. GOLF COURSE area OF LANDFILL IS SOUTH.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 23 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1532

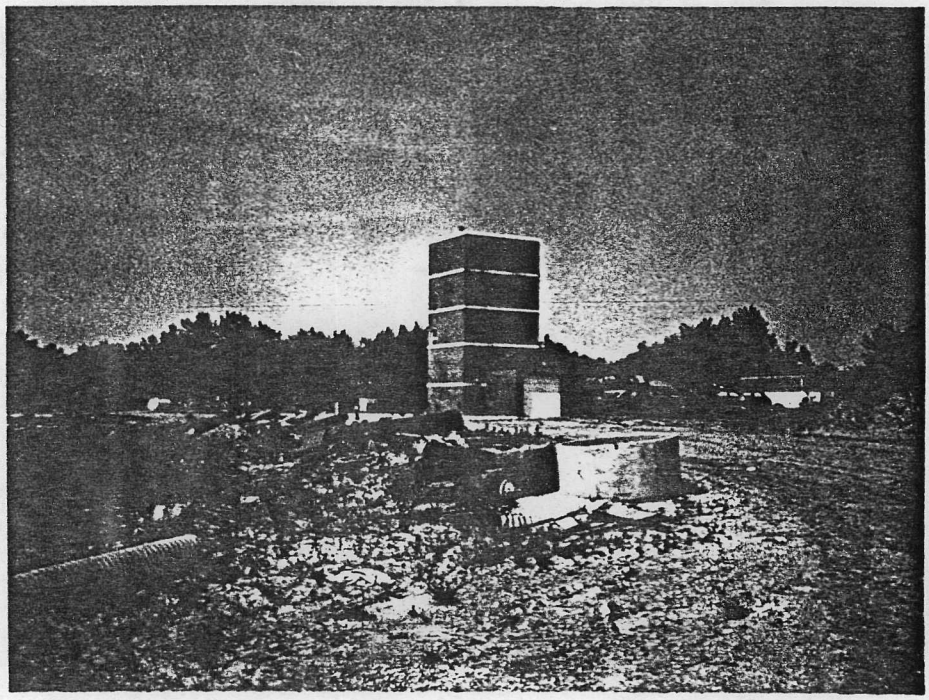
DIRECTION OF PHOTOGRAPH: > NE

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > FIRE TOWER AND JUNK; ACCESS ROAD TO WEST OF TOWER; RTE 22 IS NORTH.

DATE: > 5-31-88

TIME: > 1541

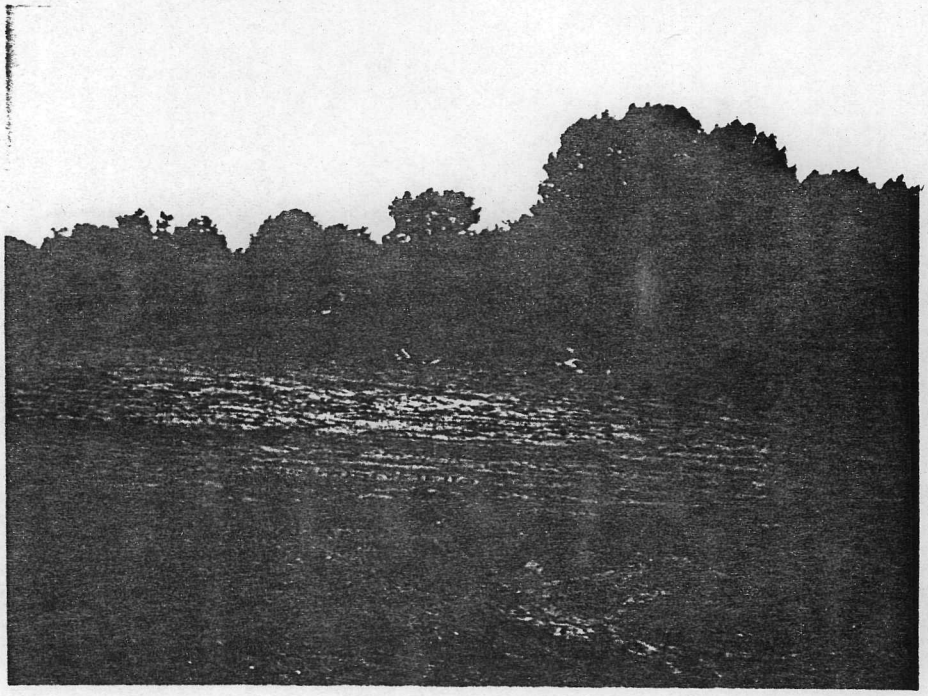
DIRECTION OF PHOTOGRAPH: > SW

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > TRANSFER AREA; TRUCKS LOAD and UNLOAD here. Piles of Dirt mixed with Cement and junk in Background. FENCE AND GOLF COURSE ARE LEFT and BEHIND piles.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1214

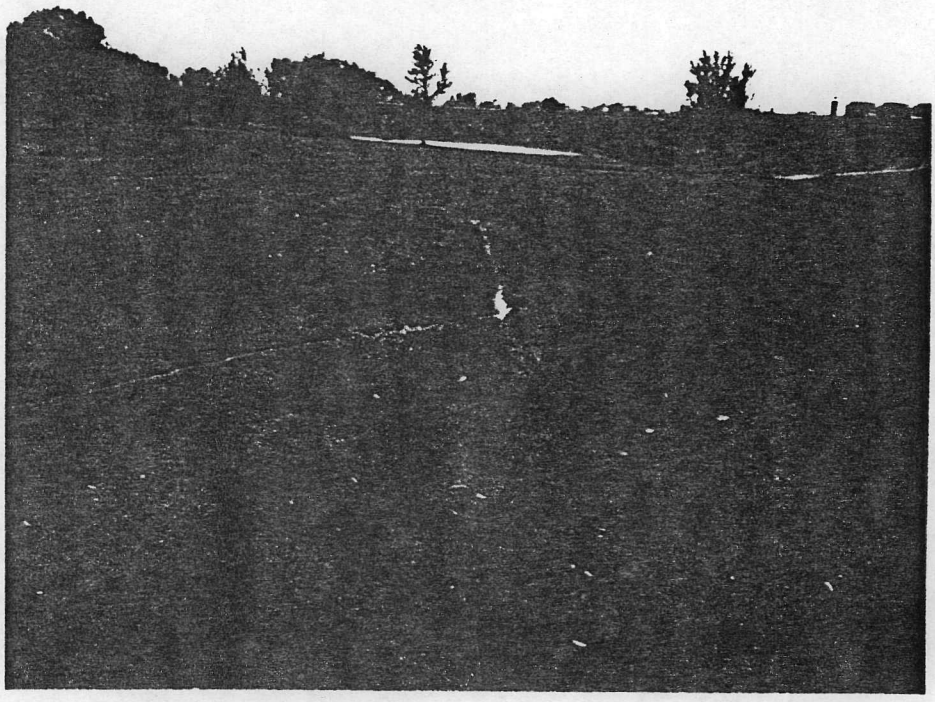
DIRECTION OF PHOTOGRAPH: > S

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > FAIRWAYS AND BACK OF K-MART, looking SOUTH. TILE DRAINS IN LEFT AND MIDDLE coming from EAST Side of Site.

DATE: > 6-1-88

TIME: > 1028

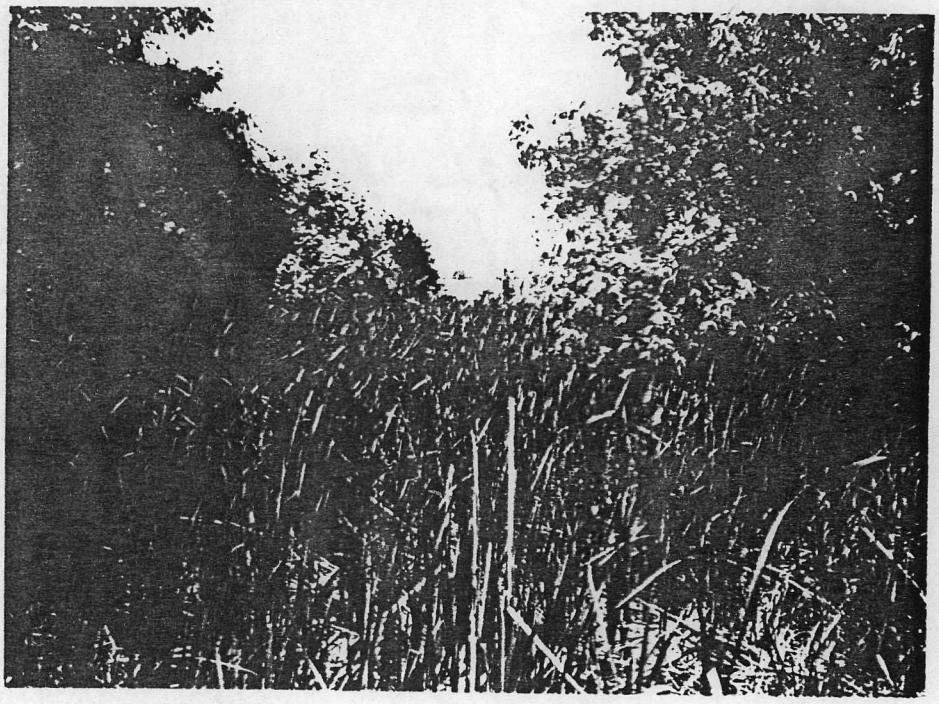
DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > SOUTH Side ditch looking West. Building is ACROSS Highway 41. K-MART is to left.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1255

DIRECTION OF PHOTOGRAPH: > W

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A

DESCRIPTION: > South Drainage Ditch looking West. K-MART is West AND to Left.

DATE: > 6-1-88

TIME: > 1027

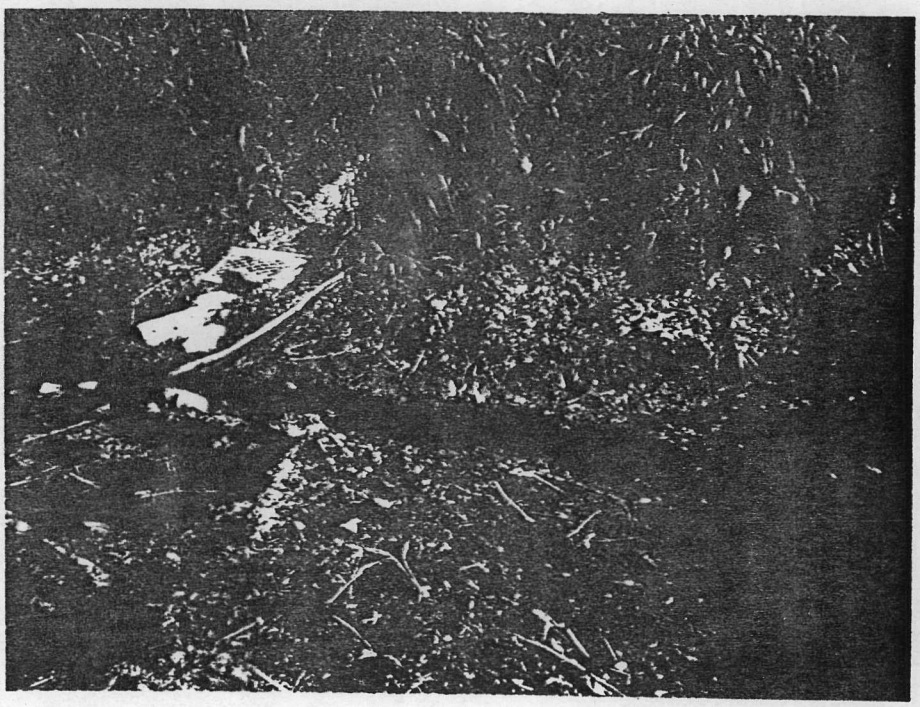
DIRECTION OF PHOTOGRAPH: > NW

WEATHER CONDITIONS: > Sunny

> High 80's/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > South Side ditch draining EAST into SKOKIE Drainage Ditch. Minnows SEEN at Conjunction of two.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: HIGHLAND PARK LANDFILL PAGE 26 OF 26

U.S. EPA ID: ILD981795449 TDD: F05-8804-015 PAN: FIL0642SB

DATE: > 5-31-88

TIME: > 1520

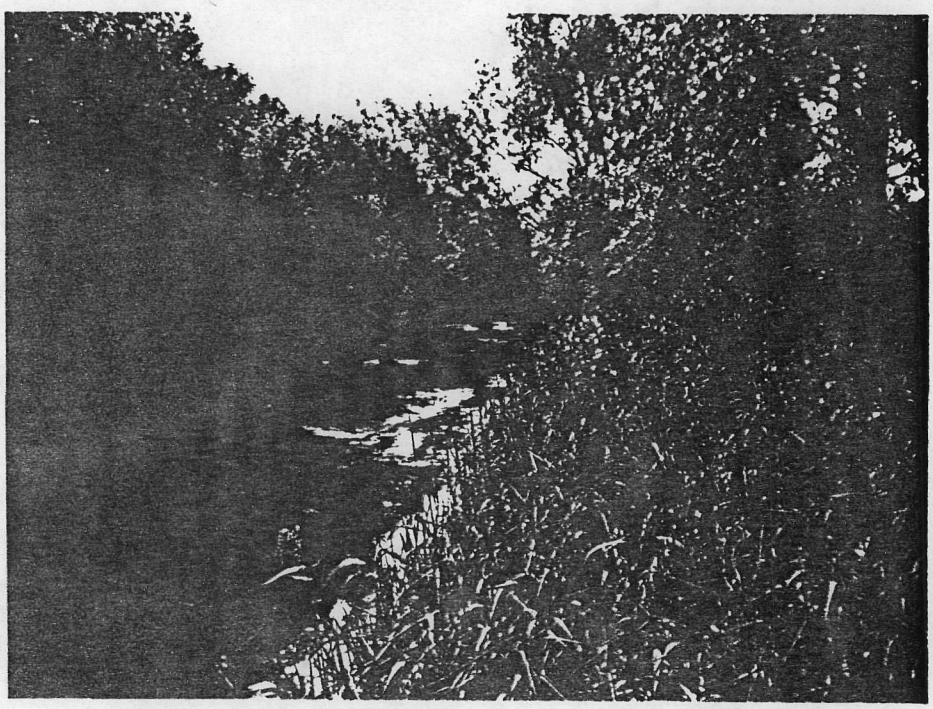
DIRECTION OF PHOTOGRAPH: > S

WEATHER CONDITIONS: > Sunny

> High 80S/90S

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): > N/A



DESCRIPTION: > Skokie Drainage Ditch looking South.

DATE: > 5-31-88

TIME: >

DIRECTION OF PHOTOGRAPH: >

WEATHER CONDITIONS: > Sunny

> High 80's/90's

PHOTOGRAPHED BY: > T. WOLFF

SAMPLE ID (if applicable): >

No Photo

DESCRIPTION: >

>

APPENDIX E

CHEMICAL ANALYSIS DATA
OF
FIT-COLLECTED SAMPLES

ADDENDUM A

ROUTINE ANALYTICAL SERVICES
CONTRACT REQUIRED DETECTION AND QUANTITATION LIMITS

Contract Laboratory Program
Target Compound List
Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
Chloromethane	74-87-3	10 ug/L	10 ug/Kg
Bromomethane	74-83-9	10	10
Vinyl chloride	75-01-4	10	10
Chloroethane	75-00-3	10	10
Methylene chloride	75-09-2	5	5
Acetone	67-64-1	10	5
Carbon disulfide	75-15-0	5	5
1,1-dichloroethene	75-35-4	5	5
1,1-dichloroethane	75-34-3	5	5
1,2-dichloroethene (total)	540-59-0	5	5
Chloroform	67-66-3	5	5
1,2-dichloroethane	107-06-2	5	5
2-butanone (MEK)	78-93-3	10	10
1,1,1-trichloroethane	71-55-6	5	5
Carbon tetrachloride	56-23-5	5	5
Vinyl acetate	108-05-4	10	10
Bromodichloromethane	75-27-4	5	5
1,2-dichloropropane	78-87-5	5	5
cis-1,3-dichloropropene	10061-01-5	5	5
Trichloroethene	79-01-6	5	5
Dibromochloromethane	124-48-1	5	5
1,1,2-trichloroethane	79-00-5	5	5
Benzene	71-43-2	5	5
Trans-1,3-dichloropropene	10061-02-6	5	5
Bromoform	75-25-2	5	5
4-Methyl-2-pentanone	108-10-1	10	10
2-Hexanone	591-78-6	10	10
Tetrachloroethene	127-18-4	5	5
Tolene	108-88-3	5	5
1,1,2,2-tetrachloroethane	79-34-5	5	5
Chlorobenzene	108-90-7	5	5
Ethyl benzene	100-41-4	5	5
Styrene	100-42-5	5	5
Xylenes (total)	1330-20-7	5	5

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
Phenol	108-95-2	10 ug/L	330 ug/Kg
bis(2-Chloroethyl) ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzene	106-46-7	10	330
Benzyl Alcohol	100-51-6	10	330
1,2-Dichlorobenzene	95-50-1	10	330
2-Methylphenol	95-48-7	10	330
bis(2-Chloroisopropyl) ether	108-60-1	10	330
4-Methylphenol	106-44-5	10	330
N-Nitroso-di-n-dipropylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
Benzoic Acid	65-85-0	50	1600
bis(2-Chloroethoxy) methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
4-Chloroaniline	106-47-8	10	330
Hexachlorobutadiene	87-68-3	10	300
4-Chloro-3-methylphenol	59-50-7	10	330
2-Methylnaphthalene	91-57-6	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330
2,4,5-Trichlorophenol	95-95-4	50	1600
2-Chloronaphthalene	91-58-7	10	330
2-Nitroaniline	88-74-4	50	1600
Dimethylphthalate	131-11-3	10	330
Acenaphthylene	208-96-8	10	330
2,6-Dinitrotoluene	606-20-2	10	330
3-Nitroaniline	99-09-2	50	1600
Acenaphthene	83-32-9	10	330
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
Dibenzofuran	132-64-9	10	330
2,4-Dinitrotoluene	121-14-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenyl-phenyl ether	7005-72-3	10	330

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SLUDGE SEDIMENT
Fluorene	86-73-7	10 ug/L	330 ug/Kg
4-Nitroaniline	100-01-6	50	1600
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-nitrosodiphenylamine	86-30-6	10	330
4-Bromophenyl-phenylether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenanthrene	85-01-8	10	330
Anthracene	120-12-7	10	330
Di-n-butylphthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Pyrene	129-00-0	10	330
Butylbenzylphthalate	85-68-7	10	330
3,3'-Dichlorobenzidine	91-94-1	20	660
Benzo(a)anthracene	56-55-3	10	330
Chrysene	218-01-9	10	330
bis(2-Ethylhexyl)phthalate	117-81-7	10	330
Di-n-octylphthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenz(a,h)anthracene	53-70-3	10	330
Benzo(g,h,i)perylene	191-24-2	10	330

Table A
Contract Laboratory Program
Target Analyte List
Inorganic Quantitation Limits

COMPOUND	PROCEDURE	SOIL VATER	SEDIMENT SLUDGE
Aluminum	ICP	200 ug/L	40 mg/Kg
Antimony	Furnace	60	2.4
Arsenic	Furnace	10	2
Barium	ICP	200	40
Beryllium	ICP	5	1
Cadmium	ICP	5	1
Calcium	ICP	5000	1000
Chromium	ICP	10	2
Cobalt	ICP	50	10
Copper	ICP	25	5
Iron	Icp	100	20
Lead	Furnace	5	1
Magnesium	ICP	5000	1000
Manganese	ICP	15	3
Mercury	Cold Vapor	0.2	0.008
Nickel	ICP	40	8
Potassium	ICP	5000	1000
Selenium	Furnace	5	1
Silver	ICP	10	2
Sodium	ICP	5000	1000
Thallium	Furnace	10	2
Vanadium	ICP	50	10
Zinc	ICP	20	4
Cyanide	Color	10	2

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 6/17/88 FIT Receipt Date 7/15/88 Review Completed 7/18/88

TO: T. WOLFF
FROM: Mary Gzyra
SUBJECT: HIGHLAND PK. LF.
PAN: IL064254 (1 hour charged for review) Case # 9726/3905

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 12	Low Soil	#	Low Soil
6	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status X Completed!!

Incomplete, awaiting

FIT Data Review Findings:
SOILS: VOA - aromatics detected.
Semi-VOA - aromatics, halogenated aromatics, phenols, polyaromatic hydrocarbons, phthalates detected.
Pest/PCB - detected in samples EAA 343, 347 to 352
Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 8 Page No. 104 Date Sampled 5/31 & 6/1

0759:2

Pg 2 of semi-VOA ODAS sheet for EAA349 missing - called CRL 7/18 - will send copy.

recycled paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 7/15/88

SUBJECT: Review of Region V CLP Data
Received for Review on 6-17-88

FROM. Curtis Ross, Director (5SCRL) Patrick J. Chunlle for
Central Regional Laboratory

TO: Data User: Fit

We have reviewed the data for the following case(s).

SITE NAME: Highland Park Landfill (IL) SMO Case No. 9726SAS3905E

EPA Data Set No. SF5237 No. of Samples: 18 D.U./Activity Numbers 19051C72122

CRL No. 88FW23S23-S38, D35, R05

SMO Traffic No. EAA 341-358

CLP Laboratory: SWOK Hrs. Required for Review: 10

Following are our findings:

THIS CASE CONTAINS 12 SOIL AND 6 WATER SAMPLES ANALYZED FOR THE FULL CLP ORGANICS PACKAGE. SEE THE ATTACHED REVIEW FOR QUALIFICATIONS.

PJC
7/15/88

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

DATA QUALIFIERS

Contractor: SWOK

Case 9726 SAS 3905E

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

VOLATILES

✓ 1. HOLDING TIMES WERE OK

✓ 2. MS/MSD RECOVERIES WERE ACCEPTABLE

✓ 3. SAMPLES EAA342, EAA351 AND EAA352 HAD HIGH RECOVERY OF D8-TOLUENE. THIS MAY HAVE BEEN CAUSED BY THE PRESENCE OF TOLUENE IN THESE SAMPLES. THIS DOES NOT AFFECT THE DATA

✓ 4. THE METHOD BLANKS AND FIELD BLANK CONTAINED TOLUENE AS DID MANY OF THE SAMPLES. RESULTS FOR TOLUENE ARE CONSIDERED UNDETECTED IN SAMPLES EAA341, EAA342, EAA346, EAA351, EAA354-EAA358. IN ALL OF THE OTHER SAMPLES TOLUENE RESULTS ARE CONSIDERED BIASED HIGH BECAUSE OF THIS CONTAMINATION.

5. CALIBRATIONS WERE GOOD. SEE THE CALIBRATION OUTLIER FORMS FOR COMPOUNDS AND SAMPLES AFFECTED

✓ 6. BFB TUNING WAS ACCEPTABLE

✓ 7. THE INTERNAL STANDARD D5-CHLOROBENZENE HAD A LARGE SHIFT IN RESPONSE FACTOR FOR SAMPLES EAA345 AND EAA352. REANALYSIS SHOWED THE SAME SHIFT. SINCE THE CLOSEST SURROGATE ALSO SHOWED THIS SHIFT AND THE COMPOUNDS QUANTITATED WITH THIS INTERNAL STANDARD ARE ALREADY ESTIMATED DUE TO FIELD CONTAMINATION, THERE IS NO FURTHER EFFECT ON THE DATA.

Reviewed by: Patrick J. Chenille, EPA, CPMS

Phone: 353-2313

Date: 7/15/88

DATA QUALIFIERS

Contractor: SWOK

Case 9706 SAS3905E

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

SEMI-VOLATILES

✓1. HOLDING TIMES ARE OK.

✓2. MS/MSD RECOVERIES ARE OK.

✓3. SURROGATE RECOVERIES WERE WITHIN CONTRACT REQUIREMENTS ~~[illegible]~~ EVEN THOUGH SOME WERE BIASED HIGH

✓4. NO TCL COMPOUNDS WERE FOUND IN THE METHOD BLANK OR FIELD BLANK

✓5. CALIBRATIONS ARE ACCEPTABLE. SEE OUTLIER FORMS FOR EXCEPTIONS.

✓6. DFTPP TUNING WAS ACCEPTABLE

✓7. INTERNAL STANDARD AREAS ARE OK.

PESTICIDES / PCB'S

1. HOLDING TIMES ARE OK

✓2. MS/MSD RECOVERIES ARE HIGH. THEREFORE RESULTS FOR EAA355 AND EAA347 ARE ESTIMATED.

✓3. SURROGATE RECOVERY WAS VERY HIGH FOR SAMPLES EAA342 EAA345MS AND EAA350. THE CAUSE OF THIS IS UNKNOWN. RESULTS SHOULD BE CONSIDERED ESTIMATED FOR THESE SAMPLES.

✓4. LINEARITY DEGRADATION AND RETENTION TIME SHIFT WERE ACCEPTABLE

Reviewed by: PJC 7/15/98

Phone:

Date:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA341

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19239

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8488

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 60 Date Analyzed: 06/01/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl Chloride	25	U
75-00-3	Chloroethane	25	U
75-09-2	Methylene Chloride	13	U
67-64-1	Acetone	120	
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-35-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	25	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
108-05-4	Vinyl Acetate	25	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	Trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
----------	Total Xylenes	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA341

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19239

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8488

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 60 Date Analyzed: 06/01/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA342

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8489

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 Date Analyzed: 06/01/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	33	
75-15-0	Carbon Disulfide	0.6	J
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	5	J
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	0.8	~~BJ~~ UJ
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	6	U

PJC 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA342

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8489

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 Date Analyzed: 06/01/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA342RE

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8504

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	43	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	5	J
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	1	~~J~~ BJ
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	29	
	Total Xylenes	6	U

PJC 7/13/8

02

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA342RE

Lab Name: SWL - TULSA Contract: 68-01-7393

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8504

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA343

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19241

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8505

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 13 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	2	J B
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	4	J

Pse 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA343

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39058 SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19241

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8505

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 13 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	21.52	11	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA344

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19242

Sample wt/vol: 1.0 (g/mL) G Lab File ID: 8506

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 28 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	69	U
74-83-9	Bromomethane	69	U
75-01-4	Vinyl Chloride	69	U
75-00-3	Chloroethane	69	U
75-09-2	Methylene Chloride	35	U
67-64-1	Acetone	830	
75-15-0	Carbon Disulfide	35	U
75-35-4	1,1-Dichloroethene	35	U
75-35-3	1,1-Dichloroethane	35	U
540-59-0	1,2-Dichloroethene (total)	35	U
67-66-3	Chloroform	35	U
107-06-2	1,2-Dichloroethane	35	U
78-93-3	2-Butanone	69	U
71-55-6	1,1,1-Trichloroethane	35	U
56-23-5	Carbon Tetrachloride	35	U
108-05-4	Vinyl Acetate	69	U
75-27-4	Bromodichloromethane	35	U
78-87-5	1,2-Dichloropropane	35	U
10061-01-5	cis-1,3-Dichloropropene	35	U
79-01-6	Trichloroethene	35	U
124-48-1	Dibromochloromethane	35	U
79-00-5	1,1,2-Trichloroethane	35	U
71-43-2	Benzene	35	U
10061-02-6	Trans-1,3-Dichloropropene	35	U
75-25-2	Bromoform	35	U
108-10-1	4-Methyl-2-Pentanone	69	U
591-78-6	2-Hexanone	69	U
127-18-4	Tetrachloroethene	35	U
79-34-5	1,1,2,2-Tetrachloroethane	69	U
108-88-3	Toluene	200	B
108-90-7	Chlorobenzene	26	J
100-41-4	Ethylbenzene	67	
100-42-5	Styrene	35	U
	Total Xylenes	260	

PRC 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA344

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19242

Sample wt/vol: 1.0 (g/mL) G Lab File ID: 8506

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 28 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	24.85	49	J
2. 5364830	Cyclohexane, 1-propenyl- (9C	25.39	42	J
3.	UNKNOWN COMPOUND	26.67	28	J
4.	UNKNOWN COMPOUND	27.42	28	J
5.	UNKNOWN HYDROCARBON	31.67	120	J
6.	UNKNOWN COMPOUND	33.97	42	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA345

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39058 SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8507

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	3	J B
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	6	U
	Total Xylenes	6	U

JSC 7/13/88

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA345

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8507

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA345RE

Lab Name: SWL - TULSA Contract: 69-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39088 SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8544

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	38	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA345RE

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8544

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA346

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19244

Sample wt/vol: 1.0 (g/mL) G Lab File ID: 8508

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	61	U
74-83-9	Bromomethane	61	U
75-01-4	Vinyl Chloride	61	U
75-00-3	Chloroethane	61	U
75-09-2	Methylene Chloride	30	U
67-64-1	Acetone	930	
75-15-0	Carbon Disulfide	30	U
75-35-4	1,1-Dichloroethene	30	U
75-35-3	1,1-Dichloroethane	30	U
540-59-0	1,2-Dichloroethene (total)	30	U
67-66-3	Chloroform	30	U
107-06-2	1,2-Dichloroethane	30	U
78-93-3	2-Butanone	61	U
71-55-6	1,1,1-Trichloroethane	30	U
56-23-5	Carbon Tetrachloride	30	U
108-05-4	Vinyl Acetate	61	U
75-27-4	Bromodichloromethane	30	U
78-87-5	1,2-Dichloropropane	30	U
10061-01-5	cis-1,3-Dichloropropene	30	U
79-01-6	Trichloroethene	30	U
124-48-1	Dibromochloromethane	30	U
79-00-5	1,1,2-Trichloroethane	30	U
71-43-2	Benzene	30	U
10061-02-6	Trans-1,3-Dichloropropene	30	U
75-25-2	Bromoform	30	U
108-10-1	4-Methyl-2-Pentanone	61	U
591-78-6	2-Hexanone	61	U
127-18-4	Tetrachloroethene	30	U
79-34-5	1,1,2,2-Tetrachloroethane	61	U
108-88-3	Toluene	30	U
108-90-7	Chlorobenzene	30	U
100-41-4	Ethylbenzene	30	U
100-42-5	Styrene	30	U
	Total Xylenes	30	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA346

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19244

Sample wt/vol: 1.0 (g/mL) G Lab File ID: 8508

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA347

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19245

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8494

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 23 Date Analyzed: 06/01/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	25	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	51	B
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA347

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19245

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8494

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 23 Date Analyzed: 06/01/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	17.64	5	J
2.	UNKNOWN HYDROCARBON	18.34	13	J
3. 108872	Cyclohexane, methyl- (8CI9CI	18.64	110	J
4.	Pentane, dimethyl-	19.47	31	J
5.	UNKNOWN HYDROCARBON	19.82	13	J
6. 539344	Hexane, 3-methyl- (8CI9CI)	20.70	65	J
7.	UNKNOWN HYDROCARBON	21.17	22	J
8.	UNKNOWN HYDROCARBON	24.12	21	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA348

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19246

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8495

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 19 Date Analyzed: 06/01/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	28	B
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA348

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19246

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8495

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 19 Date Analyzed: 06/01/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 5

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	19.47	6	J
2.	UNKNOWN COMPOUND	19.79	4	J
3. 589344	Hexane, 3-methyl- (8CI9CI)	20.67	21	J
4.	UNKNOWN HYDROCARBON	21.19	7	J
5.	UNKNOWN COMPOUND	24.05	7	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA349

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19247

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8517

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 11 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	6	B
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
	Total Xylenes	6	U

POE 7/13/88

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA349

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19247

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8517

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 11 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA350

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19248

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8512

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 44 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	9	J
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	9	U
67-64-1	Acetone	100	
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-35-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	18	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	18	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
108-88-3	Toluene	3	J B
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
	Total Xylenes	9	U

7/13/88

FORM I VOA

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA350

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19248

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8512

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 44 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA351

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8513

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	67	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-35-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	17	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
108-88-3	Toluene	1	~~U~~ UJ
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
	Total Xylenes	8	U

P.C. 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA351

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8513

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA351RE

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8518

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	66	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-35-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	17	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
108-88-3	Toluene	0.9	B UJ
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
	Total Xylenes	8	U

PSC 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA351RE

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8518

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA352

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8519

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-35-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	5	J B
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
	Total Xylenes	7	U

RSG 11/3/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA352

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8519

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	19.47	4	J
2.	UNKNOWN COMPOUND	20.67	7	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA352RE

b Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8547

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	12	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-35-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	3	~~BJ~~ UJ
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
	Total Xylenes	7	U

PJC 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA352RE

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8547

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA353

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19258

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8528

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
----------	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA353

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19258

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 9528

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA354

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19259

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8529

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA354

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3805E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19259

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8529

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA355

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19260

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8530

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
----------	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA355

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19260

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8530

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA356

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19261

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8533

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	0.5	~~U~~ J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
----------	Total Xylenes	5	U

Poe 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA356

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19261

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8533

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75183	Methane, thiobis- (9CI)	6.23	5	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA357

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19262

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8534

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
----------	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA357

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19262

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8534

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA358

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19263

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8535

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-97-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	0.6	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	0.9	~~J~~ UJ
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

PJC 7/13/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA358

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19263

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 9535

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA341DL

Lab Name: SWL - TULSA Contract: 68-01-7399

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19239

Sample wt/vol: 30.5 (g/mL) G Lab File ID: F0496

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 60 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 4.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3400	U
111-44-4	bis(2-Chloroethyl)Ether	3400	U
95-57-8	2-Chlorophenol	3400	U
541-73-1	1,3-Dichlorobenzene	3400	U
106-46-7	1,4-Dichlorobenzene	3400	U
100-51-6	Benzyl Alcohol	3400	U
95-50-1	1,2-Dichlorobenzene	3400	U
95-48-7	2-Methylphenol	3400	U
39638-32-9	bis(2-Chloroisopropyl)Ether	3400	U
106-44-5	4-Methylphenol	3400	U
621-64-7	N-Nitroso-Di-n-Propylamine	3400	U
67-72-1	Hexachloroethane	3400	U
98-95-3	Nitrobenzene	3400	U
78-59-1	Isophorone	3400	U
88-75-5	2-Nitrophenol	3400	U
105-67-9	2,4-Dimethylphenol	3400	U
65-85-0	Benzoic Acid	17000	U
111-91-1	bis(2-Chloroethoxy)Methane	3400	U
120-83-2	2,4-Dichlorophenol	3400	U
120-82-1	1,2,4-Trichlorobenzene	3400	U
91-20-3	Naphthalene	3400	U
106-47-8	4-Chloroaniline	3400	U
87-68-3	Hexachlorobutadiene	3400	U
59-50-7	4-Chloro-3-Methylphenol	3400	U
91-57-6	2-Methylnaphthalene	3400	U
77-47-4	Hexachlorocyclopentadiene	3400	U
88-06-2	2,4,6-Trichlorophenol	3400	U
95-95-4	2,4,5-Trichlorophenol	17000	U
91-58-7	2-Chloronaphthalene	3400	U
88-74-4	2-Nitroaniline	17000	U
131-11-3	Dimethyl Phthalate	3400	U
208-96-8	Acenaphthylene	3400	U
606-20-2	2,6-Dinitrotoluene	3400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA341DL

e: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

rix: (soil/water) SOIL Lab Sample ID: 19239

le wt/vol: 30.5 (g/mL) G Lab File ID: F0496

vol: (low/med) LOW Date Received: 06/01/88

oisture: not dec. 60 dec. ____ Date Extracted: 06/03/88

action: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

C Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 4.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	17000	U
83-32-9	Acenaphthene	3400	U
51-28-5	2,4-Dinitrophenol	17000	U
100-02-7	4-Nitrophenol	17000	U
132-64-9	Dibenzofuran	3400	U
121-14-2	2,4-Dinitrotoluene	3400	U
84-66-2	Diethylphthalate	3400	U
7005-72-3	4-Chlorophenyl-phenylether	3400	U
86-73-7	Fluorene	3400	U
100-10-6	4-Nitroaniline	17000	U
534-52-1	4,6-Dinitro-2-Methylphenol	17000	U
86-30-6	N-Nitrosodiphenylamine (1)	3400	U
101-55-3	4-Bromophenyl-phenylether	3400	U
118-74-1	Hexachlorobenzene	3400	U
87-86-5	Pentachlorophenol	17000	U
85-01-8	Phenanthrene	150	DJ
120-12-7	Anthracene	3400	U
84-74-2	Di-n-Butylphthalate	3400	U
206-44-0	Fluoranthene	420	DJ
129-00-0	Pyrene	330	DJ
85-68-7	Butylbenzylphthalate	3400	U
91-94-1	3,3'-Dichlorobenzidine	6800	U
56-55-3	Benzo(a)Anthracene	170	DJ
218-01-9	Chrysene	240	DJ
117-81-7	bis(2-Ethylhexyl)Phthalate	3400	U
117-84-0	Di-n-Octyl Phthalate	3400	U
205-99-2	Benzo(b)Fluoranthene	210	DJ
207-08-9	Benzo(k)Fluoranthene	3400	U
50-32-8	Benzo(a)Pyrene	150	DJ
193-39-5	Indeno(1,2,3-cd)Pyrene	3400	U
53-70-3	Dibenz(a,h)Anthracene	3400	U
191-24-2	Benzo(g,h,i)Perylene	3400	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA341DL

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19239

Sample wt/vol: 30.5 (g/mL) G Lab File ID: F0496

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 60 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 4.2

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ACID	17.67	16000	J
2. 10544500	Sulfur, mol. (S8) (8CI9CI)	18.15	9700	J
3. 10544500	Sulfur, mol. (S8) (8CI9CI)	18.29	52000	J
4.	UNKNOWN HYDROCARBON	19.07	48000	J
5.	UNKNOWN ACID	19.24	23000	J
6.	UNKNOWN ACID	20.74	26000	J
7.	UNKNOWN ACID	22.12	14000	J
8.	UNKNOWN HYDROCARBON	22.99	21000	J
9.	UNKNOWN HYDROCARBON	23.29	10000	J
10.	UNKNOWN HYDROCARBON	23.60	14000	J
11.	UNKNOWN HYDROCARBON	23.79	20000	J
12.	UNKNOWN HYDROCARBON	24.22	48000	J
13.	UNKNOWN HYDROCARBON	24.77	17000	J
14.	UNKNOWN HYDROCARBON	25.37	110000	J
15.	UNKNOWN COMPOUND	25.67	32000	J
16.	UNKNOWN HYDROCARBON	26.64	21000	J
17.	UNKNOWN COMPOUND	27.07	130000	J
18.	UNKNOWN COMPOUND	27.87	14000	J
19.	UNKNOWN COMPOUND	28.06	10000	J
20.	UNKNOWN COMPOUND	29.01	15000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA342

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 30.2 (g/mL) G Lab File ID: F0497

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
39638-32-9	bis(2-Chloroisopropyl)Ether	420	U
106-44-5	4-Methylphenol	120	J
621-64-7	N-Nitroso-Di-n-Propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA342

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 30.2 (g/mL) G Lab File ID: F0497

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	72	J
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	93	J
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	120	J
100-10-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	890	
120-12-7	Anthracene	170	J
84-74-2	Di-n-Butylphthalate	420	U
206-44-0	Fluoranthene	1500	
129-00-0	Pyrene	1200	
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	840	U
56-55-3	Benzo(a)Anthracene	470	
218-01-9	Chrysene	750	
117-81-7	bis(2-Ethylhexyl)Phthalate	550	
117-84-0	Di-n-Octyl Phthalate	110	J
205-99-2	Benzo(b)Fluoranthene	670	
207-08-9	Benzo(k)Fluoranthene	470	
50-32-8	Benzo(a)Pyrene	500	
193-39-5	Indeno(1,2,3-cd)Pyrene	390	J
53-70-3	Dibenz(a,h)Anthracene	98	J
191-24-2	Benzo(g,h,i)Perylene	370	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA342

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 30.2 (g/mL) G Lab File ID: F0497

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	2.97	940	J
2.	UNKNOWN COMPOUND	5.43	810	J
3.	UNKNOWN COMPOUND	6.07	1400	J
4.	UNKNOWN COMPOUND	12.87	720	J
5.	UNKNOWN HYDROCARBON	13.19	640	J
6.	UNKNOWN HYDROCARBON	14.24	770	J
7.	UNKNOWN HYDROCARBON	15.29	550	J
8.	UNKNOWN HYDROCARBON	17.07	510	J
9.	UNKNOWN ACID	17.74	4000	J
10.	UNKNOWN COMPOUND	19.00	470	J
11.	UNKNOWN ACID	19.29	640	J
12.	UNKNOWN HYDROCARBON	21.69	770	J
13.	UNKNOWN HYDROCARBON	23.02	4700	J
14.	UNKNOWN HYDROCARBON	24.24	4700	J
15.	UNKNOWN HYDROCARBON	25.38	3600	J
16.	UNKNOWN COMPOUND	25.71	2800	J
17.	UNKNOWN HYDROCARBON	26.66	2000	J
18.	UNKNOWN COMPOUND	27.09	2500	J
19.	UNKNOWN COMPOUND	28.12	1800	J
20.	UNKNOWN COMPOUND	28.92	1200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA343DL

ame: SWL - TULSA Contract: 68-01-7393

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19241

ample wt/vol: 1.0 (g/mL) G Lab File ID: F0494

evel: (low/med) MED Date Received: 06/01/88

Moisture: not dec. 13 dec. ____ Date Extracted: 06/03/88

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

PC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	110000	U
111-44-4	bis(2-Chloroethyl)Ether	110000	U
95-57-8	2-Chlorophenol	110000	U
541-73-1	1,3-Dichlorobenzene	110000	U
106-46-7	1,4-Dichlorobenzene	110000	U
100-51-6	Benzyl Alcohol	110000	U
95-50-1	1,2-Dichlorobenzene	110000	U
95-48-7	2-Methylphenol	110000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	110000	U
106-44-5	4-Methylphenol	110000	U
621-64-7	N-Nitroso-Di-n-Propylamine	110000	U
67-72-1	Hexachloroethane	110000	U
98-95-3	Nitrobenzene	110000	U
78-59-1	Isophorone	110000	U
88-75-5	2-Nitrophenol	110000	U
105-67-9	2,4-Dimethylphenol	110000	U
65-85-0	Benzoic Acid	550000	U
111-91-1	bis(2-Chloroethoxy)Methane	110000	U
120-83-2	2,4-Dichlorophenol	110000	U
120-82-1	1,2,4-Trichlorobenzene	110000	U
91-20-3	Naphthalene	110000	U
106-47-8	4-Chloroaniline	110000	U
87-68-3	Hexachlorobutadiene	110000	U
59-50-7	4-Chloro-3-Methylphenol	110000	U
91-57-6	2-Methylnaphthalene	110000	U
77-47-4	Hexachlorocyclopentadiene	110000	U
88-06-2	2,4,6-Trichlorophenol	110000	U
95-95-4	2,4,5-Trichlorophenol	550000	U
91-58-7	2-Chloronaphthalene	110000	U
88-74-4	2-Nitroaniline	550000	U
131-11-3	Dimethyl Phthalate	110000	U
208-96-8	Acenaphthylene	110000	U
606-20-2	2,6-Dinitrotoluene	110000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA343DL

me: SWL - TULSA Contract: 68-01-7383

) Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

trix: (soil/water) SOIL Lab Sample ID: 19241

ple wt/vol: 1.0 (g/mL) G Lab File ID: F0494

evel: (low/med) MED Date Received: 06/01/88

Moisture: not dec. 13 dec. ____ Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

PC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	550000	U
83-32-9	Acenaphthene	110000	U
51-28-5	2,4-Dinitrophenol	550000	U
100-02-7	4-Nitrophenol	550000	U
132-64-9	Dibenzofuran	110000	U
121-14-2	2,4-Dinitrotoluene	110000	U
84-66-2	Diethylphthalate	110000	U
7005-72-3	4-Chlorophenyl-phenylether	110000	U
86-73-7	Fluorene	110000	U
100-10-6	4-Nitroaniline	550000	U
534-52-1	4,6-Dinitro-2-Methylphenol	550000	U
86-30-6	N-Nitrosodiphenylamine (1)	110000	U
101-55-3	4-Bromophenyl-phenylether	110000	U
118-74-1	Hexachlorobenzene	110000	U
87-86-5	Pentachlorophenol	550000	U
85-01-8	Phenanthrene	110000	U
120-12-7	Anthracene	110000	U
84-74-2	Di-n-Butylphthalate	110000	U
206-44-0	Fluoranthene	110000	U
129-00-0	Pyrene	110000	U
85-68-7	Butylbenzylphthalate	110000	U
91-94-1	3,3'-Dichlorobenzidine	230000	U
56-55-3	Benzo(a)Anthracene	110000	U
218-01-9	Chrysene	110000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	6700	DJ
117-84-0	Di-n-Octyl Phthalate	110000	U
205-99-2	Benzo(b)Fluoranthene	110000	U
207-08-9	Benzo(k)Fluoranthene	110000	U
50-32-8	Benzo(a)Pyrene	110000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	110000	U
53-70-3	Dibenz(a,h)Anthracene	110000	U
191-24-2	Benzo(g,h,i)Perylene	110000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA343DL

ame: SWL - TULSA Contract: 68-01-7393

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: 19241

ample wt/vol: 1.0 (g/mL) G Lab File ID: F0494

Level: (low/med) MED Date Received: 06/01/88

Moisture: not dec. 13 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 5.0

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	16.15	11000	J
2. 6912078	Hexadecane, 5-butyl- (8CI)	16.24	23000	J
3. 593497	Heptacosane (8CI9CI)	17.05	23000	J
	UNKNOWN COMPOUND	17.60	11000	J
	UNKNOWN HYDROCARBON	17.90	46000	J
6.	UNKNOWN HYDROCARBON	18.24	23000	J
7.	UNKNOWN COMPOUND	18.50	34000	J
8.	UNKNOWN HYDROCARBON	18.74	34000	J
9.	UNKNOWN HYDROCARBON	18.99	57000	J
10.	UNKNOWN HYDROCARBON	19.29	34000	J
11.	UNKNOWN HYDROCARBON	19.79	170000	J
12.	UNKNOWN COMPOUND	20.12	46000	J
[illegible]	UNKNOWN HYDROCARBON	20.57	170000	J
14.	UNKNOWN HYDROCARBON	21.24	160000	J
15.	UNKNOWN HYDROCARBON	21.92	100000	J
16.	UNKNOWN HYDROCARBON	23.19	250000	J
17.	UNKNOWN COMPOUND	25.71	340000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA344DL

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19242

Sample wt/vol: 30.5 (g/mL) G Lab File ID: F0537

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 28 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/14/88

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 5.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2400	U
111-44-4	bis(2-Chloroethyl)Ether	2400	U
95-57-8	2-Chlorophenol	2400	U
541-73-1	1,3-Dichlorobenzene	2400	U
106-46-7	1,4-Dichlorobenzene	970	DJ
100-51-6	Benzyl Alcohol	2400	U
95-50-1	1,2-Dichlorobenzene	2400	U
95-48-7	2-Methylphenol	2400	U
39638-32-9	bis(2-Chloroisopropyl)Ether	2400	U
106-44-5	4-Methylphenol	2400	U
621-64-7	N-Nitroso-Di-n-Propylamine	2400	U
67-72-1	Hexachloroethane	2400	U
98-95-3	Nitrobenzene	2400	U
78-59-1	Isophorone	2400	U
88-75-5	2-Nitrophenol	2400	U
105-67-9	2,4-Dimethylphenol	2400	U
65-85-0	Benzoic Acid	12000	U
111-91-1	bis(2-Chloroethoxy)Methane	2400	U
120-83-2	2,4-Dichlorophenol	2400	U
120-82-1	1,2,4-Trichlorobenzene	2400	U
91-20-3	Naphthalene	2400	U
106-47-8	4-Chloroaniline	2400	U
87-68-3	Hexachlorobutadiene	2400	U
59-50-7	4-Chloro-3-Methylphenol	2400	U
91-57-6	2-Methylnaphthalene	2400	U
77-47-4	Hexachlorocyclopentadiene	2400	U
88-06-2	2,4,6-Trichlorophenol	2400	U
95-95-4	2,4,5-Trichlorophenol	12000	U
91-58-7	2-Chloronaphthalene	2400	U
88-74-4	2-Nitroaniline	12000	U
131-11-3	Dimethyl Phthalate	2400	U
208-96-8	Acenaphthylene	2400	U
606-20-2	2,6-Dinitrotoluene	2400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA344DL

: SWL - TULSA Contract: 68-01-7393

Code: SWOI Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

trix: (soil/water) SOIL Lab Sample ID: 19242

ple wt/vol: 30.5 (g/mL) G Lab File ID: F0537

vel: (low/med) LOW Date Received: 06/01/88

oisture: not dec. 28 dec. ____ Date Extracted: 06/03/88

raction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/14/88

PC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 5.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	12000	U
83-32-9	Acenaphthene	2400	U
51-28-5	2,4-Dinitrophenol	12000	U
100-02-7	4-Nitrophenol	12000	U
132-64-9	Dibenzofuran	2400	U
121-14-2	2,4-Dinitrotoluene	2400	U
84-66-2	Diethylphthalate	2400	U
7005-72-3	4-Chlorophenyl-phenylether	2400	U
86-73-7	Fluorene	2400	U
100-10-6	4-Nitroaniline	12000	U
534-52-1	4,6-Dinitro-2-Methylphenol	12000	U
86-30-6	N-Nitrosodiphenylamine (1)	2400	U
101-55-3	4-Bromophenyl-phenylether	2400	U
118-74-1	Hexachlorobenzene	2400	U
87-86-5	Pentachlorophenol	12000	U
85-01-8	Phenanthrene	2400	U
120-12-7	Anthracene	2400	U
84-74-2	Di-n-Butylphthalate	2400	U
206-44-0	Fluoranthene	140	DJ
129-00-0	Pyrene	2400	U
85-68-7	Butylbenzylphthalate	2400	U
91-94-1	3,3'-Dichlorobenzidine	4700	U
56-55-3	Benzo(a)Anthracene	2400	U
218-01-9	Chrysene	2400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2400	U
117-84-0	Di-n-Octyl Phthalate	2400	U
205-99-2	Benzo(b)Fluoranthene	2400	U
207-08-9	Benzo(k)Fluoranthene	2400	U
50-32-8	Benzo(a)Pyrene	2400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	2400	U
53-70-3	Dibenz(a,h)Anthracene	2400	U
191-24-2	Benzo(g,h,i)Perylene	2400	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

EAA344DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

e: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: 19242

ple wt/vol: 30.5 (g/mL) G Lab File ID: F0537

evel: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 28 dec. ____ Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/14/88

PC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 5.3

er TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	1.98	41000	J
2.	UNKNOWN HYDROCARBON	17.79	5300	J
3. 10544500	Sulfur, mol. (S8) (8CI9CI)	18.92	15000	J
	UNKNOWN COMPOUND	19.29	1200	J
	UNKNOWN HYDROCARBON	20.14	2900	J
6.	UNKNOWN COMPOUND	20.24	1400	J
7.	UNKNOWN COMPOUND	21.52	15000	J
8.	UNKNOWN KETONE	22.47	11000	J
9.	UNKNOWN COMPOUND	23.87	5300	J
10.	UNKNOWN COMPOUND	23.97	4600	J
11.	UNKNOWN HYDROCARBON	24.74	3800	J
2.	UNKNOWN HYDROCARBON	25.94	4600	J
3.	UNKNOWN HYDROCARBON	26.11	3600	J
14.	UNKNOWN PNA	26.69	4600	J
15.	UNKNOWN COMPOUND	27.22	6700	J
16.	UNKNOWN PNA	27.44	4300	J
17.	UNKNOWN COMPOUND	27.87	26000	J
18.	UNKNOWN COMPOUND	29.92	84000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA345

Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 15243

Sample wt/vol: 30.8 (g/mL) G Lab File ID: F0499

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
39638-32-9	bis(2-Chloroisopropyl)Ether	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	130	J
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	120	J
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	410	U
208-96-8	Acenaphthylene	67	J
606-20-2	2,6-Dinitrotoluene	410	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA345

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 30.8 (g/mL) G Lab File ID: F0499

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	280	J
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	150	J
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	330	J
100-10-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	2300	
120-12-7	Anthracene	600	
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	3500	
129-00-0	Pyrene	2800	
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	820	U
56-55-3	Benzo(a)Anthracene	1600	
218-01-9	Chrysene	1700	
117-81-7	bis(2-Ethylhexyl)Phthalate	98	J
117-84-0	Di-n-Octyl Phthalate	94	J
205-99-2	Benzo(b)Fluoranthene	1800	
207-08-9	Benzo(k)Fluoranthene	730	
50-32-8	Benzo(a)Pyrene	1200	
193-39-5	Indeno(1,2,3-cd)Pyrene	670	
53-70-3	Dibenz(a,h)Anthracene	250	J
191-24-2	Benzo(g,h,i)Perylene	740	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA345

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 30.8 (g/mL) G Lab File ID: F0499

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.1

mber TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	2.97	1700	J
2.	UNKNOWN HYDROCARBON	15.24	540	J
3.	UNKNOWN ACID	16.44	580	J
4.	UNKNOWN COMPOUND	16.50	660	J
5.	UNKNOWN PNA	17.05	490	J
6.	UNKNOWN PNA	17.20	580	J
7.	UNKNOWN ACID	17.49	1400	J
8.	UNKNOWN ACID	17.57	780	J
9.	UNKNOWN ACID	17.69	2400	J
10.	UNKNOWN PNA	19.05	330	J
11.	UNKNOWN COMPOUND	19.10	660	J
12.	UNKNOWN HYDROCARBON	19.14	540	J
13.	UNKNOWN ACID	19.37	330	J
14.	UNKNOWN HYDROCARBON	23.00	1800	J
15.	UNKNOWN PNA	23.99	1500	J
16.	UNKNOWN HYDROCARBON	24.24	1900	J
17.	UNKNOWN ALCOHOL	24.30	7800	J
18.	UNKNOWN HYDROCARBON	25.37	3800	J
19.	UNKNOWN HYDROCARBON	26.64	1900	J
20.	UNKNOWN COMPOUND	27.06	1600	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA346

me: SWL - TULSA Contract: 68-01-7393

b Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: 19244

nple wt/vol: 1.1 (g/mL) G Lab File ID: F0495

evel: (low/med) MED Date Received: 06/01/88

Moisture: not dec. 18 dec. ____ Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

PC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	24000	U
111-44-4	bis(2-Chloroethyl)Ether	24000	U
95-57-8	2-Chlorophenol	24000	U
541-73-1	1,3-Dichlorobenzene	24000	U
106-46-7	1,4-Dichlorobenzene	24000	U
100-51-6	Benzyl Alcohol	24000	U
95-50-1	1,2-Dichlorobenzene	24000	U
95-48-7	2-Methylphenol	24000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	24000	U
106-44-5	4-Methylphenol	24000	U
621-64-7	N-Nitroso-Di-n-Propylamine	24000	U
67-72-1	Hexachloroethane	24000	U
98-95-3	Nitrobenzene	24000	U
78-59-1	Isophorone	24000	U
88-75-5	2-Nitrophenol	24000	U
105-67-9	2,4-Dimethylphenol	24000	U
65-85-0	Benzoic Acid	120000	U
111-91-1	bis(2-Chloroethoxy)Methane	24000	U
120-83-2	2,4-Dichlorophenol	24000	U
120-82-1	1,2,4-Trichlorobenzene	24000	U
91-20-3	Naphthalene	24000	U
106-47-8	4-Chloroaniline	24000	U
87-68-3	Hexachlorobutadiene	24000	U
59-50-7	4-Chloro-3-Methylphenol	24000	U
91-57-6	2-Methylnaphthalene	24000	U
77-47-4	Hexachlorocyclopentadiene	24000	U
88-06-2	2,4,6-Trichlorophenol	24000	U
95-95-4	2,4,5-Trichlorophenol	120000	U
91-58-7	2-Chloronaphthalene	24000	U
88-74-4	2-Nitroaniline	120000	U
131-11-3	Dimethyl Phthalate	24000	U
208-96-8	Acenaphthylene	24000	U
606-20-2	2,6-Dinitrotoluene	24000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA346

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19244

Sample wt/vol: 1.1 (g/mL) G Lab File ID: F0495

Level: (low/med) MED Date Received: 06/01/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	120000	U
83-32-9	Acenaphthene	24000	U
51-28-5	2,4-Dinitrophenol	120000	U
100-02-7	4-Nitrophenol	120000	U
132-64-9	Dibenzofuran	24000	U
121-14-2	2,4-Dinitrotoluene	24000	U
84-66-2	Diethylphthalate	24000	U
7005-72-3	4-Chlorophenyl-phenylether	24000	U
86-73-7	Fluorene	24000	U
100-10-6	4-Nitroaniline	120000	U
534-52-1	4,6-Dinitro-2-Methylphenol	120000	U
86-30-6	N-Nitrosodiphenylamine (1)	24000	U
101-55-3	4-Bromophenyl-phenylether	24000	U
118-74-1	Hexachlorobenzene	24000	U
87-86-5	Pentachlorophenol	120000	U
85-01-8	Phenanthrene	24000	U
120-12-7	Anthracene	24000	U
84-74-2	Di-n-Butylphthalate	24000	U
206-44-0	Fluoranthene	24000	U
129-00-0	Pyrene	24000	U
85-68-7	Butylbenzylphthalate	24000	U
91-94-1	3,3'-Dichlorobenzidine	48000	U
56-55-3	Benzo(a)Anthracene	24000	U
218-01-9	Chrysene	24000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	24000	U
117-84-0	Di-n-Octyl Phthalate	24000	U
205-99-2	Benzo(b)Fluoranthene	24000	U
207-08-9	Benzo(k)Fluoranthene	24000	U
50-32-8	Benzo(a)Pyrene	24000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	24000	U
53-70-3	Dibenz(a,h)Anthracene	24000	U
191-24-2	Benzo(g,h,i)Perylene	24000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA346

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19244

Sample wt/vol: 1.1 (g/mL) G Lab File ID: F0495

Level: (low/med) MED Date Received: 06/01/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 1.1

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	11.39	7300	J
2.	UNKNOWN COMPOUND	16.02	12000	J
3.	UNKNOWN COMPOUND	17.25	12000	J
4.	UNKNOWN ACID	17.57	9800	J
5. 10544500	SULFUR, MOL. (S8) (8CIPCI)	18.17	63000	J
6.	UNKNOWN ACID	19.04	17000	J
7.	UNKNOWN ACID	19.20	12000	J
8.	UNKNOWN HYDROCARBON	19.47	73000	J
9.	UNKNOWN HYDROCARBON	19.89	12000	J
10.	UNKNOWN HYDROCARBON	20.97	27000	J
11.	UNKNOWN COMPOUND	21.19	9800	J
12.	UNKNOWN COMPOUND	21.87	4900	J
13.	UNKNOWN COMPOUND	22.22	7300	J
14.	UNKNOWN COMPOUND	25.39	9800	J
15.	UNKNOWN COMPOUND	26.82	20000	J
16.	UNKNOWN COMPOUND	28.56	170000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA347

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19245

Sample wt/vol: 30.4 (g/mL) G Lab File ID: F0500

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 23 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	450	U
111-44-4	bis(2-Chloroethyl)Ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
100-51-6	Benzyl Alcohol	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	2-Methylphenol	450	U
39638-32-9	bis(2-Chloroisopropyl)Ether	450	U
106-44-5	4-Methylphenol	450	U
621-64-7	N-Nitroso-Di-n-Propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
65-85-0	Benzoic Acid	2200	U
111-91-1	bis(2-Chloroethoxy)Methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	450	U
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	450	U
59-50-7	4-Chloro-3-Methylphenol	450	U
91-57-6	2-Methylnaphthalene	450	U
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethyl Phthalate	450	U
208-96-8	Acenaphthylene	450	U
606-20-2	2,6-Dinitrotoluene	450	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA347

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19245

Sample wt/vol: 30.4 (g/mL) G Lab File ID: F0500

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 23 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	450	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenyl-phenylether	450	U
86-73-7	Fluorene	450	U
100-10-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	450	U
101-55-3	4-Bromophenyl-phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	450	U
120-12-7	Anthracene	450	U
84-74-2	Di-n-Butylphthalate	450	U
206-44-0	Fluoranthene	110	J
129-00-0	Pyrene	76	J
85-68-7	Butylbenzylphthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	890	U
56-55-3	Benzo(a)Anthracene	450	U
218-01-9	Chrysene	450	U
117-81-7	bis(2-Ethylhexyl)Phthalate	450	U
117-84-0	Di-n-Octyl Phthalate	33	J
205-99-2	Benzo(b)Fluoranthene	450	U
207-08-9	Benzo(k)Fluoranthene	450	U
50-32-8	Benzo(a)Pyrene	450	U
193-39-5	Indeno(1,2,3-cd)Pyrene	450	U
53-70-3	Dibenz(a,h)Anthracene	450	U
191-24-2	Benzo(g,h,i)Perylene	450	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA347

ıme: SWL - TULSA Contract: 68-01-7393

b Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: 19245

mple wt/vol: 30.4 (g/mL) G Lab File ID: F0500

Level: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 23 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

PC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	2.88	1900	J
2.	UNKNOWN COMPOUND	17.44	720	J
3.	UNKNOWN COMPOUND	17.52	630	J
	UNKNOWN ACID	17.62	1100	J
	UNKNOWN HYDROCARBON	21.75	580	J
6.	UNKNOWN ACID	22.12	580	J
7.	UNKNOWN HYDROCARBON	23.12	2300	J
8.	UNKNOWN COMPOUND	23.42	1600	J
9.	UNKNOWN HYDROCARBON	24.20	3200	J
10.	UNKNOWN HYDROCARBON	24.34	4500	J
11.	UNKNOWN HYDROCARBON	25.36	3200	J
12.	UNKNOWN PNA	26.37	8500	J
13.	UNKNOWN PNA	26.56	1900	J
14.	UNKNOWN HYDROCARBON	26.64	1800	J
15.	UNKNOWN PNA	26.87	2100	J
16.	UNKNOWN COMPOUND	27.04	4500	J
17.	UNKNOWN PNA	27.37	7600	J
18.	UNKNOWN COMPOUND	28.09	4400	J
19.	UNKNOWN COMPOUND	28.66	2200	J
20.	UNKNOWN COMPOUND	28.89	4100	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA348

me: SWL - TULSA Contract: 68-01-7[illegible]

) Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

latrix: (soil/water) SOIL Lab Sample ID: 19246

mple wt/vol: 30.1 (g/mL) G Lab File ID: F0514

vel: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 19 dec. ____ Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl Alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
39638-32-9	bis(2-Chloroisopropyl)Ether	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-Di-n-Propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic Acid	2100	U
111-91-1	bis(2-Chloroethoxy)Methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethyl Phthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA348

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19246

Sample wt/vol: 30.1 (g/mL) G Lab File ID: F0514

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 19 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-10-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-Methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	140	J
120-12-7	Anthracene	430	U
84-74-2	Di-n-Butylphthalate	430	U
206-44-0	Fluoranthene	360	J
129-00-0	Pyrene	240	J
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	860	U
56-55-3	Benzo(a)Anthracene	130	J
218-01-9	Chrysene	180	J
117-81-7	bis(2-Ethylhexyl)Phthalate	430	U
117-84-0	Di-n-Octyl Phthalate	430	U
205-99-2	Benzo(b)Fluoranthene	170	J
207-08-9	Benzo(k)Fluoranthene	120	J
50-32-8	Benzo(a)Pyrene	130	J
193-39-5	Indeno(1,2,3-cd)Pyrene	91	J
53-70-3	Dibenz(a,h)Anthracene	430	U
191-24-2	Benzo(g,h,i)Perylene	97	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

EAA348

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19246

Sample wt/vol: 30.1 (g/mL) G Lab File ID: F0514

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 19 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.1

mber TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	2.30	2200	J
2.	UNKNOWN COMPOUND	4.82	690	J
3.	UNKNOWN COMPOUND	12.52	560	J
4.	UNKNOWN ACID	17.27	740	J
5.	UNKNOWN HYDROCARBON	19.94	390	J
6.	UNKNOWN HYDROCARBON	21.34	1400	J
7.	UNKNOWN PHTHALATE	21.44	430	J
8.	UNKNOWN HYDROCARBON	22.64	2200	J
9.	UNKNOWN COMPOUND	22.70	2600	J
10.	UNKNOWN HYDROCARBON	23.87	3600	J
11.	UNKNOWN COMPOUND	23.94	1100	J
12.	UNKNOWN COMPOUND	23.97	1700	J
13.	UNKNOWN COMPOUND	25.01	3000	J
14.	UNKNOWN COMPOUND	25.12	1300	J
15.	UNKNOWN COMPOUND	26.34	1200	J
16.	UNKNOWN COMPOUND	26.44	1100	J
17.	UNKNOWN COMPOUND	28.09	1100	J

-trix: (soil/water) SOIL

Lab Sample ID: 1[illegible]

mple wt/vol: 1.2 (g/mL) G

Lab File ID: F0518

vol: (low/med) MED

Date Received: 06/01/88

sture: not dec. 11 dec. ____

Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.9

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	19000	U
111-44-4	bis(2-Chloroethyl)Ether	19000	U
95-57-8	2-Chlorophenol	19000	U
541-73-1	1,3-Dichlorobenzene	19000	U
106-46-7	1,4-Dichlorobenzene	19000	U
100-51-6	Benzyl Alcohol	19000	U
95-50-1	1,2-Dichlorobenzene	19000	U
95-48-7	2-Methylphenol	19000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	19000	U
106-44-5	4-Methylphenol	19000	U
621-64-7	N-Nitroso-Di-n-Propylamine	19000	U
67-72-1	Hexachloroethane	19000	U
98-95-3	Nitrobenzene	19000	U
78-59-1	Isophorone	19000	U
88-75-5	2-Nitrophenol	19000	U
105-67-9	2,4-Dimethylphenol	19000	U
65-85-0	Benzoic Acid	94000	U
111-91-1	bis(2-Chloroethoxy)Methane	19000	U
120-83-2	2,4-Dichlorophenol	19000	U
120-82-1	1,2,4-Trichlorobenzene	19000	U
91-20-3	Naphthalene	19000	U
106-47-8	4-Chloroaniline	19000	U
87-68-3	Hexachlorobutadiene	19000	U
59-50-7	4-Chloro-3-Methylphenol	19000	U
91-57-6	2-Methylnaphthalene	19000	U
77-47-4	Hexachlorocyclopentadiene	19000	U
88-06-2	2,4,6-Trichlorophenol	19000	U
95-95-4	2,4,5-Trichlorophenol	94000	U
91-58-7	2-Chloronaphthalene	19000	U
88-74-4	2-Nitroaniline	94000	U
131-11-3	Dimethyl Phthalate	19000	U
208-96-8	Acenaphthylene	19000	U
606-20-2	2,6-Dinitrotoluene	19000	U

FORM I SV-1 1/87 Rev.

552

(1) - Cannot be separated from Diphenylamine

553

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA349

Name: SWL - TULSA Contract: 68-01-7383

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19347

ample wt/vol: 1.2 (g/mL) G Lab File ID: F0518

Level: (low/med) MED Date Received: 06/01/88

. Moisture: not dec. 11 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

ber TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN PNA	12.97	1600	J
2.	UNKNOWN HYDROCARBON	14.40	3900	J
3.	UNKNOWN HYDROCARBON	14.90	3900	J
4.	UNKNOWN HYDROCARBON	14.97	7800	J
5.	UNKNOWN HYDROCARBON	15.84	3900	J
6.	UNKNOWN HYDROCARBON	15.92	5900	J
7.	UNKNOWN HYDROCARBON	16.72	3900	J
8.	UNKNOWN HYDROCARBON	17.57	3900	J
9.	UNKNOWN COMPOUND	23.84	12000	J
10.	UNKNOWN COMPOUND	23.99	12000	J
11.	UNKNOWN COMPOUND	24.39	9800	J
12.	UNKNOWN COMPOUND	24.79	9800	J
13.	UNKNOWN COMPOUND	25.27	14000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA350DL

Name: SWL - TULSA Contract: 68-01-7393

J Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19248

Sample wt/vol: 30.8 (g/mL) G Lab File ID: F0536

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 44 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/14/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 5.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3000	U
111-44-4	bis(2-Chloroethyl)Ether	3000	U
95-57-8	2-Chlorophenol	3000	U
541-73-1	1,3-Dichlorobenzene	3000	U
106-46-7	1,4-Dichlorobenzene	3000	U
100-51-6	Benzyl Alcohol	3000	U
95-50-1	1,2-Dichlorobenzene	3000	U
95-48-7	2-Methylphenol	3000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	3000	U
106-44-5	4-Methylphenol	3000	U
621-64-7	N-Nitroso-Di-n-Propylamine	3000	U
67-72-1	Hexachloroethane	3000	U
98-95-3	Nitrobenzene	3000	U
78-59-1	Isophorone	3000	U
88-75-5	2-Nitrophenol	3000	U
105-67-9	2,4-Dimethylphenol	3000	U
65-85-0	Benzoic Acid	15000	U
111-91-1	bis(2-Chloroethoxy)Methane	3000	U
120-83-2	2,4-Dichlorophenol	3000	U
120-82-1	1,2,4-Trichlorobenzene	3000	U
91-20-3	Naphthalene	3000	U
106-47-8	4-Chloroaniline	3000	U
87-68-3	Hexachlorobutadiene	3000	U
59-50-7	4-Chloro-3-Methylphenol	3000	U
91-57-6	2-Methylnaphthalene	3000	U
77-47-4	Hexachlorocyclopentadiene	3000	U
88-06-2	2,4,6-Trichlorophenol	3000	U
95-95-4	2,4,5-Trichlorophenol	15000	U
91-58-7	2-Chloronaphthalene	3000	U
88-74-4	2-Nitroaniline	15000	U
131-11-3	Dimethyl Phthalate	3000	U
208-96-8	Acenaphthylene	3000	U
606-20-2	2,6-Dinitrotoluene	3000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA350DL

L ame: SWL - TULSA Contract: 68-01-7393

b Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

trix: (soil/water) SOIL Lab Sample ID: 19248

mple wt/vol: 30.8 (g/mL) G Lab File ID: F0536

evel: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 44 dec. ____ Date Extracted: 06/03/88

E traction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/14/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 5.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	15000	U
83-32-9	Acenaphthene	160	DJ
51-28-5	2,4-Dinitrophenol	15000	U
100-02-7	4-Nitrophenol	15000	U
132-64-9	Dibenzofuran	3000	U
121-14-2	2,4-Dinitrotoluene	3000	U
84-66-2	Diethylphthalate	3000	U
7005-72-3	4-Chlorophenyl-phenylether	3000	U
86-73-7	Fluorene	640	DJ
100-10-6	4-Nitroaniline	15000	U
534-52-1	4,6-Dinitro-2-Methylphenol	15000	U
86-30-6	N-Nitrosodiphenylamine (1)	3000	U
101-55-3	4-Bromophenyl-phenylether	3000	U
118-74-1	Hexachlorobenzene	3000	U
87-86-5	Pentachlorophenol	15000	U
85-01-8	Phenanthrene	6000	D
120-12-7	Anthracene	1900	DJ
84-74-2	Di-n-Butylphthalate	100	DJ
206-44-0	Fluoranthene	12000	D
129-00-0	Pyrene	9200	D
85-68-7	Butylbenzylphthalate	3000	U
91-94-1	3,3'-Dichlorobenzidine	6000	U
56-55-3	Benzo(a)Anthracene	4400	D
218-01-9	Chrysene	6200	D
117-81-7	bis(2-Ethylhexyl)Phthalate	1600	DJ
117-84-0	Di-n-Octyl Phthalate	3000	U
205-99-2	Benzo(b)Fluoranthene	5600	D
207-08-9	Benzo(k)Fluoranthene	3500	D
50-32-8	Benzo(a)Pyrene	4600	D
193-39-5	Indeno(1,2,3-cd)Pyrene	2400	DJ
53-70-3	Dibenz(a,h)Anthracene	930	DJ
191-24-2	Benzo(g,h,i)Perylene	3000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA350DL

Name: SWL - TULSA Contract: 68-01-7293

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19248

Sample wt/vol: 30.8 (g/mL) G Lab File ID: F0536

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 44 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/14/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 5.3

Number TICs found: 15

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	1.98	73000	J
2.	UNKNOWN COMPOUND	13.69	1200	J
3.	UNKNOWN HYDROCARBON	15.74	1500	J
[illegible]	UNKNOWN HYDROCARBON	15.79	1800	J
[illegible]	UNKNOWN HYDROCARBON	17.57	1200	J
6.	UNKNOWN PNA	17.82	1800	J
7.	UNKNOWN HYDROCARBON	18.42	1200	J
8.	UNKNOWN COMPOUND	18.84	5200	J
9.	UNKNOWN HYDROCARBON	20.67	1500	J
10.	UNKNOWN COMPOUND	22.29	1200	J
11.	UNKNOWN HYDROCARBON	23.54	4600	J
12.	UNKNOWN PNA	24.39	7600	J
13.	UNKNOWN HYDROCARBON	25.97	17000	J
14.	UNKNOWN COMPOUND	29.29	920	J
15.	UNKNOWN COMPOUND	30.31	1200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA351

me: SWL - TULSA Contract: 68-01-7233

.) Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

'.trix: (soil/water) SOIL Lab Sample ID: 19249

: mple wt/vol: 30.0 (g/mL) G Lab File ID: F0516

.evel: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 40 dec. ____ Date Extracted: 06/03/88

E traction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

(PC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	580	U
111-44-4	bis(2-Chloroethyl)Ether	580	U
95-57-8	2-Chlorophenol	580	U
541-73-1	1,3-Dichlorobenzene	580	U
106-46-7	1,4-Dichlorobenzene	580	U
100-51-6	Benzyl Alcohol	580	U
95-50-1	1,2-Dichlorobenzene	580	U
95-48-7	2-Methylphenol	580	U
39638-32-9	bis(2-Chloroisopropyl)Ether	580	U
106-44-5	4-Methylphenol	580	U
621-64-7	N-Nitroso-Di-n-Propylamine	580	U
67-72-1	Hexachloroethane	580	U
98-95-3	Nitrobenzene	580	U
78-59-1	Isophorone	580	U
88-75-5	2-Nitrophenol	580	U
105-67-9	2,4-Dimethylphenol	580	U
65-85-0	Benzoic Acid	2800	U
111-91-1	bis(2-Chloroethoxy)Methane	580	U
120-83-2	2,4-Dichlorophenol	580	U
120-82-1	1,2,4-Trichlorobenzene	580	U
91-20-3	Naphthalene	580	U
106-47-8	4-Chloroaniline	580	U
87-68-3	Hexachlorobutadiene	580	U
59-50-7	4-Chloro-3-Methylphenol	580	U
91-57-6	2-Methylnaphthalene	580	U
77-47-4	Hexachlorocyclopentadiene	580	U
88-06-2	2,4,6-Trichlorophenol	580	U
95-95-4	2,4,5-Trichlorophenol	2800	U
91-58-7	2-Chloronaphthalene	580	U
88-74-4	2-Nitroaniline	2800	U
131-11-3	Dimethyl Phthalate	580	U
208-96-8	Acenaphthylene	580	U
606-20-2	2,6-Dinitrotoluene	580	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA351

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0516

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2800	U
83-32-9	Acenaphthene	240	J
51-28-5	2,4-Dinitrophenol	2800	U
100-02-7	4-Nitrophenol	2800	U
132-64-9	Dibenzofuran	120	J
121-14-2	2,4-Dinitrotoluene	580	U
84-66-2	Diethylphthalate	580	U
7005-72-3	4-Chlorophenyl-phenylether	580	U
86-73-7	Fluorene	290	J
100-10-6	4-Nitroaniline	2800	U
534-52-1	4,6-Dinitro-2-Methylphenol	2800	U
86-30-6	N-Nitrosodiphenylamine (1)	580	U
101-55-3	4-Bromophenyl-phenylether	580	U
118-74-1	Hexachlorobenzene	580	U
87-86-5	Pentachlorophenol	2800	U
85-01-8	Phenanthrene	2300	
120-12-7	Anthracene	500	J
84-74-2	Di-n-Butylphthalate	580	U
206-44-0	Fluoranthene	4200	
129-00-0	Pyrene	4100	
85-68-7	Butylbenzylphthalate	250	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
56-55-3	Benzo(a)Anthracene	1800	
218-01-9	Chrysene	2500	
117-81-7	bis(2-Ethylhexyl)Phthalate	870	
117-84-0	Di-n-Octyl Phthalate	580	U
205-99-2	Benzo(b)Fluoranthene	2500	
207-08-9	Benzo(k)Fluoranthene	1600	
50-32-8	Benzo(a)Pyrene	2000	
193-39-5	Indeno(1,2,3-cd)Pyrene	1300	
53-70-3	Dibenz(a,h)Anthracene	300	J
191-24-2	Benzo(g,h,i)Perylene	1200	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA351

Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0516

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.0

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	2.22	2300	J
2.	UNKNOWN HYDROCARBON	2.22	2300	J
3.	UNKNOWN COMPOUND	11.59	2000	J
.	UNKNOWN COMPOUND	11.82	640	J
.	UNKNOWN COMPOUND	12.70	1600	J
6.	UNKNOWN HYDROCARBON	12.89	700	J
7.	UNKNOWN HYDROCARBON	14.99	700	J
8.	UNKNOWN COMPOUND	15.82	590	J
9.	UNKNOWN HYDROCARBON	16.77	590	J
10.	UNKNOWN COMPOUND	18.30	820	J
11.	UNKNOWN PNA	18.59	410	J
12.	UNKNOWN ACID	18.94	290	J
3.	UNKNOWN HYDROCARBON	19.97	410	J
14.	UNKNOWN HYDROCARBON	23.90	3700	J
15.	UNKNOWN ALCOHOL	24.00	1800	J
16.	UNKNOWN HYDROCARBON	25.04	2100	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA352

ame: SWL - TULSA Contract: 68-01-7393

'ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: 19250

ample wt/vol: 30.0 (g/mL) G Lab File ID: F0517

Level: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 24 dec. ____ Date Extracted: 06/03/88

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

PC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
100-51-6	Benzyl Alcohol	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
39638-32-9	bis(2-Chloroisopropyl)Ether	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
65-85-0	Benzoic Acid	2200	U
111-91-1	bis(2-Chloroethoxy)Methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethyl Phthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA352

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0517

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	460	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
86-73-7	Fluorene	460	U
100-10-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	88	J
120-12-7	Anthracene	460	U
84-74-2	Di-n-Butylphthalate	460	U
206-44-0	Fluoranthene	250	J
129-00-0	Pyrene	180	J
85-68-7	Butylbenzylphthalate	110	J
91-94-1	3,3'-Dichlorobenzidine	910	U
56-55-3	Benzo(a)Anthracene	78	J
218-01-9	Chrysene	130	J
117-81-7	bis(2-Ethylhexyl)Phthalate	460	U
117-84-0	Di-n-Octyl Phthalate	100	J
205-99-2	Benzo(b)Fluoranthene	460	U
207-08-9	Benzo(k)Fluoranthene	460	U
50-32-8	Benzo(a)Pyrene	97	J
193-39-5	Indeno(1,2,3-cd)Pyrene	67	J
53-70-3	Dibenz(a,h)Anthracene	460	U
191-24-2	Benzo(g,h,i)Perylene	460	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA352

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0517

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	2.25	1900	J
2.	UNKNOWN ACID	16.09	510	J
3.	UNKNOWN KETONE	16.24	510	J
4.	UNKNOWN ACID	17.29	1800	J
5.	UNKNOWN HYDROCARBON	18.74	1100	J
6.	UNKNOWN ACID	18.89	690	J
7.	UNKNOWN HYDROCARBON	19.92	600	J
8.	UNKNOWN HYDROCARBON	21.34	2400	J
9.	UNKNOWN ACID	21.79	1400	J
10.	UNKNOWN ACID	22.44	2600	J
11.	UNKNOWN HYDROCARBON	22.64	4600	J
12.	UNKNOWN ALDEHYDE	23.49	4100	J
13.	UNKNOWN ALCOHOL	23.90	31000	J
14.	UNKNOWN COMPOUND	24.29	1700	J
15.	UNKNOWN HYDROCARBON	25.01	6000	J
16.	UNKNOWN COMPOUND	25.12	3200	J
17.	UNKNOWN HYDROCARBON	26.17	1800	J
18.	UNKNOWN COMPOUND	26.34	1800	J
19.	UNKNOWN COMPOUND	26.44	1900	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA353

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWDK Case No.: 9726 SAS No.: 39058 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19258

Sample wt/vol: 1030 (g/mL) ML Lab File ID: 19258

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 5.1 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L

CAS NO.	COMPOUND	Q
108-95-2	Phenol	10 U
111-44-4	bis(2-Chloroethyl)Ether	10 U
95-57-8	2-Chlorophenol	10 U
541-73-1	1,3-Dichlorobenzene	10 U
106-46-7	1,4-Dichlorobenzene	10 U
100-51-6	Benzyl Alcohol	10 U
95-50-1	1,2-Dichlorobenzene	10 U
95-48-7	2-Methylphenol	10 U
39638-32-9	bis(2-Chloroisopropyl)Ether	10 U
106-44-5	4-Methylphenol	10 U
621-64-7	N-Nitroso-Di-n-Propylamine	10 U
67-72-1	Hexachloroethane	10 U
98-95-3	Nitrobenzene	10 U
78-59-1	Isophorone	10 U
88-75-5	2-Nitrophenol	10 U
105-67-9	2,4-Dimethylphenol	10 U
65-85-0	Benzoic Acid	49 U
111-91-1	bis(2-Chloroethoxy)Methane	10 U
120-83-2	2,4-Dichlorophenol	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U
91-20-3	Naphthalene	10 U
106-47-8	4-Chloroaniline	10 U
87-68-3	Hexachlorobutadiene	10 U
59-50-7	4-Chloro-3-Methylphenol	10 U
91-57-6	2-Methylnaphthalene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U
88-06-2	2,4,6-Trichlorophenol	10 U
95-95-4	2,4,5-Trichlorophenol	49 U
91-58-7	2-Chloronaphthalene	10 U
88-74-4	2-Nitroaniline	49 U
131-11-3	Dimethyl Phthalate	10 U
208-96-8	Acenaphthylene	10 U
606-20-2	2,6-Dinitrotoluene	10 U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA353

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19258

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 19258

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	49	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	49	U
100-02-7	4-Nitrophenol	49	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	49	U
534-52-1	4,6-Dinitro-2-Methylphenol	49	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	49	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA353

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 38058 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19258

Sample wt/vol: 1030 (g/mL) mL Lab File ID: 19258

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA354

Lab Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19259

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19259

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9	U
111-44-4	bis(2-Chloroethyl)Ether	9	U
95-57-8	2-Chlorophenol	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
100-51-6	Benzyl Alcohol	9	U
95-50-1	1,2-Dichlorobenzene	9	U
95-48-7	2-Methylphenol	9	U
39638-32-9	bis(2-Chloroisopropyl)Ether	9	U
106-44-5	4-Methylphenol	9	U
621-64-7	N-Nitroso-Di-n-Propylamine	9	U
67-72-1	Hexachloroethane	9	U
98-95-3	Nitrobenzene	9	U
78-59-1	Isophorone	9	U
88-75-5	2-Nitrophenol	9	U
105-67-9	2,4-Dimethylphenol	9	U
65-85-0	Benzoic Acid	44	U
111-91-1	bis(2-Chloroethoxy)Methane	9	U
120-83-2	2,4-Dichlorophenol	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
91-20-3	Naphthalene	9	U
106-47-8	4-Chloroaniline	9	U
87-68-3	Hexachlorobutadiene	9	U
59-50-7	4-Chloro-3-Methylphenol	9	U
91-57-6	2-Methylnaphthalene	9	U
77-47-4	Hexachlorocyclopentadiene	9	U
88-06-2	2,4,6-Trichlorophenol	9	U
95-95-4	2,4,5-Trichlorophenol	44	U
91-58-7	2-Chloronaphthalene	9	U
88-74-4	2-Nitroaniline	44	U
131-11-3	Dimethyl Phthalate	9	U
208-96-8	Acenaphthylene	9	U
606-20-2	2,6-Dinitrotoluene	9	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA354

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19259

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19259

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
99-09-2	3-Nitroaniline	44	U
83-32-9	Acenaphthene	9	U
51-28-5	2,4-Dinitrophenol	44	U
100-02-7	4-Nitrophenol	44	U
132-64-9	Dibenzofuran	9	U
121-14-2	2,4-Dinitrotoluene	9	U
84-66-2	Diethylphthalate	9	U
7005-72-3	4-Chlorophenyl-phenylether	9	U
86-73-7	Fluorene	9	U
100-10-6	4-Nitroaniline	44	U
534-52-1	4,6-Dinitro-2-Methylphenol	44	U
86-30-6	N-Nitrosodiphenylamine (1)	9	U
101-55-3	4-Bromophenyl-phenylether	9	U
118-74-1	Hexachlorobenzene	9	U
87-86-5	Pentachlorophenol	44	U
85-01-8	Phenanthrene	9	U
120-12-7	Anthracene	9	U
84-74-2	Di-n-Butylphthalate	9	U
206-44-0	Fluoranthene	9	U
129-00-0	Pyrene	9	U
85-68-7	Butylbenzylphthalate	9	U
91-94-1	3,3'-Dichlorobenzidine	18	U
56-55-3	Benzo(a)Anthracene	9	U
218-01-9	Chrysene	9	U
117-81-7	bis(2-Ethylhexyl)Phthalate	9	U
117-84-0	Di-n-Octyl Phthalate	9	U
205-99-2	Benzo(b)Fluoranthene	9	U
207-08-9	Benzo(k)Fluoranthene	9	U
50-32-8	Benzo(a)Pyrene	9	U
193-39-5	Indeno(1,2,3-cd)Pyrene	9	U
53-70-3	Dibenz(a,h)Anthracene	9	U
191-24-2	Benzo(g,h,i)Perylene	9	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA334

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19239

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19239

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	5.12	8	J

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA355

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19260

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19260

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	9	U
111-44-4	bis(2-Chloroethyl)Ether	9	U
95-57-8	2-Chlorophenol	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
100-51-6	Benzyl Alcohol	9	U
95-50-1	1,2-Dichlorobenzene	9	U
95-48-7	2-Methylphenol	9	U
39638-32-9	bis(2-Chloroisopropyl)Ether	9	U
106-44-5	4-Methylphenol	9	U
621-64-7	N-Nitroso-Di-n-Propylamine	9	U
67-72-1	Hexachloroethane	9	U
98-95-3	Nitrobenzene	9	U
78-59-1	Isophorone	9	U
88-75-5	2-Nitrophenol	9	U
105-67-9	2,4-Dimethylphenol	9	U
65-85-0	Benzoic Acid	44	U
111-91-1	bis(2-Chloroethoxy)Methane	9	U
120-83-2	2,4-Dichlorophenol	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
91-20-3	Naphthalene	9	U
106-47-8	4-Chloroaniline	9	U
87-68-3	Hexachlorobutadiene	9	U
59-50-7	4-Chloro-3-Methylphenol	9	U
91-57-6	2-Methylnaphthalene	9	U
77-47-4	Hexachlorocyclopentadiene	9	U
88-06-2	2,4,6-Trichlorophenol	9	U
95-95-4	2,4,5-Trichlorophenol	44	U
91-58-7	2-Chloronaphthalene	9	U
88-74-4	2-Nitroaniline	44	U
131-11-3	Dimethyl Phthalate	9	U
208-96-8	Acenaphthylene	9	U
606-20-2	2,6-Dinitrotoluene	9	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA355

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19260

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19260

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	44	U
83-32-9	Acenaphthene	9	U
51-28-5	2,4-Dinitrophenol	44	U
100-02-7	4-Nitrophenol	44	U
132-64-9	Dibenzofuran	9	U
121-14-2	2,4-Dinitrotoluene	9	U
84-66-2	Diethylphthalate	9	U
7005-72-3	4-Chlorophenyl-phenylether	9	U
86-73-7	Fluorene	9	U
100-10-6	4-Nitroaniline	44	U
534-52-1	4,6-Dinitro-2-Methylphenol	44	U
86-30-6	N-Nitrosodiphenylamine (1)	9	U
101-55-3	4-Bromophenyl-phenylether	9	U
118-74-1	Hexachlorobenzene	9	U
87-86-5	Pentachlorophenol	44	U
85-01-8	Phenanthrene	9	U
120-12-7	Anthracene	9	U
84-74-2	Di-n-Butylphthalate	9	U
206-44-0	Fluoranthene	9	U
129-00-0	Pyrene	9	U
85-68-7	Butylbenzylphthalate	9	U
91-94-1	3,3'-Dichlorobenzidine	18	U
56-55-3	Benzo(a)Anthracene	9	U
218-01-9	Chrysene	9	U
117-81-7	bis(2-Ethylhexyl)Phthalate	9	U
117-84-0	Di-n-Octyl Phthalate	9	U
205-99-2	Benzo(b)Fluoranthene	9	U
207-08-9	Benzo(k)Fluoranthene	9	U
50-32-8	Benzo(a)Pyrene	9	U
193-39-5	Indeno(1,2,3-cd)Pyrene	9	U
53-70-3	Dibenz(a,h)Anthracene	9	U
191-24-2	Benzo(g,h,i)Perylene	9	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA355

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWDK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19260

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19260

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	4.59	5	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA356

Lab Name: SWL - TULSA Contract: 68-01-7353

Lab Code: SWOK Case No.: 9726 SAS No.: 39082 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19261

Sample wt/vol: 1120 (g/mL) ML Lab File ID: 19261

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	8	U
111-44-4	bis(2-Chloroethyl)Ether	8	U
95-57-8	2-Chlorophenol	8	U
541-73-1	1,3-Dichlorobenzene	8	U
106-46-7	1,4-Dichlorobenzene	8	U
100-51-6	Benzyl Alcohol	8	U
95-50-1	1,2-Dichlorobenzene	8	U
95-48-7	2-Methylphenol	8	U
39638-32-9	bis(2-Chloroisopropyl)Ether	8	U
106-44-5	4-Methylphenol	8	U
621-64-7	N-Nitroso-Di-n-Propylamine	8	U
67-72-1	Hexachloroethane	8	U
98-95-3	Nitrobenzene	8	U
78-59-1	Isophorone	8	U
88-75-5	2-Nitrophenol	8	U
105-67-9	2,4-Dimethylphenol	8	U
65-85-0	Benzoic Acid	16	J
111-91-1	bis(2-Chloroethoxy)Methane	8	U
120-83-2	2,4-Dichlorophenol	8	U
120-82-1	1,2,4-Trichlorobenzene	8	U
91-20-3	Naphthalene	8	U
106-47-8	4-Chloroaniline	8	U
87-68-3	Hexachlorobutadiene	8	U
59-50-7	4-Chloro-3-Methylphenol	8	U
91-57-6	2-Methylnaphthalene	8	U
77-47-4	Hexachlorocyclopentadiene	8	U
88-06-2	2,4,6-Trichlorophenol	8	U
95-95-4	2,4,5-Trichlorophenol	42	U
91-58-7	2-Chloronaphthalene	8	U
88-74-4	2-Nitroaniline	42	U
131-11-3	Dimethyl Phthalate	8	U
208-96-8	Acenaphthylene	8	U
606-20-2	2,6-Dinitrotoluene	8	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA356

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19361

Sample wt/vol: 1180 (g/mL) ML Lab File ID: 19261

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
99-09-2	3-Nitroaniline	42	U
83-32-9	Acenaphthene	8	U
51-28-5	2,4-Dinitrophenol	42	U
100-02-7	4-Nitrophenol	42	U
132-64-9	Dibenzofuran	8	U
121-14-2	2,4-Dinitrotoluene	8	U
84-66-2	Diethylphthalate	8	U
7005-72-3	4-Chlorophenyl-phenylether	8	U
86-73-7	Fluorene	8	U
100-10-6	4-Nitroaniline	42	U
534-52-1	4,6-Dinitro-2-Methylphenol	42	U
86-30-6	N-Nitrosodiphenylamine (1)	8	U
101-55-3	4-Bromophenyl-phenylether	8	U
118-74-1	Hexachlorobenzene	8	U
87-86-5	Pentachlorophenol	42	U
85-01-8	Phenanthrene	8	U
120-12-7	Anthracene	8	U
84-74-2	Di-n-Butylphthalate	8	U
206-44-0	Fluoranthene	8	U
129-00-0	Pyrene	8	U
85-68-7	Butylbenzylphthalate	8	U
91-94-1	3,3'-Dichlorobenzidine	17	U
56-55-3	Benzo(a)Anthracene	8	U
218-01-9	Chrysene	8	U
117-81-7	bis(2-Ethylhexyl)Phthalate	8	U
117-84-0	Di-n-Octyl Phthalate	8	U
205-99-2	Benzo(b)Fluoranthene	8	U
207-08-9	Benzo(k)Fluoranthene	8	U
50-32-8	Benzo(a)Pyrene	8	U
193-39-5	Indeno(1,2,3-cd)Pyrene	8	U
53-70-3	Dibenz(a,h)Anthracene	8	U
191-24-2	Benzo(g,h,i)Perylene	8	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAA356

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39053 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19261

Sample wt/vol: 1150 (g/mL) ML Lab File ID: 19261

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	3.68	14	J
2.	UNKNOWN COMPOUND	5.05	11	J
3.	UNKNOWN COMPOUND	5.15	24	J
4.	UNKNOWN HYDROCARBON	6.73	86	J
5.	UNKNOWN ACID	10.30	30	J
6.	UNKNOWN COMPOUND	11.57	10	J
7.	UNKNOWN COMPOUND	14.60	3	J
8.	UNKNOWN ACID	16.47	12	J
9.	UNKNOWN HYDROCARBON	17.20	90	J
10.	UNKNOWN COMPOUND	17.27	57	J
11.	UNKNOWN COMPOUND	17.42	130	J
12.	UNKNOWN COMPOUND	18.02	15	J
13.	UNKNOWN ESTER	18.95	240	J
14.	UNKNOWN COMPOUND	20.13	36	J
15.	UNKNOWN COMPOUND	24.39	22	J
16.	UNKNOWN COMPOUND	25.27	33	J
17.	UNKNOWN ESTER	26.12	110	J
18.	UNKNOWN COMPOUND	27.06	31	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA357

Lab Name: SWL - TULSA Contract: 68-01-7395

Lab Code: SWOK Case No.: 9726 SAS No.: 39056 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19262

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19262

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
108-95-2	Phenol	9	U
111-44-4	bis(2-Chloroethyl)Ether	9	U
95-57-8	2-Chlorophenol	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
100-51-6	Benzyl Alcohol	9	U
95-50-1	1,2-Dichlorobenzene	9	U
95-48-7	2-Methylphenol	9	U
39638-32-9	bis(2-Chloroisopropyl)Ether	9	U
106-44-5	4-Methylphenol	9	U
621-64-7	N-Nitroso-Di-n-Propylamine	9	U
67-72-1	Hexachloroethane	9	U
98-95-3	Nitrobenzene	9	U
78-59-1	Isophorone	9	U
88-75-5	2-Nitrophenol	9	U
105-67-9	2,4-Dimethylphenol	9	U
65-85-0	Benzoic Acid	44	U
111-91-1	bis(2-Chloroethoxy)Methane	9	U
120-83-2	2,4-Dichlorophenol	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
91-20-3	Naphthalene	9	U
106-47-8	4-Chloroaniline	9	U
87-68-3	Hexachlorobutadiene	9	U
59-50-7	4-Chloro-3-Methylphenol	9	U
91-57-6	2-Methylnaphthalene	9	U
77-47-4	Hexachlorocyclopentadiene	9	U
88-06-2	2,4,6-Trichlorophenol	9	U
95-95-4	2,4,5-Trichlorophenol	44	U
91-58-7	2-Chloronaphthalene	9	U
88-74-4	2-Nitroaniline	44	U
131-11-3	Dimethyl Phthalate	9	U
208-96-8	Acenaphthylene	9	U
606-20-2	2,6-Dinitrotoluene	9	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA357

Lab Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9726 SAS No.: 39035 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19262

Sample wt/vol: 1130 (g/mL) ML Lab File ID: 19262

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L

CAS NO.	COMPOUND		Q
99-09-2	3-Nitroaniline	44	U
83-32-9	Acenaphthene	9	U
51-28-5	2,4-Dinitrophenol	44	U
100-02-7	4-Nitrophenol	44	U
132-64-9	Dibenzofuran	9	U
121-14-2	2,4-Dinitrotoluene	9	U
84-66-2	Diethylphthalate	9	U
7005-72-3	4-Chlorophenyl-phenylether	9	U
86-73-7	Fluorene	9	U
100-10-6	4-Nitroaniline	44	U
534-52-1	4,6-Dinitro-2-Methylphenol	44	U
86-30-6	N-Nitrosodiphenylamine (1)	9	U
101-55-3	4-Bromophenyl-phenylether	9	U
118-74-1	Hexachlorobenzene	9	U
87-86-5	Pentachlorophenol	44	U
85-01-8	Phenanthrene	9	U
120-12-7	Anthracene	9	U
84-74-2	Di-n-Butylphthalate	9	U
206-44-0	Fluoranthene	9	U
129-00-0	Pyrene	9	U
85-68-7	Butylbenzylphthalate	9	U
91-94-1	3,3'-Dichlorobenzidine	18	U
56-55-3	Benzo(a)Anthracene	9	U
218-01-9	Chrysene	9	U
117-81-7	bis(2-Ethylhexyl)Phthalate	9	U
117-84-0	Di-n-Octyl Phthalate	9	U
205-99-2	Benzo(b)Fluoranthene	9	U
207-08-9	Benzo(k)Fluoranthene	9	U
50-32-8	Benzo(a)Pyrene	9	U
193-39-5	Indeno(1,2,3-cd)Pyrene	9	U
53-70-3	Dibenz(a,h)Anthracene	9	U
191-24-2	Benzo(g,h,i)Perylene	9	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA358

Lab Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9736 SAS No.: 39058 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19263

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 19263

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	48	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA358

Lab Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWDK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19263

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 19263

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/L	Q
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-Methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE No.
EAA358

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 39055 SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19263

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 19263

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	5.58	5	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA341

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19239

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 60 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	80	U
319-85-7	beta-BHC	80	U
319-86-8	delta-BHC	80	U
58-89-9	gamma-BHC (Lindane)	80	U
76-44-8	Heptachlor	80	U
309-00-2	Aldrin	80	U
1024-57-3	Heptachlor epoxide	80	U
959-98-8	Endosulfan I	80	U
60-57-1	Dieldrin	160	U
72-55-9	4,4'-DDE	160	U
72-20-8	Endrin	160	U
33213-65-9	Endosulfan II	160	U
72-54-8	4,4'-DDD	160	U
1031-07-8	Endosulfan sulfate	160	U
50-29-3	4,4'-DDT	160	U
72-43-5	Methoxychlor	800	U
53494-70-5	Endrin ketone	160	U
5103-71-9	alpha-Chlordane	800	U
5103-74-2	gamma-Chlordane	800	U
8001-35-2	Toxaphene	1600	U
12674-11-2	Aroclor-1016	800	U
11104-28-2	Aroclor-1221	800	U
11141-16-5	Aroclor-1232	800	U
53469-21-9	Aroclor-1242	800	U
12672-29-6	Aroclor-1248	800	U
11097-69-1	Aroclor-1254	1600	U
11096-82-5	Aroclor-1260	1600	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA342

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19240

Sample wt/vol: 30.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	48	U
319-85-7	beta-BHC	48	U
319-86-8	delta-BHC	48	U
58-89-9	gamma-BHC (Lindane)	48	U
76-44-8	Heptachlor	48	U
309-00-2	Aldrin	48	U
1024-57-3	Heptachlor epoxide	48	U
959-98-8	Endosulfan I	48	U
60-57-1	Dieldrin	97	U
72-55-9	4,4'-DDE	97	U
72-20-8	Endrin	97	U
33213-65-9	Endosulfan II	97	U
72-54-8	4,4'-DDD	97	U
1031-07-8	Endosulfan sulfate	97	U
50-29-3	4,4'-DDT	97	U
72-43-5	Methoxychlor	480	U
53494-70-5	Endrin ketone	97	U
5103-71-9	alpha-Chlordane	480	U
5103-74-2	gamma-Chlordane	480	U
8001-35-2	Toxaphene	970	U
12674-11-2	Aroclor-1016	480	U
11104-28-2	Aroclor-1221	480	U
11141-16-5	Aroclor-1232	480	U
53469-21-9	Aroclor-1242	480	U
12672-29-6	Aroclor-1248	480	U
11097-69-1	Aroclor-1254	970	U
11096-82-5	Aroclor-1260	970	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA343

Lab Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19241

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 13 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	37	U
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	37	U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	37	U
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	180	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	370	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	1800	
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	370	U
11096-82-5	Aroclor-1260	370	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA344

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19242

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 28 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	110	U
319-85-7	beta-BHC	110	U
319-86-8	delta-BHC	110	U
58-89-9	gamma-BHC (Lindane)	110	U
76-44-8	Heptachlor	110	U
309-00-2	Aldrin	110	U
1024-57-3	Heptachlor epoxide	110	U
959-98-8	Endosulfan I	110	U
60-57-1	Dieldrin	220	U
72-55-9	4,4'-DDE	220	U
72-20-8	Endrin	220	U
33213-65-9	Endosulfan II	220	U
72-54-8	4,4'-DDD	220	U
1031-07-8	Endosulfan sulfate	220	U
50-29-3	4,4'-DDT	220	U
72-43-5	Methoxychlor	1100	U
53494-70-5	Endrin ketone	220	U
5103-71-9	alpha-Chlordane	1100	U
5103-74-2	gamma-Chlordane	1100	U
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	1100	U
11104-28-2	Aroclor-1221	1100	U
11141-16-5	Aroclor-1232	1100	U
53469-21-9	Aroclor-1242	1100	U
12672-29-6	Aroclor-1248	1100	U
11097-69-1	Aroclor-1254	2200	U
11096-82-5	Aroclor-1260	2200	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA345

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19243

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 17 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	39	U
72-55-9	4,4'-DDE	39	U
72-20-8	Endrin	39	U
33213-65-9	Endosulfan II	39	U
72-54-8	4,4'-DDD	39	U
1031-07-8	Endosulfan sulfate	39	U
50-29-3	4,4'-DDT	39	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	39	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	390	U
11096-82-5	Aroclor-1260	390	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA346

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19244

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 18 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	97	U
319-85-7	beta-BHC	97	U
319-86-8	delta-BHC	97	U
58-89-9	gamma-BHC (Lindane)	97	U
76-44-8	Heptachlor	97	U
309-00-2	Aldrin	97	U
1024-57-3	Heptachlor epoxide	97	U
959-98-8	Endosulfan I	97	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	970	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	970	U
5103-74-2	gamma-Chlordane	970	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	970	U
11104-28-2	Aroclor-1221	970	U
11141-16-5	Aroclor-1232	970	U
53469-21-9	Aroclor-1242	970	U
12672-29-6	Aroclor-1248	970	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA347

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19245

Sample wt/vol: 20.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 23 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
319-84-6	alpha-BHC	31	U
319-85-7	beta-BHC	31	U
319-86-8	delta-BHC	31	U
58-89-9	gamma-BHC (Lindane)	31	U
76-44-8	Heptachlor	31	U
309-00-2	Aldrin	31	U
1024-57-3	Heptachlor epoxide	31	U
959-98-8	Endosulfan I	31	U
60-57-1	Dieldrin	62	U
72-55-9	4,4'-DDE	45	J
72-20-8	Endrin	62	U
33213-65-9	Endosulfan II	62	U
72-54-8	4,4'-DDD	110	
1031-07-8	Endosulfan sulfate	62	U
50-29-3	4,4'-DDT	62	U
72-43-5	Methoxychlor	310	U
33494-70-5	Endrin ketone	62	U
5103-71-9	alpha-Chlordane	310	U
5103-74-2	gamma-Chlordane	310	U
8001-35-2	Toxaphene	620	U
12674-11-2	Aroclor-1016	310	U
11104-28-2	Aroclor-1221	310	U
11141-16-5	Aroclor-1232	310	U
53469-21-9	Aroclor-1242	310	U
12672-29-6	Aroclor-1248	310	U
11097-69-1	Aroclor-1254	620	U
11096-82-5	Aroclor-1260	620	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA348

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19246

Sample wt/vol: 30.4 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 19 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	39	U
72-55-9	4,4'-DDE	27	J
72-20-8	Endrin	39	U
33213-65-9	Endosulfan II	39	U
72-54-8	4,4'-DDD	85	
1031-07-8	Endosulfan sulfate	39	U
50-29-3	4,4'-DDT	96	
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	39	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	390	U
11096-82-5	Aroclor-1260	390	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA349

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19247

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 11 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	36	U
72-55-9	4,4'-DDE	130	
72-20-8	Endrin	36	U
33213-65-9	Endosulfan II	36	U
72-54-8	4,4'-DDD	120	
1031-07-8	Endosulfan sulfate	36	U
50-29-3	4,4'-DDT	180	
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	36	U
5103-71-9	alpha-Chlordane	180	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	360	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	360	U
11096-82-5	Aroclor-1260	360	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA350

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: 19248

Sample wt/vol: 31.5 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 06/01/88

Moisture: not dec. 44 dec. ____ Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

PC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	140	U
319-85-7	beta-BHC	140	U
319-86-8	delta-BHC	140	U
58-89-9	gamma-BHC (Lindane)	140	U
76-44-8	Heptachlor	140	U
309-00-2	Aldrin	140	U
1024-57-3	Heptachlor epoxide	140	U
959-98-8	Endosulfan I	140	U
60-57-1	Dieldrin	270	U
72-55-9	4,4'-DDE	270	J
72-20-8	Endrin	270	U
33213-65-9	Endosulfan II	270	U
72-54-8	4,4'-DDD	2800	
1031-07-8	Endosulfan sulfate	270	U
50-29-3	4,4'-DDT	270	U
72-43-5	Methoxychlor	1400	U
53494-70-5	Endrin ketone	270	U
5103-71-9	alpha-Chlordane	1400	U
5103-74-2	gamma-Chlordane	1400	U
8001-35-2	Toxaphene	2700	U
12674-11-2	Aroclor-1016	1400	U
11104-28-2	Aroclor-1221	1400	U
11141-16-5	Aroclor-1232	1400	U
53469-21-9	Aroclor-1242	1400	U
12672-29-6	Aroclor-1248	1400	U
11097-69-1	Aroclor-1254	2700	U
11096-82-5	Aroclor-1260	2700	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA351

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19249

Sample wt/vol: 30.9 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 40 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	130	U
319-85-7	beta-BHC	130	U
319-86-8	delta-BHC	130	U
58-89-9	gamma-BHC (Lindane)	130	U
76-44-8	Heptachlor	130	U
309-00-2	Aldrin	130	U
1024-57-3	Heptachlor epoxide	130	U
959-98-8	Endosulfan I	130	U
60-57-1	Dieldrin	260	U
72-55-9	4,4'-DDE	260	U
72-20-8	Endrin	260	U
33213-65-9	Endosulfan II	260	U
72-54-8	4,4'-DDD	210	J
1031-07-8	Endosulfan sulfate	260	U
50-29-3	4,4'-DDT	260	U
72-43-5	Methoxychlor	1300	U
53494-70-5	Endrin ketone	260	U
5103-71-9	alpha-Chlordane	1300	U
5103-74-2	gamma-Chlordane	1300	U
8001-35-2	Toxaphene	2600	U
12674-11-2	Aroclor-1016	1300	U
11104-28-2	Aroclor-1221	1300	U
11141-16-5	Aroclor-1232	1300	U
53469-21-9	Aroclor-1242	1300	U
12672-29-6	Aroclor-1248	1300	U
11097-69-1	Aroclor-1254	2600	U
11096-82-5	Aroclor-1260	2600	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA352

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 19250

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 06/01/88

% Moisture: not dec. 24 dec. Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/11/88

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	190	
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	39	J
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	45	
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11-2	Aroclor-1016	210	U
11104-28-2	Aroclor-1221	210	U
11141-16-5	Aroclor-1232	210	U
53469-21-9	Aroclor-1242	210	U
12672-29-6	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	420	U

CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 9726 SAS 3905E CONTRACTOR SWOK

Instrument # 7002D	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	6-1-88			6-2-88/7:55											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane					30.6	J									
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

EAA341-EAA352	EAA343-EAA346
EAA342RE	EAA349-EAA352
EAA351RE	EAA342RE
	EAA351RE

Reviewer's Initials/Date: PJC 7/6/88

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 9726 SAS 3905E CONTRACTOR SWOM

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	6-3-88			6-3-88/10:35											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone		34.2	J												
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

EAA353-EAA358	EAA345RE			
EAA345RE	EAA352RE			
EAA352RE				

Reviewer's Initials/Date: BJC 7/21/87

* These flags should be applied to the analytes on the sample data sheets.

6 of

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE# 8726 SAS 3905E CONTRACTOR SWOK

INSTRUMENT A	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	5-12-88			6-7-88/10:43											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether					27.6	J									
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol					53.0	J									
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline		91.9	J		68.8	J									
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

EAA353-EAA358	EAA353-EAA358			

PJC 7/5/88

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE# 9726 SAS 3905E CONTRACTOR SWOK

INSTRUMENT A	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	5-12-88			6-7-88 / 10:43											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenyletner															
Fluorene															
4-Nitroaniline															
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenyletner															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene					26.0	J									
Benzo(k)Fluoranthene															
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene															
Dibenz(a,h)Anthracene															
Benzo(g,h,i) Perylene															

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

PTC 7/1/88

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE# 9726 SAS 3905E CONTRACTOR SWOK

INSTRUMENT F	Init. Cal.			Cont. Cal.			~~Cont~~ Init. Cal.			~~Cont~~ Init. Cal.			Cont. Cal.		
DATE/TIME:	6-9-88			6-10-88/11:51			6-11-88			6-13-88					
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroetnyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol											51.6	J			
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene					33.2	J									
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline					34.6	J					34.9	J			
Acenaphthene															
2,4-Dinitrophenol					52.2	J					47.6	J			
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

EAA342	EAA342	EAA348	EAA350DL
EAA343DL	EAA343DL	EAA349	EAA344DL
EAA341DL	EAA341DL	EAA351	
EAA345-EAA347	EAA345-EAA347	EAA352	

PJC 7/18/89

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE# 9726 SAS 3905E CONTRACTOR SWOK

INSTRUMENT F	Init. Cal.			Cont. Cal.			Init. ~~Cont.~~ Cal.			Init. ~~Cont.~~ Cal.			Cont. Cal.		
DATE/TIME:	6-9-88			6-10-88/11:51			6-11-88			6-13-88					
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenyletner															
Fluorene															
4-Nitroaniline															
4,6-Dinitro-2-Methylphenol					39.2	J									
N-Nitrosodiphenylamine															
4-Bromophenyl-phenyletner															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate											35.1	J			
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene					26.2	J									
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene															
Dibenz(a,h)Anthracene															
Benzo(g,h,i) Perylene															

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

PTC
-/1-1-88

Case: 9726 SAS3905E

Contractor: SWOK

TENTATIVELY IDENTIFIED COMPOUNDS
WATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

Reviewer's Initials/Date: RSC 7/27/88

JUN 8 1988

SUPER FUND 5237

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

SAMPLE LOGIN DATE: 6/13/88
DUE DATE: 6/24/88

CASE NUMBER/SAS No. 9726/3905E SITE NAME Highland Park Landfill LABORATORY SWOL/Versar DATE SHIPPED 5/31/88

SUPERFUND DU NUMBER Y905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER ILD981795479 PAGE 1 OF _

ACTIVITY NUMBER C72100

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYANIDE UG/L MIN74919	NITRATE NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7362	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	EP TOXICITY METALS MG/KG	AMMONIA MG/KG MIN42925			
88FW23S23	EAA341	MEY891							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S24	EAA342	MEY892							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S25	EAA343	MEY893							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S26	EAA344	MEY894							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S27	EAA345	MEY895							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S28	EAA346	MEY896							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S29	EAA347	MEY897							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S30	EAA348	MEY898							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S31	EAA349	MEY899							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S32	EAA350	MEY900							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S33	EAA351	MEY901							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S34	EAA352	MEY902							✓	✓	✓				✓	✓	✓	✓	✓	✓					
88FW23S35	EAA353	MEY903	✓	✓	✓	✓	✓	✓	✓	✓	✓														
88FW23D35	EAA354	MEY904	✓	✓	✓	✓	✓	✓	✓	✓	✓														
88FW23S36	EAA355	MEY905	✓	✓	✓	✓	✓	✓	✓	✓	✓														
88FW23S37	EAA356	MEY906	✓	✓	✓	✓	✓	✓	✓	✓	✓														
88FW23S38	EAA357	MEY907	✓	✓	✓	✓	✓	✓	✓	✓	✓														
88FW23R05	EAA358	MEY908	✓	✓	✓	✓	✓	✓	✓	✓	✓														
									[illegible]	[illegible]	Data														

14 day TA

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9726 | SAS NO: (IF APPLICABLE) 3905-E

ORGANIC TRAFFIC REPORT
(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND—_____PROGRAM

SAMPLE DESCRIPTION
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

REGION NO: V
SAMPLING COMPANY ② FIT
SAMPLER: (NAME) Craig L. Carlson

SHIP TO: ③
Southwest Labs of Oklahoma
10926 East 55th Place
Tulsa, OK 74146
ATTN: Jack Wright

SAMPLING DATE: ④
BEGIN: 5/31/88 END: 5/31/88

DATE SHIPPED: 5/31/88 CARRIER: F ⑤
AIRBILL NO: 5016107312

DATE REC'D: 6/1/88
SDG NO: EAA 341
REC'D BY: S. Johnson
LABORATORY CONTRACT NO. 68-01-7392-1
UNIT PRICE 868.00
TRANSFER TO:
DATE REC'D:
REC'D BY:
CONTRACT NO./PRICE

Shipment (is) is not complete

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION	Ⓕ SAMPLE CONDITION ON RECEIPT	Ⓖ HIGH CO PHASE (CHECK: SOLID	WATER—MIS LIQUID	NON WATER—
EAA 341	5	L	✓	✓	✓			Soil 1	No Discrepancy			
EAA 342	5	L	✓	✓	✓			Soil 2				
EAA 343	4	L	✓	✓	✓			Soil 3				
EAA 344	4	L	✓	✓	✓			Soil 4				
EAA 345	4	L	✓	✓	✓			Soil 5				
EAA 346	4	L	✓	✓	✓			Soil 6				
EAA 347	4	L	✓	✓	✓			Soil 7				
EAA 348	4	L	✓	✓	✓			Soil 8				
EAA 349	4	L	✓	✓	✓			Soil 9				
EAA 350	4	L	✓	✓	✓			Soil 10				
EAA 351	5	L	✓	✓	✓			Soil 11				
EAA 352	4	L	✓	✓	✓			Soil 12	✓			

EPA Form 2075-7 (8-87)

002

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COP

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9726 | SAS NO: 3905-E (IF APPLICABLE)

ORGANIC TRAFFIC REPORT
(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SAMPLE DESCRIPTION (ENTER IN BOX A)
1. SURFACE WATER 4. SOIL
2. GROUND WATER 5. SEDIMENT
3. LEACHATE 6. OIL (SAS) 7. WASTE (SAS)

REGION NO: V
SAMPLING COMPANY ②: FIT
SAMPLER: (NAME) Craig L Carlsen

SHIP TO: ③
Southwest Labs of Oklahoma
10926 East 55th Place
Tulsa, Oklahoma 74146
ATTN: Jack Wright

SAMPLING DATE: ④
BEGIN: ~~5/31/88~~ 6/1/88 END: ~~5/31/88~~ 6/1/88

DATE SHIPPED: 6/1/88 CARRIER: F ⑤
AIRBILL NO: 5060107334

DATE REC'D: 6/2/88
SDG NO: EAA34
REC'D BY: S Johnson
LABORATORY CONTRACT NO.: 68-01-7393-1
UNIT PRICE: 868.00
TRANSFER TO:
DATE REC'D:
REC'D BY:
CONTRACT NO./PRICE

Shipment is is not complete

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION	Ⓕ SAMPLE CONDITION ON RECEIPT	Ⓖ HIGH CONC PHASE (CHECK): SOLID	WATER—MIS LIQUID	NON WATER—
EAA 353	1	L	✓	✓	✓		SW1	Air Bubbles in VOA vials			
EAA 354	1	L	✓	✓	✓		duplicate	↓			
EAA 355	1	L	✓	✓	✓	MSD	SW2				
EAA 356	1	L	✓	✓	✓		SW3				
EAA 357	1	L	✓	✓	✓		SW4				
EAA 358	3	L	✓	✓	✓	Blank	Blank	↓			
Final Sample in SDB											

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COP

Southwest Laboratory of Oklahoma
1700 West Albany, Suite C / Broken Arrow, Ok. 74012
918-251-2858

CASE NARRATIVE

June 15 1988

CONTRACT NO.: 68-01-7393

CASE NO.: 9726/SAS3905E

SAMPLE NO.: EAA341 thru EAA358

SDG NO.: EAA341

---

1. The SDG number for this case has six characters instead of the normal 5 character limit. The SDG number on the forms can be printed correctly with six characters, however, on the diskette, the SDG number will be truncated to five characters. The length of the SDG number as per the contract (Exhibit H) is 5 digits. The numbering system should be changed or the contract should be amended. If contract modification takes place, then the software has to be changed.

2. Surrogates were outside the QC limits for samples EAA342, EAA351 and EAA352 in the volatile fraction. The reanalysed samples also did not meet surrogate recovery criteria. All the reanalyses are billable.

3. Internal standard areas were outside the QC limits for samples EAA345, EAA352 and it's reanalysis in the volatile fraction. The reanalyses are billable.

3. In the BNA fraction, samples EAA341, EAA344 and EAA350 from the low level soil extracts had to be diluted. Samples EAA343, EAA346 and EAA349 had to be extracted as medium level samples. Sample EAA343 of the medium level extracts had to be further diluted.

4. All pesticide soil blanks, samples and spikes were cleaned through alumina.

5. Sample EAA343 showed baseline elevation despite alumina clean-up. The baseline was adjusted to match, as nearly as possible, the AR1232 standard baseline.

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

K. M. Bagawandoss, Ph. D.
Assistant Program Manager

6/15/88
Date

2A
WATER VOLATILE SURROGATE RECOVERY

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	EAA353	101	102	91		0
02	EAA354	101	93	90		0
03	EAA355	101	99	90		0
04	EAA356	102	100	91		0
05	EAA357	101	99	91		0
06	EAA358	102	99	92		0
07	EAA355MS	101	98	102		0
08	EAA355MSD	100	98	89		0
09	VBLK3	102	98	91		0

	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	EAA341	113	81	100		0
02	EAA342	120 *	89	103		1
03	EAA342RE	118 *	96	90		1
04	EAA343	111	94	89		0
05	EAA344	99	99	96		0
06	EAA345	111	89	91		0
07	EAA345RE	112	91	89		0
08	EAA346	104	96	98		0
09	EAA347	112	88	108		0
10	EAA348	112	87	104		0
11	EAA349	114	86	88		0
12	EAA350	108	95	106		0
13	EAA351	122 *	88	95		1
14	EAA351RE	120 *	86	89		1
15	EAA352	136 *	78	88		1
16	EAA352RE	133 *	76	89		1
17	EAA349MS	108	93	90		0
18	EAA349MSD	105	96	89		0
19	VBLK1	99	100	104		0
20	VBLK2	94	103	93		0
21	VBLK4	100	104	97		0

	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

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WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix Spike - EPA Sample No.: EAA355

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	0	49.6	99	61-145
Trichloroethene	50.0	0	49.6	99	71-120
Benzene	50.0	0	47.4	95	76-127
Toluene	50.0	0	47.6	95	76-125
Chlorobenzene	50.0	0	49.0	98	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.0	51.7	103	-4	14	61-145
Trichloroethene	50.0	52.3	105	-6	14	71-120
Benzene	50.0	51.8	104	-9	11	76-127
Toluene	50.0	50.6	101	-6	13	76-125
Chlorobenzene	50.0	52.3	105	-7	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix Spike - EPA Sample No.: EAA349 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	56.2	0	52.4	93	59-172
Trichloroethene	56.2	0	47.5	85	62-137
Benzene	56.2	0	56.0	100	66-142
Toluene	56.2	5.66	57.8	93	59-139
Chlorobenzene	56.2	0	53.6	95	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	56.2	56.9	101	-8	22	59-172
Trichloroethene	56.2	49.4	88	-3	24	62-137
Benzene	56.2	56.2	100	0	21	66-142
Toluene	56.2	56.9	91	2	21	59-139
Chlorobenzene	56.2	54.4	97	-2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab File ID: 8487 Lab Sample ID: VBLK1

Date Analyzed: 06/01/88 Time Analyzed: 1844

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EAA341	19239	8488	1920
02	EAA342	19240	8489	1957
03	EAA347	19245	8494	2259
04	EAA348	19246	8495	2336

COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab File ID: 8503 Lab Sample ID: VBLK2

Date Analyzed: 06/02/88 Time Analyzed: 0832

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EAA342RE	19240	8504	0909
02	EAA343	19241	8505	0946
03	EAA344	19242	8506	1028
04	EAA345	19243	8507	1138
05	EAA346	19244	8508	1215
06	EAA349	19247	8517	1746
07	EAA350	19248	8512	1443
08	EAA351	19249	8513	1520
09	EAA351RE	19249	8518	1833
10	EAA352	19250	8519	1859

COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab File ID: 8527 Lab Sample ID: VBLK3

Date Analyzed: 06/03/88 Time Analyzed: 0052

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: 7002D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EAA353	19258	8528	0135
02	EAA354	19259	8529	0211
03	EAA355	19260	8530	0248
04	EAA356	19261	8533	0438
05	EAA357	19262	8534	0515
06	EAA358	19263	8535	0551
07	EAA355MS	19260MS	8531	0325
08	EAA355MSD	19260MSD	8532	0401

COMMENTS:

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VOLATILE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3903E SDG No.: EAA341

Lab File ID: 8543 Lab Sample ID: VBLK4

Date Analyzed: 06/03/88 Time Analyzed: 1111

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EAA345RE	19243	8544	1148
02	EAA352RE	19250	8547	1337
03	EAA349MS	19247MS	8545	1224
04	EAA349MSD	19247MSD	8548	1414

COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: VBLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8487

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/01/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	0.2	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: VBLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8487

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/01/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: VBLK2

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8503

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/02/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: VBLK2

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8503

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/02/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK3

b Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: VBLK3

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 8527

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK4

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: VBLK4

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8543

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	0.6	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
----------	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK4

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: VBLK4

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 8543

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 06/03/88

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	EAA353	75	76	61	86	95	100		0
02	EAA354	66	66	49	67	72	89		0
03	EAA355	74	68	55	76	80	91		0
04	EAA356	62	65	26 *	85	94	70		1
05	EAA357	58	59	38	62	67	71		0
06	EAA358	67	63	75	67	59	59		0
07	EAA355MS	68	66	79	86	91	99		0
08	EAA355MSD	59	51	53	60	63	78		0
09	SBLK	85	82	101	79	95	95		0

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl	(33-141)
S4 (PHL)	= Phenol-d5	(10-94)
S5 (2FP)	= 2-Fluorophenol	(21-100)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

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

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

lame: SWL - TULSA Contract: 68-01-7383

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

vel:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	EAA341DL	84	102	87	94	81	107		0
02	EAA342	98	171 *	85	102	96	135 *		2
03	EAA344DL	84	78	65	80	70	94		0
04	EAA345	92	136 *	82	97	91	147 *		2
05	EAA347	87	117 *	80	89	88	113		1
06	EAA348	87	137 *	75	92	83	146 *		2
07	EAA350DL	85	83	82	69	71	103		0
08	EAA351	94	131 *	92	94	85	169 *		2
09	EAA352	83	92	80	90	81	118		0
10	EAA347MS	100	95	90	94	91	169 *		1
11	EAA347MSD	83	98	89	91	81	120		0
12	SBLKE	86	95	89	89	87	83		0
13	SBLKG	77	84	94	87	76	96		0

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl	(18-137)
S4 (PHL)	= Phenol-d5	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

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

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Level:(low/med) MED

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	EAA343DL	91	113	110	100	92	84		0
02	EAA346	104	107	94	107	103	111		0
03	EAA349	108	106	97	100	50	127 *		1
04	EAA349MS	143 *	96	89	102	103	138 *		2
05	EAA349MSD	151 *	94	98	95	97	158 *		2
06	SBLKH	114	105	96	109	103	103		0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(23-120)
S2 (FBP) = 2-Fluorobiphenyl	(30-115)
S3 (TPH) = Terphenyl	(18-137)
S4 (PHL) = Phenol-d5	(24-113)
S5 (2FP) = 2-Fluorophenol	(25-121)
S6 (TBP) = 2,4,6-Tribromophenol	(19-122)

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

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Name: SWL - TULSA Contract: 68-01-7383

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix Spike - EPA Sample No.: EAA355

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	328	0	241	73	12- 86
2-Chlorophenol	328	0	326	99	27-123
1,4-Dichlorobenzene	164	0	108	66	36 97
N-Nitroso-di-n-prop.(1)	164	0	33.0	20 *	41 116
1,2,4-Trichlorobenzene	164	0	110	67	39 98
4-Chloro-3-methylphenol	328	0	225	69	23 97
Acenaphthene	164	0	120	73	46-118
4-Nitrophenol	328	0	315	96 *	10- 80
2,4-Dinitrotoluene	164	0	134	82	24- 96
Pentachlorophenol	328	0	289	88	9-103
Pyrene	164	0	139	85	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	328	175	53	32	42	12- 96
2-Chlorophenol	328	235	72	32	40	27-123
1,4-Dichlorobenzene	164	77.9	48	32 *	28	36 97
N-Nitroso-di-n-prop.(1)	164	20.2	12 *	50 *	38	41 116
1,2,4-Trichlorobenzene	164	92.0	56	18	28	39 98
4-Chloro-3-methylphenol	328	179	55	23	42	23 97
Acenaphthene	164	97.7	60	20	31	46-118
4-Nitrophenol	328	254	77	22	50	10- 80
2,4-Dinitrotoluene	164	98.1	60	31	38	24- 96
Pentachlorophenol	328	225	69	24	50	9-103
Pyrene	164	98.6	60	34 *	31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 11 outside limits
Spike Recovery: 3 out of 22 outside limits

COMMENTS: EAA355 CASE 9726 SAS 3905E - 1130ML/1ML/1UL
45/4-300 @12 DB-5 FSCC 30M/0.25UM INSTR:A

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ab Name: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix Spike - EPA Sample No.: EAA347 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	4260	0	3280	77	26- 90
2-Chlorophenol	4260	0	4260	100	25-102
1,4-Dichlorobenzene	2130	0	1940	91	28 104
N-Nitroso-di-n-prop.(1)	2130	0	2010	94	41 126
1,2,4-Trichlorobenzene	2130	0	2030	95	38 107
4-Chloro-3-methylphenol	4260	0	3370	79	26 103
Acenaphthene	2130	0	3220	151 *	31-137
4-Nitrophenol	4260	0	5580	131 *	11-114
',4-Dinitrotoluene	2130	0	2680	126 *	28- 89
entachlorophenol	4260	0	5710	134 *	17-109
Pyrene	2130	76.4	2500	114	35-142

OMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	4260	4070	96 *	-22	35	26- 90
2-Chlorophenol	4260	2210	52	63 *	50	25-102
1,4-Dichlorobenzene	2130	1700	80	13	27	28 104
N-Nitroso-di-n-prop.(1)	2130	1830	86	9	38	41 126
1,2,4-Trichlorobenzene	2130	1740	82	15	23	38 107
4-Chloro-3-methylphenol	4260	4190	98	-21	33	26 103
cenaphthene	2130	2250	106	35 *	19	31-137
4-Nitrophenol	4260	3590	84	44	50	11-114
2,4-Dinitrotoluene	2130	1950	92 *	31	47	28- 89
Pentachlorophenol	4260	4860	114 *	16	47	17-109
Pyrene	2130	2490	113	1	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

PD: 2 out of 11 outside limits
pike Recovery: 7 out of 22 outside limits

OMMENTS: EAA347 19245
CASE9726/3905E,INST:

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Name: SWL - TULSA Contract: 68-01-7393

L Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix Spike - EPA Sample No.: EAA349 Level:(low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	222000	0	141000	64	26- 90
2-Chlorophenol	222000	0	247000	111 *	25-102
1,4-Dichlorobenzene	111000	0	110000	99	28 104
N-Nitroso-di-n-prop.(1)	111000	0	104000	94	41 126
1,2,4-Trichlorobenzene	111000	0	103000	93	38 107
4-Chloro-3-methylphenol	222000	0	225000	101	26 103
Acenaphthene	111000	0	123000	111	31-137
4-Nitrophenol	222000	0	177000	80	11-114
2,4-Dinitrotoluene	111000	0	81600	74	28- 89
Pentachlorophenol	222000	0	316000	142 *	17-109
Pyrene	111000	6310	131000	112	35-142

OMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	220000	229000	104 *	-48 *	35	26- 90
2-Chlorophenol	220000	231000	105 *	6	50	25-102
1,4-Dichlorobenzene	110000	105000	95	4	27	28 104
N-Nitroso-di-n-prop.(1)	110000	60300	55	52 *	38	41 126
1,2,4-Trichlorobenzene	110000	109000	99	-6	23	38 107
4-Chloro-3-methylphenol	220000	236000	107 *	-6	33	26 103
Acenaphthene	110000	133000	121	-9	19	31-137
4-Nitrophenol	220000	201000	91	-13	50	11-114
2,4-Dinitrotoluene	110000	75300	68	8	47	28- 89
Pentachlorophenol	220000	315000	143 *	-1	47	17-109
Pyrene	110000	143000	124	-10	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

D: 2 out of 11 outside limits
Spike Recovery: 6 out of 22 outside limits

IMMENTS: EAA 349 19247
CASE9726/3905E,INST:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab File ID: BLK9726A Lab Sample ID: BLK9726A

Date Extracted: 06/03/88 Extraction:(SepF/Cont/Sonc) CONT

Date Analyzed: 06/07/88 Time Analyzed: 1231

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EAA353	19258	19258	06/07/88
02	EAA354	19259	19259	06/07/88
03	EAA355	19260	19260	06/07/88
04	EAA356	19261	19261	06/07/88
05	EAA357	19262	19262	06/07/88
06	EAA358	19263	19263	06/07/88
07	EAA355MS	19260MS	19260MS	06/07/88
08	EAA355MSD	19260MSD	19260MSD	06/07/88

COMMENTS: SBLK CASE 9726 SAS 3905E - 1000ML/1ML/1UL
45/4-300 @12 DB-5 FSOC 30M/0.25UM INSTR:A

4B
SEMIVOLATILE METHOD BLANK SUMMARY

'ab Name: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab File ID: F0491 Lab Sample ID: SBLKE

Date Extracted: 06/03/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 06/10/88 Time Analyzed: 1451

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: F

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EAA341DL	19239	F0496	06/10/88
02	EAA342	19240	F0497	06/10/88
03	EAA344DL	19242	F0537	06/14/88
04	EAA345	19243	F0499	06/10/88
05	EAA347	19245	F0500	06/10/88
06	EAA348	19246	F0514	06/11/88
07	EAA350DL	19248	F0536	06/14/88
08	EAA351	19249	F0516	06/11/88
09	EAA352	19250	F0517	06/11/88

COMMENTS: SBLK1E BLANK E
CASE9726/3905E,INST:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

ile ID: F0492 Lab Sample ID: SBLKH

Extracted: 06/03/88 Extraction:(SepF/Cont/Sonc) SONC

Analyzed: 06/10/88 Time Analyzed: 1534

x: (soil/water) SOIL Level:(low/med) MED

trument ID: F

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EAA343DL	19241	F0494	06/10/88
02	EAA346	19244	F0495	06/10/88
03	EAA349	19247	F0518	06/11/88
04	EAA349MS	19247MS	F0519	06/12/88
05	EAA349MSD	19247MSD	F0520	06/12/88

MENTS:

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4B
SEMIVOLATILE METHOD BLANK SUMMARY

Name: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab File ID: F0493 Lab Sample ID: SBLKG

Date Extracted: 06/03/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 06/10/88 Time Analyzed: 1617

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: F

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EAA347MS	19245MS	F0501	06/10/88
02	EAA347MSD	19245MSD	F0502	06/10/88

COMMENTS: SBLK2G BLANK G
CASE9726/3905E,INST:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: BLK9726A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BLK9726A

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

ab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: BLK9726A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BLK9726A

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

IF

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK

b Name: SWL - TULSA Contract: 68-01-7392

Code: SWCK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

trix: (soil/water) WATER Lab Sample ID: BLK9726A

mple wt/vol: 1000 (g/mL) ML Lab File ID: BLK9726A

vel: (low/med) LOW Date Received: _____

Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/88

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

mber TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKE

ame: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) SOIL Lab Sample ID: SBLKE

ple wt/vol: 30.0 (g/mL) G Lab File ID: F0491

el: (low/med) LOW Date Received:

Moisture: not dec. dec. Date Extracted: 06/03/88

raction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-10-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKE

Name: SWL - TULSA Contract: 68-01-7373

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

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

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0491

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	2.78	1200	J
2.	UNKNOWN COMPOUND	4.92	100	J
3.	UNKNOWN COMPOUND	6.00	67	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKH

Name: SWL - TULSA Contract: 68-01-7353

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

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

Sample wt/vol: 1.0 (g/mL) G Lab File ID: F0492

Level: (low/med) MED Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	20000	U
111-44-4	bis(2-Chloroethyl)Ether	20000	U
95-57-8	2-Chlorophenol	20000	U
541-73-1	1,3-Dichlorobenzene	20000	U
106-46-7	1,4-Dichlorobenzene	20000	U
100-51-6	Benzyl Alcohol	20000	U
95-50-1	1,2-Dichlorobenzene	20000	U
95-48-7	2-Methylphenol	20000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	20000	U
106-44-5	4-Methylphenol	20000	U
621-64-7	N-Nitroso-Di-n-Propylamine	20000	U
67-72-1	Hexachloroethane	20000	U
98-95-3	Nitrobenzene	20000	U
78-59-1	Isophorone	20000	U
88-75-5	2-Nitrophenol	20000	U
105-67-9	2,4-Dimethylphenol	20000	U
65-85-0	Benzoic Acid	96000	U
111-91-1	bis(2-Chloroethoxy)Methane	20000	U
120-83-2	2,4-Dichlorophenol	20000	U
120-82-1	1,2,4-Trichlorobenzene	20000	U
91-20-3	Naphthalene	20000	U
106-47-8	4-Chloroaniline	20000	U
87-68-3	Hexachlorobutadiene	20000	U
59-50-7	4-Chloro-3-Methylphenol	20000	U
91-57-6	2-Methylnaphthalene	20000	U
77-47-4	Hexachlorocyclopentadiene	20000	U
88-06-2	2,4,6-Trichlorophenol	20000	U
95-95-4	2,4,5-Trichlorophenol	96000	U
91-58-7	2-Chloronaphthalene	20000	U
88-74-4	2-Nitroaniline	96000	U
131-11-3	Dimethyl Phthalate	20000	U
208-96-8	Acenaphthylene	20000	U
606-20-2	2,6-Dinitrotoluene	20000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKH

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

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

Sample wt/vol: 1.0 (g/mL) G Lab File ID: F0492

Level: (low/med) MED Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	96000	U
83-32-9	Acenaphthene	20000	U
51-28-5	2,4-Dinitrophenol	96000	U
100-02-7	4-Nitrophenol	96000	U
132-64-9	Dibenzofuran	20000	U
121-14-2	2,4-Dinitrotoluene	20000	U
84-66-2	Diethylphthalate	20000	U
7005-72-3	4-Chlorophenyl-phenylether	20000	U
86-73-7	Fluorene	20000	U
100-10-6	4-Nitroaniline	96000	U
534-52-1	4,6-Dinitro-2-Methylphenol	96000	U
86-30-6	N-Nitrosodiphenylamine (1)	20000	U
101-55-3	4-Bromophenyl-phenylether	20000	U
118-74-1	Hexachlorobenzene	20000	U
87-86-5	Pentachlorophenol	96000	U
85-01-8	Phenanthrene	20000	U
120-12-7	Anthracene	20000	U
84-74-2	Di-n-Butylphthalate	20000	U
206-44-0	Fluoranthene	20000	U
129-00-0	Pyrene	20000	U
85-68-7	Butylbenzylphthalate	20000	U
91-94-1	3,3'-Dichlorobenzidine	40000	U
56-55-3	Benzo(a)Anthracene	20000	U
218-01-9	Chrysene	20000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	20000	U
117-84-0	Di-n-Octyl Phthalate	20000	U
205-99-2	Benzo(b)Fluoranthene	20000	U
207-08-9	Benzo(k)Fluoranthene	20000	U
50-32-8	Benzo(a)Pyrene	20000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	20000	U
53-70-3	Dibenz(a,h)Anthracene	20000	U
191-24-2	Benzo(g,h,i)Perylene	20000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKH

ame: SWL - TULSA Contract: 68-01-7393

Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

trix: (soil/water) SOIL Lab Sample ID: SBLKH

ple wt/vol: 1.0 (g/mL) G Lab File ID: F0492

el: (low/med) MED Date Received: _____

Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

raction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

ber TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC

1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKG

Name: SWL - TULSA Contract: 68-01-7393

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

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

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0493

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
39638-32-9	bis(2-Chloroisopropyl)Ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKG

Name: SWL - TULSA Contract: 68-01-7393

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

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

Sample wt/vol: 30.0 (g/mL) G Lab File ID: F0493

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-10-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKG

Name: SWL - TULSA Contract: 68-01-7393

ab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

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

ample wt/vol: 30.0 (g/mL) G Lab File ID: F0493

evel: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

mber TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	2.97	3700	J
2.	UNKNOWN COMPOUND	6.05	400	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA353

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19258

Sample wt/vol: 1200 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.042	U
319-85-7	beta-BHC	0.042	U
319-86-8	delta-BHC	0.042	U
58-89-9	gamma-BHC (Lindane)	0.042	U
76-44-8	Heptachlor	0.042	U
309-00-2	Aldrin	0.042	U
1024-57-3	Heptachlor epoxide	0.042	U
959-98-8	Endosulfan I	0.042	U
60-57-1	Dieldrin	0.083	U
72-55-9	4,4'-DDE	0.083	U
72-20-8	Endrin	0.083	U
33213-65-9	Endosulfan II	0.083	U
72-54-8	4,4'-DDD	0.083	U
1031-07-8	Endosulfan sulfate	0.083	U
50-29-3	4,4'-DDT	0.083	U
72-43-5	Methoxychlor	0.42	U
53494-70-5	Endrin ketone	0.083	U
5103-71-9	alpha-Chlordane	0.42	U
5103-74-2	gamma-Chlordane	0.42	U
8001-35-2	Toxaphene	0.83	U
12674-11-2	Aroclor-1016	0.42	U
11104-28-2	Aroclor-1221	0.42	U
11141-16-5	Aroclor-1232	0.42	U
53469-21-9	Aroclor-1242	0.42	U
12672-29-6	Aroclor-1248	0.42	U
11097-69-1	Aroclor-1254	0.83	U
11096-82-5	Aroclor-1260	0.83	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA354

, Name: SWL - TULSA Contract: 68-01-7393

..b Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

M trix: (soil/water) WATER Lab Sample ID: 19259

Sample wt/vol: 970 (g/mL) ML Lab File ID: _____

vel: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

traction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 0.999

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA355

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19260

Sample wt/vol: 860 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 0.998

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.058	U
319-85-7	beta-BHC	0.058	U
319-86-8	delta-BHC	0.058	U
58-89-9	gamma-BHC (Lindane)	0.058	U
76-44-8	Heptachlor	0.058	U
309-00-2	Aldrin	0.058	U
1024-57-3	Heptachlor epoxide	0.058	U
959-98-8	Endosulfan I	0.058	U
60-57-1	Dieldrin	0.12	U
72-55-9	4,4'-DDE	0.12	U
72-20-8	Endrin	0.12	U
33213-65-9	Endosulfan II	0.12	U
72-54-8	4,4'-DDD	0.12	U
1031-07-8	Endosulfan sulfate	0.12	U
50-29-3	4,4'-DDT	0.12	U
72-43-5	Methoxychlor	0.58	U
53494-70-5	Endrin ketone	0.12	U
5103-71-9	alpha-Chlordane	0.58	U
5103-74-2	gamma-Chlordane	0.58	U
8001-35-2	Toxaphene	1.2	U
12674-11-2	Aroclor-1016	0.58	U
11104-28-2	Aroclor-1221	0.58	U
11141-16-5	Aroclor-1232	0.58	U
53469-21-9	Aroclor-1242	0.58	U
12672-29-6	Aroclor-1248	0.58	U
11097-69-1	Aroclor-1254	1.2	U
11096-82-5	Aroclor-1260	1.2	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA356

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19261

Sample wt/vol: 1030 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 06/02/88

Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.097	U
72-55-9	4,4'-DDE	0.097	U
72-20-8	Endrin	0.097	U
33213-65-9	Endosulfan II	0.097	U
72-54-8	4,4'-DDD	0.097	U
1031-07-8	Endosulfan sulfate	0.097	U
50-29-3	4,4'-DDT	0.097	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.097	U
5103-71-9	alpha-Chlordane	0.49	U
5103-74-2	gamma-Chlordane	0.49	U
8001-35-2	Toxaphene	0.97	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.97	U
11096-82-5	Aroclor-1260	0.97	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA357

..o Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

atrix: (soil/water) WATER Lab Sample ID: 19262

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

evel: (low/med) LOW Date Received: 06/02/88

" Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

PC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAA358

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 19263

Sample wt/vol: 1120 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 06/02/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.045	U
319-85-7	beta-BHC	0.045	U
319-86-8	delta-BHC	0.045	U
58-89-9	gamma-BHC (Lindane)	0.045	U
76-44-8	Heptachlor	0.045	U
309-00-2	Aldrin	0.045	U
1024-57-3	Heptachlor epoxide	0.045	U
959-98-8	Endosulfan I	0.045	U
60-57-1	Dieldrin	0.089	U
72-55-9	4,4'-DDE	0.089	U
72-20-8	Endrin	0.089	U
33213-65-9	Endosulfan II	0.089	U
72-54-8	4,4'-DDD	0.089	U
1031-07-8	Endosulfan sulfate	0.089	U
50-29-3	4,4'-DDT	0.089	U
72-43-5	Methoxychlor	0.45	U
53494-70-5	Endrin ketone	0.089	U
5103-71-9	alpha-Chlordane	0.45	U
5103-74-2	gamma-Chlordane	0.45	U
8001-35-2	Toxaphene	0.89	U
12674-11-2	Aroclor-1016	0.45	U
11104-28-2	Aroclor-1221	0.45	U
11141-16-5	Aroclor-1232	0.45	U
53469-21-9	Aroclor-1242	0.45	U
12672-29-6	Aroclor-1248	0.45	U
11097-69-1	Aroclor-1254	0.89	U
11096-82-5	Aroclor-1260	0.89	U

2E
WATER PESTICIDE SURROGATE RECOVERY

) Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
01	EAA353	65	0
02	EAA354	85	0
03	EAA355	82	0
04	EAA356	23 *	0
05	EAA357	82	0
06	EAA358	110	0
07	EAA355MS	86	0
08	EAA355MSD	107	0
09	PBLK	113	0

ADVISORY
QC LIMITS
S1 (DBC) = Dibutlychlorendate (24-154)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

1081

FORM II PEST-1

1/87 Rev.

2F

SOIL PESTICIDE SURROGATE RECOVERY

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
01	EAA341	103	0
02	EAA342	999 *	0
03	EAA343	73	0
04	EAA344	79	0
05	EAA345	106	0
06	EAA346	93	0
07	EAA347	99	0
08	EAA348	101	0
09	EAA349	138	0
10	EAA349MS	186 *	0
11	EAA349MSD	173 *	0
12	EAA350	187 *	0
13	EAA351	125	0
14	EAA352	99	0
15	PBLK	120	0

ADVISORY QC LIMITS

S1 (DBC) = Dibutlychlorendate (20-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix Spike - EPA Sample No.: EAA355

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.282	0.0113	0.367	126 *	56-123
Heptachlor	0.282	0.00625	0.348	121	40-131
Aldrin	0.282	0	0.385	137 *	40-120
Dieldrin	0.705	0	0.912	129 *	52-126
Endrin	0.705	0	0.962	137 *	56-121
4,4'-DDT	0.705	0	0.864	123	38-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	0.282	0.371	128 *	-1	15	56-123
Heptachlor	0.282	0.362	126	-4	20	40-131
Aldrin	0.282	0.396	140 *	-3	22	40-120
Dieldrin	0.705	0.921	131 *	-1	18	52-126
Endrin	0.705	0.963	137 *	0	21	56-121
4,4'-DDT	0.705	0.900	128 *	-4	27	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 9 out of 12 outside limits

COMMENTS:

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix Spike - EPA Sample No.: EAA349 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	45.0	0	58.9	131 *	46-127
Heptachlor	45.0	3.66	75.5	160 *	35-130
Aldrin	45.0	0	69.2	154 *	34-132
Dieldrin	112	0	158	141 *	31-134
Endrin	112	0	182	163 *	42-139
4,4'-DDT	112	182	436	227 *	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	45.0	58.7	130 *	0	50	46-127
Heptachlor	45.0	77.1	163 *	-2	31	35-130
Aldrin	45.0	72.8	162 *	-5	43	34-132
Dieldrin	112	229	205 *	-37	38	31-134
Endrin	112	243	217 *	-29	45	42-139
4,4'-DDT	112	238	50	128 *	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 6 outside limits
Spike Recovery: 11 out of 12 outside limits

COMMENTS:

4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab Sample ID: 0603PWB Lab File ID: _____

Matrix:(soil/water) WATER Level:(low/med) LOW

Date Extracted: 06/03/88 Extraction:(SepF/Cont/Sonc) CONT

Date Analyzed (1): 06/09/88 Date Analyzed (2): 06/11/88

Time Analyzed (1): 0208 Time Analyzed (2): 2226

Instrument ID (1): H5890A Instrument ID (2): V3700A

GC Column ID (1): 22502401 GC Column ID (2): DB5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EAA353	19258	06/09/88	06/11/88
02	EAA354	19259	06/09/88	
03	EAA355	19260	06/09/88	
04	EAA356	19261	06/09/88	06/11/88
05	EAA357	19262	06/09/88	
06	EAA358	19263	06/09/88	06/12/88
07	EAA355MS	19260MS	06/09/88	
08	EAA355MSD	19260MD	06/09/88	

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Lab Sample ID: 0608PSB Lab File ID: _____

Matrix:(soil/water) SOIL Level:(low/med) LOW

Date Extracted: 06/08/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 06/10/88 Date Analyzed (2): 06/12/88

Time Analyzed (1): 1816 Time Analyzed (2): 0131

Instrument ID (1): H5890A Instrument ID (2): V3700A

GC Column ID (1): 22502401 GC Column ID (2): DB5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EAA341	19239	06/10/88	06/12/88
02	EAA342	19240	06/10/88	06/12/88
03	EAA343	19241	06/10/88	06/12/88
04	EAA344	19242	06/10/88	06/12/88
05	EAA345	19243	06/10/88	06/12/88
06	EAA346	19244	06/11/88	06/12/88
07	EAA347	19245	06/11/88	06/12/88
08	EAA348	19246	06/11/88	06/12/88
09	EAA349	19247	06/11/88	06/12/88
10	EAA350	19248	06/11/88	06/12/88
11	EAA351	19249	06/11/88	06/12/88
12	EAA352	19250	06/11/88	06/12/88
13	EAA349MS	19247MS	06/11/88	06/12/88
14	EAA349MSD	19247MD	06/11/88	06/12/88

COMMENTS:

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) WATER Lab Sample ID: 0603PWB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/03/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK

Lab Name: SWL - TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 9726 SAS No.: 3905E SDG No.: EAA341

Matrix: (soil/water) SOIL Lab Sample ID: 0608PSB

Sample wt/vol: 60.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/08/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 6/16/88 FIT Receipt Date 7/7/88 Review Completed 7/7/88

TO: T. Wolff
FROM: Mary Gzyra
SUBJECT: HIGHLAND PARK LF
PAN: IL0642 (1 hour charged for review) Case # 9726/3905

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# _____	Low Soil	# 12	Low Soil
_____	Low Water	6	Low Water
_____	Drinking Water	_____	Drinking Water
_____	Other	_____	Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting soil & water organics

FIT Data Review Findings:
Hg, As, Be, Cr, Pb, Ni detected in soils
Note ↑ Pb in MEY 896, 900, 901.
As detected in MEY 906 - waters
Pb " " " "
Ag " " " "
Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 8 Page No. 106 Date Sampled 5/31 + 6/1/88

0759:2

recycled paper

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

MEMORANDUM

DATE: 7/7/88
TO: File
FROM: Mary Gzyra
SUBJECT: HIGHLAND PARK LF
PAN IL 0642

Below is a list of elements whose spike recoveries were biased low:

Element	Spike Recovery
Thallium	68%

The low recoveries rates biases the data low, thereby raising the detection limits and estimating any reported values. This means that in the worst case the true concentration is greater than the reported values and the data is an underestimation.

It is the opinion of this reviewer that the data is acceptable for HRS scoring.

0759:2

7/7/88

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE 7.5.88

SUBJECT: Review of Region V CLP Data
Received for Review on [illegible]

FROM: Curtis Ross, Director (BSCRL)
Central Regional Laboratory [signature]

TO: Data User: Fit

We have reviewed the data for the following case(s).

SITE NAME: Highland Park Landfill (IL) SMO Case No. 9726SAS3905E

EPA Data Set No. SF5237 No. of Samples: 18 D.U./Activity Numbers V9C51C72172

CRL No. 88FW23 S23 - S38 D35 205

SMO Traffic No. Mey 891 - 908

CLP Laboratory: Versar Hrs. Required for Review: 10 +½

Following are our findings:
laboratory's portion of case 9726/SAS3905E consisted of 12 and 6 water samples analyzed for total metals and cyanide.
Soil Samples (MEY891-902)
ICP Analysis: Matrix spike %R for Sb(32%) indicates low bias and detection limits may be elevated. Sb is estimated (UJ). Serial dilution results for Na(120%) and Zn(23%) indicate interference and Na and Zn are estimated(J).
AA Analysis: Matrix spike %R for As(36%) and Tl(68%) indicate bias : As is estimated (J) for MEY893, 895-897, 899-902 and the rest estimated (UJ) for elevated detection limit. All Tl results may have elevated detection limit and is estimated (UJ). Hg data is acceptable. Cyanide Analysis: Matrix spike %R (13%) and all data is unuseable except MEY902, which is estimated(J). Mn result calculated incorrectly on Form I, sample MEY892 and viewer corrected.
water: (Samples MEY903-908)
ICP Analysis: All data is acceptable.
AA: Tl matrix spike %R(42%) indicates low bias. Tl is estimated(UJ). Hg and CN data are acceptable.
Field Blank (MEY908): All data acceptable.
Field Duplicate (MEY903/904): Both samples have good agreement.

Margaret [signature]
6/28/88

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

FORM I

EPA CONTRACT LABORATORY PROGRAM
LE MANAGEMENT OFFICE
BOX 818 - ALEXANDRIA, VA. 22313
03/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 891

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SDW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50096

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	7510.	P	13.	MAGNESIUM	1300.	P
2.	ANTIMONY	12. UN	P	14.	MANGANESE	222.	P
3.	ARSENIC	5.1 UN	F	15.	MERCURY	0.26 U	
4.	BARIUM	[68.]	P	16.	NICKEL	[16.]	P
5.	BERYLLIUM	[0.59]	P	17.	POTASSIUM	[877.]	P
6.	CADMIUM	1.5 U	P	18.	SELENIUM	2.6 U	F
7.	CALCIUM	29400.	P	19.	SILVER	2.6 U	P
8.	CHROMIUM	17.	P	20.	SODIUM	[335.] E	P
9.	COBALT	[7.1]	P	21.	THALLIUM	5.1 UN	F
10.	COPPER	24.	P	22.	VANADIUM	[23.]	P
11.	IRON	15900.	P	23.	ZINC	87. E	P
12.	LEAD	32.	F		PERCENT SOLIDS	38.9	
	CYANIDE	1.29 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - DARK BROWN; TEXTURE - MEDIUM; DF OF 2 FOR PB; SD;

00002

LAB SUPERVISOR PKW for

FORM I

U. S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 892

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50097

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1. ALUMINUM	3720.	P	13. MAGNESIUM	~~9670.~~ 16200 MMT	P
2. ANTIMONY	7.7 UN	P	14. MANGANESE	264.	P
3. ARSENIC	3.4 UN	F	15. MERCURY	0.17 U	
4. BARIUM	[28.]	P	16. NICKEL	[6.6]	P
5. BERYLLIUM	[0.37]	P	17. POTASSIUM	[918.]	P
6. CADMIUM	1.0 U	P	18. SELENIUM	1.7 U	F
7. CALCIUM	31300.	P	19. SILVER	1.7 U	P
8. CHROMIUM	12.	P	20. SODIUM	[399.] E	P
9. COBALT	[4.8]	P	21. THALLIUM	3.4 UN	F
10. COPPER	16.	P	22. VANADIUM	[9.1]	P
11. IRON	7930.	P	23. ZINC	83. E	P
12. LEAD	46.	F	PERCENT SOLIDS	59.5	
CYANIDE	0.84 UN				

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - DARK BROWN; TEXTURE - MEDIUM; DF OF 5 FOR MG; DF OF 5 FOR PB;

LAB SUPERVISOR PKW for

FORM I

..S. EPA CONTRACT LABORATORY PROGRAM
'PLE MANAGEMENT OFFICE
. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 893

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50098

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	11600.	P	13.	MAGNESIUM	24100.	P
2.	ANTIMONY	5.6 UN	P	14.	MANGANESE	536.	P
3.	ARSENIC	6.6 N	F S	15.	MERCURY	0.13	
4.	BARIUM	68.	P	16.	NICKEL	25.	P
5.	BERYLLIUM	[0.66]	P	17.	POTASSIUM	2200.	P
6.	CADMIUM	[0.89]	P	18.	SELENIUM	1.2 U	F
7.	CALCIUM	48500.	P	19.	SILVER	1.2 U	P
8.	CHROMIUM	20.	P	20.	SODIUM	[189.] E	P
9.	COBALT	[11.]	P	21.	THALLIUM	2.4 UN	F
10.	COPPER	22.	P	22.	VANADIUM	24.	P
11.	IRON	21000.	P	23.	ZINC	107. E	P
12.	LEAD	28.	F		PERCENT SOLIDS	81.8	
	CYANIDE	0.61 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - MEDIUM; DF OF 5 FOR MG, CA, PB; DF OF 2 FOR AS;

00004

LAB SUPERVISOR PKW for

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 894

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50099

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	8000.	P	13.	MAGNESIUM	11700.	P
2.	ANTIMONY	6.2 UN	P	14.	MANGANESE	258.	P
3.	ARSENIC	2.7 UN	F	15.	MERCURY	0.14 U	
4.	BARIUM	66.	P	16.	NICKEL	14.	P
5.	BERYLLIUM	[0.56]	P	17.	POTASSIUM	[945.]	P
6.	CADMIUM	0.82 U	P	18.	SELENIUM	1.4 U	F
7.	CALCIUM	27400.	P	19.	SILVER	1.4 U	P
8.	CHROMIUM	14.	P	20.	SODIUM	[88.] E	P
9.	COBALT	[7.6]	P	21.	THALLIUM	2.7 UN	F
10.	COPPER	18.	P	22.	VANADIUM	18.	P
11.	IRON	12400.	P	23.	ZINC	60. E	P
12.	LEAD	25.	F		PERCENT SOLIDS	73.6	
	CYANIDE	0.68 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - DARK BROWN; TEXTURE - MEDIUM; DF OF 5 FOR MG, PB;

00005

LAB SUPERVISOR PKW for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
O. BOX 818 - ALEXANDRIA, VA. 22313
.03/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 895

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50100

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	8250.	P	13.	MAGNESIUM	24700.	P
2.	ANTIMONY	5.5 UN	P	14.	MANGANESE	633.	P
3.	ARSENIC	4.5 N	F	15.	MERCURY	0.12 U	
4.	BARIUM	53.	P	16.	NICKEL	19.	P
5.	BERYLLIUM	[0.54]	P	17.	POTASSIUM	1650.	P
6.	CADMIUM	0.71 U	P	18.	SELENIUM	1.2 U	F
7.	CALCIUM	48100.	P	19.	SILVER	1.2 U	P
8.	CHROMIUM	15.	P	20.	SODIUM	[190.] E	P
9.	COBALT	[9.8]	P	21.	THALLIUM	2.4 UN	F
10.	COPPER	20.	P	22.	VANADIUM	18.	P
11.	IRON	16600.	P	23.	ZINC	73. E	P
12.	LEAD	38.	F		PERCENT SOLIDS	84.0	
	CYANIDE	0.60 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - COARSE; DF OF 5 FOR MG, CA, PB;

00006

LAB SUPERVISOR Pkw for

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P. BOX 818 - ALEXANDRIA, VA. 22313
3/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 896

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50101

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	7220.	P	13.	MAGNESIUM	12000.	P
2.	ANTIMONY	5.8 UN	P	14.	MANGANESE	245.	P
3.	ARSENIC	6.8 N	F	15.	MERCURY	0.12 U	
4.	BARIUM	1240.	P	16.	NICKEL	14.	P
5.	BERYLLIUM	[0.42]	P	17.	POTASSIUM	[779.]	P
6.	CADMIUM	2.0	P	18.	SELENIUM	1.2 U	F
7.	CALCIUM	31200.	P	19.	SILVER	1.2 U	P
8.	CHROMIUM	16.	P	20.	SODIUM	[120.] E	P
9.	COBALT	[7.2]	P	21.	THALLIUM	2.5 UN	F
10.	COPPER	33.	P	22.	VANADIUM	16.	P
11.	IRON	12700.	P	23.	ZINC	1220. E	P
12.	LEAD	1980.	F		PERCENT SOLIDS	79.9	
	CYANIDE	0.62 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - DARK GREY; TEXTURE - MEDIUM; DF OF 5 FOR MG; DF OF 200 FOR PB;

00007

LAB SUPERVISOR PKW for

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 897

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50102

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	13100.	P	13.	MAGNESIUM	4570.	P
2.	ANTIMONY	6.0 UN	P	14.	MANGANESE	421.	P
3.	ARSENIC	9.8 N	F S	15.	MERCURY	0.13 U	
4.	BARIUM	104.	P	16.	NICKEL	21	P
5.	BERYLLIUM	[0.76]	P	17.	POTASSIUM	1520.	P
6.	CADMIUM	0.78 U	P	18.	SELENIUM	1.3 U	F
7.	CALCIUM	6980.	P	19.	SILVER	1.3 U	P
8.	CHROMIUM	21.	P	20.	SODIUM	[104.] E	P
9.	COBALT	[12.]	P	21.	THALLIUM	2.6 UN	F
10.	COPPER	26.	P	22.	VANADIUM	26.	P
11.	IRON	22400.	P	23.	ZINC	64. E	P
12.	LEAD	22.	F S		PERCENT SOLIDS	77.3	
	CYANIDE	0.65 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - MEDIUM; DF OF 2 FOR AS; DF OF 10 FOR PB;

00008

LAB SUPERVISOR PKW for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
3/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 898

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50103

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	10700.	P	13.	MAGNESIUM	6200.	P
2.	ANTIMONY	5.8 UN	P	14.	MANGANESE	487.	P
3.	ARSENIC	25. UN	F	15.	MERCURY	0.17	
4.	BARIUM	82.	P	16.	NICKEL	18.	P
5.	BERYLLIUM	[0.74]	P	17.	POTASSIUM	1440.	P
6.	CADMIUM	1.2	P	18.	SELENIUM	1.2 U	F
7.	CALCIUM	17800.	P	19.	SILVER	1.2 U	P
8.	CHROMIUM	19.	P	20.	SODIUM	[112.] E	P
9.	COBALT	[9.0]	P	21.	THALLIUM	2.5 UN	F
10.	COPPER	593.	P	22.	VANADIUM	28.	P
11.	IRON	27600.	P	23.	ZINC	395. E	P
12.	LEAD	33.	F S		PERCENT SOLIDS	80.0	
	CYANIDE	0.63 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - MEDIUM; DF OF 5 FOR MG, FE; DF OF 10 FOR AS, PB;

00009

LAB SUPERVISOR PKW for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
3/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 899

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50104

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	5850.	P	13.	MAGNESIUM	36700.	P
2.	ANTIMONY	5.5 UN	P	14.	MANGANESE	492.	P
3.	ARSENIC	6.0 N	F	15.	MERCURY	0.12 U	
4.	BARIUM	48.	P	16.	NICKEL	17.	P
5.	BERYLLIUM	[0.55]	P	17.	POTASSIUM	[865.]	P
6.	CADMIUM	0.72 U	P	18.	SELENIUM	1.2 U	F
7.	CALCIUM	68000.	P	19.	SILVER	1.2 U	P
8.	CHROMIUM	12.	P	20.	SODIUM	[344.] E	P
9.	COBALT	[7.6]	P	21.	THALLIUM	2.4 UN	F
10.	COPPER	36.	P	22.	VANADIUM	16.	P
11.	IRON	13400.	P	23.	ZINC	266. E	P
12.	LEAD	68.	F		PERCENT SOLIDS	83.8	
	CYANIDE	0.60 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - COARSE; DF OF 5 FOR CA; DF OF 25 FOR MG; DF OF 10 FOR PB;

00010

LAB SUPERVISOR PKW for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
, BOX 818 - ALEXANDRIA, VA. 22313
, 3/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 900

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50105

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	11400.	P	13.	MAGNESIUM	14300.	P
2.	ANTIMONY	8.2 UN	P	14.	MANGANESE	456.	P
3.	ARSENIC	7.6 N	F	15.	MERCURY	0.18 U	
4.	BARIUM	77.	P	16.	NICKEL	26.	P
5.	BERYLLIUM	[0.86]	P	17.	POTASSIUM	1810.	P
6.	CADMIUM	1.1 U	P	18.	SELENIUM	1.8 U	F
7.	CALCIUM	48600.	P	19.	SILVER	1.8 U	P
8.	CHROMIUM	26.	P	20.	SODIUM	[376.] E	P
9.	COBALT	[11.]	P	21.	THALLIUM	3.6 UN	F
10.	COPPER	78.	P	22.	VANADIUM	26.	P
11.	IRON	23000.	P	23.	ZINC	306. E	P
12.	LEAD	277.	F		PERCENT SOLIDS	55.8	
	CYANIDE	0.90 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - GREY; TEXTURE - COARSE; DF OF 5 FOR MG; DF OF 20 FOR PB;

00011

LAB SUPERVISOR PKW for

FORM I

.S. EPA CONTRACT LABORATORY PROGRAM
IPLE MANAGEMENT OFFICE
BOX 818 - ALEXANDRIA, VA. 22313
7-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 901

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

B NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO 785

LAB RECEIPT DATE 6/01/88

B SAMPLE ID. NO. 50106

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

C CENTRATION: LOW X MEDIUM HIGH

TRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	7780.	P	13.	MAGNESIUM	14900.	P
2.	ANTIMONY	7.3 UN	P	14.	MANGANESE	509.	P
3.	ARSENIC	4.9 N	F	15.	MERCURY	0.17	
4.	BARIUM	[58.]	P	16.	NICKEL	20.	P
5.	BERYLLIUM	[0.47]	P	17.	POTASSIUM	[1540.]	P
6.	CADMIUM	0.96 U	P	18.	SELENIUM	1.6 U	F
7.	CALCIUM	46100.	P	19.	SILVER	[2.0]	P
8.	CHROMIUM	26.	P	20.	SODIUM	[285.] E	P
9.	COBALT	[10.]	P	21.	THALLIUM	3.2 UN	F
10.	COPPER	40.	P	22.	VANADIUM	19.	P
11.	IRON	16800.	P	23.	ZINC	192. E	P
12.	LEAD	101.	F		PERCENT SOLIDS	62.6	
	CYANIDE	0.80 UN					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - GREY; TEXTURE - COARSE; DF OF 5 FOR MG; DF OF 10 FOR PB;

00012

LAB SUPERVISOR PLW for

JANET BECKMAN

FORM I

.S. EPA CONTRACT LABORATORY PROGRAM
-MPLE MANAGEMENT OFFICE
, BOX 818 - ALEXANDRIA, VA. 22313
-J/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 902

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/01/88

LAB SAMPLE ID. NO. 50107

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 225

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	10700.	P	13.	MAGNESIUM	6290.	P
2.	ANTIMONY	6.0 UN	P	14.	MANGANESE	255.	P
3.	ARSENIC	6.4 N	F	15.	MERCURY	0.29	
4.	BARIUM	86.	P	16.	NICKEL	20.	P
5.	BERYLLIUM	[0.81]	P	17.	POTASSIUM	2260.	P
6.	CADMIUM	[1.2]	P	18.	SELENIUM	1.3 U	F
7.	CALCIUM	12000.	P	19.	SILVER	[2.1]	P
8.	CHROMIUM	59.	P	20.	SODIUM	[87.] E	P
9.	COBALT	[7.6]	P	21.	THALLIUM	2.6 UN	F
10.	COPPER	47.	P	22.	VANADIUM	25.	P
11.	IRON	15200.	P	23.	ZINC	107. E	P
12.	LEAD	54.	F S		PERCENT SOLIDS	76.8	
	CYANIDE	0.74 N					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - DARK BROWN; TEXTURE - FINE; DF OF 10 FOR PB;

00013

LAB SUPERVISOR Pkw for

FORM I

EPA CONTRACT LABORATORY PROGRAM
MPLE MANAGEMENT OFFICE
. BOX 818 - ALEXANDRIA, VA. 22313
-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 903

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

B NAME VERSAR INC.

CASE NO. 9726/3905E

NO. 785

LAB RECEIPT DATE 6/02/88

SAMPLE ID. NO. 50115, 50121

QC REPORT NO. 225 - 226

OJECT-TASK 5027.0000

BATCH 226

ELEMENTS IDENTIFIED AND MEASURED

NTRATION: LOW X MEDIUM HIGH

RIX: WATER X SOIL WIPE

UG/L

1.	ALUMINUM	[48.]	P	13.	MAGNESIUM	45900.	P
	ANTIMONY	23. U	P	14.	MANGANESE	268.	P
	ARSENIC	10. U	F	15.	MERCURY	0.2 U	
4.	BARIUM	[51.]	P	16.	NICKEL	8.0 U	P
5.	BERYLLIUM	1.0 U	P	17.	POTASSIUM	[2740.]	P
6.	CADMIUM	3.0 U	P	18.	SELENIUM	5.0 U	F
7.	CALCIUM	91900.	P	19.	SILVER	5.0 U	P
8.	CHROMIUM	[5.1]	P	20.	SODIUM	90300.	P
9.	COBALT	4.0 U	P	21.	THALLIUM	10. UN	F
10.	COPPER	6.0 U	P	22.	VANADIUM	3.0 U	P
11.	IRON	474.	P	23.	ZINC	[2.8]	P
12.	LEAD	5.0 U	F				
	CYANIDE	10. U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR; DF OF 5 FOR MG;

00011

LAB SUPERVISOR Pkw for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P. O. BOX 818 - ALEXANDRIA, VA. 22313
/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 905

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/02/88

LAB SAMPLE ID. NO. 50117, 50123

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 226

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER X SOIL WIPE

UG/L

1.	ALUMINUM	[63.]	P	13.	MAGNESIUM	44400.	P
2.	ANTIMONY	23. U	P	14.	MANGANESE	295.	P
3.	ARSENIC	10. U	F	15.	MERCURY	0.2 U	
4.	BARIUM	[59.]	P	16.	NICKEL	8.0 U	P
5.	BERYLLIUM	1.0 U	P	17.	POTASSIUM	[4620.]	P
6.	CADMIUM	3.0 U	P	18.	SELENIUM	5.0 U	F
7.	CALCIUM	86200.	P	19.	SILVER	5.0 U	P
8.	CHROMIUM	5.0 U	P	20.	SODIUM	91700.	P
9.	COBALT	[5.4]	P	21.	THALLIUM	10. UN	F
10.	COPPER	6.0 U	P	22.	VANADIUM	3.0 U	P
11.	IRON	793.	P	23.	ZINC	[5.6]	P
12.	LEAD	5.0 U	F				
	CYANIDE	10. U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR; DF OF 5 FOR MG;

00016

LAB SUPERVISOR PKW for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
`/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 906

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/02/88

LAB SAMPLE ID. NO. 50118, 50124

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 226

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER X SOIL WIPE

UG/L

1.	ALUMINUM	1970.	P	13.	MAGNESIUM	62400.	P
2.	ANTIMONY	23. U	P	14.	MANGANESE	2790.	P
3.	ARSENIC	36.	F	15.	MERCURY	0.2 U	
4.	BARIUM	743.	P	16.	NICKEL	8.0 U	P
5.	BERYLLIUM	1.0 U	P	17.	POTASSIUM	22000.	P
6.	CADMIUM	15. U	P	18.	SELENIUM	5.0 U	F
7.	CALCIUM	124000.	P	19.	SILVER	[5.0]	P
8.	CHROMIUM	5.0 U	P	20.	SODIUM	85100.	P
9.	COBALT	[16.]	P	21.	THALLIUM	10. UN	F
10.	COPPER	[6.5]	P	22.	VANADIUM	[9.4]	P
11.	IRON	107000.	P	23.	ZINC	50.	P
12.	LEAD	9.8	F				
	CYANIDE	10. U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; CLARITY - CLEAR; DF OF 5 FOR MG, FE;

00017

LAB SUPERVISOR PKW for

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
)3/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 907

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/02/88

LAB SAMPLE ID. NO. 50119, 50125

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 226

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER X SOIL WIPE

UG/L

1.	ALUMINUM	[58.]	P	13.	MAGNESIUM	45600.	P
2.	ANTIMONY	23. U	P	14.	MANGANESE	284.	P
3.	ARSENIC	10. U	F	15.	MERCURY	0.2 U	
4.	BARIUM	[49.]	P	16.	NICKEL	8.0 U	P
5.	BERYLLIUM	1.0 U	P	17.	POTASSIUM	[2910.]	P
6.	CADMIUM	3.0 U	P	18.	SELENIUM	5.0 U	F
7.	CALCIUM	90900.	P	19.	SILVER	5.0 U	P
8.	CHROMIUM	5.0 U	P	20.	SODIUM	81400.	P
9.	COBALT	4.0 U	P	21.	THALLIUM	50. UN	F
10.	COPPER	6.0 U	P	22.	VANADIUM	3.0 U	P
11.	IRON	449.	P	23.	ZINC	[3.6]	P
12.	LEAD	5.0 U	F				
	CYANIDE	10. U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR; DF OF 5 FOR MG, TL; SD;

00018

LAB SUPERVISOR PKW for

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MEY 908

DATE 6/07/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9726/3905E

SOW NO. 785

LAB RECEIPT DATE 6/02/88

LAB SAMPLE ID. NO. 50120, 50126

QC REPORT NO. 225 - 226

PROJECT-TASK 5027.0000

BATCH 226

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER X SOIL WIPE

UG/L

1.	ALUMINUM	16. U	P	13.	MAGNESIUM	[11.]	P
2.	ANTIMONY	23. U	P	14.	MANGANESE	2.0 U	P
3.	ARSENIC	10. U	F	15.	MERCURY	0.2 U	
4.	BARIUM	1.0 U	P	16.	NICKEL	8.0 U	P
5.	BERYLLIUM	1.0 U	P	17.	POTASSIUM	340. U	P
6.	CADMIUM	3.0 U	P	18.	SELENIUM	5.0 U	F
7.	CALCIUM	[29.]	P	19.	SILVER	5.0 U	P
8.	CHROMIUM	5.0 U	P	20.	SODIUM	[46.]	P
9.	COBALT	4.0 U	P	21.	THALLIUM	10. UN	F
10.	COPPER	6.0 U	P	22.	VANADIUM	3.0 U	P
11.	IRON	[11.]	P	23.	ZINC	2.0 U	P
12.	LEAD	5.0 U	F				
	CYANIDE	10. U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR;

00019

LAB SUPERVISOR PKW for

JANET BECKMAN

QC EXCEPTION SUMMARY REPORT

CASE # 9726/3105E SAS
DATA SET # SF5237
LAB Q.C. # 225/226
DATE: 6/24/88

SITE Highland Park Landfill
LAB Versar
REVIEWED BY [illegible]

MATRIX: 12 soil 225
CONC. : low
MATRIX: 6 water 226
CONC. low

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER COMMENTS
	Holding Time	Cal Blanks	Ind Calver	Contin Calver	Prep Blk AQ	Prep Blk SOL	ICS %R	LCS % AQ	LCS % SOL	Sol Dup RPD	Sol Spk %R	AQ Dup RPD	AQ Spk %R	Ser Dilu AQ	Ser Dilu SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike %R	Blind Blank	Blind Spike %R	Split Sample RPD	
Aluminum																								
Antimony											32													
Arsenic											36													
Barium																								
Beryllium																								
Cadmium																								
Calcium																								
Chromium																								
Cobalt																								
Copper																								
Iron																								
Lead																								
Magnesium																								
Manganese																								
Mercury																								
Nickel																								
Potassium																								
Selenium																								
Silver																								
Sodium															120									
Thallium											68		42											
Tin																								
Vanadium																								
Zinc															23									
Cyanide											13													

Field Dup 403/404 [illegible]
Field Blank 408 [illegible]

US ENVIRONMENTAL PROTECTION AGENCY
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA 22313
703/557-2490 FTS:8-557-2490

DATE: 5/07/88

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

LAB NAME: VERSAR, INC.
SOW NO.: 785

Q.C. REPORT: 225 - 226
CASE NO.: 9726/3905E
PROJECT NO.: 5027.0500

SAMPLE NUMBERS

EPA NO.	LAB ID NO.	EPA NO.	LAB ID NO.
MEY 891	50096	MEY 892	50097
MEY 893	50098	MEY 894	50099
MEY 895	50100	MEY 896	50101
MEY 897	50102	MEY 898	50103
MEY 899	50104	MEY 900	50105
MEY 901	50106	MEY 902	50107
MEY 903	50115, 50121	MEY 904	50116, 50122
MEY 905	50117, 50123	MEY 906	50118, 50124
MEY 907	50119, 50125	MEY 908	50120, 50126

COMMENTS: THE SODIUM AND ZINC VALUES FOR THE SOIL MATRIX HAVE BEEN FLAGGED WITH E'S DUE TO THE SERIAL DILUTION; SAMPLE MEY 905 WAS SPECIFIED TO BE USED FOR QC FOR THE WATER MATRIX, HOWEVER SAMPLE MEY 903 WAS USED FOR THE QC FOR THE MERCURY ANALYSIS DUE TO INSUFFICIENT SAMPLE VOLUME OF MEY 905;

ICP INTERELEMENT AND BACKGROUND CORRECTION APPLIED? YES.
CORRECTIONS APPLIED BEFORE GENERATION OF RAW DATA.

FOOTNOTES:

NR - NOT REQUIRED BY CONTRACT AT THIS TIME
FORM I:

VALUE - IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT, REPORT THE VALUE IN BRACKETS (I.E., [10]). INDICATE THE ANALYTICAL METHOD USED WITH P (FOR ICP/FLAME AA) OR F (FOR FURNACE).
U - INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORT WITH THE DETECTION LIMIT VALUE (E.G., 10U).
E - INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE. EXPLANATORY NOTE INCLUDED ON COVER PAGE.
S - INDICATES VALUE DETERMINED BY METHOD OF STANDARD ADDITION
N - INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.
* - INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.
- INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995
DF - DILUTION FACTOR
SD - SAMPLE USED FOR ICP SERIAL DILUTION
M - INDICATES DUPLICATE INJECTION RESULTS EXCEED CONTROL LIMITS

INDICATE METHOD USED: P FOR ICP; A FOR FLAME AA; AND F FOR FURNACE.

FORM III A
BLANKS

Q.C. REPORT: 225 - 226

LAB NAME: VERSAR, INC.
DATE: 5/07/88

CASE NO.: 9726/3905E
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1: SOIL	MATRIX 2: HOH
1. ALUMINUM	16.U	16.U	16.U	16.U	16.U	[3.8]	16.U
2. ANTIMONY	23.U	23.U	23.U	23.U	23.U	4.6U	23.U
3. ARSENIC	3.0U	3.0U	3.0U	3.0U	3.0U	0.60U	3.0U
4. BARIUM	1.0U	1.0U	1.0U	1.0U	1.0U	0.20U	1.0U
5. BERYLLIUM	1.0U	1.0U	1.0U	1.0U	1.0U	0.20U	1.0U
6. CADMIUM	3.0U	3.0U	3.0U	3.0U	3.0U	0.60U	3.0U
7. CALCIUM	6.0U	6.0U	6.0U	6.0U	6.0U	1.2U	6.0U
8. CHROMIUM	5.0U	5.0U	5.0U	5.0U	5.0U	1.0U	5.0U
9. COBALT	4.0U	4.0U	4.0U	4.0U	4.0U	[0.96]	4.0U
10. COPPER	6.0U	6.0U	6.0U	6.0U	6.0U	1.2U	6.0U
IRON	[13.]	5.0U	5.0U	5.0U	5.0U	[1.0]	[14.]
12. LEAD	2.0U	2.0U	---	---	---	0.40U	2.0U
13. MAGNESIUM	1.0U	1.0U	1.0U	1.0U	1.0U	[0.84]	[1.5]
14. MANGANESE	2.0U	2.0U	2.0U	2.0U	2.0U	0.40U	2.0U
15. MERCURY	0.2U	0.2U	0.2U	---	---	0.10U	0.2U
16. NICKEL	8.0U	8.0U	8.0U	8.0U	8.0U	1.6U	8.0U
17. POTASSIUM	340.U	340.U	340.U	[375.]	340.U	68.U	340.U
18. SELENIUM	3.0U	3.0U	---	---	---	0.60U	3.0U
19. SILVER	5.0U	5.0U	5.0U	5.0U	5.0U	1.0U	5.0U
20. SODIUM	22.U	22.U	[27.]	[39.]	[33.]	[13.]	[39.]
21. THALLIUM	3.0U	3.0U	3.0U	3.0U	3.0U	0.60U	3.0U
22. VANADIUM	3.0U	3.0U	[4.8]	3.0U	3.0U	0.60U	[4.0]
23. ZINC	2.0U	2.0U	2.0U	2.0U	2.0U	0.40U	2.0U
CYANIDE	10.U	10U.	10.U	---	---	2.5U	10.U

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III B
BLANKS

Q.C. REPORT: 225 - 226

NAME: VERSAR, INC.
DATE: 5/07/88

CASE NO.: 9726/3905E
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1: HOH	MATRIX 2:
1. ALUMINUM		16.U	16.U	16.U			
2. ANTIMONY		23.U	23.U	23.U			
3. ARSENIC	3.0U	3.0U	3.0U	3.0U			
4. BARIUM		1.0U	[1.8]	1.0U			
5. BERYLLIUM		1.0U	1.0U	1.0U			
6. CADMIUM		3.0U	3.0U	3.0U			
7. CALCIUM		6.0U	6.0U	6.0U			
8. CHROMIUM		5.0U	5.0U	5.0U			
9. COBALT		4.0U	4.0U	4.0U			
COPPER		6.0U	6.0U	6.0U			
11. IRON		5.0U	5.0U	[9.2]			
12. LEAD	2.0U	2.0U	2.0U	2.0U			
13. MAGNESIUM		[4.0]	1.0U	[4.2]			
14. MANGANESE		2.0U	2.0U	2.0U			
15. MERCURY	0.2U	0.2U	---	---			
16. NICKEL		8.0U	8.0U	8.0U			
17. POTASSIUM		340.U	340.U	340.U			
18. SELENIUM	3.0U	3.0U	3.0U	3.0U	3.0U		
19. SILVER		5.0U	5.0U	5.0U			
20. SODIUM		[32.]	[26.]	[39.]			
21. THALLIUM		3.0U	3.0U	---		3.0U	
22. VANADIUM		3.0U	3.0U	3.0U			
ZINC		2.0U	2.0U	2.0U			
24. CYANIDE	10.U	10.U	---	---			

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III C
BLANKS

Q.C. REPORT: 225 - 226

3 NAME: VERSAR, INC.
DATE: 5/07/88

CASE NO.: 9726/3905E
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1:	MATRIX 2:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC	3.0U	3.0U					
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
COPPER							
11. IRON							
12. LEAD	2.0U	2.0U					
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM		3.0U					
19. SILVER							
20. SODIUM							
21. THALLIUM	3.0U	3.0U					
22. VANADIUM							
ZINC							
24. CYANIDE							

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III D
BLANKS

Q.C. REPORT: 225 - 226

LAB NAME: VERSAR, INC.
ATE: 5/07/88

CASE NO.: 9726/3905E
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1:	MATRIX 2:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC	3.0U	3.0U					
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
10. COPPER							
. IRON							
12. LEAD	2.0U	2.0U	2.0U	2.0U			
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM							
19. SILVER							
20. SODIUM							
21. THALLIUM	3.0U	3.0U					
22. VANADIUM							
23. ZINC							
. CYANIDE							

00031

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III E
BLANKS

Q.C. REPORT: 225 - 226

LAB NAME: VERSAR, INC.
DATE: 5/07/88

CASE NO.: 9726/3905E
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1:	MATRIX 2:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC							
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
10. COPPER							
1. IRON							
12. LEAD	2.0U	2.0U	2.0U				
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM							
19. SILVER							
20. SODIUM							
21. THALLIUM							
22. VANADIUM							
23. ZINC							
24. CYANIDE							

00032

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III F
BLANKS

Q.C. REPORT: 225 - 226

B NAME: VERSAR, INC.
DATE: 5/07/88

CASE NO.: 9726/3905E
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1:	MATRIX 2:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC							
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
COPPER							
11. IRON							
12. LEAD	2.0U	2.0U					
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM							
19. SILVER							
20. SODIUM							
21. THALLIUM							
22. VANADIUM							
ZINC							
24. CYANIDE							

00033

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM V B
SPIKE SAMPLE RECOVERY

Q.C. REPORT: 225 - 226

LAB NAME: VERSAR, INC.
DATE: 5/07/88

MATRIX: L. SOIL

CASE NO.: 9726/3905E
EPA SAMPLE NO.: MEY 902
LAB SAMPLE ID NO.: 50107
UNITS: MG/KG

COMPOUND	CONTROL LIMIT %R	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKED ADDED (SA)	%R (1)	
1. ALUMINUM	75-125	NR	---	---	---	
2. ANTIMONY	75-125	42.	6.0U	130.	32.	N
3. ARSENIC	75-125	10.	6.4	10.	36.	N
4. BARIUM	75-125	573.	86.	521.	93.	
5. BERYLLIUM	75-125	13.	[0.81]	13.	94.	
6. CADMIUM	75-125	14.	[1.2]	13.	98.	
7. CALCIUM	75-125	NR	---	---	---	
8. CHROMIUM	75-125	106.	59.	52.	90.	
9. COBALT	75-125	129.	[7.6]	130.	93.	
10. COPPER	75-125	110.	47.	65.	97.	
11. IRON	75-125	NR	---	---	---	
12. LEAD	75-125	68.	54.	13.	108.	
13. MAGNESIUM	75-125	NR	---	---	---	
14. MANGANESE	75-125	373.	255.	130.	91.	
15. MERCURY	75-125	0.96	0.29	0.65	103.	
16. NICKEL	75-125	140.	20.	130.	92.	
17. POTASSIUM	75-125	NR	---	---	---	
18. SELENIUM	75-125	3.0	1.3U	2.6	115.	
19. SILVER	75-125	12.	[2.1]	13.	76.	
20. SODIUM	75-125	NR	---	---	---	
21. THALLIUM	75-125	8.9	2.6U	13.	68.	N
. VANADIUM	75-125	141.	25.	130.	89.	
23. ZINC	75-125	224.	107.	130.	90.	
24. CYANIDE (2)	75-125	0.79	0.68U	6.09	13.	N

(1) %R = [(SSR-SR)/SA] X 100 N=OUT OF CONTROL U=NOT REQUIRED

FORM V A
SPIKE SAMPLE RECOVERY

Q.C. REPORT: 225 - 226

LAB NAME: VERSAR, INC.
DATE: 5/07/88

MATRIX: L. HOH

CASE NO.: 9726/3905E
EPA SAMPLE NO.:MEY 905
LAB SAMPLE ID NO.: 50117, 50123
UNITS: UG/L

COMPOUND	CONTROL LIMIT %R	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKED ADDED (SA)	%R (1)	
1. ALUMINUM	75-125	2130.	[63.]	2000.	103.	
2. ANTIMONY	75-125	495.	23.U	500.	99.	
3. ARSENIC	75-125	21.	10.U	20.	105.	
4. BARIUM	75-125	2130.	[59.]	2000.	104.	
5. BERYLLIUM	75-125	50.	1.0U	50.	100.	
6. CADMIUM	75-125	55.	3.0U	50.	110.	
7. CALCIUM	75-125	NR	---	---	---	
8. CHROMIUM	75-125	200.	5.0U	200.	100.	
9. COBALT	75-125	514.	[5.4]	500.	102.	
10. COPPER	75-125	267.	6.0U	250.	107.	
11. IRON	75-125	1780.	793.	1000.	99.	
12. LEAD	75-125	21.	5.0U	20.	105.	
13. MAGNESIUM	75-125	NR	---	---	---	
14. MANGANESE	75-125	488.	295.	200.	96.	
15. MERCURY (2)	75-125	1.1	0.2U	1.0	110.	
16. NICKEL	75-125	405.	8.0U	400.	101.	
17. POTASSIUM	75-125	NR	---	---	---	
18. SELENIUM	75-125	9.4	5.0U	10.	94.	
19. SILVER	75-125	50.	5.0U	50.	100.	
20. SODIUM	75-125	NR	---	---	---	
21. THALLIUM	75-125	21.	10.U	50.	42.	N
22. VANADIUM	75-125	501.	3.0U	500.	100.	
23. ZINC	75-125	203.	[5.6]	200.	99.	
24. CYANIDE	75-125	100.	10.U	100.	100.	

(1) %R = [(SSR-SR)/SA] X 100 "N"- OUT OF CONTROL "NR" - NOT REQUIRED
(2) EPA # MEY 903 - LAB # 50115

FORM VI A
DUPLICATES

Q.C. REPORT: 225 - 226

AB NAME: VERSAR, INC.
DATE: 5/07/88

MATRIX: L. HOH

CASE NO.: 9726/3905E
EPA SAMPLE NO.: MEY 905
LAB SAMPLE ID NO.: 50117, 50123
UNITS: UG/L

COMPOUND	CONTROL LIMITS (1)	SAMPLE(S)	DUPLICATE(D)	RPD(2)
1. ALUMINUM		[63.]	[87.]	NC
2. ANTIMONY		23.U	23.U	NC
3. ARSENIC		10.U	10.U	NC
4. BARIUM		[59.]	[58.]	NC
5. BERYLLIUM		1.0U	1.0U	NC
6. CADMIUM		3.0U	3.0U	NC
7. CALCIUM		86200.	84800.	1.6
8. CHROMIUM		5.0U	[5.7]	NC
9. COBALT		[5.4]	[5.4]	NC
COPPER		6.0U	[6.5]	NC
11. IRON		793.	769.	3.1
12. LEAD		5.0U	5.0U	NC
13. MAGNESIUM	+/- 5000.	44400.	44100.	0.68
14. MANGANESE		295.	290.	1.7
15. MERCURY (3)		0.2U	0.2U	NC
16. NICKEL		8.0U	8.0U	NC
17. POTASSIUM		[4620.]	[4450.]	NC
18. SELENIUM		5.0U	5.0U	NC
19. SILVER		5.0U	5.0U	NC
20. SODIUM		91700.	90200.	1.6
21. THALLIUM		10.U	50.U	NC
22. VANADIUM		3.0U	[3.4]	NC
ZINC		[5.6]	[3.2]	NC
24. CYANIDE		10.U	10.U	NC

(1) TO BE ADDED AT A LATER DATE (2) RPD = [(S-D)/((S+D)/2)]X100
(3) EPA # MEY 903 - LAB # 50115

FORM VI B
DUPLICATES

Q.C. REPORT: 225 - 226

B NAME: VERSAR, INC.
DATE: 5/07/88

MATRIX: L. SOIL

CASE NO.: 9726/3905E
EPA SAMPLE NO.:MEY 902
LAB SAMPLE ID NO.:50107
UNITS: MG/KG

COMPOUND	CONTROL LIMITS (1)	SAMPLE(S)	DUPLICATE(D)	RPD(2)
1. ALUMINUM		10700.	9720.	9.6
2. ANTIMONY		6.0U	6.0U	NC
3. ARSENIC	+/- 2.6	6.4	5.4	18.
4. BARIUM	+/- 52.	86.	82.	4.8
5. BERYLLIUM		[0.81]	[0.69]	NC
6. CADMIUM		[1.2]	1.8	NC
7. CALCIUM		12000.	11900.	0.84
8. CHROMIUM		59.	59.	0.0
9. COBALT		[7.6]	[7.3]	NC
COPPER		47.	46.	2.2
11. IRON		15200.	14200.	6.8
12. LEAD		54.	48.	12.
13. MAGNESIUM	+/- 1300.	6290.	6150.	2.2
4. MANGANESE		255.	238.	6.9
15. MERCURY	+/- 0.13	0.29	0.36	22.
16. NICKEL	+/- 10.	20.	18.	10.
17. POTASSIUM	+/- 1300.	2260.	2060.	9.2
18. SELENIUM		1.3U	[0.98]	NC
19. SILVER		[2.1]	1.3U	NC
20. SODIUM		[87.]	[82.]	NC
21. THALLIUM		2.6U	2.6U	NC
22. VANADIUM	+/- 13.	25.	24.	4.1
ZINC		107.	102.	4.8
24. CYANIDE (3)		0.68U	0.68U	NC

(1) TO BE ADDED AT A LATER DATE (2) RPD = [(S-D)/((S+D)/2)]X100
(3) EPA # MEY 894 - LAB # 50099

FORM VII A Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/07/88

LCS NO.:LCSA OR LCSF (HOH)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID# 4	IDL (UG/L) Furnace ID# 5	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.	16.		1980.	1980.	100.
2. ANTIMONY (1)	60.	23.		1010.	1010.	100.
3. ARSENIC	10.		3.	47.0	49.	104.
4. BARIUM	200.	1.		1980.	1990.	100.
5. BERYLLIUM	5.	1.		481.	473.	98.
6. CADMIUM	5.	3.		489.	507.	104.
7. CALCIUM	5000.	6.		49800.	49900.	100.
8. CHROMIUM	10.	5.		506.	491.	97.
9. COBALT	50.	4.		474.	497.	105.
10. COPPER	25.	6.		542.	548.	101.
11. IRON	100.	5.		1990.	1970.	99.
12. LEAD	5.					
13. MAGNESIUM	5000.	1.		25000.	24300.	97.
14. MANGANESE	15.	2.		513.	513.	100.
15. MERCURY	0.2					
16. NICKEL	40.	8.		496.	467.	94.
17. POTASSIUM	5000.	340.		50200.	47700.	95.
18. SELENIUM	5.					
19. SILVER	10.	5.		509.	486.	95.
20. SODIUM	5000.	22.		50700.	49400.	97.
21. THALLIUM	10.					
22. VANADIUM	50.	3.		511.	492.	96.
23. ZINC	20.	2.		3100.	2920.	94.
24. CYANIDE	10.	NR	NR	1000.	955.	96.

00039

NR - NOT REQUIRED ID# 4- JARRELL ASH 1150 ID# 5- PERKIN ELMER 5000

(1) LCS NO. IS LCSB

FORM VII B Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/27/88

LCS NO.: LCSF

(HOH)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 10	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.		3.	104.	98.	94.
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

00040

NR - NOT REQUIRED ID# 10- PERKIN ELMER 3030

FORM VII C Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

L. NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/07/88
LCS NO.: LCSF
(HOH)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 3	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
COPPER	25.					
11. IRON	100.					
12. LEAD	5.		2.	97.9	99.	101.
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.		3.	97.3	87.	89.
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 3- PERKIN ELMER 2380

FORM VII E Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

.B NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/07/88

LCS NO.:LCSA OR LCSF (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID# 4	IDL (UG/L) Furnace ID# 6	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.	16.		1980.	1960.	99.
2. ANTIMONY (1)	60.	23.		1010.	1010.	100.
3. ARSENIC	10.		3.	47.0	50.	106.
4. BARIUM	200.	1.		1980.	1960.	99.
5. BERYLLIUM	5.	1.		481.	469.	98.
6. CADMIUM	5.	3.		489.	501.	102.
7. CALCIUM	5000.	6.		49800.	49300.	99.
8. CHROMIUM	10.	5.		506.	486.	96.
9. COBALT	50.	4.		474.	493.	104.
COPPER	25.	6.		542.	544.	100.
11. IRON	100.	5.		1990.	1950.	98.
12. LEAD	5.					
13. MAGNESIUM	5000.	1.		25000.	23800.	95.
14. MANGANESE	15.	2.		513.	507.	99.
15. MERCURY	0.2					
16. NICKEL	40.	8.		496.	461.	93.
17. POTASSIUM	5000.	340.		50200.	47000.	94.
18. SELENIUM	5.					
19. SILVER	10.	5.		509.	480.	94.
20. SODIUM	5000.	22.		50700.	48600.	96.
21. THALLIUM	10.					
22. VANADIUM	50.	3.		511.	487.	95.
23. ZINC	20.	2.		3100.	2900.	94.
24. CYANIDE	10.	NR	NR	1000.	932.	93.

00043

NR - NOT REQUIRED ID# 4- JARRELL ASH 1150 ID# 5- PERKIN ELMER 5000

(1) LCS NO. IS LCSB

FORM VII F Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/07/88

LCS NO.: LCSF (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 10	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.		3.	104.	95.	91.
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 10- PERKIN ELMER 3030

FORM VII G Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/07/88

LCS NO.: LCSF (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 3	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.		2.	97.9	93.	95.
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.		3.	97.3	80.	82.
22. VANADIUM	50.					
3. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 3- PERKIN ELMER 2380

FORM VII H Q.C. REPORT: 225 - 226

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9726/3905E DATE: 5/07/88

LCS NO.: ICV #5 (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 7	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2		0.2	5.2	4.8	92.
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 7- MAS 50

APPENDIX F

WELL LOGS OF THE AREA OF THE SITE

White Copy – Ill. Dept. of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS ...ILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

REFERENCE A
SITE NAME
SITE ID

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug ____. Bored ____. Hole Diam. 5 in. Depth 178 ft.
   Curb material ____. Buried Slab: Yes ____ No ____
   b. Driven ____. Drive Pipe Diam. ____ in. Depth ____ ft.
   c. Drilled X. Finished in Drift ____. In Rock X.
   Tubular ____. Gravel Packed ____.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building ____ Ft. Seepage Tile Field ____
   Cess Pool ____ Sewer (non Cast iron) ____
   Privy ____ Sewer (Cast iron) ____
   Septic Tank ____ Barnyard ____
   Leaching Pit ____ Manure Pile ____
3. Well furnishes water for human consumption? Yes X No ____
4. Date well completed 7/24/80
5. Permanent Pump Installed? Yes X Date 7/25/80 No ____
   Manufacturer Red Jacket Type subm. Location ____
   Capacity 10 gpm. Depth of Setting 100 Ft.
6. Well Top Sealed? Yes X No ____ Type ____
7. Pitless Adapter Installed? Yes X No ____
   Manufacturer Williams Model Number ____
   How attached to casing? clamp
8. Well Disinfected? Yes X No ____
9. Pump and Equipment Disinfected? Yes X No ____
10. Pressure Tank Size 82 gal. Type Well-X-Trol
    Location ____
11. Water Sample Submitted? Yes X No ____

REMARKS:

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner KOMEN CO. Well No. Lot 2 Blounts Subd.
    Address Rt. 2, Box 137BB, Antioch, IL.
    Driller GEORGE E. GAFFKE License No. 102-234
11. Permit No. 94788 Date 7/11/80
12. Water from Limestone Formation at depth 173 to 178 ft.
13. County Lake
    Sec. 19.7e
    Twp. 43N
    Rge. 12E
    Elev. ____
14. Screen: Diam. ____ in.
    Length: ____ ft. Slot ____

X			

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	1' abv. grade	157
5	Black Steel	157	178

SHOW LOCATION IN SECTION PLAT
Lot 2 Blounts Subd
50'S, 150'E, NW/C SESWNW

16. Size Hole below casing: 5 in.
17. Static level 53 ft. below casing top which is 1 ft. above ground level. Pumping level ____ ft. when pumping at 20 gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	18	18
Blue Clay	108	126
Broken Rock-Gravel	8	134
Blue Clay	13	147
Blue Clay - Lt. Gravel	18	165
Broken Rock - Gravel	8	173
Limestone to Broken Rock	5	178

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 10/27/80

IDPH 4.065
1/74 – KNB-1
(59571--12½M Sets–6-74) ...-5

OWN Highland Park OWNSHIP West Deerfield NO. 16
OMPANY Henry Boysen, Jr. NO. 2E
ARM Rogers, Harlan NO. 1 T. 43 N SEC. 21
UTHORITY Henry Boysen, Jr.
LEVATION 647 T. M.
OLLECTOR
ONFIDENTIAL DATE DRILLED Feb. 1940
t 44, North Shore Acres or 1414 Center St.

STRATA	THICKNESS FEET	THICKNESS IN.	DEPTH FEET	DEPTH IN.
100' N. line, 1975' E. line				
COUNTY NO. 498				
Clay, yellow	10		10	
Clay, blue	150		160	
Quicksand	10		170	
Hardpan	20		190	
Gravel	3		193	
4 1/2" casing to 193'				
Water level 4' from surface				
Capacity tested to 9 gal. per min.				

COUNTY Lake INDEX NO. 1621
DRILL RECORD
(A6072—15M—10-39) ILLINOIS GEOLOGICAL SURVEY, URBANA

Town Highland Park Township West Deerfield Map No.
Company Snelton Brothers No. R.
Farm Knudtzen, Kermit No. T. Sec. 21
Authority Cornelius Snelten
Elevation 43 N
Collector
Confidential Date Drilled Sept. 1940

No.	COUNTY NO. 497 Strata	Thickness Feet	Thickness In.	Depth Feet	Depth In.
	Lot 35, 1269 West Road				
	Clay, yellow	15		15	
	Clay, blue	53		68	
	Hardpan blue	20		88	
	Clay, blue	45		133	
	Clay, sandy	27		160	
	Gravel	11		171	
	Sand and gravel	41		212	
	Limestone	14		226	
	4½" casing to 212'				
	Water level from surface 15'				
	Capacity tested to 10 gal.				
	Water lowered to 40'				
	Test run 3 hrs.				

COUNTY Lake INDEX NO. 21-43N-12E
DRILL RECORD
(12880—20M) ILLINOIS GEOLOGICAL SURVEY, URBANA (12-41)