445047

048419

Empire state Oil
refinery
Thermopolis, WY
WYD980807762

ANALYTICAL RESULTS REPORT
FOR EMPIRE STATE OIL REFINERY
THERMOPOLIS, WYOMING

TDD R8-8609-01

EPA PROJECT OFFICER: LAM NGUYEN
E&E PROJECT OFFICER: ROBERT EDDY
REVIEWED BY: KARL FORD

SUBMITTED TO: KEITH SCHWAB, FIT-DPO
WILLIAM GEISE, REM-FIT COORDINATOR

DATE SUBMITTED: OCTOBER 21, 1986

being filmed
SITE MIS INVOLVEMENT DOCUMENT

TABLE OF CONTENTS

PAGE

LIST OF TABLES i

I. INTRODUCTION 1

II. QUALITY ASSURANCE. 2
- A. Organic Data 2
- B. Inorganic Data 3
- C. Field Blanks and Duplicates. 3

III. DISCUSSION OF ANALYTICAL RESULTS 4
- A. Waste Characterization 4
- B. Ground Water 5
- C. Surface Water/Sediment 6
- D. Sludge 7

IV. CONCLUSIONS AND RECOMMENDATIONS. 7

APPENDIX A QA DATA PACKAGE

recycled paper

ecology and environment

LIST OF TABLES

TABLE 1 GROUND WATER ORGANIC DATA

TABLE 2 GROUND WATER INORGANIC DATA

TABLE 3 ORGANIC SURFACE WATER DATA

TABLE 4 ORGANIC SOIL/SEDIMENT AND SLUDGE DATA

TABLE 5 INORGANIC SOIL/SEDIMENT DATA

being filmed

ANALYTICAL RESULTS REPORT FOR EMPIRE STATE OIL REFINERY
THERMOPOLIS, WYOMING
TDD R8-8609-01
CASE #s 6243, 6320

I. INTRODUCTION

This report has been prepared to satisfy the requirements of the above-mentioned Technical Directive Document (TDD) R8-8609-01 issued to the Ecology and Environment, Inc., Field Investigation Team (E&E FIT) by Region VIII U.S. Environmental Protection Agency (EPA). All samples discussed in this report were collected by the FIT during the period of July 15 through July 20, 1986 from the inactive refinery site. Two previous reports, Sampling Activities and Sampling Plan - R8-8607-07 discuss the project objectives, sample documentation and field observations pertaining to this site. The samples collected in this investigation included seven ground water, including two quality assurance, four surface water, and eight soil, sediment and sludge samples. All organics, except the two sludges and one soil were analyzed by Aquatec; the inorganics were analyzed by JTC and the medium sludges and soil were analyzed by Western Research Institute under case #6243/2398H.

The principal objective of this investigation was to determine the existence of a release of hazardous substances to ground water and surface water at this site. The FIT also obtained the necessary data for the completion of the site inspection form (SI). Two previous visits have been made by FIT to this site. Previous FIT sampling in 1985 had indicated a surface water release of toluene. (TDD R8-8509-23).

The Empire State Oil Refinery site is located at the southeastern end of the community of Thermopolis on the Big Horn River approximately 24 miles downstream from Boysen Reservoir and about 4 miles north of the Wind River Canyon.

The site encompasses about 30 acres in Section 1 Township 42N Range 95W in Hot Springs County, Figure 1. It is surrounded on two sides by dwelling places of local residents. About 1/2 mile away across the river is the municipal water supply facility where both ground water and surface water is used to supply the needs of the community. During nine months of the year, supply is obtained from the Big Horn River; in summer it is augmented by well water from the well field across the river, approximately 1600 feet from the site.

The site was used for the refining of heavy crude. The sampling effort required the installation of four wells and the collection of five ground water, four surface water, three sediments and two soil samples. The background soil (ES-SO-1) was collected approximately 75 yards to the west of the main gate. The background ground water sample (ES-MW-3) was obtained from the same general area.

ES-MW-6 was a collected as duplicate of ES-MW-2A. Sludge samples ES-SL-1 and ES-SL-2 were judged to be high concentration.

The objectives of this report are to: (1) summarize the analytical results for this particular sampling effort, and (2) evaluate the data with respect to ground water and surface water for Hazard Ranking System purposes.

II. QUALITY ASSURANCE

The data (inorganic and organic) were examined in house for compliance with EPA Functional Guidelines for Evaluating Inorganic and Organic Data and the approved Region VIII FIT Contract Laboratory Program (CLP) Quality Assurance Standard Operation Procedures (SOP). The data packages were judged acceptable with the following qualifications.

A. ORGANIC DATA

All samples except HC795 (ES-MW-7) were analyzed within contract holding times. HC795 was held too long before BNA extraction thus positive results for this particular sample were qualified as estimated "j" and negative results as "uj". Several compounds identified were detected below the IDL (instrument detection limits) so positive results for those compounds also received a "j" qualifier.

The laboratory blanks also contained methylene chloride, acetone, 2-butanone, pyrene and several unknowns.

Water samples HC792 and HC793 had two acid fraction surrogate recoveries below 10%. Upon reanalysis, HC793 RE had two acid fraction recoveries of zero so positive results were flagged "j" and negative results were flagged as unusable "r".

Soil sample HC786 had one volatile fraction surrogate outside QC limits. Upon reanalysis, the surrogate recovery was still low so positive results were qualified "j" and negative results "uj".

HC749, HC750, HC784, HC786, HC790, HC791, HC792 and HC794 had hydrocarbon "peaks" (i.e. a large number of unresolved hydrocarbons) present in the volatiles fraction and/or the extractables fraction chromatograms. Please see Tables 1-4 for compounds identified.

The time span between sampling and extraction was too long (32 days) for all sludge samples. So positive results were flagged "j" and negative results "uj". Most of the compounds identified were detected above the detection limits. Those compounds which were detected below the IDL were flagged as estimated "j".

All initial and continuing calibration requirements were achieved except for Di-N-octylphthalate. The aforementioned compound had a percent difference slightly above twenty-five. Some HSL compounds had

a response factor below 0.05. Negative results for these results were flagged "r" as unusable. 2-butanone had very low response factors, therefore concentration values for this compound as detected in the blanks may be positively biased. Other HSL compounds were flagged "j" for positive results and "uj" for negative results because of percent relative standard deviations and percent differences above the required limits.

Those HSL compounds detected in the laboratory blanks above the detection limits were asterisked when the results were above the CRDL.

Several surrogates had recoveries of zero. Samples were not reanalyzed, thus negative results for the VOA fraction of HC978 and the aromatic fraction of HC878 and HC978 were qualified "r" as unusable. Positive results were qualified "j".

The polar fractions of samples HC 877 and HC878 were analyzed on a different instrument, and chromatograms indicate severe column bleed. Large hydrocarbon peaks were present in most fractions. Polyaromatic hydrocarbons may have been masked by the hydrocarbon matrix. Since the base/neutral fraction surrogates and spikes for samples HC878 and HC978 were diluted out, it is possible that any HSL compounds present may also have been diluted out.

B. INORGANIC DATA

Certain sample results were flagged "n" due to poor spike recoveries. The antimony spike recovery for soils was 44%, indicating a negative bias may be present.

C. FIELD BLANKS AND DUPLICATES

Field blank ES-MW-7 was found to contain antimony at 21 ug/l, iron at 137 ug/l and zinc at 62 ug/l, and the organics blank, methylene chloride and acetone, which were also found in the laboratory blank. Field duplicates ES-MW-2A and ES-MW-6 were judged to have only

fair agreement with a relative percent difference of about 50 for most inorganics. For organics, hydrocarbon masking may account for poor agreement.

III. DISCUSSION OF ANALYTICAL RESULTS

The samples were analyzed for volatile and base-neutral-acid extractable hazardous substance list (HSL) organics and for Task 1 and 2 metals. The results of the organic and inorganic analyses are shown in Tables 2 through 6. For organic compounds, only those compounds detected are reported. Sampling locations are shown in Figure 2, Appendix A contains the organic and inorganic quality assurance reviews, and raw data sheets.

A. WASTE CHARACTERIZATION

Two surface soils were collected: ES-SO-1 and ES-SO-2. ES-SO-1 was collected approximately 75 yards west of the main site entrance and was characterized as background. This sample showed only a trace of methylene chloride and acetone, both of which were also found in the laboratory blank. ES-SO-2 was collected approximately 50 yards south of the office complex onsite and was found to contain 17 ug/kg of toluene. One onsite sediment ES-OP-3 was collected from the fire protection pond. It did not contain any unusual concentrations of inorganics or organics, though a large number of unknown hydrocarbons were reported.

Three medium solid samples were collected as characteristic of the wastes present at the site. Each of these samples contained blank equivalent concentrations of methylene chloride, acetone, butanone and toluene which should be disregarded. ES-OP-1 was collected from the augered core from well ES-MW-4. This sample contained high concentrations of phthalates. Sample ES-SL-2, collected from the south end of the railroad tracks, contained large concentrations of numerous organic compounds, notably 2-methyl naphthalene and various other polycyclic aromatic hydrocarbons (PAHs) and other aromatics.

A laboratory could not be obtained for the inorganic fractions of these samples.

B. GROUND WATER

The upgradient sample ES-MW-3 contained methylene chloride and acetone. Since these compounds were found in the lab blank, these values were not a factor in determining whether a release occurred. However it should be noted that Prometon, an herbicide and several other unknowns were tentatively identified in almost all the onsite samples. Special notice should also be taken of the compounds flagged "j" detected in the duplicate sample ES-MW-6. A hydrocarbon peak may have masked similar results in ES-MW-2A which was the duplicated sample. Samples from this well and well ES-MW-4 contained a large number of unidentified hydrocarbons, see Appendix A.

The antimony and mercury findings are quite unusual in FIT's experience. Inasmuch as antimony was found in the field blank at 21 ug/l, some doubt may exist about the true concentrations. This concern is somewhat alleviated by the uniformly high concentrations found in all the ground water samples. Since the background well contained the highest concentrations of antimony, it is possible that it is naturally occurring or that the background well is contaminated. Mercury was also found in the background well.

None of the data suggest the existence of a ground water release of hazardous substances.

C. SURFACE WATER/SEDIMENT

Four surface water samples were collected from the site (ES-SW-1, ES-SW-2, ES-SW-3 and ES-OP-2). All samples were found to contain methylene chloride and acetone contamination which are associated with

being filmed
SITE / SITE ASSESSMENT

the laboratory blank. Since these samples were collected by direct introduction to the containers, contamination by the laboratory is the most likely explanation.

Three sediment samples were collected (ES-SE-1, ES-SE-2, ES-OP-3). The upgradient sample contained toluene at 400 ug/kg along with 2-butanone (23 ug/kg) phenanthrene (82 ug/kg), di-n-butylphthalate (58 ug/kg), fluoranthene (150 ug/kg) pyrene and bis(2-ethylhexyl)phthalate. Pyrene was flagged "ub" indicating its presence in the blank. ES-SE-2 contained 2-butanone (47 ug/kg) chloroform (29 ug/kg), 1,2-dichloropropane 5 (ug/kg). The two latter results were flagged "j". ES-OP-3 contained 27 ug/kg 2-butanone and 200 ug/kg of pyrene. These samples also contained a number of unknown hydrocarbons. All three also showed the ubiquituous methylene chloride and acetone laboratory contamination.

D. SLUDGE

Two sludge samples were collected. As with all other samples, these also showed the presence of acetone and methylene chloride.

Toluene was also found in substantial concentrations 960 ug/kg for SL-1 and 1300 ug/kg for SL-2. Phenanthrene in ES-SL-2 was 17,000 ug/kg though none was found in ES-SL-1. Benzene and ethylbenzene were detected in substantial concentration along with 2-hexanone, 4-methyl-2-pentanone, total xylenes and naphthalene. The highest concentrations were of total xylenes (90000 ug/kg) and 2-hexanone (93000 ug/kg).

V. CONCLUSIONS AND RECOMMENDATIONS

The data presented in this report do not provide evidence of a surface or ground water release of hazardous substances from the site, although many unidentified hydrocarbons were detected in most samples. An unusual occurrence of antimony and mercury was detected in ground water, including background ground water samples.

quality of the document being filmed
SITE/SITE ASSESSMENT SA5006 E E E

Since the investigation did not reveal any release of contaminants, no HRS needs to be performed. However, sludge pits are present at the site that do contain hazardous substances that may present a health and safety hazard to children and animals therefore access to these areas should be restricted.

being filmed
SITE ASSESSMENT

TABLE 1
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
GROUND WATER ORGANICS (ug/l)

	UPGRDNT HC-789 ES-MW-3	HC-790 ES-MW-2A	DUPLICATE HC-791 ES-MW-6	HC-792 ES-MW-5	HC-793 ES-MW-1	HC-794 ES-MW-4	BLANK HC-795 ES-MW-7
Methylene Chloride	2jb	1500ub	8ub	2jb	80ub	69ub	7ub
Acetone	9ub	9700ub	8ub	35ub	490ub	200ub	55ub
1,2-Dichloroethane	3	--	--	--	--	--	--
2-Butanone	--	300ub	3ub	--	13ub	15ub	--
Total Xylenes	--	--	2	--	--	--	--
Chrysene	--	--	3j	--	--	--	--
Benzo(b)Fluoranthene	--	--	3j	--	--	--	--
Benzo(k)Fluoranthene	--	--	3j	--	--	--	--
Benzo(a)pyrene	--	--	3j	--	--	--	--
Indeno(1,2,3-CD)pyrene	--	--	3j	--	--	--	--
Dibenzo(a,h)anthracene	--	--	3j	--	--	--	--
bis(2-ethylhexyl)phthalate	--	--	--	4j	2	--	--
Diethylphthalate	--	--	--	--	16	--	--

j The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

ub Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at <5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

uj Detection limit is estimated because quality control criteria were not met.

jb The value is an estimated amount detected below required limits and also detected in the blank.

b Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (<10 X for methylene chloride, acetone, toluene and phthalates).

recycled paper

being filmed

TABLE 2
INORGANIC DATA ANALYSIS RESULTS AT
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
GROUND WATER INORGANICS (ug/l)

	UPGRDNT MHC-670 ES-MW-3	MHD-777 ES-MW-1	DUPLICATE MHD-775 ES-MW-2A	MHD-776 ES-MW-4	MHD-752 ES-MW-5	DUPLICATE MHD-776 ES-MW-6	BLANK MHD-779 ES-MW-7
Aluminum	154	153	136	[136]	[76]	[109]	[25]
Antimony	606	482	477	487	285	307	21
Arsenic	1.5u	1.5u	[5.8]	[3.6]	1.5u	[4.9]	1.5u
Barium	[43]	[28]	287	287	[49]	[59]	[1.56]
Beryllium	4.2u	4.2u	4.2u	4.2u	4.2u	4.2u	4.2u
Cadmium	2.4un	2.4un	2.4un	2.4un	2.4un	2.4un	2.4un
Calcium	371,000	283,000	91,900	91,900	102,000	99,300	[581]
Chromium	4.8u	4.8u	4.8u	4.8u	4.8u	4.8u	4.8u
Cobalt	5.4u	12	5.4u	5.4u	5.4u	5.4u	5.4u
Copper	25	9.0u	9.0u	9.0u	9.9u	[16]	[9.9]
Iron	11ne	2530ne	3370ne	3440ne	239ne	313ne	137ne
Lead	0.9u	0.9u	0.9u	[1.5]	0.9u	0.9u	0.9u
Magnesium	142,000	115,000	112,000	112,000	66,800	68,800	[269]
Manganese	284	2840	374	376	1660	231	[6.9]
Mercury	0.9	1.0	1.2	1.5	0.7	1.0	[0.2u]
Nickel	0.9u	13u	13u	13u	13u	13u	13u
Potassium	1,200	15,300	6400	6440	8090	9770	252u
Selenium	2.4u	2.4u	2.4u	2.4u	2.4u	2.4u	2.4u
Silver	17	14	[5.5]	[5.5]	[5.8]	[5.2]	5.1u
Sodium	435,000	494,000	625,000	625,000	396,000	535,000	3140
Thallium	0.8u	0.8u	0.8u	0.8u	0.8u	0.8u	0.8u
Vanadium	[14]	[13]	[11]	[11]	[8.9]	[9.9]	2.7u
Zinc	37	2.4u	2.4u	[16]	[12]	[2.4u]	62

u Not detected above detection limit.
[] Less than contract required detection limit but above instrument detection limit.
n Matrix spike recovery outside of required limit.
e Interference present (estimate).

TABLE 3
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
SURFACE WATER ORGANICS (ug/l)

	UPGRDNT HC-785 ES-SW-1	DNGRDNT HC-787 ES-SW-2	HC-788 ES-SW-3	FIRE POND HC-796 ES-OP-2
Methylene Chloride	2jb	2jb	2jb	4jb
Acetone	5jb	2jb	1jb	9ub

j The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

ub Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at <5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

uj Detection limit is estimated because quality control criteria were not met.

jb The value is an estimated amount detected below required limits and also detected in the blank.

b Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (<10 X for methylene chloride, acetone, toluene and phthalates).

TABLE 4
EMPIRE STATE OIL REFINERY
THERMOPOLIS, WYOMING
SOIL, SEDIMENT AND SLUDGE ORGANICS (ug/kg)

	BCKGRND ES-SO-1 HC-750	ONSITE ES-SO-2 HC-749	UPRGDNT ES-SE-1 HC-784	DNGRDNT ES-SE-2 HC-786	FIRE POND ES-OP-3 HC-797	CORE ES-OP-1 HC-877	ONSITE ES-SL-1 HC-878	ONSITE ES-SL-2 HC-978
Methylene Chloride	4jb	5ub	25ub	29ub	100ub	940j	550ub	460jb
Acetone	6ub	4jb	71ub	57ub	120ub	5100ub	5700ub	6700ub
Toluene	--	17	400	--	--	1100ub	960ub	1300ub
2-Butanone	--	--	23	47b	27	6600ub	7600ub	7400ub
Phenanthrene	--	--	82	--	--	240ub	--	17000j
Di-n-Butylphthalate	--	--	58	--	--	--	--	--
Fluoranthene	--	--	150	--	--	--	--	--
Pyrene	--	--	160ub	--	200b	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	150	--	--	2600j	--	11000j
Chloroform	--	--	--	29j	--	820ub	790ub	800ub
1-2-Dichloropropane	--	--	--	5j	--	--	--	--
di-n-Octylphthalate	--	--	--	--	--	--	--	450ub
Benzene	--	--	--	--	--	--	--	3600j
4-methyl-2-pentanone	--	--	--	--	--	--	--	35000j
2-hexanone	--	--	--	--	--	--	--	93000j
Ethylbenzene	--	--	--	--	--	--	--	49000j
Total xylenes	--	--	--	--	--	--	--	90000j
Naphthalene	--	--	--	--	--	--	--	14000j
2-methylnaphthalene	--	--	--	--	--	--	--	51000j

b Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (>10 X for methylene chloride, acetone, toluene, and phthalates).

ub Estimated sample quantitation limit increased. Amount found in sample reported. compound detected at >5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

uj Detection limit is estimated because quality control criteria were not met.

jb The value is an estimated amount detected below required limits and also detected in the blank.

TABLE 5
INORGANIC DATA ANALYSES RESULTS FOR
SOILS AND SEDIMENTS (ug/kg)
EMPIRE STATE OIL REFINERY
THERMOPOLIS, WYOMING
RB-8607-07

SAMPLE # TRAFFIC REPORT #	BACKGROUND ES-SE-1 MHD-871	DOWNGRADIENT ES-SE-2 MHD-872	FIRE POND ES-OP-3 MHD-883	BACKGROUND ES-SO-1 MHD-826	ONSITE ES-SO-2 MHD-891
Aluminum	8080	7480	4690	22600	11700
Antimony	40u	42u	51u	32u	28u
Arsenic	7.2u	7.5u	6.7u	5.7u	5.1u
Barium	[130]	[13]	[79]	163	157
Beryllium	[3]	1.84	2.3u	1.44	[2]
Cadmium	3.3u	3.4u	4.2u	2.6u	2.3u
Calcium	51,200	19,800	37,800	15,400	27,500
Chromium	20	24	15	22	22
Cobalt	16u	17u	21u	13u	12u
Copper	1u	18u	22u	13.5u	12u
Iron	10,600	10,800	8270	20,800	13900
Lead	11.1	41.7	27.7	26.6	94
Magnesium	7210	6460	9940	7650	8450
Manganese	29.3	204	235	454	343
Mercury	0.144	0.154	0.18u	0.114	0.10
Nickel	19u	20u	25u	26	27
Potassium	3623u	3730u	4630u	5950	3060
Selenium	3.6u	3.4u	4.6u	2.6u	2.5u
Silver	3.1u	[5]	3.9u	2.4u	2.2u
Sodium	3540u	4520	4530u	2790u	2490u
Thallium	2.2u	2.2u	--	--	--
Tin	22u	--	62	1.7u	15u
Vanadium	14u	14u	17u	17u	[23]
Zinc	32	24	37	[24]	42

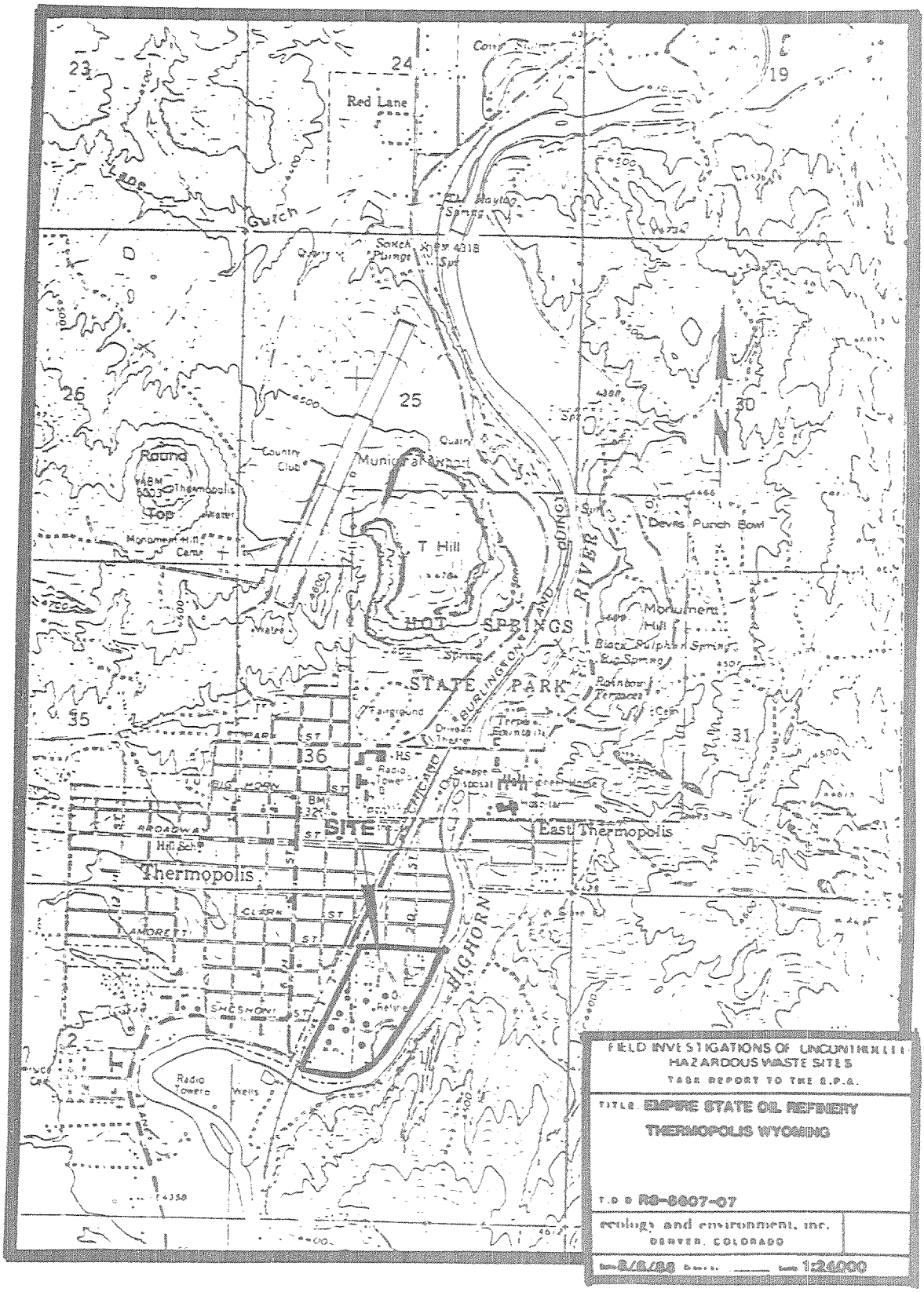
u Not detected above detection limit.

[] Less than Contract Required Detection Limit but above Instrument Detection Limit.

-- Not detected.

APPENDIX A

QA DATA PACKAGE



FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES

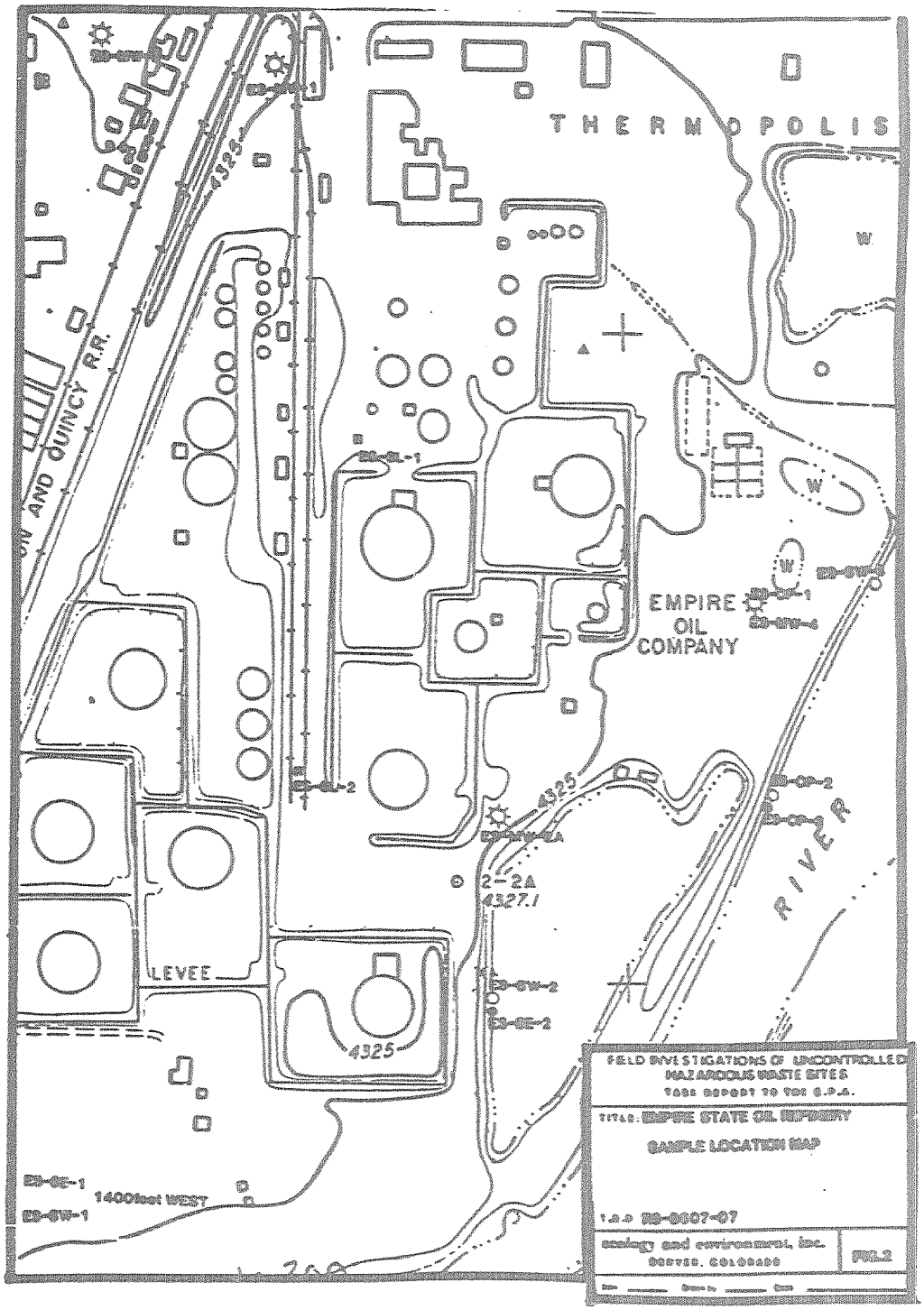
TASK REPORT TO THE E.P.A.

TITLE: EMPIRE STATE OIL REFINERY
THERMOPOLIS WYOMING

T.D. # R8-8607-07

ecology and environment, inc.
DENVER, COLORADO

DATE: 8/8/88 DRAWN: _____ SCALE: 1:24000


THERMOPOLIS
W
W
W
EMPIRE
OIL
COMPANY
4325
4325
4325
2-2A
4327.1
LEVEE
RIVER
1400feet WEST
FIELD INVESTIGATIONS OF UNCONTROLLED
HAZARDOUS WASTE SITES
TASK SUPPORT TO THE E.P.A.
TITLE: EMPIRE STATE OIL REFINERY
SAMPLE LOCATION MAP
FIG.2

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER
Empire State Oil Refinery	240 Amoretti Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Thermopolis	WY	82443	Hot Springs		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
43° 38' 21"._	108° 12' 25"._	☒ A PRIVATE ☐ B. FEDERAL ____ ☐ C STATE ☐ D COUNTY ☐ E. MUNICIPAL ☐ F OTHER ____ ☐ G UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
07 / 20 / 86 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1938 (BEGINNING YEAR) / 1969 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): E&E

☐ A EPA ☒ B EPA CONTRACTOR Ecology & Environment, Inc (Name of firm) ☐ C MUNICIPAL ☐ D MUNICIPAL CONTRACTOR ____ (Name of firm)
☐ E. STATE ☐ F STATE CONTRACTOR ____ (Name of firm) ☐ G OTHER ____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO
Robert Eddy	Geologist	E&E	(303) 757-4984
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO**
Edwin L. Coker	Engineer	E&E	(303) 757-4984
Dennis Elrod	Geologist	E&E	(303) 757-4984
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
E. Boz Glandt	Director	Gottsche Foundation P.O. Box 790 Thermopolis, WY 82443	(307) 864-3532
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT		hot, sunny

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Lam Nguyen	EPA Region VIII	(303) 293-1817

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Robert Eddy	EPA	E&E FIT	(303)757-4984	09 / 10 / 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☒ A SOLID
- ☐ B POWDER, FINES
- ☐ C SLUDGE
- ☐ D OTHER _____ (Specify)
- ☐ E SLURRY
- ☒ F LIQUID
- ☐ G GAS

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

TONS _____
CUBIC YARDS unknown
NO OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE	unknown		waste spilled on ground and disposed of in pits
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OLW			SI TK		
OLW	See Attached Tables 1-4		SI TK		
OLW			SI TK		
OLW			SI TK		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS	None		FDS		
FDS			FDS		
FDS			FDS		

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

Preliminary Assessment, 5/18/84, State of Wyoming, Dept. of Environmental Quality, Solid Waste, TDD R8-8405-31
Site Visit 6/25/84, Ecology and Environment, Inc., TDD R8-8412-07
Sampling Activities Report 4/20/85, Ecology and Environment, Inc., TDD R8-8503-20

EPA FORM 2070-13 (7-81)

recycled paper

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED >4000
02 ☐ OBSERVED (DATE 7/17/86) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

All onsite wells were found to be contaminated by heavy oil or in one instance gas.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED 5000
02 ☐ OBSERVED (DATE 4/18/86) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Samples and water of fire pretection pond onsite showed oil sheen on water. Subsequent visit showed presence of oil stains below pond's high level water mark.

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED >2500
02 ☐ OBSERVED (DATE 7/16/86) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Asbestos laying out in open onsite in a decomposed state may be carried on wind to businesses located onsite and homes downwind.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED none
02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Due to presence of hydrocarbons the potential for conflagration may exist.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED 5000
02 ☐ OBSERVED (DATE 7/18/86) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential for direct contact is approximately 95%. Young kids and men were observed angling in fire protection pond and along river bank within site limits.

01 ☐ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED 40 (Acres)
02 ☐ OBSERVED (DATE 7/16/86) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

Tarry appearing oil stains at northwest end of site. Also oil stains seen on banks of fire protection pond.

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED none
02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No residents contacted used private wells for drinking purposes but there may be others who still use private wells for drinking purposes.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED none
02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED 2000
02 ☐ OBSERVED (DATE 7/16/86) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potentially young children who have been observed traversing site may be susceptible to exposure or injury because of existing site conditions.

being filmed
SITE ASSESSMENT
PASSOO.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WY	D980807762

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 [X] J DAMAGE TO FLORA — 02 [X] OBSERVED (DATE 6/25/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Indication of vegetation stress observed by FIT. Vegetation is largely absent from soil now covering former disposal pits.

01 [X] K DAMAGE TO FAUNA Dead fish — 02 [X] OBSERVED (DATE 3/30/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

Observed by WDEQ
Not observed by FIT on 6/25/84

01 [ ] L CONTAMINATION OF FOOD CHAIN — 02 [ ] OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 [X] M UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 [ ] OBSERVED (DATE _____) [X] POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED approx. 5000 — 04 NARRATIVE DESCRIPTION

Site dismantled and unlined pits covered with soil. See Section IV.

01 [ ] N DAMAGE TO OFFSITE PROPERTY — 02 [ ] OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 [ ] O CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 [ ] OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 [ ] P ILLEGAL/UNAUTHORIZED DUMPING — 02 [ ] OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

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

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: Approx. 5000 in the city service district. This figure used by population records.

IV. COMMENTS

For A,B,E,G, and M, above, the population potentially affected is shown, but the location of the wells and surface water intake make the possibility for a significant health hazard moderate.

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

Preliminary Assessment, 5/18/84, State of Wyoming, Department of Environmental Quality, Division of Solid Waste, TDD R8-8405-31
Site Visit, 6/25/84, Ecology and Environment, Inc.
Report of Sampling Activities, 4/20/85, TDD R8-8503-20

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. PERMIT INFORMATION

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

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A SURFACE IMPOUNDMENT	3	acres
☐ B PILES		
☐ C DRUMS, ABOVE GROUND		
☐ D TANK, ABOVE GROUND		
☐ E TANK, BELOW GROUND		
☐ F LANDFILL		
☐ G LANDFARM		
☐ H OPEN DUMP	5	acres
☐ I OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A INCENERATION
- ☐ B UNDERGROUND INJECTION
- ☐ C CHEMICAL/PHYSICAL
- ☐ D BIOLOGICAL
- ☐ E WASTE OIL PROCESSING
- ☐ F SOLVENT RECOVERY
- ☐ G OTHER RECYCLING/RECOVERY
- ☐ H OTHER (Specify)

05 OTHER

- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE

approx. 54 (Acres)

07 COMMENTS

The facility is no longer active. Tanks have been removed and waste pits covered.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC

Disposal pits contain no liners, leakage observed around removed above ground tanks.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☒ YES ☐ NO

02 COMMENTS

Fence about perimeter, but gate was unlocked and unattended.

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

Preliminary Assessment, 5/18/84, State of Wyoming, Dept. of Environmental Quality.
Site Visit, 6/25/84, FIT, Ecology and Environment, Inc.

being filmed
SITE ASSESSMENT

SEPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A ☒	B ☒
NON-COMMUNITY	C. ☐	D ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A ☐	B ☐	C ☒
D ☐	E ☐	F ☐

03 DISTANCE TO SITE

A 0.2 (mi)

B _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A ONLY SOURCE FOR DRINKING ☒ B DRINKING (Other sources available) COMMERCIAL INDUSTRIAL IRRIGATION (No other water sources available) ☐ C COMMERCIAL INDUSTRIAL IRRIGATION (Limited other sources available) ☐ D NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 5000 (approx.)

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.2 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
15 (ft)	SE toward river	13 (ft)	1.4 million (gpd)	☒ YES ☐ NO

09 DESCRIPTION OF WELLS (Including village, depth and location relative to population and buildings)

3 municipal wells, 30 feet deep, supply 1000 gpm to city system. The wells are on the floodplain across the river and directly south of the town of Thermopolis.

10 RECHARGE AREA

☒ YES ☐ NO COMMENTS In spring, river recharges alluvial aquifer

11 DISCHARGE AREA

☒ YES ☐ NO COMMENTS In fall, aquifer recharges river.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Big Horn River	☐	0 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

A ONE (1) MILE OF SITE 4500 NO. OF PERSONS

B TWO (2) MILES OF SITE < 5000 NO. OF PERSONS

C THREE (3) MILES OF SITE 5000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION Across the street (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE Entire town of Thermopolis

04 DISTANCE TO NEAREST OFF-SITE BUILDING Across the street (mi)

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

Approximately 5000 people live in the vicinity of Thermopolis.

recycled paper

ecology and environment

being filmed in the document

SITE/SITE ASSESSMENT PA5006

EPA

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

I. IDENTIFICATION

01 STATE: WY | 02 SITE NUMBER: D980807762

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

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

02 PERMEABILITY OF BEDROCK (Check one)

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

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
Approx. 40 (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-31 (in)	Approx. 1.25 (in)	<1 %	SE	1 %

09 FLOOD POTENTIAL: Dam immed. upstream

SITE IS IN _____ YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. N/A (mi) OTHER: B _____ (mi)

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

ENDANGERED SPECIES _____

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS NATIONAL/STATE PARKS FORESTS OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A <1/4 (mi)	B 1 (mi)	C unknown (mi)	D unknown (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Refinery is on the Bighorn River floodplain. Site has an average slope of 1% to the southeast.

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

U.S.G.S. supplied some information on the geology of the Thermopolis area (307) 772-2716.
U.S.G.S. 7.5' topographic map, Thermopolis Quad, 1:24,000 (307)772-2716
Steve Krysiak, Water and Sewer Superintendent, Town of Thermopolis (307) 864-2658

EPA FORM 2070-13 (7-81)

quality of the document being filmed
SITE/SITE ASSESSMENT PA5006

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WY	D980807762

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	5	organic - Aquatech Labs, Orange City, CA inorganic - Associateds Lab Inc., Orangge City, CA	7/21/86
SURFACE WATER	4	organic - Aquatech Labs, Orange City, CA inorganic - JTC, Rockville, MD	7/21/86
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	organic - Aquatech Labs, Orange City, CA inorganic - JTC Rockville, MD	7/21/86
VEGETATION			
OTHER Sediment	3	organic - Aquatech Labs, Orange City, CA inorganic - JTC Rockville, MD	7/21/86

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Organic Vapor Dectection (HNU)	Downgradient surface water 0.8 ppm above background Downgradient sediment 0.8 ppm above background
	Disposal pit 0.4 - 0.8 ppm above background Refining area 4.0 ppm above background

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND ☐ AERIAL

02 IN CUSTODY OF Ecology and Environment, Inc. (Name of organization or individual)

03 MAPS X YES ☐ NO

04 LOCATION OF MAPS Ecology and Environment, Inc.

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Temperature, pH, and specific conductance was taken of all surface water samples.
Temperature was between 6 and 10°C
pH was between 5.31 and 9.33
Conductivity was between 4 and 1800 umhos/cm

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

Sampling effort of 4/20/85.

EPA FORM 2070-13 (7-81)

recycled paper

ecology and environment

quality of the document being filmed

SITE/SITE ASSESSMENT SAS006 E-7

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. CURRENT OWNER(S)

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

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
P.O. Box 790			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Thermopolis	WY	82443			

PARENT COMPANY (If applicable)

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

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

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

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

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

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

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

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

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

III. PREVIOUS OWNER(S) (Most recent first)

01 NAME	02 D+B NUMBER
Ashland Oil Company	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Ashland Drive	29111

05 CITY	06 STATE	07 ZIP CODE
Ashland		

01 NAME	02 D+B NUMBER
Empire State Oil Company	

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If different from current owner)

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

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

Preliminary Assessment, completed 5/18/84 by Wyoming Department of Environmental Quality

EPA FORM 2070-13 (7-81)

quality of the document being filmed

SITE / SITE ASSESSMENT

SAS006

EE/1

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. CURRENT OPERATOR (Provide if different from owner.)

01 NAME: None	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE: 07 ZIP CODE:
08 YEARS OF OPERATION:	09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE: 16 ZIP CODE:

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

01 NAME: Ashland Oil Company	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): Ashland Drive	04 SIC CODE:
05 CITY: Ashland	06 STATE: KY 07 ZIP CODE:
08 YEARS OF OPERATION: <1	09 NAME OF OWNER DURING THIS PERIOD: Ashland Oil
01 NAME: Empire State Oil Company	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): unknown (out of buisness)	04 SIC CODE:
05 CITY:	06 STATE: 07 ZIP CODE:
08 YEARS OF OPERATION: 31	09 NAME OF OWNER DURING THIS PERIOD: Empire State Oil Company
01 NAME:	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE: 07 ZIP CODE:
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE: 16 ZIP CODE:

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

Preliminary Assessment, completed 5/18/84 by Wyoming Department of Environmental Quality
Site visit, conducted by Region VIII FIT 6/25/84

EPA FORM 2070-13 (7-81)

recycled paper

ecology and environment

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER
None								

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

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

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
Ashland Oil Company		Ashland Drive		Ashland	KY		<1	Ashland Oil
Empire State Oil Company		unknown (out of buisness)					31	Empire State Oil Company

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

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

Preliminary Assessment, completed 5/18/84 by Wyoming Department of Environmental Quality
Site visit, conducted by Region VIII FIT 6/25/84

EPA FORM 2070-13 (7-81)

being filmed
OIL / OIL ASSESSMENT
PASSUS

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WY	D980807762

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
None	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

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

Preliminary Assessment, completed 5/18/84, by Wyoming Department of Environmental Quality
Site Visit, conducted by Region VIII FIT

EPA FORM 2070-13 (7-81)

recycled paper

ecology and environment

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. PAST RESPONSE ACTIVITIES

01 ☐ A WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ B TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ C PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ D SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ E CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ F WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ G WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ H ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ I IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ J IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ K IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ L ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ M EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ N CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ O EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ P CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Q SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION
01 STATE: WY
02 SITE NUMBER: D980807762

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ S CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ T BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ U GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ V BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ W GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ X FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Y LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Z AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 1 ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 2 POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 3 OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

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

Wyoming Department of Environmental Quality files

EPA FORM 2070-13 (7-81)

recycled paper

ecology and environment

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WY	D980807762

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES X NO

02 DESCRIPTION OF FEDERAL STATE LOCAL REGULATORY/ENFORCEMENT ACTION

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

Wyoming Department of Environmental Quality

EPA FORM 2070-13 (7-81)

being filmed

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. 6243 Project No. 8609-01

Site Empire State Refinery

Contractor Laboratory JTC

Data Reviewer L. Roberts Date of Review 9/17/86

Sample Matrix Soil

Analysis Metals

Sample No. MH0826

MH0871

MH0872

MH0891

MH0883

( ) Data are acceptable for use

(✓) Data are acceptable for use with qualification noted

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ✓ Yes ____ Following items require action ____

Action required by Project Officer (PO)?

No ✓ Yes ____

Following are our findings:

The result for antimony and selenium are flagged with an R because the matrix spike recoveries did not meet the ±25% limit. The antimony spike recovery (44%) indicates that a negative bias may be present for this element.

FORM A

Inorganic Data Completeness Checklist

✓ Inorganic analysis data sheets

✓ Initial calibration and calibration verification results

✓ Continuing calibration verification

✓ Instrument Detection limits

✓ Duplicate results

✓ Spike results

✓ ICP interference check sample

✓ Blank results

✓ Serial Dilution Results

✓ Raw data for calibration standards

✓ Raw data for blanks

✓ Raw data for samples

✓ Raw data for duplicates

✓ Raw data for spikes

✓ Raw data for furnace AA

✓ Percent solids calculation - soils only

✓ Traffic Reports

FORM B

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

YES ✓ NO _____

Comments:

Continuing calibration data were reviewed and these data met all contract requirements.

YES ✓ NO _____

Comments:

A blank was run with every twenty samples or less per case.

YES ✓ NO _____

Comments:

How many elements were detected above the required detection limit? Ø

How many elements were detected at greater than one half the amount detected in any sample? Ø

Comments:

FORM C

The interference check sample was run twice per eight hour shift. No massive interferences were present.

YES ✓ NO _____

Comments:

Percent recoveries not reported.

All matrix spike requirements were met.

YES _____ NO ✓

Comments:

Antimony 44 % Recovery - Negative bias possible
Selenium 133 % Recovery

A duplicate sample was run with every twenty or fewer samples of a similar matrix, or one per case, whichever is more frequent.

YES ✓ NO _____

The RPD's were tabulated.

YES ✓ NO _____

Comments:

All inorganic detection limits met the contract requirements.

YES ✓ NO _____

Comments:

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 8 1986

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name JTC Environmental Consultants Case No. 6243

SOW No. 784 Q.C. Report No. 278

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MHD826	72-3473	MHD 880	72-3482
871	-3474	881	-3483
872	-3475	882	-3484
873	-3476	883	-3485
875	-3477	886	-3486
876	-3478	888	-3487
877	-3479	891	-3488
878	-3480		
879	-3481		

Comments:

ICP Interelement and background corrections applied? Yes ✓ No ____.

If yes, corrections applied before ✓ or after ____ generation of raw data.

Footnotes:

NR - not required by contract at this time

Form I:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP), A (Flame AA), or F (Furnace AA)

U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

S - Indicates value determined by Method of Standard Addition.

R - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

being filmed
SITE/SITE ASSESSMENT PASSOUT

Form I A

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD826

Date 8 19 86

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts. CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3473 QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or (mg/kg) dry weight (Circle One)

1.	Aluminum	22,600	P	13.	Magnesium	7650	P
2.	Antimony	32U	P	14.	Manganese	46U	P
3.	Arsenic	5.7U	F	15.	Mercury	0.1U	Cold.V.
4.	Barium	163	P	16.	Nickel	36	P
5.	Beryllium	1.4U	P	17.	Potassium	5950	A
6.	Cadmium	2.6U	P	18.	Selenium	2.6U	F
7.	Calcium	15400	P	19.	Silver	2.4U	P
8.	Chromium	22	P	20.	Sodium	279U	P
9.	Cobalt	13U	P	21.	Thallium	1.7U	F
10.	Copper	13.5U	P	22.	Tin	19U	P
11.	Iron	20,800	P	23.	Vanadium	147	P
12.	Lead	26.6	F	24.	Zinc	77	P

Cyanide NR Auto An Percent Solids (%) 88.60

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

Form I B

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MH1571

Date 8 19 86

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72 3474

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or (mg/kg) dry weight (Circle One)

1.	Aluminum	8080	P	13.	Magnesium	7210	P
2.	Antimony	40U	P	14.	Manganese	293	P
3.	Arsenic	7.2U	F	15.	Mercury	0.14U	Cold.V.
4.	Barium	[130]	P	16.	Nickel	19U	P
5.	Beryllium	[3]	P	17.	Potassium	3623U	A
6.	Cadmium	3.3U	P	18.	Selenium	3.6U	F
7.	Calcium	51 800	P	19.	Silver	3.1U	P
8.	Chromium	20	P	20.	Sodium	3540U	P
9.	Cobalt	16U	P	21.	Thallium	2.2U	F
10.	Copper	17U	P	22.	Tin	22U	P
11.	Iron	10 600	P	23.	Vanadium	14U	P
12.	Lead	11.1	F	24.	Zinc	32	P

Cyanide NR Auto An

Percent Solids (%) 69.76

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager EB

Form I C

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MW1572

Date 8 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3475

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7480	P	13.	Magnesium	6460	P
2.	Antimony	43U	P	14.	Manganese	204	P
3.	Arsenic	7.5U	F	15.	Mercury	0.15U	Cold.V.
4.	Barium	[131]	P	16.	Nickel	20U	P
5.	Beryllium	1.8U	P	17.	Potassium	3730U	A
6.	Cadmium	3.4U	P	18.	Selenium	3.4U	F
7.	Calcium	19800	P	19.	Silver	[5]	P
8.	Chromium	24	P	20.	Sodium	4520	P
9.	Cobalt	17U	P	21.	Thallium	2.2U	F
10.	Copper	18U	P	22.	Tin	22U	P
11.	Iron	10800	P	23.	Vanadium	14U	P
12.	Lead	41.7	F	24.	Zinc	24	P

Cyanide NR Auto An

Percent Solids (%) 67.28

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

quality of the document being filmed
SITE/SITE ASSESSMENT SAS006

Form I D

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD873

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3476

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P

Cyanide Auto An

Percent Solids (%) NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/86, do not analyze water samples. Samples not analyzed because they were not filtered. New samples submitted for CLP analysis. JK

Lab Manager

Form 1 E

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD575

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3477

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P
Cyanide		Auto An	Percent Solids (%)		NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/86, do not analyze water samples

Lab Manager

Form I F

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD876

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3478

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P

Cyanide Auto An

Percent Solids (%) NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/1/86, do not analyze water samples

Lab Manager

being filmed

Form 1G

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MW1)877

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72 3479

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P
Cyanide		Auto An	Percent Solids (%)		NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/92, do not analyze water samples.

Lab Manager

Form I H

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHD878

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3480

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P

Cyanide Auto An

Percent Solids (%) NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/96, do not analyze water samples

Lab Manager

Form I I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD579

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3481

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P
Cyanide		Auto An	Percent Solids (%)		NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/86, do not analyze water samples

Lab Manager

being filmed
OILY OIL ASSESSMENT PASCOO

Form I J

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MW1580

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3482

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P
Cyanide		Auto An	Percent Solids (%)		NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: per SMO on 8/7/86, do not analyze water samples.

Lab Manager

Form I K

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD581

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72 3483

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P

Cyanide Auto An · Percent Solids (%) NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/86, do not analyze water samples.

Lab Manager

Form I L

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MH1882

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 70-3484

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

(ug/L) or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P
Cyanide		Auto An	Percent Solids (%)		NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/87, do not analyze water samples.

Lab Manager

Form I M

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MH1583

Date 8 19 86

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3485

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or (mg/kg) dry weight (Circle One)

1.	Aluminum	4690	P	13.	Magnesium	9940	P
2.	Antimony	5U	P	14.	Manganese	235	P
3.	Arsenic	6.7U	F	15.	Mercury	0.18U	Cold.V.
4.	Barium	[79]	P	16.	Nickel	25U	P
5.	Beryllium	2.3U	P	17.	Potassium	4630U	A
6.	Cadmium	4.2U	P	18.	Selenium	4.6U	F
7.	Calcium	37800	P	19.	Silver	3.9U	P
8.	Chromium	15	P	20.	Sodium	4530U	P
9.	Cobalt	2U	P	21.	Thallium	2.8U	F
10.	Copper	22U	P	22.	Tin	62	P
11.	Iron	8370	P	23.	Vanadium	17U	P
12.	Lead	27.7	F	24.	Zinc	39	P

Cyanide NR Auto An

Percent Solids (%) 54.48

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

Form 1 N

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD886

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72 3486

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P
Cyanide		Auto An	Percent Solids (%)		NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Per SMO on 8/7/90, do not analyze water samples.

Lab Manager

being filmed

Form I 0

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD588

Date

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72 3487

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	P	13.	Magnesium	P
2.	Antimony	P	14.	Manganese	P
3.	Arsenic	F	15.	Mercury	Cold.V.
4.	Barium	P	16.	Nickel	P
5.	Beryllium	P	17.	Potassium	A
6.	Cadmium	P	18.	Selenium	F
7.	Calcium	P	19.	Silver	P
8.	Chromium	P	20.	Sodium	P
9.	Cobalt	P	21.	Thallium	F
10.	Copper	P	22.	Tin	P
11.	Iron	P	23.	Vanadium	P
12.	Lead	F	24.	Zinc	P

Cyanide Auto An

Percent Solids (%) NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: per SMO on 9/7/86, do not analyze water samples

Lab Manager

Form I P

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No. MHD891

Date 8 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME JTC Environmental Cnslts.

CASE NO. 6243

SOW NO. 784

LAB SAMPLE ID. NO. 72-3488

QC REPORT NO. 278

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	11700	P	13.	Magnesium	8450	P
2.	Antimony	28u	P	14.	Manganese	343	P
3.	Arsenic	5.1u	F	15.	Mercury	0.10u	Cold.V.
4.	Barium	157	P	16.	Nickel	27	P
5.	Beryllium	[2]	P	17.	Potassium	3060	A
6.	Cadmium	2.3u	P	18.	Selenium	2.5u	F
7.	Calcium	60 ~~14-600~~ 27500	P	19.	Silver	2.3u	P
8.	Chromium	~~9u~~ 22	P	20.	Sodium	2490u	P
9.	Cobalt	12u	P	21.	Thallium	1.5u	F
10.	Copper	12u	P	22.	Tin	15u	P
11.	Iron	13900	P	23.	Vanadium	[23]	P
12.	Lead	94	F	24.	Zinc	42	P

Cyanide NR Auto An

Percent Solids (%) 99.00

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. 6320 Project No. 8609-01

Site Empire State Oil Refinery

Contractor Laboratory Associated Laboratories

Data Reviewer L. Roberts Date of Review 9/18/86

Sample Matrix Water — Inorganic

Sample No. MH0620 MH0728

MH0752 774

775

776

777

( ) Data are acceptable for use

( ) Data are acceptable for use with qualification noted above

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ✓ Yes ____ Following items require action ____

Action required by Project Officer (PO)?

No ✓ Yes ____

Following are our findings:

The cadmium and iron results are flagged with an R because of matrix spike recoveries of >125%. Serial dilution results indicate that an interference may exist for iron. An E flag has been applied to the iron results.

FORM A

Inorganic Data Completeness Checklist

✓ Inorganic analysis data sheets

✓ Initial calibration and calibration verification results

✓ Continuing calibration verification

✓ Instrument Detection limits

✓ Duplicate results

✓ Spike results

✓ ICP interference check sample

✓ Blank results

✓ Serial Dilution Results

✓ Raw data for calibration standards

✓ Raw data for blanks

✓ Raw data for samples

✓ Raw data for duplicates

✓ Raw data for spikes

✓ Raw data for furnace AA

NA Percent solids calculation - soils only

✓ Traffic Reports

FORM B

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

YES ✓ NO _____

Comments:

Continuing calibration data were reviewed and these data met all contract requirements.

YES ✓ NO _____

Comments:

A blank was run with every twenty samples or less per case.

YES ✓ NO _____

Comments:

How many elements were detected above the required detection limit? Ø

How many elements were detected at greater than one half the amount detected in any sample? _____

Comments:

None in blank at >2× IDL

FORM D

All Laboratory Control Samples met specified contract limits.

YES ✓ NO _____

Comments:

Serial Dilution requirements were met.

YES _____ NO ✓

Fe 54% difference - Results flagged within 5

The Furnace Atomic Absorption Analysis Scheme was followed correctly.

YES _____ NO _____

All holding times were met.

YES ✓ NO _____

Comments:

being filmed

#6320-006

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 9/15/86

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name ASSOCIATED LABORATORIES Case No. 6320
SOW No. 785 Q.C. Report No. 3

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MHD 752	21521-1		
MHC 670	21521-2		
MHD 775	21521-3		
MHD 776	21522-1		
MHD 777	21522-2		
MHD 778	21522-3		
MHD 779	21522-4		

Comments: Sample MHC-670 was taken for duplicates and spikes because there were 3 bottles submitted giving us plenty of sample to cover QAPP.

ICP interelement and background corrections applied? Yes X No ___.
If yes, corrections applied before X or after ___ generation of raw data.

Footnotes:

NR - Not required by contract at this time
Form I:
Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP), A (for Flame AA) or F (for Furnace AA).
U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).
E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.
S - Indicates value determined by Method of Standard Addition.
N - Indicates spike sample recovery is not within control limits.
* - Indicates duplicate analysis is not within control limits.
+ - Indicates the correlation coefficient for method of standard addition is less than 0.995
M - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA and F for Furnace.

#6320-006

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHC 670

Date 9/15/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME Associated Laboratories
SOW NO. 785
LAB SAMPLE ID. NO. 21521-2

CASE NO. 6320
Lab Receipt Date 8/12/86
QC REPORT NO. 3

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	[154]	P	13.	Magnesium	142,000	P
2.	Antimony	606	P	14.	Manganese	284	P
3.	Arsenic	[1.5U]	F	15.	Mercury	0.9	*
4.	Barium	[43]	P	16.	Nickel	[13U]	P
5.	Beryllium	[4.2U]	P	17.	Potassium	11,200	P
6.	Cadmium	[2.4U]	P (N)	18.	Selenium	[2.4U]	F
7.	Calcium	371,000	P	19.	Silver	17	P
8.	Chromium	[4.8U]	P	20.	Sodium	435,000	P
9.	Cobalt	[5.4U]	P	21.	Thallium	[0.8U]	F
10.	Copper	25	P	22.	Vanadium	[14]	P
11.	Iron	[11]	P (N,E)	23.	Zinc	37	P
12.	Lead	[0.9U]	F				

Cyanide ____ Precent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: * Coleman MAS-50

Lab Manager [signature]

#6320-006

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHD 775

Date 9/15/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME Associated Laboratories
SOW NO. 785
LAB SAMPLE ID. NO. 21521-3

CASE NO. 6320
Lab Receipt Date 8/12/86
QC REPORT NO. 3

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/l or mg/kg dry weight (Circle One)

1.	Aluminum	[136]	P	13.	Magnesium	112,000	P
2.	Antimony	477		14.	Manganese	374	P
3.	Arsenic	[5.8]	F	15.	Mercury	1.2	*
4.	Barium	287	P	16.	Nickel	[13U]	P
5.	Beryllium	[4.2U]	P	17.	Potassium	6,400	P
6.	Cadmium	[2.4U]	P (N)	18.	Selenium	[2.4U]	F
7.	Calcium	91,900	P	19.	Silver	[5.5]	P
8.	Chromium	[4.8U]	P	20.	Sodium	625,000	P
9.	Cobalt	[5.4U]	P	21.	Thallium	[0.8U]	F
10.	Copper	[9.0U]	P	22.	Vanadium	[11]	P
11.	Iron	3,370	P (N,E)	23.	Zinc	[2.4U]	P
12.	Lead	[0.9U]	F				

Cyanide ____ Percent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: * Coleman MAS-50

Lab Manager [signature]

#6320-006

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHD 776

Date 9/15/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME Associated Laboratories
SOW NO. 785
LAB SAMPLE ID. NO. 21522-1

CASE NO. 6320
Lab Receipt Date 8/12/86
QC REPORT NO. 3

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/l or mg/kg dry weight (Circle One)

1.	Aluminum	[136]	P	13.	Magnesium	112,000	P
2.	Antimony	487	P	14.	Manganese	376	P
3.	Arsenic	[3.6]	F	15.	Mercury	1.5	*
4.	Barium	287	P	16.	Nickel	[13U]	P
5.	Beryllium	[4.2U]	P	17.	Potassium	6,440	P
6.	Cadmium	[2.4U]	P (W)	18.	Selenium	[2.4U]	F
7.	Calcium	91,900	P	19.	Silver	[5.5]	P
8.	Chromium	[4.8U]	P	20.	Sodium	625,000	P
9.	Cobalt	[5.4U]	P	21.	Thallium	[0.8U]	F
10.	Copper	[9.0U]	P	22.	Vanadium	[11]	P
11.	Iron	3,440	P (N,E)	23.	Zinc	[16]	P
12.	Lead	[1.5]	F				

Cyanide ____ Percent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: * Coleman MAS-50

Lab Manager Edward Belm

being filmed
OIL/OIL MOCROFILM
PASSOO

#6320-006

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHD 777

Date 9/15/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME Associated Laboratories
SOW NO. 785
LAB SAMPLE ID. NO. 21522-2

CASE NO. 6320
Lab Receipt Date 8/12/86
QC REPORT NO. 3

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/l or mg/kg dry weight (Circle One)

1.	Aluminum	[153]	P	13.	Magnesium	115,000	P
2.	Antimony	482	P	14.	Manganese	2,840	P
3.	Arsenic	[1.5u]	F	15.	Mercury	1.0	*
4.	Barium	[28]	P	16.	Nickel	[13u]	P
5.	Beryllium	[4.2u]	P	17.	Potassium	15,300	P
6.	Cadmium	[2.4u]	P (N)	18.	Selenium	[2.4u]	F
7.	Calcium	283,000	P	19.	Silver	14	P
8.	Chromium	[4.8u]	P	20.	Sodium	494,000	P
9.	Cobalt	12	P	21.	Thallium	[0.8u]	F
10.	Copper	[9.0u]	P	22.	Vanadium	[13]	P
11.	Iron	2,530	P (N,E)	23.	Zinc	[2.4u]	P
12.	Lead	[0.9u]	F				

Cyanide ____ Percent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: * Coleman MA1-50

Lab Manager [signature]

#6320-006

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHD 77B

Date 9/15/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME Associated Laboratories
SOW NO. 785
LAB SAMPLE ID. NO. 21522-3

CASE NO. 6320
Lab Receipt Date 8/12/86
QC REPORT NO. 3

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/l or mg/kg dry weight (Circle One)

1.	Aluminum	[109]	P	13.	Magnesium	68,800	P
2.	Antimony	307	P	14.	Manganese	231	P
3.	Arsenic	[4.9]	F	15.	Mercury	1.0	*
4.	Barium	[59]	P	16.	Nickel	[13U]	P
5.	Beryllium	[4.2U]	P	17.	Potassium	9,770	P
6.	Cadmium	[2.4U]	P (N)	18.	Selenium	[2.4U]	F
7.	Calcium	99,300	P	19.	Silver	[5.2]	P
8.	Chromium	[4.8U]	P	20.	Sodium	535,000	P
9.	Cobalt	[5.4U]	P	21.	Thallium	[0.8U]	F
10.	Copper	[16]	P	22.	Vanadium	[9.9]	P
11.	Iron	313	P (N,E)	23.	Zinc	[2.4U]	P
12.	Lead	[0.9U]	F				

Cyanide ____ Precent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: * Coleman MAS-50

Lab Manager Edward [illegible]

#6320-006

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHD 779

Date 9/15/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME Associated Laboratories
SOW NO. 785
LAB SAMPLE ID. NO. 21522-4

CASE NO. 6320
Lab Receipt Date 8/12/86
QC REPORT NO. 3

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	[25]	P	13.	Magnesium	[269]	P
2.	Antimony	21	P	14.	Manganese	[6.9]	P
3.	Arsenic	[1.5U]		15.	Mercury	[0.2U]	*
4.	Barium	[1.5U]	P	16.	Nickel	[13U]	P
5.	Beryllium	[4.2U]	P	17.	Potassium	[252U]	P
6.	Cadmium	[2.4U]	P (N)	18.	Selenium	[2.4U]	F
7.	Calcium	[581]	P	19.	Silver	[5.1U]	P
8.	Chromium	[4.8U]	P	20.	Sodium	[3,140]	P
9.	Cobalt	[5.4U]	P	21.	Thallium	[0.8U]	F
10.	Copper	[9.9]	P	22.	Vanadium	[2.7U]	P
11.	Iron	137	P (N,E)	23.	Zinc	62	P
12.	Lead	[0.9U]	F				

Cyanide ____ Percent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: * Coleman MAS-50

Lab Manager [signature]

FORM D

All Laboratory Control Samples met specified contract limits.

YES ✓ NO _____

Comments:

No true value or control limits listed for solid LCS.
Control limits confirmed with EMSL-LV.

Serial Dilution requirements were met.

YES ✓ NO _____

The Furnace Atomic Absorption Analysis Scheme was followed correctly.

YES ✓ NO _____

All holding times were met.

YES ✓ NO _____

Comments:

quality of the document being filmed
SITE/SITE ASSESSMENT SASOCS

TDD Filecopy

9/15/86

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. 6243 Project No. 08-8609-01

Site Empire Refinery

Contractor Laboratory Aquatec

Data Reviewer L. DiGallonardo Date of Review 9/11/86

Sample Matrix 5 soil, 11 water

Sample No. HC 749(S) HC787(W) HC792(W) HC797(S)

HC750(S) HC788(W) HC793(W) _____

HC784(S) HC789(W) HC794(W) _____

HC785(W) HC790(W) HC795(W) _____

HC786(S) HC791(W) HC796(W) _____

( ) Data are acceptable for use

(✓) Data are acceptable for use with qualification noted ~~above~~ below

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ____ Yes ✓ Following items require action Sample HC795 held for too long before BNA extraction

Action required by Project Officer (PO)?

No ✓ Yes ____

Following are our findings:

The data package was complete. Eleven water samples and five soil samples were received for analysis on July 22. All samples were analyzed according to low level protocol except for samples HC749 and HC786 which were extracted and analyzed for semivolatile organics according to the medium level protocol. Pesticides were not analyzed. Airspace was noted in one out of the two VOA vials for samples HC785, HC788, HC790, HC791, HC792, HC794 and HC796. Sample HC789 had airspace in both VOA vials.

All samples were analyzed within contract holding times except for sample HC795 which was held too long before BNA extraction. Positive results for that sample were qualified as estimated (J) and negative results as UJ. GC/MS tuning and performance results and MS/MSD results met contract requirements.

Several compounds identified were detected below the instrument detection limits so positive results for those compounds were flagged as estimated J.

Following are our findings:

The laboratory blanks contained methylene chloride, acetone, 2-butanone, xylene and several unknowns.

All system performance check compounds and continuing calibration check compounds met initial and continuing calibration requirements. All HSL compounds had response factors greater than 0.05. A few HSL compounds had %RSD's or %D's greater than the required limits, so positive results were flagged as J and negative results as UJ.

Surrogate recoveries were reviewed. Water samples HC792 and HC793 had two acid fraction surrogate recoveries below 10 percent. Both samples were reextracted and reanalyzed according to contract protocol. Sample HC793 RE had two acid fraction surrogate recoveries of zero, so positive results for that fraction were flagged J and negative results were flagged as unusable (R). Soil sample HC786 had one VOA fraction surrogate outside of QC limits. Upon reanalysis the surrogate recovery was still low, so positive results were qualified J and negative results UJ.

Following are our findings:

Chromatograms were inspected and found to be of good quality. Samples HC749, HC750, HC784, HC786, HC790, HC791, HC792, and HC794 had hydrocarbon "humps" (a large number of unresolved hydrocarbons) present in the VOA fraction and/or the BNA fraction chromatograms. The mass spectra were of good matching quality. The following HSL compounds were identified: methylene chloride, acetone, chloroform, 1,2 Dichloroethane, 2-butanone, toluene 1,2 dichloropropane, xylenes, diethylphthalate, phenanthrene, di-n-butylphthalate, fluoranthene, pyrene, bis (2-ethylhexyl) phthalate, chrysene, benzo(b) fluoranthene, benzo(k) fluoranthene, benzo(a) pyrene, indeno(1,2,3-cd) Pyrene and Dibenz(a,h) anthracene.

DATA QUALIFIER DEFINITIONS
Region 8

For the purposes of this data review document the following code letters and associated definitions are provided.

U - The material was analyzed for, but was not detected. The associated numerical value is the estimated sample quantitation limit.

J - The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

UB - Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at <5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

UJ - Detection limit is estimated because quality control criteria were not met.

JB - The value is an estimated amount detected below required limits and also detected in the blank.

B - Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (>10 X for methylene chloride, acetone, toluene, and phthalates).

R - Quality Control indicates that data is <u>not</u> usable (compound may or may not be present). Resampling and reanalysis is necessary for verification.

Z - No analytical result.

N - Presumptive evidence of presence of material (tentative identification).

DFTPP and BFP Performance Results

The DFTPP performance results were all included and found to be within the specified criteria.

Yes ✓ No _____

Comments:

- everything fine -

Inst. 835 7/31/86 13:08
7/31/86 18:55
8/4/86 8:51
8/4/86 15:57
8/5/86 14:21
8/6/86 14:19
8/6/86 21:10

Inst. 840 7/31/86 12:17
7/31/86 12:44

The BFB performance results were all included and found to be within the spedified criteria.

Yes ✓ No _____

Comments:

Inst. 040 7/22/86 9:47
7/22/86 14:47
7/23/86 9:06
7/24/86 7:53
7/24/86 20:20
7/31/86 15:50
7/31/86 22:33

The (DFTPP/BFB) performance result(s) was/were reviewed and the following abundance were found to fall outside the specified criteria:

Date	Compound	m/z	Required Abundance	Actual Abundance
N/A				

All samples were extracted and analyzed within contract holding times

Yes _____ No ✓

Comments:

Water sample HC795 was held for seven days before BNA extraction

Flags: (+)BNA → J
(-)BNA → UJ HC795

Surrogate recoveries were reviewed. The recoveries were all within the contract limits.

Yes ✓ No. _____

Comments:

Water: % Recovery VOA 0/51 outside of QC Limits
BNA 8/126 " " " " → Sample
Rest. N/A

HC790 2,4,6 Tribromophenol (high
HC791 2,4,6 Tribromophenol (high
HC792 Phenol-D5 (below 10)
2-Fluorophenol (below 10
HC793 Phenol-D5 (0)
2-Fluorophenol (0)
HC792RE ✓ OK
HC793RE Phenol-D5 (0)
2-Fluorophenol (0)

Flag: HC793/HC793RE (+) Acid → J
(−) Acid → R

Low soil: % Recovery VOA 2/36 outside of QC Limits → HC786 Bromofluorobenzene (low
BNA 0/36 " " " " HC786R Bromofluorobenzene (low
Rest. N/A

Flag: HC786/HC786R (+) VOA → J
(−) VOA → UJ

medium soil % Recovery VOA N/A
BNA 0/30 outside of QC Limits
Rest. N/A

The matrix spike recovery data were reviewed. The Matrix spikes were performed and all data met contract requirements.

Yes ✓ No _____

Comments:

Water: RPD VOA: 0/5 outside QC limits
B/N: 0/6 " " "
Acid: 0/5 " " "
Rest: N/A

Recovery VOA: 0/10 outside QC Limits
B/N: 0/12 " " "
Acid: 0/10 " " "
Rest: N/A

Low soil: RPD VOA: 0/5 outside QC Limits
B/N: 0/6 " " "
Acid: 0/5 " " "
Rest: N/A

Recovery VOA: 0/10 outside QC limits
B/N: 0/12 " " "
Acid: 0/10 " " "
Rest: N/A

med. soil: RPD VOA: N/A
B/N: 0/6 outside QC Limits
Acid: 0/5 " " "
Rest: N/A

VOA: N/A
B/N: 0/12 outside QC Limits
Acid: 0/10 " " "
Rest: N/A

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

Yes ✓ No ____

Comments:

① VOA 7/22/86 $\overline{RF}$ < 0.05 NONE → HC749, HC785, HC750, HC787, HC784, HC788
RF_{50} < 0.05 NONE
%RSD > 30% NONE

7/31/86 $\overline{RF}$ < 0.05 NONE → [illegible]
RF_{50} < 0.05 NONE
%RSD > 30% Vinyl Acetate

② BNA 7/31/86 (835) $\overline{RF}$ < 0.05 NONE → HC792, HC795, HC793, HC791, HC790, HC794
RF_{50} < 0.05 NONE
% RSD > 30% NONE

8/4/86 (835) $\overline{RF}$ < 0.05 NONE → HC796, HC786, HC749
RF_{50} < 0.05 NONE
%RSD > 30% NONE

8/6/86 (835) $\overline{RF}$ < 0.05 NONE → HC792RE, HC793RE
RF_{50} < 0.05 NONE
%RSD > 30% Benzo(k) Fluoranthene

7/30/86 (840) $\overline{RF}$ < 0.05 NONE → HC785, HC787, HC788
RF_{50} < 0.05 NONE
%RSD > 30% 4-Nitroaniline

7/31/86 (840) $\overline{RF}$ < 0.05 NONE → HC789
RF_{50} < 0.05 NONE
%RSD > 30% 4-Chloroaniline
3,3'-Dichlorobenzidine
Benzo(k) Fluoranthene

* Transcription error: VOA fraction summary sheets labeled GC/ms #269 (7/22, 7/23, 7/24) GC/ms #040 (7/24, 7/31) Raw data labeled GC/ms #040 for all run

* RF_{50} used to quantitate data
* All SPCC's & CCC's met requirements.

Flags: $\overline{RF}$ < 0.05 (+) → J
(−) → R
%RSD > 30% (+) → J
(−) → UJ

Continuing calibration data were reviewed and this data met all contract requirements.

Yes ✓ No ____

Comments:

① VOA 7/23/86 10:04 RF_{50} < 0.05 NONE → HC777, HC779, HC782
%D > 25% NONE

7/24/86 9:26 RF_{50} < 0.05 NONE → HC795, HC796
%D > 25% 2-Butanone

7/24/86 20:37 RF_{50} < 0.05 NONE → HC793, HC720, HC791, HC794, HC786
%D > 25% Methylene Chloride
Acetone

② BNA 8/5/86 (835) 14:46 RF_{50} < 0.05 NONE → HC750, HC777, HC784
%D > 25% 4-Nitrophenol (see)
4-Nitroaniline

* All SPCC's & CCC's met requirements

Flags: RF_{50} < 0.05 (+) → J
(−) → R
%D > 25% (+) → J
(−) → UJ

PESTICIDES

The laboratory met the pesticide linearity check criteria.
Yes _____ No _____

Comments:

N/A

The % breakdown of 4,4DDT and of Endrin was less than 20%.
Yes _____ No _____

Comments:

N/A

The dibutychlorendate retention time shift was within the specified limits.
Yes _____ No _____

Comments:

N/A

The pesticide standard compounds showed a % D of the calibration factor of no more than 15% for the quantitation runs and 20% for the confirmation runs.
Yes _____ No _____

Comments:

N/A

being filmed

(9)

BLANK ANALYSYS RESULTS (1)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
OA →	Low water 340	7/22/86	Methylene Chloride	2ug/l	HC785, HC787, HC788
			Acetone	3ug/l	
			Unknown	14ug/l	
			Unknown	1ug/l	
JOA →	Low soil 340	7/22/86	Methylene Chloride	4ug/kg	HC749, HC750, HC784,
			Acetone	6ug/kg	
			Unknown	29ug/kg	
			Unknown	2ug/kg	
L A →	Low water 340	7/23/86	Methylene Chloride	4ug/l	HC789, HC792
			*Acetone	17ug/l	
			Unknown	1ug/l	
LIOA →	Low soil 340	7/23/86	*Methylene Chloride	9ug/kg	HC797
			*Acetone	7ug/kg	
			Unknown	2ug/kg	
UOA →	Low water 340	7/24/86	Methylene Chloride	5ug/l	HC795, HC796
			*Acetone	20ug/l	
			2-Butanone	2ug/l	

Remarks: See page 11.

being filmed
SITE/SITE ASSESSMENT
PASSOO

BLANK ANALYSYS RESULTS (2)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
VOA →	Low 840 water	7/31/86	Methylene Chloride	4ug/l	HC 793, HC 790, HC 791, HC 79
			*Acetone	11ug/l	
			2-Butanone	3ug/l	
BNA →	Low 840 water	7/30/86	Unlabeled perylene	17ug/l	HC 785, HC 787, HC 788
BNA →	Low 840 water	7/31/86	Unlabeled perylene	20ug/l	HC 789
BNA →	Low 835 water	7/31/86	Unlabeled perylene	17ug/l	HC 791, HC 792, HC 793, HC 790, HC 794, HC 795
VOA →	Low 840 soil	7/31/86	*Methylene Chloride	8ug/kg	HC 786
			*Acetone	23ug/kg	
			2-Butanone	5ug/kg	
VOA →	Low 840 soil	8/1/86	*Methylene Chloride	19ug/kg	HC 786R
			*Acetone	25ug/kg	
			2-Butanone	2ug/kg	
BNA →	Low 835 water	8/4/86	unlabeled perylene	19ug/l	

Remarks: See page 11.

BLANK ANALYSYS RESULTS 3

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
BNA→	low 835 soil	8/5/86	Pyrene	34ug/kg	HC 797, HC 784, HC 750
			Unknown	2000ug/kg	
			Unknown alkane	370 ug/kg	
			Unknown alkane	460ug/kg	
			Unknown alkane	470ug/kg	
			Unknown	660ug/kg	
			unlabeled perylene	750ug/kg	
LVOA→	low 835 water	8/4/86	unlabeled perylene	12ug/l	HC 796
LVOA→	medium 835 soil	8/4/86	unlabeled perylene	19000ug/kg	HC 749, HC 786
BNA→	low 835 water	8/6/86	Chlorocyclohexanol isomer	24ug/l	HC 792 AE, HC 793 AE
			unlabled perylene	25ug/l	
			Unknown	1ug/l	

Remarks: No serious contamination.

Flags: HSL O → JB → IDL → UB (Amount in sample 5 / 10x Amount in blank) → B (Amount in sample greater than 5 / 10 x Amount in blank.)

TIC Detected → UB (Amount in sample 5x Amount in blank) → B (Amount in sample greater than 5x Amount in blank.)

HSL: 5x for all HSL compounds except those listed below

10x for common contaminants: methylene Chloride, Acetone, Toluene, Phthalates

COMPOUNDS IDENTIFIED

Sample No. HC 749 (Soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
10A →	Methylene Chloride	5	UB	L.75 = amount in blank,
	Acetone	.4	JB	0.2 = " " " below IRL ★
	Toluene	17		
0VA →	none detected	—	—	

Tentatively Identified Compounds Detected: See page 34.

UOA →	Unknown	22	UB	0.8 = amount in blank, Estimated Conc.
E OA →	Unlabeled persylene	21000	UB	1.1 = " " " " "

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Small hydrocarbon hump in BNA fraction chromatogram.

★ = below contract required detection limit (CRDL).

(13)

COMPOUNDS IDENTIFIED

Sample No. HC 750 (Soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	4	JB	1x amount in blank, below IQL ★
	Acetone	6	UB	1x " " " ★
VA →	None detected	—	—	

Tentatively Identified Compounds Detected: See page 37.

VOA →	Unknown	29	UB	1x amount in blank, Estimated Concentration
VA →	3 unknowns			
	2 unknown alkanes			
	2 unknown hydrocarbons			
	unlabeled perylene			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Small hydrocarbon "hump" in BNA fraction chromatogram

★=below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC 784 (Soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
VOA→	Methylene Chloride	25	UB	4.5 = amount in blank
	Acetone	71	UB	8 = " " " "
	2-Butanone	23		
	Toluene	400		
BNA→	Phenanthrene	82		*
	Di-n-Butyl phthalate	58		*
	Fluoranthene	150		*
	Pyrene	160	UB	11.7 = amount in blank *
	Bis(2-Ethylhexyl)Phthalate	150		*

Tentatively Identified Compounds Detected: See page 40.

VOA→	Unknown	78	UB	2.7 = amount in blank, estimated concentratio
VOA→	Hexadecanoic Acid	490	J	estimated concentration
	4 unknowns			
	3 unknown alkanes			
	3 unknown hydrocarbons			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Medium size hydrocarbon "hump" in BNA fraction chromatogram.

*=below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC785 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VA→	Methylene Chloride	2	JB	1= Amount in blank, below 3 pl. ★
	Acetone	5	JB	1.7 " " " " " ★
VA→	none detected	—	—	

Tentatively Identified Compounds Detected: See page 43.

UOA→	Unknown	6	VB	6 = Amount in blank, estimated concentration
UVA→	Unlabeled polyene	19	UB	1 = " " " " "

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks:

★=below CRDL.

being filmed

(16)

COMPOUNDS IDENTIFIED

Sample No. HC 7Ble (Soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	29	UB	2x amount in blank, low surrogate recovery, %D>25
	Acetone	57	UB	1x " " " " " " " "
	Chloroform	29	J	low surrogate recovery
	2-Butanone	47	B	5x amount in blank, low surrogate recovery
	1,2-Dichloropropane	5	J	low surrogate recovery
BNA →	None detected			

Tentatively Identified Compounds Detected: See page 46.

VOA →	1,1,3-trimethylcyclohexane	980	J	estimated concentration
	8 unknown hydrocarbons			
	1 unknown			
BNA →	12 unknown hydrocarbons			
	8 unknowns			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.

____ The spectra were examined and found to be of poor matching quality due to: 2-Butanone - poor mass spec. match.

Remarks: VOA fraction chromatogram has several unresolved peaks. BNA fraction has a hydrocarbon "hump" in chromatogram.

COMPOUNDS IDENTIFIED

Sample No. HC7B6 R (Soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
C # →	Methylene Chloride	130	UB	2x amount in blank, low surrogate recovery
	Acetone	110	UB	1 " " " " " "
	2-Butanone	22	UB	0.7x " " " " " "
BnA →	not analyzed for	—	—	

Tentatively Identified Compounds Detected: See page 48.

Unk →	1,1,3-trimethylcyclohexane	5,500	J	estimated concentration
	4 unknown hydrocarbons			
	5 unknowns			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: VOA fraction Chromatogram has several unresolved peaks

COMPOUNDS IDENTIFIED

Sample No. HC 787 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
( )A→	Methylene Chloride	2	JB	In amount in blank, below 2 ug. *
	Acetone	2	JB	0.72 " " " " " *
(UA→	none detected	—	—	

Tentatively Identified Compounds Detected: See page 51

UOA→	none detected	—		
B 1A→	unknown hydrocarbon	28	J	estimated concentration
	Prometon	26	J	" "
	Unknown	12	J	" "

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks:

*=below CRDL.

COMPOUNDS IDENTIFIED

Sample No. 4C 788 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
DA→	Methylene Chloride	2	JB	1 = amount in blank, below IDL ☆
	Acetone	1	JB	0.3 = " " " " " ☆
WA→	none detected			

Tentatively Identified Compounds Detected: See page 54.

DOA→	none detected			
WA→	none detected			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks:

☆ = below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC789 (Water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
OA→	Methylene Chloride	2	JB	0.5x amount in blank, below IDL *
	Acetone	9	UB	0.5x " " " *
	1,2-Dichloroethane	3		*
NA→	none detected	—	—	

Tentatively Identified Compounds Detected: See page 57.

UOA→	Unknown	5	UB	5x amount in blank, estimated concentration
NA→	Unknown	12	J	estimated concentration

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks:

* = below CRDL.

(21)

COMPOUNDS IDENTIFIED

Sample No. HC 790 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (µg/l)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	1500	UB	4x amount in blank 9/10/85
	Acetone	9700	UB	8x " " " " "
	2-Butanone	300	UB	1x " " "
BNA →	none detected	—	—	

Tentatively Identified Compounds Detected: See page 60.

VOA →	none detected	—		
BNA →	15 unknown hydrocarbons			
	5 unknowns			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: large hydrocarbon "hump" present in BNA fraction chromatogram

quality of the document being filmed
SITE/SITE ASSESSMENT
SAS006

(22)

COMPOUNDS IDENTIFIED

Sample No. HC 791 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	8	UB	2x amount in blank, %RD > 25%
	Acetone	8	UB	0.7x " " " " " ★
	2-Butanone	3	UB	1x " " " ★
	Total xylenes	2		★
BNA →	Chrysene	3	J	below IDL ★
	Dibenz(a,h)Anthracene	3	J	" " ★
	Benzo(b)Fluoranthene	3	J	" " ★
	Benzo(k)Fluoranthene	3	J	" " ★
	Benzo(a)Pyrene	3	J	" " ★
	Indeno(1,2,3-cd)Pyrene	3	J	" " ★

Tentatively Identified Compounds Detected: See page 63.

VOA →	1,1,3-Trimethylcyclohexane		J	estimated concentration
	3 unknown hydrocarbons			
	1 substituted naphthalene			
BNA →	16 unknown hydrocarbons			
	4 unknowns			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks: "Hump" in VOA fraction chromatogram.
Large hydrocarbon hump in BNA fraction chromatogram

★ = below CRDL.

Quality of the document being filmed
SITE/SITE ASSESSMENT
SAS006

23

COMPOUNDS IDENTIFIED

Sample No. HC 792 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
1 VA →	Methylene Chloride	2	JB	0.5 = Amount in blank, below IQL *
	Acetone	35	UB	2 " " " "
3 VA →	None detected	—	—	

Tentatively Identified Compounds Detected: See page 66.

VOA →	None detected	—	—	
3 VA →	Unlabeled perylene	19	UB	1x amount in blank, estimated concentration

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Small hump in VOA fraction chromatogram

* = below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC792 BE (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VOA →	not analyzed for			
BNA →	bis(2-ethylhexyl)Phthalate	4	J	below IDL. *

Tentatively Identified Compounds Detected: See page 69.

BNA →	Chlorocyclohexane Isomer	35	UB	1.5x amount in blank, estimated conc.
	unknown.	11	B	11x " " " " "

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks:

* = below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC 793 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VOA→	Methylene Chloride	80	UB	4x amount in blank, % D > 25%
	Acetone	490	UB	9x " " " " "
	2-Butanone	13	UB	0.8x " " "
SVOA→	Diethylphthalate	14		

Tentatively Identified Compounds Detected: See page 71.

VOA→	none detected			
SVOA→	unlabeled perylene	20	UB	1x amount in blank, estimated conc.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks:

COMPOUNDS IDENTIFIED

Sample No. HC 793-RE (Water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
OA →	not analyzed for.			
BNA →	Diethylphthalate	11e		
	bis(2-Ethylhexyl)Phthalate	2	J	below IDL *

Tentatively Identified Compounds Detected: See page 75.

BNA →	Chlorocyclohexanol isomer	31	UB	1.3x amount in blank, estimated conc.
	Unknown.	13	J	estimated concentration
	Unknown	10	B	1.3x amount in blank, estimated conc.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks:

* = below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC 794 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	69	UB	3.5x amount in blank, %D>25%
	Acetone	200	UB	4x " " " " "
	2-Butanone	15	UB	1x " " "
BNA →	None detected	—	—	

Tentatively Identified Compounds Detected: See page 78.

VOA →	None detected	—		
BNA →	Decahydro-2-methyl-naphthalene	940	J	estimated concentration
	14 unknown hydrocarbons			
	5 unknowns			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Large hydrocarbon hump in BNA fraction chromatogram.

(28)

COMPOUNDS IDENTIFIED

Sample No. HC 795 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	7	UB	1.4 x amount in blank
	Acetone	55	UB	2.8 x " " "
BNA →	none detected			

Tentatively Identified Compounds Detected: See page 81.

VOA →	none detected			
BNA →	unlabeled perylene	18	UB	1.8 x amount in blank, estimated conc.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks:

COMPOUNDS IDENTIFIED

Sample No. HC796 (water)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/l)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	4	JB	1 = amount in blank below CRQL ★
	Acetone	9	UB	as " " " ★
VA →	None detected			

Tentatively Identified Compounds Detected: See page 84.

VOA →	None detected			
VA →	unlabeled paraffins	17	UB	1 = amount in blank, estimated conc.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks:

★ = below CRDL.

COMPOUNDS IDENTIFIED

Sample No. HC 797 (Soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	100	UB	3x amount in blank
	Acetone	120	UB	3x " " "
	2-Butanone	27		
VOA	Xylene	200	B	1x amount in blank ☆

Tentatively Identified Compounds Detected: See page 87.

VOA →	none detected			
BNA →	5 unknown hydrocarbons			
	6 unknowns			
	3 unknown alkanes			
	unlabeled peaks			

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks:

☆ = below CRDL.

DATA COMPLETENESS CHECKLIST

✓ Included; no problems
* Included: problems noted in review
O Not Included

✓ Case Narrative

✓ Quality Control Summary Package
- ✓ Surrogate Recovery Summary (Form II)
- ✓ MS/MSD Summary (Form III)
- ✓ Reagent Blank Summary (Form IV)
- ✓ GC/MS Tuning and Mass Calibration (Form V)

✓ Sample Data Package
- ✓ Holding Times (SMO Sample Traffice Reports)
- ✓ Organic Analysis Data Sheets (Form I; all four pages for each sample, arranged in increasing SMO number order)
- ✓ Reconsrtructed Ion Chromatogram(s) (RIC)
- N/A GC/EC Chromatograms
- ✓ Quantitation Reports
- ✓ Mass Spectral Data
- ✓ EPA/NIH Mass Spectral Library Search for TIC's

✓ Standards Data Package
- ✓ Current List of Laboratory/Instrumental Detection Limits
- ✓ Initial Calibration Data (Form VI) for each instrument
- ✓ Continuing Calibration Data (Form VII) for each instrument
- N/A Pesticide Evaluation Standards Summary (Form VIII)
- N/A Pesticide/PCB Standards Summary (Form IX)
- N/A Pesticide/PCB Identification (Form X; if any positive results)
- ✓ VOA and BNA Standards Reconstruction Ion Chromatograms (RIC)
- ✓ VOA and BNA Standards Quantitation Reports
- ✓ Pesticide/PCB Standard Chromatograms and Data System Printouts

✓ Raw QC Data Package
- ✓ DFTPP and BFB mass spectra and mass listings
- ✓ Reagent Blank Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - N/A GC/EC Chromatograms and Data System Printouts

- ✓ Matrix Spike and Matrix Spike Duplicate Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - N/A GC/EC Chromatograms and Data System Printouts

Sample Number 132
HC749

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60829
Sample Matrix: Soil
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 22-JUL-86 18:26
Conc/Dil Factor: 1.9121 pH 7.55
Percent Moisture: (Not Decanted) 2.430

CAS Number		ug/l or (ug/Kg) (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	~~B~~ B
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	17	
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC749 (33)

60829

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low (Medium) (Circle One)

Date Extracted/Prepared: 30-JUL-86

Date Analyzed: 05-AUG-86 0:27

(Conc) Dil Factor: 0.9998

Percent Moisture: (Decanted) 2.430

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
108-95-2	Phenol	9900	U
111-44-4	bis(-2-Chloroethyl)Ether	9900	U
95-57-8	2-Chlorophenol	9900	U
541-73-1	1, 3-Dichlorobenzene	9900	U
106-46-7	1, 4-Dichlorobenzene	9900	U
100-51-6	Benzyl Alcohol	9900	U
95-50-1	1, 2-Dichlorobenzene	9900	U
95-48-7	2-Methylphenol	9900	U
39638-32-9	bis(2-chloroisopropyl)Ether	9900	U
106-44-5	4-Methylphenol	9900	U
621-64-7	N-Nitroso-Di-n-Propylamine	9900	U
67-72-1	Hexachloroethane	9900	U
98-95-3	Nitrobenzene	9900	U
78-59-1	Isophorone	9900	U
88-75-5	2-Nitrophenol	9900	U
105-67-9	2, 4-Dimethylphenol	9900	U
65-85-0	Benzoic Acid	48000	U
111-91-1	bis(-2-Chloroethoxy)Methane	9900	U
120-83-2	2, 4-Dichlorophenol	9900	U
120-82-1	1, 2, 4-Trichlorobenzene	9900	U
91-20-3	Naphthalene	9900	U
106-47-8	4-Chloroaniline	9900	U
87-68-3	Hexachlorobutadiene	9900	U
59-50-7	4-Chloro-3-Methylphenol	9900	U
91-57-6	2-Methylnaphthalene	9900	U
77-47-4	Hexachlorocyclopentadiene	9900	U
88-06-2	2, 4, 6-Trichlorophenol	9900	U
95-95-4	2, 4, 5-Trichlorophenol	48000	U
91-58-7	2-Chloronaphthalene	9900	U
88-74-4	2-Nitroaniline	48000	U
131-11-3	Dimethyl Phthalate	9900	U
208-96-8	Acenaphthylene	9900	U
99-09-2	3-Nitroaniline	48000	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
83-32-9	Acenaphthene	9900	U
51-28-5	2, 4-Dinitrophenol	48000	U
100-02-7	4-Nitrophenol	48000	U
132-64-9	Dibenzofuran	9900	U
121-14-2	2, 4-Dinitrotoluene	9900	U
606-20-2	2, 6-Dinitrotoluene	9900	U
84-66-2	Diethylphthalate	9900	U
7005-72-3	4-Chlorophenyl-phenylether	9900	U
86-73-7	Fluorene	9900	U
100-01-6	4-Nitroaniline	48000	U
534-52-1	4, 6-Dinitro-2-Methylphenol	48000	U
86-30-6	N-Nitrosodiphenylamine(1)	9900	U
101-55-3	4-Bromophenyl-phenylether	9900	U
118-74-1	Hexachlorobenzene	9900	U
87-86-5	Pentachlorophenol	48000	U
85-01-8	Phenanthrene	9900	U
120-12-7	Anthracene	9900	U
84-74-2	Di-n-Butylphthalate	9900	U
206-44-0	Fluoranthene	9900	U
129-00-0	Pyrene	9900	U
85-68-7	Butylbenzylphthalate	9900	U
91-94-1	3, 3'-Dichlorobenzidine	20000	U
56-55-3	Benzo(a)Anthracene	9900	U
117-81-7	bis(2-Ethylhexyl)Phthalate	9900	U
218-01-9	Chrysene	9900	U
117-84-0	Di-n-Octyl Phthalate	9900	U
205-99-2	Benzo(b)Fluoranthene	9900	U
207-08-9	Benzo(k)Fluoranthene	9900	U
50-32-8	Benzo(a)Pyrene	9900	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	9900	U
53-70-3	Dibenz(a, h)Anthracene	9900	U
191-24-2	Benzo(g, h, i)Perylene	9900	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number: HC749 (34)

60829

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1. —	Unknown	VO	76	22 ~~JB~~ UB
2.				
3. —	Suspected unlabeled perylene	BNA	244	21000 ~~JB~~ UB
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number
HC750

35

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Case No: 6243
Lab Sample ID No: 60830
QC Report No: 15
Sample Matrix: Soil
Contract No: 68-01- 7020
Data Release Authorized By:
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: -----

Date Analyzed: 22-JUL-86 19:37

Conc/Dil Factor: 2.031 pH 7.80

Percent Moisture: (Not Decanted) 13.62

CAS Number		ug/l or (ug/Kg) (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	JB
67-64-1	Acetone	6	~~JB~~ UB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name: Aquatec, Inc.

Case No. 6243

Sample Number HC750 (30)

60830

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 28-JUL-86

Date Analyzed: 05-AUG-86 17:16

(Conc) Dil Factor: 13.04

Percent Moisture: (Decanted) 13.62

GPC Cleanup [X] Yes [ ] No

Separatory Funnel Extraction [X] Yes

Continuous Liquid - Liquid Extraction [ ] Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
108-95-2	Phenol	760	U
111-44-4	bis(-2-Chloroethyl)Ether	760	U
95-57-8	2-Chlorophenol	760	U
541-73-1	1, 3-Dichlorobenzene	760	U
106-46-7	1, 4-Dichlorobenzene	760	U
100-51-6	Benzyl Alcohol	760	U
95-50-1	1, 2-Dichlorobenzene	760	U
95-48-7	2-Methylphenol	760	U
39638-32-9	bis(2-chloroisopropyl)Ether	760	U
106-44-5	4-Methylphenol	760	U
621-64-7	N-Nitroso-Di-n-Propylamine	760	U
67-72-1	Hexachloroethane	760	U
98-95-3	Nitrobensene	760	U
78-59-1	Isophorone	760	U
88-75-5	2-Nitrophenol	760	U
105-67-9	2, 4-Dimethylphenol	760	U
65-85-0	Benzoic Acid	3700	U
111-91-1	bis(-2-Chloroethoxy)Methane	760	U
120-83-2	2, 4-Dichlorophenol	760	U
120-82-1	1, 2, 4-Trichlorobenzene	760	U
91-20-3	Naphthalene	760	U
106-47-8	4-Chloroaniline	760	U
87-68-3	Hexachlorobutadiene	760	U
59-50-7	4-Chloro-3-Methylphenol	760	U
91-57-6	2-Methylnaphthalene	760	U
77-47-4	Hexachlorocyclopentadiene	760	U
88-06-2	2, 4, 6-Trichlorophenol	760	U
95-95-4	2, 4, 5-Trichlorophenol	3700	U
91-58-7	2-Chloronaphthalene	760	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethyl Phthalate	760	U
208-96-8	Acenaphthylene	760	U
99-09-2	3-Nitroaniline	3700	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
83-32-9	Acenaphthene	760	U
51-28-5	2, 4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	~~U~~ UJ
132-64-9	Dibenzofuran	760	U
121-14-2	2, 4-Dinitrotoluene	760	U
606-20-2	2, 6-Dinitrotoluene	760	U
84-66-2	Diethylphthalate	760	U
7005-72-3	4-Chlorophenyl-phenylether	760	U
86-73-7	Fluorene	760	U
100-01-6	4-Nitroaniline	3700	~~U~~ UJ
534-52-1	4, 6-Dinitro-2-Methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine(1)	760	U
101-55-3	4-Bromophenyl-phenylether	760	U
118-74-1	Hexachlorobenzene	760	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	760	U
120-12-7	Anthracene	760	U
84-74-2	Di-n-Butylphthalate	760	U
206-44-0	Fluoranthene	760	U
129-00-0	Pyrene	760	U
85-68-7	Butylbenzylphthalate	760	U
91-94-1	3, 3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	760	U
117-81-7	bis(2-Ethylhexyl)Phthalate	760	U
218-01-9	Chrysene	760	U
117-84-0	Di-n-Octyl Phthalate	760	U
205-99-2	Benzo(b)Fluoranthene	760	U
207-08-9	Benzo(k)Fluoranthene	760	U
50-32-8	Benzo(a)Pyrene	760	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	760	U
53-70-3	Dibenz(a, h)Anthracene	760	U
191-24-2	Benzo(g, h, i)Perylene	760	U

(1)-Cannot be separated from diphenylamine

000036

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC750 (37)

60830

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown	VO	77	29 JB UB
2.				
3. —	Unknown ✓	BNA	360	2700 JB UB
4. —	Unknown Alkane ✓	BNA	410	410 JB UB
5. —	Unknown Alkane ✓	BNA	432	390 JB UB
6. —	Unknown ✓	BNA	740	870 J
7. —	Unknown ✓	BNA	788	650 JB UB
8. —	Unknown Hydrocarbon ✓	BNA	2347	690 J
9. —	Unknown Hydrocarbon ✓	BNA	2450	610 J
10. —	Suspected unlabeled perylene ✓	BNA	2413	730 JB UB
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Quality of the document being filmed

SITE/SITE ASSESSMENT SAS006

Sample Number
HC784

38

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60831
Sample Matrix: Soil
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 22-JUL-86 21:11
Conc/Dil Factor: 2.848 pH 7.05
Percent Moisture: (Not Decanted) 31.95

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	25	~~B~~ UB
67-64-1	Acetone	71	~~B~~ UB
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
156-60-5	Trans-1,2-Dichloroethene	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	23	
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
110-75-8	2-Chloroethylvinylether	14	U
75-25-2	Bromoform	7	U
591-78-6	2-Hexanone	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	400	
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
	Total Xylenes	7	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

being filmed
DATA ASSESSMENT

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC784

60831

39

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 28-JUL-86

Date Analyzed: 06-AUG-86 1:09

(Conc) Dil Factor: 10.24

Percent Moisture: (Decanted) 31.95

GPC Cleanup [X] Yes [ ] No

Separatory Funnel Extraction [X] Yes

Continuous Liquid - Liquid Extraction [ ] Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
108-95-2	Phenol	970	U
111-44-4	bis(-2-Chloroethyl)Ether	970	U
95-57-8	2-Chlorophenol	970	U
541-73-1	1, 3-Dichlorobenzene	970	U
106-46-7	1, 4-Dichlorobenzene	970	U
100-51-6	Benzyl Alcohol	970	U
95-50-1	1, 2-Dichlorobenzene	970	U
95-48-7	2-Methylphenol	970	U
39638-32-9	bis(2-chloroisopropyl)Ether	970	U
106-44-5	4-Methylphenol	970	U
621-64-7	N-Nitroso-Di-n-Propylamine	970	U
67-72-1	Hexachloroethane	970	U
98-95-3	Nitrobenzene	970	U
78-59-1	Isophorone	970	U
88-75-5	2-Nitrophenol	970	U
105-67-9	2, 4-Dimethylphenol	970	U
65-85-0	Benzoic Acid	4700	U
111-91-1	bis(-2-Chloroethoxy)Methane	970	U
120-83-2	2, 4-Dichlorophenol	970	U
120-82-1	1, 2, 4-Trichlorobenzene	970	U
91-20-3	Naphthalene	970	U
106-47-8	4-Chloroaniline	970	U
87-68-3	Hexachlorobutadiene	970	U
59-50-7	4-Chloro-3-Methylphenol	970	U
91-57-6	2-Methylnaphthalene	970	U
77-47-4	Hexachlorocyclopentadiene	970	U
88-06-2	2, 4, 6-Trichlorophenol	970	U
95-95-4	2, 4, 5-Trichlorophenol	4700	U
91-58-7	2-Chloronaphthalene	970	U
88-74-4	2-Nitroaniline	4700	U
131-11-3	Dimethyl Phthalate	970	U
208-96-8	Acenaphthylene	970	U
99-09-2	3-Nitroaniline	4700	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
83-32-9	Acenaphthene	970	U
51-28-5	2, 4-Dinitrophenol	4700	U
100-02-7	4-Nitrophenol	4700	~~U~~ UJ
132-64-9	Dibenzofuran	970	U
121-14-2	2, 4-Dinitrotoluene	970	U
606-20-2	2, 6-Dinitrotoluene	970	U
84-66-2	Diethylphthalate	970	U
7005-72-3	4-Chlorophenyl-phenylether	970	U
86-73-7	Fluorene	970	U
100-01-6	4-Nitroaniline	4700	~~U~~ UJ
534-52-1	4, 6-Dinitro-2-Methylphenol	4700	U
86-30-6	N-Nitrosodiphenylamine(1)	970	U
101-55-3	4-Bromophenyl-phenylether	970	U
118-74-1	Hexachlorobenzene	970	U
87-86-5	Pentachlorophenol	4700	U
85-01-8	Phenanthrene	82	J
120-12-7	Anthracene	970	U
84-74-2	Di-n-Butylphthalate	58	J
206-44-0	Fluoranthene	150	J
129-00-0	Pyrene	160	J UB
85-68-7	Butylbenzylphthalate	970	U
91-94-1	3, 3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)Anthracene	970	U
117-81-7	bis(2-Ethylhexyl)Phthalate	150	J
218-01-9	Chrysene	970	U
117-84-0	Di-n-Octyl Phthalate	970	U
205-99-2	Benzo(b)Fluoranthene	970	U
207-08-9	Benzo(k)Fluoranthene	970	U
50-32-8	Benzo(a)Pyrene	970	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	970	U
53-70-3	Dibenz(a, h)Anthracene	970	U
191-24-2	Benzo(g, h, i)Perylene	970	U

(1)-Cannot be separated from diphenylamine

000039

being filmed

SITE / SITE ASSESSMENT

DASOOO

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number: HC7E4 (40)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or (ug/kg))
1. —	Unknown	VO	772	30 JB UB
2.				
3. —	Unknown ✓	BNA	360	3800 JB UB
4. —	Unknown alkane ✓	BNA	385	770 JB UB
5. —	Unknown alkane ✓	BNA	407	940 JB UB
6. —	Unknown alkane ✓	BNA	429	880 JB UB
7. —	Unknown ✓	BNA	710	1700 J
8. —	Unknown ✓	BNA	788	960 JB UB
9. —	Unknown ✓	BNA	840	550 J
10. 57-10-3	Hexadecanoic acid ✓	BNA	1789	490 J
11. —	Unknown Hydrocarbon ✓	BNA	2237	530 J
12. —	Unknown Hydrocarbon ✓	BNA	2348	2300 J
13. —	Unknown Hydrocarbon ✓	BNA	2451	1800 J
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000040

being filmed

SITE/SITE ASSESSMENT

PASS000

Sample Number
HC785

41

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60832
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 22-JUL-86 22:39
Conc/Dil Factor: 1 pH
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	5	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

SITE / SITE ASSESSMENT
PASO06
being filmed

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC785 (42)

60832

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JULY-86

Date Analyzed: 30-JULY-86 21:04

(Conc)Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene*	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	~~U~~ UJ
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000042

being filmed

SITE / SITE ASSESSMENT

PASSOO

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC785 (43)

60832

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown	VO	131	6 ~~JB~~ B
2.				
3.				
4.				
5. —	Suspected Unlabeled Perylene	BNA	2693	19 ~~JB~~ UB
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000043

being filmed

SITE ASSESSMENT 5A5000

Sample Number
HC786

44

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60833
Sample Matrix: Soil
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 25-JUL-86 10:10
Conc/Dil Factor: 4.599 pH 7.35
Percent Moisture: (Not Decanted) 32.05

CAS Number		ug/l or ug/Kg (Circle One)		
74-87-3	Chloromethane	23	~~U~~	UJ
74-83-9	Bromomethane	23	U	
75-01-4	Vinyl Chloride	23	U	
75-00-3	Chloroethane	23	U	
75-09-2	Methylene Chloride	29	~~B~~	UB
67-64-1	Acetone	57	~~B~~	UB
75-15-0	Carbon Disulfide	11	~~U~~	UJ
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
156-60-5	Trans-1,2-Dichloroethene	11	U	
67-66-3	Chloroform	29		J
107-06-2	1,2-Dichloroethane	11	~~U~~	UJ
78-93-3	2-Butanone	47	B	
71-55-6	1,1,1-Trichloroethane	11	~~U~~	UJ
56-23-5	Carbon Tetrachloride	11	U	
108-05-4	Vinyl Acetate	23	U	
75-27-4	Bromodichloromethane	11	U	

CAS Number		ug/l or ug/Kg (Circle One)		
78-87-5	1,2-Dichloropropane	5	J	
10061-02-6	Trans-1,3-Dichloropropene	11	~~U~~	UJ
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
110-75-8	2-Chloroethylvinylether	23	U	
75-25-2	Bromoform	11	U	
591-78-6	2-Hexanone	23	U	
108-10-1	4-Methyl-2-Pentanone	23	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
	Total Xylenes	11	U	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000044

quality of the document being filmed
SITE/SITE ASSESSMENT
SAS006

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC786

(45)

60833

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low (Medium) (Circle One)

Date Extracted/Prepared: 30-JUL-86

Date Analyzed: 04-AUG-86 23:14

(Conc) Dil Factor: 0.7943

Percent Moisture: (Decanted) 32.05

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
108-95-2	Phenol	12000	U
111-44-4	bis(-2-Chloroethyl)Ether	12000	U
95-57-8	2-Chlorophenol	12000	U
541-73-1	1, 3-Dichlorobenzene	12000	U
106-46-7	1, 4-Dichlorobenzene	12000	U
100-51-6	Benzyl Alcohol	12000	U
95-50-1	1, 2-Dichlorobenzene	12000	U
95-48-7	2-Methylphenol	12000	U
39638-32-9	bis(2-chloroisopropyl)Ether	12000	U
106-44-5	4-Methylphenol	12000	U
621-64-7	N-Nitroso-Di-n-Propylamine	12000	U
67-72-1	Hexachloroethane	12000	U
98-95-3	Nitrobenzene	12000	U
78-59-1	Isophorone	12000	U
88-75-5	2-Nitrophenol	12000	U
105-67-9	2, 4-Dimethylphenol	12000	U
65-85-0	Benzoic Acid	60000	U
111-91-1	bis(-2-Chloroethoxy)Methane	12000	U
120-83-2	2, 4-Dichlorophenol	12000	U
120-82-1	1, 2, 4-Trichlorobenzene	12000	U
91-20-3	Naphthalene*	12000	U
106-47-8	4-Chloroaniline	12000	U
87-68-3	Hexachlorobutadiene	12000	U
59-50-7	4-Chloro-3-Methylphenol	12000	U
91-57-6	2-Methylnaphthalene	12000	U
77-47-4	Hexachlorocyclopentadiene	12000	U
88-06-2	2, 4, 6-Trichlorophenol	12000	U
95-95-4	2, 4, 5-Trichlorophenol	60000	U
91-58-7	2-Chloronaphthalene	12000	U
88-74-4	2-Nitroaniline	60000	U
131-11-3	Dimethyl Phthalate	12000	U
208-96-8	Acenaphthylene	12000	U
99-09-2	3-Nitroaniline	60000	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
83-32-9	Acenaphthene	12000	U
51-28-5	2, 4-Dinitrophenol	60000	U
100-02-7	4-Nitrophenol	60000	U
132-64-9	Dibenzofuran	12000	U
121-14-2	2, 4-Dinitrotoluene	12000	U
606-20-2	2, 6-Dinitrotoluene	12000	U
84-66-2	Diethylphthalate	12000	U
7005-72-3	4-Chlorophenyl-phenylether	12000	U
86-73-7	Fluorene	12000	U
100-01-6	4-Nitroaniline	60000	U
534-52-1	4, 6-Dinitro-2-Methylphenol	60000	U
86-30-6	N-Nitrosodiphenylamine(1)	12000	U
101-55-3	4-Bromophenyl-phenylether	12000	U
118-74-1	Hexachlorobenzene	12000	U
87-86-5	Pentachlorophenol	60000	U
85-01-8	Phenanthrene	12000	U
120-12-7	Anthracene	12000	U
84-74-2	Di-n-Butylphthalate	12000	U
206-44-0	Fluoranthene	12000	U
129-00-0	Pyrene	12000	U
85-68-7	Butylbenzylphthalate	12000	U
91-94-1	3, 3'-Dichlorobenzidine	25000	U
56-55-3	Benzo(a)Anthracene	12000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	12000	U
218-01-9	Chrysene	12000	U
117-84-0	Di-n-Octyl Phthalate	12000	U
205-99-2	Benzo(b)Fluoranthene	12000	U
207-08-9	Benzo(k)Fluoranthene	12000	U
50-32-8	Benzo(a)Pyrene	12000	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	12000	U
53-70-3	Dibenz(a, h)Anthracene	12000	U
191-24-2	Benzo(g, h, i)Perylene	12000	U

(1)-Cannot be separated from diphenylamine

000045

SITE / SITE ASSESSMENT PASOOO6 1 of 1
Image of the document being filmed

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC7E6 (40)

60833

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 3773-66-3	1,3-trimethylcyclohexane ✓	VO	475	980 J
2. —	unknown hydrocarbon ✓	VO	491	81 J
3. —	unknown hydrocarbon ✓	VO	501	410 J
4. —	unknown hydrocarbon ✓	VO	521	720 J
5. —	unknown hydrocarbon ✓	VO	532	600 J
6. —	unknown hydrocarbon ✓	VO	545	430 J
7. —	unknown ✓	VO	556	81 J
8. —	unknown hydrocarbon ✓	VO	572	1,400 J
9. —	unknown hydrocarbon ✓	VO	602	220 J
10. —	unknown hydrocarbon ✓	VO	652	1,200 J
11. —	Unknown Hydrocarbon ✓	BNA	772	170,000 J
12. —	Unknown Hydrocarbon ✓	BNA	779	87,000 J
13. —	Unknown Hydrocarbon ✓	BNA	808	120,000 J
14. —	Unknown ✓	BNA	830	140,000 J
15. —	Unknown Hydrocarbon ✓	BNA	931	120,000 J
16. —	Unknown ✓	BNA	937	80,000 J
17. —	Unknown Hydrocarbon ✓	BNA	1044	270,000 J
18. —	Unknown ✓	BNA	1062	250,000 J
19. —	Unknown ✓	BNA	1078	81,000 J
20. —	Unknown ✓	BNA	1091	120,000 J
21. —	Unknown Hydrocarbon ✓	BNA	1114	270,000 J
22. —	Unknown Hydrocarbon ✓	BNA	1130	170,000 J
23. —	Unknown Hydrocarbon ✓	BNA	1165	160,000 J
24. —	Unknown ✓	BNA	1177	74,000 J
25. —	Unknown ✓	BNA	1200	70,000 J
26. —	Unknown Hydrocarbon ✓	BNA	1229	300,000 J
27. —	Unknown ✓	BNA	1250	150,000 J
28. —	Unknown Hydrocarbon ✓	BNA	1257	69,000 J
29. —	Unknown Hydrocarbon ✓	BNA	1316	200,000 J
30. —	Unknown Hydrocarbon ✓	BNA	1335	76,000 J

000046

Sample Number
HC786R

(47)

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60833R
Sample Matrix: Soil
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 07-AUG-86 2143
Conc/Dil Factor: 7.912 pH 7.35
Percent Moisture: (Not Decanted) 32.05

CAS Number		ug/l or (ug/Kg) (Circle One)		
74-87-3	Chloromethane	40	~~U~~	UJ
74-83-9	Bromomethane	40	U	
75-01-4	Vinyl Chloride	40	U	
75-00-3	Chloroethane	40	U	
75-09-2	Methylene Chloride	130	~~B~~	UB
67-64-1	Acetone	110	~~B~~	UB
75-15-0	Carbon Disulfide	20	~~U~~	UJ
75-35-4	1,1-Dichloroethene	20	U	
75-34-3	1,1-Dichloroethane	20	U	
156-60-5	Trans-1,2-Dichloroethene	20	U	
67-66-3	Chloroform	20	U	
107-06-2	1,2-Dichloroethane	20	U	
78-93-3	2-Butanone	22	~~B~~	UB
71-55-6	1,1,1-Trichloroethane	20	~~U~~	UJ
56-23-5	Carbon Tetrachloride	20	U	
108-05-4	Vinyl Acetate	40	U	
75-27-4	Bromodichloromethane	20	U	

CAS Number		ug/l or (ug/Kg) (Circle One)		
78-87-5	1,2-Dichloropropane	20	~~U~~	UJ
10061-02-6	Trans-1,3-Dichloropropene	20	U	
79-01-6	Trichloroethene	20	U	
124-48-1	Dibromochloromethane	20	U	
79-00-5	1,1,2-Trichloroethane	20	U	
71-43-2	Benzene	20	U	
10061-01-5	cis-1,3-Dichloropropene	20	U	
110-75-8	2-Chloroethylvinylether	40	U	
75-25-2	Bromoform	20	U	
591-78-6	2-Hexanone	40	U	
108-10-1	4-Methyl-2-Pentanone	40	U	
127-18-4	Tetrachloroethene	20	U	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	
108-88-3	Toluene	20	U	
108-90-7	Chlorobenzene	20	U	
100-41-4	Ethylbenzene	20	U	
100-42-5	Styrene	20	U	
	Total Xylenes	20	U	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000047

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC786R (48)

60633R

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or (ug/kg))
1. 3073-66-3	1,1,3-trimethylcyclohexane ✓	VO	471	5,500 J
2. —	unknown hydrocarbon ✓	VO	497	2,300 J
3. —	unknown ✓	VO	515	4,800 J
4. —	unknown hydrocarbon ✓	VO	526	4,200 J
5. —	unknown ✓	VO	547	2,100 J
6. —	unknown hydrocarbon ✓	VO	562	13,000 J
7. —	unknown ✓	VO	623	8,300 J
8. —	unknown ✓	VO	644	3,800 J
9. —	unknown hydrocarbon ✓	VO	537	3,600 J
10. —	unknown ✓	VO	677	4,400 J
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000048

being filmed

SITE/SITE ASSESSMENT PASSOUO

Sample Number
HC787

(49)

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60834
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 22-JUL-86 23:27
Conc/Dil Factor: 1 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	2	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

being filmed

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC787

(50)

60834

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JULY-86

Date Analyzed: 30-JULY-86 22:11

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	~~U~~ UJ
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000050

being filmed

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC787 (51)

60834

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3.				
4. —	Unknown Hydrocarbon	BNA	1779	28 J
5. 1610-18-0	Prometon	BNA	1831	26 J
6. —	Unknown	BNA	2581	12 J
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000051

Sample Number
HC788

52

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60835
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 23-JUL-86 0:13
Conc/Dil Factor: 1 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	1	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000052

being filmed

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC788

(53)

60835

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JULY-86

Date Analyzed: 30-JULY-86 23:19

(Conc)Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000053

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HL7E8
LC8835

54

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3.				
4.	No Semi-volatile organic compounds		found	
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000054

being filmed
DATA ASSESSMENT

Sample Number
HC789

55

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Case No: 6243
Lab Sample ID No: 60836
QC Report No: 15
Sample Matrix: Water
Contract No: 68-01- 7020
Data Release Authorized By:
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: -----

Date Analyzed: 23-JUL-86 14:43

Conc/Dil Factor: 1 pH ----

Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	9	~~JB~~ uB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	3	~~J~~
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000055

being filmed
DIE/DIE ASSEMBLY
DASOOO

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC789 (56)

60836

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JULY-86

Date Analyzed: 31-JULY-86 21:14

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000056

Quality of the document being filmed

SITE / SITE ASSESSMENT PA5006

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC789 (57)

1r0836

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown	VO	132	5 JB UB
2.				
3.				
4. —	Unknown	BNA	719	12 J
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000057

being filmed

Sample Number
HC790

58

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60837
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 25-JUL-86 2:31
Conc/Dil Factor: 100 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	1000	U
74-83-9	Bromomethane	1000	U
75-01-4	Vinyl Chloride	1000	U
75-00-3	Chloroethane	1000	U
75-09-2	Methylene Chloride	1500	~~B~~ UB
67-64-1	Acetone	9700	~~B~~ UB
75-15-0	Carbon Disulfide	500	U
75-35-4	1,1-Dichloroethene	500	U
75-34-3	1,1-Dichloroethane	500	U
156-60-5	Trans-1,2-Dichloroethene	500	U
67-66-3	Chloroform	500	U
107-06-2	1,2-Dichloroethane	500	U
78-93-3	2-Butanone	300	~~JB~~ UB
71-55-6	1,1,1-Trichloroethane	500	U
56-23-5	Carbon Tetrachloride	500	U
108-05-4	Vinyl Acetate	1000	U
75-27-4	Bromodichloromethane	500	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	500	U
10061-02-6	Trans-1,3-Dichloropropene	500	U
79-01-6	Trichloroethene	500	U
124-48-1	Dibromochloromethane	500	U
79-00-5	1,1,2-Trichloroethane	500	U
71-43-2	Benzene	500	U
10061-01-5	cis-1,3-Dichloropropene	500	U
110-75-8	2-Chloroethylvinylether	1000	U
75-25-2	Bromoform	500	U
591-78-6	2-Hexanone	1000	U
108-10-1	4-Methyl-2-Pentanone	1000	U
127-18-4	Tetrachloroethene	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
108-88-3	Toluene	500	U
108-90-7	Chlorobenzene	500	U
100-41-4	Ethylbenzene	500	U
100-42-5	Styrene	500	U
	Total Xylenes	500	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000058

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC790

60837

59

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JUL-86

Date Analyzed: 01-AUG-86 1212

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000059

being filmed

SITE/SITE ASSESSMENT PASOOO6

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC790

60

60837

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3. —	unknown hydrocarbon ✓	BNA	648	270 J
4. —	unknown hydrocarbon ✓	BNA	779	350 J
5. —	unknown ✓	BNA	837	230 J
6. —	unknown hydrocarbon ✓	BNA	925	350 J
7. —	unknown hydrocarbon ✓	BNA	942	330 J
8. —	unknown ✓	BNA	948	230 J
9. —	unknown hydrocarbon ✓	BNA	979	250 J
10. —	unknown hydrocarbon ✓	BNA	1056	750 J
11. —	unknown hydrocarbon ✓	BNA	1075	590 J
12. —	unknown hydrocarbon ✓	BNA	1089	350 J
13. —	unknown ✓	BNA	1102	340 J
14. —	unknown hydrocarbon ✓	BNA	1125	930 J
15. —	unknown hydrocarbon ✓	BNA	1141	570 J
16. —	unknown ✓	BNA	1148	270 J
17. —	unknown hydrocarbon ✓	BNA	1176	580 J
18. —	unknown	BNA	1189	310 J
19. —	unknown hydrocarbon	BNA	1239	650 J
20. —	unknown hydrocarbon ✓	BNA	1324	530 J
21. —	unknown hydrocarbon ✓	BNA	1342	260 J
22. —	unknown hydrocarbon ✓	BNA	1494	240 J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000060

SITE/SITE ASSESSMENT DASOOO 17 17/17

Sample Number
HC791

(61)

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60838
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 25-JUL-86 3:25
Conc/Dil Factor: 1 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	~~B~~ UB
67-64-1	Acetone	8	~~JB~~ UB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	3	~~JB~~ UB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	2	~~J~~

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC791

60838

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JULY-86

Date Analyzed: 31-JULY-86 21:36

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	3	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	3	J
207-08-9	Benzo(k)Fluoranthene	3	J
50-32-8	Benzo(a)Pyrene	3	J
193-39-5	Indeno(1, 2, 3-cd)Pyrene	3	J
53-70-3	Dibenz(a, h)Anthracene	3	J
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000062

being filmed

SITE / SITE ASSESSMENT

DASOOO

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC791

63

60838

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1. 3073-66-3	1,1,3-trimethylcyclohexane	VO	476	20 J
2. —	unknown hydrocarbon	VO	546	10 J
3. —	unknown hydrocarbon	VO	573	54 J
4. —	substituted Naphthalene	VO	635	18 J
5. —	unknown hydrocarbon	VO	651	14 J
6.				
7. —	Unknown hydrocarbon	BNA	652	310 J
8. —	Unknown hydrocarbon	BNA	783	380 J
9. —	Unknown hydrocarbon	BNA	811	250 J
10. —	Unknown	BNA	929	370 J
11. —	Unknown hydrocarbon	BNA	946	410 J
12. —	Unknown	BNA	950	330 J
13. —	Unknown hydrocarbon	BNA	982	330 J
14. —	Unknown hydrocarbon	BNA	1060	930 J
15. —	Unknown hydrocarbon	BNA	1079	640 J
16. —	Unknown hydrocarbon	BNA	1094	310 J
17. —	Unknown	BNA	1105	400 J
18. —	Unknown hydrocarbon	BNA	1129	1000 J
19. —	Unknown hydrocarbon	BNA	1145	650 J
20. —	Unknown hydrocarbon	BNA	1152	230 J
21. —	Unknown hydrocarbon	BNA	1179	690 J
22. —	Unknown	BNA	1192	320 J
23. —	Unknown hydrocarbon	BNA	1244	410 J
24. —	Unknown hydrocarbon	BNA	1328	460 J
25. —	Unknown hydrocarbon	BNA	1424	270 J
26. —	Unknown hydrocarbon	BNA	1497	270 J
27.				
28.				
29.				
30.				

000063

being filmed

Sample Number
HC792

64

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60839
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 23-JUL-86 18:42
Conc/Dil Factor: 1 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	35	~~B~~ UB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000064

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC792 (65)

60839

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JUL-86

Date Analyzed: 31-JUL-86 23:59:00

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)		
108-95-2	Phenol	10	~~U~~	R
111-44-4	bis(-2-Chloroethyl)Ether	10	U	
95-57-8	2-Chlorophenol	10	~~U~~	R
541-73-1	1, 3-Dichlorobenzene	10	U	
106-46-7	1, 4-Dichlorobenzene	10	U	
100-51-6	Benzyl Alcohol	10	U	
95-50-1	1, 2-Dichlorobenzene	10	U	
95-48-7	2-Methylphenol	10	~~U~~	R
39638-32-9	bis(2-chloroisopropyl)Ether	10	U	
106-44-5	4-Methylphenol	10	~~U~~	R
621-64-7	N-Nitroso-Di-n-Propylamine	10	U	
67-72-1	Hexachloroethane	10	U	
98-95-3	Nitrobenzene	10	U	
78-59-1	Isophorone	10	U	
88-75-5	2-Nitrophenol	10	~~U~~	R
105-67-9	2, 4-Dimethylphenol	10	~~U~~	R
65-85-0	Benzoic Acid	50	~~U~~	R
111-91-1	bis(-2-Chloroethoxy)Methane	10	U	
120-83-2	2, 4-Dichlorophenol	10	~~U~~	R
120-82-1	1, 2, 4-Trichlorobenzene	10	U	
91-20-3	Naphthalene	10	U	
106-47-8	4-Chloroaniline	10	U	
87-68-3	Hexachlorobutadiene	10	U	
59-50-7	4-Chloro-3-Methylphenol	10	~~U~~	R
91-57-6	2-Methylnaphthalene	10	U	
77-47-4	Hexachlorocyclopentadiene	10	U	
88-06-2	2, 4, 6-Trichlorophenol	10	~~U~~	R
95-95-4	2, 4, 5-Trichlorophenol	50	~~U~~	R
91-58-7	2-Chloronaphthalene	10	U	
88-74-4	2-Nitroaniline	50	U	
131-11-3	Dimethyl Phthalate	10	U	
208-96-8	Acenaphthylene	10	U	
99-09-2	3-Nitroaniline	50	U	

CAS Number		(ug/l) or ug/Kg (Circle One)		
83-32-9	Acenaphthene	10	U	
51-28-5	2, 4-Dinitrophenol	50	~~U~~	R
100-02-7	4-Nitrophenol	50	~~U~~	R
132-64-9	Dibenzofuran	10	U	
121-14-2	2, 4-Dinitrotoluene	10	U	
606-20-2	2, 6-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
86-73-7	Fluorene	10	U	
100-01-6	4-Nitroaniline	50	U	
534-52-1	4, 6-Dinitro-2-Methylphenol	50	~~U~~	R
86-30-6	N-Nitrosodiphenylamine(1)	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	50	~~U~~	R
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-Butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
91-94-1	3, 3'-Dichlorobenzidine	20	U	
56-55-3	Benzo(a)Anthracene	10	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U	
218-01-9	Chrysene	10	U	
117-84-0	Di-n-Octyl Phthalate	10	U	
205-99-2	Benzo(b)Fluoranthene	10	U	
207-08-9	Benzo(k)Fluoranthene	10	U	
50-32-8	Benzo(a)Pyrene	10	U	
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U	
53-70-3	Dibenz(a, h)Anthracene	10	U	
191-24-2	Benzo(g, h, i)Perylene	10	U	

(1)-Cannot be separated from diphenylamine

000065

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC792

(66)

60851

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3. —	Suspected unlabelled perylene	BNA	2415	19 JB UB
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number
HC792 RE

67

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Case No: 6243
Lab Sample ID No: 60839 RE
QC Report No: 15
Sample Matrix: Water
Contract No: 68-01- 7020
Data Release Authorized By:
Date Sample Received: 22-JULY-86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared:

Date Analyzed: Not Required

Conc Dil Factor: pH

Percent Moisture: (Not Decanted)

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
591-78-6	2-Hexanone	
108-10-1	4-Methyl-2-Pentanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000067

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC792-RE

60839-RE

68

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 05-AUG-86

Date Analyzed: 07-AUG-86 22:38:00

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	4	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	~~U~~ UJ
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000068

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC79C-RE

60839-RE

(69)

Organics Analysis Data Sheet

(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	chlorocyclohexanol isomer	BNA	786	35 ~~JB~~ UB
2. —	unknown	BNA	2320	11 ~~JB~~ B
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000069

Sample Number
HC793

70

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Case No: 6243
Lab Sample ID No: 60840
QC Report No: 15
Sample Matrix: Water
Contract No: 68-01- 7020
Data Release Authorized By:
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: -----

Date Analyzed: 25-JUL-86 0:42

Conc/Dil Factor: 5 pH ----

Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	50	U
75-09-2	Methylene Chloride	80	~~B~~ UB
67-64-1	Acetone	490	~~B~~ UB
75-15-0	Carbon Disulfide	25	U
75-35-4	1,1-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
156-60-5	Trans-1,2-Dichloroethene	25	U
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	13	~~JB~~ UB
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	25	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	25	U
10061-02-6	Trans-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	25	U
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
110-75-8	2-Chloroethylvinylether	50	U
75-25-2	Bromoform	25	U
591-78-6	2-Hexanone	50	U
108-10-1	4-Methyl-2-Pentanone	50	U
127-18-4	Tetrachloroethene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
	Total Xylenes	25	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

000070

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC793

60840

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JUL-86

Date Analyzed: 01-AUG-86 1:08:00

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	14	
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000071

boratory Name: Aquatec, Inc.

se No: 6243

Sample Number
HC793
6.0840

(72)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3.	suspected unlabelled perylene	BNA	2414	20 ~~JB~~ UB
4.				
5.				
6.				
7.				
8.				
9.				
0.				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
0.				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
0.				

000072

Sample Number
HC793 RE

73

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Case No: 6243
Lab Sample ID No: 60840 RE
QC Report No: 15
Sample Matrix: Water
Contract No: 68-01- 7020
Data Release Authorized By:
Date Sample Received: 22-JULY-86

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared:

Date Analyzed: Not Required

(Conc) Dil Factor: pH

Percent Moisture: (Not Decanted)

CAS Number		(ug/l) or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		(ug/l) or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
591-78-6	2-Hexanone	
108-10-1	4-Methyl-2-Pentanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/ dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000073

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number HC793-RE (74)

60840-RE

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 05-AUG-86

Date Analyzed: 07-AUG-86 1.39

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	16	
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number: HC793-RE (75)

60840-RE

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1. —	chlorocyclohexanol isomer	BNA	787	31 ~~JB~~ UB
2. —	unknown	BNA	952	13 J
3. —	unknown	BNA	2320	10 ~~JB~~ B
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

being filmed

SITE/SITE ASSESSMENT PASSUO

Sample Number
HC794

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60841
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 25-JUL-86 1:36
Conc/Dil Factor: 5 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	50	U
75-09-2	Methylene Chloride	69	~~B~~ UB
67-64-1	Acetone	200	~~B~~ UB
75-15-0	Carbon Disulfide	25	U
75-35-4	1,1-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
156-60-5	Trans-1,2-Dichloroethene	25	U
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	15	~~JB~~ UB
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	25	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	25	U
10061-02-6	Trans-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	25	U
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
110-75-8	2-Chloroethylvinylether	50	U
75-25-2	Bromoform	25	U
591-78-6	2-Hexanone	50	U
108-10-1	4-Methyl-2-Pentanone	50	U
127-18-4	Tetrachloroethene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
	Total Xylenes	25	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 5J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

being filmed
OIL/OIL ASSESSMENT
PASSOUO

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC794

60841

77

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 24-JULY-86

Date Analyzed: 01-AUG-86 3:17

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000077

Quality of the document being filmed

SITE/SITE ASSESSMENT SAS006

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC7N
60841

78

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3.				
4. —	Unknown hydrocarbon ✓	BNA	776	23 J
5. —	Unknown hydrocarbon ✓	BNA	810	20 J
6. —	Unknown ✓	BNA	832	24 J
7. 2ASE-76-1	Decahydro-2-Methylnaphthalene ✓	BNA	940	17 J
8. —	Unknown hydrocarbon ✓	BNA	1044	41 J
9. —	Unknown hydrocarbon ✓	BNA	1063	49 J
10. —	Unknown ✓	BNA	1091	23 J
11. —	Unknown ✓	BNA	1113	49 J
12. —	Unknown ✓	BNA	1129	33 J
13. —	Unknown hydrocarbon ✓	BNA	1165	25 J
14. —	Unknown hydrocarbon ✓	BNA	1229	53 J
15. —	Unknown hydrocarbon ✓	BNA	1250	31 J
16. —	Unknown hydrocarbon ✓	BNA	1316	45 J
17. —	Unknown hydrocarbon ✓	BNA	1417	24 J
18. —	Unknown hydrocarbon ✓	BNA	1492	37 J
19. —	Unknown hydrocarbon ✓	BNA	1543	45 J
20. —	Unknown hydrocarbon ✓	BNA	1584	17 J
21. —	Unknown hydrocarbon ✓	BNA	1631	78 J
22. —	Unknown hydrocarbon ✓	BNA	1698	20 J
23.	Unknown ✓	BNA	1577	16 J
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000078

Quality of the document being filmed

SITE/SITE ASSESSMENT

FSA5006

Sample Number
HC795

79

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60842
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 24-JUL-86 14:22
Conc/Dil Factor: 1 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	~~B~~ UB
67-64-1	Acetone	55	~~B~~ UB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	~~U~~ UJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC795

60842

80

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 29-JUL-86

Date Analyzed: 01-AUG-86 4:21:00

(Conc) Dil Factor: 457.5

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	11	U
111-44-4	bis(-2-Chloroethyl)Ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1, 3-Dichlorobenzene	11	U
106-46-7	1, 4-Dichlorobenzene	11	U
100-51-6	Benzyl Alcohol	11	U
95-50-1	1, 2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
39638-32-9	bis(2-chloroisopropyl)Ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-Propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2, 4-Dimethylphenol	11	U
65-85-0	Benzoic Acid	55	U
111-91-1	bis(-2-Chloroethoxy)Methane	11	U
120-83-2	2, 4-Dichlorophenol	11	U
120-82-1	1, 2, 4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-Methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2, 4, 6-Trichlorophenol	11	U
95-95-4	2, 4, 5-Trichlorophenol	55	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	55	U
131-11-3	Dimethyl Phthalate	11	U
208-96-8	Acenaphthylene	11	U
99-09-2	3-Nitroaniline	55	U

UJ

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	11	U
51-28-5	2, 4-Dinitrophenol	55	U
100-02-7	4-Nitrophenol	55	U
132-64-9	Dibenzofuran	11	U
121-14-2	2, 4-Dinitrotoluene	11	U
606-20-2	2, 6-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	55	U
534-52-1	4, 6-Dinitro-2-Methylphenol	55	U
86-30-6	N-Nitrosodiphenylamine(1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	55	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3, 3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)Anthracene	11	U
117-81-7	bis(2-Ethylhexyl)Phthalate	11	U
218-01-9	Chrysene	11	U
117-84-0	Di-n-Octyl Phthalate	11	U
205-99-2	Benzo(b)Fluoranthene	11	U
207-08-9	Benzo(k)Fluoranthene	11	U
50-32-8	Benzo(a)Pyrene	11	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	11	U
53-70-3	Dibenz(a, h)Anthracene	11	U
191-24-2	Benzo(g, h, i)Perylene	11	U

UJ

(1)-Cannot be separated from diphenylamine

000080

being filmed

UNIT OIL MOLOUMENT PASCOO.

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC795
60842

(81)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3.	Suspected unlabelled penylene	BNA	2415	18 ~~JB~~ UB
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000081

Sample Number
HC796

82

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Lab Sample ID No: 60843
Sample Matrix: Water
Data Release Authorized By:

Case No: 6243
QC Report No: 15
Contract No: 68-01- 7020
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: -----
Date Analyzed: 24-JUL-86 1023
Conc/Dil Factor: 1 pH ----
Percent Moisture: (Not Decanted) N/A

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	~~JB~~ JB
67-64-1	Acetone	9	~~JB~~ UB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	✓ UJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

being filmed

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC796

60843

83

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 25-JUL-86

Date Analyzed: 04-AUG-86 22:08

(Conc) Dil Factor: 500

Percent Moisture: (Decanted) N/A

GPC Cleanup ☐ Yes ☒ No

Separatory Funnel Extraction ☒ Yes

Continuous Liquid - Liquid Extraction ☐ Yes

CAS Number		(ug/l) or ug/Kg (Circle One)	
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1, 3-Dichlorobenzene	10	U
106-46-7	1, 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1, 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2, 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2, 4-Dichlorophenol	10	U
120-82-1	1, 2, 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2, 4, 6-Trichlorophenol	10	U
95-95-4	2, 4, 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10	U
51-28-5	2, 4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2, 4-Dinitrotoluene	10	U
606-20-2	2, 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4, 6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3, 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	10	U
53-70-3	Dibenz(a, h)Anthracene	10	U
191-24-2	Benzo(g, h, i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

000083

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC796
6CE413

94

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3. —	Suspected unlabeled perylene	BNA	2412	17 JB UB
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000084

Sample Number
HC797

85

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Aquatec, Inc.
Case No: 6243
Lab Sample ID No: 60844
QC Report No: 15
Sample Matrix: Soil
Contract No: 68-01- 7020
Data Release Authorized By:
Date Sample Received: 22-JUL-86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: -----

Date Analyzed: 23-JUL-86 1343

Conc/Dil Factor: 4.049 pH 7.00

Percent Moisture: (Not Decanted) 47.45

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	100	~~B~~ UB
67-64-1	Acetone	120	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-60-5	Trans-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	27	
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	20	U
75-27-4	Bromodichloromethane	10	U

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1,2-Dichloropropane	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
110-75-8	2-Chloroethylvinylether	20	U
75-25-2	Bromoform	10	U
591-78-6	2-Hexanone	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
	Total Xylenes	10	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$ 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number

HC797

60844

86

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 28-JUL-86

Date Analyzed: 06-AUG-86 0:03 AM

(Conc) Dil Factor: 7.909

Percent Moisture: (Decanted) 47.45

GPC Cleanup [X] Yes [ ] No

Separatory Funnel Extraction [X] Yes

Continuous Liquid - Liquid Extraction [ ] Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
108-95-2	Phenol	1300	U
111-44-4	bis(-2-Chloroethyl)Ether	1300	U
95-57-8	2-Chlorophenol	1300	U
541-73-1	1, 3-Dichlorobenzene	1300	U
106-46-7	1, 4-Dichlorobenzene	1300	U
100-51-6	Benzyl Alcohol	1300	U
95-50-1	1, 2-Dichlorobenzene	1300	U
95-48-7	2-Methylphenol	1300	U
39638-32-9	bis(2-chloroisopropyl)Ether	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	N-Nitroso-Di-n-Propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2, 4-Dimethylphenol	1300	U
65-85-0	Benzoic Acid	6100	U
111-91-1	bis(-2-Chloroethoxy)Methane	1300	U
120-83-2	2, 4-Dichlorophenol	1300	U
120-82-1	1, 2, 4-Trichlorobenzene	1300	U
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
87-68-3	Hexachlorobutadiene	1300	U
59-50-7	4-Chloro-3-Methylphenol	1300	U
91-57-6	2-Methylnaphthalene	1300	U
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2, 4, 6-Trichlorophenol	1300	U
95-95-4	2, 4, 5-Trichlorophenol	6100	U
91-58-7	2-Chloronaphthalene	1300	U
88-74-4	2-Nitroaniline	6100	U
131-11-3	Dimethyl Phthalate	1300	U
208-96-8	Acenaphthylene	1300	U
99-09-2	3-Nitroaniline	6100	U

CAS Number		ug/l or (ug/Kg) (Circle One)	
83-32-9	Acenaphthene	1300	U
51-28-5	2, 4-Dinitrophenol	6100	U
100-02-7	4-Nitrophenol	6100	~~U~~ UJ
132-64-9	Dibenzofuran	1300	U
121-14-2	2, 4-Dinitrotoluene	1300	U
606-20-2	2, 6-Dinitrotoluene	1300	U
84-66-2	Diethylphthalate	1300	U
7005-72-3	4-Chlorophenyl-phenylether	1300	U
86-73-7	Fluorene	1300	U
100-01-6	4-Nitroaniline	6100	~~U~~ UJ
534-52-1	4, 6-Dinitro-2-Methylphenol	6100	U
86-30-6	N-Nitrosodiphenylamine(1)	1300	U
101-55-3	4-Bromophenyl-phenylether	1300	U
118-74-1	Hexachlorobenzene	1300	U
87-86-5	Pentachlorophenol	6100	U
85-01-8	Phenanthrene	1300	U
120-12-7	Anthracene	1300	U
84-74-2	Di-n-Butylphthalate	1300	U
206-44-0	Fluoranthene	1300	U
129-00-0	Pyrene	200	~~J~~ BJ
85-68-7	Butylbenzylphthalate	1300	U
91-94-1	3, 3'-Dichlorobenzidine	2500	U
56-55-3	Benzo(a)Anthracene	1300	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1300	U
218-01-9	Chrysene	1300	U
117-84-0	Di-n-Octyl Phthalate	1300	U
205-99-2	Benzo(b)Fluoranthene	1300	U
207-08-9	Benzo(k)Fluoranthene	1300	U
50-32-8	Benzo(a)Pyrene	1300	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	1300	U
53-70-3	Dibenz(a, h)Anthracene	1300	U
191-24-2	Benzo(g, h, i)Perylene	1300	U

(1)-Cannot be separated from diphenylamine

000086

Laboratory Name: Aquatec, Inc.

Case No: 6243

Sample Number
HC797
60844

87

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or (Scan) Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOLATILE COMPOUNDS FOUND			
2.				
3. –	Unknown	BNA	362	5200 JB UB 2.6 bla
4. –	Unknown Alkane	BNA	387	890 JB UB 2.4 bla
5. –	Unknown Alkane	BNA	409	1100 JB UB 2.2 bla
6. –	Unknown Alkane	BNA	431	1000 JB UB 2.1 bla
7. –	Unknown	BNA	789	1400 JB UB 2.0 bla
8. –	Unknown Hydrocarbon	BNA	2238	1400 J
9. –	Unknown Hydrocarbon	BNA	2349	9400 J
10. –	Unknown Hydrocarbon	BNA	2401	1000 J
11. –	Unknown Hydrocarbon	BNA	2452	7300 J
12. –	Unknown Hydrocarbon	BNA	2569	1000 J
13. –	Unknown	BNA	2661	1200 J
14. –	Unknown	BNA	2731	650 J
15. –	Unknown	BNA	2787	1100 J
16. –	Unknown	BNA	2905	2300 J
17. –	Suspected unlabeled perylene	BNA	2414	1400 JB UB 1.9 x blan.
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000087

being filmed

I. Sample Holding Times

Sample	Date Taken	Date Received	VOA	BNA Extracted	BNA analyzed	Pest Extracted	Pest analyzed
(S) HC749	7/19/86	7/22/86	7/22/86	7/30/86	8/5/86		
(S) HC750				7/28/86			
(S) HC784					8/6/86		
HC785				7/24/86	7/30/86		
(S) HC786			7/25/86	7/30/86	8/5/86		
HC787			7/22/86	7/24/86	7/30/86		
HC788			7/23/86				
HC789	7/20/86				7/31/86		
HC790			7/25/86		8/1/86		
HC791					7/31/86		
HC792	7/21/86		7/23/86				
HC793			7/25/86		8/1/86		
HC794							
HC795			7/29/86	7/29/86			
HC796				7/25/86	8/4/86		
(S) HC797			7/23/86	7/28/86	8/6/86		
HC786R			8/1/86				
HC792RE				8/5/86	8/7/86		
HC793 RE							

HC795 Held for 7 days before BNA extraction

II. GC/MS Tuning and Performance

1. Transcription errors: NONE ✓ ok
2. Significant figures: 3 to 4 ✓ ok
3. Clon Abundances: ✓ ok
4. Calculation of % mass: ✓ ok

$$\%\text{Abundance} = \%A = \frac{\text{relative abundance of } m/z\ 443}{\text{relative abundance of } m/z\ 442}$$

$$= \frac{7.84}{40.25} = 19.48\% \checkmark$$

(DFTPP 13:08 7/31/86 #8215 Inst.)

5. Background Subtraction: ✓ ok

DFTPP	dnet.	835	7/31/86	13:08	Spec #1720 — #1720–#1722 summed
		835	7/31/86	18:55	Spec #1719 — #1718–#1721 summed
		835	8/4/86	8:51	Spec #523 — #523–#524 summed
		835	8/4/86	15:57	Spec #523 — #521–#526 summed
		835	8/5/86	14:21	Spec #499 — #498–#500 summed
		835	8/6/86	14:49	Spec #535 — #535–#536 summed
		835	8/6/86	21:40	Spec #1717 — #1716–#1718 summed
		840	7/30/86	12:17	Spec #609 — #609–#610, summed #615–#616 × 1.00
		840	7/31/86	12:44	Spec #621 — #623–#625 summed #628–#629 × 1.00
BFB		040	7/22/86	9:47	
		040	7/22/86	14:47	
		040	7/23/86	9:06	
		040	7/24/86	7:53	
		040	7/24/86	20:20	
		040	7/31/86	15:50	
		040	7/31/86	22:33	

III Calibration

A. Initial

VOA: Chromatograms all look fine

$RF_{60} = \frac{A_x}{A_{13}} \times \frac{C_{13}}{C_x}$ Chloromethane (SPCC) $RF_{60} = \frac{17440}{67676} \times \frac{50}{50}$

$= 0.644$ ✓ ok

$\overline{RF} = \sum_{i=1}^{N} \frac{RF_i}{N}$ $\overline{RF} = \frac{0.644 + 0.533 + 0.544 + 0.527 + 0.499}{5}$

$= 0.549$ ✓ ok

$SD = \sqrt{\sum_{i=1}^{N} \frac{(RF_i - \overline{RF})^2}{N-1}}$ $SD = 0.055$

$\% RSD = \frac{SD}{RF} \times 100$ $\% RSD = \frac{0.055}{0.549} \times 100$

$= 10.089$ ✓ok

Ethylbenzene (CCC) ✓ok

BNA: Chromatograms all look fine

Checked calculations for:

Phenol (CCC) ✓ok

4-Nitrophenol (SPCC) ✓ok

B. Continuing

VOA: Chromatograms all look fine

$\% D = \frac{RF - RF_{50}}{RF} \times 100$ Chloromethane (SPCC) $\% D = \frac{0.511 - 0.549}{0.549}$

$= 10.565$ ✓

Ethylbenzene (CCC) ✓ok

BNA: Chromatograms all look fine

Checked calculations for:

Phenol (CCC) ✓ok

4-Nitrophenol (SPCC) ✓ok

			20	50	100	150	200	INST ID.
IC	VOA	7/22/86	10:51	15:09	13:44	13:04	11:48	269 raw dat 040
CC		7/23/86		10:04				269 raw dat 040
CC		7/24/86		9:26				269 raw dat 040
CC		7/24/86		20:37				040
IC		7/31/86	16:13	22:52 ↓ if continuing CCC's >25%D	20:13	18:38	17:25	040
			20	50	80	120	160	
IC	BNA	7/31/86	14:26	18:55	16:47	15:40	13:08	835
IC		8/4/86	12:31	16:22 ↓ CCC >25%D	14:55	13:47	11:14	835
CC		8/5/86		14:46				835
IC		8/6/86	19:00	22:14 ↓ CCC's >25%D	21:10	20:06	17:51	835
IC		7/30/86	14:04	17:35	16:26	15:15	12:47	840
IC		7/31/86	14:42	18:58	17:05	15:52	13:34	840

II Blanks

Chromatograms look clean

NO serious contamination problems

frequency ✓

Blank < 5x CRQL CH_2Cl_2 ✓

Acetone ✓

Toluene ✓

Phthalate ✓

V Surrogate Recoveries

HC789 (low-water)

Toluene D-8

$RF_{50} = \frac{320640}{217951} \times \frac{50}{50} = 1.009$ (standard 7/23 10:04)

$C = \frac{316054}{311575} \times \frac{50}{1.009} = 50.394$

$50.394 (\times 2) = 100.8$ ✓ ok

HC784 (low-soil)

Toluene D-8

$RF_{50} = \frac{310785}{302171} \times \frac{50}{50} = 1.029$ (standard 7/22 18:09)

$C = \frac{282868}{278022} \times \frac{50}{1.029} = 50.343$

$50.343 (\times 2) = 100.7$ ✓ ok

HC789 (low-water)

Terphenyl D_{14}

$RF_{50} = \frac{79069}{56490} \times \frac{40}{50} = 1.120$ (standard 7/21 18:50)

$C = \frac{44238}{40370} \times \frac{40}{1.120} = 39.233$

$39.233 (\times 2.37) = 92.98$ ✓ ok

Phenol D_5

$RF_{50} = \frac{35712}{17621} \times \frac{40}{50} = 1.621$

$C = \frac{11677}{11413} \times \frac{40}{1.621} = 25.247$

$C = 25.247 (\times 1.19) = 30.04$ ✓ ok

HC784 (low-soil)

Terphenyl D14

$RF_{50} = \frac{46969}{40232} \times \frac{40}{50} = 0.779$ (Standard 8/6 14:36)

$C = \frac{43357}{68164} \times \frac{40}{0.779} = 32.661$

$32.661 (\times 2.39) = 78.06$ ✓ ok

Phenol D5

$RF_{50} = \frac{34754}{14580} \times \frac{40}{50} = 1.358$

$C = \frac{43519}{22149} \times \frac{40}{1.358} = 57.874$

$57.874 (\times 1.19) = 68.87$ ✓ ok

water

2 l to liter →

12 ml sample to 50 ml (Bad I.S.)

$\frac{2}{1.7} = 1.19$

GC has 2 fold dilution | Soil 1 mL 10 → 5 mL

$\times 1.19 = 2.38$

HC786 (medium-soil)

Terphenyl D14 $RF_{50} = \frac{47465}{43108} \times \frac{40}{50} = 0.881$ (Standard 8/4 16:22)

$C = \frac{42849}{48037} \times \frac{40}{0.881} = 40.499$

$40.499 (\times 2.37) = 95.98$ ✓ ok

Phenol D5 $RF_{50} = \frac{28730}{16050} \times \frac{40}{50} = 1.527$

$C = \frac{36618}{13552} \times \frac{40}{1.527} = 70.780$

$70.780 (\times 1.19) = 84.23$ ✓ ok

VI Matrix Spike / Matrix Spike Duplicate

HC796 ms (low-water)

Chlorobenzene: $C = \frac{251563}{281537} \times \frac{50}{0.929} = 48.091$ ✓ ok

% Recovery $= \frac{SSR - SR}{SA} \times 100 = \frac{48.1 - 0}{50} \times 100$

$= 96.2$ ✓ ok

$RPD = \frac{D_1 - D_2}{D_1 + D_2/2} \times 100 = \frac{96 - 100}{96 + 100} \times 200 = 4$ ✓ ok

HC789 ms (low-water)

Phenol: $C = \frac{22755}{18499} \times \frac{40}{1.612} = 30.523$

$30.523 (\times 2.38) = 72.6$ ✓ ok

Pyrene: $C = \frac{68551}{46615} \times \frac{40}{1.404} = 41.897$

$41.897 (\times 2.38) = 99.7$ ✓ ok

HC797ms (low-soil)

Chlorobenzene: $C = \frac{263559}{290378} \times \frac{50}{0.878} = 51.688$

$51.688 \times 3.688 = 190.6$ ✓ ok

↑ Dilution Factor

HC750 ms (low-soil)

Phenol: $C = \frac{82833}{19717} \times \frac{40}{1.348} = 124.662$

$124.662 (\times 91.54) = 11412$ ✓ ok

$\frac{82833}{19717} \times \frac{40\ ng/ul}{1.348} \times \frac{50\ ml}{42\ ml} \times \frac{2\ ml}{30.2\ g} \times \frac{1000\ g/kg}{0.8638} = 11377.9\ ug/kg$

Pyrene: $C = \frac{109939}{61538} \times \frac{40}{1.148} = 62.248$

$62.248 (\times 91.57) = 5700$ ok

HC 749 ms (medium-soil)

Phenol: $C = \frac{34302}{16384} \times \frac{40}{1.348} = 62.125$

$62.125 (\ 2268\ ) = 140887$ ok

$\frac{50g}{42ml} \times \frac{2ml}{1.0247g} \times \frac{1000mg}{0.976} = 2268$

Pyrene: $C = \frac{50897}{53772} \times \frac{40}{1.148} = 32.980$

$32.980 (\times 2268) = 74799$ ok

Checked % Recovery & RPD for the above compounds ok

~~VII~~ HC 787 (low-water)

methylene chloride: $C = \frac{1913}{71511} \times \frac{50}{0.648} = 2.064$ ok

HC 784 (low-soil)

methylene chloride: $C = \frac{2990}{70384} \times \frac{50}{0.648} \times 2.848 = 24.946$ ok

HC 791 (low-water)

Chrysene: $C = \frac{1109}{31823} \times \frac{40}{1.242} \times 1.122$

$1.122 (\times 2.28) = 2.67$ ok

HC 784 (low-soil)

Phenanthrene: $C = \frac{1200}{109898} \times \frac{40}{0.689} = 0.706$

$0.706 (\times 116) = 81.89$ ok

$\frac{50}{42} \times \frac{2}{30.1} \times \frac{1000}{0.681} = 116$

HC 749 (med-soil)

None detected

Water: $IDL \times D.F. = IDL$

Soil: $IDL \times \frac{D.F.}{2} = IDL$

Telecon OK to 10/8/86

TDD File Copy (1)

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. 6243/2398H Project No. 08-8609-01

Site Empire Refinery

Contractor Laboratory Western Research Institute

Data Reviewer Jim Difalbonardo Date of Review 10/7/86

Sample Matrix oily soil*/oily sludge

Sample No. HC 877* _____ _____ _____

HC 87B _____ _____ _____

HC 97B _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

( ) Data are acceptable for use

(✓) Data are acceptable for use with qualification noted ~~above~~ below

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ✓ Yes _____ Following items require action _____

_____

Action required by Project Officer (PO)?

No ✓ Yes _____

Following are our findings:

The data package was complete. Special analytical techniques were used to analyze the three oily samples; thus, usual QC criteria will be used for advisory limits. Pesticides were not analyzed. The BNA extraction procedures yielded four fractions which were analyzed separately by GC-MS. Medium level protocol was used for the BNA analysis and high level protocol was used for the VOA analysis. GC-MS tuning and performance results met specified criteria. The time span between sampling and extraction was too long (32 days) for all samples, so positive results were qualified as estimated (J), and negative results as UJ.

Instrument detection limits (IDL) were checked, and most compounds identified were detected above the limits. Compounds which were detected below the IDLs were flagged as estimated (J).

All system performance check compounds (SPCCs), and all calibration check compounds (CCCs) except for Di-n-octylphthalate met

Following are our findings:

initial and continuing calibration requirements. Di-n-octylphthalate had a percent difference slightly above twenty-five. A few HSL compounds had response factors below 0.05; negative results for these compounds were flagged as unusable (R). 2-butanone had a very low response factor, so concentrations reported for this compound in the blanks may be positive biased. A few compounds had percent relative standard deviations and percent differences above the required limits, so positive results were flagged as J, and negative results were flagged as UJ.

Several HSL compounds were detected in the laboratory blanks. Those which were detected at levels above the CRQL are asterisked on the blank analysis results form. Chromatograms did not show any distortion; peaks were well resolved.

Several surrogates had recoveries of zero. Samples were not reanalyzed, so negative results for the VOA fraction of HC978 and the aromatic fraction of HC878 and HC978 were qualified as unusable (R), and positive results as J.

being filmed
SITE / SITE ASSESSMENT
CASCO

Following are our findings:

(4)

Several base/neutral fraction spikes had low recoveries for sample HC877 (soil). Several base/neutral fraction spikes had high recoveries or were diluted out for sample HC878 (water). The matrix spike, matrix spike duplicate, and sample results for the acid fraction of HC878 did not agree very well. The acid fraction had a large hydrocarbon "hump", and the spiked sample had much smaller "humps". No action was taken as a result of the matrix spike analysis.

The chromatograms were inspected and found to be of good quality. The polar fractions of sample HC877 and HC878 were run on a different instrument, and chromatograms showed evidence of severe column bleed. Large hydrocarbon "humps" (a large number of unresolved hydrocarbons) were present in most fractions, and such a pattern is indicative of an oil like material. Polyaromatic hydrocarbons may have been masked by the hydrocarbon matrix. Since the base/neutral fraction surrogates and spikes for samples HC878 and HC978 were diluted out it is possible that any HSL compounds present may also have been diluted out. The Mass Spectra was of good matching quality.

quality of the document being filmed
SITE / SITE ASSESSMENT
SAS006

5

DATA QUALIFIER DEFINITIONS
Region 8

For the purposes of this data review document the following code letters and associated definitions are provided.

U - The material was analyzed for, but was not detected. The associated numerical value is the estimated sample quantitation limit.

J - The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

UB - Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at <5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

UJ - Detection limit is estimated because quality control criteria were not met.

JB - The value is an estimated amount detected below required limits and also detected in the blank.

B - Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (>10 X for methylene chloride, acetone, toluene, and phthalates).

R - Quality Control indicates that data is <u>not</u> usable (compound may or may not be present). Resampling and reanalysis is necessary for verification.

Z - No analytical result.

N - Presumptive evidence of presence of material (tentative identification).

quality of the document being filmed
SITE / SITE ASSESSMENT
SAS006

DFTPP and BFB Performance Results

The DFTPP performance results were all included and found to be within the specified criteria.

Yes ✓ No ____

Comments:

- everything fine -

scan #	Inst #		
2349	GC/ms#1	8/20/86	16:29
2315	GC/ms#1	9/3/86	16:58
2329	GC/ms#1	9/4/86	16:11
2324	GC/ms#1	9/5/86	10:22
2325	GC/ms#1	9/5/86	21:44
1778	GC/ms#4	9/3/86	16:28

The BFB performance results were all included and found to be within the spedified criteria.

Yes ✓ No ____

Comments:

- everything fine -

scan #	Inst #		
338	GC/ms#3	8/27/86	9:06
340	GC/ms#3	8/27/86	20:02
370	GC/ms#3	8/29/86	18:42
367	GC/ms#3	9/2/86	8:29
373	GC/ms#3	9/3/86	8:35

The (DFTPP/BFB) performance result(s) was/were reviewed and the following abundance were found to fall outside the specified criteria:

Date	Compound	m/z	Required Abundance	Actual Abundance

NONE

All samples were extracted and analyzed within contract holding times

Yes ✓ No ____

Comments:

Sampling to analysis too long

Sample	Sampling to extraction (VOA)	Extraction to analysis (VOA)	Sampling to Extraction (BNA)	Extraction to analysis (BNA)
HC877	32 days	13 days	32 days	14 → 17 days
HC878	"	14 days	"	"
HC978	"	"	"	"

Flags: (+) → J (−) → UJ for all fractions of all samples

possible low bias

Surrogate recoveries were reviewed. The recoveries were all within the contract limits.

Yes ✓ No. ____

Comments:

Water

UOA: N/A

BNA: 12/30 outside of QC Limits → Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14 } 0 % recovery in HC878, HC978, HC878MS, HC878MSD (diluted out)

Flags: HC878, HC978 (aromatic) (+) → J (−) → R

Pest: N/A

Soil

UOA: 2/30 outside of QC Limits → Toluene-d8, 4-Bromofluorobenzene } lost due to high concentration interference (HC978)

Flags: HC978 UOA (+) → J (−) → R

BNA: 0/24 " " " "

Pest: N/A

* Recoveries for MS/MSD were not reported on Form II.

The matrix spike recovery data were reviewed. The Matrix spikes were performed and all data met contract requirements.

Yes ✓ No ____

Comments:

Water (HC878)

Relative Percent Difference: UOA: N/A

B/N: 1/2 outside QC Limits → Pyrene (high)

1,2,4-Trichlorobenzene, Acenaphthene (MSD), 2,4-Dinitrotoluene, 1,4-Dichlorobenzene } Diluted out

Acid: 0/5 outside of QC Limits

Pest: N/A

Recovery: UOA: N/A

B/N: 12/12 outside of QC Limits → Acenaphthene (ms) (high), Pyrene (high), N-Nitroso-di-n-propylamine (high) (compounds which were diluted out)

Acid: 0/10 outside of QC Limits

Pest: N/A

Matrix Spike (cont.)

8

Soil (HC077)

Relative Percent Difference: VOA: N/A
B/N: 1/10 outside of QC limits → N-Nitroso-di-n-propylamine(h
Acid: 0/4 " " " " → pentachlorophenol (diluted out)
Peat: N/A

Recovery: VOA: 0/5 outside of QC limits
B/N: 7/12 " " " " → 1,2,4-Trichlorobenzene (low)
2,4-Dinitrotoluene (low)
N-Nitroso-di-n-propylamine (low)
1,4-Dichlorobenzene (MSD) (low)
Acid: 2/10 " " " " → pentachlorophenol (diluted out)
Peat: N/A

quality of the document being filmed

SITE / SITE ASSESSMENT FASOOS

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

Yes ✓ No ____

Comments:

VOA: (3) 8/27/86 $\overline{RF}$ < 0.05 NONE
%RSD > 30% 2 Chloroethylvinylether

VOA: (3) 8/29/86 $\overline{RF}$ < 0.05 NONE
%RSD > 30% NONE

BNA: (1) 8/20/86 $\overline{RF}$ < 0.05 N-Nitrosodimethylamine
Benzidine
%RSD > 30% Benzoic Acid
2,4-Dinitrophenol (SPCC)
Benzo(a,h) Anthracene

BNA: (4) 9/3/86 $\overline{RF}$ < 0.05 N-Nitrosodimethylamine → HC877 (Polar), HC878 (Polar)
Aniline
Benzidine
%RSD > 30% 3-Nitroaniline
4-Nitroaniline
Benzidine

Flags: $\overline{RF}$ < 0.05 (+) → J, (−) → R
%RSD > 30% (+) → J, (−) → UJ

*All SPCC's and CCC's met requirements

** Some compounds had several initial calibration responses factors equal to zero. N-Nitrosodimethylamine 0 at all con. Aniline 0 at 20 & 160 inst (1) Benzidine 0 at 20, 50, & 80 inst (1) 50, 80, & 160 inst (4)

Continuing calibration data were reviewed and this data met all contract requirements.

Yes ____ No ✓

Comments:

VOA: (3) 8/27/86 RF_{50} < 0.05 NONE
%D > 25% Carbon Disulfide
Vinyl Acetate
2-Chloroethylvinylether

VOA: (3) 9/2/86 RF_{50} < 0.05 NONE → HC877
%D > 25% Chloromethane (SPCC)
Vinyl Acetate
2-Hexanone
4-methyl-2-pentanone

VOA: (3) 9/3/86 RF_{50} < 0.05 NONE → HC878, HC878
%D > 25% Chloromethane (SPCC)
Vinyl Acetate
2-Hexanone
4-methyl-2-pentanone

Continuing Calibration

(10)

BNA: (2) 9/3/86 $RF_{50} < 0.05$ N-Nitrosodimethylamine (0)
Benzidine (0)
%D > 25% 4-Chloroaniline
3-Nitroaniline
2,4-Dinitrophenol (SPCC)
4-Nitroaniline
2,4,6-Tribromophenol
Hexachlorobenzene
Benzidine
3,3-Dichlorobenzidine
Dibenzo(a,h)Anthracene
Benzo(g,h,i) Perylene

BNA: (1) 9/4/86 $RF_{50} < 0.05$ N-Nitrosodimethylamine (0) → HC877 (aliphatic), HC877 (acid)
aniline (0)
Benzidine (0)
%D > 25% Aniline
Benzoic acid
4-Chloroaniline
2,4-Dinitrotoluene
2,4,6-Tribromophenol
Benzidine
3,3'-Dichlorobenzidine
Di-n-octylphthalate (CCC)
Indeno (1,2,3-cd) Pyrene
Dibenzo (a,h) Anthracene
Benzo (g,h,i) Perylene

Flags: $RF_{50} < 0.05$ (+) → J
(−) → R
%D > 25% (+) → J
(−) → UJ

BNA: (1) 9/5/86 $RF_{50} < 0.05$ N-Nitrosodimethylamine (0) → HC878 (aromatic), HC878 (aliphatic), HC978 (aliphatic)
Aniline (0)
Benzidine (0)
%D > 25% Aniline
Benzoic Acid
4-Chloroaniline
2,4-Dinitrotoluene
4-Nitroaniline
2,4,6-Tribromophenol
Benzidine
Pyrene
3,3'-Dichlorobenzidine
Dibenzo(a,h)Anthracene
Benzo (g,h,i) Perylene

BNA: (1) 9/5/86 $RF_{50} < 0.05$ N-Nitrosodimethylamine (0) → HC877 (aromatic), HC878 (acid), HC978 (acid), HC978 (aromatic), HC978 (aliphatic)
Aniline (0)
Benzidine (0)
%D > 25% Aniline
Benzoic Acid
4-Chloroaniline
2,4,6-Tribromophenol
Benzidine
Pyrene
3,3'-Dichlorobenzidine
Di-n-octylphthalate (CCC)
Dibenzo(a,h) Anthracene
Benzo(g,h,i) Perylene

*all SPCC's met requirements
** Di-n-octylphthalate a BNA fraction CCC had a %D greater than ≥ 25%. All other CCC's met requirements.

being filmed
SITE/SITE ASSESSMENT
DASOOO

PESTICIDES

The laboratory met the pesticide linearity check criteria.
Yes _____ No _____

Comments:

N/A

The % breakdown of 4,4DDT and of Endrin was less than 20%.
Yes _____ No _____

Comments:

N/A

The dibutychlorendate retention time shift was within the specified limits.
Yes _____ No _____

Comments:

N/A

The pesticide standard compounds showed a % D of the calibration factor of no more than 15% for the quantitation runs and 20% for the comfirmation runs.
Yes _____ No _____

Comments:

N/A

(laboratory) BLANK ANALYSIS RESULTS (1)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
VOA →	water blank 1	8/27/86	Acetone	1500ug/kg	
			Chloroform	670ug/kg	
			2-Butanone	1700ug/kg	
			1,4-dioxane	2300ug/kg	
VOA →	method blank 1	8/27/86	Methylene Chloride	290ug/kg	
			* Acetone	6700ug/kg	
			Chloroform	850ug/kg	
			* 2-Butanone	9300ug/kg	
			Toluene	1200ug/kg	
VOA →	water blank 2	9/2/86	* Acetone	1700ug/kg	
			Chloroform	690ug/kg	
			2-Butanone	1200ug/kg	
			1,4-dioxane	2600ug/kg	
VOA →	method blank 2	9/2/86	Acetone	6700ug/kg	HC877
			Chloroform	780ug/kg	
			* 2-Butanone	870ug/kg	
			* Toluene	1300ug/kg	
VOA →	water blank 3	9/3/86	Methylene Chloride	1200ug/kg	
			Acetone	1300ug/kg	
			Chloroform	720ug/kg	
			2-Butanone	1400ug/kg	

(laboratory) BLANK ANALYSIS RESULTS (2)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRQL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
			Toluene	540 ug/kg	
L 7A →	method blank 3	9/3/86	Methylene Chloride	1200 ug/kg	HC878, HC978
			*Acetone	5700 ug/kg	
			Chloroform	830 ug/kg	
			*2-Butanone	7400 ug/kg	
			*Toluene	1300 ug/kg	
HCID →	method blank	9/3/86	Di-n-octylphthalate	110 ug/kg	HC 877
			4-methyl-4-Penten-2-one	390 ug/kg	
			Cottar alkane	620 ug/kg	
			3-methyl-2-cyclohexen-1-one	300 ug/kg	
			unknown compound	165 ug/kg	
			unknown compound	360 ug/kg	
			unknown / PAH 244	73 ug/kg	
			unknown phthalate	140 ug/kg	
Polar →	method blank	9/3/86	unknown	190 ug/kg	HC 877
			unknown	100 ug/kg	
			unknown	290 ug/kg	
			unknown	750 ug/kg	
			unknown	1000 ug/kg	
			unknown	68 ug/kg	
			unknown	2300 ug/kg	

(laboratory) BLANK ANALYSIS RESULTS (3)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
			unknown	89ug/kg	
			unknown	460ug/kg	
			unknown	210ug/kg	
Aromatic →	method blank	9/3/86	Di-n-Butylphthalate	460ug/kg	HC877
			bis-(2-ethylhexyl)Phthalate	210ug/kg	
			Di-n-Octyl Phthalate	40ug/kg	
			unknown	65ug/kg	
			unknown	70ug/kg	
Aliphatic →	method blank	9/4/86	2,3-dimethyl Heptane	2900ug/kg	HC 877
			unknown	1200ug/kg	
			C_8H_{18} alkane	3800ug/kg	
			C_8H_{14} alkene	3400ug/kg	
Acid →	method blank	9/3/86	Di-n-octyl phthalate	1000ug/L	HC 878, HC978
			unknown phthalate	200ug/L	
			unknown phthalate	670ug/L	
			unknown phthalate	420ug/L	
			unknown phthalate	310ug/L	
			unknown phthalate	240ug/L	
			unknown phthalate	210ug/L	
			unknown phthalate	1000ug/L	
			unknown phthalate	470ug/L	

(laboratory) BLANK ANALYSIS RESULTS (4)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
			unknown phthalate	1900 ug/L	
			unknown phthalate (mixture of phthalate & PAH 252)	240 ug/L	
			unknown phthalate	190 ug/L	
			unknown phthalate	770 ug/L	
			unknown	260 ug/L	
blar →	method blank	9/3/86	unknown	1500 ug/L	HC 878, HC978
			unknown	4400 ug/L	
			unknown	4700 ug/L	
			unknown	890 ug/L	
			unknown / Bromocyclohexane	11,000 ug/L	
			unknown	650 ug/L	
			unknown	340 ug/L	
			C_6H_{14} alkene	370 ug/L	
Aromatic →	method blank	9/4/86	bis (2-ethylhexyl) Phthalate	920 ug/L	HC878, HC978
			Di-n-octyl Phthalate	170 ug/L	
			unknown	190 ug/L	
			unknown	300 ug/L	
			unknown / PAH 252	220 ug/L	
Aliphatic →	method blank	9/4/86	unknown	250 ug/L	HC 878, HC 978
			unknown	360 ug/L	
			unknown	1000 ug/L	

(laboratory) BLANK ANALYSIS RESULTS (5)

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRIL)

Sample	Date	Compound	Conc.	Samples Associated with this Blank
		unknown/PAH-252	190ug/l	

Remarks:

Flags: 0 —JB→ Detection Limit —UB→ Amount detected in sample is 5 or 10 times amount in blank —B→ Amount detected in sample is 5 or 10 times greater than amount in blank.

5x for most HSL compounds

10x for common laboratory contaminants: Methylene Chloride
Acetone
Toluene
Phthalate Esters

COMPOUNDS IDENTIFIED

Sample No. HC 877 (oily soil)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	940	J	holding times
	Acetone	5100	UB	0.76x amount in blank, holding times
	Chloroform	820	UB	1.05x " " " " "
	2-Butanone	6100	UB	0.75x " " " " "
	Toluene	1100	UB	0.85x " " " " "
ACID →	bis(2-Ethylhexyl)Phthalate	2600	J	holding times
BN AROMATIC →	Di-n-Butylphthalate	240	UB	0.25 amount in blank, holding times
	bis(2-Ethylhexyl)Phthalate	2200	UB	4x " " " " "
BN ALIPHATIC →	none detected	—		
Polar →	none detected	—		

Tentatively Identified Compounds Detected:

VOA →	See page 22			
ACID →	See page 25			
BN AROMATIC →	See page 28			
BN Aliphatic →	See page 31			
Polar →	See page 34			

* Identified alkanes should be labeled as unknown hydrocarbons.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.

___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Chromatograms: VOA - several poorly resolved peaks
Acid - ✓
Aromatic - large hydrocarbon hump in chromatogram.
Aliphatic - small hydrocarbon hump in chromatogram.
Polar - evidence of column bleed present in chromatogram.

being filmed
SITE/SITE ASSESSMENT
PASCO

COMPOUNDS IDENTIFIED

Sample No. HC87B (oily sludge)

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/g)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	550	UB	0.45 amount in blank, holding times
	Acetone	5700	UB	1 " " " " "
	Chloroform	790	UB	0.95 " " " " "
	2-Butanone	7000	UB	1.03 " " " " "
	Toluene	960	UB	0.7 " " " " "
ACID →	none detected			
BN AROMATIC →	none detected			
ALIPHATIC →	none detected			
Polar →	none detected			

Tentatively Identified Compounds Detected:

VOA →	tic page not delivered			
ACID →	see page 38			
Aromatic →	see page 41			
Aliphatic →	see page 44			
Polar →	see page 47			

* identified alkanes should be labeled as unknown hydrocarbons

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.

____ The spectra were examined and found to be of poor matching quality due to:

Remarks: Chromatograms: VOA - ok ✓
ACID - huge "hump" in chromatogram.
Aromatic - huge hydrocarbon hump in chromatogram.
Aliphatic - large hydrocarbon hump in chromatogram.
Polar: column bleed evident in chromatogram.

SITE/SITE ASSESSMENT PASSOC

COMPOUNDS IDENTIFIED

Sample No. HC 978 (oily sludge) - Sample was leaking when received.

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (ug/kg)	Qualifier (if needed)	Comments
VOA →	Methylene Chloride	460	JB	0.9x amount in blank, below RL
	Acetone	6700	UB	1x " " "
	Chloroform	800	UB	1x " " " poor mass spec match
	2-Butanone	7400	UB	1x " " "
	Benzene	31000	J	
	4-Methyl-2-Pentanone	35000	J	%D > 25%
	2-Hexanone	93000	J	%D > 25%
	Toluene	1300	UB	1x amount in blank, poor mass spec. match
	Ethylbenzene	49000	J	
	Total Xylenes	90000	J	
ACID →	bis(2-Ethylhexyl) Phthalate	11000	J	
	Di-n-Octyl Phthalate	450	UB	0.5x amount in blank, %D > 25%
BN AROMATIC →	Naphthalene	14000	J	Surrogates out (zero recovery)
	2-Methylnaphthalene	51000	J	" "
	Phenanthrene	17000	J	" "
BN AliPHATIC →	none detected	—		
BN Polar →	none detected	—		

Tentatively Identified Compounds Detected:

VOA →	see page 49			
ACID →	see page 52			
AROMATIC →	see page 55			
ALIPHATIC →	see page 58			
POLAR →	see page 61			

* Identified alkanes should be labeled as unknown hydrocarbons.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.

___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Chromatograms: VOA - TICs were poorly resolved
Acid - small hydrocarbon "hump" in chromatogram.
Aromatic - large hydrocarbon "hump" in chromatogram.
Aliphatic - medium sized hydrocarbon "hump" in chromatogram.
Polar - evidence of column bleed.

* All fractions: holding times exceeded → J
** VOA fraction: surrogates out (zero recovery) → J

20

DATA COMPLETENESS CHECKLIST

✓ Included; no problems
* Included: problems noted in review
O Not Included

✓ Case Narrative

✓ Quality Control Summary Package
- * Surrogate Recovery Summary (Form II)
- ✓ MS/MSD Summary (Form III)
- ✓ Reagent Blank Summary (Form IV)
- ✓ GC/MS Tuning and Mass Calibration (Form V)

✓ Sample Data Package
- ✓ Holding Times (SMO Sample Traffice Reports)
- ✓ Organic Analysis Data Sheets (Form I; all four pages for each sample, arranged in increasing SMO number order)
- ✓ Reconsrtructed Ion Chromatogram(s) (RIC)
- N/A GC/EC Chromatograms
- ✓ Quantitation Reports
- ✓ Mass Spectral Data
- ✓ EPA/NIH Mass Spectral Library Search for TIC's

✓ Standards Data Package
- ✓ Current List of Laboratory/Instrumental Detection Limits
- ✓ Initial Calibration Data (Form VI) for each instrument
- ✓ Continuing Calibration Data (Form VII) for each instrument
- N/A Pesticide Evaluation Standards Summary (Form VIII)
- N/A Pesticide/PCB Standards Summary (Form IX)
- N/A Pesticide/PCB Identification (Form X; if any positive results)
- ✓ VOA and BNA Standards Reconstruction Ion Chromatograms (RIC)
- ✓ VOA and BNA Standards Quantitation Reports
- N/A Pesticide/PCB Standard Chromatograms and Data System Printouts

✓ Raw QC Data Package
- ✓ DFTPP and BFB mass spectra and mass listings
- ✓ Reagent Blank Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - N/A GC/EC Chromatograms and Data System Printouts

- ✓ Matrix Spike and Matrix Spike Duplicate Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - O EPA/NIH Library Search of TIC's
  - N/A GC/EC Chromatograms and Data System Printouts

(21)

HC877

Laboratory Name: Western Research Institute
Lab Sample ID: [illegible]
Sample Matrix: [illegible]
Data release Authorized by: [illegible]

Case No.: SFD 2296
SC Report No.: ---
Contract No.: 68-01-7160
Date Sample Received: 8-11-86

Volatile Compound

Concentration: Low Medium (Circle one)
Date Extracted: 8-20-86
Date Analyzed: 8/23/86 10:20
Conc/Dil Factor: 2 pH: .....
Percent Moisture: (Not Detected) %

C.A.S. Number		Conc. or Dil. (ug/kg) (Circle one)		C.A.S. Number		Conc. or Dil. (ug/kg) (Circle one)	
74-87-3	Chloromethane	250.	UJ	75-27-4	Bromodichloromethane	125.	UJ
74-83-9	Bromomethane	250.		10061-02-6	trans-1,3-Dichloropropene	125.	
75-01-4	Vinyl Chloride	250.		79-01-6	Trichloroethene	125.	
75-00-3	Chloroethane	250.		124-48-1	Dibromochloromethane	125.	
75-09-2	Methylene Chloride	640.		79-00-5	1,1,2-Trichloroethane	125.	
67-64-1	Acetone	510.	B, UB	71-43-2	Benzene	125.	
75-15-0	Carbon Disulfide	125.	UJ	10061-01-5	cis-1,3-Dichloropropene	125.	
75-35-4	1,1-Dichloroethene	125.		110-75-8	2-Chloroethylvinylether	250.	
75-34-3	1,1-Dichloroethane	125.		75-25-2	Bromoform	125.	
156-60-5	Trans-1,2-Dichloroethene	125.		108-10-1	4-Methyl-2-Pentanone	250.	
67-66-3	Chloroform	820	UB, B, UB	591-78-6	2-Hexanone	250.	
107-06-2	1,2-Dichloroethane	125.	UJ	127-18-4	Tetrachloroethene	125.	
78-93-3	2-Butanone	6600.	B, UB	79-34-5	1,1,2,2-Tetrachloroethane	125.	
71-55-6	1,1,1-Trichloroethane	125.	UJ	108-88-3	Toluene	110.	UB
56-23-5	Carbon Tetrachloride	125.		108-90-7	Chlorobenzene	125.	UJ
108-05-4	Vinyl Acetate	250.		100-41-4	Ethylbenzene	125.	
75-27-4	Bromodichloromethane	125.		100-42-5	Styrene	125.	
					Total Xylenes	125.	

Data reporting qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged, however the definition of each flag must be explicit.

Value - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U flag. MDL based on necessary concentration dilution action. This is not necessarily the instrument detection limit. The footnote should read Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria, but the result is less than the specified detection limit but greater than zero.

B - This flag applies to pesticide or aroclor where the identification has been confirmed by GC/MS. Single component pesticides if 10 ng/ul in the final extract should be confirmed by GC/MS.

E - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns data the user to take appropriate action.

Other - Any qualifiers used which are not defined must be accompanied by a full definition of each qualifier. Qualifiers used must be fully descriptive of the data quality.

UB - Compound found in method blank

[illegible] 9-11-86

000032

2 Laboratory Name [illegible]

Case No [illegible]

Sample Number [illegible]

22

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	tetramethyl [illegible] — unknown	[illegible]	[illegible]	6500 J
2. —	unknown [illegible]	[illegible]	[illegible]	[illegible] J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number

23

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Case No: [illegible]

Lab Sample ID No: [illegible]

CC Report No:

Sample Matrix: Mine Water

Contract No: 68-01-7160

Data Release Authorized By: [illegible]

Date Sample Received: [illegible]

Volatile Compounds

Concentration: Low | Medium (Circle One)

Date Extracted/Prepared:

Date Analyzed:

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted):

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 2 ug/l is calculated, report as 2J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000045

24

Case No. [illegible]

Sample No. [illegible]

Page 2

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted: 6-20-86

Date Analyzed: 9/05/86 0:23

Dilution Factor: 2X

Percent Moisture (Decanted) ---

GPC Cleanup: __ Yes X No

Separatory Funnel Extraction: X Yes

Continuous Liquid-Liquid Extraction: __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	3300.	US
111-44-4	bis(2-Chloroethyl)Ether	3300.	
95-57-8	2-Chlorophenol	3300.	
541-73-1	1,3-Dichlorobenzene	3300.	
106-46-7	1,4-Dichlorobenzene	3300.	
100-51-6	Benzyl Alcohol	3300.	
95-50-1	1,2-Dichlorobenzene	3300.	
95-48-7	2-Methylphenol	3300.	
39638-32-9	bis(2-Chloroisopropyl)Ether	3300.	
106-44-5	4-Methylphenol	3300.	
621-64-7	N-Nitroso-Di-n-Propylamine	4000.	
67-72-1	Hexachloroethane	3300.	
98-95-3	Nitrobenzene	3300.	
78-59-1	Isophorone	3300.	
88-75-5	2-Nitrophenol	3300.	
105-67-9	2,4-Dimethylphenol	3300.	
65-85-0	Benzoic Acid	17000.	
111-91-1	Bis(2-Chloroethoxy)Methane	3300.	
120-83-2	2,4-Dichlorophenol	3300.	
120-82-1	1,2,4-Trichlorobenzene	3300.	
91-20-3	Naphthalene	3300.	
106-47-8	4-Chloroaniline	3300.	
87-68-3	Hexachlorobutadiene	3300.	
59-50-7	4-Chloro-3-Methylphenol	3300.	
91-57-6	2-Methylnaphthalene	3300.	
77-47-4	Hexachlorocyclopentadiene	4000.	
88-06-2	2,4,6-Trichlorophenol	7000.	
95-95-4	2,4,5-Trichlorophenol	17000.	
91-58-7	2-Chloronaphthalene	3300.	
88-74-4	2-Nitroaniline	16000.	
131-11-3	Dimethyl Phthalate	3300.	
208-96-8	Acenaphthylene	3300.	
99-09-2	3-Nitroaniline	7000.	

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	3300.	US
51-28-5	2,4-Dinitrophenol	17000.	
100-02-7	4-Nitrophenol	20000.	
132-64-9	Dibenzofuran	3300.	
121-14-2	2,4-Dinitrotoluene	3700.	
606-20-2	2,6-Dinitrotoluene	3300.	
84-66-2	Diethylphthalate	3300.	
7005-72-3	4-Chlorophenyl-phenylether	3700.	
86-73-7	Fluorene	3300.	
100-01-6	4-Nitroaniline	3300.	
534-52-1	4,6-Dinitro-2-Methylphenol	17000.	
86-30-6	N-Nitrosodiphenylamine (1)	11000.	
101-55-3	4-Bromophenyl-phenylether	3300.	
118-74-1	Hexachlorobenzene	3300.	
87-86-5	Pentachlorophenol	17000.	
85-01-8	Phenanthrene	3300.	
120-12-7	Anthracene	4000.	
84-74-2	Di-n-Butylphthalate	3300.	
206-44-0	Fluoranthene	3300.	
129-00-0	Pyrene	3700.	
85-68-7	Butylbenzylphthalate	3300.	
91-94-1	3,3'-Dichlorobenzidine	3300.	
56-55-3	Benzo(a)Anthracene	3300.	
117-81-7	bis(2-Ethylhexyl) Phthalate	2600.	
218-01-9	Chrysene	3700.	US
117-84-0	Di-n-Octyl Phthalate	3300.	
205-99-2	Benzo(b)Fluoranthene	3300.	
207-08-9	Benzo(k)Fluoranthene	3300.	
50-32-8	Benzo(a)Pyrene	3300.	
193-39-5	Indeno(1,2,3-cd)Pyrene	3700.	
53-70-3	Dibenzo(a,h)Anthracene	3700.	
191-24-2	Benzo(g,h,i)Perylene	3300.	

(1) - Cannot be separated from Diphenylamine

Form 1 SVOA

5 Laboratory Name Western Research Institute

Case No [illegible]

Sample Number [illegible] 25

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 0	3 u-bromopyrene-0 ether PAH-[illegible]	PAH	[illegible]	1000
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24				
25.				
26.				
27.				
28.				
29.				
30				

000047

Sample Number
[illegible]
(26)

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute
Lab Sample ID No: JS9828
Sample Matrix: Oil, [illegible]
Data Release Authorized By: [illegible]

Case No: [illegible]
QC Report No: —
Contract No: 68-01-7160
Date Sample Received: [illegible]

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: _____
Date Analyzed: _____
Conc/Dil Factor: _____ pH _____
Percent Moisture: (Not Decanted): _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged, however, the definition of each flag must be given.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 5 ug/l is calculated, report as 5J.

C This flag applies to pesticide data/analyses where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ml in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000035

Lab Name : [illegible]
Case No : 54[illegible]

ORGANIC ANALYSIS DATA SHEET
(Page 2)

Sample Number
Matrix: AQUATIC

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 6-20-86
Date Analyzed: 9/05/86 23:47
Conc/Dil. Factor: 1.75
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes X_ No
Separatory Funnel Extraction X_ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/kg (Circle One)	
108-95-2	Phenol	460.	U
111-44-4	bis(2-Chloroethyl)Ether	460.	U
95-57-8	2-Chlorophenol	460.	U
541-73-1	1,3-Dichlorobenzene	460.	U
106-46-7	1,4-Dichlorobenzene	460.	U
100-51-6	Benzyl Alcohol	460.	U
95-50-1	1,2-Dichlorobenzene	460.	U
95-48-7	2-Methylphenol	460.	U
39638-32-9	bis(2-chloroisopropyl)Ether	460.	U
106-44-5	4-Methylphenol	460.	U
621-64-7	N-Nitroso-Di-n-Propylamine	550.	U
67-72-1	Hexachloroethane	460.	U
98-95-3	Nitrobenzene	460.	U
78-59-1	Isophorone	460.	U
88-75-5	2-Nitrophenol	460.	U
105-67-9	2,4-Dimethylphenol	460.	U
65-85-0	Benzoic Acid	2300.	U
111-91-1	bis(2-Chloroethoxy)Methane	460.	U
120-83-2	2,4-Dichlorophenol	460.	U
120-82-1	1,2,4-Trichlorobenzene	460.	U
91-20-3	Naphthalene	460.	U
106-47-8	4-Chloroaniline	460.	U
87-68-3	Hexachlorobutadiene	460.	U
59-50-7	4-Chloro-3-Methylphenol	460.	U
91-57-6	2-Methylnaphthalene	460.	U
77-47-4	Hexachlorocyclopentadiene	550.	U
88-06-2	2,4,6-Trichlorophenol	460.	U
95-95-4	2,4,5-Trichlorophenol	2300.	U
91-58-7	2-Chloronaphthalene	460.	U
88-74-4	2-Nitroaniline	2300.	U
131-11-3	Dimethyl Phthalate	1100.	U
208-96-8	Acenaphthylene	460.	U
99-09-2	3-Nitroaniline	2300.	U

C.A.S. Number		ug/L or ug/kg (Circle One)	
83-32-9	Acenaphthene	460.	U
51-28-5	2,4-Dinitrophenol	2300.	U
100-02-7	4-Nitrophenol	2700.	U
132-64-9	Dibenzofuran	460.	U
121-14-2	2,4-Dinitrotoluene	460.	U
606-20-2	2,6-Dinitrotoluene	460.	U
84-66-2	Diethylphthalate	460.	U
7005-72-3	4-Chlorophenyl-phenylether	500.	U
86-73-7	Fluorene	460.	U
100-01-6	4-Nitroaniline	460.	U
534-52-1	4,6-Dinitro-2-Methylphenol	2300.	U
86-30-6	N-Nitrosodiphenylamine (1)	1500.	U
101-55-3	4-Bromophenyl-phenylether	460.	U
118-74-1	Hexachlorobenzene	460.	U
87-86-5	Pentachlorophenol	2300.	U
85-01-8	Phenanthrene	460.	U
120-12-7	Anthracene	550.	U
84-74-2	Di-n-Butylphthalate	240.	JB
206-44-0	Fluoranthene	460.	U
129-00-0	Pyrene	500.	U
85-68-7	Butylbenzylphthalate	460.	U
91-94-1	3,3'-Dichlorobenzidine	1400.	U
56-55-3	Benzo(a)Anthracene	460.	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2200.	JB
218-01-9	Chrysene	920.	U
117-84-0	Di-n-Octyl Phthalate	460.	U
205-99-2	Benzo(b)Fluoranthene	460.	U
207-08-9	Benzo(k)Fluoranthene	460.	U
50-32-8	Benzo(a)Pyrene	460.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	690.	U
53-70-3	Dibenzo(a,h)Anthracene	780.	U
191-24-2	Benzo(g,h,i)Perylene	870.	U

(1)-Cannot be separated from Diphenylamine

Form 1 7/85

000054

Laboratory Name Western Research Institute

Case No 545 2387H

Sample Number
HC277
[illegible]

(28)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown - poor spectra ?	BNA	17.83	610 J
2. 20409158	(1,1-dimethyl propyl)- benzene		18.85	400 J
3. —	C_9H_{11} substituted benzene ?		19.34	540 J
4. 4463442	(1-ethyl butyl)- benzene		19.84	860 J
5. 102250	1,3,5- triethyl - benzene or isomer		20.48	090 J
6. 5561988	1,4-dimethyl 2-(2-methyl propyl)- benzene		20.77	1200 J
7. 19780204	7- methylene tridecane		21.05	1000 J
8. —	unknown compound ?		21.37	470 J
9. —	C_7H_{16} - substituted benzene ?		21.73	1200 J
10. —	unknown compound ?		21.88	1100 J
11. —	C_7H_{16} - substituted benzene ?		22.05	640 J
12. —	unknown compound ?		22.80	380 J
13. 21777844	[2-methyl-1-(1-methylethyl) propyl] benzene		23.21	550 J
14. —	unknown compound ?		24.0 ?	1100 J
15. —	unknown compound ?		24.55	190 J
16. —	unknown compound ?		25.50	880 J
17. 3363720	tetraethyl-benzene ($C_{10}H_{14}$-benzene isomer)		27.37	600 J
18. —	unknown compound ?		28.88	660 J
19. 3074666	2,5-dimethyl-[illegible] isomer	↓	33.15	610 J
20. 117-81-7	[bis-2-methoxyethyl phthalate] isomer	PNA	35.81	550 J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30				

000003

Form 1, Part B

7 85

Image quality of the document being filmed

SITE/SITE ASSESSMENT SAS006

9

HC877
Rpt: 9/10/94 (29)

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Lab Sample ID No: 159815

Sample Matrix: Other waste

Data Release Authorized By: [illegible]

Case No: [illegible] 239814

QC Report No: —

Contract No: 68-01-7160

Date Sample Received: 8/11/94

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be defined.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the confirmation has been confirmed by GC/MS. Simple component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000063

10

30

Lab Name : WCC
Case No : SRC3396-

Sample Number
MCCT 04-FLT

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/04/86 20:52
Conc/Dil Factor: 12.5
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction XX Yes
Continuous Liquid-Liquid Extraction __ Yes

C.R.S. Number		ug/L or ug/kg (Circle one)		C.R.S. Number		ug/L or ug/kg (Circle one)	
108-95-2	Phenol	2100.	U UJ	83-32-9	Acenaphthene	2100.	U UJ
111-44-4	bis(-2-Chloroethyl)Ether	2100.	U	51-28-5	2,4-Dinitrophenol	10000.	U
95-57-8	2-Chlorophenol	2100.	U	100-02-7	4-Nitrophenol	12000.	U
541-73-1	1,3-Dichlorobenzene	2100.	U	132-64-9	Dibenzofuran	2100.	U
106-46-7	1,4-Dichlorobenzene	2100.	U	121-14-2	2,4-Dinitrotoluene	2300.	U
100-51-6	Benzyl Alcohol	2100.	U	606-20-2	2,6-Dinitrotoluene	2100.	U
95-50-1	1,2-Dichlorobenzene	2100.	U	84-66-2	Diethylphthalate	2100.	U
95-48-7	2-Methylphenol	2100.	U	7005-72-3	4-Chlorophenyl-phenylether	2300.	U
39638-32-9	bis(2-chloroisopropyl)Ether	2100.	U	86-73-7	Fluorene	2100.	U
106-44-5	4-Methylphenol	2100.	U	100-01-6	4-Nitroaniline	2100.	U
621-64-7	N-Nitroso-Di-n-Propylamine	2500.	U	534-52-1	4,6-Dinitro-2-Methylphenol	10000.	U
67-72-1	Hexachloroethane	2100.	U	86-30-6	N-Nitrosodiphenylamine (1)	6900.	U
98-95-3	Nitrobenzene	2100.	U	101-55-3	4-Bromophenyl-phenylether	2100.	U
78-59-1	Isophorone	2100.	U	118-74-1	Hexachlorobenzene	2100.	U
88-75-5	2-Nitrophenol	2100.	U	87-86-5	Pentachlorophenol	10000.	U
105-67-9	2,4-Dimethylphenol	2100.	U	85-01-8	Phenanthrene	2100.	U
65-85-0	Benzoic Acid	10000.	U	120-12-7	Anthracene	2500.	U
111-91-1	bis(-2-Chloroethoxy)Methane	2100.	U	84-74-2	Di-n-Butylphthalate	2100.	U
120-83-2	2,4-Dichlorophenol	2100.	U	206-44-0	Fluoranthene	2100.	U
120-82-1	1,2,4-Trichlorobenzene	2100.	U	129-00-0	Pyrene	2300.	U
91-20-3	Naphthalene	2100.	U	85-68-7	Butylbenzylphthalate	2100.	U
106-47-8	4-Chloroaniline	2100.	U	91-94-1	3,3'-Dichlorobenzidine	5800.	U
87-68-3	Hexachlorobutadiene	2100.	U	56-55-3	Benzo(a)Anthracene	2100.	U
59-50-7	4-Chloro-3-Methylphenol	2100.	U	117-81-7	bis(2-Ethylhexyl)Phthalate	2100.	U
91-57-6	2-Methylnaphthalene	2100.	U	218-01-9	Chrysene	3500.	U
77-47-4	Hexachlorocyclopentadiene	2500.	U	117-84-0	Di-n-Octyl Phthalate	2100.	U
88-06-2	2,4,6-Trichlorophenol	4400.	U	205-99-2	Benzo(b)Fluoranthene	2100.	U
95-95-4	2,4,5-Trichlorophenol	10000.	U	207-08-9	Benzo(k)Fluoranthene	2100.	U
91-58-7	2-Chloronaphthalene	2100.	U	50-32-8	Benzo(a)Pyrene	2100.	U
88-74-4	2-Nitroaniline	11000.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	3100.	U
131-11-3	Dimethyl Phthalate	5000.	U	53-70-3	Dibenzo(a,h)Anthracene	3500.	U
208-96-8	Acenaphthylene	2100.	U	191-24-2	Benzo(g,h,i)Perylene	4000.	U
99-09-2	3-Nitroaniline	10000.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name Western Research Institute

Case No SAS 23052

Sample Number HG 377 Dil 2.0 J

31

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 4110445	3,3-dimethyl-octane	BNA	15.44	3600 J
2. —	1,1,2,3-Tetramethylcyclohexane or isomer		16.16	4300 J
3. —	C_9H_{18} alkene or cyclic aliphatic cmp'd		16.88	4000 J
4. 1068877	3-ethyl-2,4-dimethyl-pentane or isomer		17.52	2900 J
5. 2958761	decahydro-2-methyl-naphthalene isomer		18.06	4000 J
6. —	C_9H_{18} isomer		18.73	2400 J
7. 5911046	3-methyl-nonane		19.50	4800 J
8. 54676390	2-butyl-1,1,3-trimethyl-cyclohexane		19.97	7100 J
9. —	$C_{10}H_{20}$ alkene ?		20.43	3600 J
10. —	unknown compound		20.64	6700 J
11. 41446677	(Z)-3-Tetradecene or isomer		21.06	5300 J
12. 17302328	3,7-dimethyl-nonane or isomer		22.58	7400 J
13. —	$\geq C_{10}H_{22}$ alkane		24.05	1200 J
14. 294662	Cyclododecane		24.57	4000 J
15. —	$\geq C_{10}H_{22}$ alkane		25.75	2500 J
16. —	$> C_{10}H_{22}$ alkane		27.03	5400 J
17. 1921706	2,6,10,14-tetramethyl-pentadecane or isomer		27.90	4700 J
18. 638368	2,6,10,14-tetramethyl-hexadecane or isomer		29.40	9600 J
19. 7667552	1,2,3-trimethyl-(1α 2α 3β) cyclohexane isomer	V	30.17	2400 J
20. —	unknown compound	BNA	30.52	2200 J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000085

Quality of the document being filmed

SITE/SITE ASSESSMENT SAS006 L

12

Sample Number
HC 377
PL-AR

32

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute
Lab Sample ID No: 259801
Sample Matrix: Oily waste
Data Release Authorized By: [illegible]

Case No: SAS 2305H
QC Report No: —
Contract No: 68-01-7160
Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: _____
Date Analyzed: _____
Conc/Dil Factor: _____ pH _____
Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged, however, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U: Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 5 ug/l is calculated, report as 5J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000111

13

33

Lab Name : [illegible]
Case No. : 5822336

Sample Number
BNA01LAB.7

[illegible]
(Page 2.

Semivolatile Compounds

Concentration: Low (Medium) (Circle One)
Date Extracted: 6-20-86
Date Analyzed: 9/03/86 22:31
Concentration Factor: 2.75
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction X Yes
Continuous Liquid-Liquid Extraction ___ HB 9-16-86

C.A.S. Number		ug/L or ug/kg (Circle one)		C.A.S. Number		ug/L or ug/kg (Circle one)	
108-95-2	Phenol	460.	U	83-32-9	Acenaphthene	460.	U
111-44-4	bis(2-Chloroethyl)Ether	460.	U	51-28-5	2,4-Dinitrophenol	2300.	U
95-57-8	2-Chlorophenol	460.	U	100-02-7	4-Nitrophenol	2300.	U
541-73-1	1,3-Dichlorobenzene	460.	U	132-64-9	Dibenzofuran	460.	U
106-46-7	1,4-Dichlorobenzene	460.	U	121-14-2	2,4-Dinitrotoluene	550.	U
100-51-6	Benzyl Alcohol	460.	U	606-20-2	2,6-Dinitrotoluene	460.	U
95-50-1	1,2-Dichlorobenzene	460.	U	84-66-2	Diethylphthalate	550.	U
95-48-7	2-Methylphenol	460.	U	7005-72-3	4-Chlorophenyl-phenylether	500.	U
39638-32-9	bis(2-chloroisopropyl)Ether	460.	U	86-73-7	Fluorene	550.	U
106-44-5	4-Methylphenol	460.	U	100-01-6	4-Nitroaniline	460.	U
621-64-7	N-Nitroso-Di-n-Propylamine	460.	U	534-52-1	4,6-Dinitro-2-Methylphenol	2300.	U
67-72-1	Hexachloroethane	460.	U	86-30-6	N-Nitrosodiphenylamine (1)	460.	U
98-95-3	Nitrobenzene	460.	U	101-55-3	4-Bromophenyl-phenylether	460.	U
78-59-1	Isophorone	460.	U	118-74-1	Hexachlorobenzene	460.	U
88-75-5	2-Nitrophenol	460.	U	87-86-5	Pentachlorophenol	2300.	U
105-67-9	2,4-Dimethylphenol	460.	U	85-01-8	Phenanthrene	460.	U
65-85-0	Benzoic Acid	2300.	U	120-12-7	Anthracene	460.	U
111-91-1	bis(2-Chloroethoxy)Methane	460.	U	84-74-2	Di-n-Butylphthalate	460.	U
120-83-2	2,4-Dichlorophenol	460.	U	206-44-0	Fluoranthene	460.	U
120-82-1	1,2,4-Trichlorobenzene	460.	U	129-00-0	Pyrene	460.	U
91-20-3	Naphthalene	460.	U	85-68-7	Butylbenzylphthalate	460.	U
106-47-8	4-Chloroaniline	460.	U	91-94-1	3,3'-Dichlorobenzidine	920.	U
87-68-3	Hexachlorobutadiene	460.	U	56-55-3	Benzo(a)Anthracene	460.	U
59-50-7	4-Chloro-3-Methylphenol	460.	U	117-81-7	bis(2-Ethylhexyl)Phthalate	460.	U
91-57-6	2-Methylnaphthalene	460.	U	218-01-9	Chrysene	460.	U
77-47-4	Hexachlorocyclopentadiene	460.	U	117-84-0	Di-n-Octyl Phthalate	460.	U
88-06-2	2,4,6-Trichlorophenol	460.	U	205-99-2	Benzo(b)Fluoranthene	460.	U
95-95-4	2,4,5-Trichlorophenol	2300.	U	207-08-9	Benzo(k)Fluoranthene	460.	U
91-58-7	2-Chloronaphthalene	460.	U	50-32-8	Benzo(a)Pyrene	600.	U
88-74-4	2-Nitroaniline	2300.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	2600.	U
131-11-3	Dimethyl Phthalate	460.	U	53-70-3	Dibenzo(a,h)Anthracene	460.	U
208-96-8	Acenaphthylene	460.	U	191-24-2	Benzo(g,h,i)Perylene	460.	U
99-09-2	3-Nitroaniline	2300.	U				

1 -Cannot be separated from diphenylamine

Laboratory Name Western Research Institute

Case No SAS 2309 U

Sample Number HS 377

(34)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 123422	4-hydroxy-4 methyl-2-Pentanone (aldol condensation product)	BNA	9.69	2100J
2. —	C_6H_{14} alkane		12.45	210J
3. —	C_6H_{14} alkane		12.68	240J
4. —	C_7H_{14} Alkene		13.05	1000J
5. 107879	2-Pentanone		13.11	450J
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000113

being filmed

(35)

HC878

Volatile Analysis Data Sheet
Page 1

Laboratory Name: Western Research Institute
Lab Sample ID: 9608H9 ::0: ACN9164
Sample Matrix: OILY SLUDGE
Data release Authorized by: _____

Case No.: SAS 2398H
QC Report No.: ---
Contract No.: 68-01-7160
Date Sample Received: 6-11-86

Volatile Compounds

Concentration: Low (Medium) (Circle One)
Date Extracted: 6-20-86
Date Analyzed: 9/03/86 15:23
Conc/Dil factor: 2 pH : .....
Percent Moisture: (Not Decanted) 1.

C.A.S. Number		ug/l or ug/kg (Circle One)		C.A.S. Number		ug/l or ug/kg (Circle One)	
74-87-3	Chloromethane	2500.	UJ	78-87-5	1,2-Dichloropropane	1250.	UJ
74-83-9	Bromomethane	2500.		10061-02-6	Trans-1,3-Dichloropropene	1250.	
75-01-4	Vinyl Chloride	2500.		75-01-4	Trichloroethene	1250.	
75-00-3	Chloroethane	2500.		124-48-1	Dibromochloromethane	1250.	
75-09-2	Methylene Chloride	550.	~~UB~~	79-00-5	1,1,2-Trichloroethane	1250.	
67-64-1	Acetone	5700.	~~BUB~~	71-43-2	Benzene	1250.	
75-15-0	Carbon Disulfide	1250.	UJ	10061-01-5	cis-1,3-Dichloropropene	1250.	
75-35-4	1,1-Dichloroethene	1250.		110-75-8	2-Chloroethylvinylether	2500.	
75-34-3	1,1-Dichloroethane	1250.		75-25-2	Bromoform	1250.	
156-60-5	Trans-1,2-Dichloroethene	1250.		108-10-1	4-Methyl-2-Pentanone	2500.	
67-66-3	Chloroform	790.	~~UB~~	591-78-6	2-Hexanone	2500.	
107-02-2	1,2-Dichloroethane	1250.	UJ	127-18-4	Tetrachloroethene	1250.	
78-93-3	2-Butanone	7600.	~~BUB~~	79-34-5	1,1,2,2-Tetrachloroethane	1250.	
71-55-6	1,1,1-Trichloroethane	1250.	UJ	108-88-3	Toluene	960.	~~BUB~~
56-23-5	Carbon Tetrachloride	1250.		108-90-7	Chlorobenzene	1250.	UJ
108-05-4	Vinyl Acetate	2500.		100-41-4	Ethylbenzene	1250.	
75-27-4	Bromodichloromethane	1250.		100-42-5	Styrene	1250.	
					Total Xylenes	1250.	

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged, however the definition of each flag must be explicit.

Value - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action (this is not necessarily the instrument detection limit.. The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is than the specified detection limit but than zero (e.g. 10J). If limit of detection is 10 ug/L and a concentration of 3.0 ug/L is calculated, report as 3J.

C - This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥ 10 ng/ul in the final extract should be confirmed by GC/MS.

B - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns data the user to take appropriate action.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

OPTIONAL FLAGS

M - Compound not present in Calibration file.

M- Compound present in method blank

Form I

000122

TT 9-11-86

being filmed

DUE/OIL ASSESSMENT PASSUC

Sample Number
HC378

36

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute
Case No: 545 2398 H
Lab Sample ID No: 259831
QC Report No: —
Sample Matrix: Oily waste
Contract No: 68-01-7160
Data Release Authorized By: [illegible]
Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	Cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be written.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 5 ug/l is calculated, report as 5J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000131

being filmed
DIRECT OIL RESEARCH PROJECT

3

37

Lab Name : WRI
Case No : 9450798W

Sample Number
H5870H2XX

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/06/86 3:18
Conc/Dil Factor 10
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes X_ No
Separatory Funnel Extraction X_ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/kg (Circle One)	
108-95-2	Phenol	5000.	U UJ
111-44-4	bis(-2-Chloroethyl)Ether	5000.	U
95-57-8	2-Chlorophenol	5000.	U
541-73-1	1,3-Dichlorobenzene	5000.	U
106-46-7	1,4-Dichlorobenzene	5000.	U
100-51-6	Benzyl Alcohol	5000.	U
95-50-1	1,2-Dichlorobenzene	5000.	U
95-48-7	2-Methylphenol	5000.	U
39638-32-9	bis(2-chloroisopropyl)Ether	5000.	U
106-44-5	4-Methylphenol	5000.	U
621-64-7	N-Nitroso-Di-n-Propylamine	6000.	U
67-72-1	Hexachloroethane	5000.	U
98-95-3	Nitrobenzene	5000.	U
78-59-1	Isophorone	5000.	U
88-75-5	2-Nitrophenol	5000.	U
105-67-9	2,4-Dimethylphenol	5000.	U
65-85-0	Benzoic Acid	25000.	U
111-91-1	bis(-2-Chloroethoxy)Methane	5000.	U
120-83-2	2,4-Dichlorophenol	5000.	U
120-82-1	1,2,4-Trichlorobenzene	5000.	U
91-20-3	Naphthalene	5000.	U
106-47-8	4-Chloroaniline	5000.	U
87-68-3	Hexachlorobutadiene	5000.	U
59-50-7	4-Chloro-3-Methylphenol	5000.	U
91-57-6	2-Methylnaphthalene	5000.	U
77-47-4	Hexachlorocyclopentadiene	6000.	U
88-06-2	2,4,6-Trichlorophenol	11000.	U
95-95-4	2,4,5-Trichlorophenol	25000.	U
91-58-7	2-Chloronaphthalene	5000.	U
88-74-4	2-Nitroaniline	27000.	U
131-11-3	Dimethyl Phthalate	12000.	U
208-96-8	Acenaphthylene	5000.	U
99-09-2	3-Nitroaniline	25000.	U UJ

C.A.S. Number		ug/L or ug/kg (Circle One)	
83-32-9	Acenaphthene	5000.	U UJ
51-28-5	2,4-Dinitrophenol	25000.	U
100-02-7	4-Nitrophenol	30000.	U
132-64-9	Dibenzofuran	5000.	U
121-14-2	2,4-Dinitrotoluene	5500.	U
606-20-2	2,6-Dinitrotoluene	5000.	U
84-66-2	Diethylphthalate	5000.	U
7005-72-3	4-Chlorophenyl-phenylether	5500.	U
86-73-7	Fluorene	5000.	U
100-01-6	4-Nitroaniline	5000.	U
534-52-1	4,6-Dinitro-2-Methylphenol	25000.	U
86-30-6	N-Nitrosodiphenylamine (1)	17000.	U
101-55-3	4-Bromophenyl-phenylether	5000.	U
118-74-1	Hexachlorobenzene	5000.	U
87-86-5	Pentachlorophenol	25000.	U
85-01-8	Phenanthrene	5000.	U
120-12-7	Anthracene	6000.	U
84-74-2	Di-n-Butylphthalate	5000.	U
206-44-0	Fluoranthene	5000.	U
129-00-0	Pyrene	5500.	U
85-68-7	Butylbenzylphthalate	5000.	U
91-94-1	3,3'-Dichlorobenzidine	15000.	U
56-55-3	Benzo(a)Anthracene	5000.	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5000.	U
218-01-9	Chrysene	10000.	U
117-84-0	Di-n-Octyl Phthalate	5000.	U
205-99-2	Benzo(b)Fluoranthene	5000.	U
207-08-9	Benzo(k)Fluoranthene	5000.	U
50-32-8	Benzo(a)Pyrene	5000.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	7500.	U
53-70-3	Dibenzo(a,h)Anthracene	8500.	U
191-24-2	Benzo(g,h,i)Perylene	9500.	U UJ

(1)-Cannot be separated from diphenylamine

Form 1

7/85

000132

Being filmed

Laboratory Name Western Research Institute

Case No SAS-[illegible]

Sample Number [illegible] 38

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	(RT) or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	> C_8H_{16} alkene ?	BNA	22.54	4000 J
2. 6975980	Decane 2-methyl or isomer		24.02	6000 J
3. 629629	Pentadecane or isomer		24.62	9000 J
4. —	unknown compound		25.39	4000 J
5. 5504-95	Hexadecane or isomer		26.23	18,000 J
6. 0	Pentadecane, 2,6,10-trimethyl or isomer		27.01	22,000 J
7. 629787	Heptadecane		27.77	51,000 J
8. 638368	Hexadecane, 2,6,10,14-tetramethyl		29.39	100,000 J
9. 2801478	Pentadecane, 4-methyl or isomer		30.52	32,000 J
10. 112958	Eicosane		31.91	70,000 J
11. —	> $C_{19}H_{38}$ alkene ?		32.89	31,000 J
12. 1560445	Eicosane or isomer		33.14	69,000 J
13. —	> $C_{17}H_{36}$ alkene ?		34.33	39,000 J
14. 503453	Octadecane		35.47	54,000 J
15. 646311 / 1560-74	Pentadecane / Tetracosane or isomer mixture		36.56	43,000 J
16. 629662	Pentacosane or isomer		37.61	34,000 J
17. 638675	Tricosane or isomer		38.60	24,000 J
18. 112954	Eicosane or isomer		39.52	27,000 J
19. 629620	Heptadecane or isomer		40.52	30,000 J
20. 629992	Pentadecane or isomer	—	42.15	23,000 J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000133

Sample Number
HC 278

39

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Case No: 545 3298 U

Lab Sample ID No: >

QC Report No: –

Sample Matrix: Oily Waste

Contract No: 68-01-7160

Data Release Authorized By: [illegible]

Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	Cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 ug/l and a concentration of 2 ug/l is calculated, report as 2J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000158

(40)

Lab Name : UFI
Case No : 5822398

Sample Number
M2878(64 ROMAIIC)

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/05/86 16:08
Concentration Factor: 330X ACB 9-16-86
Percent Moisture (Decanted) --

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction XX Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	160000	U R	83-32-9	Acenaphthene	160000	U R
111-44-4	bis(-2-Chloroethyl)Ether	160000	U	51-28-5	2,4-Dinitrophenol	800000	U
95-57-8	2-Chlorophenol	160000	U	100-02-7	4-Nitrophenol	960000	U
541-73-1	1,3-Dichlorobenzene	160000	U	132-64-9	Dibenzofuran	160000	U
106-46-7	1,4-Dichlorobenzene	160000	U	121-14-2	2,4-Dinitrotoluene	160000	U
100-51-6	Benzyl Alcohol	160000	U	606-20-2	2,6-Dinitrotoluene	160000	U
95-50-1	1,2-Dichlorobenzene	160000	U	84-66-2	Diethylphthalate	160000	U
95-48-7	2-Methylphenol	160000	U	7005-72-3	4-Chlorophenyl-phenylether	180000	U
39638-32-9	bis(2-chloroisopropyl)Ether	160000	U	86-73-7	Fluorene	160000	U
106-44-5	4-Methylphenol	160000	U	100-01-6	4-Nitroaniline	160000	U
621-64-7	N-Nitroso-Di-n-Propylamine	190000	U	534-52-1	4,6-Dinitro-2-Methylphenol	800000	U
67-72-1	Hexachloroethane	160000	U	86-30-6	N-Nitrosodiphenylamine (1)	530000	U
98-95-3	Nitrobenzene	160000	U	101-55-3	4-Bromophenyl-phenylether	160000	U
78-59-1	Isophorone	160000	U	118-74-1	Hexachlorobenzene	160000	U
88-75-5	2-Nitrophenol	160000	U	87-86-5	Pentachlorophenol	800000	U
105-67-9	2,4-Dimethylphenol	160000	U	85-01-8	Phenanthrene	160000	U
65-85-0	Benzoic Acid	800000	U	120-12-7	Anthracene	190000	U
111-91-1	bis(-2-Chloroethoxy)Methane	160000	U	84-74-2	Di-n-Butylphthalate	160000	U
120-83-2	2,4-Dichlorophenol	160000	U	206-44-0	Fluoranthene	160000	U
120-82-1	1,2,4-Trichlorobenzene	160000	U	129-00-0	Pyrene	180000	U
91-20-3	Naphthalene	160000	U	85-68-7	Butylbenzylphthalate	160000	U
106-47-8	4-Chloroaniline	160000	U	91-94-1	3,3'-Dichlorobenzidine	460000	U
87-68-3	Hexachlorobutadiene	160000	U	56-55-3	Benzo(a)Anthracene	160000	U
59-50-7	4-Chloro-3-Methylphenol	160000	U	117-81-7	bis(2-Ethylhexyl)Phthalate	160000	U
91-57-6	2-Methylnaphthalene	160000	U	218-01-9	Chrysene	320000	U
77-47-4	Hexachlorocyclopentadiene	190000	U	117-84-0	Di-n-Octyl Phthalate	160000	U
88-06-2	2,4,6-Trichlorophenol	340000	U	205-99-2	Benzo(b)Fluoranthene	160000	U
95-95-4	2,4,5-Trichlorophenol	800000	U	207-08-9	Benzo(k)Fluoranthene	160000	U
91-58-7	2-Chloronaphthalene	160000	U	50-32-8	Benzo(a)Pyrene	160000	U
88-74-4	2-Nitroaniline	860000	U	193-39-5	Indeno(1,2,3-cd)Pyrene	340000	U
131-11-3	Dimethyl Phthalate	380000	U	53-70-3	Dibenzo(a,h)Anthracene	270000	U
208-96-8	Acenaphthylene	160000	U	191-24-2	Benzo(g,h,i)Perylene	300000	U
99-09-2	3-Nitroaniline	800000	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name Western Research Institute

Case No SAS 23984

Sample Number
MC878
BI AROMATIC

(41)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug or ug/kg)
1.	—	unknown compound	BN 4	26.48	72,000 J
2.	—	unknown compound		27.09	120,000 J
3.	—	unknown compound		27.37	110,000 J
4.	—	unknown compound		28.11	130,000 J
5.	—	unknown compound		28.88	230,000 J
6.	—	unknown compound		29.22	170,000 J
7.	—	unknown compound		29.40	350,000 J
8.	—	unknown compound		30.01	150,000 J
9.	—	unknown compound		30.18	260,000 J
10.	—	unknown compound		30.33	390,000 J
11.	16587523	mixture, including 3-methyl-dibenzothiophene		31.02	350,000 J
12.	—	unknown compound		32.39	470,000 J
13.	—	unknown compound		32.89	930,000 J
14.	3674666	2,5-dimethyl-phenanthrene		33.15	650,000 J
15.	3674735	2,3,5-trimethyl-phenanthrene		34.64	760,000 J
16.	—	unknown compound		39.76	420,000 J
17.	—	unknown compound		43.36	97,000 J
18.	—	unknown compound		45.57	260,000 J
19.	—	unknown compound	Y	47.40	370,000 J
20.	—	unknown compound	BN 4	49.52	170,000 J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

000160

being filmed

Sample Number
HC 878

(42)

ALIPHATIC

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Lab Sample ID No: SS9821

Sample Matrix: Oily waste

Data Release Authorized By: [illegible]

Case No: CAS 2398H

GC Report No: —

Contract No: 68-01-7160

Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ml in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000186

Lab name : UTI
Case No : SA52398

Sample number
AC876(BN A,1PMB110)

ORGANIC ANALYSIS DATA SHEET
(Page 2)

43

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/05/86 12:36
Conc/Dil Factor: 1600
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction XX Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	800000	U
111-44-4	bis(-2-Chloroethyl)Ether	800000	U
95-57-8	2-Chlorophenol	800000	U
541-73-1	1,3-Dichlorobenzene	800000	U
106-46-7	1,4-Dichlorobenzene	800000	U
100-51-6	Benzyl Alcohol	800000	U
95-50-1	1,2-Dichlorobenzene	800000	U
95-48-7	2-Methylphenol	800000	U
39638-32-9	bis(2-chloroisopropyl)Ether	800000	U
106-44-5	4-Methylphenol	800000	U
621-64-7	N-Nitroso-Di-n-Propylamine	960000	U
67-72-1	hexachloroethane	800000	U
98-95-3	Nitrobenzene	800000	U
78-59-1	Isophorone	800000	U
88-75-5	2-Nitrophenol	800000	U
105-67-9	2,4-Dimethylphenol	800000	U
65-85-0	Benzoic Acid	4000000	U
111-91-1	bis(-2-Chloroethoxy)Methane	800000	U
120-83-2	2,4-Dichlorophenol	800000	U
120-82-1	1,2,4-Trichlorobenzene	800000	U
91-20-3	Naphthalene	800000	U
106-47-8	4-Chloroaniline	800000	U
87-68-3	Hexachlorobutadiene	800000	U
59-50-7	4-Chloro-3-Methylphenol	800000	U
91-57-6	2-Methylnaphthalene	800000	U
77-47-4	Hexachlorocyclopentadiene	960000	U
88-06-2	2,4,6-Trichlorophenol	1700000	U
95-95-4	2,4,5-Trichlorophenol	4000000	U
91-58-7	2-Chloronaphthalene	800000	U
88-74-4	2-Nitroaniline	4000000	U
131-11-3	Dimethyl Phthalate	1600000	U
208-96-8	Acenaphthylene	800000	U
99-09-2	3-Nitroaniline	4000000	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	800000	U
51-28-5	2,4-Dinitrophenol	4000000	U
100-02-7	4-Nitrophenol	4000000	U
132-64-9	Dibenzofuran	800000	U
121-14-2	2,4-Dinitrotoluene	800000	U
606-20-2	2,6-Dinitrotoluene	800000	U
84-66-2	Diethylphthalate	800000	U
7005-72-3	4-Chlorophenyl-phenylether	800000	U
86-73-7	Fluorene	800000	U
100-01-6	4-Nitroaniline	800000	U
534-52-1	4,6-Dinitro-2-Methylphenol	4000000	U
86-30-6	N-Nitrosodiphenylamine (1)	2600000	U
101-55-3	4-Bromophenyl-phenylether	800000	U
118-74-1	Hexachlorobenzene	800000	U
87-86-5	Pentachlorophenol	4000000	U
85-01-8	Phenanthrene	800000	U
120-12-7	Anthracene	960000	U
84-74-2	Di-n-Butylphthalate	800000	U
206-44-0	Fluoranthene	800000	U
129-00-0	Pyrene	800000	U
85-68-7	Butylbenzylphthalate	800000	U
91-94-1	3,3'-Dichlorobenzidine	2200000	U
56-55-3	Benzo(a)Anthracene	800000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	800000	U
218-01-9	Chrysene	1400000	U
117-84-0	Di-n-Octyl Phthalate	800000	U
205-99-2	Benzo(b)Fluoranthene	800000	U
207-08-9	Benzo(k)Fluoranthene	800000	U
50-32-8	Benzo(a)Pyrene	800000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200000	U
53-70-3	Dibenzo(a,h)Anthracene	1400000	U
191-24-2	Benzo(g,h,i)Perylene	1600000	U

(1)-Cannot be separated from Diphenylamine

Form I

7/85

Laboratory Name Western Research Institute

Case No CAS 22084

Sample Number
HA 378
PK ALIPH

(44)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT/or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	≥ $C_{11}H_{24}$ alkane	BNA	24.67	1,000,000 J
2. 629947	Heneicosane or isomer -		26.26	2,000,000 J
3. 17302328	3,7-dimethyl-nonane or isomer		27.03	1,800,000 J
4. 629947	Heneicosane or isomer		27.79	3,100,000 J
5. 1921706	2,6,10,14-tetramethyl-pentadecane or isomer		27.91	2,700,000 J
6. 4316658	3,5,5-trimethyl-1-Hexene or larger alkene or isomer		28.58	2,400,000 J
7. 629925	Nonadecane		29.23	4,000,000 J
8. 638368	2,6,10,14-tetramethyl-hexadecane or isomer		29.40	5,700,000 J
9. 22256?3	7-hexyl-tridecane or isomer		30.61	4,800,000 J
10. 13475757	8-hexyl-pentadecane or isomer		33.15	4,800,000 J
11. —	unknown $C_{22}H_{46}$ alkane		34.35	2,500,000 J
12. 638675	Tricosane or isomer		35.47	3,200,000 J
13. —	≥ $C_{24}H_{48}$ unknown alkane		36.55	3,200,000 J
14. —	> $C_{20}H_{42}$ alkane		38.50	2,400,000 J
15. —	alkane		39.21	2,100,000 J
16. —	> $C_{17}H_{36}$ alkane		40.49	2,300,000 J
17. 629970	Docosane or isomer		42.69	2,700,000 J
18. —	unknown alkane		44.04	1,900,000 J
19. 638368	2,6,10,14-tetramethyl-hexadecane or isomer	↓	45.57	2,100,000 J
20. —	unknown compound	BNA	47.39	1,100,000 J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000188

Form 1, Part B

7/85

being filmed
OIL/GAS ASSESSMENT
PASSED

Sample Number
HC 878
EN ONLAR

45

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Lab Sample ID No: >< 9804

Sample Matrix: Oil w ulante

Data Release Authorized By: [signature]

Case No: SAS 23981H

QC Report No: —

Contract No: 68-01-7160

Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-05-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	Cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged; however, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000214

Lab Name : UAL
Case No : SAS33388

Sample Number
BW Polar

ORGANIC ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 6-20-86
Date Analyzed: 9/04/86 1:38
Concn/Dil Factor: 176
Percent Moisture (Decanted) —

GPC Cleanup __ Yes X No
Separatory Funnel Extraction X Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	88000.	U	83-32-9	Acenaphthene	88000.	U
111-44-4	bis(2-Chloroethyl)Ether	88000.	U	51-28-5	2,4-Dinitrophenol	440000	U
95-57-8	2-Chlorophenol	88000.	U	100-02-7	4-Nitrophenol	440000	U
541-73-1	1,3-Dichlorobenzene	88000.	U	132-64-9	Dibenzofuran	88000.	U
106-46-7	1,4-Dichlorobenzene	88000.	U	121-14-2	2,4-Dinitrotoluene	110000	U
100-51-6	Benzyl Alcohol	88000.	U	606-20-2	2,6-Dinitrotoluene	88000.	U
95-50-1	1,2-Dichlorobenzene	88000.	U	84-66-2	Diethylphthalate	110000	U
95-48-7	2-Methylphenol	88000.	U	7005-72-3	4-Chlorophenyl-phenylether	57000.	U
39638-32-9	bis(2-chloroisopropyl)Ether	88000.	U	86-73-7	Fluorene	110000	U
106-44-5	4-Methylphenol	88000.	U	100-01-6	4-Nitroaniline	88000.	U
621-64-7	N-Nitroso-Di-n-Propylamine	88000.	U	534-52-1	4,6-Dinitro-2-Methylphenol	440000	U
67-72-1	Hexachloroethane	88000.	U	86-30-6	N-Nitrosodiphenylamine (1)	88000.	U
98-95-3	Nitrobenzene	88000.	U	101-55-3	4-Bromophenyl-phenylether	88000.	U
78-59-1	Isophorone	88000.	U	118-74-1	Hexachlorobenzene	88000.	U
88-75-5	2-Nitrophenol	88000.	U	87-86-5	Pentachlorophenol	440000	U
105-67-9	2,4-Dimethylphenol	88000.	U	85-01-8	Phenanthrene	88000.	U
65-85-0	Benzoic Acid	440000	U	120-12-7	Anthracene	88000.	U
111-91-1	bis(2-Chloroethoxy)Methane	88000.	U	84-74-2	Di-n-Butylphthalate	88000.	U
120-83-2	2,4-Dichlorophenol	88000.	U	206-44-0	Fluoranthene	88000.	U
120-82-1	1,2,4-Trichlorobenzene	88000.	U	129-00-0	Pyrene	88000.	U
91-20-3	Naphthalene	88000.	U	85-68-7	Butylbenzylphthalate	88000.	U
106-47-8	4-Chloroaniline	88000.	U	91-94-1	3,3'-Dichlorobenzidine	180000	U
87-68-3	Hexachlorobutadiene	88000.	U	56-55-3	Benzo(a)Anthracene	88000.	U
59-50-7	4-Chloro-3-Methylphenol	88000.	U	117-81-7	bis(2-Ethylhexyl)Phthalate	88000.	U
91-57-6	2-Methylnaphthalene	88000.	U	218-01-9	Chrysene	88000.	U
77-47-4	Hexachlorocyclopentadiene	88000.	U	117-84-0	Di-n-Octyl Phthalate	88000.	U
88-06-2	2,4,6-Trichlorophenol	88000.	U	205-99-2	Benzo(b)Fluoranthene	88000.	U
95-95-4	2,4,5-Trichlorophenol	440000	U	207-08-9	Benzo(k)Fluoranthene	88000.	U
91-58-7	2-Chloronaphthalene	88000.	U	50-32-8	Benzo(a)Pyrene	110000	U
88-74-4	2-Nitroaniline	440000	U	193-39-5	Indeno(1,2,3-cd)Pyrene	500000	U
131-11-3	Dimethyl Phthalate	88000.	U	53-70-3	Dibenz(a,h)Anthracene	88000.	U
208-96-8	Acenaphthylene	88000.	U	191-24-2	Benzo(g,h,i)Perylene	88000.	U
99-09-2	3-Nitroaniline	440000	U				

(1) Cannot be separated from diphenylamine

Portions of this document being lined

SITE ASSESSMENT SAS006

15 Laboratory Name [illegible]

Case No SAS 2908 L

Sample Number HC 378

SDG [illegible]

(47)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	C_6H_{14} isomer	BNA	9.19	51,000 J
2. 108930	Cyclohexanol		9.71	330,000 J
3. —	unknown compound		11.04	130,000 J
4. —	unknown compound - acetone?		11.70	45,000 J
5. —	unknown compound		11.93	76,000 J
6. —	C_6H_{14} isomer (alkane)		12.45	83,000 J
7. —	C_6H_{14} isomer		12.68	91,000 J
8. —	C_6H_{12} (alkene) isomer		13.03	440,000 J
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000216

being filmed

(48/10)

HC978

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute
Lab Sample ID: 98AH10::02 ; ACN 9166
Sample Matrix: HIGH CONC
Data release Authorized by: [signature]

Case No.: SAS 2398A
CC Report No.: ---
Contract No.: 68-01-7160
Date Sample Received: 8-11-86

Volatile Compounds [signature] 9-12-86

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/03/86 17:52
Conc/Dil factor: 2 pH : .....
Percent Moisture: (Not Decanted) %.

C.A.S. number		ug/l or ug/kg (Circle One)		C.A.S. number		ug/l or ug/kg (Circle One)	
74-87-3	Chloromethane	2500.	UR	78-87-5	1,2-Dichloropropane	1250.	UR
74-83-9	Bromomethane	2500.	UR	10061-02-6	trans-1,3-Dichloropropene	1500.	UR
75-01-4	Vinyl Chloride	2500.	UR	79-01-6	Trichloroethene	1250.	UR
75-00-3	Chloroethane	2500.	UR	124-48-1	Dibromochloromethane	1250.	UR
75-09-2	Methylene Chloride	460.	~~1,6,UB~~	79-00-5	1,1,2-Trichloroethane	1250.	UR
67-64-1	Acetone	6700.	2-UB	71-43-2	Benzene	5000.	J
75-15-0	Carbon Disulfide	1250.	UR	10061-01-5	cis-1,3-Dichloropropene	1250.	UR
75-35-4	1,1-Dichloroethene	1250.	UR	110-75-8	2-Chloroethylvinylether	2500.	UR
75-34-3	1,1-Dichloroethane	1250.	UR	75-25-2	Bromoform	1250.	UR
156-60-5	trans-1,2-Dichloroethene	1250.	UR	108-10-1	4-Methyl-2-Pentanone	35000.	J
67-66-3	Chloroform	800.	~~1,5,UB~~	591-78-6	2-Hexanone	55000.	J
107-02-2	1,2-Dichloroethane	1250.	UR	127-18-4	Tetrachloroethene	1250.	UR
78-93-3	2-Butanone	7400.	~~1,UB~~	79-34-5	1,1,2,2-Tetrachloroethane	1250.	UR
71-55-6	1,1,1-Trichloroethane	1250.	UR	108-88-3	Toluene	1300.	~~5,UB~~ UB
56-23-5	Carbon Tetrachloride	1250.	UR	108-90-7	Chlorobenzene	1250.	UR
108-05-4	Vinyl Acetate	2500.	UR	100-41-4	Ethylbenzene	49000.	J
75-27-4	Bromodichloromethane	1250.0	UR	100-42-5	Styrene	1250.0	UR
					Total Xylenes	~~[illegible]~~ 90,000	J

dcz 9-12-86

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However the definition of each flag must be explicit.

Value - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit). The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is < than the specified detection limit but > than zero (e.g. 10J). If limit of detection is 10 ug/L and a concentration of 3.0 ug/L is calculated, report as 3J.

C - This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10 ng/ul in the final extract should be confirmed by GC/MS.

B - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns data the user to take appropriate action.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

OPTIONAL FLAGS

M - Compound found in method blank

N - Compound not present in Calibration file.

Form I 000229 [illegible] 9-11-86

IHC4 18 (49)

Organics Analysis Data Sheet
(Page 2)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 110827	Cyclohexane	VOA	16.5	3400 J
2. 06140	2-methyl pentane		14.3	3100 J
3. 110543	hexane		21.2	4300 J
4. 1759586	1,2 dichloroethylene		22.5	5200 J
5. 589344	2-methyl 1 butene		24.3	11000 J
6.	1,2 dichloroethylene		28.9	4100 J
7. 20736631	1,1,2-trichloroethylene		29.9	13000
8. 5590758	3-ethyl-4,4-dimethyl 2-pentene		33.4	4100 J
9. 2213232	2,4-dimethyl heptane		38.9	15000 J
10. 1839630	trimethyl cyclohexane		40.1	3200 J
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

SITE/SITE ASSESSMENT PASOOO6

Sample Number
HC 974 (Acid)

50

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Lab Sample ID No: 59934

Sample Matrix: city waste

Data Release Authorized By: [illegible]

Case No: SAS-2398H

QC Report No:

Contract No: 68-01-7160

Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared:

Date Analyzed:

Conc/Dil Factor: pH

Percent Moisture: (Not Decanted)

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be added.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000255

Being filmed on this document

SITE/SITE ASSESSMENT SAS006 7 7/87

(51)

Lab Name : UFI
Case No : SAS2358H

Sample Number
MC976(ACID) :

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/06/86 6:50
Conc/Dil Factor: 1.1
Percent Moisture (Decanted) —

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction XX Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	550.	~~U~~ UJ
111-44-4	bis(-2-Chloroethyl)Ether	550.	U
95-57-8	2-Chlorophenol	550.	U
541-73-1	1,3-Dichlorobenzene	550.	U
106-46-7	1,4-Dichlorobenzene	550.	U
100-51-6	Benzyl Alcohol	550.	U
95-50-1	1,2-Dichlorobenzene	550.	U
95-48-7	2-Methylphenol	550.	U
39638-32-9	bis(2-chloroisopropyl)Ether	550.	U
106-44-5	4-Methylphenol	550.	U
621-64-7	N-Nitroso-Di-n-Propylamine	660.	U
67-72-1	Hexachloroethane	550.	U
98-95-3	Nitrobenzene	550.	U
78-59-1	Isophorone	550.	U
88-75-5	2-Nitrophenol	550.	U
105-67-9	2,4-Dimethylphenol	550.	U
65-85-0	Benzoic Acid	2800.	U
111-91-1	bis(-2-Chloroethoxy)Methane	550.	U
120-83-2	2,4-Dichlorophenol	550.	U
120-82-1	1,2,4-Trichlorobenzene	550.	U
91-20-3	Naphthalene	550.	U
106-47-8	4-Chloroaniline	550.	U
87-68-3	Hexachlorobutadiene	550.	U
59-50-7	4-Chloro-3-Methylphenol	550.	U
91-57-6	2-Methylnaphthalene	550.	U
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	2800.	U
91-58-7	2-Chloronaphthalene	550.	U
88-74-4	2-Nitroaniline	3000.	U
131-11-3	Dimethyl Phthalate	1500.	U
208-96-8	Acenaphthylene	550.	U
99-09-2	3-Nitroaniline	2800.	U

C.A.S. Number		ug/L or ug/kg (Circle One)	
83-32-9	Acenaphthene	550.	~~U~~ UJ
51-28-5	2,4-Dinitrophenol	2800.	U
100-02-7	4-Nitrophenol	3300.	U
132-64-9	Dibenzofuran	550.	U
121-14-2	2,4-Dinitrotoluene	610.	U
606-20-2	2,6-Dinitrotoluene	550.	U
84-66-2	Diethylphthalate	550.	U
7005-72-3	4-Chlorophenyl-phenylether	610.	U
86-73-7	Fluorene	550.	U
100-01-6	4-Nitroaniline	550.	U
534-52-1	4,6-Dinitro-2-Methylphenol	2800.	U
86-30-6	N-Nitrosodiphenylamine (1)	1800.	U
101-55-3	4-Bromophenyl-phenylether	550.	U
118-74-1	Hexachlorobenzene	550.	U
87-86-5	Pentachlorophenol	2800.	U
85-01-8	Phenanthrene	550.	U
120-12-7	Anthracene	660.	U
84-74-2	Di-n-Butylphthalate	550.	U
206-44-0	Fluoranthene	550.	U
129-00-0	Pyrene	610.	U
85-68-7	Butylbenzylphthalate	550.	U
91-94-1	3,3'-Dichlorobenzidine	1500.	U
56-55-3	Benzo(a)Anthracene	550.	U ~~UJ~~
117-81-7	bis(2-Ethylhexyl)Phthalate	11000.	—
218-01-9	Chrysene	940.	~~U~~ UJ
117-84-0	Di-n-Octyl Phthalate	450.	~~U~~ BUJ
205-99-2	Benzo(b)Fluoranthene	550.	~~U~~ UJ
207-08-9	Benzo(k)Fluoranthene	550.	U
50-32-8	Benzo(a)Pyrene	550.	U
193-39-5	Indeno(1,2,3-cd) Pyrene	830.	U
53-70-3	Dibenzo(a,h) Anthracene	940.	U
191-24-2	Benzo(g,h,i) Perylene	1000.	U

(1) - Cannot be separated from Diphenylamine

Form I

7/85

being filmed

Laboratory Name Western Research Institute

Case No SAS 23984

Sample Number HC 478 7C11

52

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown - mixture?	BNA	19.35	330J
2. 15869940	3,6-dimethyl octane or isomer		19.47	330J
3. —	C_8H_{16} alkene or cyclohexane?		19.94	390J
4. —	unknown compound?		20.26	390J
5. —	unknown compound?		20.44	320J
6. —	C_8H_{16} alkene?		20.61	410J
7. 0	~~1,2~~ TP 1,1,2,3-tetramethyl cyclohexane		21.03	460J
8. —	C_4H_9 - cyclohexane?		21.18	360J
9. 62016335	2,3,6-trimethyl octane or isomer		22.53	860J
10. —	C_9H_{18} isomer?		23.01	750J
11. 17301303	3,8-dimethyl undecane or isomer		24.02	640J
12. 42604046	mixture including methoxy cycloheptane		24.34	430J
13. —	unknown compound?		25.53	280J
14. —	unknown compound?		25.74	510J
15. 0	2,6,10-trimethyl-pentadecane (no. distin) or isomer		27.01	960J
16. 1921706	2,6,10,14-tetramethyl pentadecane or isomer		27.87	890J
17. 593397	Heptadecene or isomer		28.56	540J
18. 638368	2,6,10,14-tetramethyl Heptadecane or isomer		29.37	1600J
19. —	$C_{20}H_{42}$ isomer?		30.50	400J
20. —	$C_{16}H_{34}$ isomer?	BNA	33.54	330J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Image quality of the document being filmed

SITE/SITE ASSESSMENT SAS003

Sample Number
HC478
PON: AROM-TIC

53

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute

Case No: CAS 2398H

Lab Sample ID No: 259836

QC Report No: —

Sample Matrix: Oily waste

Contract No: 68-01-7160

Data Release Authorized By: [illegible]

Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged, however, the definition of each flag must be defined.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum, attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 ug/l and a concentration of 5 ug/l is calculated, report as 5J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000285

being filmed
DISTRIBUTION STATEMENT A
PASSUO

Lab Name : CFC
Case No : 5F532986

Sample Number
HC978(Eh AP/MPTIC

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 6-20-86
Date Analyzed: 9/06/86 9:11
Conc/Dil Factor: 76
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction XX Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	38000.	U R	83-32-9	Acenaphthene	38000.	U R
111-44-4	bis(-2-Chloroethyl)Ether	38000.	U	51-28-5	2,4-Dinitrophenol	190000	U
95-57-8	2-Chlorophenol	38000.	U	100-02-7	4-Nitrophenol	230000	U
541-73-1	1,3-Dichlorobenzene	38000.	U	132-64-9	Dibenzofuran	38000.	U
106-46-7	1,4-Dichlorobenzene	38000.	U	121-14-2	2,4-Dinitrotoluene	42000.	U
100-51-6	Benzyl Alcohol	38000.	U	606-20-2	2,6-Dinitrotoluene	38000.	U
95-50-1	1,2-Dichlorobenzene	38000.	U	84-66-2	Diethylphthalate	38000.	U
95-48-7	2-Methylphenol	38000.	U	7005-72-3	4-Chlorophenyl-phenylether	42000.	U
39638-32-9	bis(2-chloroisopropyl)Ether	38000.	U	86-73-7	Fluorene	38000.	U
106-44-5	4-Methylphenol	38000.	U	100-01-6	4-Nitroaniline	38000.	U
621-64-7	N-Nitroso-Di-n-Propylamine	46000.	U	534-52-1	4,6-Dinitro-2-Methylphenol	190000	U
67-72-1	Hexachloroethane	38000.	U	86-30-6	N-Nitrosodiphenylamine (1)	130000	U
98-95-3	Nitrobenzene	38000.	U	101-55-3	4-Bromophenyl-phenylether	38000.	U
78-59-1	Isophorone	38000.	U	118-74-1	Hexachlorobenzene	38000.	U
88-75-5	2-Nitrophenol	38000.	U	87-86-5	Pentachlorophenol	190000	U
105-67-9	2,4-Dimethylphenol	38000.	U	85-01-8	Phenanthrene	17000.	J
65-85-0	Benzoic Acid	190000	U	120-12-7	Anthracene	46000.	U R
111-91-1	bis(-2-Chloroethoxy)Methane	38000.	U	84-74-2	Di-n-Butylphthalate	38000.	U
120-83-2	2,4-Dichlorophenol	38000.	U	206-44-0	Fluoranthene	38000.	U
120-82-1	1,2,4-Trichlorobenzene	38000.	U	129-00-0	Pyrene	42000.	U
91-20-3	Naphthalene	14000.	J	85-68-7	Butylbenzylphthalate	38000.	U
106-47-8	4-Chloroaniline	38000.	U R	91-94-1	3,3'-Dichlorobenzidine	110000	U
87-68-3	Hexachlorobutadiene	38000.	U R	56-55-3	Benzo(a)Anthracene	38000.	U
59-50-7	4-Chloro-3-Methylphenol	38000.	U R	117-81-7	bis(2-Ethylhexyl)Phthalate	38000.	U
91-57-6	2-Methylnaphthalene	51000.	J	218-01-9	Chrysene	76000.	U
77-47-4	Hexachlorocyclopentadiene	46000.	U R	117-84-0	Di-n-Octyl Phthalate	38000.	U
88-06-2	2,4,6-Trichlorophenol	38000.	U	205-99-2	Benzo(b)Fluoranthene	38000.	U
95-95-4	2,4,5-Trichlorophenol	190000	U	207-08-9	Benzo(k)Fluoranthene	38000.	U
91-58-7	2-Chloronaphthalene	38000.	U	50-32-8	Benzo(a)Pyrene	38000.	U
88-74-4	2-Nitroaniline	190000	U	193-39-5	Indeno(1,2,3-cd)Pyrene	57000.	U
131-11-3	Dimethyl Phthalate	38000.	U	53-70-3	Dibenzo(a,h)Anthracene	65000.	U
208-96-8	Acenaphthylene	38000.	U	191-24-2	Benzo(g,h,i)Perylene	72000.	U
99-09-2	3-Nitroaniline	190000	U				

(1)-Cannot be separated from diphenylamine

SITE/SITE ASSESSMENT DASOOC3 1 / 1 / 1
Image of the document being filmed

Laboratory Name Western Research Institute

Case No 545-2378μ

Sample Number HC 176 Blue Aromatic

55

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 95636	1,2,4-trimethyl Benzene or isomer	BNA	14.83	52,000 J
2. 933982	1-ethyl-2,3-dimethyl benzene or isomer		18.46	69,000 J
3. —	C_9H_{11}-substituted benzene ?		19.83	37,000 J
4. 55669880	1,4-dimethyl-2-(2-methylpropyl) benzene		20.86	31,000 J
5. 90120	1-methyl-naphthalene or isomer		21.78	39,000 J
6. 475036	1,2,3,4-tetrahydro-1,1,6-trimethyl naphthalene		22.55	35,000 J
7. 575371	1,7-dimethyl naphthalene or isomer		23.73	79,000 J
8. —	Unknown compound ?		24.03	46,000 J
9. 16587443	7-ethyl-2-methyl-Benzo[b]thiophene		25.50	100,000 J
10. —	unknown compound ?		26.47	90,000 J
11. 17312571	3-methyl dodecane or isomer		27.03	43,000 J
12. —	$\geq C_{13}H_{28}$ alkane		27.89	42,000 J
13. —	Unknown compound ?		28.86	37,000 J
14. 132650	Dibenzothiophene		29.30	80,000 J
15. 2372885	4-methyl-dibenzothiophene or isomer		30.75	52,000 J
16. —	mixture of 4-methyl-dibenzothiophene + 1-methyl-		31.37	62,000 J
17.	anthracene or isomer thereof ?			
TP 17 18. 16587341	4,9-dimethyl-naphtho[2,3-b]thiophene		32.74	57,000 J
TP 8 19. 74630834	1,1-diphenyl-1-propene-2-thiol or isomer		33.57	57,000 J
TP 9 20. 3074735	2,3,5-trimethyl-phenanthrene or isomer	↓	34.62	110,000 J
TP 20 21. —	unknown - poor spectra ?	BNA	35.93	79,000 J
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000287

Quality of the document being filmed

SITE/SITE ASSESSMENT SAS006 L-11-1

Sample Number
HC 478
01,02,03,10

56

Organics Analysis Data Sheet:
(Page 1)

Laboratory Name: Western Research Institute

Lab Sample ID No: 259827

Sample Matrix: Mix waste

Data Release Authorized By: [illegible]

Case No: 23 2975H

QC Report No: —

Contract No: 68-01-7160

Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH: _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional lab or footnotes explaining results are encouraged. However, the definition of each lab must be given.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000317

57

Lab Name : WPI
Case No : 5452398H

Sample Number :
HC978(BN AL)PWI

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low (Medium) (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/05/86 19:40
Conc/Dil Factor> 380
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes X_ No
Separatory Funnel Extraction X_ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/l or ug/Kg (Circle One)	
108-95-2	Phenol	190000	U UJ
111-44-4	bis(-2-Chloroethyl)Ether	190000	U
95-57-8	2-Chlorophenol	190000	U
541-73-1	1,3-Dichlorobenzene	190000	U
106-46-7	1,4-Dichlorobenzene	190000	U
100-51-6	Benzyl Alcohol	190000	U
95-50-1	1,2-Dichlorobenzene	190000	U
95-48-7	2-Methylphenol	190000	U
39638-32-9	bis(2-chloroisopropyl)Ether	190000	U
106-44-5	4-Methylphenol	190000	U
621-64-7	N-Nitroso-Di-n-Propylamine	230000	U
67-72-1	Hexachloroethane	190000	U
98-95-3	Nitrobenzene	190000	U
78-59-1	Isophorone	190000	U
88-75-5	2-Nitrophenol	190000	U
105-67-9	2,4-Dimethylphenol	190000	U
65-85-0	Benzoic Acid	950000	U
111-91-1	bis(-2-Chloroethoxy)Methane	190000	U
120-83-2	2,4-Dichlorophenol	190000	U
120-82-1	1,2,4-Trichlorobenzene	190000	U
91-20-3	Naphthalene	190000	U
106-47-8	4-Chloroaniline	190000	U
87-68-3	Hexachlorobutadiene	190000	U
59-50-7	4-Chloro-3-Methylphenol	190000	U
91-57-6	2-Methylnaphthalene	190000	U
77-47-4	Hexachlorocyclopentadiene	230000	U
88-06-2	2,4,6-Trichlorophenol	400000	U
95-95-4	2,4,5-Trichlorophenol	950000	U
91-58-7	2-Chloronaphthalene	190000	U
88-74-4	2-Nitroaniline	1000000	U
131-11-3	Dimethyl Phthalate	460000	U
208-96-8	Acenaphthylene	190000	U
99-09-2	3-Nitroaniline	950000	U UJ

C.A.S. Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	190000	U UJ
51-28-5	2,4-Dinitrophenol	950000	U
100-02-7	4-Nitrophenol	1100000	U
132-64-9	Dibenzofuran	190000	U
121-14-2	2,4-Dinitrotoluene	210000	U
606-20-2	2,6-Dinitrotoluene	190000	U
84-66-2	Diethylphthalate	190000	U
7005-72-3	4-Chlorophenyl-phenylether	210000	U
86-73-7	Fluorene	190000	U
100-01-6	4-Nitroaniline	190000	U
534-52-1	4,6-Dinitro-2-Methylphenol	950000	U
86-30-6	N-Nitrosodiphenylamine (1)	630000	U
101-55-3	4-Bromophenyl-phenylether	190000	U
118-74-1	Hexachlorobenzene	190000	U
87-86-5	Pentachlorophenol	950000	U
85-01-8	Phenanthrene	190000	U
120-12-7	Anthracene	230000	U
84-74-2	Di-n-Butylphthalate	190000	U
206-44-0	Fluoranthene	190000	U
129-00-0	Pyrene	210000	U
85-68-7	Butylbenzylphthalate	190000	U
91-94-1	3,3'-Dichlorobenzidine	530000	U
56-55-3	Benzo(a)Anthracene	190000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	190000	U
218-01-9	Chrysene	320000	U
117-84-0	Di-n-Octyl Phthalate	190000	U
205-99-2	Benzo(b)Fluoranthene	190000	U
207-08-9	Benzo(k)Fluoranthene	190000	U
50-32-8	Benzo(a)Pyrene	190000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	290000	U
53-70-3	Dibenzo(a,h)Anthracene	320000	U
191-24-2	Benzo(g,h,i)Perylene	360000	U

(1)-Cannot separated from diphenylamine

Laboratory Name Western Research Institute

Case No SAS 2398 H

Sample Number
MC 0 78
[illegible]

58

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	(RT) or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 2051301	2,6-dimethyl octane	BNA	13.31	450,000 J
2. 0	1,1,2,3-tetramethyl cyclohexane or isomer		14.00	600,000 J
3. 4110445	3,3-dimethyl octane		15.43	630,000 J
4. —	unknown compound		15.82	560,000 J
5. —	unknown alkane		17.53	310,000 J
6. 62108285	4,8-dimethyl-1,7-nonadiene or isomer?		18.09	320,000 J
7. 54676390	2-butyl-1,1,3-trimethyl-cyclohexane or isomer		19.96	540,000 J
8. 62108230	2,5,6-trimethyl-decane		20.64	740,000 J
9. 1120361	1-Tetradecane		21.06	470,000 J
10. 17312599	3,8-dimethyl decane		21.49	290,000 J
11. —	≥ $C_{13}H_{28}$ alkane		22.57	780,000 J
12. 4057925	2,6-dimethyl-2-octene		23.06	550,000 J
13. —	≥ $C_{13}H_{28}$ alkene		24.05	480,000 J
14. 35507096	(Z)-7-hexadecene or isomer		24.57	330,000 J
15. —	≥ $C_{11}H_{24}$ alkane		25.74	310,000 J
16. 0	2,6,10-Trimethyl-pentadecane (nor-phytane) or isomer		27.04	860,000 J
17. 1921706	2,6,10,14-tetramethyl-pentadecane		27.90	810,000 J
18. 638368	2,6,10,14-tetramethyl-hexadecane or isomer		29.39	1,300,000 J
19. —	unknown ≥ $C_{18}H_{36}$ alkene	↓	30.13	850,000 J
20. —	unknown compound	BNA	31.69	320,000 J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000313

Sample Number
HC978

59

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Western Research Institute
Case No: SAS 2396 H
Lab Sample ID No: 259835
GC Report No: –
Sample Matrix: Dilu Waste
Contract No: 68-01-7160
Data Release Authorized By: [illegible]
Date Sample Received: 8/11/86

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____ pH _____

Percent Moisture: (Not Decanted) _____

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1,1-Dichloroethene	
75-34-3	1,1-Dichloroethane	
156-60-5	Trans-1,2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1,2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1,2-Dichloropropane	
10061-02-6	Trans-1,3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1,1,2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1,3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1,1,2,2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be added.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

000345

(60)

Lab Name : WPI
Case No : 5452398W

Sample Number
MC978(BN POLAR)

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 8-20-86
Date Analyzed: 9/06/86 8:00
Conc/Dil Factor 42
Percent Moisture (Decanted) ---

GPC Cleanup __ Yes X_ No
Separatory Funnel Extraction X_ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	21000.	U (UJ)	83-32-9	Acenaphthene	21000.	U (UJ)
111-44-4	bis(-2-Chloroethyl)Ether	21000.	U	51-28-5	2,4-Dinitrophenol	110000	U
95-57-8	2-Chlorophenol	21000.	U	100-02-7	4-Nitrophenol	130000	U
541-73-1	1,3-Dichlorobenzene	21000.	U	132-64-9	Dibenzofuran	21000.	U
106-46-7	1,4-Dichlorobenzene	21000.	U	121-14-2	2,4-Dinitrotoluene	23000.	U
100-51-6	Benzyl Alcohol	21000.	U	606-20-2	2,6-Dinitrotoluene	21000.	U
95-50-1	1,2-Dichlorobenzene	21000.	U	84-66-2	Diethylphthalate	21000.	U
95-48-7	2-Methylphenol	21000.	U	7005-72-3	4-Chlorophenyl-phenylether	23000.	U
39638-32-9	bis(2-chloroisopropyl)Ether	21000.	U	86-73-7	Fluorene	21000.	U
106-44-5	4-Methylphenol	21000.	U	100-01-6	4-Nitroaniline	21000.	U
621-64-7	N-Nitroso-Di-n-Propylamine	25000.	U	534-52-1	4,6-Dinitro-2-Methylphenol	110000	U
67-72-1	Hexachloroethane	21000.	U	86-30-6	N-Nitrosodiphenylamine (1)	69000.	U
98-95-3	Nitrobenzene	21000.	U	101-55-3	4-Bromophenyl-phenylether	21000.	U
78-59-1	Isophorone	21000.	U	118-74-1	Hexachlorobenzene	21000.	U
88-75-5	2-Nitrophenol	21000.	U	87-86-5	Pentachlorophenol	110000	U
105-67-9	2,4-Dimethylphenol	21000.	U	85-01-8	Phenanthrene	21000.	U
65-85-0	Benzoic Acid	110000	U	120-12-7	Anthracene	25000.	U
111-91-1	bis(-2-Chloroethoxy)Methane	21000.	U	84-74-2	Di-n-Butylphthalate	21000.	U
120-83-2	2,4-Dichlorophenol	21000.	U	206-44-0	Fluoranthene	21000.	U
120-82-1	1,2,4-Trichlorobenzene	21000.	U	129-00-0	Pyrene	23000.	U
91-20-3	Naphthalene	21000.	U	85-68-7	Butylbenzylphthalate	21000.	U
106-47-8	4-Chloroaniline	21000.	U	91-94-1	3,3'-Dichlorobenzidine	59000.	U
87-68-3	Hexachlorobutadiene	21000.	U	56-55-3	Benzo(a)Anthracene	21000.	U
59-50-7	4-Chloro-3-Methylphenol	21000.	U	117-81-7	bis(2-Ethylhexyl)Phthalate	21000.	U
91-57-6	2-Methylnaphthalene	21000.	U	218-01-9	Chrysene	36000.	U
77-47-4	Hexachlorocyclopentadiene	25000.	U	117-84-0	Di-n-Octyl Phthalate	21000.	U
88-06-2	2,4,6-Trichlorophenol	44000.	U	205-99-2	Benzo(b)Fluoranthene	21000.	U
95-95-4	2,4,5-Trichlorophenol	110000	U	207-08-9	Benzo(k)Fluoranthene	21000.	U
91-58-7	2-Chloronaphthalene	21000.	U	50-32-8	Benzo(a)Pyrene	21000.	U
88-74-4	2-Nitroaniline	110000	U	193-39-5	Indeno(1,2,3-cd)Pyrene	32000.	U
131-11-3	Dimethyl Phthalate	50000.	U	53-70-3	Dibenzo(a,h)Anthracene	36000.	U
208-96-8	Acenaphthylene	21000.	U	191-24-2	Benzo(g,h,i)Perylene	40000.	U
99-09-2	3-Nitroaniline	110000	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name Western Research Institute

Case No SAS 2398H

Sample Number
[illegible]

61

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown compound?	BNA	12.15	22,000J
2. —	unknown alkane?		22.53	5100J
3. —	unknown alkane?		24.01	6300J
4. —	unknown compound?		27.00	15,000J
5. —	unknown compound?		27.87	11,000J
6. —	unknown compound?		28.55	6800J
7. —	unknown compound?		29.37	19,000J
8. —	unknown compound?		30.11	5700J
9. —	unknown compound?		30.49	5900J
10. —	unknown compound?		30.81	7400J
11. —	unknown compound?		31.10	7700J
12. —	unknown compound?		31.67	4600J
13. —	unknown compound?		32.16	6300J
14. —	unknown compound?		32.84	4400J
15. —	unknown compound?		33.88	4500J
16. —	unknown compound?		34.62	5400J
17. —	unknown compound?		37.33	5600J
18. —	unknown compound?		39.04	5200J
19. —	unknown compound?	↓	40.64	11,000J
20. —	unknown compound?	BNA	46.30	8900J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30				

000347

Sample Holding Times

Sample	Date Taken	Date Received	VOA Extracted	VOA analyzed	BNA Extracted	BNA analyzed (ACID)	BNA (AROMATIC)	BNA (ALIPHATIC)	BNA (POLAR)
HC877	7/19/86	8/11/86	8/20/86	9/2/86	8/20/86	9/5/86	9/5/86	9/4/86	9/3/86
HC878	7/19/86	8/11/86	8/20/86	9/3/86	8/20/86	9/6/86	9/5/86	9/5/86	9/4/86
HC978	7/19/86	8/11/86	8/20/86	9/3/86	8/20/86	9/6/86	9/6/86	9/5/86	9/6/86

GC/MS Tuning and Performance

	Scan#	Date	Time	Background Subtraction	GC/MS Inst #
DFTPP	2349	8/20/86	16:29	NRM	1
	2315	9/3/86	16:58	NRM	1
	2329	9/4/86	16:11	SUB ADD	1
	2324	9/5/86	10:22	SUB ADD	1
	2325	9/5/86	21:44	NRM	1
	1778	9/3/86	16:28	NRM	4
BFB	338	8/27/86	9:06	NRM	3
	340	8/27/86	20:02	NRM	3
	370	8/29/86	18:42	NRM	3
	367	9/2/86	8:29	SUB ADD	3
	373	9/3/86	8:35	NRM	3

Transcription Errors: None ✓ok

Background Subt: ✓ok

% Abundance: ✓ok

Ion Abundance Criteria: ✓ok

Significant figures: ✓ok

$$\% \text{ Abundance} = \frac{\text{relative abundance } m/z\ 443}{\text{relative abundance } m/z\ 442} \times 100$$

$$= \frac{14.24}{70.49} \times 100 \quad (\text{DFTPP } \#2349\ 8/20\ 16:29)$$

$$= 20.20\% \ ✓ok$$

II. Calibration

A. Initial

VOA: Case number missing on form III's.

Chromatograms all look good.

Standards run at 20ppb. → 200ppb.

Chloromethane (SPCC)

$RF_x = \frac{A_x}{A_{IS}} \times \frac{C_{IS}}{C_x}$ $\qquad RF_{20} = \frac{13499}{40184} \times \frac{50}{20} = 0.82716$ ✓ok

$\overline{RF} = \sum_{i=1}^{N} \frac{RF_i}{N}$ $\qquad \overline{RF} = \frac{0.82716 + 0.23657 + 1.0875 + 1.04916 + 1.09326}{5}$

$= 0.95364$ ✓ok

$SD = \sqrt{\sum_{i=1}^{N} \frac{(RF_i - \overline{RF})^2}{N-1}}$ $\qquad SD = 0.16184$

$\%RSD = \frac{SD}{\overline{RF}} \times 100$ $\qquad \%RSD = \frac{0.16184}{0.95364} \times 100 = 16.971\%$ ✓ok

Toluene (CCC) ✓ok

BNA: GC/MS #1 Chromatograms all look good

GC/MS #4 Evidence of excessive column bleed present on all chromatograms.

Checked calculations for:

Phenol (CCC) ✓ok

4-Nitrophenol (SPCC) ✓ok

B. Continuing

VOA: Chromatograms all look good

Chloromethane (SPCC)

$\%D = \frac{\overline{RF} - RF_{20}}{\overline{RF}} \times 100$

$= \frac{0.95364 - 0.73963}{0.95364} \times 100 = 22.44$ ✓ok (8/27/86 21:10)

Toluene ✓ok (CCC)

BNA: Chromatograms all look good

Checked calculations for:

Phenol (CCC) ✓ok

4-Nitrophenol (SPCC) ✓ok

V. Blanks

8/27 22:26 Water Blank 1 Acetone $C = \frac{3427}{40182} \times \frac{50}{0.6943} = 6.167$ ppb

$6.167 \times 250 = 1541.80$ ug/kg ok

WB (1)
MB (1)
WB (3)
MB (3)
} baseline ok / Chromatogram ok

WB (2)
MB (2)
} small hump in chromatogram baseline

VI Surrogate Recoveries

VOA

HCB78 Toluene D8: $\frac{169860}{164852} \times \frac{50}{1.25003} = 40.95$ ppb ok

$40.95 \times 2 = 81.9$ ok

BNA

HCB78 Phenol D5: $\frac{48593}{48152} \times \frac{40}{1.45396} = 27.76303$ ok

$27.76 \times \frac{10}{4} = 69$ ok

HCB78 (Blank/aromatic)

Terphenyl D14: $\frac{287567}{114111} \times \frac{40}{0.84855} = 106.27$ ok

$106.27 \div 2 = 53$ ok

BNA

HCB77 Phenol D5: $\frac{19665}{43531} \times \frac{40}{1.47542} = 12.25$ ug/L ok

12.25 ug/L $\times 5 = 61$ ok

HCB77 Terphenyl D14: $\frac{165907}{173870} \times \frac{40}{0.95590} = 39.93$ ok

$39.93 \times \frac{2.25}{2} = 54.9$ ok

- outliners: ✓
- recoveries verified: ✓
- blank surrogates: ✓

II Matrix Spike/Matrix Spike Duplicate

Control Matrix Spike:

Chlorobenzene: $\frac{160923}{144658} \times \frac{50}{1.0444} = 54.814$

$54.814 \times 500 = 27407$

$\%Rec = \frac{SSR - SR}{SA} \times 100$ $\quad \frac{1100 - 0}{6700} = 0.164 \times 100 = 16.4$ (N-Nitrosodipropylamine)

$RPD = \frac{D_1 - D_2}{D_1 + D_2/2} \times 100$ $\quad \frac{1100 - 2100}{1100 + 2100} \times 200 = 63\%$ (N-Nitrosodipropylamine)

N-Nitrosodi-N-propylamine - polar fraction

All other BNA spikes - Aromatic/Acid fractions

III Compound Identification

TIC's: Identified alkanes should be labeled as unknown saturated hydrocarbons.

Sample HC97B was leaking when received at lab.

HC97B: VOA: lots of poorly resolved "fat" peaks Chloroform, Toluene: poor matches.

ACID: Small hydrocarbon hump in chromatogram.

Aromatic: Large hydrocarbon hump in chromatogram.

Aliphatic: medium sized hydrocarbon hump.

Polar: "hump" in baseline probably from column bleed.

quality of the document being filmed

SITE/SITE ASSESSMENT SAS006

HC 878: VOA: No tic sheet delivered:
ACID: huge hump in chromatogram (no visible humps in ms/msD - higher sensitivities should have bigger humps. (?))
Aromatic: hump
Aliphatic: large hydrocarbon hump (ms/msD/sample all have similar chromatograms)
Polar: column bleed evident (ms/msD/sample all have similar chromatograms)

[No surrogates in polar fraction, aliphatic fraction, or aromatic fraction (diluted out)
Acid fraction - surrogates ✓ ok]

HC877: VOA: lots of poorly resolved peaks.
Aromatic: large hydrocarbon hump (ms/msD have slightly smaller humps & diff. amts of phthalate)
Aliphatic: small hydrocarbon hump (ms/msD have similar chromatograms)
Polar: column bleed evident (ms/msD have similar chromatograms)
Acid: ✓ (ms - phthalate, msD - no phthalate) similar chromatograms)

[2-Butanone Response factor is low - actual conc. may be less]

$$VOA_{conc} = \frac{A_x}{A_{is}} \times \frac{50ng}{RF} \times \frac{1000ml}{100ml} \times \frac{5g}{2g} \times D \times \frac{250}{5g} \rightarrow ug/kg$$

2g sample extracted with methanol

$$BNA_{conc} = \frac{A_x}{A_{is}} \times \frac{40ng}{RF} \times \frac{1000ml}{2ml} \times \frac{D}{S}$$

S = 10mL for HC878 / HC978
S = 30g for HC877

* Spikes & Surrogates were added to the sample - then extracted.