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471607

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TECHNICAL MEMORANDUM NO. 1

PROJECT: Albion/Sheridan Township Landfill

SUBJECT: Test Pitting Program

PREPARED BY: Garret Bondy, P.E. and Craig Kielty / ABB Environmental Services, Inc.

INTRODUCTION

The purpose of this technical memorandum is to describe the test pitting activities conducted by ABB Environmental Services, Inc. (ABB-ES) at the Albion/Sheridan Township Landfill (ASTL) site. This work was conducted through Contract No. ERD #9477 with the State of Michigan under the direction of the Michigan Department of Natural Resources (MDNR), Superfund Section in Lansing, Michigan.

The ASTL site is an inactive landfill located approximately 1 mile east of Albion, Michigan, in Section 36 (T2S,R4W) of Calhoun County (see Figure TM1-1). The site is also defined as Lot 27 and Lot 28 of the Supervisor's Plat and is comprised of approximately 17 acres of land. The site is bordered on the north by Michigan Avenue (State Route 99), on the east by the Calhoun/Jackson County line, and on the south by East Erie Road. The western boundary of the site is approximately 700 feet west of the Calhoun/Jackson County line. The topography of the site is varied with a relief range of approximately 30 feet (see Figure TM1-2). Elevations in the area generally increase to the north away from the drainage basin of the north branch of the Kalamazoo River. Several depressional areas are visible across the site. These are most likely related to former sand and gravel pit, and landfilling operations.

A study conducted at the ASTL site revealed several areas within the landfill where magnetic anomalies were present. Other information obtained by the MDNR suggested that drums, possibly containing industrial wastes, were buried at the ASTL between 1966 and 1981. The MDNR requested that ABB-ES conduct a test pitting program in several of these anomalous areas. The objective of the test pitting program was to:

(1) assess whether drums containing industrial wastes are present in significant numbers in

concentrated areas (as opposed to sporadic occurrences in scattered locations); and

(2) sample the contents of selected drums to evaluate whether they contain substances that may pose a significant threat to public health or the environment.

To meet these objectives, an approach for test pitting in the anomalous areas was developed in cooperation with the MDNR. The approach is detailed in a Work Plan entitled "Test Pitting Operations - Albion/Sheridan Township Landfill," April 1994. This technical memorandum presents the test pitting and drum sampling procedures used, as well as the analytical results from the samples.

SCHEDULE

Site facilities (a trailer and portable toilet) were delivered to the site the week of May 30, 1994. Personnel and test pitting equipment arrived at the site on June 6, 1994. Test pitting began on June 7, 1994 and was completed on June 9, 1994. Personnel and test pitting equipment departed the site on June 10, 1994. Laboratory analyses by the MDNR were conducted the week of June 6, 1994 and thereafter. The portable toilet was removed from the site on June 10, 1994. The site trailer was removed on June 15, 1994.

PERSONNEL

Personnel from ABB-ES and the MDNR were on-site to oversee and manage the ASTL test pitting program. Additional MDNR personnel were also present to conduct sample analyses using the MDNR mobile laboratory. Piedmont Remedial Services, Inc. (PRS) of Marne, Michigan, provided personnel and equipment to perform the test pitting and drum sampling. Representatives for the U.S. Environmental Protection Agency (USEPA) were also present to observe the activities. A list of individual names and functional titles for these personnel is presented in Appendix A.

Other personnel from the MDNR were present to conduct compound-specific air monitoring along the site perimeter and to observe the operation, but they did not actually participate in the test pitting work. Daily log-in sheets indicating all on-site personnel are presented in Appendix A.

During the test pitting, the ABB-ES field operations leader (FOL) and site manager were present within the exclusion zone in level B personal protective equipment (PPE). The FOL and site manager observed the operations, documented the activities, and monitored ambient conditions at the excavation.

An MDNR representative was also present inside the exclusion zone in level B PPE. The MDNR representative provided direction as to the extent of each test pit, which drums to sample, and which drums to remove from the excavation overpack. The MDNR representative also videotaped the activities. PRS equipment operators and a crew chief were inside the exclusion zone in level B PPE to conduct the test pitting. The PRS crew chief directed the equipment operators.

Throughout the work, the ABB-ES Health and Safety Officer (HSO) traversed the site, monitoring ambient conditions at the exclusion zone perimeter and at the ASTL site perimeter. An ABB-ES support zone person remained present at the perimeter of the exclusion zone partially dressed in level B PPE, ready to assist in the exclusion zone in case of emergency. The MDNR project director and site geologist remained outside the exclusion zone, providing direction to the test pitting activities from that location. Representatives for the USEPA also remained outside the exclusion zone, observing the operation.

FIELD PROCEDURES

Prior to initiating the test pitting, MDNR personnel marked and prioritized areas for test pitting. On June 6, 1994, ABB-ES, MDNR, and PRS personnel conducted a site walkover for orientation purposes. A meteorological station was placed on the site to monitor temperature, humidity, and wind speed and direction.

At each test pit area, an exclusion zone was established. Outside the exclusion zone, a support area was established where support equipment including a decontamination station (for personnel and small equipment), breathing air, drum sampling equipment, sample bottles and drinking water were staged.

During test pitting operations, ambient conditions were monitored within the exclusion zone by the FOL for the following parameters:

- Total volatile organic compounds (VOCs) using an HNu Model P-101 photoionization

detector (PID) equipped with a 10.2 electron volt lamp;

- Lower explosive limit, percent oxygen, and hydrogen sulfide using a Neotronics Exotox Model 50;

- Hydrogen cyanide using a MDA Monitox Personal Alarm; and

- Radiation using a Radiation Alert Monitor 4 detector.

In addition, high-risk personnel (the FOL and PRS crew chief) were outfitted daily with a 3M Passive Air Sampling Badge to monitor for selected organic compounds.

Outside the exclusion zone and at the site perimeter, ambient conditions were monitored by the HSO for the following parameters:

- Total VOCs using an Hnu Model P-101 PID;

- Dust levels using an MIE PDM-3 MINIRAM respirable dust monitor; and

- Meteorological conditions (temperature, humidity, wind speed and direction) using a Rain Wise Weather Station.

Perimeter and meteorological observations, as well as personal monitoring data, are presented in Appendix B.

The test pits were excavated using a Komatsu PC-120 track-hoe. A plate was welded across the bucket of the track-hoe to cover the bucket teeth and decrease the potential for damaging buried drums during the work. A Komatsu PC-200, equipped with a grappling device, was used to move and overpack drums.

In beginning each test pit, the track-hoe scraped the ground surface lightly to assess whether drums were present near the surface and to remove the existing landfill cover. The existing cover was segregated from the other excavated materials. Excavation at each test pit continued until the MDNR directed the

excavation to cease and backfilling to commence. Stockpiled material was sequentially replaced into the excavation with the segregated cover material at the surface. Each test pit was backfilled prior to initiating another, and no test pit remained open overnight. The excavation equipment was decontaminated at the conclusion of the field work, prior to leaving the site.

As is discussed later in this Technical Memorandum, drums were only encountered in test pit area TP-09. Upon encountering the drums, test pitting continued in an effort to delineate the extent of the drum burial area and to obtain samples from a representative number of drums.

Drums observed to contain liquids were removed and overpacked if it was concluded that the drum could be removed without releasing its contents. In removing a drum, the track-hoe bucket was first used to unearth the drum as much as possible. Hand shovels were also used. Once the drum was unearthed, the grappling device removed the drum and placed it into a DOT-approved overpack container situated on plastic sheeting. The overpack containers were labeled and temporarily staged to the side of the test pit.

Samples were collected from a number of drums observed to contain liquids or sludges. Whenever possible, drums were sampled in-situ, prior to removal and overpacking. If a drum could not be sampled in-situ, then a sample was obtained once it was removed and overpacked.

Liquid samples were collected using a disposable glass coliwasa. One sludge sample was collected using a stainless-steel spoon. Samples were placed directly into pre-prepared laboratory sample containers provided by the MDNR. Filled sample containers were decontaminated in the support zone and transferred to the custody of the MDNR for delivery to the MDNR mobile laboratory located on-site or to the Lansing-based MDNR laboratory for analysis.

PPE and plastic sheeting used during the test pitting activities were placed into overpack drums and labeled as such. Personal decontamination fluids generated during the program were also containerized in an overpack drum and labeled as such. Prior to demobilizing from the site, all overpack containers were staged and covered on a concrete pad located near the southern entrance to the site, pending disposal.

The track-hoes were decontaminated on the last day of operations on a temporary decontamination pad

constructed of plastic sheeting and timbers provided by the MDNR. A high-pressure hot-water sprayer was used to clean the equipment, and a portable sump pump was used to collect and transfer the decontamination fluid to a polyethylene holding tank located on site, pending disposal.

Daily field activity summaries and a copy of the project log book are included as Appendix C.

RESULTS

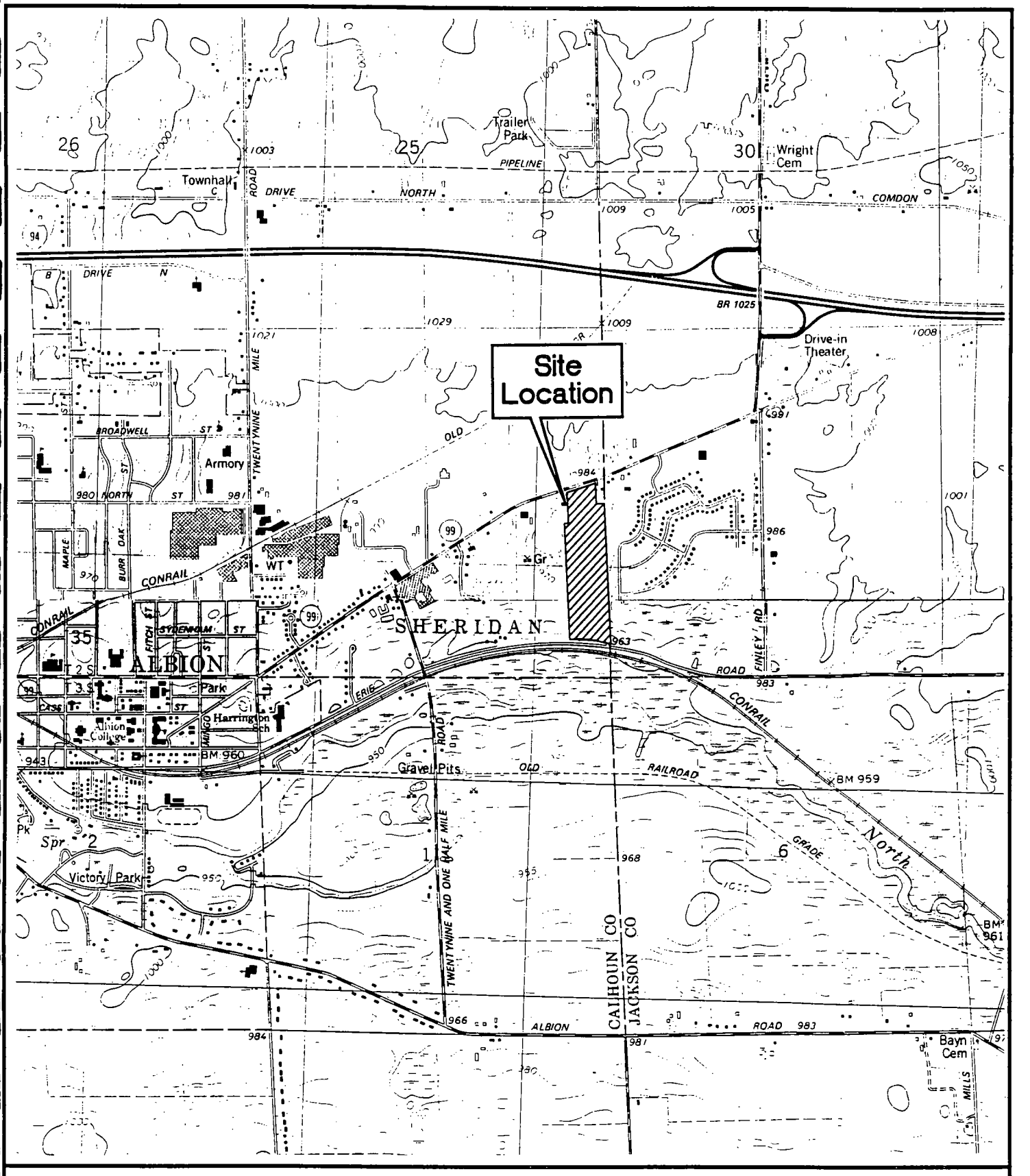
A total of 12 areas were test pitted and backfilled. Figure TM1-3 presents the test pit locations. Table TM1-1 presents the approximate final size of the test pit areas and general observations made during the work. As indicated in Table TM1-1, test pit TP-09 was the only area found to contain buried drums. The remaining areas were found to contain municipal refuse and varying types of industrial debris.

Figure TM1-4 illustrates the excavation work conducted at test pit TP-09. A total of seven excavations were completed to delineate the extent of the buried drums and to obtain the desired number of samples. The excavations are alphabetically labeled in the order in which they were completed. Two layers of drums were observed during the excavation of areas E and F. The extent of the second layer and whether additional layers of drums exist in these areas was not ascertained.

Based upon these excavations, ABB-ES estimated the areal extent of the buried drums as shown on Figure TM1-4. This area is estimated to cover approximately 1,350 square feet. ABB-ES also performed rough calculations to estimate the number of buried drums which may be present (see Appendix D). According to these calculations, approximately 200 to 400 drums may exist in this area.

A total of nine drums were removed from test pit area TP-09 and overpacked. Of these nine, seven were sampled for chemical analysis. Two additional drums were sampled but were not removed from the excavation (even though they contained liquids), because it was concluded that the drums could not be removed without releasing the contents. Figure TM1-5 illustrates the approximate locations from which individual drum samples were collected. Table TM1-2 compares the overpack container designations to the sample designations. Sample records for drum samples have been included as Appendix E.

Sample analyses were conducted by the MDNR. In general, the on-site MDNR mobile laboratory conducted the analyses for VOCs, and the MDNR's Lansing laboratory conducted all other analyses. MDNR analytical reports have been included as Appendix F. A summary of the unvalidated analytical results is presented in Table TM1-3 along with field PID readings and sample descriptions.



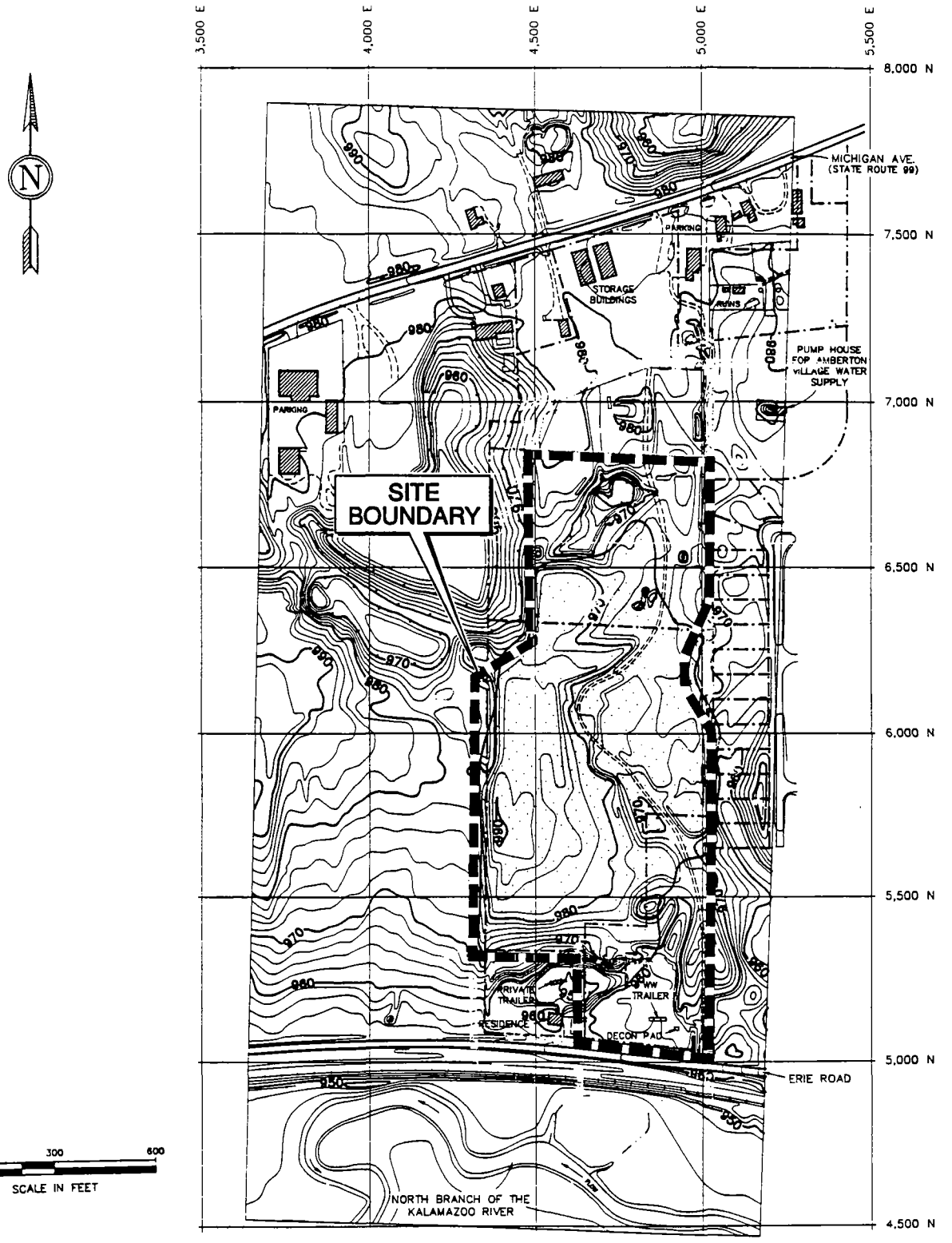
SCALE

0 1000 2000 3000 FT.

Taken from the Albion NE & SE, Michigan, 7.5 Series U.S.G.S Topographic Quadrangle Map

FIGURE TM1-1
SITE LOCATION
ALBION-SHERIDAN LANDFILL
ALBION, MICHIGAN

ABB Environmental Services, Inc.



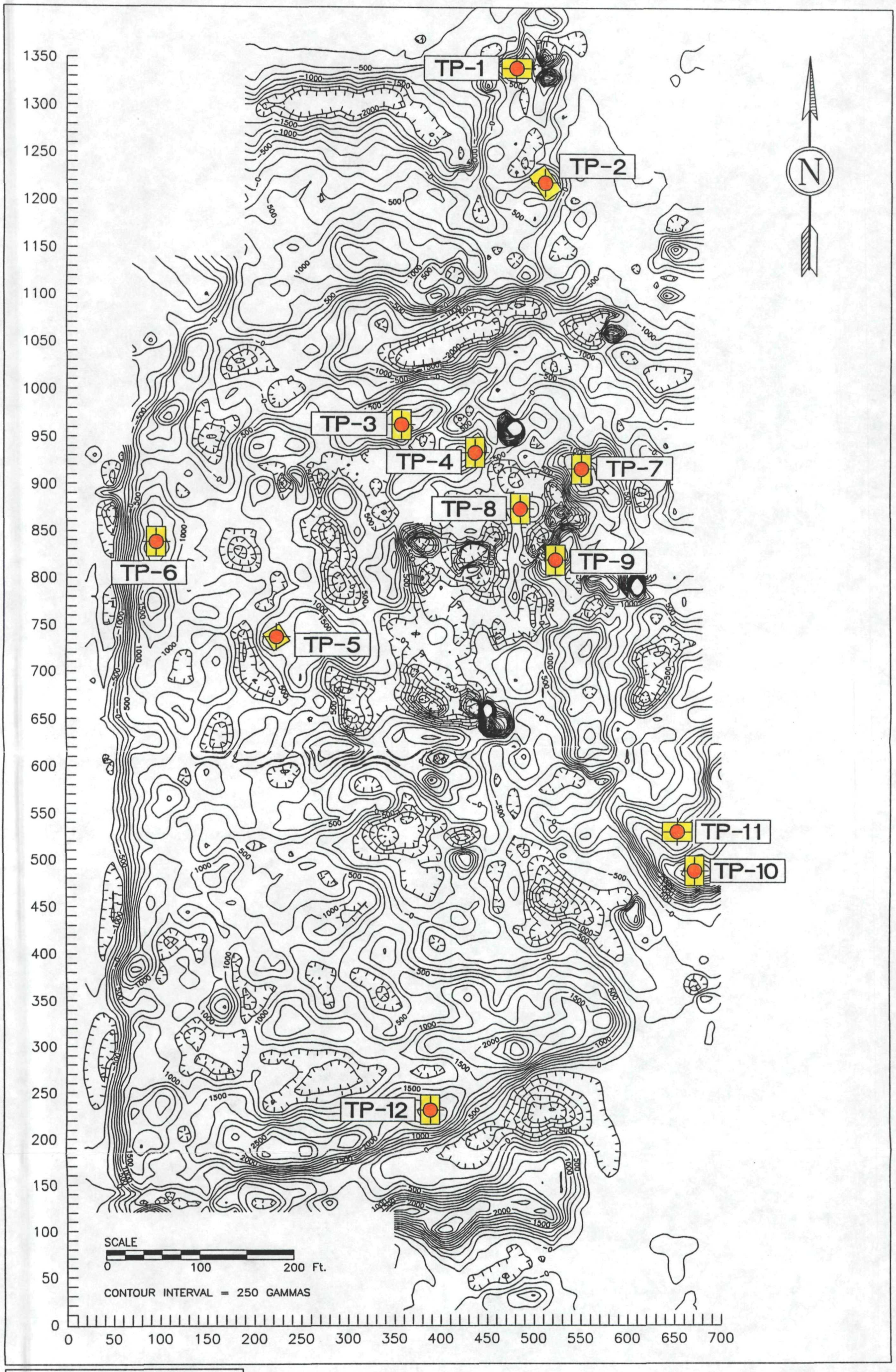
Legend

- Approximate landfill boundary (dashed portions indicate the survey grid boundary)
- Property boundary
- Unpaved road
- Intermittent stream
- Railroad track
- Fence line
- 960 Topographic contour (10' interval)
- Topographic contour (2' interval)

Taken from: Draft Final-Remedial Investigation Report for the Albion-Sheridan Township Landfill. Prepared by WW Engineering & Science for USEPA Region 5.

FIGURE TM1-2
SITE LAYOUT AND TOPOGRAPHY
ALBION-SHERIDAN LANDFILL
ALBION, MICHIGAN

ABB Environmental Services, Inc.



NOTE: TEST PIT SIZES ARE NOT TO SCALE

SOURCE: Michigan Department of Natural Resources, Geological Services Section
Residual Magnetic Contour Map, December 1993

FIGURE TM1-3
TEST PIT LOCATIONS
ALBION-SHERIDAN LANDFILL
ALBION, MICHIGAN

ABB Environmental Services, Inc.

A9408047/8809-00/AC000	Drawn: MDNR/DGH	Rev: 09/08/94 By: DGH Chkd: GEB

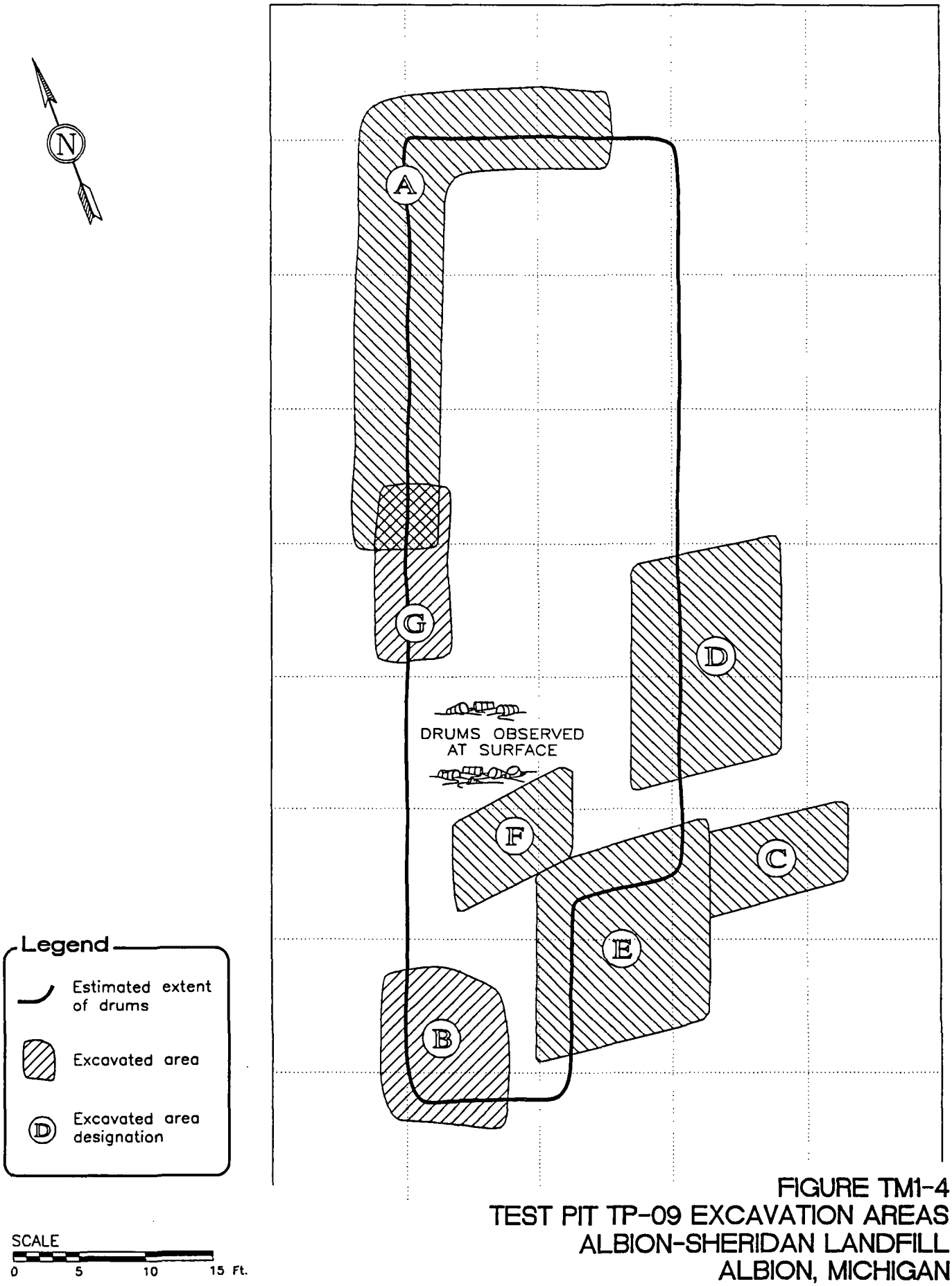


FIGURE TM1-4
TEST PIT TP-09 EXCAVATION AREAS
ALBION-SHERIDAN LANDFILL
ALBION, MICHIGAN

ABB Environmental Services, Inc.

A9406018/8809-00/AC286 | Drawn: DGH | Rev: 07/13/94 By: DGH Chkd: CSK

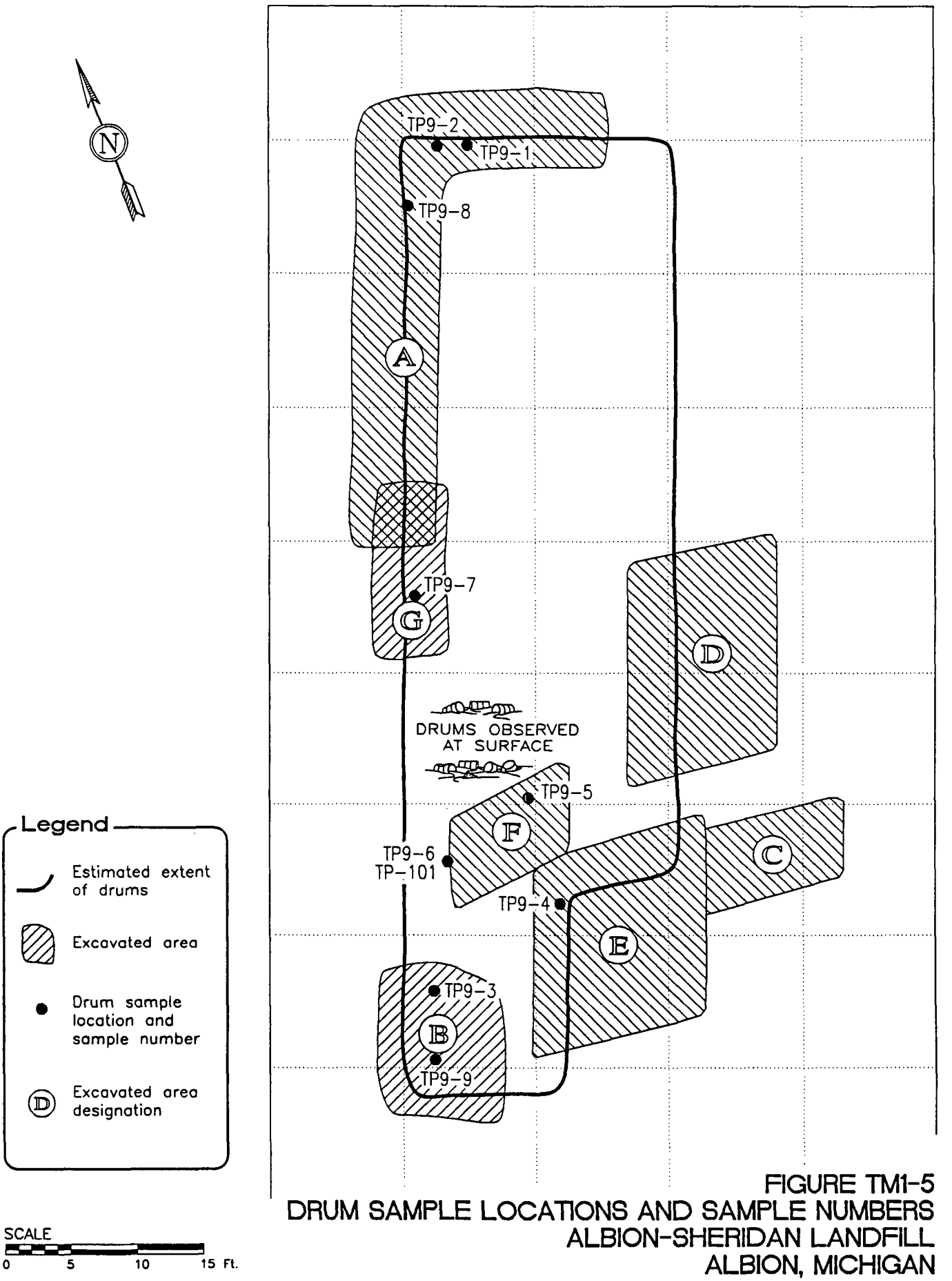


FIGURE TM1-5
DRUM SAMPLE LOCATIONS AND SAMPLE NUMBERS
ALBION-SHERIDAN LANDFILL
ALBION, MICHIGAN

ABB Environmental Services, Inc.

A9406019/8809-00/AC286 | Drawn: DGH | Rev: 07/13/94 By: DGH Chkd: CSK

TABLE TM1-1
TEST PIT OBSERVATIONS
ALBION/SHERIDAN TWP LANDFILL
ALBION, MICHIGAN

Test Pit Designation	Date Conducted	Approximate Area of Test Pit	Approximate Depth of Test Pit	Observations
TP-01	06-07-94	4' x 10'	8 - 10 feet	Demolition debris (brick, concrete, asphalt) slag; foundry sand. One crushed drum (no contents)
TP-02	06-07-94	4' x 10'	10 feet	Possible foundry debris; One crushed drum (empty) "Oily" odor noted.
TP-03	06-07-94	4' x 10'	6 feet	Municipal refuse. Some metal debris.
TP-04	06-07-94	4' x 10'	5 feet	Municipal refuse. Some metal debris/white good.
TP-05	06-07-94	4' x 10'	8 feet	Municipal refuse. Some metal debris.
TP-06	06-07-94	4' x 10'	10 feet	Municipal refuse. Asphalt debris.
TP-07	06-08-94	4' x 6'	6 - 7 feet	Municipal refuse. Some metal debris/white good (newspaper dates 1970)
TP-08	06-08-94	4' x 10'	6 feet	Surface drum containing solid material; Municipal refuse.
TP-09	06-08-94 06-09-94	See Figure TM1-4	Varied to 8 feet	Municipal refuse; Demolition debris (concrete/wood/ alum. siding) Approximately 1350 sq. ft. area of buried drums; Drums containing liquids and possible paint sludges.
TP-10	06-09-94	4' x 13'	12 - 15 feet	Municipal refuse. "Oily" odor noted.
TP-11	06-09-94	4' x 8'	8 feet	Municipal refuse; Metal debris; Calendar dated to '73.
TP-12	06-09-94	4' x 10'	13 feet	Industrial refuse (metal/rubber); Municipal refuse.

TABLE TM1-2
DRUM OVERPACK AND SAMPLES
TEST PIT AREA 9
ALBION/SHERIDAN TWP LANDFILL
ALBION, MICHIGAN

Over Pack Number	Sample Number	Content Volume Observation
TP-9-01	TP-9-01	Partially full
TP-9-02	None	Unknown
TP-9-03	TP-9-02	Full
TP-9-04	None	Some Liquid
TP-9-05	TP-9-08	Full
TP-9-06	TP-9-03	Full
TP-9-07	TP-9-09	Full
Left in-place	TP-9-04	Partially Full
TP-9-08	TP-9-05	2" Liquid
Left in-place	TP-9-06 TP-9-101(dup.)	Half-full
TP-9-09	TP-9-07	Partially full

TABLE TWO
ANALYTICAL RESULTS (ppb)
TEST PIT DRUM SAMPLES
ALBION/SHERIDAN TWP LANDFILL
ALBION, MICHIGAN

Description	TP-9-01	TP-9-02	TP-9-03	TP-9-04	TP-9-05	TP-9-06	TP-9-101	TP-9-07	TP-9-08	TP-9-09	TP-201
Sample Description	Liquid-Silty w/trace silver	Liquid-translucent brown	Sludge-white "gel" consistency	Liquid-brownish; two phases *	Liquid-yellowish brown	Liquid-gold flakes throughout	Liquid-gold flakes throughout (Duplicate of TP-9-06) **	Liquid-silver flakes throughout	Liquid-brownish gold	Liquid-white	Blank sample
PID Results (ppm)	150	1,500-2,000	500	65	450	600	600	550	800	350	-
Volatile Compounds (ppb)											
Acetone	-	-	NA	610,000	6,500,000	340,000	-	-	-	NA	-
2-Hexanone	580	-	NA	-	110,000	-	-	-	-	NA	-
Methyl ethyl ketone	-	2,000,000	NA	-	-	-	-	-	300,000	NA	-
Benzene	-	-	NA	-	-	-	10,000	-	-	NA	-
Ethylbenzene	2,000	12,000,000	NA	1,600	19,000	390,000	44,000	270,000	1,900,000	NA	-
Toluene	1,700	6,300,000	NA	-	10,000	280,000	31,000	280,000	890,000	NA	-
m/p-Xylene	7,900	40,000,000	NA	8,800	71,000	3,200,000	3,300,000	2,200,000	6,700,000	NA	-
o-Xylene	4,000	15,000,000	NA	6,400	320,000	7,800,000	9,100,000	7,200,000	5,100,000	NA	-
Isopropyl benzene	200	1,300,000	NA	-	88,000	5,900,000	6,800,000	7,300,000	3,400,000	NA	-
n-Propylbenzene	680	7,400,000	NA	-	240,000	48,000,000	55,000,000	310,000,000	180,000,000	NA	-
1,3,5-Trimethyl benzene	1,300	13,000,000	NA	-	240,000	90,000,000	110,000,000	280,000,000	280,000,000	NA	-
1,2,4-Trimethyl benzene	4,900	39,000,000	NA	160	1,000,000	227,000,000	260,000,000	730,000,000	550,000,000	NA	-
Base Neutral Compounds (ppb)											
Bis (2-ethylhexyl)phthalate	-	-	-	-	-	-	-	-	-	-	18
Isophorone	-	-	-	-	-	-	-	-	-	390,000 J	-
2-Methylnaphthalene ***	-	550,000	-	540	-	-	-	260,000	570,000	-	-
Naphthalene	1,300	290,000 J	3,200,000 J	-	14,000	36,000 J	450,000 J	220,000 J	150,000 J	140,000 J	-
Phenanthrene	-	-	-	3,200 J	-	-	-	-	-	-	-
MDNR Scan 3 Compounds (ppb)											
1,2,3-Trichlorobenzene	-	-	-	-	-	0.012	-	-	-	-	0.01
1,3,5-Trichlorobenzene	0.074	-	-	-	-	-	-	-	-	-	-
Metals (ppm)											
Aluminum	-	-	2,470	-	NA	-	-	-	-	4,200	-
Arsenic	0.0031	-	1.3	4.1	NA	-	-	-	-	2.7	-
Barium	-	-	1	-	NA	-	-	-	-	2	-
Chromium	1.9	15	157	7	NA	96	30	60	6	2	-
Copper	0.19	-	-	86	NA	-	-	-	-	-	-
Iron	-	-	660	-	NA	-	-	-	-	480	-
Lead	0.32	-	773	-	NA	337	80	14	-	-	-
Lithium	-	-	-	-	NA	-	-	-	-	19	-
Manganese	-	-	-	-	NA	-	-	-	-	9.8	-
Nickel	0.18	-	-	13	NA	-	-	-	-	-	-
Titanium	-	-	273	-	NA	-	-	-	-	183	-
Vanadium	-	-	4	-	NA	-	-	-	-	2	-
Zinc	5.0	-	-	46	NA	-	-	-	16	15	-

* Two-phases analyzed. Results reflect lower layer. An upper viscous layer exhibited 490,000 ppb and 350,000 ppb of m/p-xylene and o-xylene respectively.

** Two-phases analyzed from duplicate sample only. Results reflect solvent (vs. water) portion of the sample.

NOTE: Other compounds analyzed for but not detected (see Analytical Reports)

*** 2-Methylnaphthalene values from MDNR mobile laboratory

NA Not analyzed

\- Dash indicates the compound was not detected at or above reported detection limits.

APPENDIX A

KEY PERSONNEL/FUNCTIONAL TITLES

ALBION/SHERIDAN TOWNSHIP LANDFILL
TEST PITTING PROGRAM
KEY PERSONNEL AND FUNCTIONAL TITLES

Michigan Department of Natural Resources

Jim Meyers	Project Director
Tex Irvin	Field Supervisor
Mike Baranowski	Project Geologist
Keith Martin	Field Technician
Fernando Calera	Mobile Laboratory Supervisor

ABB Environmental Services, Inc.

Garret Bondy	Site Manager
Craig Kielty	Field Operations Leader
Meg Macleod	Health & Safety Officer
Jim Kralik	Support Zone Leader

Piedmont Remedial Services

Jim Padden	Crew Chief
Kendall Leonard	Grappler Operator
Ken Veenstra	Back Hoe Operator
Bob Peterson	Assistant Crew Chief

WWES - Earth Tech

Kurt Osterman	USEPA Representative
Elizabeth Bartz	USEPA Representative

SITE LOG IN SHEETS

Date	Name	Representing	Time in	Time Out
6/6/94	Craig Kietty	ABB-ES	0745	1735
"	[illegible]	MDNR	0915	
"	Jim Kralik	ABB-ES	≈1000	1735
"	Meg McLeod	ABB-ES	≈1000	1735
"	Jim Padden	Piedmont Remedial S.	0825	1645
"	Kendall Leonard	Piedmont Rem. S.	0845	1645
"	Jim Myers	MDNR	1045	1615
"	Dave Morgan	MDNR	10:30	1615
"	Andrew Cummings	MDNR	10:30	1615
"	Sandy Buchner	MDNR	1332	17:00
"	Fernando Calera	MDNR	1334	17:00
"	Bob Petersen	Piedmont Remedial	1400	1645
"	Ken Veenstra	Piedmont Remedial	1400	1645
12	Michael Baranoski	DNR/ERD	1445	
"	Garrett Bondy	ABB-ES	1540	1735
7/12				
	James M Padden	PRS	0645	1645
	Bob Petersen	PRS	0645	1645
	Ken Veenstra	PRS	0645	1645
	Jim Kralik	ABB-ES	0645	1645
	Meg MacClead		0645	1645
	Garrett Bondy		0645	1645
	Craig Kietty		0645	1645
	Kendall Leonard	Piedmont	0627	1645
	[illegible]	MDNR	0620	
	Jim Myers	MDNR	0714	1620
	Andrew Cummings	MDNR	0714	1620
	Dave Morgan	MDNR	0714	1620
	Keith Martin	MDNR	740	330P
	Tom Monsmith	MDNR	8:10	3:30P
	Elizabeth Bartz	WWES-EARTH TECH	08:25	
	Kurt Osterman	WWES-Earth Tech	08:25	
	Kendall Leonard	PRS		

CONTINUED NEXT PAGE

DATE	NAME	REPRESENTING	TIME IN	TIME OUT
6/7/94	DAN JORDANICH	MDNR-ERA JXN	11:15	14:43
6/7/94	Yori A. Aronoff	" "	11:15 a	14:43
6/7/94	Hernando Calva	MDNR - LAB	8:00	
6/7/94	Sandy Buchner	" "	8:00	
6/7/94	Bev Waack	ABB	11:25	1715
6/8/94	Kendall Leonard	PRS	07:30	7:00
6/8/94	K. Osterman	ET	[illegible]	
6/8/94	M. MacLeod	ABB	0700	
6-8-94	KEN VEENSTRA	PRS	0630	
6-8-94	C. Kelty	ABB	0700	
6-8-94	J. Kralek	ABB	0700	
6-8-94	G. Bondy	ABB	0700	
6-8-94	Dave Morgan	MDNR	0700	
6/8/94	Jim Myers	MDNR	0700	1830
6-8-94	Jim Podd	PRS	0630	
6-8-94	KEITH MARTIN	MDNR	8:05	504
6-8-94	BEV WAACK	ABB	8:00	
6-8-94	Tom Monosmith	AQD	11:00	504
6/8/94	Yori A Aronoff	ERD	12:50	
6/9/94	M. MacLeod	ABB	7:00	1730
	Jim Kralek	"	"	1730
	Craig Kelty	"	"	1730
	Garret Bondy			1730
6/9/94	KEN VEENSTRA	PRS	0630	1730
	DAVE MORGAN	MDNR	0700	
	Jim Myers	MDNR	0700	
	Jim Podd	PRS	0630	
6-9-94	Kendall Leonard	PRS	0630	1730
6-9-94	K. Osterman	E.T.	0730	
6-9-94	Tom Monosmith	AQD	0830	
"	Carl Knight	"	"	
6/9/94	Dan Jordanich	ERD	11:20	1145

6/10/94	Craig Kielty	ABB	0650	1030
	Jim Kralik	ABB	0650	1030
	Jim Podd	PRS	0715	1023
	R. Coleman	E.T.	0800	
6/15/94	Jim Kralik	ABB	1430	1500

APPENDIX B

METEOROLOGICAL OBSERVATIONS

TABLE TM1B-1
METEORLOGICAL OBERVATIONS - TEST PITTING PROGRAM
ALBION/SHERIDAN TWP LANDFILL
ALBION, MICHIGAN

DATE	TIME	AIR TEMP. degree F	HUMIDITY	WIND SPEED	WIND DIRECTION degree
06/07/94	0900	65	97%	3.3 MPH	204
	1030	73	71%	3.3 MPH	178
	1130	78	61%	3.8 MPH	59
	1330	77	57%	3.0 MPH	173
	1515	80	51%	7.2 MPH	350
	1605	82	42%	8-10 MPH	325
06/08/94	0820	45	96%	6.2 MPH	59
	0930	46	88%	8.9 MPH	16
	1100	54	72%	5-8 MPH	17
	1230	61	50%	10.8 MPH	16
	1435	65	39%	6.2 MPH	68
	1535	66	37%	10.8 MPH	10
	1700	67	33%	8.1 MPH	130
	1830	66	36%	6.5 MPH	10
06/09/94	0720	36	95%	<1 MPH	10
	0830	48	75%	3.0 MPH	159
	0930	53	41%	1 MPH	133
	1045	61	27%	4.5 MPH	180
	1135	66	22%	3.9 MPH	180
	1335	72	16%	3.1 MPH	180
	1440	74	11%	3.9 MPH	40
	1540	75	13%	4.6 MPH	72
	1640	76	15%	5 MPH	120

DAILY AIR MONITORING LOG

JOB NAME: Albion Landfill

JOB NO. 03908 00

OPERATOR: M. MacLeod/C. Kielty

DAILY AIR MONITORING LOG
ACTUAL SITE CONDITIONS

STATION/ LOCATION	'94 DATE	TIME	am/pm	TYPE OF EQUIPMENT	READING	UNITS	WEATHER CONDITIONS	COMMENTS
East Perimeter	6/6	1630	pm	miniram	0	mg/m³	sunny/80°F	
"	"	"	"	PID/HNU	0	ppm	" "	Same readings at drum location
TP1 - Per EZP	6/7	1000	am	HNU	0	ppm	sunny/73°F	
TP1 - P EZP	6/7	1000	am	miniram	0	mg/m³	" "	
TP2 - EZP	6/7	1100	am	HNU	0	mg/m³	" "	
TP2 - EZP	6/7	1100	am	miniram	2.58	mg/m³	" "	zero = 0.42 mg/m³
TP3 - EZP	6/7	1345	pm	HNU	0	ppm	Sunny/79°F	100' EZP
TP3 - EZP	6/7	1345	pm	Miniram	2.69	mg/m³	sunny/79°F	sporadic
TP4 - EZP	6/7	1430	pm	HNU	0	ppm	sunny/79°F	100' EZP
TP4 - EZP	6/7	1430	pm	miniram	2.55	mg/m³	sunny/79°F	sporadic
TP5 - EZP	6/7	1535	pm	HNU	0	ppm	Sunny/80°F	200' Downwind
TP5 - EZP	6/7	1535	pm	Miniram	0.18-0.49	mg/m³	Sunny/80°F	" Slight "Garbage" Odor
TP6 - EZP	6/7	1555	pm	HNU	0	ppm	Sunny/80°F	Slight Garbage odor
TP6 - EZP	6/7	1555	pm	MiniRam	0.9-1.3	mg/m³	Sunny/80°F	" "

NOTE: All monitoring equipment is to be calbirated once daily (minimum) or as required by site conditions or instrument operation. Calibrant gas concentration and span should be listed under comments.

9205024.WP/CR525

EZP = Exclusion Zone perimeter monitoring

JOB NAME: Albion Landfill JOB NO. 8809-00

OPERATOR: M. Macleod

DAILY AIR MONITORING LOG
ACTUAL SITE CONDITIONS

STATION/ LOCATION	'94 DATE	TIME	am/pm	TYPE OF EQUIPMENT	READING	UNITS	WEATHER CONDITIONS	COMMENTS
TP7-EZP	6/8	0820	am	HNU	0	ppm	Sunny/45°F	30' from Test Pit Slight odor
TP7-EZP	6/8	0820	am	Mini Ram	0.04	mg/m³	" "	"
TP8-EZP	6/8	0855	am	HNU	0	ppm	" "	30' From test pit
TP8-EZP	6/8	0855	am	Mini Ram	0.02-0.08	mg/m³	" "	" "
TP9-EZP	6/8	0935	am	HNU	0	ppm	Sunny/46°F	≈30' from test pit
" "	6/8	0935	am	Mini Ram	0.03	mg/m³	" "	" "
" "	6/8	1010	am	HNU	0	ppm	Sunny/50°F	" " Drum Removal
" "	6/8	1010	am	Mini Ram	0.14	mg/m³	" "	" "
" "	6/8	1015	am	HNU	5 ppm	ppm	" "	2nd Drum Removal; Dissipated. *
" "	6/8	1030	am	HNU	20 ppm	ppm	" "	3rd Drum Removed Dissipated
" "	6/8	1115	am	HNU	0-6	ppm	Sunny/55°F	Backfilling TP-9
" "	6/8	1115	am	Mini Ram	0	mg/m³	" "	10 feet to west
TP9-P	6/8	1100	am	HNU	0	ppm	Sunny/54°F	200' south
TP9-P	6/8	1100	am	Mini Ram	0	mg/m³	" "	" "

NOTE: All monitoring equipment is to be calbirated once daily (minimum) or as required by site conditions or instrument operation. Calibrant gas concentration and span should be listed under comments.

EZP - Exclusion zone perimeter

9205024.WP/CR525

P - Perimeter

* - moved people from near EZP

JOB NAME: MDNR - Albion Landfill JOB NO. 8809-00

OPERATOR: M. Macleod

DAILY AIR MONITORING LOG
ACTUAL SITE CONDITIONS

STATION/ LOCATION	9d DATE	TIME	am/pm	TYPE OF EQUIPMENT	READING	UNITS	WEATHER CONDITIONS	COMMENTS
TP 9 - EZP	6/8	1200	pm	HNU	0	ppm	60°/Sunny	50' to SW
" "	6/8	1200	pm	Mini Ram	0.0	mg/m³	" "	" "
" "	6/8	1510	pm	HNU	1	ppm	65°/Sunny	6th Drum 50' to SW
" "	6/8	1510	pm	Mini Ram	0	mg/m³	" "	" "
" "	6/8	1620	pm	HNU	5	ppm	67°/Sunny	Punctured Drum White Paint; 30' SW *
" "	6/8	1715	pm	HNU	0-5	ppm	" "	Variable; 20' SW
" "	6/8	1740	pm	HNU	0	ppm	66°/Sunny	30' SW
" "	6/8	1750	pm	HNU	1	ppm	" "	Decon of simple containers (not sustained)

NOTE: All monitoring equipment is to be calbirated once daily (minimum) or as required by site conditions or instrument operation. Calibrant gas concentration and span should be listed under comments.
EZP - Exclusion Zone Perimeter

9205024.WP/CR525

* Moved people from/near EZP

JOB NAME: MDNR- Albion Landfill JOB NO. 8809-00

OPERATOR: M. MacLeod

DAILY AIR MONITORING LOG
ACTUAL SITE CONDITIONS

STATION/ LOCATION	'94 DATE	TIME	am/pm	TYPE OF EQUIPMENT	READING	UNITS	WEATHER CONDITIONS	COMMENTS
TP 10 - EZP	6/9	0845	am	HNU	0	ppm	48°F/Sunny	20' West
TP 10 - EZP	6/9	0845	am	Mini Ram	0.28	mg/m³	" "	" "
TP10 - EZP	6/9	0847	am	HNU	1-2ppm	ppm	" "	Garbage odor
TP 10 - EZP	6/9	0847	am	LEL (@ Hole)	0%		" "	" " Reading dissipated
TP9 - EZP	6/9	1030	am	HNU	0	ppm	53°F/Sunny	Drum & sample 5; 20' NW
TP9 - EZP	6/9	1030	am	Mini Ram	0.04	mg/m³	" "	" "
TP9 - EZP	6/9	1045	am	HNU	0-5ppm	ppm	61°F/Sunny	light wind; 15' to West
TP9 - EZP	6/9	1125	am	HNU	0-5	ppm	65°F/Sunny	" "
TP9 - EZP	6/9	1420	pm	HNU	0-1	ppm	72°F/Sunny	30' to NW Drum & Sample
TP11 - EZP	6/9	1620	pm	HNU	0	ppm	75°F/Sunny	30' to SW Light wind
TP11 - EZP	6/9	1620	pm	Mini Ram	0	mg/m³	" "	" "

NOTE: All monitoring equipment is to be calbirated once daily (minimum) or as required by site conditions or instrument operation. Calibrant gas concentration and span should be listed under comments.

EZP - Exclusion Zone Perimeter

9205024.WP/CR525

PERSONAL MONITORING

AIR SAMPLING WORKSHEET

ABB ENVIRONMENTAL SERVICES, INC.

Location: Albion Landfill	Job No.: 8909.00	Sampling Date: 6/8/94
Sampler:	Sampler Employee No.:	
Employee Name: Craig Kielty	No.:	Dept.:
Job Title:		

PPE (Indicate Level and Type):

Level B

Work Area Description:

Test pits to excavate drums

Weather: Cloudy/Sunny	Temp.: 44 to
	Humidity:

Sampling Data

Pump No.:	N/A					
Sample No.	7094C					
Lab Sample No.						
Sample Media						
Filter/Tube No.	~~N/A~~ 3M 3500 Organic Vapor Monitor					
Time ON	0915					
Time OFF	1400					
Total Time (min.)	345					
Flow Rate ON	N/A					
Flow Rate OFF	N/A					
Volume (Liters)	N/A					
Analyze For:						

Comments to Lab	Supporting Samples (blanks)	Chain of Custody	Initials	Date
Personnel took a lunch break for 120 mins. The break is included in the total time sampled. Analyze for: benzene ~~toluene, xylene~~	Blanks:	Seals Intact?	Y N	
		Rec'd in Lab		
		Rec'd by Anal.		
	Bulks:	Anal. Completed		
		Calc. Checked		
		Supr. OK'd		

AIR SAMPLING WORKSHEET

ABB ENVIRONMENTAL SERVICES, INC.

Location: Albion Landfill	Job No.: 3809.00	Sampling Date: 6/9/94	
Sampler: Meg MacLeod	Sampler Employee No.:		
Employee Name: Craig Kielty / Jim Padden	No.:	Dept.:	
Job Title: ABB-ES / Piedmont			

PPE (Indicate Level and Type):

Level B

Work Area Description:

Test pits in Landfill to excavate drums

Weather: Sunny	Temp.: 36°-75°F
	Humidity: 95%-11%

Sampling Data

Pump No.:	C. Kielty J. Padden					
Sample No.	70423C	70327C				
Lab Sample No.						
Sample Media						
Filter/Tube No.	3M 3500 Organic Vapor Monitor					
Time ON	0930	0930				
Time OFF	1630	1630				
Total Time (min.)	480	480				
Flow Rate ON	N/A	N/A				
Flow Rate OFF	N/A	N/A				
Volume (Liters)	N/A	N/A				
Analyze For:						

Comments to Lab	Supporting Samples (blanks)	Chain of Custody	Initials	Date
120 min break for lunch, Included break in the total time sampled	Blanks:	Seals Intact?	Y N	
		Rec'd in Lab		
		Rec'd by Anal.		
analyze for: benzene ~~toluene, xylene~~	Bulks:	Anal. Completed		
		Calc. Checked		
		Supr. OK'd		

AIR SAMPLING WORKSHEET

ABB ENVIRONMENTAL SERVICES, INC.

Location: Albion Land Fill	Job No.: 5909.00	Sampling Date: 6/8/94
Sampler: Mg MacLeod	Sampler Employee No.:	
Employee Name: Jim Peddin of Piedmont	No.:	Dept.:
Job Title:		
PPE (Indicate Level and Type):		
Level B		

Work Area Description:

Test pits in landfill to excavate drums

Weather: cloudy/sunny	Temp.: 45 to 66°F
	Humidity: 96 to 36%

Sampling Data

Pump No.:	N/A					
Sample No.	70156					
Lab Sample No.						
Sample Media	~~3~~					
Filter/Tube No.	~~N/A~~ 3M	3500	Organic	Vapor	Monitor	
Time ON	0815					
Time OFF	0800					
Total Time (min.)	345					
Flow Rate ON	N/A					
Flow Rate OFF	N/A					
Volume (Liters)	N/A					
Analyze For:						

Comments to Lab	Supporting Samples (blanks)	Chain of Custody	Initials	Date
Personnel took a lunch break for 120 mins. The break is included in the total time sampled	Blanks:	Seals Intact?	Y N	
		Rec'd in Lab		
		Rec'd by Anal.		
	Bulks:	Anal. Completed		
		Calc. Checked		
Analyze for: benzene, ~~toluene, xylene~~		Supr. OK'd		

Clayton
ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page ____ of ____
Project No.	
Batch No.	
Ind. Code	W.P.
Date Logged In	By

REPORT RESULTS TO

Name GARRETT BOYDY	Title	Purchase Order No. SE 418069	Client Job No.
Company ABOES	Dept.		
Mailing Address 39255 Country Club Drive B-25			
City, State, Zip FARMINGTON Hills, MICH 48331			
Telephone No. 810 989-8040	Telefax No. 810 489-8048		

SEND INVOICE TO

Name SAME	
Company —	Dept.
Address —	
City, State, Zip —	

Date Results Req.: | Rush Charges Authorized? ☐ Yes ☐ No | Phone / Fax Results ☐ ☐

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	BENZENE ONLY										FOR LAB USE ONLY
7015C	6/8/94			1	X										
7094C	6/8/94			1	X										
7043C	6/9/94			1	X										
7027C	6/9/94			1	X										
7089C	6/10/94			1	X										

CHAIN OF CUSTODY

Collected by: M. McLEOD (print)		Collector's Signature:	
Relinquished by: [illegible]	Date/Time 6/13/94 1345	Received by: [illegible]	Date/Time [illegible]
Relinquished by:	Date/Time	Received at Lab by:	Date/Time
Method of Shipment:		Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)	

Authorized by: [illegible] G. BOYDY Date _____
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive Novi, MI 48375 (313) 344-1770	Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040	400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500	1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

2/92

SE 418069

ANALYSIS REQUEST FORM

Client Information: Name ABB-ES

Company 39255 Country Club Dr.

Mailing Adddress Ste B-25

Farmington Hills, MI 48331

Purchase Order/Job Number

810 489 8040

Where to Send Report ☐ Directly to Client

☒ ABB - Name

Analyses Requested By: Janet Bondy
Technical Project Professional

Approved By: _____
Project Manager

Date Received _____
Lab Location _____
Results Due _____
Client I.D. No. _____

☐ Solid Waste Data File
☐ Data Documentation Req'd
☐ Entered in Computer

Type of Sample _____
List Any Hazards _____

☐ SPECIAL PROCEDURE

☐ Filtered in Field ☐ Non-Filtered

Additional Information or Special Procedures

Sample Identification	Lab Numbers	Date Sampled	Sampled By	Analyses Required
7015 C		6/8/91	M. McLeod	Benzene
7071 C		6/8/91	↓	↓
7043 C		6/9/91	↓	↓
7027 C		6/9/91	↓	↓
7089 C		6/10/91	↓	↓
				Std. TAT

OH-62

ABB Environmental Services, Inc.

Midwestern Operations

22345 Roethel Drive
P.O. Box 8022
Novi, MI 48375
(810) 344-1770
Fax (810) 344-2654

Clayton
ENVIRONMENTAL
CONSULTANTS

June 22, 1994

Mr. Garrett Bondy
ABB ENVIRONMENTAL SERVICES, INC.
39255 County Club Drive
Farmington Hills, MI 48331

Clayton Project No. 16338.00
Purchase Order No. SE418069

Dear Mr. Bondy:

Attached is our analytical laboratory report for the samples received on June 13, 1994. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after July 22, 1994, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact a Client Services Representative at (810) 344-2650.

Sincerely,

Robert Lieckfield, Jr., CIH
Director, Laboratory Services
Midwestern Operations

RL/el

Attachments

RECEIVED
JUN 24 1994

Table 1
Analytical Results
for
ABB ENVIRONMENTAL SERVICES, INC.
Clayton Project No. 16338.00

Sample Identification:	7015C	Date Sampled:	--
Lab Number:	001a	Date Received:	06/13/94
Sample Type:	Passive Monitor	Date Analyzed:	06/21/94
Analyst:	J. Lane	Sampling Time (min):	0

Analyte	Sampling Rate (cc/min)	Analytical Results (mg)	(mg/m3)	ppm	LOD (mg)	Method Reference
Benzene	35.50	<0.003	--	--	0.003	1501, mod.

Sample Identification:	7094C	Date Sampled:	--
Lab Number:	002a	Date Received:	06/13/94
Sample Type:	Passive Monitor	Date Analyzed:	06/21/94
Analyst:	J. Lane	Sampling Time (min):	0

Analyte	Sampling Rate (cc/min)	Analytical Results (mg)	(mg/m3)	ppm	LOD (mg)	Method Reference
Benzene	35.50	<0.003	--	--	0.003	1501, mod.

Table 1 (continued)
Analytical Results
for
ABB ENVIRONMENTAL SERVICES, INC.
Clayton Project No. 16338.00

Sample Identification:	7043C	Date Sampled:	--
Lab Number:	003a	Date Received:	06/13/94
Sample Type:	Passive Monitor	Date Analyzed:	06/21/94
Analyst:	J. Lane	Sampling Time (min):	0

Analyte	Sampling Rate (cc/min)	Analytical Results (mg)	(mg/m3)	ppm	LOD (mg)	Method Reference
Benzene	35.50	<0.003	--	--	0.003	1501, mod.

Sample Identification:	7027C	Date Sampled:	--
Lab Number:	004a	Date Received:	06/13/94
Sample Type:	Passive Monitor	Date Analyzed:	06/21/94
Analyst:	J. Lane	Sampling Time (min):	0

Analyte	Sampling Rate (cc/min)	Analytical Results (mg)	(mg/m3)	ppm	LOD (mg)	Method Reference
Benzene	35.50	<0.003	--	--	0.003	1501, mod.

Table 1 (continued)
Analytical Results
for
ABB ENVIRONMENTAL SERVICES, INC.
Clayton Project No. 16338.00

Sample Identification:	7089C	Date Sampled:	--
Lab Number:	005a	Date Received:	06/13/94
Sample Type:	Passive Monitor	Date Analyzed:	06/21/94
Analyst:	J. Lane	Sampling Time (min):	0

Analyte	Sampling Rate (cc/min)	Analytical Results (mg)	(mg/m3)	ppm	LOD (mg)	Method Reference
Benzene	35.50	<0.003	--	--	0.003	1501, mod.

General Notes
<: Less than the indicated limit of detection (LOD)
--: Information not available or not applicable.

Clayton
ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page ____ of ____
Project No. 16338	
Batch No.	
Ind. Code	W.P.
Date Logged In	By

REPORT RESULTS TO

Name: GARRETT BONDY | Title:
Company: ABB-ES | Dept.:
Mailing Address: 39255 Country Club Drive B-25
City, State, Zip: FARMINGTON Hills, MICH 48331
Telephone No.: 810 489-8040 | Telefax No.: 810 489-8048

Purchase Order No.: SE418069 | Client Job No.:

SEND INVOICE TO

Name: SAME
Company: — | Dept.:
Address: —
City, State, Zip: —

Date Results Req.: | Rush Charges Authorized? ☐ Yes ☐ No | Phone / Fax Results ☐ ☐

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	48 hr REVIEW ONLY										FOR LAB USE ONLY
7015C ✓	6/8/94			1	X										
7094C ✓	6/8/94			1	X										25
7043C ✓	6/9/94			1	X										O/N
7027C ✓	6/9/94			1	X										
7089C ✓	6/10/94			1	X										

CHAIN OF CUSTODY

Collected by: M. McLeod (print) | Collector's Signature:
Relinquished by: [signature] | Date/Time 6/13/94 1345 | Received by: [signature] | Date/Time 6/13/94 1.47
Relinquished by: | Date/Time | Received at Lab by: Jennifer Lipton | Date/Time 6/13/94 6:20 pm
Method of Shipment: | Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Authorized by: [signature] for G. Bondy Date _____
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive Novi, MI 48375 (313) 344-1770	Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040	400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500	1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

DISTRIBUTION:
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APPENDIX C

DAILY FIELD SUMMARY

Site Field Summary

Albion / Sheridan TWP LANDFILL
8809-00
6/94

6/6/94

★ See sign-in sheet for people on-site
★ See Field Book # 1

Mobilization Day:

ABB-ES, Piedmont Remedial Services, and the MDNR mobilized equipment and supplies to the site.

MDNR mobile laboratory brought and set up on-site.

Mike Baranowski (MDNR) conducted a site walkover with ABB-ES and Piedmont to familiarize us with test pit areas so that a plan of attack could be established.

Meg MacLeod conducted a background monitoring survey around the site (mostly in the area of potential test pits). An HNU photoionization detector and respirable dust monitor were used.

Tex Irvin and M. Baranowski (MDNR) remained on site in the MDNR trailer.

Craig S Kelly 6/7/94

6/7/94

- See Sign-in Sheet for people on-site
- See Field Book #1

Test Pitting Day 1

M. Macleod (ABB-ES) conducted a site safety meeting for all workers on-site. Hazards of the site and condition, as well as communication were highlighted

Six test pit locations were conducted: TP-1, TP-2, TP-3, TP-4, TP-5, and TP-6. No drums were discovered in any of the test pits*. Generally, foundry sands/materials and municipal refuse was unearthed.

CK * with the exception of a crushed drum (no contents)

No samples were collected today.

Bob Peterson and Jim Padden (Piedmont), and Craig Kietty (ABB-ES) were affected by the heat during the day. Individuals were switched out as necessary. Bob Peterson ~~had~~ CK was relieved of his duties at days end due to a pre-existing condition. He will not be replaced since there seems to be enough people on-site to handle the work.

T. Irwin and M. Baranowski remained on site for the night.

Craig S Kietty 6/8/94

6/8/94

- See Sign in Sheet for people on-site
- See Field Book #1 for notes

Test Pitting Day #2

M. Macleod conducted Site Safety Briefing on-site. Heat stress was highlighted.

Three test pit areas (TP-7, TP-8, and TP-9) were conducted. Drums were encountered at TP-9 area. One drum of solid material was unearthed @ TP-8. No drums were observed @ TP-7.

Four samples, TP9-1, TP-9-2, TP9-3, and TP9-4. were collected and submitted to MDNRs mobile lab. Seven total drums were removed from TP-9 area and overpacked (staged near excavation).

No Heat stress victims today.
Some sustained HNU readings were observed at times at the exclusion zone perimeta. M. Macleod notified individuals in the Contamination Reduction zone and support zone of the conditions. Individuals relocated as necessary.

Guy S Kiefty 6/8/94

6/9/94

- See sign in sheet for people on-site
- See Field Book #1 for notes

Test Pitting Day #3

C. Kelly conducted a site safety briefing at the start of the day. Heat stress and worker communication were highlighted.

Three new test pits were conducted; TP-10, TP-11, and TP-12. Additional test pitting was conducted in the TP9 area in order to further define the area and obtain additional drum samples.

No drums were observed in TP-10, -11, or -12. Generally, municipal refuse was unearthed. A total of three samples were collected from drums @ TP-9. One duplicate sample was also collected. In addition, two samples were collected from staged drums previously removed from TP9 (samples TP9-8 + TP9-9).

TP9 overpacks: TP9-8, TP9-9
TP9 samples Collected: TP9-5; TP9-6; TP9-7;
TP9-8; TP9-9; TP9-101 (Duplicate of -6)
TP9-201 Equipment Blank (glass collimasa)

Per MDNR, test pitting operations were terminated at days end. Will demobilize from site tomorrow.

T. Irvin remained on-site.

Craig S Kelly
6/9/94

6/10/94

- See sign in sheet for personnel on-site
- See field book #1

Demobilization Day

ABB-ES, MDNR, Piedmont began demobilization of equipment and supplies.

Piedmont Tasks completed:

- Picked up bagged PPE and brought to trailer area; Tex will haul off.
- Moved overpack drums from TP9 and staged on the concrete pad near the trailers; Tex Irvin said he will cover with plastic sheeting.
- Checked over Test pit areas to make sure all activity "garbage" was picked up.
- Decontaminated both track hoes; decon water was transferred to on-site poly tanks.

Piedmont left air cylinders on-site to be picked up on Monday (T. Irvin will be on-site). Track hoes were parked outside site gate to be picked up.

Porta-John was removed from site. Site trailer could not be picked up. We may have to come out when it does.

T. Irvin removed electrical to site trailer. T. Irvin will be on-site to complete MDNR

6/10 continued

demobilization:
All ABB-ES equipment and supplies have been removed from site.

Craig S Kietty
6/10/94

6/15/94

J. Kralik on-site to supervise site trailer removal.

All equipment/facilities have been removed.
Gate secured.

Craig S Kietty
6/16/94

PROJECT LOG BOOK

6/6/94 Albion 8809-00 (1)

0745 Craig Kietty (ABB-ES) on-site.
Mobilization day for Test Pitting Program.
Gate Key #2126.

No body here yet. Komatsu backhoe set out side gate.
Piedmont (Test Pit Contractor) is planning to have items delivered starting by 8AM

0805 Called Garret Bondy (ABB-ES), site manager, told him to bring site maps that he may have. He will be coming out to site this afternoon.
Jim Khalik and Meg Macleod (ABB-ES) will be out to site by late AM.

0830 Jim Paddon (Piedmont) on-site.

0845 An (Cylinders Purity Gas) delivered (13) staged near fence (layed down)

6/6/94 Albion 8809-00

0840 Dim Padden off-site to use phone in town. Cellular reception/transmission not very good out here.

I notified Garret Bondy to call MDNR to get there schedule - I will call him back in an hour or so.

0915 Tex Irvin (MDNR) on-site will unload. Gave me a set of trailer keys.

0920 Piedmont Support vehicle on-site: (Kendall)

0930 ABB-ES on site (Meg Macleod / Jim Kulek) Will unload

6/6/94 Albion 8809-00

1000 Piedmont taking delivery of overpack drums.

1025 MDNR on-site (Dave Morgan / Andy Cummins) with more equipment.

1048 Jim Meyers (MDNR) on-site.

1100 Called Albion Electric after Tex informed me they needed to finish Electric hook up for the lab trailer. I had to leave a message. John at Albion Electric will be notified. Supposedly he is scheduled to be out (Per MDNR).

Awaiting Mike Barsanowski (MDNR) to take site walkover

6/6/94 Albion 8809-00

[1200] Jim + Kendall (Piedmont) were given HASP to look @. Still waiting for the rest of the Piedmont crew.

[1250] Jim + Meg (ABB). Offsite to Lunch.

I (Craig) will remain on-site. Outfit our Breathing masks w/ Hansen Fittings.

Tex has informed me that Piedmont will have to switch bucket plate (remove teeth + put on a blade).

This was not specified in RFQ.

* Piedmont says it would be a change order ≈ $130.

Apparently Tex already gave Piedmont the go ahead to get.

Rationale: Reduce potential for puncturing drums.

6/6/94 Albion 8809-00

[1320] Piedmont Grapples onsite (Komatsu PC-200) (Backhoe - Komatsu PC-120)

[1350] MDNR Mobile lab on-site (Fernando + Sandy)

★ Piedmont having plate welded to track-hoe bucket (over teeth)

[1445] Mike Baranowski (MDNR) on-site

Will take Piedmont and walk around site to look @ anomaly areas.

Make plans for plan of attack

[1540] Garnet Bondy (ABB-ES) on-site

Plan of attack to hit "clusters" of anomalies to reduce setup-teardown time.

6/6/94 Albion 8809-00

* We will have a site safety meeting in the AM.
- Piedmont will pack up and leave for day.
- We will start up in the morning @ 0645

[1630]
⇒ Background Air Monitoring
- Respirable Dust Monitor (RDM)
- HNU Photoionization meter

Proceed to walk around main excavation areas. Up road to encircle main areas designated by MDNR. All HNU and RDM reading @ 0.0
0.0 ppm 0.0 mg/cm3

* See Monitoring Data sheets

[1645] Piedmont off-site

[1735] ABB-ES (all) offsite

6/7/94 Albion 8809-00

0645 0650 - ABB-ES + Piedmont personnel on-site.

[0720] - Site Safety Meeting held w/all personnel. Discussed hazards, communication, etc.

Will set up air station.

[0830] Weather station set up

[0900] Mobilize to first Test pit area.

[0950] Decon zone set up
Exclusion zone established + marked.
Suiting up.

[1010] Start Excavation at TP-1
Begin at west end and trench across to east.

6/7/94 Albion 8809-00 (8)

Top 2 feet is dark, hard, almost asphalt looking

See some brick + maybe concrete.

Looks like demo, debris.

No HNU or LEL or RAD Detects

Down to 5 Ft, seeing slag and metal debris.

1 crushed drum removed at 7:

Mixed w slag / Foundry? debris

Final pit = 8-10 Ft long, 3 Ft wide (bucket width) and 8-10 Ft deep.

All foundry debris.

No Adverse readings.

6/7/94 Albion 8809-00 (9)

TP-2

11:05 Am

Top 2 Ft - black crusty

Mostly dirt mixed w/ fine black material - possibly foundry debris.

Minor, miscellaneous debris, mostly dirt.

No HNU, Rad, LEL adverse readings.

1 crushed drum

Final pit = 10 feet long, 3 feet wide (bucket width) and up to 10 feet deep.

Upon backfilling pit, we took level B off + could smell ~~[illegible]~~ faint oily smell from disturbed soil.

1120 Will demob from area + take lunch.

1150 Complete.

Setting up decon. area and support vehicle for next two test-pit locations

1215 To Lunch

1300 Back from lunch; will mob. to site.

Setting up at third test pit location. Temp° in the low 80°s; not very much breeze.

TP-3

HNU Background - 1 ppm

LEL O_2 20.7 %

H_2S 0 ppm

Rad. Meter

TP-3 - 13:40

Municipal refuse from surface to 6'.

Final pit size = 10' long, 3' wide (widest width), 6' deep.

HNU = 0 above background

O_2 = 20.4 %

Support now personnel noted methane odor

1400 ⇒ Piedmont ordered to fill in hole

No readings on H_2S or Radiation meter.

Mobilize to 4th Test Pit area

(12)

Albion 8809-00 6/7/94

TP-4 14:20

6" of top soil cover

- Municipal refuse
- White goods

Final pit: 10' long,

3 Ft (bucket) wide,

5' deep,

All municipal refuse.

Piedmont ordered to fill in hole.

HNU 0 ppm above background
LEL/O_2 Background
H_2S Background
Rad. Background

MDNR will locate next test pits to set up at.

(13)

6/7/94 8809-00 Albion

ABB-ES (Garret/Craig) back to trailer to discuss field notes.

(1450) ABB-E Back to Test Pit area

TP5 - 15:35

Topsoil for first 1'

Municipal debris after 1'

1 quick hit on HNU of 5 ppm (background is 1 ppm)

Final pit = 10' long, 3' wide, 8' deep, all Municipal refuse.

(14)

6/7/94 Albion 8809.00

Partially buried drum southwest by 4' of TP-5.

Removed drum w/ Excavator. Was a crushed drum - no contents, HNU = background. Reburied drum.

TP-6

6" topsoil
Large piece of asphalt,
Municipal refuse

(15)

6/7/94 Albion 8809

Final pit size = 7' long, 3' wide, 10 feet deep.

MAX LEL = 3%
Background HNU levels only.
All municipal refuse.

De-Mob for day at 16:20

(1645) ABB-ES offsite

* Piedmont will be sending 1 person home due to medical difficulty (Bob
He will not be replaced. Not Necessary

Craig S Kelly

6/8/94 Albion 8809-00

- ABB-ES on-site @ 0655
- Piedmont on-site @ 0630

Piedmont, MDNR, ABB-ES will move to set up at next test pit location (#7).

ABB-ES will set up meteorological Station (complete @ 0750).

0900

6/8/94 Albion 8809-00

TP-7 Start at 8:20

6" Topsoil

Municipal refuse

White pond at Northeast of Pit at 3 Ft deep.

Newspaper dated 1970

All municipal refuse

Final Pit = 6 Ft long, 3 Ft wide, 6-7 Ft deep.

No adverse meter readings except from HNU on garbage pile got 1.5 ppm above background.

TP-8 (SW of TP-7)

Digging where surface drum observed

Metal
^ Refuse at surface

Metal refuse - white, grey dust (looks like ash)

Unearthed surface drum - appears full of the grey dust - but it appears solid.

Marking on drum say

"Northwest Chemical Co
Detroit" (Final Pit = 6' long, 3' wide, 3' deep)

2nd bucket width west of original dig (west of drum)
More refuse + miscellaneous municipal refuse
Final Pit size = 10' long / 6 Ft deep,
3 Ft wide

TP-9 3 trenches
running East-West
Starting west.

Trench 1 - Northernmost

1 ft topsoil
concrete floor

Small drum at 1 foot at west edge - box core welded to it - looks like a pontoon.

Another drum horizontal 1 foot down, liquid leaking, dirt soaked w/ liquid HNY = 5 ppm above background
(liquid appears to be water draining)

Another drum in south wall sitting vertically - looks stacked.

(20)

6.8.94 Albion 8809

OHIO Piedmont preparing to remove drum w/ grappler.
Place into overpack if possible
More fluid leaking from drum.
Draining fluid into overpack and lifting drum on visqueen.

HNU over overpack - 150 ppm.

Took liquid sample #TP-9-1

Liquid was muddy w/ silver (possible paint) floating on surface. The silver paint (?) smeared on sample bottles & wouldn't come off. ~~[illegible]~~ Crushed drum from pit was placed w/ liquid into Overpack #TP-9-01.

(21)

6.8.94 Albion 8809-00

10:20 - Remove 2nd drum ~~leaking liquid~~ from hole.

Drum near it in hole appears to have leaked liquid. Overpack drum into TP-9-2

Remove 3rd drum, it appears full of brown liquid. Liquid de-canted into overpack. HNU over drum top = 1500 - 2000 ppm. Support zone smells faint paint odor. Background HNU for ambient.

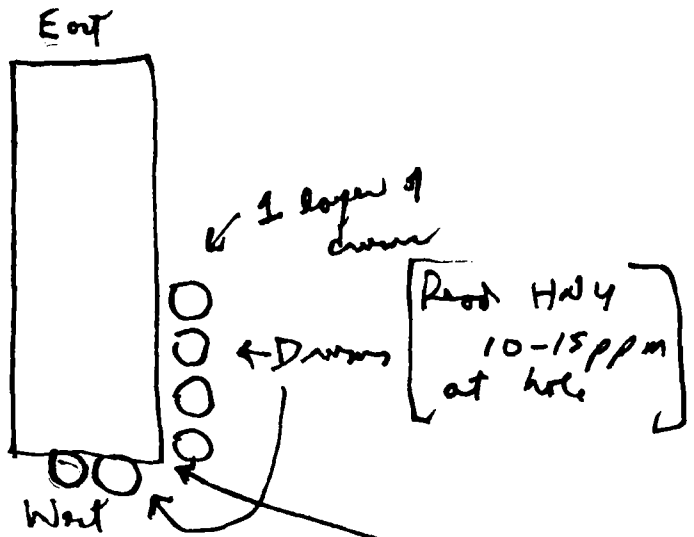
almost completely full

Took liquid sample from ~~TP~~ drum TP-9-03.
Sample # = TP-9-02.

Remove another drum that felt as if contained liquid.
Overpack in TP-9-04.

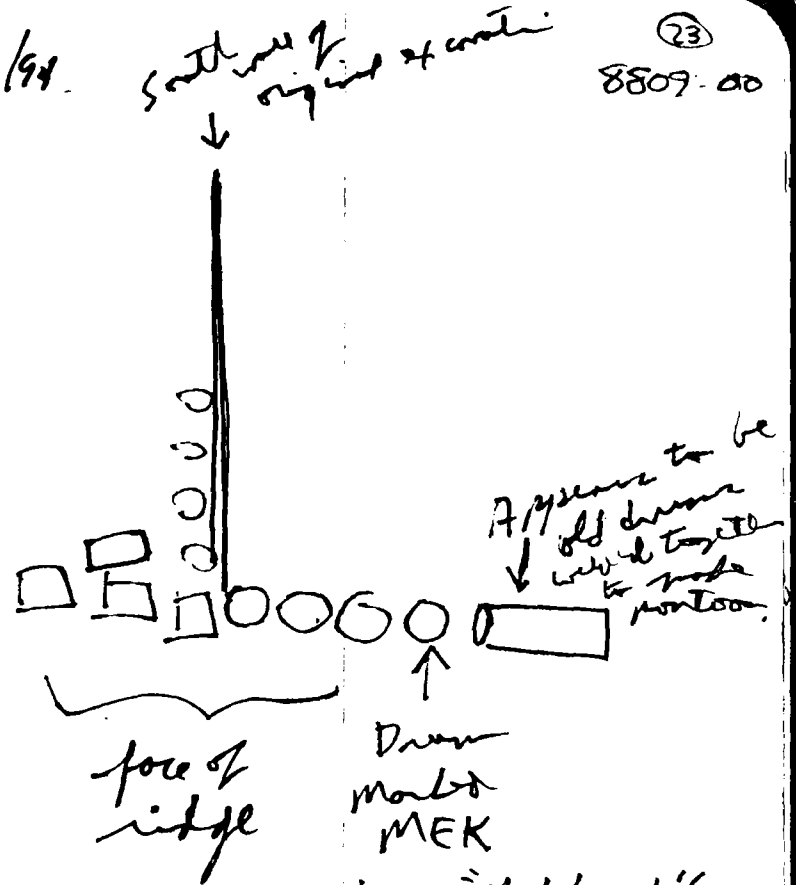
6/8/94 Albion 5809-00 (22)

10:55 Continue excavating to determine extent of drums. Dig down to ~ 10 Ft -



When removing surface soil punctured drum. Splashed dark liquid. HNU = 150 ppm at wet soil. Removed drum and overpacked as TP9-5

6/8/94 (23) 8809-00



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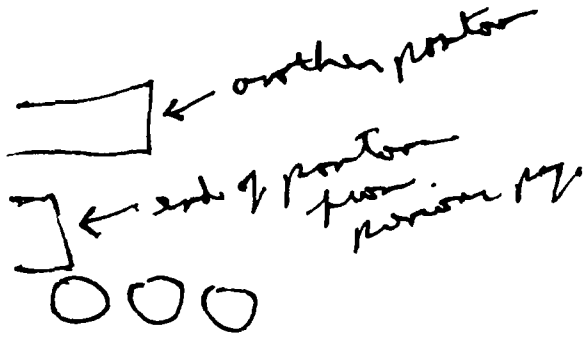
6/8/94 Albion 8809-00 (24)



Lunch break at 12:15

[14:10] ABB Back on-site.
Piedmont changing air cylinders.
Will get up to continue w/ test pitting

(25)

6/8/94 Albion 8809-00

Operator says stuff is chemical roofing + gutter putty material

Define Southern end of TP-9 ; 15:00 HOURS

Begin at S.W. corner of anomalous area (at ridge)

Immediately ran into drum that contained white shaving cream type material (sticky - it stuck to bucket
HNU = 250 ppm

Put broken drum and sludge (looks like paint sludge) into overpack

TP-9-~~3~~6.

[15:15] Sample = TP-9-3
HNU from sludge = 500 ppm

(1530) Drum overpacked with sludge spilled sludge picked up w/shovel + placed into overpack also

15:40 Move further south along ridge to find ~~south~~ S.W. corner of drums.

Did not find drums - only minor municipal refuse.

Backfill.

Start another hole 6' north of last hole and move N, E to try + catch drums

Found broken drum of white paint sludge material. Thinner

thin sludge - may it be paint

At request of MDNR, we attempt to remove it to overpack.

Use grapple to remove + it spills about 1 gallon.

We overpack drum + scoop up paint-like material into overpack.

Overpack TP-9-7

Did not sample.

MDNR agrees to not try to remove drums if it will create spill.

Will move to S.E. corner to find drum edge

6/8/94 Albion 8809-00 (28)

Will try 2 trenches to SE (A+B) corner, then move toward NE (C).

No evidence of drums in A trench
trench B moved. B ok
Drum encountered. Will not move. no evidence of a leak.

6/8/94 Albion 8809-00 (29)

Propane tank (5 gal) encountered + removed. Placed off side of work area.

Working to the south slightly. From new B trench
1785 C trench started (see Below)

Drum encountered. Leaking Brownish fluid. Will get a sample.

* HNU on leaking liquid is @ 65ppm

TP-9-4 sample of liquid
[1745] ≈ Sample Time

Drum is located ≈ 4' bgs.

Will dig deeper + around to try to remove drum.

[1800]
- @ ≈ 6-7' bgs.

* May be 2 layers thick w/ drums at this point some visual confirmation by MDNR + Piedmont.

It appears that the compromised drum is pretty much empty.

[1810] A decision was made to leave drum in place. Will fill in excavations.

* It appears the drum deposition is fairly rectangular in areal.

Three corners have been staked. After fill has been replaced, will place 4th stake for SE corner extent.

* Measure in area tomorrow.
- ABB-ES Piedmont will demob large for day.

ABB-ES offsite [1900]

Craig Kelly

6/9/94 Albion 8809-00

[0700] HBB-ES on site
Will set up weather station and mobilize to next test pit location.

MDNR (Jim Baranowski + Tax Irwin) measured in TP-9 area at approximately 80' x 40'. Mike estimated ≈ 200 drums at the low end. Didn't take into account a second layer. We will tape off to make a better estimate.

Piedmont will clear out some trees and debris from next test pit area.

[0755] Setting up decon area; Still preparing site.

6/9/94 Albion 8809-00

TP-10 8:30 (run north-south)

6" topsoil, then municipal refuse.

- All municipal refuse w/ oily smell.
- ~~First pit~~

- Grey soil at 8 Ft depth w/ oily smell.

HNU = 2ppm

- First pit - 13' long, 3' wide, 12-15 Ft deep.
- No drums but oily smell, HNU = 1-2 ppm above background. couple pings of 5-10 ppm.

6/9/94 Albion 8809-00 (34)

TP-11 (located 8 Ft north of northern end of TP-10) - runs East-West, start at west end

Lots of metal refuse 6" below surface, Find calendar w/ years 1971-1973.

~~Gra~~ Refuse and soil grey, (maybe stained).

Final pit size = 8' long, 3 Ft wide, 8 feet deep.

All refuse.

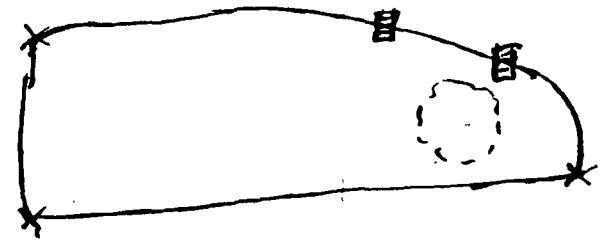
No HNU above background.

6/9/94 Albion 8809-00 (35)

10:05 Return to TP-9 to further define S.E. corner.

1st 3 Ft = Topsoil

Find SE corner shape of area is:



Exposed Drums @ Surface

1015 Exposed drum. Will dig around Removed drum intact. ~~Bro~~ Placed in overpack Broken open

1030 Bung HNU is hot = 450 ppm. Will pull a sample from drum. Volatile sample only per MDNR. Using a glass Colliwasa

6/9/94 Albion 8809-00 (36)

[1035] Placing lid on overpack

TP9-05 (1030)

"Dirty" liquid. yellowish Brown

{from drum #TP9-08}

some "gel" consistency

≈2" of liquid in bottom of drum.

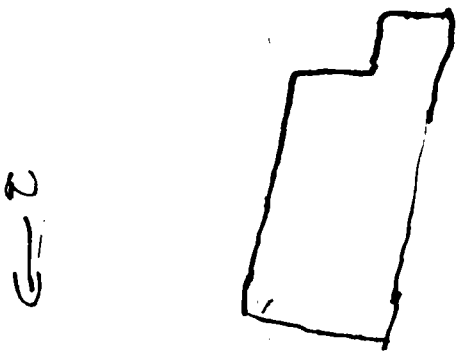
Only VOA sample as a result

This overpack labeled TP9-08

[1040] Continuing to excavate towards the southwest corner

6/9/94 Albion 8809-00 (37)

[1050] Drum side ripped open. Gray "paint like" material spilled into excavation. Dirt thrown on.



General shape of drum depositional area.

- Will try to excavate drum out + overpack

Drums are ≈ 2-2.5' bgs.

In process, another drum exposed

6/9/94 Albion 8809-00 (38)

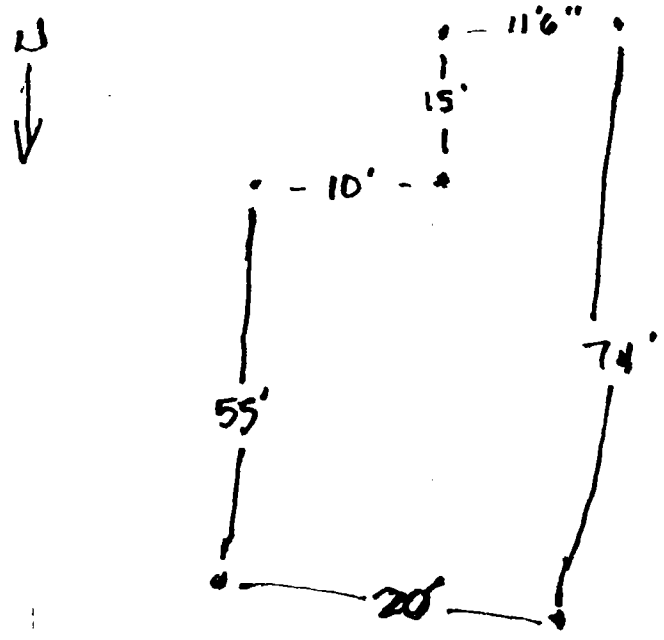
[1100] Next drum has hole in top, not leaking.
HNU in hole @ 600ppm
Garret will check contents w/ stick.

Appears to be pretty full.
Will attempt to get a sample.

[1110] Sample + duplicate
Sample
TP9-06 TP9-101 CK
Will collect for the full suite of analyses.
Using glass colliwasa

→ Will measure in excavation prior to filling

6/9/94 Albion 8809-00 (39)



⟹ drum left in place + excavation filled.

[1135] Decon. Personnel + break for lunch.

[1145] Lunch

[1230] ABB-EJ back from lunch

8809-00 Albion 6-9-94 (40)

* Collecting
TP-201; an equipment
[1300] blank sample collected
through glass colliwasa (w/
Distilled water).

Mobilize back to TP 9
[1310] area. We will unearth
drums seen previously.
So as to collect another
sample. Area of excavation
will be in the central - west
edge portion.

6-9-94 Abion 8809-00 (80)

13:40
Return to Ridge force on
West edge of TP-9 to
uncover drums to
collect 1 sample.

[1345] Drum exposed
will try to remove
it w/ grappling device.

No contents; hole in
bottom of drum.

[1400] Two more empty drums
exposed. Will move
on.

* No HNU readings
above background.

(42)

6-9-94 Albion 8809-00

Drum exposed - hole in top side (lying on side)

HNu in Drum 550 ppm will sample.

- TP 9-07 (14:30)

Sample w/ Glass Collimator

Silvery liquid - silver "flakes" floating in liquid.

Able to collect for full suite.

- ~~Place~~ Extract drum and place in overpack

TP-9-9

(43)

6-9-94 Albion 8809-00

Will go back + collect samples from 2 overpacks collected ~~yesterday~~ yesterday.

Will collect samples from overpack #'s

~~[illegible]~~ Sample

TP-9-5

TP-9-7

over →

6/9/94 Albion 880900 (44)

Take Sample

Drum #	Sample #	HNU @ Drum	Time
TP-9-5	TP-9-8	800 ppm	1530
TP-9-7	TP-9-9	350 ppm	15:06

6/9/94 Albion 880900 (45)

TP-12 - 16:15 hours

1½' - Topsoil

Industrial effluent (metal + rubber) below to 3 ft, then see municipal waste below.

Dug to 12 ft

Final pit: 10 ft long, 3' wide, 12-13 feet deep. See clean dirt at 13 ft.

Will rap it up + demob. for day.

Final demob. and decontamination of equipment will be completed tomorrow morning.

Will make a punch list to make sure everything is in order when Piedmont leaves OFFsite @ 1730 — Crystal

6/10/94 Albion 8809-00 (46)

0650
- ABB-ES on site (Jim K./Craig K.)
PIEDMONT ON-SITE (3)
MDNR ON-SITE (Tex Irvin)

Demobilization Day.

Piedmont Tasks

- Pick up + drum Plastic and PPE @ TP-2 + TP-9, resp.
- Stage overpack Drums from TP-9 @ Decon. Pad
- Decon Heavy equipment.

ABB-ES

- Empty Trailer / Clean
- Pack Van
- Site Walkover

6/10/94 Albion 8809-00 (47)

0800
- Called office to see about site service pick up.

Trailer may not be picked up today. Checking into Porta-John.

⇒ Tex disconnected electric from trailer.

0900 Piedmont has removed Plastic + PPE from site. Picked up drums and staged on Concrete decon Pad.

Completed a walkover of the site + everything looks good; Cleaned up.

- Piedmont will prepare to decon.
- Tex says that he may be here on Monday; see if trailer + Porta John can be picked up

6/10/94 Albion 8809-00

* Piedmont will have air cylinders picked up on Monday.

Drums Staged:

			Sample Desig.
TP9-	1	Sampled	(TP9-1)
-	2	~~sampled~~ ck	
.	3	Sampled	(TP9-2)
-	4	~~Sampled~~ ck	
	5	sampled	(TP9-8)
	6	Sampled	(TP9-3)
	7	sampled	(TP9-9)
	8	Sampled	(TP9-5)
	9	Sampled	(TP9-7)

~~Decon water~~ ck (Transfered to on-site poly tank)

~~PPE~~ ck (TEX will move out PPE on Stake truck)

* Samples not from overpacked drums
TP9-4; TP9-6
Drums left in place.

6/10/94 Albion 8809-00

0945 Decon on Bucket track hoe complete. Grappler Next.

* Porta John being picked up.

- Called office: they are trying to get trailer picked up on Monday morning. I informed TEX. He will call ABB-ES Monday to verify.

1030 All equipment deconed.
Piedmont
ABB-ES offsite

[signature]

APPENDIX D

DRUM QUANTITY ESTIMATE

PROJECT	COMP. BY	JOB NO.
Albion/Sheridan Twp Landfill TP#9 Drum Quantity Estimation	CSK	8809-00
	CHK. BY GR	DATE 7/5/94

Assumptions:

Defined area of TP-9 = 1,350 square feet

Standard 55-gallon drum dimensions - 1.8 feet x 2.75 feet

Area (standing drum)

πr^2 = 2.54 sq. feet

Area (flat lying drum)

$L \times W$ = 4.95 sq. feet

CALCULATION A - Standing single layer of drums packed together (assuming 20% wasted space).

(1,350 sq feet / 2.54 sq. feet) x 0.80 =

425 Drums

CALCULATION B - Flat lying single layer of drums packed together (assuming 20% wasted space).

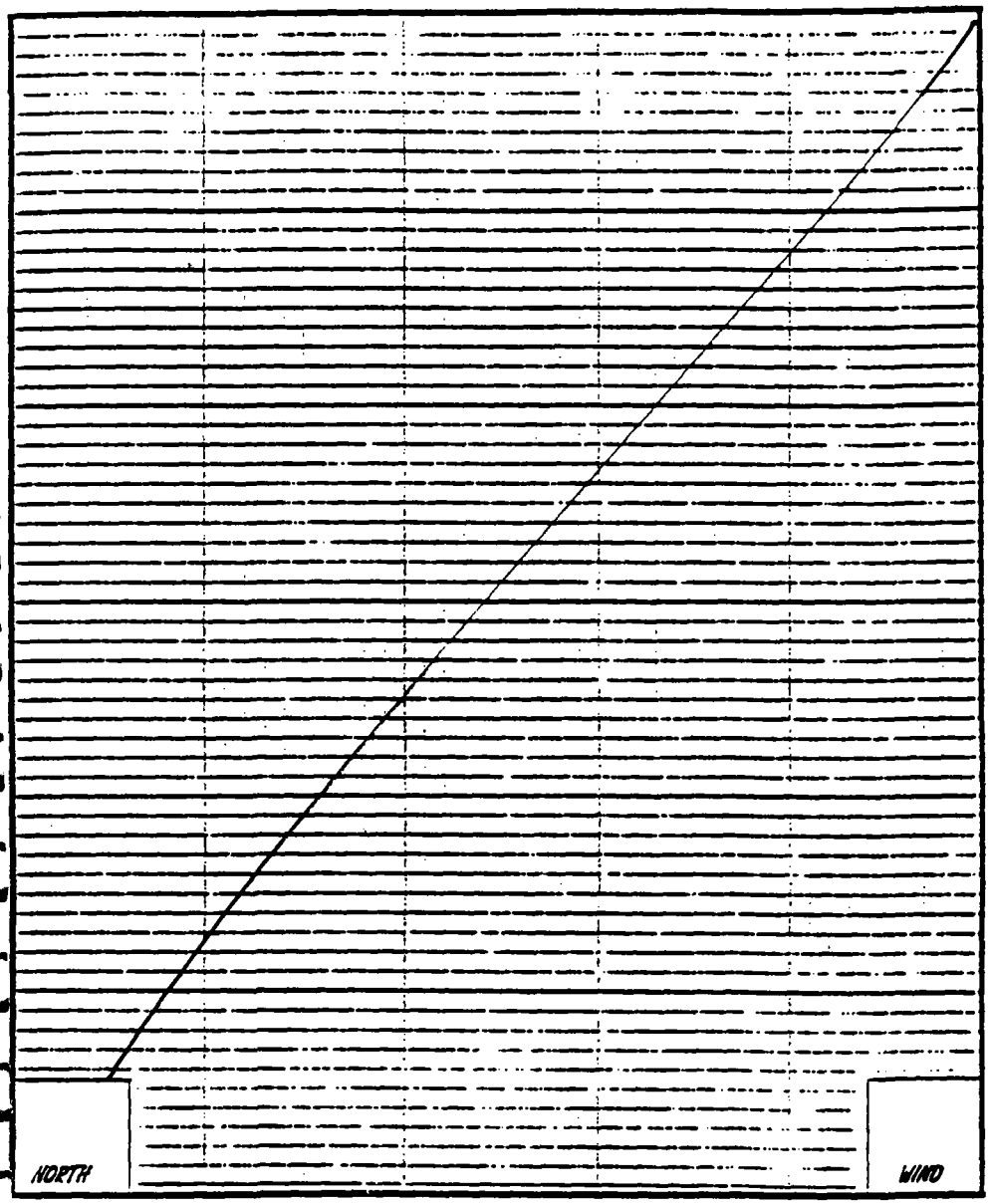
(1,350 sq. feet / 4.95 sq feet) x 0.80 =

218 Drums

APPENDIX E

DRUM SAMPLE RECORDS

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER: TP9 - 01

DATE COLLECTED: 6/8/94

SAMPLE TIME: ≈1000

JOB NUMBER: 8809

SAMPLE TYPE:

WATER ☐ GRAB ☒

SOIL ☐ COMPOSITE ☐

OTHER: waste/drum

PID METER USED: HNU

BACKGROUND: 0 ppm

SAMPLE: 150 ppm

HEADSPACE:

SAMPLING CREW:

T. Irvin (MDNR)

G. Bondy (ABB)

C. Kietty (ABB)

SAMPLE DESCRIPTION/NOTES:

Liquid sample - Appeared to be sediment laden water with silver "paint" floating on.

Samples collected for: VOCs/SVOCs/Pesticides + PCBs/ Total Metals

Overpack drum #1 (TP9-01)

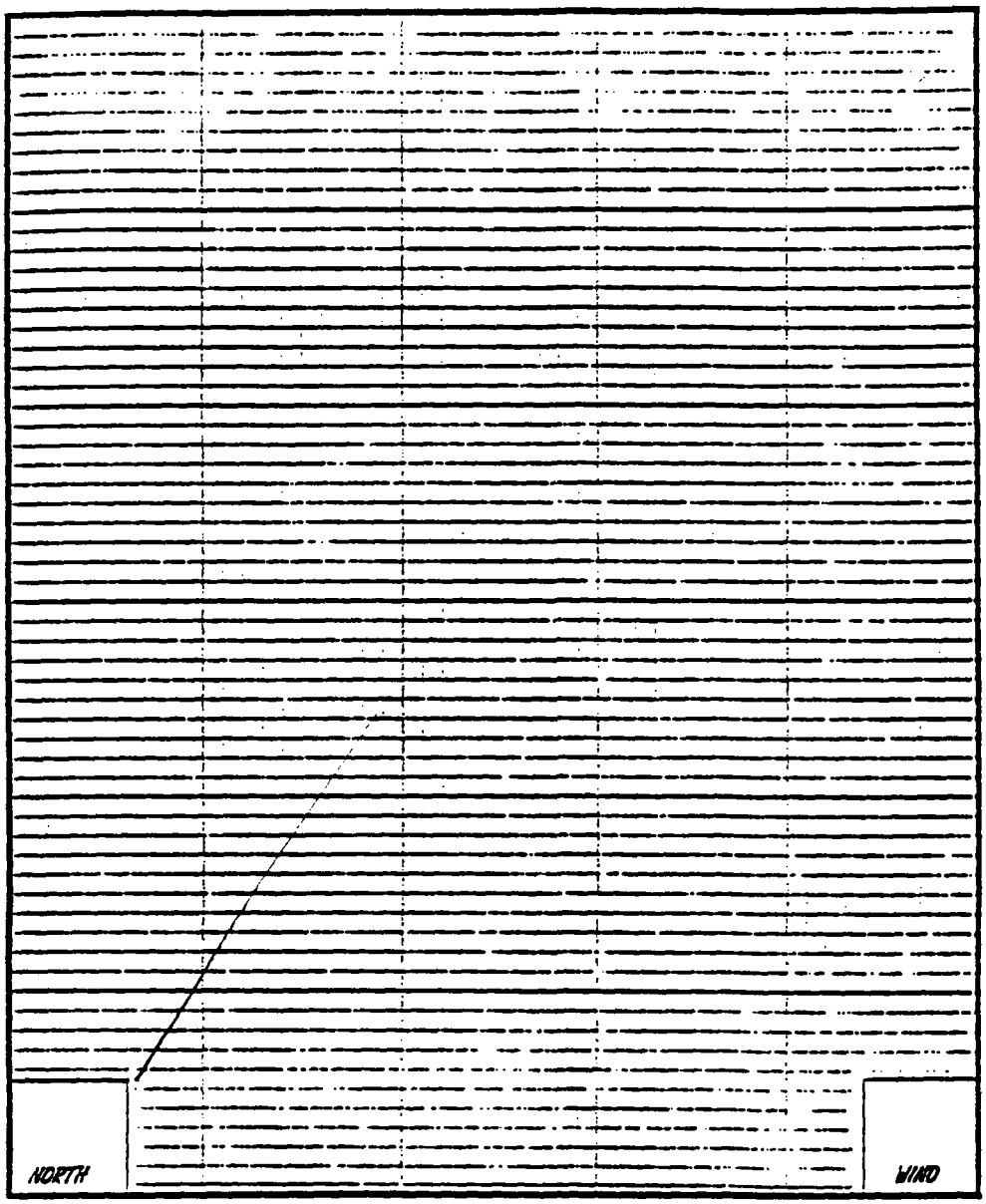
EQUIPMENT USED:

Glass Colliwasa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	4	PLASTIC	1	VOLUME 2-40ml/2-1L/1-Ba
GLASS		PLASTIC		VOLUME
GLASS		PLASTIC		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-02

DATE COLLECTED 6/8/94

SAMPLE TIME ≈ 1040

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☑

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNU

BACKGROUND 0 ppm

SAMPLE 1500-2000 ppm

HEADSPACE —

SAMPLING CREW:

T. Irvin (MDNR)

G. Bondy (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Translucent brown liquid; paint odor was evident at times in CRZ

Samples collected for: VOCs/SVOCs/Pesticides + PCBs/ Total metals

Overpack Drum TP9-3

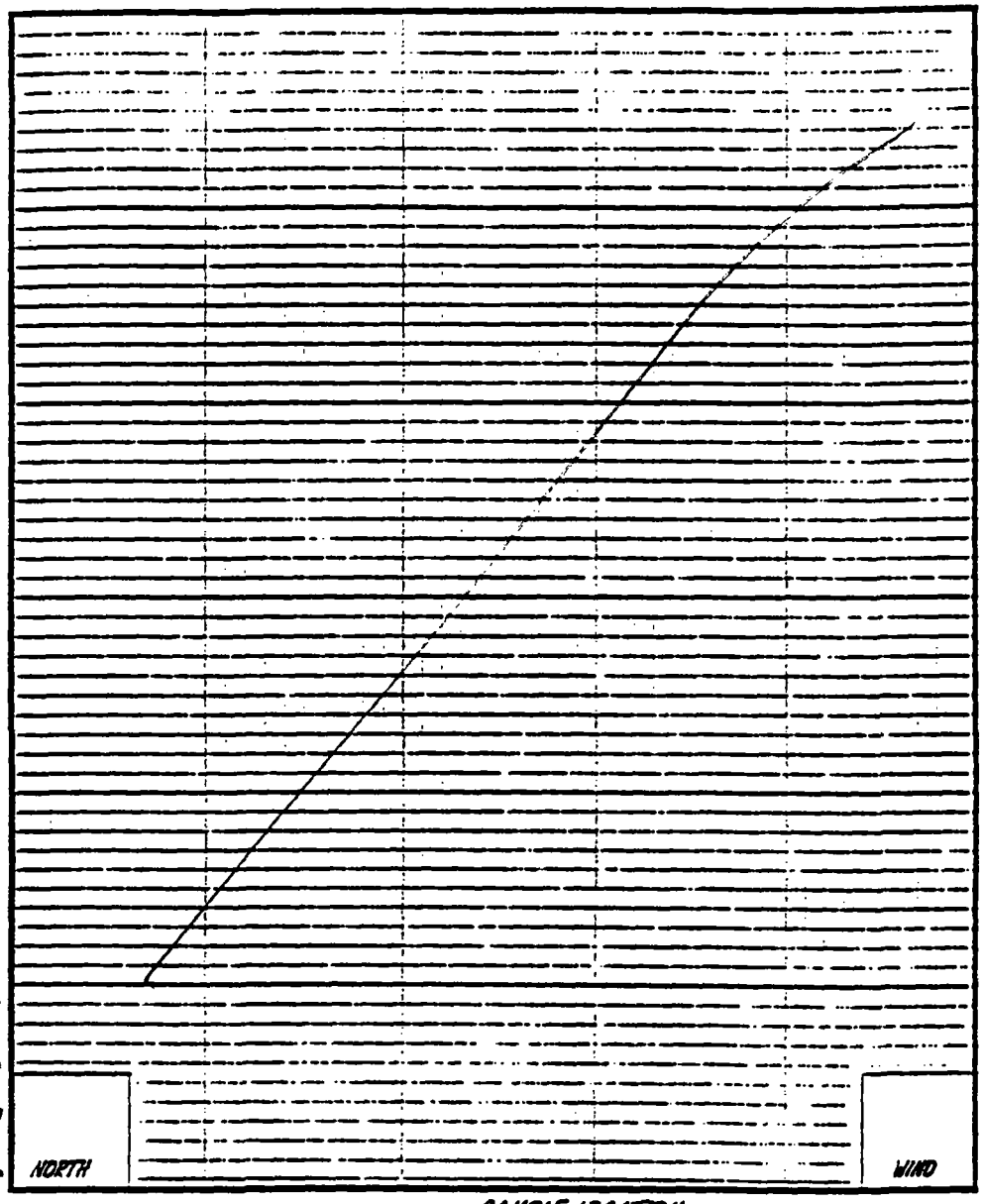
EQUIPMENT USED:

Glass Collivasa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	4	PLASTIC	1	VOLUME 240 ml/2-1L/1-250
GLASS ☐		PLASTIC ☐		VOLUME
GLASS ☐		PLASTIC ☐		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-03

DATE COLLECTED 6/8/94

SAMPLE TIME ≈ 1515

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☑

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNU

BACKGROUND 0 ppm

SAMPLE 500 ppm

HEADSPACE —

SAMPLING CREW:

C. Keltz (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

White sludge -
"gel" consistency ; paint sludge?
"sticky"

Sample Collected for
VOCs only

Overpack Drum TP9-6

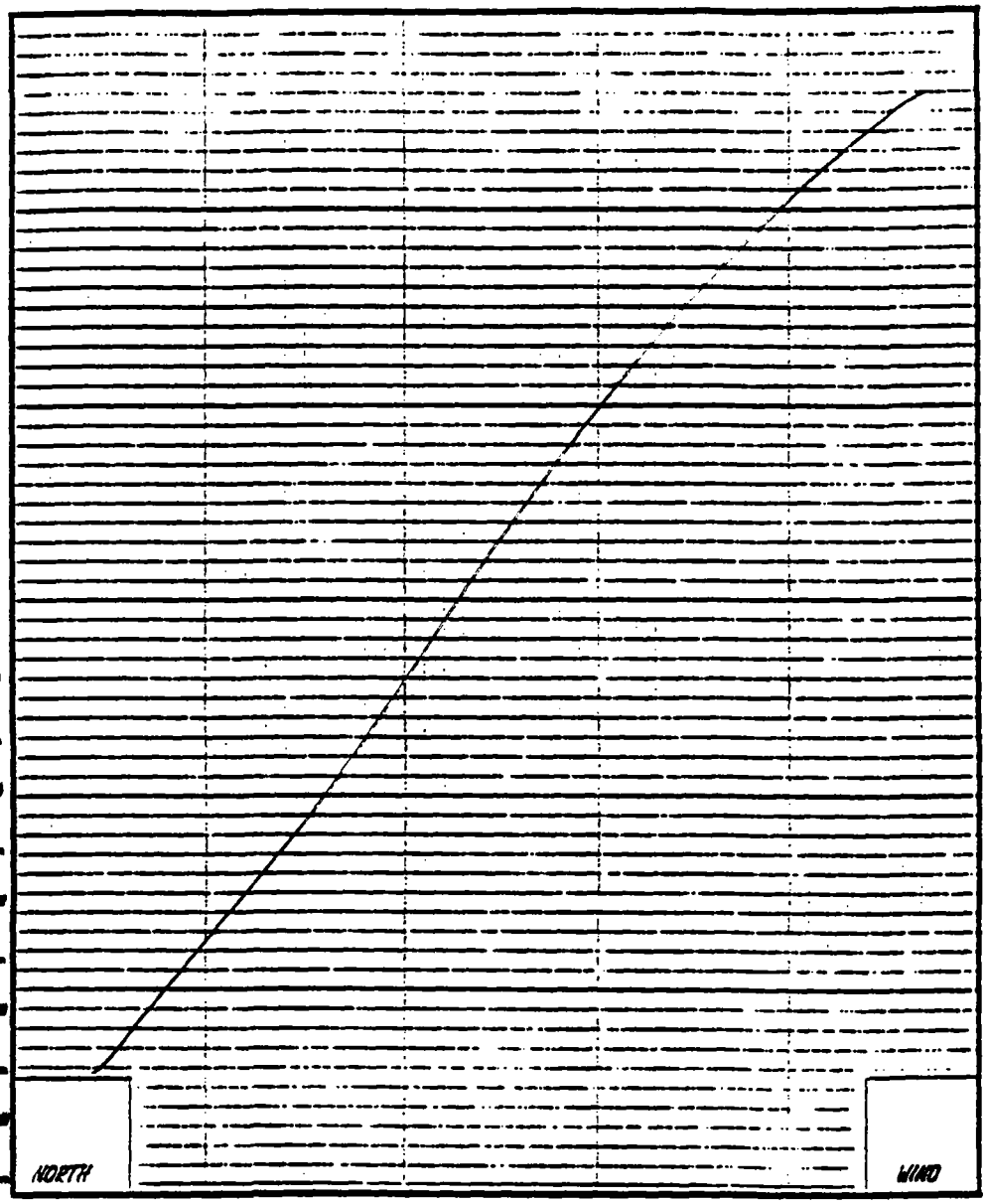
EQUIPMENT USED:

Stainless Steel Spoon

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	1	PLASTIC		VOLUME 4 oz jar
GLASS		PLASTIC		VOLUME
GLASS		PLASTIC		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-04

DATE COLLECTED 6/8/94

SAMPLE TIME = 1745

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☑

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNU

BACKGROUND 0 ppm

SAMPLE _____

HEADSPACE —

SAMPLING CREW:

T. IRVIN MONR

C. Kielty ABB-ES

D. Bondy ABB-ES

SAMPLE DESCRIPTION/NOTES:

Liquid - brownish in color
somewhat translucent

sample collected for:
VOCs/SVOCs/Pesticides + PCBs
Total metals

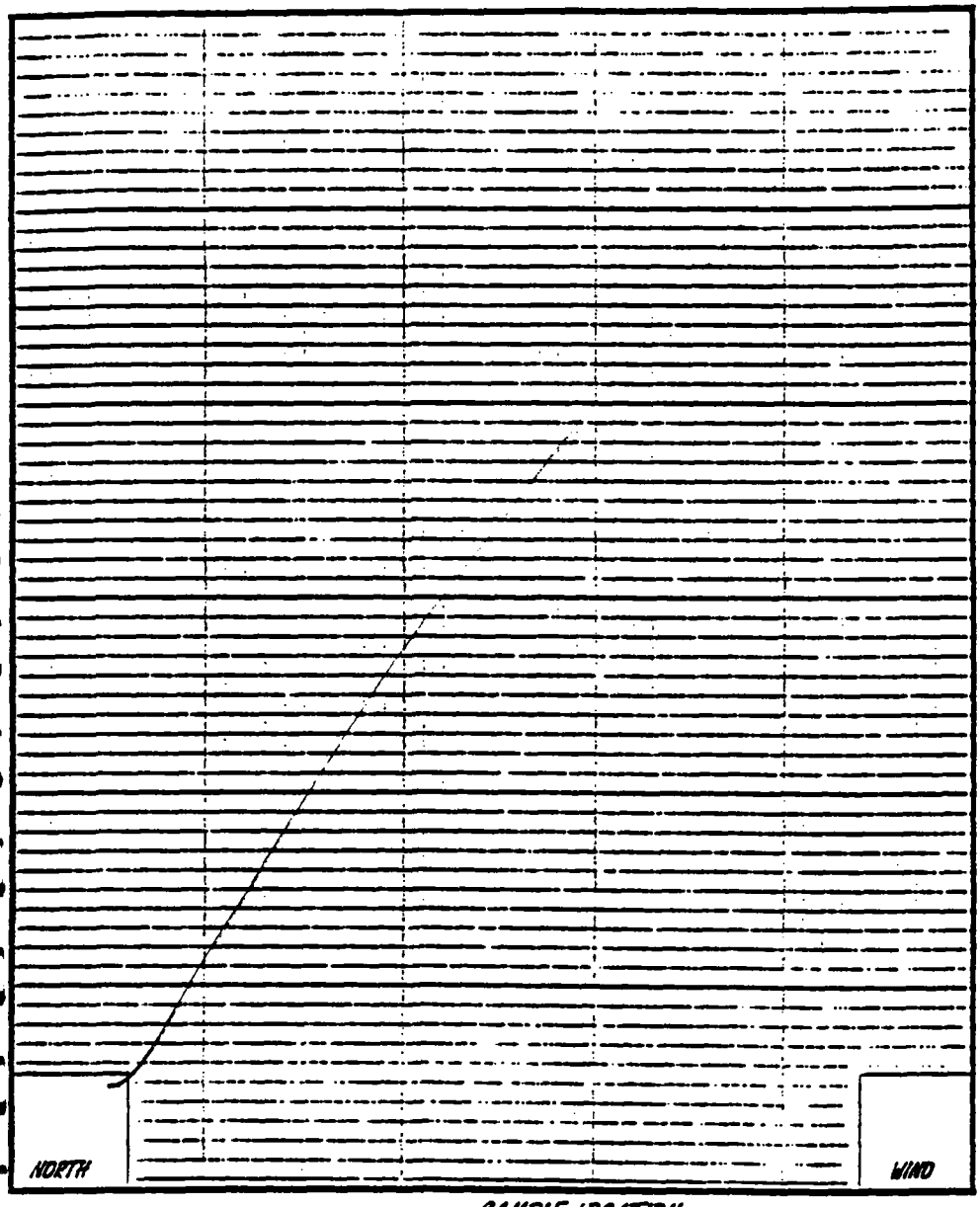
EQUIPMENT USED:

Glass Colliwasa

SAMPLE CONTAINER(S):

	QTY.		QTY.		
GLASS	4	PLASTIC	1	VOLUME	240 ml / 2.1L 1.250 ml
GLASS		PLASTIC		VOLUME	
GLASS		PLASTIC		VOLUME	

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-05

DATE COLLECTED 6/9/94

SAMPLE TIME 1030

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☑

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNU

BACKGROUND 0 ppm

SAMPLE 450 ppm

HEADSPACE —

SAMPLING CREW:

T. Irvin (MDNR)

G. Brady (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Yellowish Brown liquid "dirty" (sediment). Two-phases, one phase "gel" like consistency

Sample collected only for VOCs

Only 2-3" of liquid in drum.

Overpack drum: TP9-08

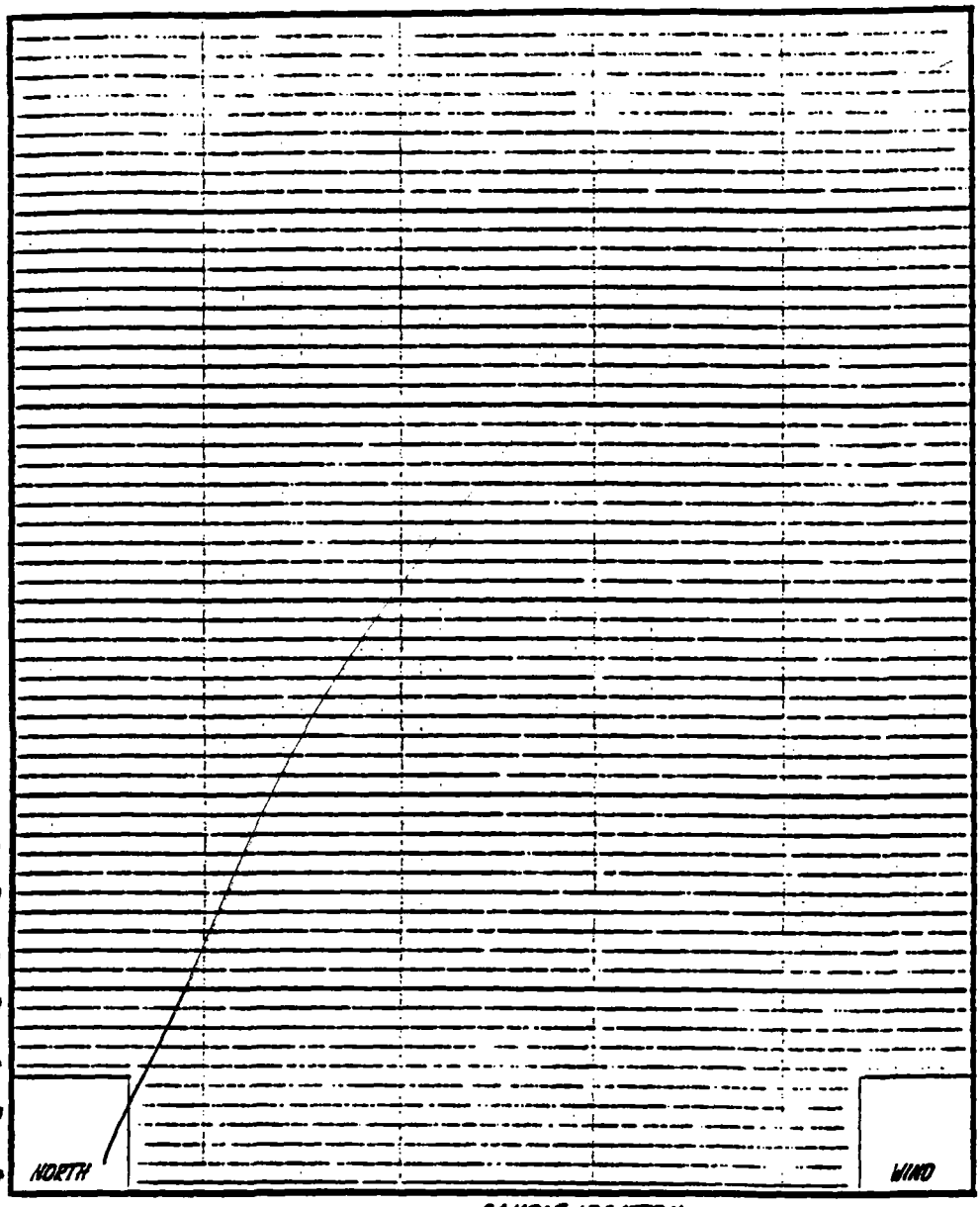
EQUIPMENT USED:

Glass Collivasa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	2	PLASTIC		VOLUME 2-40ml
GLASS		PLASTIC		VOLUME
GLASS		PLASTIC		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-06/TP-101

DATE COLLECTED 6/9/94

SAMPLE TIME = 1110

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☑

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNu

BACKGROUND 0 ppm

SAMPLE 600 ppm

HEADSPACE —

SAMPLING CREW:

T. IRVIN (MDNR)

G. Bondy (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Liquid - gold flake paint? throughout

Duplicate sample (TP-101) also collected.

Samples for: VOCs/SVOCs/Pesticides + PCBs/Total metals

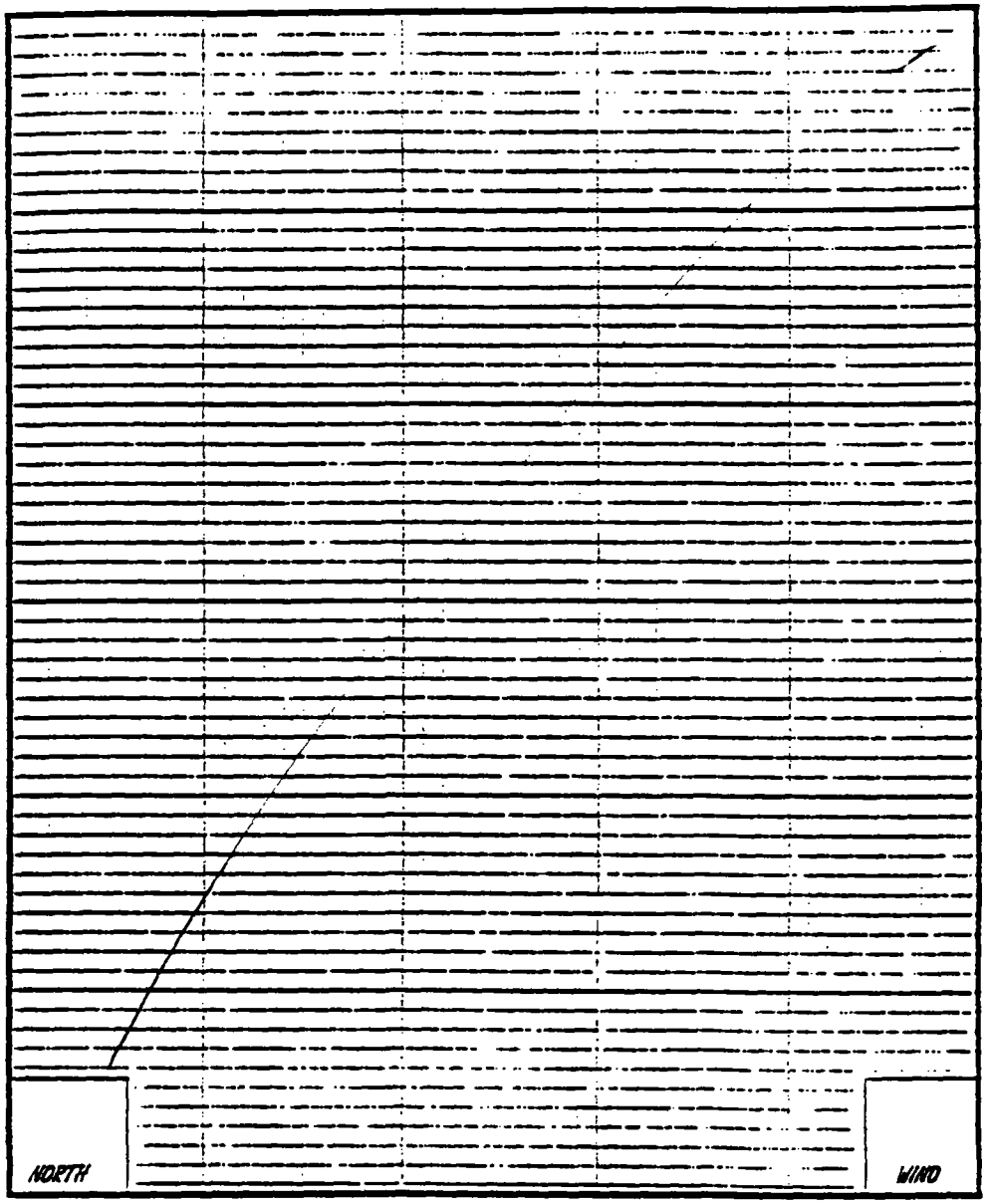
EQUIPMENT USED:

Glass Collwasa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	8	PLASTIC	2	VOLUME 4-40ml, 4-1L, 2-250ml
GLASS ☐		PLASTIC ☐		VOLUME
GLASS ☐		PLASTIC ☐		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP-201

DATE COLLECTED 6/9/94

SAMPLE TIME 1300

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☑

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED _____

BACKGROUND _____

SAMPLE _____

HEADSPACE _____

SAMPLING CREW:

J. Kralek (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Sampler blank through glass Collinsa - Distilled water

Sample Collected for VOCs/SVOCs/Pesticides + PCBs/ Total Metals

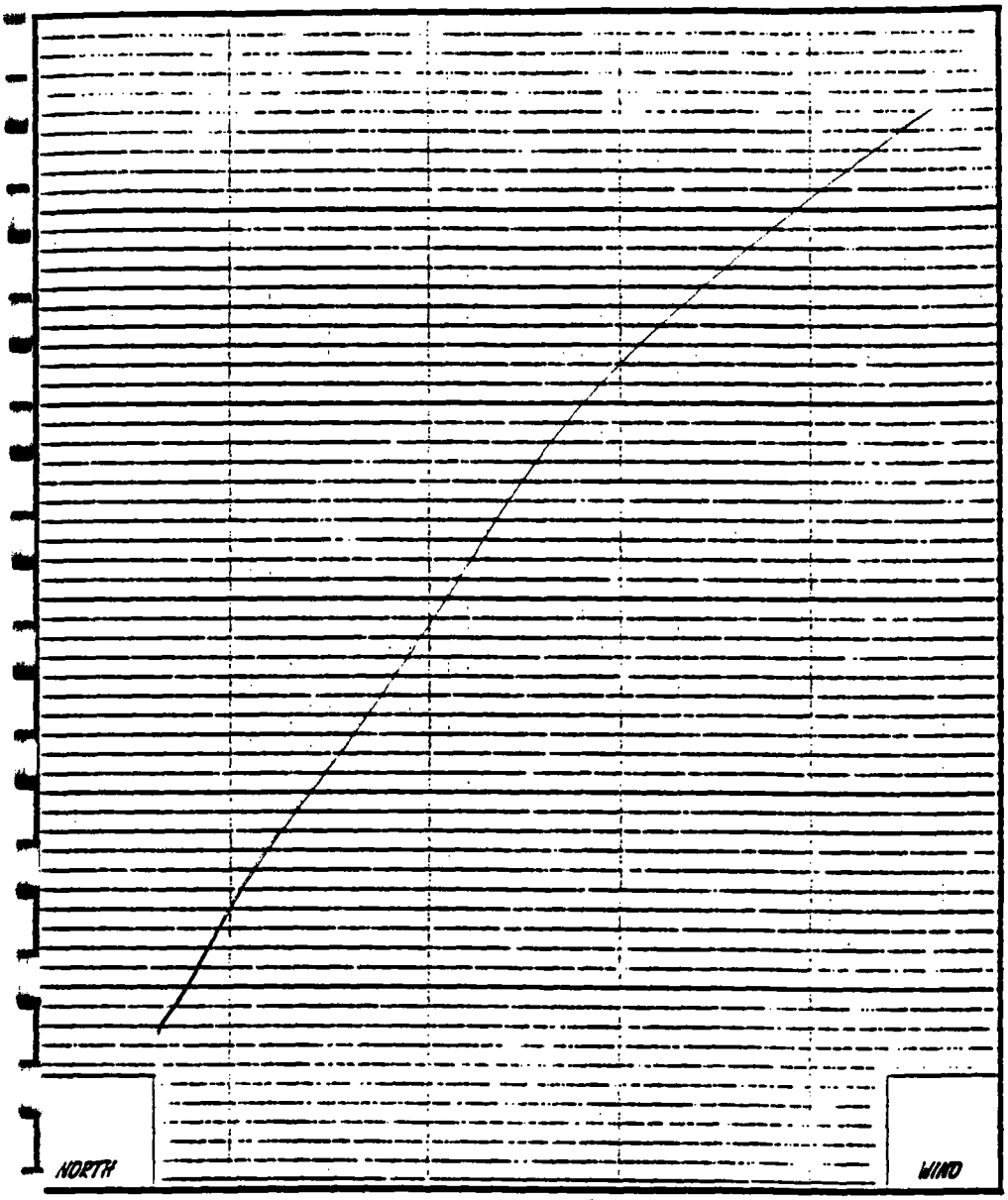
EQUIPMENT USED:

Glass Collinsa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	4	PLASTIC	1	VOLUME 2-40 ml, 2-1L, 2-250 ml
GLASS		PLASTIC		VOLUME
GLASS		PLASTIC		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-07

DATE COLLECTED 6/9/94

SAMPLE TIME ≈ 1430

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☒

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNU

BACKGROUND 0 ppm

SAMPLE 550 ppm

HEADSPACE —

SAMPLING CREW:

T. Irvin (MDNR)

C. Kelly (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Liquid - Silver "Flakes" throughout.
has the look of paint in thinner or mineral spirits.

Collected for VOCs/SVOCs/Pesticides + PCBs/Total Metals

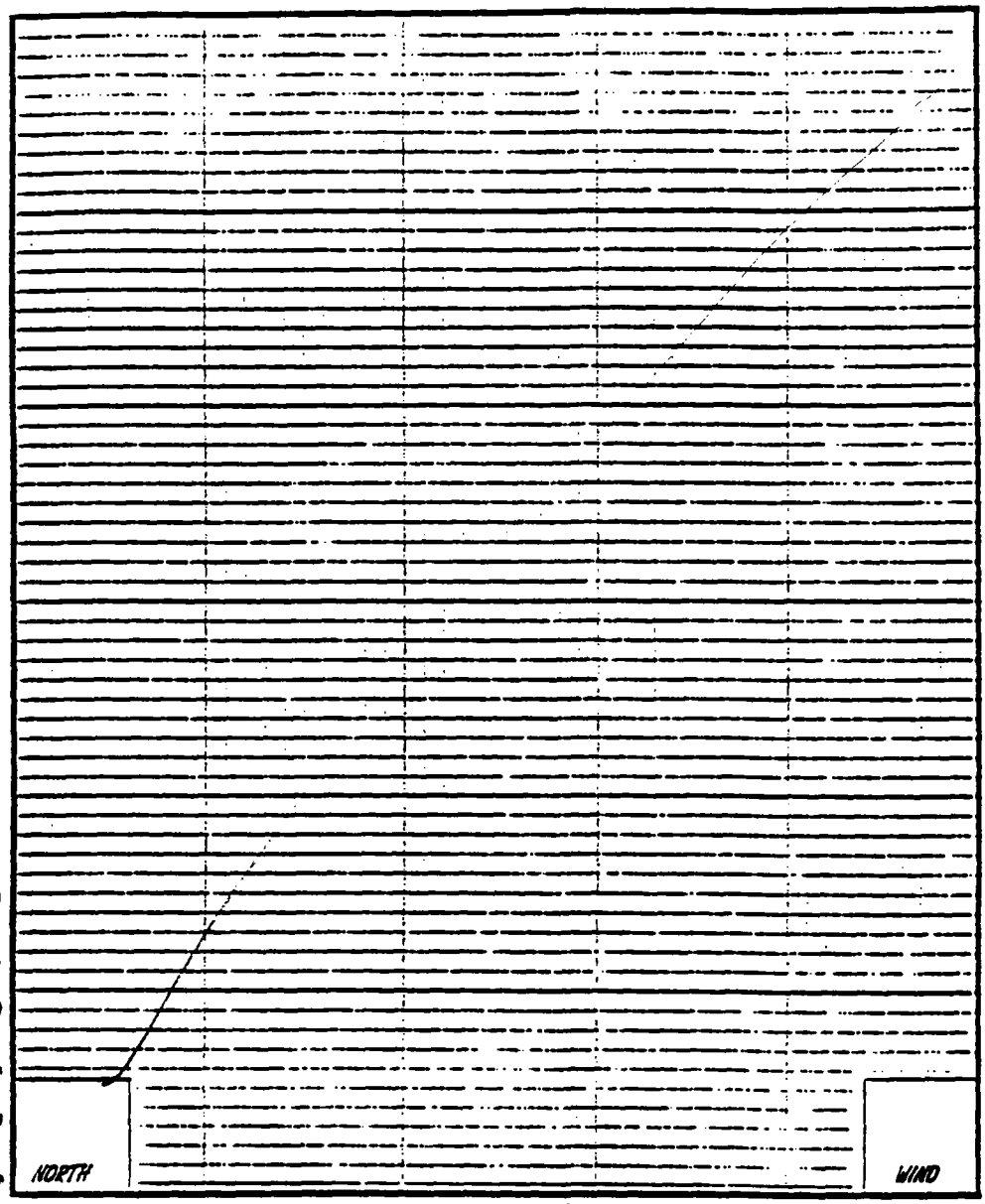
EQUIPMENT USED:

Glass Collection

SAMPLE CONTAINER(S):

	QTY.		QTY.	VOLUME
GLASS	4	PLASTIC	1	2-40 ml, 2-1 L, 2-250 ml
GLASS ☐		PLASTIC ☐		VOLUME
GLASS ☐		PLASTIC ☐		VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER: TP9-08

DATE COLLECTED: 6/9/94

SAMPLE TIME: 1530

JOB NUMBER: 880900

SAMPLE TYPE:

WATER ☐ GRAB ☒

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED: HNU

BACKGROUND: 0 ppm

SAMPLE: 800 ppm

HEADSPACE: —

SAMPLING CREW:

C. Kielty (ABB-ES)

G. Bondy (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Liquid - brownish gold "paint-like" mixed in throughout

Sample Collected for VOCs / SVOCs / Pesticides + PCBs / Total Metals

Overpack Drum : TP9-05

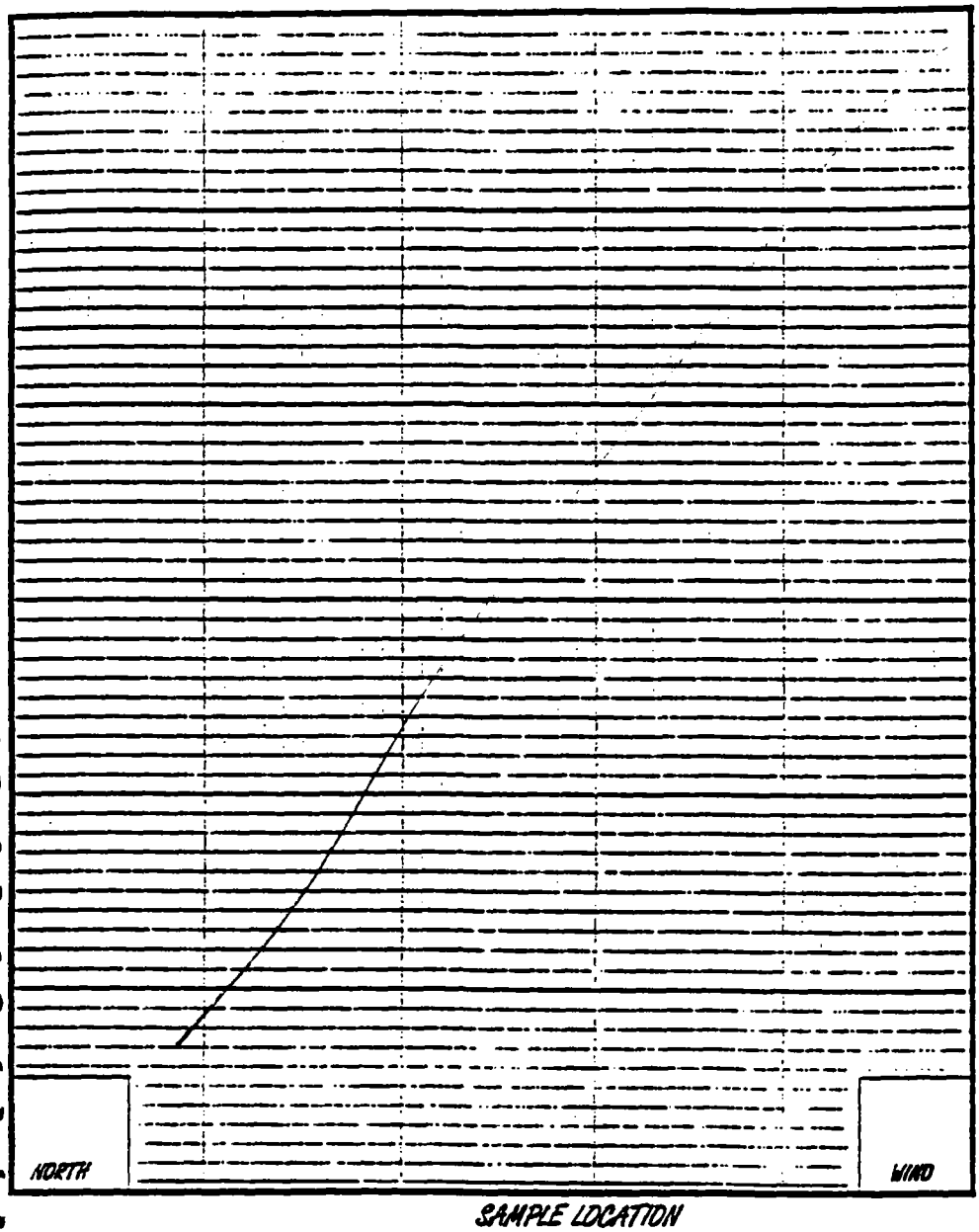
EQUIPMENT USED:

Glass Collitwasa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	4	PLASTIC	1	VOLUME 2-40 ml, 2-1L, ck 1-250 ml
GLASS	☐	PLASTIC	☐	VOLUME
GLASS	☐	PLASTIC	☐	VOLUME

ABB ENVIRONMENTAL SERVICES SAMPLE RECORD



SAMPLE LOCATION

SAMPLE NUMBER TP9-09

DATE COLLECTED 6/9/94

SAMPLE TIME 1506

JOB NUMBER 8809-00

SAMPLE TYPE:

WATER ☐ GRAB ☒

SOIL ☐ COMPOSITE ☐

OTHER _____

PID METER USED HNu

BACKGROUND 0 ppm

SAMPLE 350 ppm

HEADSPACE _____

SAMPLING CREW:

C. Keelly (ABB-ES)

G. Bonty (ABB-ES)

SAMPLE DESCRIPTION/NOTES:

Liquid (P)
White Paint; somewhat thick consistency
Collected for VOCs only

EQUIPMENT USED:

Glass Colliwasa

SAMPLE CONTAINER(S):

	QTY.		QTY.	
GLASS	1	PLASTIC		VOLUME 4 oz jar
GLASS		PLASTIC		VOLUME
GLASS		PLASTIC		VOLUME

APPENDIX F

LABORATORY ANALYSIS REPORTS

MDNR Mobile Laboratory

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

VOLATILE ORGANIC COMPOUNDS DETECTION LIMITS

	COMPOUND NAME	DETECTION LIMIT WATER ug/L	DETECTION LIMIT SEDIMENT ug/Kg
1	Chloromethane	5	10
2	Vinyl Chloride	5	10
3	Bromomethane	5	10
4	Chloroethane	5	10
5	Acetone	5	10
6	1,1-Dichloroethene	2	5
7	Methylene Chloride	2	5
8	Carbon Disulfide	2	5
9	trans-1,2-Dichloroethene	2	5
10	Methyl Tertiary Butyl Ether (MTBE)	2	5
11	1,1-Dichloroethane	2	5
12	2-Butanone (MEK)	5	10
13	cis-1,2-Dichloroethene	2	5
14	Chloroform	2	5
15	1,1,1-Trichloroethane	2	5
16	1,2-Dichloroethane	2	5
17	Benzene	2	5
18	Carbon Tetrachloride	2	5
19	1,2-Dichloropropane	2	5
20	Trichloroethene	2	5
21	Bromodichloromethane	2	5
22	2-Hexanone	5	10
23	cis-1,3-Dichloropropene	2	5
24	trans-1,3-Dichloropropene	2	5
25	Toluene	2	5
26	1,1,2-Trichloroethane	2	5
27	4-Methyl-2-Pentanone (MIBK)	5	10
28	Dibromochloromethane	2	5
29	1,2-Dibromoethane	2	5
30	Tetrachloroethene	2	5
31	Chlorobenzene	2	5
32	Ethylbenzene	2	5
33	m/p-Xylene	2	5
34	Styrene	2	5
35	Bromoform	2	5
36	o-Xylene	2	5
37	1,1,2,2-Tetrachloroethane	2	5

Case Narrative for Albion/Sheridan Landfill

Volatile analysis of drum samples from Albion/Sheridan indicated the absence of chlorinated compounds. Samples TP-9-1, TP-9-2, TP-9-7, and TP-9-8 had similar characteristic GC patterns. This pattern indicated the presence of unidentified organic compounds. Mass spectra library search of these compounds tentatively identified these unknowns as substituted benzenes and cyclohexanes. The following is a list of unknowns tentatively identified by mass spectra library search:

1) 1-ethyl-2-methyl cyclohexane
2) propyl cyclohexane
3) butyl cyclohexane
4) isomers of ethyl-methyl benzenes
5) isomers of methyl-propyl benzenes
6) isomers of ethyl-dimethyl benzenes
7) isomers of methyl-methylethyl benzenes
8) 1,2,4,5-tetramethyl benzene
9) methyl-propenyl benzene
10) 1,2-diethyl benzene

Sample TP-9-4 and TP-101 had two separate and distinct phases. The upper phase had the appearance of an oil like substance while the lower phase had the appearance of a water like substance. Both phases were analyzed separately and the results reported out.

DNR ENVIRONMENTAL LABORATORY : RESULT REMARK CODES

A	value reported is the mean of two or more determinations.
C	value calculated from other independant parameters.
J	estimated value.
K	actual value is known to be less than the value given.
L	actual value is known to be greater than thhe value given.
T	value reported is less than the criteria of detection.
W	value observed is less than the lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q.C. indicated possible low recovery. Actual value may be higher.
LL	Q.C. indicated possible high recovery. Actual value may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homoeneous sample made analysis of a representative sample questionable.
PI	possible interferance may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	Reagent Blank.The level of reagent blank contamination is reported in the lab code column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interferance encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservaton. Sample not suitable for analysis
NAV	requested analysis not available.
QNS	quanity not sufficient to perform requested anlysis.
STR	settable residue was not analyzed due to low suspended solids.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-1

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/8/94

SAMPLE WT/VOL (g / ml): 1:50 dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	2-Hexanone	580	250	DL	Y
2	Toluene	1700	50	DL	Y
3	Ethylbenzene	2000	50	DL	Y
4	m/p-Xylene	7900	50	DL	Y
5	o-Xylene	4000	50	DL	Y
6	Isopropyl benzene	200	50	DL	Y
	n-Propylbenzene	680	50	DL	Y
8	1,3,5-Trimethyl benzene	1300	50	DL	Y
9	1,2,4-Trimethyl benzene	4900	50	DL	Y
10	Naphthalene	1400	50	DL	Y
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-2

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/8/94

SAMPLE WT/VOL (g / ml): 1:50K/5M dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Methyl Ethyl Ketone	2,000,000	250,000	DL	Y
2	Toluene	6,300,000	50,000	DL	Y
3	Ethylbenzene	12,000,000	5,000,000	DL	Y
4	m/p-Xylene	40,000,000	5,000,000	DL	Y
5	o-Xylene	15,000,000	5,000,000	DL	Y
6	Isopropyl benzene	1,300,000	50,000	DL	Y
	n-Propylbenzene	7,400,000	50,000	DL	Y
8	1,3,5-Trimethyl benzene	13,000,000	5,000,000	DL	Y
9	1,2,4-Trimethyl benzene	39,000,000	5,000,000	DL	Y
10	Naphthalene	6,100,000	50,000	DL	Y
11	2-Methyl Naphthalene	550,000	50,000	DL	Y
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-4 Liquid (lower) Layer

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/8/94

SAMPLE WT/VOL (g / ml): 1:100/10K dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Acetone	610,000	50,000	DL	Y
2	Ethylbenzene	1600	100	DL	Y
3	m/p-Xylene	8800	100	DL	Y
4	o-Xylene	6400	100	DL	Y
5	1,2,4-Trimethyl benzene	160	100	DL	Y
6	Naphthalene	120	100	DL	Y
	2-Methyl Naphthalene	540	100	DL	Y
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-4 Viscous (upper) Layer

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/8/94

SAMPLE WT/VOL (g / ml): 1:100/100K dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Ethylbenzene	* *			
2	m/p-Xylene	490,000	50,000	DL	Y
3	o-Xylene	350,000	50,000	DL	Y
4	Isopropyl benzene	* *			
5	n-Propylbenzene	* *			
6	1,3,5-Trimethyl benzene	* *			
7	1,2,4-Trimethyl benzene	* *			
8	Naphthalene	* *			
9	2- Methyl Naphthalene	* *			
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

* * Comments: Due to matrix interference the internal standards performance was unsatisfactory. As a result no accurate quantitation of these compounds could be done. Only qualitative results are reported.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-5

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94

SAMPLE WT/VOL (g / ml): 1:10K/100K dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Acetone	6,500,000	500,000	DL	Y
2	2-Hexanone	110,000	50,000	DL	Y
3	Toluene	10,000	10,000	DL	Y
4	Ethylbenzene	19,000	10,000	DL	Y
5	m/p-Xylene	71,000	10,000	DL	Y
6	o-Xylene	320,000	10,000	DL	Y
7	Isopropyl benzene	88,000	10,000	DL	Y
8	n-Propylbenzene	240,000	10,000	DL	Y
9	1,3,5-Trimethyl benzene	240,000	10,000	DL	Y
10	1,2,4-Trimethyl benzene	1,000,000	10,000	DL	Y
11	Naphthalene	14,000	10,000	DL	Y
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-6

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94

SAMPLE WT/VOL (g / ml): 1:10K/1M dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Acetone	340,000	50,000	DL	Y
2	Toluene	280,000	10,000	DL	Y
3	Ethylbenzene	390,000	10,000	DL	Y
4	m/p-Xylene	3,200,000	1,000,000	DL	Y
5	o-Xylene	7,800,000	1,000,000	DL	Y
6	Isopropyl benzene	5,900, 000	1,000,000	DL	Y
	n-Propylbenzene	48,000,000	1,000,000	DL	Y
8	1,3,5-Trimethyl benzene	90,000,000	1,000,000	DL	Y
9	1,2,4-Trimethyl benzene	227,000,000	1,000,000	J,DL	Y
10	Naphthalene	6,500,000	1,000,000	DL	Y
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-7

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94

SAMPLE WT/VOL (g / ml): 1:50K/1:1M dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Toluene	280,000	50,000	DL	Y
2	Ethylbenzene	270,000	50,000	DL	Y
3	m/p-Xylene	2,200,000	50,000	DL	Y
4	o-Xylene	7,200,000	50,000	DL	Y
5	Isopropyl benzene	7,300,000	50,000	DL	Y
6	n-Propylbenzene	310,000,000	1,000,000	J,DL	Y
7	1,3,5-Trimethyl benzene	280,000,000	1,000,000	J,DL	Y
8	1,2,4-Trimethyl benzene	730,000,000	1,000,000	J,DL	Y
9	Naphthalene	5,800,000	50,000	DL	Y
10	2 - Methyl Naphthalene	260,000	50,000	DL	Y
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-9-8

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94

SAMPLE WT/VOL (g / ml): 1:50K/1:1M dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Toluene	890,000	50,000	DL	Y
2	Ethylbenzene	1,900,000	50,000	DL	Y
3	m/p-Xylene	6,700,000	50,000	DL	Y
4	o-Xylene	5,100,000	50,000	DL	Y
5	Isopropyl benzene	3,400,000	50,000	DL	Y
6	n-Propylbenzene	180,000,000	1,000,000	DL	Y
7	1,3,5-Trimethyl benzene	280,000,000	1,000,000	J,DL	Y
8	1,2,4-Trimethyl benzene	550,000,000	1,000,000	J,DL	Y
9	Naphthalene	9,700,000	50,000	DL	Y
10	2 - Methyl Naphthalene	570,000	50,000	DL	Y
11	Methyl Ethyl Ketone (MEK)	300,000	50,000	DL	Y
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-101 water portion

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94

SAMPLE WT/VOL (g / ml): 1:1000 dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Acetone	47,000	5,000	DL	Y
2	Methyl Ethyl Ketone (MEK)	56,000	5,000	DL	Y
3	o-Xylene	2,600	1,000	DL	Y
4	Isopropyl benzene	1,100	1,000	DL	Y
5	n-Propylbenzene	8,200	1,000	DL	Y
6	1,3,5-Trimethyl benzene	18,000	1,000	DL	Y
7	1,2,4-Trimethyl benzene	50,000	1,000	DL	Y
8	Naphthalene	5,000	1,000	DL	Y
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

FIELD ID. or DESCRIPTION: TP-101 solvent portion

MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94

SAMPLE WT/VOL (g / ml): 1:10K/1M dilution ANALYST NAME: F. CALERA

% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	Benzene	10,000	10,000	DL	Y
2	Toluene	31,000	10,000	DL	Y
3	Ethylbenzene	44,000	10,000	DL	Y
4	m/p-Xylene	3,300,000	10,000	DL	Y
5	o-Xylene	9,100,000	1,000,000	DL	Y
6	Isopropyl benzene	6,800,000	1,000,000	DL	Y
7	n-Propylbenzene	55,000,000	1,000,000	DL	Y
8	1,3,5-Trimethyl benzene	110,000,000	1,000,000	DL	Y
9	1,2,4-Trimethyl benzene	260,000,000	1,000,000	J,DL	Y
10	Naphthalene	7,800,000	1,000,000	DL	Y
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

Comments: Unidentified Peaks. Library Search tentatively identified the unknowns as substituted benzene. See attached narrative for details

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY
EPA 8260 VOLATILE ANALYSIS SAMPLE REPORT

SITE NAME: ALBION SHERIDAN LANDFILL
SITE LOCATION: ALBION
FIELD ID. or DESCRIPTION: TP - 201
MATRIX (SOIL/WATER): WATER ANALYSIS DATE: 6/9/94
SAMPLE WT/VOL (g / ml): 5 ml. ANALYST NAME: F. CALERA
% TOTAL SOLIDS (SOILS ONLY): LAB. LOG #: 94-06-058

#	COMPOUND NAME	CONCENTRATION (UG/L)	DETECTION LIMIT	LAB. CODES	DILUTION (Y/N)
1	none detected				N
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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18					
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21					
22					
23					
24					
25					

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

VOLATILE INTERNAL STANDARDS SUMMARY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

ANALYSIS DATE: 6/8/94 ANALYST NAME: F. CALERA

	IS1 (PFB) AREA	IS2 (DFB) AREA	IS3 (CBZ) AREA	IS4(DCB) AREA
DAILY STANDARD	730935	1328410	1185445	531272
UPPER LIMIT	1461870	2656820	2370890	1062544
LOWER LIMIT	365468	664205	592723	265636
FIELD SAMPLE ID.	XXXXXXX	XXXXXXX	XXXXXXX	XXXXX
SYSTEM BLANK 1	653044	1180641	1031818	474214
TP-9-1 (1:5K)	620471	1138875	1001851	493829
TP-9-2 (1:50K)	756486	1312485	1091070	459089
TP-9-1 (1:50)	790198	1402846	1216790	515453
TP-9-1 (1:50) RE	785164	1351224	1184464	515632
TP-9-2 (1:5M)	797826	1393649	1229137	539084
TP-9-4 LOWER 1:10K	947916	1574788	1343989	589190
TP-9-4 UPPER 1:0.1M	834752	1423488	1231808	553000
TP-9-4 LOWER 1:100	804069	1403265	1210864	523174

INTERNAL STANDARDS

IS1 (PFB) = PENTAFLUOROBENZENE

IS2 (DFB) = 1,4-DIFLUOROBENZENE

IS3 (CBZ) = CHLOROBENZENE-d5

IS4(DCB) = DICHLOROBENZENE-d4

* = VALUES OUTSIDE OF QC LIMITS

AREA UPPER/LOWER CONTROL LIMIT = +100/- 50% OF INTERNAL STANDARD

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

VOLATILE INTERNAL STANDARDS SUMMARY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

ANALYSIS DATE: 6/9/94 ANALYST NAME: F. CALERA

	IS1 (PFB) AREA	IS2 (DFB) AREA	IS3 (CBZ) AREA	IS4(DCB) AREA
DAILY STANDARD	810272	1394967	1211835	543777
UPPER LIMIT	1620544	2789934	2423670	1087554
LOWER LIMIT	405136	697484	605918	271889
FIELD SAMPLE ID.	XXXXXXX	XXXXXXX	XXXXXXX	XXXXX
SYSTEM BLANK 1	819329	1412296	1220300	552408
TP-9-5 (1:10K)	729065	1236109	1098381	508046
TP-9-6 (1:10K)	785360	1346282	1186577	42002*
TP-101 (1:10K) SOLV	776249	1328357	1166507	38101*
TP-101 (1:1K) WATER	882673	1551135	1319965	578617
TP-9-5 (1:100K)	849048	1469504	1231241	550515
TP-9-6 (1:1M)	838130	1467002	1237130	542435
TP-101 (1:1M)	816260	1441798	1236245	531653
TP-9-7 (1:50K)	862098	1517041	1263262	502882
TP-9-8 (1:50K)	858858	1496455	1252103	507552
TP-9-7 (1:1M)	903734	1568046	1350702	549434
TP-9-8 (1:1M)	923159	1608935	1384385	561002
MS TP-9-5 (1:100K)	913046	1586950	1392544	618478
MSD TP-9-5 (1:100K)	911162	1567130	1373628	604150
TP-201	958335	1627991	1403586	633731
TP-9-4 (1:1000)	758062	1289723	198269*	6130*
SYSTEM BLANK 2	920942	1597752	1382598	627039

INTERNAL STANDARDS

IS1 (PFB) = PENTAFLUOROBENZENE

IS2 (DFB) = 1,4-DIFLUOROBENZENE

IS3 (CBZ) = CHLOROBENZENE-d5

IS4(DCB) = DICHLOROBENZENE-d4

* = VALUES OUTSIDE OF QC LIMITS

AREA UPPER/LOWER CONTROL LIMIT = +100/- 50% OF INTERNAL STANDARD

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

WATER VOLATILE SYSTEM MONITORING COMPOUNDS RECOVERY

SITE NAME : ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

ANALYSIS DATE: 6/8/94 ANALYST NAME: F. Calera

FIELD SAMPLE ID.	SMC1 (DCE) 76-114	SMC2 (TOL) 88-110	SMC3 (BFB) 86-115	TOTAL OUT
SYSTEM BLANK 1	98	103	104	
TP-9-1 (1:5K)	136*	105	104	1
TP-9-2 (1:50K)	136*	108	110	1
TP-9-1 (1:50)	131*	106	99	1
TP-9-1 (1:50) RE	136*	105	99	1
TP-9-2 (1:5M)	131	108	100	1
TP-9-4 LOWER 1:10K	125*	108	100	1
TP-9-4 UPPER 1:0.1M	130*	107	101	1
TP-9-4 LOWER 1:100	131*	106	99	1

SYSTEM MONITORING COMPOUNDS

SMC1 (DCE) = 1,2-DICHLOROETHENE-d4

SMC2 (TOL) = TOLUENE-d8

SMC3 (BFB) = BROMOFLUOROBENZENE

* = INDICATES VALUES OUTSIDE QC LIMITS

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

WATER VOLATILE SYSTEM MONITORING COMPOUNDS RECOVERY

SITE NAME : ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

ANALYSIS DATE: 6/9/94 ANALYST NAME: F. Calera

FIELD SAMPLE ID.	SMC1 (DCE) 76-114	SMC2 (TOL) 88-110	SMC3 (BFB) 86-115	TOTAL OUT
SYSTEM BLANK 1	103	101	101	
TP-9-5 (1:10K)	102	100	103	
TP-9-6 (1:10K)	98	100	77*	1
TP-101 (1:10K) SOLV	99	100	77*	1
TP-101 (1:1K) WATER	97	102	99	
TP-9-5 (1:100K)	97	104	100	
TP-9-6 (1:1M)	99	103	99	
TP-101 (1:1M) SOLV	98	102	98	
TP-9-7 (1:50K)	97	103	98	
TP-9-8 (1:50K)	95	104	99	
TP-9-7 (1:1M)	95	101	97	
TP-9-8 (1:1M)	94	100	97	
MS TP-9-5 (1:100K)	94	100	99	
MSD TP-9-5 (1:100K)	94	100	97	
TP-201	93	101	99	
TP-9-4 (1:1000)	91	561*	31*	2
SYSTEM BLANK 2	94	100	98	

SYSTEM MONITORING COMPOUNDS

SMC1 (DCE) = 1,2-DICHLOROETHENE-d4

SMC2 (TOL) = TOLUENE-d8

SMC3 (BFB) = BROMOFLUOROBENZENE

* = INDICATES VALUES OUTSIDE QC LIMITS

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION - MOBILE LABORATORY

SEDIMENT VOLATILE MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SITE NAME: ALBION SHERIDAN LANDFILL

SITE LOCATION: ALBION

MATRIX SPIKE ID.: TP-9-5

ANALYSIS DATE: 6/9/94 ANALYST NAME: F. CALERA

MATRIX SPIKE RECOVERY

COMPOUND NAME	SPIKE ADDED (ug / L)	SAMPLE CONC. (ug / L)	MS CONC. (ug / L)	MS REC. %	QC. LIMITS REC.
1,1-DICHLOROETHENE	50		44.00	88	59 - 172
BENZENE	50		48.00	96	66 - 142
TRICHLOROETHENE	50		38.00	76	62 - 137
TOLUENE	50		49.00	98	59 - 139
CHLOROBENZENE	50		53.00	106	60 - 133

MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND NAME	SPIKE ADDED (ug / L)	SAMPLE CONC. (ug / L)	MS CONC. (ug / L)	MS REC. %	QC. LIMITS REC.
1,1-DICHLOROETHENE	50		48.00	96	59 - 172
BENZENE	50		51.00	102	66 - 142
TRICHLOROETHENE	50		41.00	82	62 - 137
TOLUENE	50		53.00	106	59 - 139
CHLOROBENZENE	50		56.00	112	60 - 133

MS/MSD PRECISION

COMPOUND NAME	MS/MSD RPD %	QC, LIMITS RPD
1,1-DICHLOROETHENE	8.7	22
BENZENE	6.1	21
TRICHLOROETHENE	7.6	24
TOLUENE	7.8	21
CHLOROBENZENE	5.5	21

* INDICATES VALUE OUTSIDE QC LIMITS

MDNR Laboratory (Lansing)

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL LABORATORY

REPORT Environmental Response Div.
TO ~~Mason~~ Building Capitol
Lansing, MI 48909

ATTEN JIM MYERS

LABORATORY WORK ORDER # 94-06-076
WORK ID ALBION-SHERIDAN LANDFILL
P.O. # LJAN COST $ 1324.80
RECEIVED 06/10/94 CLIENT ER
REPORTED _____ NUMBER OF SAMPLES 1
LAB CONTACT OR IN MATRIX ORGANIC

TEST	UNITS	TP-9-3
Aluminium in Oil	mg/kg (wet)	2470
Arsenic in Oil	mg/kg (wet)	1.3
Barium in Oil	mg/kg (wet)	1
Beryllium in Oil	mg/kg (wet)	K 0.2
Cadmium in Oil	mg/kg (wet)	K 4
Cobalt in Oil	mg/kg (wet)	K 10
Chromium in Oil	mg/kg (wet)	157
Copper in Oil	mg/kg (wet)	K 4
Iron in Oil	mg/kg (wet)	660
Mercury in Oil	mg/kg (wet)	K 0.1
Lithium in Oil	mg/kg (wet)	K 4
Manganese in Oil	mg/kg (wet)	K 4
Molybdenum in Oil	mg/kg (wet)	K 5
Nickel in Oil	mg/kg (wet)	K 10
Lead in Oil	mg/kg (wet)	773
Titanium in Oil	mg/kg (wet)	273
Vanadium in Oil	mg/kg (wet)	4
Zinc in Oil	mg/kg (wet)	K 10

RECEIVED 21

SE,CA,NA,MG,K UNAVAILABLE ON ORGANGIC MATRICES.

Report prepared By: Lani Cutler

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-3 FRACTION 01A TEST CODE 0 BN NAME Base Neutral-Oil/Organic
Date & Time Collected 06/08/94 Category

Form not available.

Received: 06/10/94 06/16/94 13:23:27

Environmental Response Div.

06076-01
BASE NEUTRAL OIL

e sample was an off-white, putty-like substance. 5 grams of it was mixed with 100 grams of sodium sulfate. This mixture was placed in an oil column, eluted with 150 ml of methylene chloride, then brought down on the turbovap. e final volume was 5 ml of a beige colored sample. This was diluted to 1/100 r GC/MS analysis.

e following compound was identified through GC/MS analysis, with estimated ncentrations in ppb.

COMPOUND NAME	EST. PPB	
NAPTHALENE	3,200,000	J

pattern of alkyl benzenes was present.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES	PROCEDURE ENVIRONMENTAL LABORATORY	NO: PD-13 DATE: Rev. 2/1/94

Subject: *Laboratory Result Remark Codes*

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e. substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q. C. indicated possible low recovery. Actual level may be higher.
LL	Q. C. indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exists.
RB	Reagent Blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	Improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by: _____ 2/2/94
George Su, Laboratory Director Date

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL LABORATORY

REPORT Environmental Response Div.
TO ~~Mason~~ Building Capitol
Lansing, MI 48909

ATTEN JIM MYERS

LABORATORY WORK ORDER # 94-06-079
WORK ID ALBION-SHERIDAN LANDFILL
P.O. # LJAN COST $ 1324.80
RECEIVED 06/10/94 CLIENT ER
REPORTED _____ NUMBER OF SAMPLES 1
LAB CONTACT OR IN MATRIX ORGANIC

TEST UNITS	TP-9-3/9
Aluminium in Oil mg/kg (wet)	4200
Arsenic in Oil mg/kg (wet)	2.7
Barium in Oil mg/kg (wet)	2
Beryllium in Oil mg/kg (wet)	K 0.2
Cadmium in Oil mg/kg (wet)	K 4
Cobalt in Oil mg/kg (wet)	K 10
Chromium in Oil mg/kg (wet)	2
Copper in Oil mg/kg (wet)	K 4
Iron in Oil mg/kg (wet)	480
Mercury in Oil mg/kg (wet)	K 0.1
Lithium in Oil mg/kg (wet)	19
Manganese in Oil mg/kg (wet)	9.8
Molybdenum in Oil mg/kg (wet)	K 5
Nickel in Oil mg/kg (wet)	K 10
Lead in Oil mg/kg (wet)	K 10
Titanium in Oil mg/kg (wet)	183
Vanadium in Oil mg/kg (wet)	2
Zinc in Oil mg/kg (wet)	15

RECEIVED
21 1994
ERD-SUPERFUND

SE,CA,NA,MG,K ARE UNAVAILABLE ON ORGANIC MATRICES.

Report prepared By: Larry C. [illegible]

 DNR Laboratory REPORT Work Order # 94-06-079

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-~~8~~/9 CK FRACTION 01A TEST CODE 0 BN NAME Base Neutral-Oil/Organic

Date & Time Collected 06/09/94 Category

Form not available.

Received: 06/10/94 06/16/94 13:23:43

Environmental Response Div.

06079-01
BASE NEUTRAL OIL

e sample looked like white paint, and contained metal shavings. 25 grams were mixed with 130 grams of sodium sulfate. This mixture was placed in an oil column, eluted with 150 ml methylene chloride, and brought down on the turbovap. e final volume was approximately 36 mls, and still resembled paint. It was luted to 1/100 for GC/MS analysis.

e following compounds were identified by GC/MS analysis, with estimated ncentrations in ppb.

COMPOUNDS	EST. PPB	
ISOPHORONE	390,000	J
NAPTHALENE	140,000	J

e sample also showed a pattern of alkyl benzenes.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES	PROCEDURE ENVIRONMENTAL LABORATORY	NO: PD-13 DATE: Rev. 2/1/94

Subject: *Laboratory Result Remark Codes*

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e. substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q. C. indicated possible low recovery. Actual level may be higher.
LL	Q. C. indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exists.
RB	Reagent Blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	Improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by: _____ 2/2/94
George Su, Laboratory Director Date

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL LABORATORY

REPORT Environmental Response Div.
TO Mason Building
Lansing, MI 48909

ATTEN JIM MYERS

LABORATORY WORK ORDER # 94-06-073
WORK ID ALBION-SHERIDAN LANDFILL
P.O. # LFAN COST $ [illegible]
RECEIVED 06/10/94 CLIENT ID
REPORTED NUMBER OF SAMPLES 1
LAB CONTACT OR IN MATRIX WATER

TEST	UNITS	TP-9-3
Arsenic in Oil	mg/kg (wet)	X 0.5
Cadmium in Oil	mg/kg (wet)	X 4
Chromium in Oil	mg/kg (wet)	6
Copper in Oil	mg/kg (wet)	X 4
Nickel in Oil	mg/kg (wet)	X 10
Lead in Oil	mg/kg (wet)	X 10
Zinc in Oil	mg/kg (wet)	16

Report prepared By: Louis C. Utesch

Received: 06/10/94 Results by Sample

SAMPLE ID PB-9-8 FRACTION 012 TEST CODE BN NAME Base Neutral In Water

Date & Time Collected 06/08/94 Category

ANALYST HO

ANALYZED 06/15/94

DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		0
541-73-1	1,3-Dichlorobenzene	ND		0
106-46-7	1,4-Dichlorobenzene	ND		0
95-50-1	1,2-Dichlorobenzene	ND		0
108-60-1	bis(2-Chloroisopropyl) ether	ND		0
821-64-7	N-Nitroso-di-n-propyl amine	ND		0
108-70-3	Hexachloroethane	ND		0
98-95-3	Nitrobenzene	ND		0
78-59-1	Isophorone	ND		0
111-91-1	bis(2-Chloroethoxy) methane	ND		0
120-82-1	1,2,4-Trichlorobenzene	ND		0
91-20-3	Naphthalene	1500.00	J,	1000
87-68-3	Hexachlorobutadiene	ND		0
77-47-4	Hexachlorocyclopentadiene	ND		0
91-58-7	2-Chloronaphthalene	ND		0
131-11-3	Dimethyl phthalate	ND		0
208-96-8	Acenaphthylene	ND		0
606-20-2	2,6-Dinitrotoluene	ND		0
83-32-9	Acenaphthene	ND		0
121-14-2	2,4-Dinitrotoluene	ND		0
86-73-7	Fluorene	ND		0
84-66-2	Diethyl phthalate	ND		0
7005-72-3	4-Chlorodiphenyl ether	ND		0
86-30-6	N-Nitrosodiphenyl amine	ND		0
122-66-7	1,2-Diphenylhydrazine	ND		0
101-55-3	4-Bromodiphenyl ether	ND		0
118-74-1	Hexachlorobenzene	ND		0
85-01-8	Phenanthrene	ND		0
120-12-7	Anthracene	ND		0
84-74-2	Di-n-butyl phthalate	ND		0
206-44-0	Fluoranthene	ND		0
92-87-5	4 Benzidine	ND		0
129-00-0	Pyrene	ND		0
85-68-7	Butyl benzyl phthalate	ND		0
56-55-3	Benzo (a) anthracene	ND		0
91-94-1	4 3,3'-Dichlorobenzidine	ND		0
218-01-9	Chrysene	ND		0
117-81-7	bis(2-ethylhexyl) phthalate	ND		0
117-84-0	Di-n-octyl phthalate	ND		0
205-99-2	Benzo (b) fluoranthene	ND		0
207-08-9	Benzo (k) fluoranthene	ND		0
50-32-8	Benzo (a) pyrene	ND		0
193-39-5	Indeno (1,2,3-cd) pyrene	ND		0

SAMPLE ID TP-9-8 FRACTION 01B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		0
191-24-2	Benzo (g,h,i) perylene	ND		0

COMMENTS *=RE=10,000, 1=EST. DUE TO FINAL VOLUME OF 17 ML OIL.

ND = not detected at the specified detection limit.

* Results and Det. Limit reported semi-quantitatively *

DNR Laboratory REPORT Work Order # 94-06-078

Received: 06/10/94

Results by Sample

SAMPLE ID [illegible] FRACTION 01A TEST CODE SC 3 NAME Scan 3 Water

Date & Time Collected 06/09/94 Category

ANALYST [illegible]

ANALYZED [illegible]

DILUTION [illegible]

UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		41
106-46-7	1,4-Dichlorobenzene	ND		41
95-50-1	1,2-Dichlorobenzene	ND		41
67-72-1	Hexachloroethane	ND		4.1
108-70-3	1,3,5-Trichlorobenzene	ND		4.1
120-82-1	1,2,4-Trichlorobenzene	ND		4.1
87-61-6	1,2,3-Trichlorobenzene	ND		4.1
87-68-3	Hexachlorobutadiene	ND		4.1
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		4.1
77-47-4	Hexachlorocyclopentadiene	ND		4.1
91-58-7	2-Chloronaphthalene	ND		82
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		4.1
608-68-8	Pentachlorobenzene	ND		4.1
319-84-6	a-BHC	ND		4.1
118-74-1	Hexachlorobenzene	ND		4.1
319-85-7	b-BHC	ND		4.1
58-89-9	g-BHC (lindane)	ND		4.1
82-68-8	Pentachloronitrobenzene	ND		4.1
319-86-8	d-BHC	ND		4.1
76-44-8	Heptachlor	ND		4.1
309-00-2	Aldrin	ND		4.1
1024-57-3	Heptachlor epoxide	ND		4.1
5103-74-2	g-Chlordane	ND		4.1
959-98-8	*Endosulfan I	ND		4.1
5103-71-9	a-Chlordane	ND		4.1
72-55-9	4,4'-DDE	ND		4.1
72-20-8	Endrin	ND		4.1
60-57-1	Dieldrin	ND		4.1
72-54-8	4,4'-DDD	ND		21
50-29-3	4,4'-DDT	ND		4.1
79-34-5	Hexabromobenzene	ND		4.1
72-43-5	Methoxychlor	ND		21
2385-85-5	Mirex	ND		4.1
53469-21-9	Aroclor 1242 (PCB)	ND		41
11097-69-1	Aroclor 1254 (PCB)	ND		41
11096-82-5	Aroclor 1260 (PCB)	ND		41
12674-11-1	*Aroclor 1016 (PCB)	ND		41
11104-28-2	*Aroclor 1221 (PCB)	ND		41
11141-16-5	*Aroclor 1232 (PCB)	ND		41
12672-29-6	*Aroclor 1248 (PCB)	ND		41
- -	*Aroclor 1262 (PCB)	ND		41
11100-14-4	*Aroclor 1268 (PCB)	ND		41
37324-23-5	BP-6 (PBB)	ND		[illegible]

SAMPLE ID TP-9-1 FRACTION 01A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

5001-55-2 *Toxaphene ND 41
COMMENTS XM=SAMPLE TURNED TO OIL, DM=OIL DUE TO MATRIX PROBLEM

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

MICHIGAN DEPARTMENT OF NATURAL RESOURCES	PROCEDURE ENVIRONMENTAL LABORATORY	NO: PD-13 DATE: Rev. 2/1/94

Subject: ***Laboratory Result Remark Codes***

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e. substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q. C. indicated possible low recovery. Actual level may be higher.
LL	Q. C. indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exists.
RB	Reagent Blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	Improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by: _____ 2/2/94
George Su, Laboratory Director Date

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL LABORATORY

RECEIVED
JUN 22 1994
ERD-SUPERFUND

REPORT Environmental Response Div.
TO Mason Building (Gp 1-1)
Lansing, MI 48909

ATTEN JIM MYERS

LABORATORY WORK ORDER # 94-06-072
WORK ID ALBION-SHERIDAN LANDFILL
P.O. # LJAN COST $12547.80
RECEIVED 06/10/94 CLIENT ER
REPORTED _____ NUMBER OF SAMPLES 8
LAB CONTACT OR IN MATRIX WATER

TEST UNITS	TP-101	TP-201	TP-9-7	TP-9-1
Arsenic by Furnace ug/l		K 1.0		3.1
Cadmium in Water ug/l		K 20		K 20
Chromium in Water ug/l		K 20		1900
Copper in Water ug/l		K 20		190
GC/MS Library Search -	06/20/94	06/20/94	06/20/94	06/20/94
Nickel in Water ug/l		K 50		180
Arsenic in Oil mg/kg (wet)	K 0.5		K 0.5	
Cadmium in Oil mg/kg (wet)	K 4		K 4	
Chromium in Oil mg/kg (wet)	30		60	
Copper in Oil mg/kg (wet)	K 4		K 4	
Nickel in Oil mg/kg (wet)	K 10		K 10	
Lead in Oil mg/kg (wet)	80		14	
Zinc in Oil mg/kg (wet)	K 10		K 10	
Lead in Water ug/l		K 50		320
Zinc in Water ug/l		K 50		5000

TEST UNITS	TP-9-2	TP-9-4	TP-01	TP-9-6
Arsenic by Furnace ug/l			K 1.0	
Cadmium in Water ug/l			K 20	

TEST	UNITS	TP-9-2	TP-9-4	TP-01	TP-9-6
Chromium in Water	ug/l			K 20	
Copper in Water	ug/l			170	
GC/MS Library Search	-	06/20/94	06/20/94	06/21/94	06/21/94
Nickel in Water	ug/l			K 50	
Arsenic in Oil	mg/kg (wet)	K 0.5	4.1		K 0.5
Cadmium in Oil	mg/kg (wet)	K 4	K 4		K 4
Chromium in Oil	mg/kg (wet)	15	7		96
Copper in Oil	mg/kg (wet)	K 4	86		K 4
Nickel in Oil	mg/kg (wet)	K 10	13		K 10
Lead in Oil	mg/kg (wet)	K 10	K 10		337
Zinc in Oil	mg/kg (wet)	K 10	46		K 10
Lead in Water	ug/l			K 50	
Zinc in Water	ug/l			K 50	

Report prepared By: D Harlig 6-22-94

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-101 FRACTION 01B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		0
541-73-1	1,3-Dichlorobenzene	ND		0
106-46-7	1,4-Dichlorobenzene	ND		0
95-50-1	1,2-Dichlorobenzene	ND		0
108-60-1	bis(2-Chloroisopropyl) ether	ND		0
821-64-7	N-Nitroso-di-n-propyl amine	ND		0
108-70-3	Hexachloroethane	ND		0
98-95-3	Nitrobenzene	ND		0
78-59-1	Isophorone	ND		0
111-91-1	bis(2-Chloroethoxy) methane	ND		0
120-82-1	1,2,4-Trichlorobenzene	ND		0
91-20-3	Naphthalene	450000	J,*	8300
87-68-3	Hexachlorobutadiene	ND		0
77-47-4	Hexachlorocyclopentadiene	ND		0
91-58-7	2-Chloronaphthalene	ND		0
131-11-3	Dimethyl phthalate	ND		0
208-96-8	Acenaphthylene	ND		0
606-20-2	2,6-Dinitrotoluene	ND		0
83-32-9	Acenaphthene	ND		0
121-14-2	2,4-Dinitrotoluene	ND		0
86-73-7	Fluorene	ND		0
84-66-2	Diethyl phthalate	ND		0
7005-72-3	4-Chlorodiphenyl ether	ND		0
86-30-6	N-Nitrosodiphenyl amine	ND		0
122-66-7	1,2-Diphenylhydrazine	ND		0
101-55-3	4-Bromodiphenyl ether	ND		0
118-74-1	Hexachlorobenzene	ND		0
85-01-8	Phenanthrene	ND		0
120-12-7	Anthracene	ND		0
84-74-2	Di-n-butyl pthtalate	ND		0
206-44-0	Fluoranthene	ND		0
92-87-5	* Benzidine	ND		0
129-00-0	Pyrene	ND		0
85-68-7	Butyl benzyl phthalate	ND		0
56-55-3	Benzo (a) anthracene	ND		0
91-94-1	* 3,3'-Dichlorobenzidine	ND		0
218-01-9	Chrysene	ND		0
117-81-7	bis(2-ethylhexyl) phthalate	ND		0
117-84-0	Di-n-octyl phthalate	ND		0
205-99-2	Benzo (b) fluoranthene	ND		0
207-08-9	Benzo (k) fluoranthene	ND		0
50-32-8	Benzo (a) pyrene	ND		0
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		0

SAMPLE ID TP-101 FRACTION 01R TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		0
191-24-2	Benzo (g,h,i) perylene	ND		0

COMMENTS J:EST. DUE TO FINAL VOL 75 ML.; *= RR=4600

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-101 FRACTION 01A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 600 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		60
106-46-7	1,4-Dichlorobenzene	ND		60
95-50-1	1,2-Dichlorobenzene	ND		60
67-72-1	Hexachloroethane	ND		6.0
108-70-3	1,3,5-Trichlorobenzene	ND		6.0
120-82-1	1,2,4-Trichlorobenzene	ND		6.0
87-61-6	1,2,3-Trichlorobenzene	ND		6.0
87-68-3	Hexachlorobutadiene	ND		6.0
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		6.0
77-47-4	Hexachlorocyclopentadiene	ND		6.0
91-58-7	2-Chloronaphthalene	ND		120
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		6.0
608-68-8	Pentachlorobenzene	ND		6.0
319-84-6	a-BHC	ND		6.0
118-74-1	Hexachlorobenzene	ND		6.0
319-85-7	b-BHC	ND		6.0
58-89-9	g-BHC (lindane)	ND		6.0
82-68-8	Pentachloronitrobenzene	ND		6.0
319-86-8	d-BHC	ND		6.0
76-44-8	Heptachlor	ND		6.0
309-00-2	Aldrin	ND		6.0
1024-57-3	Heptachlor epoxide	ND		6.0
5103-74-2	g-Chlordane	ND		6.0
959-98-8	*Endosulfan I	ND		6.0
5103-71-9	a-Chlordane	ND		6.0
72-55-9	4,4'-DDE	ND		6.0
72-20-8	Endrin	ND		6.0
60-57-1	Dieldrin	ND		6.0
72-54-8	4,4'-DDD	ND		30
50-29-3	4,4'-DDT	ND		6.0
79-34-5	Hexabromobenzene	ND		6.0
72-43-5	Methoxychlor	ND		30
2385-85-5	Mirex	ND		6.0
53469-21-9	Aroclor 1242 (PCB)	ND		60
11097-69-1	Aroclor 1254 (PCB)	ND		60
11096-82-5	Aroclor 1260 (PCB)	ND		60
12674-11-1	*Aroclor 1016 (PCB)	ND		60
11104-28-2	*Aroclor 1221 (PCB)	ND		60
11141-16-5	*Aroclor 1232 (PCB)	ND		60
12672-29-6	*Aroclor 1248 (PCB)	ND		60
- -	*Aroclor 1262 (PCB)	ND		60
11100-14-4	*Aroclor 1268 (PCB)	ND		60
37324-23-5	BP-6 (PBB)	ND		30

SAMPLE ID TP-101 FRACTION 01A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

8001-35-2 *Toxaphene ND 60
COMMENTS MM=SAMPLE TURNED TO OIL. DM=DIL DUE TO MATRIX PROBLEM

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-201 FRACTION 02B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		1.0
541-73-1	1,3-Dichlorobenzene	ND		1.0
106-46-7	1,4-Dichlorobenzene	ND		1.0
95-50-1	1,2-Dichlorobenzene	ND		1.0
108-60-1	bis(2-Chloroisopropyl) ether	ND		1.0
821-64-7	N-Nitroso-di-n-propyl amine	ND		2.0
108-70-3	Hexachloroethane	ND		1.0
98-95-3	Nitrobenzene	ND		2.0
78-59-1	Isophorone	ND		1.0
111-91-1	bis(2-Chloroethoxy) methane	ND		2.0
120-82-1	1,2,4-Trichlorobenzene	ND		2.0
91-20-3	Naphthalene	ND		1.0
87-68-3	Hexachlorobutadiene	ND		2.0
77-47-4	Hexachlorocyclopentadiene	ND		2.0
91-58-7	2-Chloronaphthalene	ND		2.0
131-11-3	Dimethyl phthalate	ND		2.0
208-96-8	Acenaphthylene	ND		1.0
606-20-2	2,6-Dinitrotoluene	ND		5.0
83-32-9	Acenaphthene	ND		1.0
121-14-2	2,4-Dinitrotoluene	ND		5.0
86-73-7	Fluorene	ND		1.0
84-66-2	Diethyl phthalate	ND		1.0
7005-72-3	4-Chlorodiphenyl ether	ND		1.0
86-30-6	N-Nitrosodiphenyl amine	ND		5.0
122-66-7	1,2-Diphenylhydrazine	ND		2.0
101-55-3	4-Bromodiphenyl ether	ND		2.0
118-74-1	Hexachlorobenzene	ND		1.0
85-01-8	Phenanthrene	ND		1.0
120-12-7	Anthracene	ND		1.0
84-74-2	Di-n-butyl pthtalate	ND		1.0
206-44-0	Fluoranthene	ND		1.0
92-87-5	* Benzidine	ND		15
129-00-0	Pyrene	ND		1.0
85-68-7	Butyl benzyl phthalate	ND		1.0
56-55-3	Benzo (a) anthracene	ND		1.0
91-94-1	* 3,3'-Dichlorobenzidine	ND		10
218-01-9	Chrysene	ND		1.0
117-81-7	bis(2-ethylhexyl) phthalate	18		2.0
117-84-0	Di-n-octyl phthalate	ND		2.0
205-99-2	Benzo (b) fluoranthene	ND		2.0
207-08-9	Benzo (k) fluoranthene	ND		2.0
50-32-8	Benzo (a) pyrene	ND		2.0
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		5.0

SAMPLE ID TP-201 FRACTION 02B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		5.0
191-24-2	Benzo (g,h,i) perylene	ND		5.0

COMMENTS

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-201 FRACTION 02A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		0.10
106-46-7	1,4-Dichlorobenzene	ND		0.10
95-50-1	1,2-Dichlorobenzene	ND		0.10
67-72-1	Hexachloroethane	ND		0.010
108-70-3	1,3,5-Trichlorobenzene	ND		0.010
120-82-1	1,2,4-Trichlorobenzene	ND		0.010
87-61-6	1,2,3-Trichlorobenzene	0.010	RB=0.010	0.010
87-68-3	Hexachlorobutadiene	ND		0.010
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		0.010
77-47-4	Hexachlorocyclopentadiene	ND		0.010
91-58-7	2-Chloronaphthalene	ND		0.20
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		0.010
608-68-8	Pentachlorobenzene	ND		0.010
319-84-6	a-BHC	ND		0.010
118-74-1	Hexachlorobenzene	ND		0.010
319-85-7	b-BHC	ND		0.010
58-89-9	g-BHC (lindane)	ND		0.010
82-68-8	Pentachloronitrobenzene	ND		0.010
319-86-8	d-BHC	ND		0.010
76-44-8	Heptachlor	ND		0.010
309-00-2	Aldrin	ND		0.010
1024-57-3	Heptachlor epoxide	ND		0.010
5103-74-2	g-Chlordane	ND		0.010
959-98-8	*Endosulfan I	ND		0.010
5103-71-9	a-Chlordane	ND		0.010
72-55-9	4,4'-DDE	ND		0.010
72-20-8	Endrin	ND		0.010
60-57-1	Dieldrin	ND		0.010
72-54-8	4,4'-DDD	ND		0.050
50-29-3	4,4'-DDT	ND		0.010
79-34-5	Hexabromobenzene	ND		0.010
72-43-5	Methoxychlor	ND		0.050
2385-85-5	Mirex	ND		0.010
53469-21-9	Aroclor 1242 (PCB)	ND		0.10
11097-69-1	Aroclor 1254 (PCB)	ND		0.10
11096-82-5	Aroclor 1260 (PCB)	ND		0.10
12674-11-1	*Aroclor 1016 (PCB)	ND		0.10
11104-28-2	*Aroclor 1221 (PCB)	ND		0.10
11141-16-5	*Aroclor 1232 (PCB)	ND		0.10
12672-29-6	*Aroclor 1248 (PCB)	ND		0.10
- -	*Aroclor 1262 (PCB)	ND		0.10
11100-14-4	*Aroclor 1268 (PCB)	ND		0.10
37324-23-5	BP-6 (PBB)	ND		0.050

SAMPLE ID TP-201 FRACTION 02A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

8001-35-2 *Toxaphene ND 0.10
COMMENTS RB IS NOT SUBTRACTED

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-7 FRACTION 03B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		0
541-73-1	1,3-Dichlorobenzene	ND		0
106-46-7	1,4-Dichlorobenzene	ND		0
95-50-1	1,2-Dichlorobenzene	ND		0
108-60-1	bis(2-Chloroisopropyl) ether	ND		0
821-64-7	N-Nitroso-di-n-propyl amine	ND		0
108-70-3	Hexachloroethane	ND		0
98-95-3	Nitrobenzene	ND		0
78-59-1	Isophorone	ND		0
111-91-1	bis(2-Chloroethoxy) methane	ND		0
120-82-1	1,2,4-Trichlorobenzene	ND		0
91-20-3	Naphthalene	220000	RB=1900J	3400
87-68-3	Hexachlorobutadiene	ND		0
77-47-4	Hexachlorocyclopentadiene	ND		0
91-58-7	2-Chloronaphthalene	ND		0
131-11-3	Dimethyl phthalate	ND		0
208-96-8	Acenaphthylene	ND		0
606-20-2	2,6-Dinitrotoluene	ND		0
83-32-9	Acenaphthene	ND		0
121-14-2	2,4-Dinitrotoluene	ND		0
86-73-7	Fluorene	ND		0
84-66-2	Diethyl phthalate	ND		0
7005-72-3	4-Chlorodiphenyl ether	ND		0
86-30-6	N-Nitrosodiphenyl amine	ND		0
122-66-7	1,2-Diphenylhydrazine	ND		0
101-55-3	4-Bromodiphenyl ether	ND		0
118-74-1	Hexachlorobenzene	ND		0
85-01-8	Phenanthrene	ND		0
120-12-7	Anthracene	ND		0
84-74-2	Di-n-butyl pthtalate	ND		0
206-44-0	Fluoranthene	ND		0
92-87-5	* Benzidine	ND		0
129-00-0	Pyrene	ND		0
85-68-7	Butyl benzyl phthalate	ND		0
56-55-3	Benzo (a) anthracene	ND		0
91-94-1	* 3,3'-Dichlorobenzidine	ND		0
218-01-9	Chrysene	ND		0
117-81-7	bis(2-ethylhexyl) phthalate	ND		0
117-84-0	Di-n-octyl phthalate	ND		0
205-99-2	Benzo (b) fluoranthene	ND		0
207-08-9	Benzo (k) fluoranthene	ND		0
50-32-8	Benzo (a) pyrene	ND		0
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		0

SAMPLE ID TP-9-7 FRACTION 03B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		0
191-24-2	Benzo (g,h,i) perylene	ND		0

COMMENTS J:ESTIMATE, FINAL VOL COULD NOT BRING DOWN TO <33 ML.

ND = not detected at the specified detection limit.

* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-7 FRACTION 03A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 480 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		53
106-46-7	1,4-Dichlorobenzene	ND		53
95-50-1	1,2-Dichlorobenzene	ND		53
67-72-1	Hexachloroethane	ND		5.3
108-70-3	1,3,5-Trichlorobenzene	ND		5.3
120-82-1	1,2,4-Trichlorobenzene	ND		5.3
87-61-6	1,2,3-Trichlorobenzene	ND		5.3
87-68-3	Hexachlorobutadiene	ND		5.3
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		5.3
77-47-4	Hexachlorocyclopentadiene	ND		5.3
91-58-7	2-Chloronaphthalene	ND		110
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		5.3
608-68-8	Pentachlorobenzene	ND		5.3
319-84-6	a-BHC	ND		5.3
118-74-1	Hexachlorobenzene	ND		5.3
319-85-7	b-BHC	ND		5.3
58-89-9	g-BHC (lindane)	ND		5.3
82-68-8	Pentachloronitrobenzene	ND		5.3
319-86-8	d-BHC	ND		5.3
76-44-8	Heptachlor	ND		5.3
309-00-2	Aldrin	ND		5.3
1024-57-3	Heptachlor epoxide	ND		5.3
5103-74-2	g-Chlordane	ND		5.3
959-98-8	*Endosulfan I	ND		5.3
5103-71-9	a-Chlordane	ND		5.3
72-55-9	4,4'-DDE	ND		5.3
72-20-8	Endrin	ND		5.3
60-57-1	Dieldrin	ND		5.3
72-54-8	4,4'-DDD	ND		26
50-29-3	4,4'-DDT	ND		5.3
79-34-5	Hexabromobenzene	ND		5.3
72-43-5	Methoxychlor	ND		26
2385-85-5	Mirex	ND		5.3
53469-21-9	Aroclor 1242 (PCB)	ND		53
11097-69-1	Aroclor 1254 (PCB)	ND		53
11096-82-5	Aroclor 1260 (PCB)	ND		53
12674-11-1	*Aroclor 1016 (PCB)	ND		53
11104-28-2	*Aroclor 1221 (PCB)	ND		53
11141-16-5	*Aroclor 1232 (PCB)	ND		53
12672-29-6	*Aroclor 1248 (PCB)	ND		53
- -	*Aroclor 1262 (PCB)	ND		53
11100-14-4	*Aroclor 1268 (PCB)	ND		53
37324-23-5	BP-6 (PBB)	ND		26

SAMPLE ID TP-9-7 FRACTION 03A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

8001-35-2	*Toxaphene	ND	53

COMMENTS MM=SAMPLE TURNED TO OIL, DM=DIL DUE TO MATRIX PROBLEM

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-1 FRACTION 04B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		110
541-73-1	1,3-Dichlorobenzene	ND		110
106-46-7	1,4-Dichlorobenzene	ND		110
95-50-1	1,2-Dichlorobenzene	ND		110
108-60-1	bis(2-Chloroisopropyl) ether	ND		110
821-64-7	N-Nitroso-di-n-propyl amine	ND		220
108-70-3	Hexachloroethane	ND		110
98-95-3	Nitrobenzene	ND		220
78-59-1	Isophorone	ND		110
111-91-1	bis(2-Chloroethoxy) methane	ND		220
120-82-1	1,2,4-Trichlorobenzene	ND		220
91-20-3	Naphthalene	1300	RB=63	110
87-68-3	Hexachlorobutadiene	ND		220
77-47-4	Hexachlorocyclopentadiene	ND		220
91-58-7	2-Chloronaphthalene	ND		220
131-11-3	Dimethyl phthalate	ND		220
208-96-8	Acenaphthylene	ND		110
606-20-2	2,6-Dinitrotoluene	ND		550
83-32-9	Acenaphthene	ND		110
121-14-2	2,4-Dinitrotoluene	ND		550
86-73-7	Fluorene	ND		110
84-66-2	Diethyl phthalate	ND		110
7005-72-3	4-Chlorodiphenyl ether	ND		110
86-30-6	N-Nitrosodiphenyl amine	ND		550
122-66-7	1,2-Diphenylhydrazine	ND		220
101-55-3	4-Bromodiphenyl ether	ND		220
118-74-1	Hexachlorobenzene	ND		110
85-01-8	Phenanthrene	ND		110
120-12-7	Anthracene	ND		110
84-74-2	Di-n-butyl pthtalate	ND		110
206-44-0	Fluoranthene	ND		110
92-87-5	* Benzidine	ND		1700
129-00-0	Pyrene	ND		110
85-68-7	Butyl benzyl phthalate	ND		110
56-55-3	Benzo (a) anthracene	ND		110
91-94-1	* 3,3'-Dichlorobenzidine	ND		1100
218-01-9	Chrysene	ND		110
117-81-7	bis(2-ethylhexyl) phthalate	ND		220
117-84-0	Di-n-octyl phthalate	ND		220
205-99-2	Benzo (b) fluoranthene	ND		220
207-08-9	Benzo (k) fluoranthene	ND		220
50-32-8	Benzo (a) pyrene	ND		220
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		550

SAMPLE ID TP-9-1 FRACTION 04B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		550
191-24-2	Benzo (g,h,i) perylene	ND		550

COMMENTS

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-1 FRACTION 04A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND	LH ALL	0.11
106-46-7	1,4-Dichlorobenzene	ND		0.11
95-50-1	1,2-Dichlorobenzene	ND		0.11
67-72-1	Hexachloroethane	ND		0.011
108-70-3	1,3,5-Trichlorobenzene	0.074		0.011
120-82-1	1,2,4-Trichlorobenzene	ND		0.011
87-61-6	1,2,3-Trichlorobenzene	ND		0.011
87-68-3	Hexachlorobutadiene	ND		0.011
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		0.055
77-47-4	Hexachlorocyclopentadiene	ND	K	0.055
91-58-7	2-Chloronaphthalene	ND		0.22
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		0.011
608-68-8	Pentachlorobenzene	ND		0.011
319-84-6	a-BHC	ND		0.011
118-74-1	Hexachlorobenzene	ND		0.011
319-85-7	b-BHC	ND	K	0.030
58-89-9	g-BHC (lindane)	ND	K	0.030
82-68-8	Pentachloronitrobenzene	ND		0.011
319-86-8	d-BHC	ND		0.011
76-44-8	Heptachlor	ND		0.011
309-00-2	Aldrin	ND	K	0.030
1024-57-3	Heptachlor epoxide	ND		0.011
5103-74-2	g-Chlordane	ND		0.011
959-98-8	*Endosulfan I	ND		0.011
5103-71-9	a-Chlordane	ND		0.011
72-55-9	4,4'-DDE	ND		0.011
72-20-8	Endrin	ND		0.011
60-57-1	Dieldrin	ND	K	0.030
72-54-8	4,4'-DDD	ND		0.055
50-29-3	4,4'-DDT	ND		0.011
79-34-5	Hexabromobenzene	ND		0.011
72-43-5	Methoxychlor	ND		0.055
2385-85-5	Mirex	ND		0.011
53469-21-9	Aroclor 1242 (PCB)	ND		0.11
11097-69-1	Aroclor 1254 (PCB)	ND		0.11
11096-82-5	Aroclor 1260 (PCB)	ND		0.11
12674-11-1	*Aroclor 1016 (PCB)	ND		0.11
11104-28-2	*Aroclor 1221 (PCB)	ND		0.11
11141-16-5	*Aroclor 1232 (PCB)	ND		0.11
12672-29-6	*Aroclor 1248 (PCB)	ND		0.11
- -	*Aroclor 1262 (PCB)	ND		0.11
11100-14-4	*Aroclor 1268 (PCB)	ND		0.11
37324-23-5	BP-8 (PBB)	ND		0.055

SAMPLE ID TP-9-1 FRACTION 04A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

8001-35-2 *Toxaphene ND 0.11
COMMENTS MANY UnID PEAKS, LH=QC IND. LOW RECOVERY

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-2 FRACTION BSN TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		0
541-73-1	1,3-Dichlorobenzene	ND		0
106-46-7	1,4-Dichlorobenzene	ND		0
95-50-1	1,2-Dichlorobenzene	ND		0
108-60-1	bis(2-Chloroisopropyl) ether	ND		0
821-64-7	N-Nitroso-di-n-propyl amine	ND		0
108-70-3	Hexachloroethane	ND		0
98-95-3	Nitrobenzene	ND		0
78-59-1	Isophorone	ND		0
111-91-1	bis(2-Chloroethoxy) methane	ND		0
120-82-1	1,2,4-Trichlorobenzene	ND		0
91-20-3	Naphthalene	290000	RE=1600J	2900
87-68-3	Hexachlorobutadiene	ND		0
77-47-4	Hexachlorocyclopentadiene	ND		0
91-58-7	2-Chloronaphthalene	ND		0
131-11-3	Dimethyl phthalate	ND		0
208-96-8	Acenaphthylene	ND		0
606-20-2	2,6-Dinitrotoluene	ND		0
83-32-9	Acenaphthene	ND		0
121-14-2	2,4-Dinitrotoluene	ND		0
86-73-7	Fluorene	ND		0
84-66-2	Diethyl phthalate	ND		0
7005-72-3	4-Chlorodiphenyl ether	ND		0
86-30-6	N-Nitrosodiphenyl amine	ND		0
122-66-7	1,2-Diphenylhydrazine	ND		0
101-55-3	4-Bromodiphenyl ether	ND		0
118-74-1	Hexachlorobenzene	ND		0
85-01-8	Phenanthrene	ND		0
120-12-7	Anthracene	ND		0
84-74-2	Di-n-butyl pthtalate	ND		0
206-44-0	Fluoranthene	ND		0
92-87-5	* Benzidine	ND		0
129-00-0	Pyrene	ND		0
85-68-7	Butyl benzyl phthalate	ND		0
56-55-3	Benzo (a) anthracene	ND		0
91-94-1	* 3,3'-Dichlorobenzidine	ND		0
218-01-9	Chrysene	ND		0
117-81-7	bis(2-ethylhexyl) phthalate	ND		0
117-84-0	Di-n-octyl phthalate	ND		0
205-99-2	Benzo (b) fluoranthene	ND		0
207-08-9	Benzo (k) fluoranthene	ND		0
50-32-8	Benzo (a) pyrene	ND		0
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		0

SAMPLE ID TP-9-2 FRACTION 05B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		0
191-24-2	Benzo (g,h,i) perylene	ND		0

COMMENTS J:ESTIMATE. SAMPLE TURNED INTO 25 ML OF OIL.

ND = not detected at the specified detection limit.

* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-2 FRACTION 05A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 370 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		44
106-46-7	1,4-Dichlorobenzene	ND		44
95-50-1	1,2-Dichlorobenzene	ND		44
67-72-1	Hexachloroethane	ND		4.4
108-70-3	1,3,5-Trichlorobenzene	ND		4.4
120-82-1	1,2,4-Trichlorobenzene	ND		4.4
87-61-6	1,2,3-Trichlorobenzene	ND		4.4
87-68-3	Hexachlorobutadiene	ND		4.4
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		4.4
77-47-4	Hexachlorocyclopentadiene	ND		4.4
91-58-7	2-Chloronaphthalene	ND		89
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		4.4
608-68-8	Pentachlorobenzene	ND		4.4
319-84-6	a-BHC	ND		4.4
118-74-1	Hexachlorobenzene	ND		4.4
319-85-7	b-BHC	ND		4.4
58-89-9	g-BHC (lindane)	ND		4.4
82-68-8	Pentachloronitrobenzene	ND		4.4
319-86-8	d-BHC	ND		4.4
76-44-8	Heptachlor	ND		4.4
309-00-2	Aldrin	ND		4.4
1024-57-3	Heptachlor epoxide	ND		4.4
5103-74-2	g-Chlordane	ND		4.4
959-98-8	*Endosulfan I	ND		4.4
5103-71-9	a-Chlordane	ND		4.4
72-55-9	4,4'-DDE	ND		4.4
72-20-8	Endrin	ND		4.4
60-57-1	Dieldrin	ND		4.4
72-54-8	4,4'-DDD	ND		22
50-29-3	4,4'-DDT	ND		4.4
79-34-5	Hexabromobenzene	ND		4.4
72-43-5	Methoxychlor	ND		22
2385-85-5	Mirex	ND		4.4
53469-21-9	Aroclor 1242 (PCB)	ND		44
11097-69-1	Aroclor 1254 (PCB)	ND		44
11096-82-5	Aroclor 1260 (PCB)	ND		44
12674-11-1	*Aroclor 1016 (PCB)	ND		44
11104-28-2	*Aroclor 1221 (PCB)	ND		44
11141-16-5	*Aroclor 1232 (PCB)	ND		44
12672-29-6	*Aroclor 1248 (PCB)	ND		44
- -	*Aroclor 1262 (PCB)	ND		44
11100-14-4	*Aroclor 1268 (PCB)	ND		44
37324-23-5	BP-6 (PBB)	ND		22

SAMPLE ID TP-9-2 FRACTION 05A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

8001-35-2 *Toxaphene ND 44
COMMENTS MM=SAMPLE TURNED TO OIL, DM=DIL DUE TO MATRIX PROBLEM

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-4 FRACTION 06R TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		0
541-73-1	1,3-Dichlorobenzene	ND		0
106-46-7	1,4-Dichlorobenzene	ND		0
95-50-1	1,2-Dichlorobenzene	ND		0
108-60-1	bis(2-Chloroisopropyl) ether	ND		0
821-64-7	N-Nitroso-di-n-propyl amine	ND		0
108-70-3	Hexachloroethane	ND		0
98-95-3	Nitrobenzene	ND		0
78-59-1	Isophorone	ND		0
111-91-1	bis(2-Chloroethoxy) methane	ND		0
120-82-1	1,2,4-Trichlorobenzene	ND		0
91-20-3	Naphthalene	ND		0
87-68-3	Hexachlorobutadiene	ND		0
77-47-4	Hexachlorocyclopentadiene	ND		0
91-58-7	2-Chloronaphthalene	ND		0
131-11-3	Dimethyl phthalate	ND		0
208-96-8	Acenaphthylene	ND		0
606-20-2	2,6-Dinitrotoluene	ND		0
83-32-9	Acenaphthene	ND		0
121-14-2	2,4-Dinitrotoluene	ND		0
86-73-7	Fluorene	ND		0
84-66-2	Diethyl phthalate	ND		0
7005-72-3	4-Chlorodiphenyl ether	ND		0
86-30-6	N-Nitrosodiphenyl amine	ND		0
122-66-7	1,2-Diphenylhydrazine	ND		0
101-55-3	4-Bromodiphenyl ether	ND		0
118-74-1	Hexachlorobenzene	ND		0
85-01-8	Phenanthrene	3200	J	1300
120-12-7	Anthracene	ND		0
84-74-2	Di-n-butyl pthtalate	ND		0
206-44-0	Fluoranthene	ND		0
92-87-5	* Benzidine	ND		0
129-00-0	Pyrene	ND		0
85-68-7	Butyl benzyl phthalate	ND		0
56-55-3	Benzo (a) anthracene	ND		0
91-94-1	* 3,3'-Dichlorobenzidine	ND		0
218-01-9	Chrysene	ND		0
117-81-7	bis(2-ethylhexyl) phthalate	ND		0
117-84-0	Di-n-octyl phthalate	ND		0
205-99-2	Benzo (b) fluoranthene	ND		0
207-08-9	Benzo (k) fluoranthene	ND		0
50-32-8	Benzo (a) pyrene	ND		0
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		0

SAMPLE ID TP-9-4 FRACTION 06B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		0
191-24-2	Benzo (g,h,i) perylene	ND		0

COMMENTS J: ESTIMATE. SAMPLE TURNED INTO 12 ML OF OIL.

ND = not detected at the specified detection limit.

* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-4 FRACTION 06A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 250

UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		25
106-46-7	1,4-Dichlorobenzene	ND		25
95-50-1	1,2-Dichlorobenzene	ND		25
67-72-1	Hexachloroethane	ND		2.5
108-70-3	1,3,5-Trichlorobenzene	ND		2.5
120-82-1	1,2,4-Trichlorobenzene	ND		2.5
87-61-6	1,2,3-Trichlorobenzene	ND		2.5
87-68-3	Hexachlorobutadiene	ND		2.5
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		2.5
77-47-4	Hexachlorocyclopentadiene	ND		2.5
91-58-7	2-Chloronaphthalene	ND		50
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		2.5
608-68-8	Pentachlorobenzene	ND		2.5
319-84-6	a-BHC	ND		2.5
118-74-1	Hexachlorobenzene	ND		2.5
319-85-7	b-BHC	ND		2.5
58-89-9	g-BHC (lindane)	ND		2.5
82-68-8	Pentachloronitrobenzene	ND		2.5
319-86-8	d-BHC	ND		250
76-44-8	Heptachlor	ND		250
309-00-2	Aldrin	ND		250
1024-57-3	Heptachlor epoxide	ND		250
5103-74-2	g-Chlordane	ND		250
959-98-8	*Endosulfan I	ND	K	700
5103-71-9	a-Chlordane	ND		250
72-55-9	4,4'-DDE	ND		250
72-20-8	Endrin	ND		250
60-57-1	Dieldrin	ND		250
72-54-8	4,4'-DDD	ND		1300
50-29-3	4,4'-DDT	ND	K	500
79-34-5	Hexabromobenzene	ND		250
72-43-5	Methoxychlor	ND		1300
2385-85-5	Mirex	ND		250
53469-21-9	Aroclor 1242 (PCB)	ND		2500
11097-69-1	Aroclor 1254 (PCB)	ND		2500
11096-82-5	Aroclor 1260 (PCB)	ND		2500
12674-11-1	*Aroclor 1016 (PCB)	ND		2500
11104-28-2	*Aroclor 1221 (PCB)	ND		2500
11141-16-5	*Aroclor 1232 (PCB)	ND		2500
12672-29-6	*Aroclor 1248 (PCB)	ND		2500
- -	*Aroclor 1262 (PCB)	ND		2500
11100-14-4	*Aroclor 1268 (PCB)	ND		2500
37324-23-5	BP-6 (PBB)	ND		1300

SAMPLE ID TP-9-4 FRACTION 06A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

8001-35-2 *Toxaphene ND 2500
COMMENTS MM=SAMPLE TURNED TO OIL, DM=DIL DUE TO MATRIX PROBLEM

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-01 FRACTION 07B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		1.1
541-73-1	1,3-Dichlorobenzene	ND		1.1
106-46-7	1,4-Dichlorobenzene	ND		1.1
95-50-1	1,2-Dichlorobenzene	ND		1.1
108-60-1	bis(2-Chloroisopropyl) ether	ND		1.1
821-64-7	N-Nitroso-di-n-propyl amine	ND		2.2
108-70-3	Hexachloroethane	ND		1.1
98-95-3	Nitrobenzene	ND		2.2
78-59-1	Isophorone	ND		1.1
111-91-1	bis(2-Chloroethoxy) methane	ND		2.2
120-82-1	1,2,4-Trichlorobenzene	ND		2.2
91-20-3	Naphthalene	ND		1.1
87-68-3	Hexachlorobutadiene	ND		2.2
77-47-4	Hexachlorocyclopentadiene	ND		2.2
91-58-7	2-Chloronaphthalene	ND		2.2
131-11-3	Dimethyl phthalate	ND		2.2
208-96-8	Acenaphthylene	ND		1.1
606-20-2	2,6-Dinitrotoluene	ND		5.5
83-32-9	Acenaphthene	ND		1.1
121-14-2	2,4-Dinitrotoluene	ND		5.5
86-73-7	Fluorene	ND		1.1
84-66-2	Diethyl phthalate	ND		1.1
7005-72-3	4-Chlorodiphenyl ether	ND		1.1
86-30-6	N-Nitrosodiphenyl amine	ND		5.5
122-66-7	1,2-Diphenylhydrazine	ND		2.2
101-55-3	4-Bromodiphenyl ether	ND		2.2
118-74-1	Hexachlorobenzene	ND		1.1
85-01-8	Phenanthrene	ND		1.1
120-12-7	Anthracene	ND		1.1
84-74-2	Di-n-butyl pthtalate	ND		1.1
206-44-0	Fluoranthene	ND		1.1
92-87-5	* Benzidine	ND		17
129-00-0	Pyrene	ND		1.1
85-68-7	Butyl benzyl phthalate	ND		1.1
56-55-3	Benzo (a) anthracene	ND		1.1
91-94-1	* 3,3'-Dichlorobenzidine	ND		11
218-01-9	Chrysene	ND		1.1
117-81-7	bis(2-ethylhexyl) phthalate	ND		2.2
117-84-0	Di-n-octyl phthalate	ND		2.2
205-99-2	Benzo (b) fluoranthene	ND		2.2
207-08-9	Benzo (k) fluoranthene	ND		2.2
50-32-8	Benzo (a) pyrene	ND		2.2
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		5.5

SAMPLE ID TP-01 FRACTION 07B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/08/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		5.5
191-24-2	Benzo (g,h,i) perylene	ND		5.5

COMMENTS

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-01 FRACTION 07A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		0.10
106-46-7	1,4-Dichlorobenzene	ND		0.10
95-50-1	1,2-Dichlorobenzene	ND		0.10
67-72-1	Hexachloroethane	ND		0.010
108-70-3	1,3,5-Trichlorobenzene	ND		0.010
120-82-1	1,2,4-Trichlorobenzene	ND		0.010
87-61-6	1,2,3-Trichlorobenzene	0.010	RB=0.010	0.010
87-68-3	Hexachlorobutadiene	ND		0.010
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		0.010
77-47-4	Hexachlorocyclopentadiene	ND		0.010
91-58-7	2-Chloronaphthalene	ND		0.20
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		0.010
608-68-8	Pentachlorobenzene	ND		0.010
319-84-6	a-BHC	ND		0.010
118-74-1	Hexachlorobenzene	ND		0.010
319-85-7	b-BHC	ND		0.010
58-89-9	g-BHC (lindane)	ND		0.010
82-68-8	Pentachloronitrobenzene	ND		0.010
319-86-8	d-BHC	ND		0.010
76-44-8	Heptachlor	ND		0.010
309-00-2	Aldrin	ND		0.010
1024-57-3	Heptachlor epoxide	ND		0.010
5103-74-2	g-Chlordane	ND		0.010
959-98-8	*Endosulfan I	ND		0.010
5103-71-9	a-Chlordane	ND		0.010
72-55-9	4,4'-DDE	ND		0.010
72-20-8	Endrin	ND		0.010
60-57-1	Dieldrin	ND		0.010
72-54-8	4,4'-DDD	ND		0.050
50-29-3	4,4'-DDT	ND		0.010
79-34-5	Hexabromobenzene	ND		0.010
72-43-5	Methoxychlor	ND		0.050
2385-85-5	Mirex	ND		0.010
53469-21-9	Aroclor 1242 (PCB)	ND		0.10
11097-69-1	Aroclor 1254 (PCB)	ND		0.10
11096-82-5	Aroclor 1260 (PCB)	ND		0.10
12674-11-1	*Aroclor 1016 (PCB)	ND		0.10
11104-28-2	*Aroclor 1221 (PCB)	ND		0.10
11141-16-5	*Aroclor 1232 (PCB)	ND		0.10
12672-29-6	*Aroclor 1248 (PCB)	ND		0.10
- -	*Aroclor 1262 (PCB)	ND		0.10
11100-14-4	*Aroclor 1268 (PCB)	ND		0.10
37324-23-5	BP-6 (PBB)	ND		0.050

SAMPLE ID TP-01 FRACTION 07A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/08/94 Category

8001-35-2 *Toxaphene ND 0.10
COMMENTS RB IS NOT SUBTRACTED

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

 DNR Laboratory REPORT Work Order # 94-06-072
Received: 06/10/94 Results by Sample

SAMPLE ID TP-01 FRACTION 07D TEST CODE W VOL NAME Volatile 8260/624 WATER
Date & Time Collected 06/08/94 Category

ANALYST WEI
ANALYZED 06/10/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
74-87-3	Chloromethane	ND		5.0
75-01-4	Vinyl chloride	ND		5.0
74-83-9	Bromomethane	ND		5.0
75-00-3	Chloroethane	ND		5.0
67-64-1	2-Propanone (Acetone)	30		25
75-35-4	1,1-Dichloroethene	ND		1.0
75-09-2	Methylene chloride	ND		5.0
75-15-0	Carbon Disulfide	ND		5.0
156-60-5	trans-1,2-Dichloroethene	ND		1.0
1634-04-4	Methyl Tert. Butyl Ether	ND		5.0
75-34-3	1,1-Dichloroethane	ND		1.0
78-93-3	2-Butanone (MEK)	ND		5.0
156-59-2	cis-1,2-Dichloroethene	ND		1.0
67-66-3	Chloroform	ND		1.0
71-55-6	1,1,1-Trichloroethane	ND		1.0
107-06-2	1,2-Dichloroethane	ND		1.0
71-43-2	Benzene	ND		1.0
56-23-5	Carbon tetrachloride	ND		1.0
78-87-5	1,2-Dichloropropane	ND		1.0
79-01-6	Trichloroethene	ND		1.0
75-27-4	Bromodichloromethane	ND		1.0
591-78-6	2-Hexanone	ND		5.0
10061-01-5	cis-1,3-Dichloropropene	ND		1.0
10061-02-6	trans-1,3-Dichloropropene	ND		1.0
108-88-3	Toluene	ND		1.0
79-00-5	1,1,2-Trichloroethane	ND		1.0
108-10-1	4-Methyl-2-Pentanone (MIBK)	ND		5.0
124-48-1	Dibromochloromethane	ND		1.0
106-93-4	1,2-Dibromoethane	ND		1.0
127-18-4	Tetrachloroethene	ND		1.0
108-90-7	Chlorobenzene	ND		1.0
100-41-4	Ethylbenzene	ND		1.0
108-38-3 & 106-42-3	m & p Xylene	ND		2.0
75-25-2	Bromoform	ND		1.0
100-42-5	Styrene	ND		1.0
95-47-6	o-Xylene	ND		1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0

COMMENTS

ND = not detected at the specified detection limit.

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-6 FRACTION 08B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

ANALYST HO
ANALYZED 06/15/94
DILUTION 100 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
111-44-4	bis(2-Chloroethyl) ether	ND		0
541-73-1	1,3-Dichlorobenzene	ND		0
106-46-7	1,4-Dichlorobenzene	ND		0
95-50-1	1,2-Dichlorobenzene	ND		0
108-60-1	bis(2-Chloroisopropyl) ether	ND		0
821-64-7	N-Nitroso-di-n-propyl amine	ND		0
108-70-3	Hexachloroethane	ND		0
98-95-3	Nitrobenzene	ND		0
78-59-1	Isophorone	ND		0
111-91-1	bis(2-Chloroethoxy) methane	ND		0
120-82-1	1,2,4-Trichlorobenzene	ND		0
91-20-3	Naphthalene	36000	RB=305.J	560
87-68-3	Hexachlorobutadiene	ND		0
77-47-4	Hexachlorocyclopentadiene	ND		0
91-58-7	2-Chloronaphthalene	ND		0
131-11-3	Dimethyl phthalate	ND		0
208-96-8	Acenaphthylene	ND		0
606-20-2	2,6-Dinitrotoluene	ND		0
83-32-9	Acenaphthene	ND		0
121-14-2	2,4-Dinitrotoluene	ND		0
86-73-7	Fluorene	ND		0
84-66-2	Diethyl phthalate	ND		0
7005-72-3	4-Chlorodiphenyl ether	ND		0
86-30-6	N-Nitrosodiphenyl amine	ND		0
122-66-7	1,2-Diphenylhydrazine	ND		0
101-55-3	4-Bromodiphenyl ether	ND		0
118-74-1	Hexachlorobenzene	ND		0
85-01-8	Phenanthrene	ND		0
120-12-7	Anthracene	ND		0
84-74-2	Di-n-butyl pthtalate	ND		0
206-44-0	Fluoranthene	ND		0
92-87-5	* Benzidine	ND		0
129-00-0	Pyrene	ND		0
85-68-7	Butyl benzyl phthalate	ND		0
56-55-3	Benzo (a) anthracene	ND		0
91-94-1	* 3,3'-Dichlorobenzidine	ND		0
218-01-9	Chrysene	ND		0
117-81-7	bis(2-ethylhexyl) phthalate	ND		0
117-84-0	Di-n-octyl phthalate	ND		0
205-99-2	Benzo (b) fluoranthene	ND		0
207-08-9	Benzo (k) fluoranthene	ND		0
50-32-8	Benzo (a) pyrene	ND		0
193-39-5	Indeno (1,2,3-c,d) pyrene	ND		0

SAMPLE ID TP-9-6 FRACTION 08B TEST CODE BN NAME Base Neutral in Water
Date & Time Collected 06/09/94 Category

53-70-3	Dibenzo (a,h) anthracene	ND		0
191-24-2	Benzo (g,h,i) perylene	ND		0

COMMENTS J: ESTIMATE, FINAL VOL COULD NO BRING DOWN TO < 5 ML.
ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 Results by Sample

SAMPLE ID TP-9-6 FRACTION 08A TEST CODE SC 3 NAME Scan 3 Water
Date & Time Collected 06/09/94 Category

ANALYST TS ST
ANALYZED 06/15/94
DILUTION 1 UNITS ug/L ppb

CAS#	COMPOUND	RESULT	REMARK	REPORTED DETECTION LIMIT
541-73-1	1,3-Dichlorobenzene	ND		0.10
106-46-7	1,4-Dichlorobenzene	ND		0.10
95-50-1	1,2-Dichlorobenzene	ND		0.10
67-72-1	Hexachloroethane	ND		0.010
108-70-3	1,3,5-Trichlorobenzene	ND		0.010
120-82-1	1,2,4-Trichlorobenzene	ND		0.010
87-61-6	1,2,3-Trichlorobenzene	0.012	RB=0.010	0.010
87-68-3	Hexachlorobutadiene	ND		0.010
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		0.010
77-47-4	Hexachlorocyclopentadiene	ND		0.010
91-58-7	2-Chloronaphthalene	ND		0.20
634-66-2	1,2,3,4-Tetrachlorobenzene	ND		0.010
608-68-8	Pentachlorobenzene	ND		0.010
319-84-6	a-BHC	ND		0.010
118-74-1	Hexachlorobenzene	ND		0.010
319-85-7	b-BHC	ND		0.010
58-89-9	g-BHC (lindane)	ND		0.010
82-68-8	Pentachloronitrobenzene	ND		0.010
319-86-8	d-BHC	ND		0.010
76-44-8	Heptachlor	ND		0.010
309-00-2	Aldrin	ND		0.010
1024-57-3	Heptachlor epoxide	ND		0.010
5103-74-2	g-Chlordane	ND		0.010
959-98-8	*Endosulfan I	ND		0.010
5103-71-9	a-Chlordane	ND		0.010
72-55-9	4,4'-DDE	ND		0.010
72-20-8	Endrin	ND		0.010
60-57-1	Dieldrin	ND		0.010
72-54-8	4,4'-DDD	ND		0.050
50-29-3	4,4'-DDT	ND		0.010
79-34-5	Hexabromobenzene	ND		0.010
72-43-5	Methoxychlor	ND		0.050
2385-85-5	Mirex	ND		0.010
53469-21-9	Aroclor 1242 (PCB)	ND		0.10
11097-69-1	Aroclor 1254 (PCB)	ND		0.10
11096-82-5	Aroclor 1260 (PCB)	ND		0.10
12674-11-1	*Aroclor 1016 (PCB)	ND		0.10
11104-28-2	*Aroclor 1221 (PCB)	ND		0.10
11141-16-5	*Aroclor 1232 (PCB)	ND		0.10
12672-29-6	*Aroclor 1248 (PCB)	ND		0.10
- -	*Aroclor 1262 (PCB)	ND		0.10
11100-14-4	*Aroclor 1268 (PCB)	ND		0.10
37324-23-5	BP-6 (PBB)	ND		0.050

SAMPLE ID TP-9-6 FRACTION 08A TEST CODE SC 3 NAME Seam 3 Water
Date & Time Collected 06/09/94 Category

8001-35-2	*Toxaphene	ND	0.10

COMMENTS MM=NOT SOP, NH=NON-HOMOG, QC PROB, RB NOT SUBTRACTED

ND = not detected at the specified detection limit.
* Results and Det. Limit reported semi-quantitatively *

Received: 06/10/94 06/22/94 12:10:16

Environmental Response Div.

406072
=======
HE FOLLOWING COMPOUNDS ARE TENTATIVELY IDENTIFIED THROUGH LIBRARY SEARCH.

-01:

BENZENE, PROPYL
- BENZENE, 1-ETHYL-2-METHYL-
- BENZENE, 1-ETHYL-4-METHYL-
1,2,4-TRIMETHYL BENZENE
1,2,3-TRIMETHYL BENZENE
- BENZENE, BUTYL-
BENZENE, 1-METHYL-3-PROPYL-
BENZENE, 4-ETHYL-1,2-DIMETHYL-
- BENZENE, (1-METHYLPROPYL)-
BENZENE, 2-ETHYL-1,3-DIMETHYL-
BENZENE, 1-ETHYL-2,3-DIMETHYL-
- BENZENE, 1-EHTYL-2,4-DIMETHYL-
- BENZENE, 1-METHYL-2-(2-PROPENYL)-
BENZENE, 2-BUTENYL-
BENZENE, 2,4-DIMETHYL-1-(1-METHYLETYYL)-
- BENZENE, 1,3-DIETHYL-5-METHYL-

INDANE

02:

- BENZENE, PROPYL-
BENZENE, 1-ETHYL-4-METHYL-
1,2,3 -TRIMETHYL BENZENE
- 1,2,4 -TRIMETHYL BENZENE
BENZENE, 1-METHYL-3-PROPYL-
BENZENE, (1-METHYLPROPYL)-
- BENZENE, 2-ETHYL-1,3-DIMETHYL-
- BENZENE, 1-ETHYL-2,4-DIMETHYL-
BENZENE, 1-ETHYL-2,3,-DIMETHYL-
BENZENE, 1-METHYL-3-(1-METHYLETHYL)-
- BENZENE, 2-ETHENYL-1,4-DIMETHYL-
BENZENE, 1-METHYL-2-(2-PROPENYL)-

- INDANE

HEXANEDIOIC ACID, DIOCTYL ESTER

03:

- BENZENE, PROPYL-

Environmental Response Div.

BENZENE, 1-ETHYL-2-METHYL-
- 1,2,3-TRIMETHYL BENZENE
BENZENE, 1-ETHYL-4-METHYL-
1,2,4-TRIMETHYL BENZENE
- BENZENE, (2-METHYLPROPYL)-
BENZENE, (1-METHYLPROPYL)-
BENZENE, 1-METHYL-3-PROPYL-
- BENZENE, 1-ETHYL-2,3-DIMETHYL-
- BENZENE, 1-ETHYL-2,4-DIMETHYL-
BENZENE, 2-ETHYL-1,3-DIMETHYL-
BENZENE, 4-ETHYL-1,2-DIMETHYL-
- BENZENE, 1-METHYL-2-(2-PROPENYL)-
BENZENE, 1-METHYL-2-(1-METHYLETHYL)-
BENZENE, PENTAMETHYL-

INDANE
1H-INDEN-1-ONE, 2,3-DIHYDRO-
- 1H-INDENE, 2,3-DIHYDRO-4,7-DIMETHYL-

NAPHTHALENE,1-METHYL-

04:

- BENZENE, PROPYL-
- BENZENE, 1-ETHYL-4-METHYL-
1,2,3-TRIMETHYLBENZENE
BENZENE, 1-ETHYL-2-METHYL-
- 1,2,4-TRIMETHYLBENZENE
BENZENE, 1-METHYL-3-PROPYL-
BENZENE, 1-ETHYL-2,3-DIMETHYL-
- BENZENE, (1-METHYLPROPYL)-
BENZENE, 2-ETHYL-1,3-DIMETHYL-
BENZENE, 2-ETHYL-2,4-DIMETHYL-
- BENZENE, 1-METHYL-2-(1-METHYLETHYL)-
- BENZENE, 1-ETHYL-2,4-DIMETHYL-
BENZENE, 1-METHYL-2-(2-PROPENYL)-
BENZENE, 1,2,3,4-TETRAMETHYL-
- BENZENE, (1,1-DIMETHYLPROPYL)-
BENZENE, PENTAMETHYL-
BENZENE, ETHYL-1,2,4-TRIMETHYL-

1-BUTANAMINE, N-BUTYL-
DECANE, 4-METHYL-
- DECANE, 3-METHYL-
- UNDECANE

AZULENE
- 1H-INDENE,2,3-DIHYDRO-4,6-DIMETHYL-

Environmental Response Div.

- HEXADECANOIC ACID
- 9,17-OCTADECADIENAL, (Z)-
OCTADECANOIC ACID

5:
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- BENZENE, PROPYL-
- BENZENE, 1-ETHYL-4-METHYL-
1,2,3-TRIMETHYLBENZENE
1,2,4-TRIMETHYLBENZENE
- 1,3,5-TRIMETHYLBENZENE
BENZENE, 1-METHYL-3-PROPYL-
BENZENE, 1-METHYL-2-(1-METHYLETHYL)-
- BENZENE, (1-METHYLPROPYL)-
BENZENE, 1-ETHYL-2,4-DIMETHYL-
BENZENE, 2-ETHYL-1,3-DIMETHYL-
- BENZENE, 1-ETHYL-2,3-DIMETHYL-
- BENZENE, 4-ETHYL-1,2-DIMETHYL-
BENZENE, 1-METHYL-2-(2-PROPENYL)-
BENZENE, 1-METHYL-4-(1-METHYLETHYL)-
- BENZENE, (1,1-DIMETHYLPROPYL)-
BENZENE, 2,4-DIMETHYL-1-(1-METHYLETHYL)-
BENZENE, PENTAMETHYL-

NONANE, 3-METHYL-
DECANE, 4-METHYL-
- UNDECANE
- CYCLOHEXANE, PROPYL-
CYCLOHEXANE, BUTYL-
PHTHALIC ANHYDRIDE
- 1H-INDENE, 2,3-DIHYDRO-4,7-DIMETHYL-
9,17-OCTADECADIENAL, (Z)-

- 9,12-OCTADECADIENOIC ACID, METHYL ESTER
- 10-OCTADECENOIC ACID, METHYL ESTER
OCTADECANOIC ACID, METHYL ESTER

6:
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- BENZENE, PROPYL-
BENZENE, 1-ETHYL-2-METHYL-
1,2,4-TRIMETHYLBENZENE
- BENZENE, 1-ETHYL-4-METHYL-
- 1,2,3-TRIMETHYLBENZENE
BENZENE, 1-METHYL-3-PROPYL-
BENZENE, 4-ETHYL-1,2-DIMETHYL-
- BENZENE, (1-METHYLPROPYL)-

Environmental Response Div.

BENZENE, 2-ETHYL-1,3-DIMETHYL-
- BENZENE, 1-ETHYL-2,3-DIMETHYL-

UNDECANE
- DODECANE
- UNDECANE, 2,6-DIMETHYL-
DODECANE, 2-METHYL-
DECANE, 2,6,7-TRIMETHYL-
- TRIDECANE
DODECANE, 3-METHYL-
TRIDECANE, 3-METHYL-
- DODECANE, 2,6,11-TRIMETHYL-
TETRADECANE
PENTADECANE
- HEXADECANE
- HEPTADECANE
PENTADECANE, 2,6,10,14-TETRAMETHYL-
OCTADECANE
- NONADECANE
EICOSANE
EICOSANE, 2-METHYL-
- 5-EICOSENE, (E)-
HEPTADECANE, 2,6,10,15-TETRAMETHYL-

- CYCLOHEXANE, (4-METHYLPENTYL)-
- OCTANE, 2-CYCLOHEXYL-
CYCLOHEXANE, DECYL-
DODECYLCYCLOHEXANE
- CYCLOHEXANE,1,1'-(1,4-BUTANEDIYL)BIS-

INDANE
- TETRADECANE, 1-CHLORO-
OCTADECANE, 1-CHLORO-
TETRADECANOIC ACID, METHYL ESTER
- HEXADECANOIC ACID, METHYL ESTER
- 10-OCTADECENOIC ACID, METHYL ESTER
OCTADECANOIC ACID, METHYL ESTER

07:

- BENZENE, PROPYL-
- BENZENE, 1-ETHYL-4-METHYL-
1,2,4-TRIMETHYLBENZENE
- BENZENE, 1-ETHYL-2-METHYL-
- BENZENE,1-METHYL-3-PROPYL-
BENZENE, (1-METHYLPROPYL)-
BENZENE, 1-ETHYL-2,3-DIMETHYL-
- BENZENE, 4-ETHYL-1,2-DIMETHYL-

Environmental Response Div.

BENZENE, 1-ETHYL-2,4-DIMETHYL-
- BENZENE, 2-ETHYL-1,3-DIMETHYL-
BENZENE, 1-METHYL-2-(1-METHYLETHYL)-
BENZENE, 1-METHYL-2-(2-PROPENYL)-
- BENZENE, (1,1-DIMETHYLPROPYL)-

INDANE
UNDECANE

08:

BENZENE, PROPYL-
BENZENE, (1-METHYLETHYL)-
- 1,2,4-TRIMETHYLBENZENE
- BENZENE, 1-ETHYL-4-METHYL-
BENZENE, BUTYL-
BENZENE, (1-METHYLPROPYL)-
- 1,2,3-TRIMETHYLBENZENE
BENZENE, 1-METHYL-3-PROPYL-
BENZENE, 1-ETHYL-2,3-DIMETHYL-
- BENZENE, 4-ETHYL-1,2-DIMETHYL-
- BENZENE, 1-ETHYL-2,4-DIMETHYL-
BENZENE, 1,2,4,5-TETRAMETHYL-
- BENZENE, 1-METHYL-2-(2-PROPENYL)-
- BENZENE, 2-BUTENYL-
BENZENE, 1,4-DIETHYL-2-METHYL-
BENZENE, (1,1-DIMETHYLPROPYL)-
- BENZENE, 2,4-DIMETHYL-1-(1-METHYLETHYL)-
BENZENE, PENTAMETHYL-

- INDANE
- 1H-INDENE, 2,3-DIHYDRO-4,7-DIMETHYL-