

# Y-12

## OAK RIDGE Y-12 PLANT

**MARTIN MARIETTA**

Final Report from VFL Technologies  
for the Pilot-Scale Thermal Treatment of  
Lower East Fork Poplar Creek  
Floodplain Soils

LEFPC Appendices  
Volume 5  
Appendix V-D

Prepared by VFL Technology Corporation  
for  
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Subcontract No. 82Y-05556V

September 1994

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MARTIN MARIETTA ENERGY  
SYSTEMS, INC.  
managing the  
Oak Ridge, Y-12 Plant  
Oak Ridge, Tennessee  
under contract DE-AC05-84OR21400  
for the  
U.S. Department of Energy

MANAGED BY  
MARTIN MARIETTA ENERGY SYSTEMS, INC.  
FOR THE UNITED STATES  
DEPARTMENT OF ENERGY

**MASTER**

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APPENDIX V - D

FINAL VERIFICATION RUN DATA PACKAGE

PAH

Herbicides (TCLP)

Pesticides (TCLP)

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PAH

LSDG: 32140

**CASE NARRATIVE FOR PAH ANALYSIS**  
**USING MODIFIED SW-846 METHOD 8270**

**CLIENT:** Nuclear Fuel Services, Inc.  
**LSDG:** 32140  
**PROJECT:** LEFPC

**Analytical Summary**

Two (2) soil samples were received on May 17, 1994 for analysis of polyaromatic hydrocarbons (PAHs) by Method 8270. Sample extractions were performed on May 25, 1994 and analyses were performed per Method 8270 on May 31, 1994.

**Procedural Summary**

- **Analysis** - For soil/solid sample matrices, a thirty (30) gram aliquot of sample is extracted, unless noted otherwise. Final extract concentration is performed by the nitrogen blowdown technique to a final volume of one (1) milliliter, unless stated otherwise. Semivolatile organic Gas Chromatographic/Mass Spectrometric analysis is performed by injecting a one (1) microliter aliquot of extract into a Hewlett Packard 5890/5970 GC/MSD systems, configured for electron impact ionization. Chromatography is performed on a thirty (30) meter J&W fused silica DB-5 capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final quantitation report as the minimum value that can be detected with confidence. PQLs are factored for initial sample volume, percent moistures, and final extract volumes, along with any necessary dilution.
- **Scope and Limitations** - Due to the complex nature of many wastes, emulsions may be encountered during the extraction process. Resultant extracts frequently yield noncompliant surrogate recoveries upon analysis, due to losses to emulsions. Furthermore, complex matrices often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples may be required to prevent instrument damage, resulting in higher detection limits.

**QA/QC**

The method blanks analyzed with this case demonstrated compliant surrogate recoveries and were free of all target analytes.

Method QC, consisting of matrix spike and matrix spike duplicate analyses and blank spike and blank spike duplicate analyses, was performed with samples of this case. Low

**CASE NARRATIVE FOR PAH ANALYSIS**  
**USING MODIFIED SW-846 METHOD 8270(cont'd)**

**CLIENT:** Nuclear Fuel Services, Inc.  
**LSDG:** 32140  
**PROJECT:** LEFPC

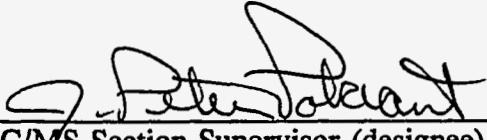
soil QC was performed on sample 1661B-63. Accuracy results for all analytes in the matrix spike analysis were compliant; however, recoveries were high for all analyte spikes in the matrix spike duplicate analysis. It is believed that the matrix spike duplicate extract was mistakenly double spiked with matrix spiking solution, resulting in a two-fold increase in analyte recoveries over the matrix spike analysis. Precision results are correspondingly high for all analytes, due to this spiking error. Due to limited sample, it was not possible to prepare a matrix spike duplicate extract for 1661B-138. Recovery results for the matrix spike analysis, however, were complaint for all spiked analytes. Only base/neutral surrogate recoveries are herein reported for the method specific QC, since PAH's are base/neutral target analytes. Additional blank spike and blank spike duplicate batch QC analyses manifest compliant accuracy and precision results for all spiked analytes.

**General**

The reports of the PAH analytes identified and quantified in the samples are contained in the following sections of the data package. The soil result PQLs and final results have been factored for initial sample volume, final extract volume, any necessary dilutions, and percent moisture. Also included are the appropriate calibration and quality control data where applicable.

Since PAHs are base/neutrals, as stated above, only the base/neutral surrogate recoveries are herein reported as well; all are compliant.

Sample 1661B-63 was analyzed at a 2x dilution due to the viscosity of the sample extract. All results reported herein are compliant

  
\_\_\_\_\_  
GC/MS Section Supervisor (designee)

6/29/94  
Date

**Semivolatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3214002  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-63  
Date Received: 17-May-94  
Date Extracted: 25-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	5/31/94	2	BQL	840	
91576	2-Methylnaphthalene	5/31/94	2	BQL	840	
208968	Acenaphthylene	5/31/94	2	BQL	840	
83329	Acenaphthene	5/31/94	2	BQL	840	
86737	Fluorene	5/31/94	2	BQL	840	
85018	Phenanthrene	5/31/94	2	570	840	J
120127	Anthracene	5/31/94	2	84	840	J
206440	Fluoranthene	5/31/94	2	1600	840	
129000	Pyrene	5/31/94	2	1300	840	
56553	Benzo(a)anthracene	5/31/94	2	700	840	J
218019	Chrysene	5/31/94	2	780	840	J
205992	Benzo(b)fluoranthene	5/31/94	2	1100	840	
207089	Benzo(k)fluoranthene	5/31/94	2	320	840	J
50328	Benzo(a)pyrene	5/31/94	2	800	840	J
193395	Indeno(1,2,3-cd)pyrene	5/31/94	2	BQL	840	
53703	Dibenzo(a,h)anthracene	5/31/94	2	BQL	840	
191242	Benzo(g,h,i)perylene	5/31/94	2	BQL	840	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3214002

Client Sample No.: 1661B-63

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>5/31/94</i>	<i>50</i>	<i>58</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>5/31/94</i>	<i>50</i>	<i>77</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>5/31/94</i>	<i>50</i>	<i>94</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

Lab Sample ID: 3214007

Client Sample No.: 1661B-138

Matrix: Soil

Date Received: 17-May-94

Date Extracted: 25-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	5/31/94	1	BQL	330	
91576	2-Methylnaphthalene	5/31/94	1	BQL	330	
208968	Acenaphthylene	5/31/94	1	BQL	330	
83329	Acenaphthene	5/31/94	1	BQL	330	
86737	Fluorene	5/31/94	1	BQL	330	
85018	Phenanthrene	5/31/94	1	45	330	J
120127	Anthracene	5/31/94	1	BQL	330	
206440	Fluoranthene	5/31/94	1	89	330	J
129000	Pyrene	5/31/94	1	BQL	330	
56553	Benzo(a)anthracene	5/31/94	1	BQL	330	
218019	Chrysene	5/31/94	1	BQL	330	
205992	Benzo(b)fluoranthene	5/31/94	1	100	330	J
207089	Benzo(k)fluoranthene	5/31/94	1	BQL	330	
50328	Benzo(a)pyrene	5/31/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	5/31/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	5/31/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	5/31/94	1	BQL	330	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit



*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3214007

Client Sample No.: 1661B-138

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>5/31/94</i>	<i>50</i>	<i>47</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>5/31/94</i>	<i>50</i>	<i>60</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>5/31/94</i>	<i>50</i>	<i>88</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

*Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: Q1452511  
Matrix: Soil*

*Client Reference No.: LEFPC  
Client Sample No.: Method Blank  
Date Received: N/A  
Date Extracted: 25-May-94*

<i>CAS Number</i>	<i>Compound Name</i>	<i>Analysis Date</i>	<i>Dilution Factor</i>	<i>Result ug/kg</i>	<i>PQL ug/kg</i>	<i>Note</i>
91203	Naphthalene	5/31/94	1	BQL	330	
91576	2-Methylnaphthalene	5/31/94	1	BQL	330	
208968	Acenaphthylene	5/31/94	1	BQL	330	
83329	Acenaphthene	5/31/94	1	BQL	330	
86737	Fluorene	5/31/94	1	BQL	330	
85018	Phenanthrene	5/31/94	1	BQL	330	
120127	Anthracene	5/31/94	1	BQL	330	
206440	Fluoranthene	5/31/94	1	BQL	330	
129000	Pyrene	5/31/94	1	BQL	330	
56553	Benzo(a)anthracene	5/31/94	1	BQL	330	
218019	Chrysene	5/31/94	1	BQL	330	
205992	Benzo(b)fluoranthene	5/31/94	1	BQL	330	
207089	Benzo(k)fluoranthene	5/31/94	1	BQL	330	
50328	Benzo(a)pyrene	5/31/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	5/31/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	5/31/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	5/31/94	1	BQL	330	

*PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit*

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: Q1452511

Client Sample No.: Method Blank

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>5/31/94</i>	<i>50</i>	<i>76</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>5/31/94</i>	<i>50</i>	<i>78</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>5/31/94</i>	<i>50</i>	<i>99</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile QC Spike Data**

Client: Nuclear Fuel Services, Inc.  
Method: SW-846 8270  
Lab Sample ID: Q1452509/Q1452510  
Client Sample ID: Blank Spike/Blank Spike Duplicate  
Matrix: Soil

Date of Leachate: NA  
Date of Extraction: 25-May-94  
Date of Analysis: 31-May-94  
Client Reference No.: LEFPC

**BS/BSD ANALYTICAL RESULTS**

Spike Compound	% Recovery QC Limits	Spike amount added ug	Unspiked Sample Result ug/Kg	Spiked Sample Result ug/Kg (BS)	% Spike Recovery (BS)	Duplicate Spike Sample Result ug/Kg (BSD)	% Dup. Spike Recovery (BSD)	RPD
Phenol	26-90	75	0	1600	64	1800	72	11.8
2-Chlorophenol	25-102	75	0	1600	64	1700	68	6.1
1,4,-Dichlorobenzene	28-104	50	0	1000	60	1100	66	9.5
N-Nitroso-di-n-propylamine	41-126	50	0	1100	66	1200	72	8.7
1,2,4-Trichlorobenzene	38-107	50	0	1000	60	1000	60	0.0
4-Chloro-3-methylphenol	26-103	75	0	1700	68	1700	68	0.0
Acenaphthene	31-137	50	0	1100	66	1100	66	0.0
4-Nitrophenol	11-114	75	0	1600	64	1600	64	0.0
2,4-Dinitrotoluene	28-89	50	0	1100	66	1000	60	9.5
Pentachlorophenol	17-109	75	0	2000	80	2200	88	9.5
Pyrene	35-142	50	0	1400	84	1400	84	0.0

QC limits based upon SW-846, Method 8270

**Semivolatile QC Spike Data**

Client: Nuclear Fuel Services, Inc.  
Method: SW-846 8270  
Lab Sample ID: 3214002MS/3214002MSD  
Client Sample ID: 1661B-63  
Matrix: Soil

Date of Leachate: NA  
Date of Extraction: 25-May-94  
Date of Analysis: 31-May-94  
Client Reference No.: LEFPC

**MS/MSD ANALYTICAL RESULTS**

Spike Compound	% Recovery QC Limits	Spike amount added ug	Unspiked Sample Result ug/Kg	Spiked Sample Result ug/Kg (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result ug/Kg (MSD)	%Dup. Spike Recovery (MSD)	RPD
1,4,-Dichlorobenzene	28-104	25	0	1600	77	2600	125	47.2
N-Nitroso-di-n-propylamine	41-126	25	0	1700	82	2800	135	48.5
1,2,4-Trichlorobenzene	38-107	25	0	1600	77	2600	125	47.2
Acenaphthene	31-137	25	0	1900	92	2900	139	41.2
2,4-Dinitrotoluene	28-89	25	0	1500	72	2300	111	41.7
Pyrene	35-142	25	1300	3100	87	4300	144	49.6

QC limits based upon SW-846, Method 8270

### Semivolatile QC Spike Data

Client: Nuclear Fuel Services, Inc.  
Method: SW-846 8270  
Lab Sample ID: 3214007MS  
Client Sample ID: 1661B-138  
Matrix: Soil

Date of Leachate: NA  
Date of Extraction: 25-May-94  
Date of Analysis: 31-May-94  
Client Reference No.: LEFPC

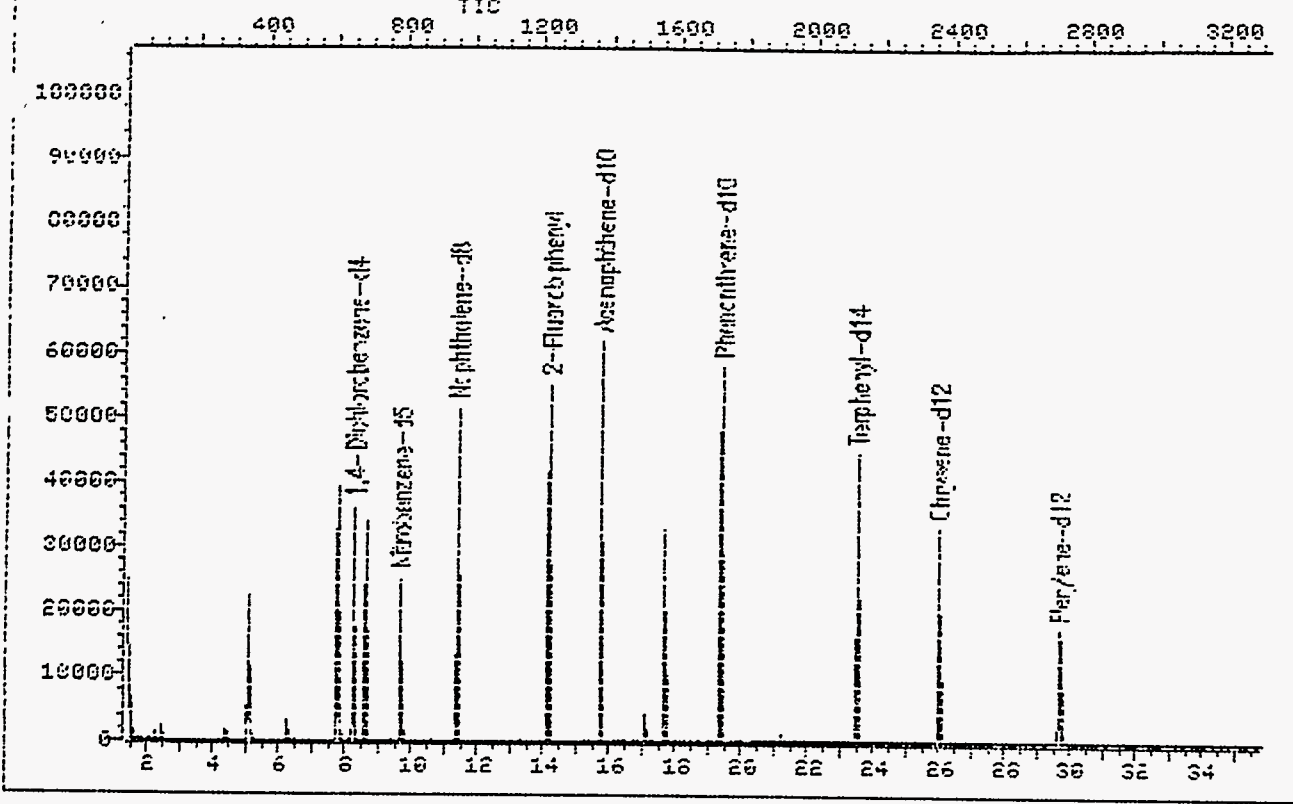
### MS/MSD ANALYTICAL RESULTS

Spike Compound	% Recovery QC Limits	Spike amount added ug	Unspiked Sample Result ug/Kg	Spiked Sample Result ug/Kg (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result ug/Kg (MSD)	% Dup. Spike Recovery (MSD)	RPD
1,4,-Dichlorobenzene	28-104	25	0	980	59	NA	NA	NA
N-Nitroso-di-n-propylamine	41-126	25	0	1000	60	NA	NA	NA
1,2,4-Trichlorobenzene	38-107	25	0	1000	60	NA	NA	NA
Acenaphthene	31-137	25	0	1100	66	NA	NA	NA
2,4-Dinitrotoluene	28-89	25	0	920	55	NA	NA	NA
Pyrene	35-142	25	0	1300	78	NA	NA	NA

QC limits based upon SW-846, Method 8270

TOTAL ION CHROMATOGRAM

File 089764 35.0-500.0 amu. 01402011 SBLKS NFS 35-500 40(4)-10-275(7)-10-295(11)



Data File: 089764::D4

Quant Output File: 089764::08

Name: Q1452511 SBLKS

Instrument ID: 7001

Misc: NFS 35-500 40(4)-10-275(7)-10-295(11)

FILE# 4

Id File: BI0531::DA

Title: SVD ID FILE FOR M8270, DODECANE AND TRIBUTYL PHOSPHATE

Last Calibration: 901207 19:50

Last Qual Time: 940531 10:29

Operator ID: MEI

Quant Time : 940531 12:45

Injected at: 940531 12:05



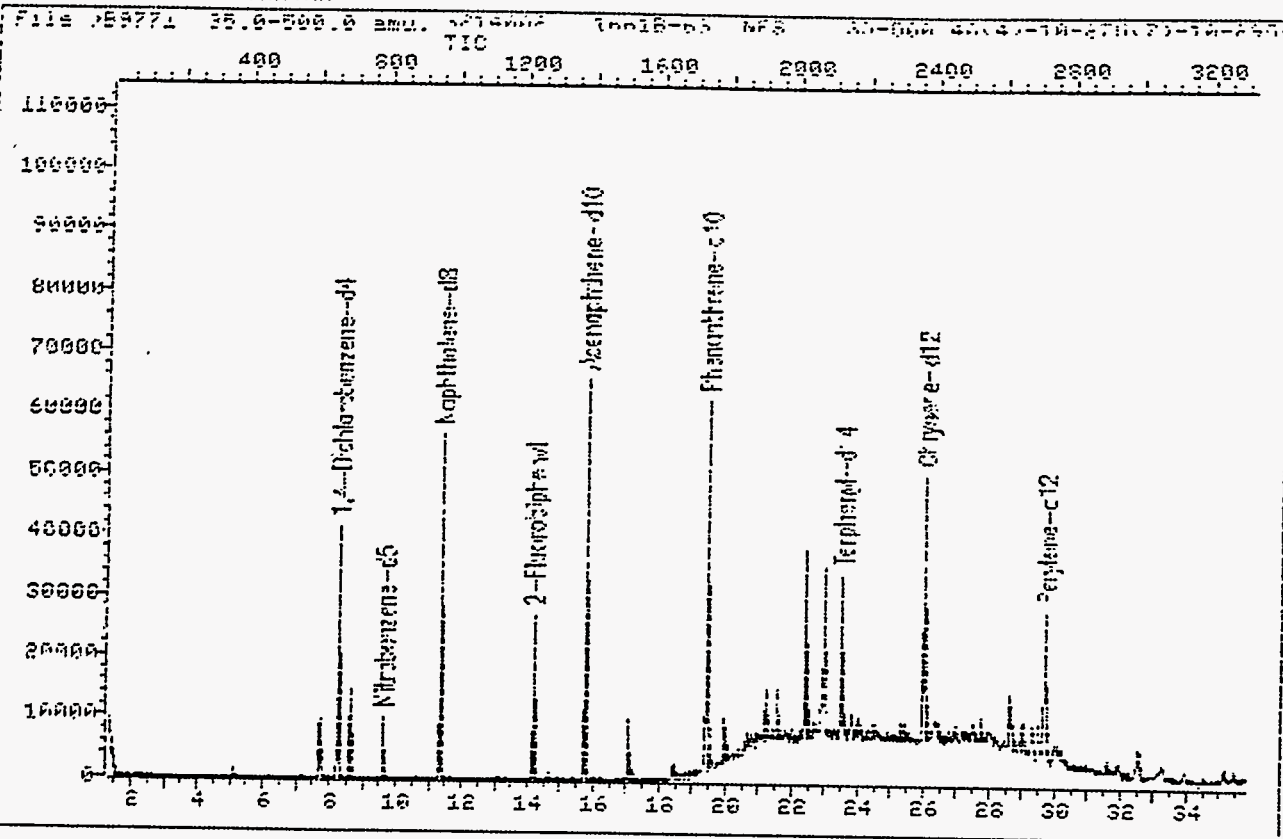
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 Dilution Factor: 1.00000  
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 Instrument ID: 7001  
 Misc: NFS 35-500 40(4)-10-275(7)-10-295(11)  
 RTL# 4

ID File: B10531:DA  
 Title: SUD 10 FILE FOR M8270 , DUDECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50  
 Last Qual Time: 940531 10:29

Compound	R.T.	U ion	Area	Conc	Units	q
1) *1,4-Dichlorobenzene-d4	8.24	152.0	15264	40.00	NG/UL	95
17) *Naphthalene-d8	11.34	136.0	49182	40.00	NG/UL	100
52) Nitrobenzene-d5	9.62	82.0	16675	37.97	NG/UL	85
63) *Acenaphthene-d10	15.69	164.0	28306	40.00	NG/UL	96
52) 2-Fluorobiphenyl	14.13	172.0	35047	38.93	NG/UL	94
54) *Phenanthrene-d10	19.36	188.0	43779	40.00	NG/UL	97
66) *Chrysene-d12	25.96	240.0	22814	40.00	NG/UL	87
73) Terphenyl-d14	23.48	244.0	29426	49.45	NG/UL	86
74) *Perylene-d12	29.64	264.0	20741	40.00	NG/UL	97

\* Compound is ISID





Data File: >89771::04                      Quant Output File: >89771::0E  
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 Misc: NFS    35-500 40(4)-10-275(7)-10-295(11)                      FILE#11

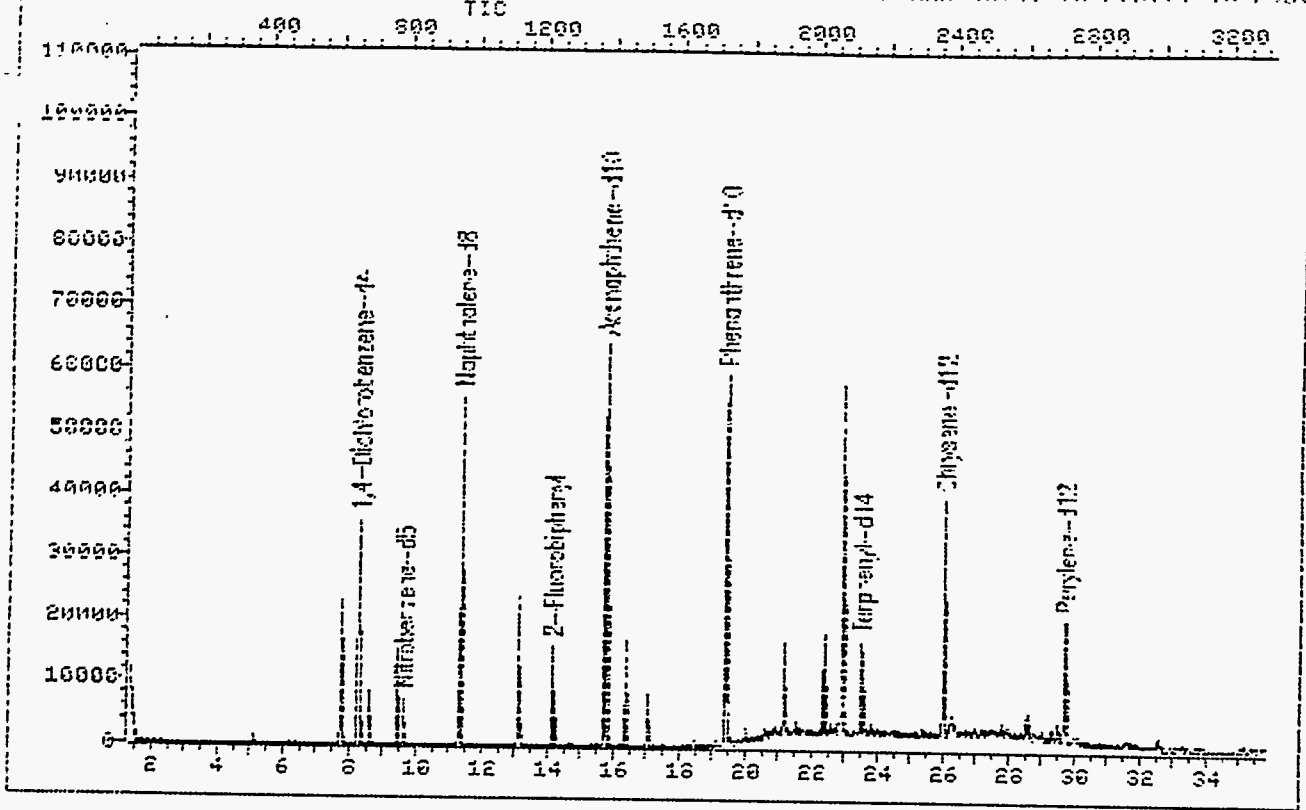
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 Title: SUV ID FILE FOR M8270 , DODECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50                      Last Cal Time: 940531 10:29

Operator ID: MEJ  
 Quant Time : 940531 17:38  
 Injected at: 940531 17:01



TOTAL ION CHROMATOGRAM

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Data File: ^B9772:104

Quant Output File: ^B9772:108

Name: 3214002MS 1661B-63

Instrument ID: /001

Misc: NFS 35-500 40(4)-10-275(7)-10-295(11)

BIL#12

Id File: B10531:DA

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Last Qual Time: 940531 10:29

Operator ID: ME1

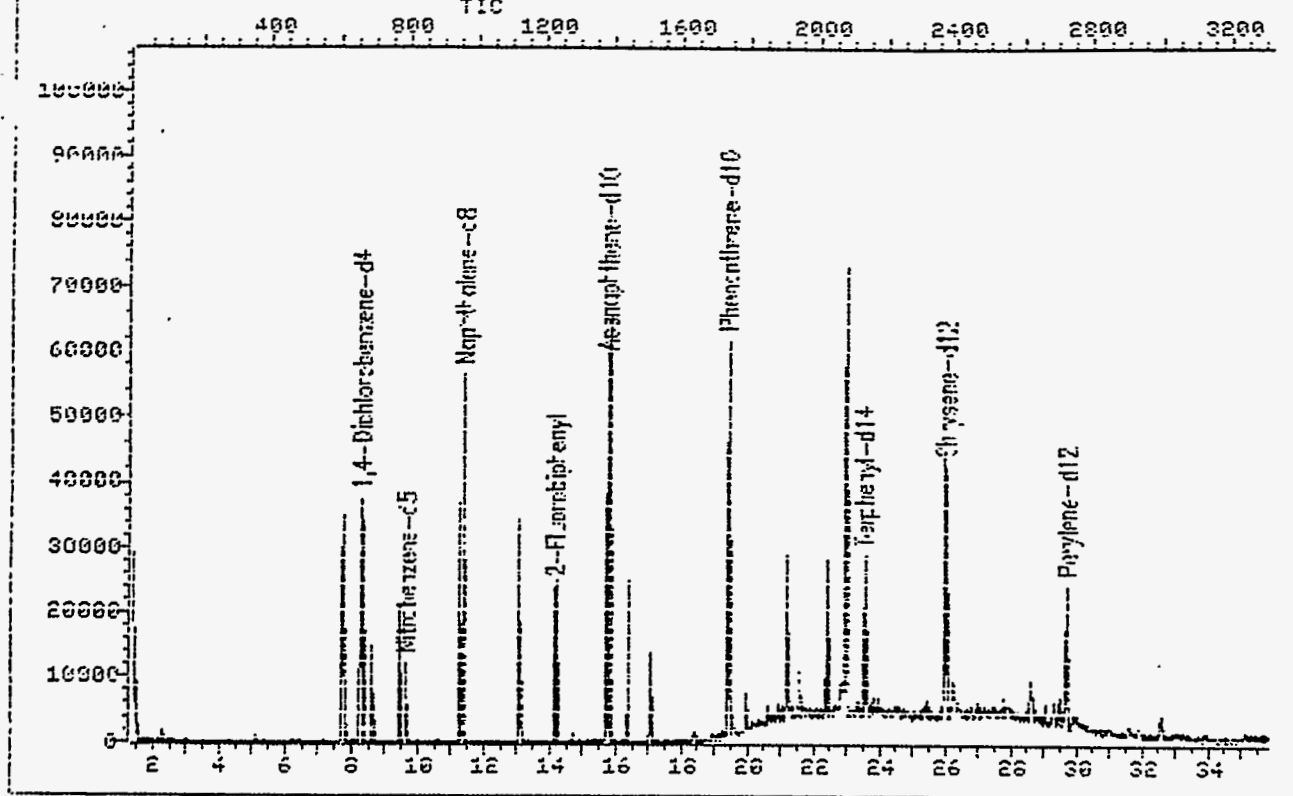
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Injected at: 940531 17:45



TOTAL ION CHROMATOGRAM

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Operator ID: MEI  
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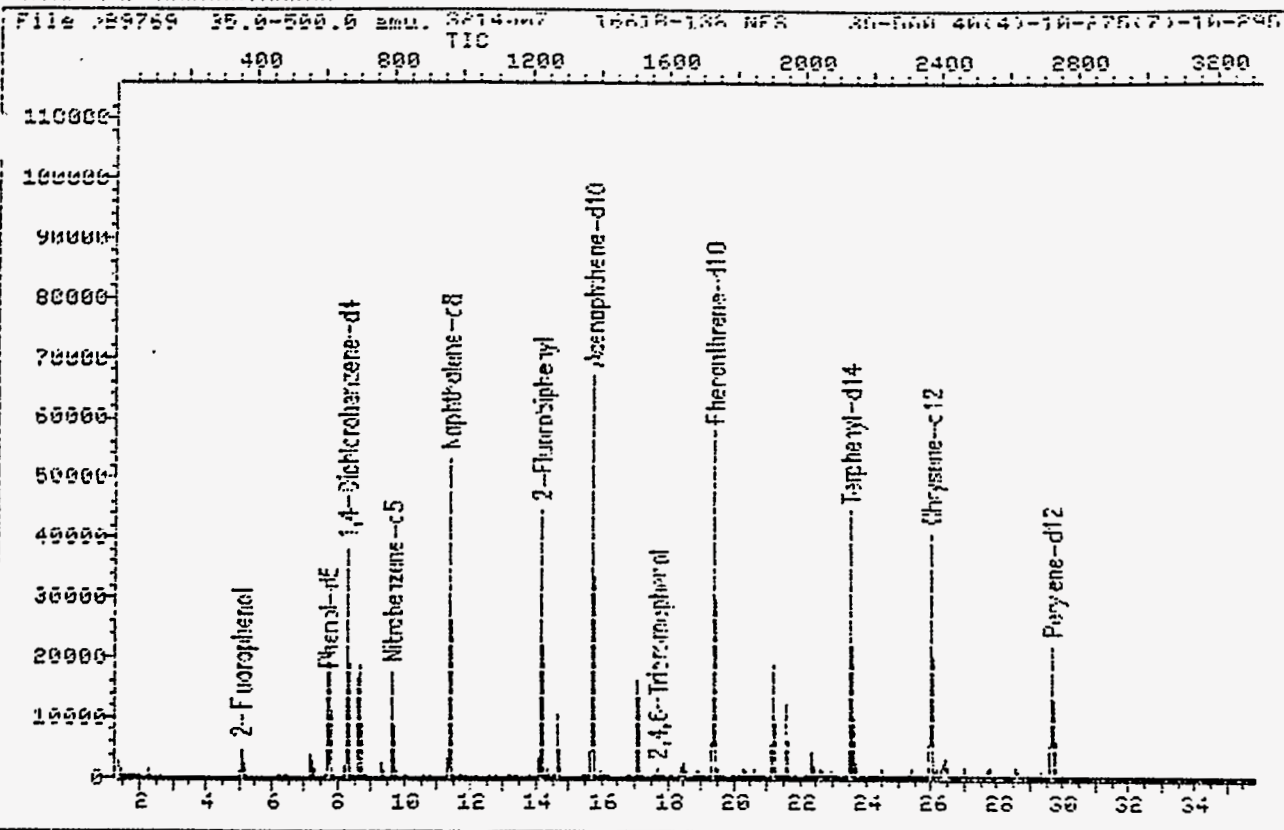
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 Misc: NFS    35-500 40(4)-10-275(7)-10-295(11)                      FILE13

ID File: 810531:DA  
 Title: SUU ID FILE FOR M8270 , DODECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50                      Last Cal time: 940531 10:29

Compound	R.T.	Wt Ion	Area	Conc	Units	q
1) *1,4-Dichlorobenzene-d4	8.24	152.0	14968	40.00	NG/UL	94
2) 1,4-Dichlorobenzene	8.29	146.0	18743	61.64	NG/UL	94
13) N-Nitroso-di-n-propylamine	9.40	70.0	9911	67.27	NG/UL	92
12) *Naphthalene-d8	11.35	136.0	52997	40.00	NG/UL	100
25) 1,2,4-Trichlorobenzene	11.26	180.0	16199	63.15	NG/UL	94
32) Nitrobenzene-d5	9.62	82.0	8015	33.88	NG/UL	78
33) *Acenaphthene-d10	15.70	164.0	31167	40.00	NG/UL	94
42) Acenaphthene	15.78	153.0	33048	70.41	NG/UL	98
46) 2,4-Dinitrotoluene	16.34	165.0	10478	56.40	NG/UL	95
52) 2-Fluorobiphenyl	14.13	172.0	17795	35.91	NG/UL	98
54) *Phenanthrene-d10	19.37	188.0	46766	40.00	NG/UL	98
61) Phenanthrene	19.43	178.0	8997	12.22	NG/UL	95
62) Anthracene	19.55	178.0	1184M	1.71	NG/UL	95
67) Fluoranthene	22.38	202.0	20522	29.68	NG/UL	93
68) *Chrysene-d12	25.99	240.0	27926	40.00	NG/UL	98
67) Pyrene	22.94	202.0	70629	104.33	NG/UL	89
70) Benzo(a)anthracene	25.95	228.0	5824	12.52	NG/UL	88
72) Chrysene	26.03	228.0	6208	13.77	NG/UL	85
73) Terphenyl-d14	23.49	244.0	15614	42.87	NG/UL	90
74) *Perylene-d12	29.67	264.0	23377	40.00	NG/UL	95
76) Benzo(b)fluoranthene	28.56	252.0	6731	18.47	NG/UL	89
77) Benzo(k)fluoranthene	28.61	252.0	2548M	7.05	NG/UL	85
78) Benzo(a)pyrene	29.47	252.0	4423	14.42	NG/UL	94

\* Compound is ISID

TOTAL ION CHROMATOGRAM



Data File: >B9769::D4 Quant Output File: ^B9769::UB  
 Name: 3214007 1661B-138 Instrument ID: 7001  
 Misc: NFS 35-500 40(4)-10-275(7)-10-295(11) BIL# 9

Id File: BIU531::DA  
 Title: SVD ID FILE FOR M8270 , DUODECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50 Last Cal Time: 940531 10:29

Operator ID: ME1  
 Quant Time : 940531 16:10  
 Injected at: 940531 15:33

Operator ID: MEJ  
 Output File: 089769:008  
 A File: 089769:014  
 Name: 3214007 1661B-138  
 Misc: NBS 35-500 40(4)-10-275(2)-10-295(11)

Quant Rev: 7  
 Quant Time: 940531 16:10  
 Injected at: 940531 15:55  
 Dilution Factor: 1.00000  
 Instrument ID: 7001  
 BIL# 9

ID File: B10531:0A  
 Title: SUU ID FILE FOR M8220 , DODECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50  
 Last Qual Time: 940531 10:29

Compound	R.T.	U Ion	Area	Conc	Units	q
1) *1,4-Dichlorobenzene-d4	8.24	152.0	14705	40.00	NG/UL	96
17) *Naphthalene-d8	11.34	136.0	51582	40.00	NG/UL	100
27) Nitrobenzene-d5	9.62	82.0	10874	25.61	NG/UL	84
33) *Acenaphthene-d10	15.70	164.0	30744	40.00	NG/UL	94
39) 2-Fluorobiphenyl	14.13	172.0	28921	30.07	NG/UL	98
44) *Phenanthrene-d10	19.36	188.0	47872	40.00	NG/UL	99
61) Phenanthrene	19.41	178.0	2035	1.35	NG/UL	93
65) Fluoranthene	22.36	202.0	5821	2.70	NG/UL	91
66) *Chrysene-d12	25.96	240.0	27758	40.00	NG/UL	97
73) Terphenyl-d14	23.48	244.0	31916	44.08	NG/UL	92
74) *Perylene-d12	29.64	264.0	25804	40.00	NG/UL	92
76) Benzo(b)fluoranthene	28.54	252.0	2334M	5.14	NG/UL	92

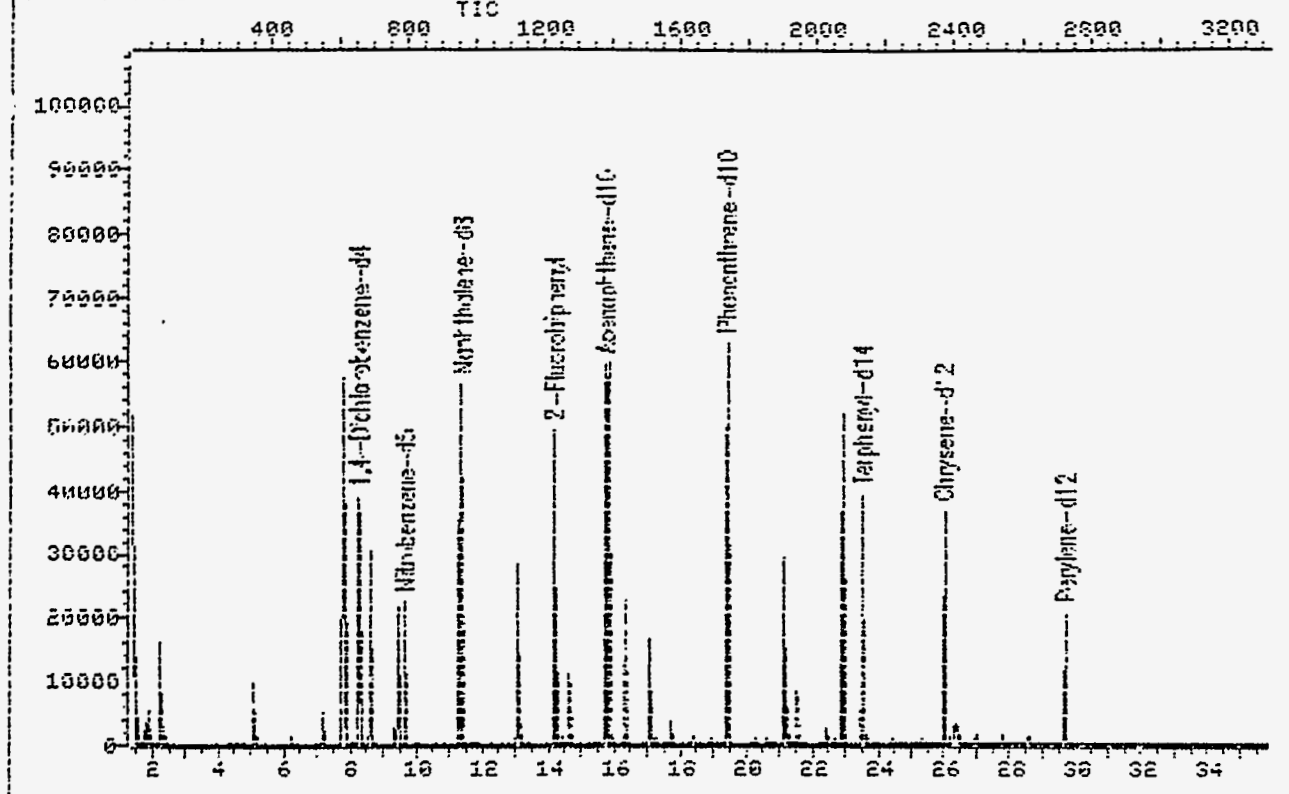
Compound is ISID

**M=Manually Quantitated**  
 By: \_\_\_\_\_  
 Date: \_\_\_\_/\_\_\_\_/\_\_\_\_



TOTAL ION CHROMATOGRAM

File >B9770 35.0-500.0 amu. 3214007MS 16618-138 NFS 3-1000 3-10-275(7)-10-29



Data File: >B9770::D4

Quant Output File: >B9770::UB

Name: 3214007MS 16618-138

Instrument ID: 7001

Misc: NFS 35-500 40(4)-10-275(7)-10-295(11)

BIL#10

Id File: B10531::DA

Title: SVD ID FILE FOR M8274 , DUDECANE AND TRIBUTYL PHOSPHATE

Last Calibration: 901207 19:50

Last Cal Time: 940531 10:29

Operator ID: MEI

Quant Time : 940531 16:54

Injected at: 940531 16:17

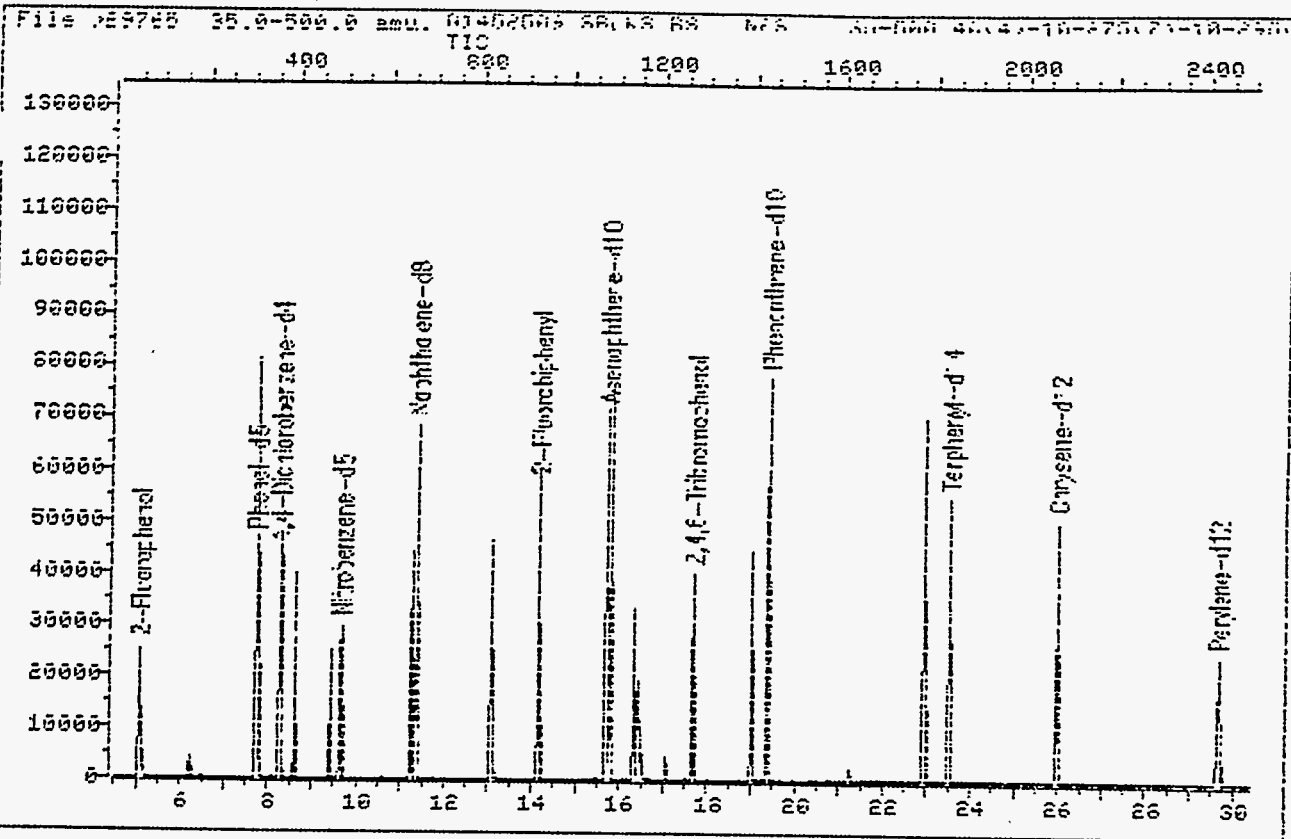
Operator ID: MEI                                      Quant Rev: 7                      Quant Time: 940531 16:54  
 Output File: >B9770::06                                      Injected at: 940531 16:17  
 Data File: >B9770::04                                      Dilution Factor: 1.00000  
 Name: 3214007MS 16618-138                                      Instrument ID: 7001  
 Misc: NPS 35-500 40(4)-10-275(7)-10-295(11)                                      RIL#10

ID File: B10531::DA  
 Title: SVD ID FILE FOR M8270 , DUDECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50                                      Last Cal Time: 940531 10:29

	Compound	R.T.	Wt Ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	8.23	152.0	14501	40.00	NG/UL	92
2)	1,4-Dichlorobenzene	8.27	146.0	17405	29.54	NG/UL	92
13)	N-Nitroso-di-n-propylamine	9.39	70.0	8763	30.70	NG/UL	82
17)	*Naphthalene-d8	11.34	136.0	51550	40.00	NG/UL	100
25)	1,2,4-Trichlorobenzene	11.25	180.0	14924	29.92	NG/UL	95
32)	Nitrobenzene-d5	9.62	82.0	15367	33.40	NG/UL	88
33)	*Acenaphthene-d10	15.69	164.0	29694	40.00	NG/UL	97
42)	Acenaphthene	15.77	153.0	29097	32.53	NG/UL	96
46)	2,4-Dinitrotoluene	16.32	165.0	9735	27.50	NG/UL	94
52)	2-Fluorobiphenyl	14.14	172.0	32013	33.90	NG/UL	92
54)	*Phenanthrene-d10	19.37	188.0	45780	40.00	NG/UL	92
61)	Phenanthrene	19.41	178.0	1570	1.09	NG/UL	92
65)	Fluoranthene	22.36	202.0	2821	2.08	NG/UL	91
73)	*Chrysene-d12	25.96	240.0	26578	40.00	NG/UL	90
74)	Pyrene	22.91	202.0	48491	37.65	NG/UL	90
73)	Terphenyl-d14	23.49	244.0	24862	35.86	NG/UL	88
74)	*Perylene-d12	29.65	264.0	23337	40.00	NG/UL	95

\* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B4765::04

Quant Output File: >B4765::08

Name: U1492509 SBLKS BS

Instrument ID: /001

Misc: NFS 35-500 40(4)-10-275(7)-10-295(11)

BIL# 5

Id File: B10531::0A

Title: SMO ID FILE FOR MX270, DODECANE AND TRIBUTYL PHOSPHATE

Last Calibration: 901207 19:50

Last Qual Time: 940531 10:29

Operator ID: MEJ

Quant Time: 940531 13:26

Injected at: 940531 12:55

Operator ID: MEI  
 Output File: >BY765::08  
 a File: >BY765::04  
 Name: 01452509 SBLKS BY  
 Misc: NFS 35-500 40(4)-10-275(7)-10-295(11)

Quant Rev: / Quant Time: 940531 13:26  
 Injected at: 940531 12:55  
 Dilution Factor: 1.00000  
 Instrument ID: /001  
 RTL# 5

ID File: B10531::04

Title: SVD ID FILE FOR M8270 , DODECANE AND TRIBUTYL PHOSPHATE

Last Calibration: 901207 19:50

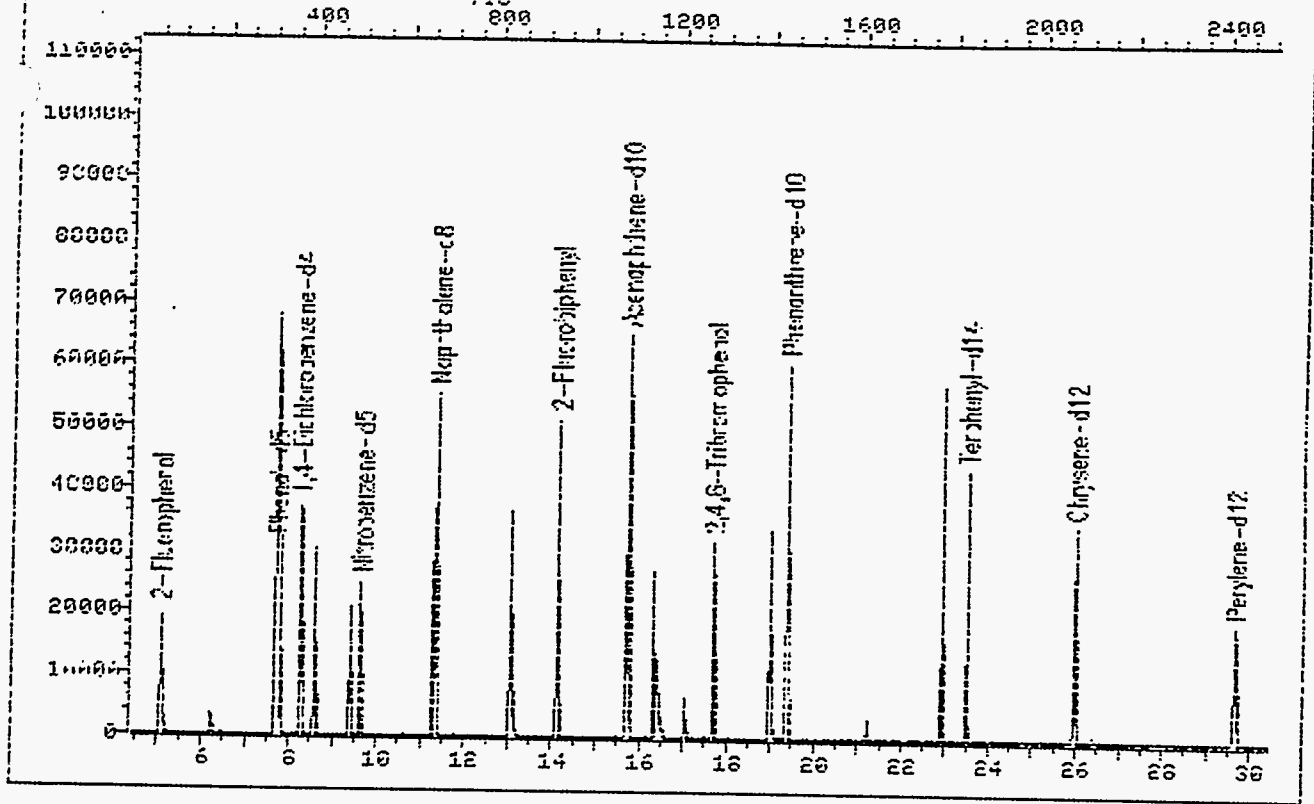
Last Qual Time: 940531 10:29

Compound	R.T.	Q ion	Area	Conc	Units	q
1) *1,4-Dichlorobenzene-d4	8.24	152.0	18784	40.00	NG/UL	90
3) Phenol	7.73	94.0	31635	49.34	NG/UL	89
5) 2-Chlorophenol	7.76	128.0	30211	48.97	NG/UL	88
7) 1,4-Dichlorobenzene	8.29	146.0	23585	30.90	NG/UL	90
13) N-Nitroso-di-n-propylamine	9.41	70.0	11779	31.85	NG/UL	90
15) 2-Fluorophenol	5.06	112.0	22427	48.72	NG/UL	80
16) Phenol-d5	7.70	99.0	28467	41.74	NG/UL	91
17) *Naphthalene-d8	11.34	136.0	64155	40.00	NG/UL	100
25) 1,2,4-Trichlorobenzene	11.25	180.0	19353	31.16	NG/UL	95
30) 4-Chloro-3-methylphenol	13.05	107.0	24990	51.73	NG/UL	91
42) Nitrobenzene-d5	9.63	82.0	19761	34.50	NG/UL	87
53) *Acenaphthene-d10	15.69	164.0	38627	40.00	NG/UL	98
42) Acenaphthene	15.78	153.0	38398	35.00	NG/UL	97
5) 4-Nitrophenol	16.40	109.0	7281	47.88	NG/UL	80
5) 2,4-Dinitrotoluene	16.34	165.0	14604	31.72	NG/UL	92
52) 2-Fluorobiphenyl	14.13	172.0	41049	53.41	NG/UL	98
53) 2,4,6-Tribromophenol	17.67	330.0	8001	53.37	NG/UL	92
54) *Phenanthrene-d10	19.37	188.0	62180	40.00	NG/UL	97
60) Pentachlorophenol	18.99	266.0	11272	61.41	NG/UL	99
66) *Chrysene-d12	25.96	240.0	35041	40.00	NG/UL	98
67) Pyrene	22.91	202.0	68850	40.53	NG/UL	95
73) Terphenyl-d14	23.49	244.0	38187	41.78	NG/UL	90
74) *Perylene-d12	29.65	264.0	29753	40.00	NG/UL	99

\* Compound is ISTD

TOTAL ION CHROMATOGRAM

File: 089706 35.0-500.0 MIN. 01452510 SBLKS BSD NFS 35-500 40(4)-10-275(2)-10-295(11)



Data File: >89766::D4                      Quant Output File: ^89766::UB  
 Name: Q1452510 SBLKS BSD                      Instrument ID: 7001  
 Misc: NFS      35-500 40(4)-10-275(2)-10-295(11)                      BIL# 6

Id File: B10531::DA  
 Title: SVD ID FILE FOR M8270 , DODECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50                      Last Cal Time: 940531 10:29

Operator ID: ME1  
 Quant Time : 940531 14:04  
 Injected at: 940531 13:33

Operator ID: MBJ  
 Output File: 89766::UB  
 Sample File: 89766::04  
 Name: 01452510 SBLKS STD  
 Desc: NFS 35-500 40(4)-10-275(2)-10-295(11)

Quant Rev: 2  
 Quant Time: 940531 14:04  
 Injected at: 940531 13:53  
 Dilution Factor: 1.00000  
 Instrument ID: 7001  
 BIL# 6

ID File: B10531::DA  
 Title: STD ID FILE FOR M8270 , DUDECANE AND TRIBUTYL PHOSPHATE  
 Last Calibration: 901207 19:50  
 Last Qual Time: 940531 10:29

Compound	R.T.	Q Ion	Area	Conc	Units	q
1) *1,4-Dichlorobenzene-d4	8.24	152.0	14549	40.00	NG/UL	93
3) Phenol	7.73	94.0	26079	52.51	NG/UL	86
5) 2-Chlorophenol	7.76	128.0	24207	50.66	NG/UL	87
7) 1,4-Dichlorobenzene	8.28	146.0	18814	31.83	NG/UL	89
13) N-Nitroso-di-n-propylamine	9.40	70.0	4943	34.72	NG/UL	93
15) 2-Fluorophenol	5.05	112.0	16511	46.51	NG/UL	85
16) Phenol-d5	7.69	99.0	23086	43.70	NG/UL	88
17) *Naphthalene-d8	11.34	136.0	51980	40.00	NG/UL	100
25) 1,2,4-Trichlorobenzene	11.25	180.0	15754	31.31	NG/UL	92
30) 4-Chloro-3-methylphenol	13.05	107.0	20202	51.61	NG/UL	91
32) Nitrobenzene-d5	9.62	82.0	15918	34.30	NG/UL	84
33) *Acenaphthene-d10	15.70	164.0	30979	40.00	NG/UL	99
42) Acenaphthene	15.77	153.0	30248	32.42	NG/UL	97
47) 4-Nitrophenol	16.40	109.0	5977	49.01	NG/UL	78
49) 2,4-Dinitrotoluene	16.33	165.0	11243	30.45	NG/UL	83
52) 2-Fluorobiphenyl	14.13	172.0	34031	34.54	NG/UL	97
53) 2,4,6-Tribromophenol	17.67	330.0	6193	51.51	NG/UL	79
54) *Phenanthrene-d10	19.37	188.0	45505	40.00	NG/UL	96
60) Pentachlorophenol	18.98	266.0	8919	66.40	NG/UL	80
66) *Chrysene-d12	25.96	240.0	26499	40.00	NG/UL	93
67) Pyrene	22.91	202.0	54364	42.31	NG/UL	91
73) Terphenyl-d14	23.49	244.0	30161	43.63	NG/UL	91
74) *Perylene-d12	29.64	264.0	23132	40.00	NG/UL	93

\* Compound is 1STD

Date 5-22-94  
 Operator ML  
 GC Meth File BDFTPP  
 GC Program 100(0)-15-275(1)  
 GC Meth File BBNA  
 GC Program 35(4)-10-275(20)  
 GC Meth File \_\_\_\_\_  
 GC Program \_\_\_\_\_

Tune File BTUNE 2  
 Mass Range 35-500  
 E.M. & A/D 18001 i  
 Threshold 60  
 Scan Delay 1.8 minutes  
 Calib. File BC 522  
 Quant ID File BC 522  
 Column ID DB-5

Cont. Cal. Std.	Area
Int Std #1	15,861
Int Std #2	68,921
Int Std #3	37,506
Int Std #4	67,291
Int Std #5	55,453
Int Std #6	37,940

**QC Summary**

Sample IS area limit (-50% to + 100%)

Initial Five-Point Calibration			
Date:	3/90 sow	m8270	
Meets criteria:	Y N	<input checked="" type="radio"/> N	Y N
DFTPP			
File:	3/90 sow	m8270	
Meets criteria:	Y N	<input checked="" type="radio"/> N	Y N
Continuing Calibration			
File:	3/90 sow	m8270	
Meets criteria:	Y N	<input checked="" type="radio"/> N	Y N

Filename	Laboratory Sample ID	Client Sample ID	Df	Comments	IS ok	SU ok	INJ ok
>B 9606	SSVTUNE4025	DFTPP		RT 8.32, Area 91, Acc. 149737 inj. 11-63			✓
>B 9607	SSVMB270TD-408	SSTD15D		ML 5/21/94			X
>B 9608	SSVTUNE 4025	DFTPP		RT 8.32, Area 91, Acc. 149737 inj. 11-63			✓
>B 9609	SSVMB270TD-408	SSTD15D					✓
>B 9610	SSVMB270TD-408	SSTD160					✓
>B 9611	SSVMB270TD-408	SSTD120					✓
>B 9612	SSVMB270TD-408	SSTD080					✓
>B 9613	SSVMB270TD-408	SSTD020					✓
>B 9614	SSVMB270TD-408	SSTD050					X
>B 9615	3200415	10-SB-009-01-F	1		✓	✓	✓
>B 9616	3204710	38-SB-008-10-F	1		✓	✓	✓
>B 9617	3204711	38-SB-508-10-F	1		✓	✓	✓
>B 9618	3204712	38-SB-508-15-F	1		✓	✓	✓
>B 9619	3204713	38-SB-004-04-F	1		✓	✓	✓
>B 9620	3204714	38-SB-504-09-F	1		✓	✓	✓
>B 9621	3204715	38-SB-004-09-F	1		✓	✓	✓
>B 9622	3204716	38-SB-007-04-F	1		✓	✓	✓
>B 9623	3204717	38-SB-007-09-F	1	>3:00	✓	✓	✓
>B 9624	ML 5/21/94						
>B				ML 5/22/94			

Signatures/Date: ML Liang 5/22/94 (with corrections)

Approved/Date: [Signature] 5/23/94

NRE = Needs Reextraction

RE = Reextraction Analysis

Surr Notes:

NRIJ = Needs Reinjection

RNIJ = Reinjection Analysis

W = Within limits

D = Dilution

NDL = Needs Dilution

DL = Dilution Analysis

L = Below lower limit

not usable

✓ = OK

X = Noncompliant

H = Above limit

M = Matrix effect

Surrates (Rec)	NBZ	FBP	TER	PHE	PPH	TBP	GPH	BCD	Notes:
Water (3/90)	36-114	43-118	33-141	10-110	21-110	10-123	33-110	18-110	
Soil (3/90)	23-120	30-115	18-137	24-113	26-121	18-122	20-130	20-130	
Water (8270)	36-114	43-118	33-141	10-84	21-100	10-123			
Soil (8270)	23-120	30-115	18-137	24-113	26-121	18-122			

# Ecotek LSI Semivolatle GC/MS Instrument Logsheet - HP7001

Date: 5-31-94  
 Operator: ML  
 GC Meth File: BDFTPP  
 GC Program: 100(0)-15-275(1)  
 GC Meth File: BBNA  
 GC Program: 35(4)-10-275(20)  
 GC Meth File: \_\_\_\_\_  
 GC Program: \_\_\_\_\_

Tune File: BTUNE 1  
 Mass Range: 35-500  
 E.M. & A/D: 1 For 1 i  
 Threshold: 60  
 Scan Delay: 1.4 minutes  
 Calib. File: BC0522  
 Quant ID File: BI0531, BI231D  
 Column ID: DB-5

Cont. Cal. Std	Area
Int Std #1	14583
Int Std #2	12,234
Int Std #3	30,626
Int Std #4	48,762
Int Std #5	31,625
Int Std #6	27,226

QC Summary

Initial Five-Point Calibration			
Date: <u>5/22/94</u>	<u>3/90 sow</u>	<u>m8270</u>	<u>DEGME</u>
Meets criteria:	<u>Y N</u>	<u>Y N</u>	<u>Y N</u>
DFTPP			
File: <u>B9761</u>	<u>3/90 sow</u>	<u>m8270</u>	<u>DEGME</u>
Meets criteria:	<u>Y N</u>	<u>Y N</u>	<u>Y N</u>
Continuing Calibration			
File: <u>B9762</u>	<u>3/90 sow</u>	<u>m8270</u>	<u>DEGME</u>
Meets criteria:	<u>Y N</u>	<u>Y N</u>	<u>Y N</u>

Sample IS area limit (-50% to +100%)

Filename	Laboratory Sample ID	Client Sample ID	DF	Comments	IS ok	SU ok	INJ ok
>B 9761	SSVTUNE 4025	DFTPP		RT 7.79, Accn 49 Area 27532 inj 10:13			✓
>B 9762	SSVMP7070-4016	ESTOCED					✓
>B 9763	Q1452806	SBLKS	1	3198208 BK	✓	✓	✓
>B 9764	Q1452511	SBLKS	1	37140 BK	✓	✓	✓
>B 9765	Q1452509	SBLKS B>	1		✓	✓	✓
>B 9766	Q1452510	SBLKS BSO	1		✓	✓	✓
>B 9767	Q1452417	SBLKW	1	32156 BK	✓	✓	✓
>B 9768	3198208	1-5-016	1		✓	✓	✓
>B 9769	3214007	1661B-138	1	base sample	✓	✓	✓
>B 9770	3214007MS	1661B-138	1		✓	✓	✓
>B 9771	3214002	1661B-63	2		✓	✓	✓
>B 9772	3214002MS	1661B-63	2		✓	✓	✓
>B 9773	3214002MSO	1661B-63	2		✓	✓	✓
>B 9774	3210202	3A-00101F	5		✓	✓	✓
>B 9775	3205602	EFFLUENT	1		✓	✓	✓
>B 9776	3205603	TWIB	1		✓	✓	✓
>B 9777	3205604	TW-16	1		✓	✓	✓
>B 9778	3205605	TW5	1		✓	✓	✓
>B 9779	3205606	TW1R	1	22:28 final c.J	✓	✓	X
>B							

Signatures/Date: ML 5/31/94 (with corrections) Approved/Date: [Signature] 6.1.194

NRE = Needs Reextraction RE = Reextraction Analysis  
 NRIN = Needs Reinjection RN = Reinjection Analysis  
 NDL = Needs Dilution DL = Dilution Analysis  
 ✓ OK X = Noncompliant

Surv Notes:  
 W = Within limits D = Dilution  
 L = Below lower limit not usable  
 H = Above limit M = Matrix effect

Surrogate (Rec)	MBZ	PBP	TER	PHE	PPH	TBP	CPH	BCD
Water (3/90)	35-114	43-118	33-141	10-110	21-110	10-123	33-110	18-110
Soil (3/90)	23-120	30-115	18-137	24-113	26-121	18-122	20-130	20-130
Water (8270)	35-114	43-118	33-141	10-84	21-100	10-123		
Soil (8270)	23-120	30-115	18-137	24-113	26-121	18-122		

Notes: 32140 PAH only



## Organic Sample Preparation-Extraction Worksheet

e-Extraction YES or NO

Worksheet #: E4602

OSP Daily Logbook #: 411-022

Page #: 76.75

Extracted by <u>DF</u> Date <u>5/25/04</u> Concentrated by (KD) <u>RPR</u> Date <u>5/27/04</u> Reduced by (N-Evap) <u>RPR</u> Date <u>5/27/04</u> Cleanup Method _____ GPC Cleanup: MR or ABC _____ Cleanup by _____ Date _____ Cleanup Conc. by _____ Date _____ Esterified by _____ Date _____ CLEANUP CODES F = Florisil <u>1</u> O = Other <u>1</u>	EXTRACTION METHOD Separatory Funnel _____ Cont. Liquid/Liquid Extractor _____ <input checked="" type="checkbox"/> Sonicator Other: _____	SOLVENTS USED <table border="1"> <thead> <tr> <th>Solvent</th> <th>Exchange</th> <th>Lot#</th> </tr> </thead> <tbody> <tr> <td><u>CH<sub>2</sub>Cl<sub>2</sub></u></td> <td><u>1</u></td> <td><u>131101</u></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Solvent	Exchange	Lot#	<u>CH<sub>2</sub>Cl<sub>2</sub></u>	<u>1</u>	<u>131101</u>																						Analysis: <u>PAH</u> Matrix: <u>Soil</u> IQC Batch ID: <u>ISSI-045</u>
Solvent	Exchange	Lot#																												
<u>CH<sub>2</sub>Cl<sub>2</sub></u>	<u>1</u>	<u>131101</u>																												

Lab Sample ID	Sample Amount Used (g or ml)	% Moisture	pH	Spike Code(s)	Final Volume (ml)	Amount of Sample Cleaned (ml)	Final Cleanup Volume (ml)	Effective Final Volume (ml)
3214002	30.234			A-	1.0			1.0
3214007	30.253			A-				
3214101	30.205			A-				
02	30.170			A-				
03	30.051			A-				
04	30.227			A-				
05	30.079			A-				
06	30.075			A-				
07	30.144			A-				
08	30.060			A-				
09	30.423			A-				
--- IN 5/27/04 ---								
3214007 M								
321007ms	15.046			15A-	0.5			0.5
2214002 ms	15.376			15A-				
3211002 MS1	15.309			15A-				
-MSD-								
0142507 EBS	30.000			AC-	1.0			1.0
01432510 EBSD	30.000			AC-				
01452511 EB	30.000			A-				
01452512 EB	30.000			A-				

SURROGATE SPIKE <table border="1"> <thead> <tr> <th>Solution ID</th> <th>MLS Added</th> <th>Spiking Compounds and Concentration (ug/ml)</th> </tr> </thead> <tbody> <tr> <td>A. SDBSU0701</td> <td>0.5</td> <td>1 TRN=100 A=150</td> </tr> <tr> <td>B. SDBSU0701</td> <td>0.25</td> <td>1 TRN=100 A=150</td> </tr> </tbody> </table>			Solution ID	MLS Added	Spiking Compounds and Concentration (ug/ml)	A. SDBSU0701	0.5	1 TRN=100 A=150	B. SDBSU0701	0.25	1 TRN=100 A=150	REAGENTS USED <table border="1"> <thead> <tr> <th>Reagent Name</th> <th>Lot #</th> <th>Final pH</th> </tr> </thead> <tbody> <tr> <td>NaOH</td> <td></td> <td>&gt; or = 12</td> </tr> <tr> <td>H2SO4</td> <td></td> <td>&lt; or = 2</td> </tr> <tr> <td>37% KOH</td> <td></td> <td>&gt; or = 12</td> </tr> </tbody> </table>			Reagent Name	Lot #	Final pH	NaOH		> or = 12	H2SO4		< or = 2	37% KOH		> or = 12
Solution ID	MLS Added	Spiking Compounds and Concentration (ug/ml)																								
A. SDBSU0701	0.5	1 TRN=100 A=150																								
B. SDBSU0701	0.25	1 TRN=100 A=150																								
Reagent Name	Lot #	Final pH																								
NaOH		> or = 12																								
H2SO4		< or = 2																								
37% KOH		> or = 12																								
MATRIX SPIKE <table border="1"> <thead> <tr> <th>Solution ID</th> <th>MLS Added</th> <th>Spiking Compounds and Concentration (ug/ml)</th> </tr> </thead> <tbody> <tr> <td>C. SOBMS40671</td> <td>0.5</td> <td>1 TRN=100 A=150</td> </tr> <tr> <td>D. SOBMS40671</td> <td>0.25</td> <td>1 TRN=100 A=150</td> </tr> </tbody> </table>			Solution ID	MLS Added	Spiking Compounds and Concentration (ug/ml)	C. SOBMS40671	0.5	1 TRN=100 A=150	D. SOBMS40671	0.25	1 TRN=100 A=150	D.I. Water Conductivity: _____ Sodium Sulfate ID #: <u>R1442702</u> Temp of Water Bath: <u>85°C</u>														
Solution ID	MLS Added	Spiking Compounds and Concentration (ug/ml)																								
C. SOBMS40671	0.5	1 TRN=100 A=150																								
D. SOBMS40671	0.25	1 TRN=100 A=150																								

ADDITIONAL COMMENTS ON BACK

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

APPROVED BY: M

DATE: 5/24/04



## % SOLID / % MOISTURE DATA WORKSHEET

Sample ID	Dish Tare Weight (g)	Wet Weight Sample + Dish (g)	Dry Weight Sample + Dish (g)	% Moisture	% Solid
3214001	1.33	7.36	6.17	19.73	80.27
3214002	1.33	7.53	6.2	21.45	78.55
3214005	1.35	7.15	5.94	20.86	79.14
3214005D	1.34	7.19	5.9	22.05	77.95
3214006	1.34	7.31	6.05	21.11	78.89
3214007	1.31	7.62	7.61	0.16	99.84
3214010	1.32	8.28	8.24	0.57	99.43

Oven Temperature (°c)

Start: 104End: 104Sample: 79.14 (%)Duplicate: 77.95 (%)% RPD: 1.5Analyst: MH 6/6

Reviewed: \_\_\_\_\_

**CASE NARRATIVE FOR SEMIVOLATILE and PAH ORGANIC ANALYSES  
USING MODIFIED METHOD 8270**

**CLIENT:** Nuclear Fuel Services  
**LSDG:** 32136  
**PROJECT:** LEFPC

**Analytical Summary**

Seventeen (17) soil and two (2) water samples were received on May 17, 1994 for semivolatile organics analysis, sixteen soils of which were received for analysis of polyaromatic hydrocarbons (PAHs) by Method 8270; the remaining three (3) for the Method 8270 listed semivolatiles analytes. Sample extractions were performed on May 19 and 24 with reextractions on June 6, 1994. GC/MS sample analyses were performed per protocol on June 1, 3, 4, 27, 28, July 2 and 3, 1994.

**Procedural Summary**

- **Analysis** - For water/aqueous sample matrices, a one (1) liter aliquot of sample is extracted, unless noted otherwise. For soil/nonsoil solids prepared as low soil matrices, thirty (30) grams of sample are extracted. Medium level soils are extracted using a one (1) gram aliquot. The resultant extract is taken to a final volume of one (1) milliliter.

Semivolatile organic Gas Chromatographic/Mass Spectrometric analysis is performed by injecting a one (1) microliter aliquot of extract into a Hewlett Packard 5890/5970 GC/MSD systems, configured for electron impact ionization. Chromatography is performed on a thirty (30) meter J&W fused silica DB-5 capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or contract required quantitation limits (PQL's) are expressed in the final quantitation report as the minimum value that can be detected with confidence. PQLs, as well as sample results, are factored for initial sample volume, percent moistures, and final extract volumes, along with any necessary dilution.

- **Scope and Limitations** - Due to the complex nature of many wastes, emulsions may be encountered during the extraction process. Resultant extracts frequently yield noncompliant surrogate recoveries upon analysis, due to losses to emulsions. Furthermore, complex matrices often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples may be required to prevent instrument damage, resulting in higher detection limits.

Additionally, the target analytes 3-methylphenol and 4-methylphenol cannot be

**CASE NARRATIVE FOR SEMIVOLATILE and PAH ORGANIC ANALYSES**  
**USING MODIFIED METHOD 8270(cont'd)**

**CLIENT:** Nuclear Fuel Services  
**LSDG:** 32136  
**PROJECT:** LEFPC

separated under these conditions. Consequently, when either or both of these isomers are present, the quantitation report will reflect a concentration for 4-methylphenol only.

**QA/QC**

The method blanks analyzed with this sample group were found to be free of all target analytes. All other blank criteria were met.

Method QC, consisting of blank spike and blank spike duplicate analyses, was batched with samples of this case. Accuracy and precision results for all spiked analytes were within prescribed limits of acceptability, except for a high relative percent difference for 1,2,4-trichlorobenzene due to disparities in the compliant analyte recoveries between the blank spike and blank spike duplicate analyses. All results are herein reported.

**General**

The reports of the PAH and Method 8270 analytes identified and quantified in the samples are contained in the following sections of the data package. The soil PQLs and final results have been factored for initial sample volume, final extract volume, any necessary dilutions, and percent moisture.

Since PAHs are base/neutrals, only the base/neutral surrogate recoveries are herein reported for all samples analyzed for PAHs only; all are compliant.

Samples 1661B-69, 1661B-95, 1661B-21, 1661B-110, 1661B-115, 1661B-120, 1661B-125 and 1661B-12 were analyzed at a 2x dilution to bring target analyte concentrations into the instrument's linear range of calibration. Sample 1661B-223 required reanalysis at a 10x dilution to bring target analyte concentrations into the instrument's linear range of calibration.

Additional sample problems were encountered during the processing of these samples. Sample 1661B-234 was initially run at a 5x dilution due to extract viscosity, requiring dilution prior to analysis. Reextraction of this sample was necessitated when surrogate results were noncompliant. Reanalysis of this reextract at a 2x dilution generated compliant surrogate results; however these reextractions were performed outside the methodologically prescribed holding time; therefore, initial analytical

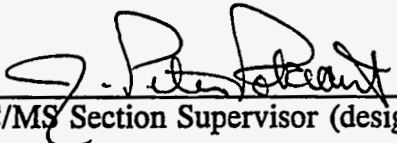
012

**CASE NARRATIVE FOR SEMIVOLATILE and PAH ORGANIC ANALYSES**  
**USING MODIFIED METHOD 8270(cont'd)**

**CLIENT:** Nuclear Fuel Services  
**LSDG:** 32136  
**PROJECT:** LEFPC

results and the reextraction results are herein reported. Finally, sample 1661B-238 manifest a noncompliant 2-fluorophenol surrogate recovery when it was initially analyzed at a 2x dilution. However, a 10x dilution was required to bring target analyte concentrations into the instrument's linear range of calibration. Upon diluted reanalysis, and subsequent dilution of matrix interferences, 2-fluorophenol was rendered compliant and phenol-d6 was now diluted out. A final 200x dilution was required to bring other target analyte concentrations into the instrument's linear range of calibration. In this final diluted analysis, all surrogates were diluted out.

All results are herein reported.

  
GC/MS Section Supervisor (designee)

7/5/94  
Date



**Semivolatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: Q1452411  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: Method Blank  
Date Received: N/A  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/1/94	1	BQL	330	
91576	2-Methylnaphthalene	6/1/94	1	BQL	330	
208968	Acenaphthylene	6/1/94	1	BQL	330	
83329	Acenaphthene	6/1/94	1	BQL	330	
86737	Fluorene	6/1/94	1	BQL	330	
85018	Phenanthrene	6/1/94	1	BQL	330	
120127	Anthracene	6/1/94	1	BQL	330	
206440	Fluoranthene	6/1/94	1	BQL	330	
129000	Pyrene	6/1/94	1	BQL	330	
56553	Benzo(a)anthracene	6/1/94	1	BQL	330	
218019	Chrysene	6/1/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/1/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/1/94	1	BQL	330	
50328	Benzo(a)pyrene	6/1/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/1/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/1/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/1/94	1	BQL	330	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: Q1452411

Client Sample No.: Method Blank

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/1/94</i>	<i>50</i>	<i>77</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/1/94</i>	<i>50</i>	<i>76</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/1/94</i>	<i>50</i>	<i>87</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213619  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-69  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	7/3/94	2	BQL	690	
91576	2-Methylnaphthalene	7/3/94	2	BQL	690	
208968	Acenaphthylene	7/3/94	2	BQL	690	
83329	Acenaphthene	7/3/94	2	BQL	690	
86737	Fluorene	7/3/94	2	BQL	690	
85018	Phenanthrene	7/3/94	2	420	690	J
120127	Anthracene	7/3/94	2	70	690	J
206440	Fluoranthene	7/3/94	2	1000	690	
129000	Pyrene	7/3/94	2	1000	690	
56553	Benzo(a)anthracene	7/3/94	2	530	690	J
218019	Chrysene	7/3/94	2	560	690	J
205992	Benzo(b)fluoranthene	7/3/94	2	610	690	J
207089	Benzo(k)fluoranthene	7/3/94	2	320	690	J
50328	Benzo(a)pyrene	7/3/94	2	BQL	690	
193395	Indeno(1,2,3-cd)pyrene	7/3/94	2	BQL	690	
53703	Dibenzo(a,h)anthracene	7/3/94	2	BQL	690	
191242	Benzo(g,h,i)perylene	7/3/94	2	BQL	690	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit



*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213619

Client Sample No.: 1661B-69

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>7/3/94</i>	<i>50</i>	<i>58</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>7/3/94</i>	<i>50</i>	<i>64</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>7/3/94</i>	<i>50</i>	<i>94</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213620  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-95  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	7/2/94	2	BQL	830	
91576	2-Methylnaphthalene	7/2/94	2	BQL	830	
208968	Acenaphthylene	7/2/94	2	BQL	830	
83329	Acenaphthene	7/2/94	2	BQL	830	
86737	Fluorene	7/2/94	2	BQL	830	
85018	Phenanthrene	7/2/94	2	540	830	J
120127	Anthracene	7/2/94	2	81	830	J
206440	Fluoranthene	7/2/94	2	1100	830	
129000	Pyrene	7/2/94	2	1200	830	
56553	Benzo(a)anthracene	7/2/94	2	600	830	J
218019	Chrysene	7/2/94	2	620	830	J
205992	Benzo(b)fluoranthene	7/2/94	2	860	830	
207089	Benzo(k)fluoranthene	7/2/94	2	270	830	J
50328	Benzo(a)pyrene	7/2/94	2	BQL	830	
193395	Indeno(1,2,3-cd)pyrene	7/2/94	2	BQL	830	
53703	Dibenzo(a,h)anthracene	7/2/94	2	BQL	830	
191242	Benzo(g,h,i)perylene	7/2/94	2	BQL	830	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

*Lab Sample ID: 3213620*

*Client Sample No.: 1661B-95*

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>7/2/94</i>	<i>50</i>	<i>57</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>7/2/94</i>	<i>50</i>	<i>57</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>7/2/94</i>	<i>50</i>	<i>80</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

Lab Sample ID: 3213621

Client Sample No.: 1661B-105

Matrix: Soil

Date Received: 17-May-94

Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	7/2/94	2	BQL	880	
91576	2-Methylnaphthalene	7/2/94	2	BQL	880	
208968	Acenaphthylene	7/2/94	2	BQL	880	
83329	Acenaphthene	7/2/94	2	BQL	880	
86737	Fluorene	7/2/94	2	BQL	880	
85018	Phenanthrene	7/2/94	2	540	880	J
120127	Anthracene	7/2/94	2	76	880	J
206440	Fluoranthene	7/2/94	2	1200	880	
129000	Pyrene	7/2/94	2	1300	880	
56553	Benzo(a)anthracene	7/2/94	2	BQL	880	
218019	Chrysene	7/2/94	2	BQL	880	
205992	Benzo(b)fluoranthene	7/2/94	2	BQL	880	
207089	Benzo(k)fluoranthene	7/2/94	2	BQL	880	
50328	Benzo(a)pyrene	7/2/94	2	BQL	880	
193395	Indeno(1,2,3-cd)pyrene	7/2/94	2	BQL	880	
53703	Dibenzo(a,h)anthracene	7/2/94	2	BQL	880	
191242	Benzo(g,h,i)perylene	7/2/94	2	BQL	880	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

*Lab Sample ID: 3213621*

*Client Sample No.: 1661B-105*

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>7/2/94</i>	<i>50</i>	<i>56</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>7/2/94</i>	<i>50</i>	<i>62</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>7/2/94</i>	<i>50</i>	<i>84</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

*Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213622  
Matrix: Soil*

*Client Reference No.: LEFPC  
Client Sample No.: 1661B-110  
Date Received: 17-May-94  
Date Extracted: 24-May-94*

<i>CAS Number</i>	<i>Compound Name</i>	<i>Analysis Date</i>	<i>Dilution Factor</i>	<i>Result ug/kg</i>	<i>PQL ug/kg</i>	<i>Note</i>
91203	Naphthalene	7/2/94	2	BQL	830	
91576	2-Methylnaphthalene	7/2/94	2	BQL	830	
208968	Acenaphthylene	7/2/94	2	BQL	830	
83329	Acenaphthene	7/2/94	2	BQL	830	
86737	Fluorene	7/2/94	2	BQL	830	
85018	Phenanthrene	7/2/94	2	500	830	J
120127	Anthracene	7/2/94	2	76	830	J
206440	Fluoranthene	7/2/94	2	1100	830	
129000	Pyrene	7/2/94	2	1200	830	
56553	Benzo(a)anthracene	7/2/94	2	BQL	830	
218019	Chrysene	7/2/94	2	BQL	830	
205992	Benzo(b)fluoranthene	7/2/94	2	BQL	830	
207089	Benzo(k)fluoranthene	7/2/94	2	BQL	830	
50328	Benzo(a)pyrene	7/2/94	2	BQL	830	
193395	Indeno(1,2,3-cd)pyrene	7/2/94	2	BQL	830	
53703	Dibenzo(a,h)anthracene	7/2/94	2	BQL	830	
191242	Benzo(g,h,i)perylene	7/2/94	2	BQL	830	

*PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit*

*Semivolatile Surrogate Recovery Data*

*Lab Sample ID: 3213622*

*Client Sample No.: 1661B-110*

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>7/2/94</i>	<i>50</i>	<i>67</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>7/2/94</i>	<i>50</i>	<i>67</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>7/2/94</i>	<i>50</i>	<i>89</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile PAH Analytical Results**  
*by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213623  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-115  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	7/2/94	2	BQL	840	
91576	2-Methylnaphthalene	7/2/94	2	BQL	840	
208968	Acenaphthylene	7/2/94	2	BQL	840	
83329	Acenaphthene	7/2/94	2	BQL	840	
86737	Fluorene	7/2/94	2	BQL	840	
85018	Phenanthrene	7/2/94	2	700	840	J
120127	Anthracene	7/2/94	2	100	840	J
206440	Fluoranthene	7/2/94	2	1300	840	
129000	Pyrene	7/2/94	2	1400	840	
56553	Benzo(a)anthracene	7/2/94	2	BQL	840	
218019	Chrysene	7/2/94	2	BQL	840	
205992	Benzo(b)fluoranthene	7/2/94	2	BQL	840	
207089	Benzo(k)fluoranthene	7/2/94	2	BQL	840	
50328	Benzo(a)pyrene	7/2/94	2	BQL	840	
193395	Indeno(1,2,3-cd)pyrene	7/2/94	2	BQL	840	
53703	Dibenzo(a,h)anthracene	7/2/94	2	BQL	840	
191242	Benzo(g,h,i)perylene	7/2/94	2	BQL	840	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit



*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213623

Client Sample No.: 1661B-115

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>7/2/94</i>	<i>50</i>	<i>62</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>7/2/94</i>	<i>50</i>	<i>66</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>7/2/94</i>	<i>50</i>	<i>82</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile PAH Analytical Results**  
*by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

Lab Sample ID: 3213624

Client Sample No.: 1661B-120

Matrix: Soil

Date Received: 17-May-94

Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	7/3/94	2	BQL	1000	
91576	2-Methylnaphthalene	7/3/94	2	BQL	1000	
208968	Acenaphthylene	7/3/94	2	BQL	1000	
83329	Acenaphthene	7/3/94	2	BQL	1000	
86737	Fluorene	7/3/94	2	BQL	1000	
85018	Phenanthrene	7/3/94	2	650	1000	J
120127	Anthracene	7/3/94	2	91	1000	J
206440	Fluoranthene	7/3/94	2	1600	1000	
129000	Pyrene	7/3/94	2	1600	1000	
56553	Benzo(a)anthracene	7/3/94	2	740	1000	J
218019	Chrysene	7/3/94	2	840	1000	J
205992	Benzo(b)fluoranthene	7/3/94	2	BQL	1000	
207089	Benzo(k)fluoranthene	7/3/94	2	BQL	1000	
50328	Benzo(a)pyrene	7/3/94	2	BQL	1000	
193395	Indeno(1,2,3-cd)pyrene	7/3/94	2	BQL	1000	
53703	Dibenzo(a,h)anthracene	7/3/94	2	BQL	1000	
191242	Benzo(g,h,i)perylene	7/3/94	2	BQL	1000	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213624

Client Sample No.: 1661B-120

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/3/94	50	60	23-120	
2-Fluorobiphenyl	7/3/94	50	69	30-115	
Terphenyl-d14	7/3/94	50	82	18-137	

D = Surrogate diluted out

\*\*\* = Surrogate recovery outside QC Limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213625

Client Sample No.: 1661B-125

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>7/3/94</i>	<i>50</i>	<i>54</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>7/3/94</i>	<i>50</i>	<i>60</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>7/3/94</i>	<i>50</i>	<i>69</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semi-volatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213626  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-130  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	7/3/94	2	BQL	840	
91576	2-Methylnaphthalene	7/3/94	2	BQL	840	
208968	Acenaphthylene	7/3/94	2	BQL	840	
83329	Acenaphthene	7/3/94	2	BQL	840	
86737	Fluorene	7/3/94	2	BQL	840	
85018	Phenanthrene	7/3/94	2	470	840	J
120127	Anthracene	7/3/94	2	97	840	J
206440	Fluoranthene	7/3/94	2	1300	840	
129000	Pyrene	7/3/94	2	1100	840	
56553	Benzo(a)anthracene	7/3/94	2	540	840	J
218019	Chrysene	7/3/94	2	620	840	J
205992	Benzo(b)fluoranthene	7/3/94	2	BQL	840	
207089	Benzo(k)fluoranthene	7/3/94	2	BQL	840	
50328	Benzo(a)pyrene	7/3/94	2	BQL	840	
193395	Indeno(1,2,3-cd)pyrene	7/3/94	2	BQL	840	
53703	Dibenzo(a,h)anthracene	7/3/94	2	BQL	840	
191242	Benzo(g,h,i)perylene	7/3/94	2	BQL	840	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213626

Client Sample No.: 1661B-130

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/3/94	50	44	23-120	
2-Fluorobiphenyl	7/3/94	50	55	30-115	
Terphenyl-d14	7/3/94	50	69	18-137	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213628  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-145  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	BQL	330	
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	47	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	70	330	J
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213628

Client Sample No.: 1661B-145

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>61</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>61</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>73</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*



**Semivolatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213629  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-154  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	46	330	J
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	130	330	J
129000	Pyrene	6/4/94	1	42	330	J
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

*Lab Sample ID: 3213629*

*Client Sample No.: 1661B-154*

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>60</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>58</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>74</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213630  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-162  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	46	330	J
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	39	330	J
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	86	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213630

Client Sample No.: 1661B-162

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>67</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>65</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>59</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile PAH Analytical Results**  
by SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213631  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-172  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	BQL	330	
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	69	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

*Lab Sample ID: 3213631*

*Client Sample No.: 1661B-172*

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>59</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>57</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>70</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

**Semivolatile PAH Analytical Results**  
*by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213632  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-178  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	BQL	330	
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	57	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit



*Semivolatile Surrogate Recovery Data*

*Lab Sample ID: 3213632*

*Client Sample No.: 1661B-178*

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>60</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>62</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>75</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*



**Semivolatile PAH Analytical Results**  
*by SW-846 Method 8270*

**Client:** Nuclear Fuel Services, Inc.  
**Lab Sample ID:** 3213633  
**Matrix:** Soil

**Client Reference No.:** LEFPC  
**Client Sample No.:** 1661B-185  
**Date Received:** 17-May-94  
**Date Extracted:** 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	BQL	330	
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	37	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213633

Client Sample No.: 1661B-185

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>60</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>65</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>74</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results  
by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213634  
Matrix: Soil

Client Reference No.: LEFPC  
Client Sample No.: 1661B-193  
Date Received: 17-May-94  
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	BQL	330	
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	54	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213634

Client Sample No.: 1661B-193

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>86</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>72</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>75</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

*Semivolatile PAH Analytical Results*  
*by SW-846 Method 8270*

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

Lab Sample ID: 3213635

Client Sample No.: 1661B-201

Matrix: Soil

Date Received: 17-May-94

Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
91203	Naphthalene	6/4/94	1	BQL	330	
91576	2-Methylnaphthalene	6/4/94	1	BQL	330	
208968	Acenaphthylene	6/4/94	1	BQL	330	
83329	Acenaphthene	6/4/94	1	BQL	330	
86737	Fluorene	6/4/94	1	BQL	330	
85018	Phenanthrene	6/4/94	1	BQL	330	
120127	Anthracene	6/4/94	1	BQL	330	
206440	Fluoranthene	6/4/94	1	72	330	J
129000	Pyrene	6/4/94	1	BQL	330	
56553	Benzo(a)anthracene	6/4/94	1	BQL	330	
218019	Chrysene	6/4/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/4/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/4/94	1	BQL	330	
50328	Benzo(a)pyrene	6/4/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/4/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/4/94	1	BQL	330	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

*Semivolatile Surrogate Recovery Data*

Lab Sample ID: 3213635

Client Sample No.: 1661B-201

<i>Surrogate Compound</i>	<i>Analysis Date</i>	<i>Spike Amount</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Notes</i>
<i>Nitrobenzene-d5</i>	<i>6/4/94</i>	<i>50</i>	<i>68</i>	<i>23-120</i>	
<i>2-Fluorobiphenyl</i>	<i>6/4/94</i>	<i>50</i>	<i>69</i>	<i>30-115</i>	
<i>Terphenyl-d14</i>	<i>6/4/94</i>	<i>50</i>	<i>77</i>	<i>18-137</i>	

*D = Surrogate diluted out*

*\*\*\* = Surrogate recovery outside QC Limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.*

# TCLP Herbicide

LSDG: 32140

**CASE NARRATIVE FOR TCLP HERBICIDE ANALYSIS**  
**USING SW-846 METHOD 8150**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32136

**Analytical Summary**

Sixteen (16) soil samples were received on 5/17/94. Samples were analyzed using a Hewlett-Packard gas chromatograph equipped with an electron capture detector.

**Procedural Summary**

- Analysis - Chromatography was performed on a RTX-200 and RTX-5 column using a temperature program suitable for resolving the target analytes. Quantitation of sample concentrations were performed using a five point calibration. All appropriate control samples were analyzed with the sample batch.
- Scope and Limitations - Extraction was performed on approximately 100 mls of the leachate extract unless stated otherwise.

Final extract concentration was performed by the nitrogen blowdown technique to a final volume of 10 ml unless stated otherwise.

Practical Quantitation Limits (PQL) are based upon the lowest standard and then factored for the initial sample amount, final sample extract volume, any necessary dilution, and percent moisture (for solids).

**QA/QC Summary**

A method blank and leaching blank were extracted and analyzed with sample batch and found to be free of target analyte contamination.

Batch QC, consisting of a blank spike and blank spike duplicate was performed with this batch. Percent recovery for 2,4-D and 2,4,5-TP in the blank spike was outside of the QC limits by 26% of the established QC limits. Percent recovery for 2,4-D in the blank spike duplicate was outside QC limits. There were no detectable analytes in the samples, except for 2,4-D in sample 1661B-67. The high percent for these analytes are under investigation and stock standards have been reordered.



**CASE NARRATIVE FOR TCLP HERBICIDE ANALYSIS**  
**USING SW-846 METHOD 8150**  
**FOLLOWING TCLP EXTRACTION**

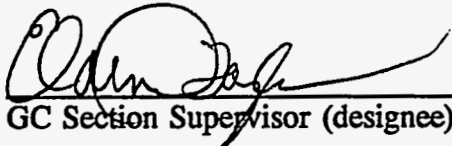
**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32136

**General Discussion**

Surrogate recoveries were outside of the established QC limits for samples 1661B-159, 1661B-168, 1661B-175, 1661B-192, and 1661B-200 due to matrix interference.

  
GC Section Supervisor (designee)

6/15/97  
Date

**Herbicide QC Data**  
 SW-846, Method 8150

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: Q1460131/Q1460132

Matrix: Water

Dilution: 1

Client Sample ID: Blank Spikes

Client Project Code: LEFPC

Date of Extraction: 6/1/94

Date of Analysis: 6/11/94

Compound	Sample Concentration µg/l	BS Spike Amount µg/l	BS Concentration µg/l	Blank Spike % Recovery	BSD Spike Amount µg/l	BSD Concentration µg/l	Blank Spike Duplicate % Recovery	QC Limits	RPD
2,4-D	0	2.50	4.50	180	2.50	4.80	192	59-166	6.4
2,4,5-TP (Silver)	0	0.500	1.00	200	0.500	0.783	157	62-165	24.5

*Herbicide TCLP Analytical Results*

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: Method Blank

Lab Sample ID: Q1460134

Client Project Code: LEFPC

Matrix: Water

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.00100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.000200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: Q1460134</i>		<i>Client Sample ID: Method Blank</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>90</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Herbicide TCLP Analytical Results**  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: Leaching Blank*

*Lab Sample ID: Q1452529*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: Q1452529</i>		<i>Client Sample ID: Leaching Blank</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>129</i>	<i>51-179</i>	

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
 Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

## Herbicide TCLP Analytical Results

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: Leaching Blank*

*Lab Sample ID: Q1452530*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: Q1452530*

*Client Sample ID: Leaching Blank*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>119</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



**Herbicide TCLP Analytical Results**

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-67

Lab Sample ID: 3213655

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	0.0106	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213655</i>		<i>Client Sample ID: 1661B-67</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>84</i>	<i>51-179</i>	

\*\*\* = *Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-94*

*Lab Sample ID: 3213656*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
<i>95757</i>	<i>2,4-D</i>	<i>1</i>	<i>6/11/94</i>	<i>BQL</i>	<i>0.0100</i>	<i>10.0</i>	
<i>93721</i>	<i>2,4,5-TP (Silvex)</i>	<i>1</i>	<i>6/11/94</i>	<i>BQL</i>	<i>0.00200</i>	<i>1.00</i>	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213656*

*Client Sample ID: 1661B-94*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>105</i>	<i>51-179</i>	

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.

Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

*Herbicide TCLP Analytical Results*

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-104

Lab Sample ID: 3213657

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213657</i>		<i>Client Sample ID: 1661B-104</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>93</i>	<i>51-179</i>	

\*\*\* = *Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Herbicide TCLP Analytical Results**

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-109

Lab Sample ID: 3213658

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213658</i>		<i>Client Sample ID: 1661B-109</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>114</i>	<i>51-179</i>	

\*\*\* = *Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



## Herbicide TCLP Analytical Results

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-114*

*Lab Sample ID: 3213659*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213659</i>		<i>Client Sample ID: 1661B-114</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>92</i>	<i>51-179</i>	

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
 Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

**Herbicide TCLP Analytical Results**

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-119

Lab Sample ID: 3213660

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

*Herbicide Surrogate Results*

*Lab Sample ID: 3213660*

*Client Sample ID: 1661B-119*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>128</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

## Herbicide TCLP Analytical Results

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-124*

*Lab Sample ID: 3213661*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213661</i>		<i>Client Sample ID: 1661B-124</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>137</i>	<i>51-179</i>	

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

## Herbicide TCLP Analytical Results

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-129*

*Lab Sample ID: 3213662*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213662*

*Client Sample ID: 1661B-129*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>87</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
 Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



*Herbicide TCLP Analytical Results*

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-143*

*Lab Sample ID: 3213664*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213664*

*Client Sample ID: 1661B-143*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>159</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

## Herbicide TCLP Analytical Results

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-151

Lab Sample ID: 3213665

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

*Herbicide Surrogate Results*

*Lab Sample ID: 3213665*

*Client Sample ID: 1661B-151*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>161</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
 Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Herbicide TCLP Analytical Results**  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213666*  
*Matrix: Leachate*

*Client Sample ID: 1661B-159*  
*Client Project Code: LEFPC*  
*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213666*

*Client Sample ID: 1661B-159*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>232</i>	<i>51-179</i>	<i>***</i>

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Herbicide TCLP Analytical Results*

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-168*

*Lab Sample ID: 3213667*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213667*

*Client Sample ID: 1661B-168*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>233</i>	<i>51-179</i>	<i>***</i>

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



*Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-175*

*Lab Sample ID: 3213668*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213668*

*Client Sample ID: 1661B-175*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>238</i>	<i>51-179</i>	<i>***</i>

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Herbicide TCLP Analytical Results**

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-184

Lab Sample ID: 3213669

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 6/1/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213669</i>		<i>Client Sample ID: 1661B-184</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>140</i>	<i>51-179</i>	

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

*Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-192*

*Lab Sample ID: 3213670*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: 3213670*

*Client Sample ID: 1661B-192*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>185</i>	<i>51-179</i>	<i>***</i>

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-200*

*Lab Sample ID: 3213671*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 6/1/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3213671</i>		<i>Client Sample ID: 1661B-200</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>232</i>	<i>51-179</i>	<i>***</i>

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



**CASE NARRATIVE FOR TCLP HERBICIDE ANALYSIS**  
**USING SW-846 METHOD 8150**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32140

**Analytical Summary**

Two (2) soil samples were received on 5/17/94. Samples were analyzed using a Hewlett-Packard gas chromatograph equipped with an electron capture detector.

**Procedural Summary**

- Analysis - Chromatography was performed on a RTX-200 and RTX-5 column using a temperature program suitable for resolving the target analytes. Quantitation of sample concentrations were performed using a five point calibration. All appropriate control samples were analyzed with the sample batch.
- Scope and Limitations - Extraction was performed on approximately 100 mls of the leachate extract unless stated otherwise.

Final extract concentration was performed by the nitrogen blowdown technique to a final volume of 10 ml unless stated otherwise.

Practical Quantitation Limits (PQL) are based upon the lowest standard and then factored for the initial sample amount, final sample extract volume, any necessary dilution, and percent moisture (for solids).

**QA/QC Summary**

A method blank and leaching blank were extracted and analyzed with sample batch and found to be free of target analyte contamination.

Method QC, consisting of a matrix spike and matrix spike diuplicate analyses, was performed on samples 1661B-61 and 1661B-135. Accuracy and precision were within acceptable QC limits except for 2,4-D in the matrix spike and matrix spike duplicate analyses of sample 1661B-61.

Batch QC, consisting of a blank spike and blank spike duplicate was performed with this batch. Accuracy and precision were within acceptable QC limits except for 2,4-D in the blank spike analysis.

**CASE NARRATIVE FOR TCLP HERBICIDE ANALYSIS**  
**USING SW-846 METHOD 8150**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32140

**General Discussion**

No analytical problems were encountered with the sample.

  
\_\_\_\_\_  
GC Section Supervisor (designee)

  
\_\_\_\_\_  
Date

## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-61*

*Lab Sample ID: 3214004*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/10/94	BQL	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/10/94	BQL	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3214004</i>		<i>Client Sample ID: 1661B-61</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>96</i>	<i>51-179</i>	

\*\*\* = *Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-135*

*Lab Sample ID: 3214009*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
<i>95757</i>	<i>2,4-D</i>	<i>1</i>	<i>6/10/94</i>	<i>BQL</i>	<i>0.0100</i>	<i>10.0</i>	
<i>93721</i>	<i>2,4,5-TP (Silvex)</i>	<i>1</i>	<i>6/10/94</i>	<i>BQL</i>	<i>0.00200</i>	<i>1.00</i>	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3214009</i>		<i>Client Sample ID: 1661B-135</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>63</i>	<i>51-179</i>	

\*\*\* = *Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Herbicide TCLP QC Data**  
*SW-846, Method 8150*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3214004MS/3214004MSD*  
*Matrix: Leachate*  
*Dilution: 1*

*Client Sample ID: 1661B-61*  
*Client Project Code: LEFPC*  
*Date of Extraction: 5/31/94*  
*Date of Analysis: 6/10/94*

<i>Compound</i>	<i>Sample Concentration</i> <i>mg/l</i>	<i>MS Spike Amount</i> <i>mg/l</i>	<i>MS Concentration</i> <i>mg/l</i>	<i>Matrix Spike Spike % Recovery</i>	<i>MSD Spike Amount</i> <i>mg/l</i>	<i>MSD Concentration</i> <i>mg/l</i>	<i>Matrix Spike Duplicate % Recovery</i>	<i>QC Limits</i>	<i>RPD</i>
<i>2,4-D</i>	<i>0</i>	<i>0.0250</i>	<i>0.0448</i>	<i>179</i>	<i>0.0250</i>	<i>0.0493</i>	<i>197</i>	<i>59-165</i>	<i>9.5</i>
<i>2,4,5-TP (Silvex)</i>	<i>0</i>	<i>0.00500</i>	<i>0.00507</i>	<i>101</i>	<i>0.00500</i>	<i>0.00501</i>	<i>100</i>	<i>62-166</i>	<i>1.2</i>

**Herbicide TCLP QC Data**  
**SW-846, Method 8150**

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: Blank Spikes*

*Lab Sample ID: Q1453125/Q1453126*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

*Dilution: 1*

*Date of Analysis: 6/11/94*

<i>Compound</i>	<i>Sample Concentration mg/l</i>	<i>BS Spike Amount mg/l</i>	<i>BS Concentration mg/l</i>	<i>Blank Spike % Recovery</i>	<i>BS Spike Amount mg/l</i>	<i>BSD Concentration mg/l</i>	<i>Blank Spike Duplicate % Recovery</i>	<i>QC Limits</i>	<i>RPD</i>
<i>2,4-D</i>	<i>0</i>	<i>0.00250</i>	<i>0.00423</i>	<i>169</i>	<i>0.00250</i>	<i>0.00411</i>	<i>164</i>	<i>59-165</i>	<i>2.9</i>
<i>2,4,5-TP (Silvex)</i>	<i>0</i>	<i>0.000500</i>	<i>0.000736</i>	<i>147</i>	<i>0.000500</i>	<i>0.000737</i>	<i>147</i>	<i>62-166</i>	<i>0.1</i>



**Herbicide TCLP QC Data**  
*SW-846, Method 8150*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-135*

*Lab Sample ID: 3214009MS/3214009MSD*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

*Dilution: 1*

*Date of Analysis: 6/11/94*

<i>Compound</i>	<i>Sample Concentration</i> mg/l	<i>MS Spike Amount</i> mg/l	<i>MS Concentration</i> mg/l	<i>Matrix Spike Spike % Recovery</i>	<i>MSD Spike Amount</i> mg/l	<i>MSD Concentration</i> mg/l	<i>Matrix Spike Duplicate % Recovery</i>	<i>QC Limits</i>	<i>RPD</i>
<i>2,4-D</i>	<i>0</i>	<i>0.0250</i>	<i>0.0339</i>	<i>135</i>	<i>0.0250</i>	<i>0.0341</i>	<i>136</i>	<i>59-165</i>	<i>0.6</i>
<i>2,4,5-TP (Silvex)</i>	<i>0</i>	<i>0.00500</i>	<i>0.00821</i>	<i>164</i>	<i>0.00500</i>	<i>0.00829</i>	<i>166</i>	<i>62-166</i>	<i>1.1</i>

## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: Method Blank*

*Lab Sample ID: Q1453127*

*Client Project Code: LEFPC*

*Matrix: Water*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
<i>95757</i>	<i>2,4-D</i>	<i>1</i>	<i>6/10/94</i>	<i>BQL</i>	<i>0.00100</i>	<i>10.0</i>	
<i>93721</i>	<i>2,4,5-TP (Silvex)</i>	<i>1</i>	<i>6/10/94</i>	<i>BQL</i>	<i>0.000200</i>	<i>1.00</i>	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Herbicide Surrogate Results*

*Lab Sample ID: Q1453127*

*Client Sample ID: Method Blank*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>109</i>	<i>51-179</i>	

**\*\*\* = Surrogate recovery outside QC limits**

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/EF05130.RES  
 Sample Name : Q1453127  
 Sample Comment : HBLK  
 Injection Time : 1940 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP5890I Instrument Method

Initial Temp	100.0	Equilbration Time	5.0
Initial Time	2.0	Oven Rate	3.5
Final Time	0.0	Rate A	50.0
Final Time A	5.0	Rate B	0.0
Final Time B	0.0	Final Temp	215.0
Injector Temp A	215.0	Final Temp A	260.0
Injector Temp B	215.0	Final Temp B	0.0
Detector Temp A	300.0	Detector Temp B	300.0

Calib Method : /DATA/METHOD/EF/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF/0610.SEQ  
 Subseq/Sample : 1/ 13

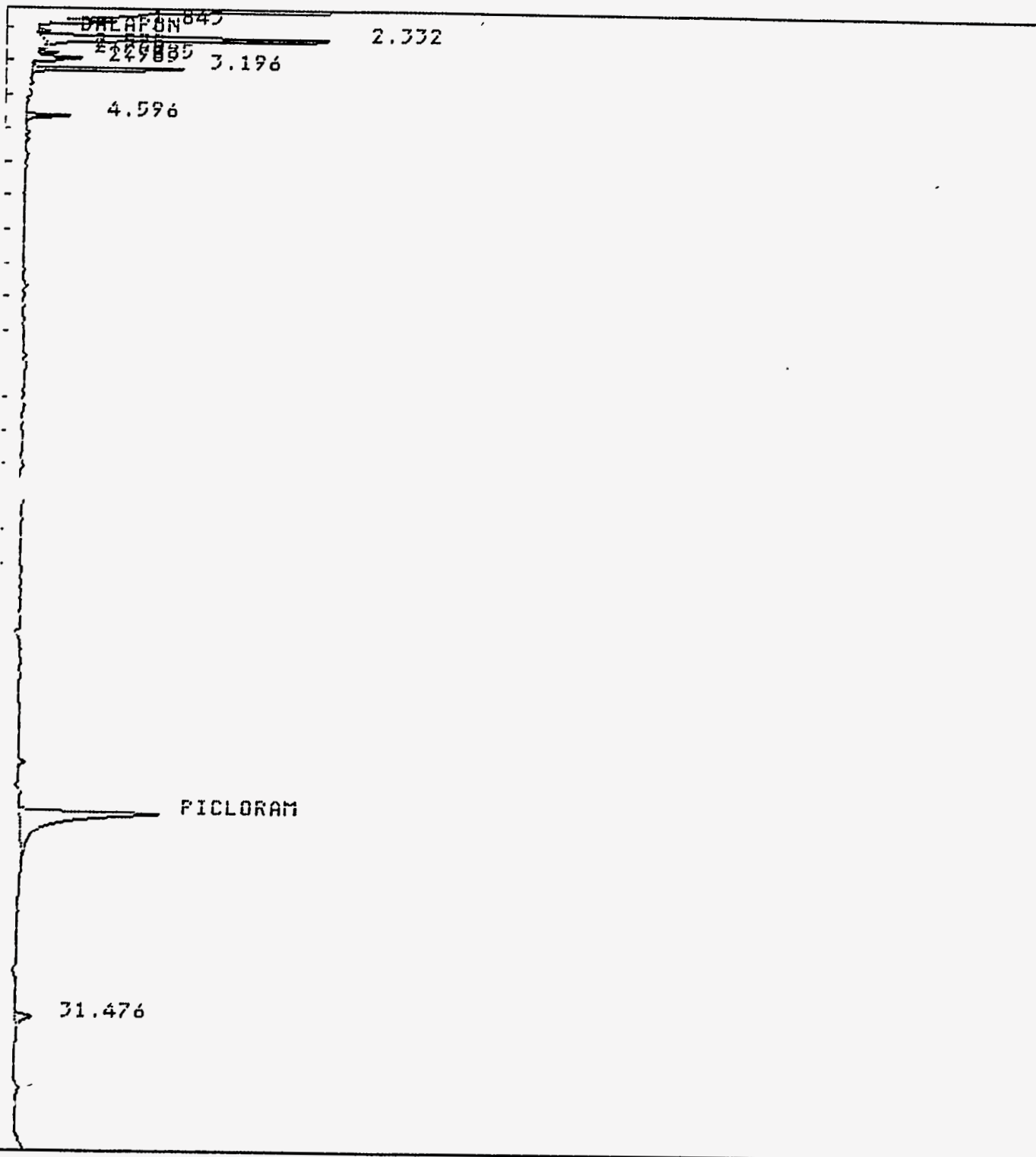
Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.11	0.00	2600236	BS	50.929	
2	1.84	0.00	317184	BT	6.212	
3	2.11	2.16	46721	PT	47.380	<del>SALAPON</del> <i>204 611394</i>
4	2.33	0.00	2698806	PT	52.859	
5	2.58	0.00	33495	PT	.656	
6	2.74	0.00	92423	PT	1.810	
7	2.88	0.00	211744	PT	4.147	
8	2.96	0.00	8929	PT	.175	
9	3.20	0.00	864347	PT	16.929	
10	4.60	0.00	264332	BB	5.177	
11	25.42	#25.48	2596548	BB	271.937	PICLORAM
12	31.48	0.00	203171	BB	3.979	

Result File : /DATA/RESULT/EF05130.RES  
Sample Name : Q1453127  
Sample Comment : HBLK  
Injection Time : 1940 10Jun1994  
Instrument : HPEF  
Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 - Autoscale)

Minimum mv: 0

Maximum mv: 0



Result File : /DATA/RESULT/EB04987.RES  
 Sample Name : Q1453127  
 Sample Comment : HBLK  
 Injection Time : 2030 10Jun1994  
 Instrument : HPEB  
 Column/Amt Inj : RTX-5 / 2uL

## HP5890I Instrument Method

Initial Temp	100.0	Equilibration Time	5.0
Initial Time	2.0	Oven Rate	3.5
Final Time	0.0	Rate A	50.0
Final Time A	5.0	Rate B	0.0
Final Time B	0.0	Final Temp	215.0
Injector Temp A	215.0	Final Temp A	260.0
Injector Temp B	215.0	Final Temp B	0.0
Detector Temp A	300.0	Detector Temp B	300.0

Calib Method : /DATA/METHOD/EB/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB/0610.SEQ  
 Subseq/Sample : 1/ 14

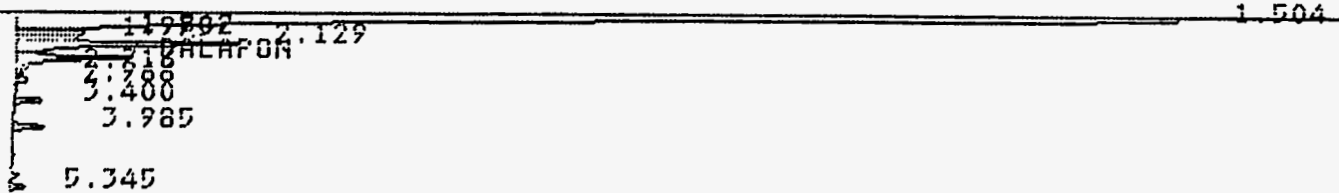
Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.06	0.00	763335	BS	14.951	
2	1.24	0.00	1676503	HS	32.836	
3	1.50	0.00	15398180	HS	301.592	
4	1.85	0.00	148854	HS	2.915	
5	1.90	0.00	267126	HS	5.232	
6	1.97	0.00	255813	HS	5.010	
7	2.13	0.00	1300591	HS	25.474	
8	2.46	2.39	637259	HS	653.228	<del>DALAPUN KDM 6/13/94</del>
9	2.72	0.00	21457	BT	.420	
10	2.97	0.00	17421	PT	.341	
11	3.40	0.00	133540	PT	2.616	
12	3.98	0.00	162057	BT	3.174	
13	5.35	0.00	68759	BB	1.347	
14	25.29	#25.28	773679	BB	229.524	PICLORAM

Result File : /DATA/RESULT/EB04987.RES  
Sample Name : Q1453127  
Sample Comment : HBLK  
Injection Time : 2030 10Jun1994  
Instrument : HPFB  
Column/Amt Inj : RTX-5 / 2uL

Scaling for Chromatogram (-1 - Autoscale)

Minimum mv: 0

Maximum mv: 0



PICLORAM

## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: Leaching Blank*

*Lab Sample ID: Q1452426*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
<i>95757</i>	<i>2,4-D</i>	<i>1</i>	<i>6/6/94</i>	<i>BQL</i>	<i>0.0100</i>	<i>10.0</i>	
<i>93721</i>	<i>2,4,5-TP (Silvex)</i>	<i>1</i>	<i>6/6/94</i>	<i>BQL</i>	<i>0.00200</i>	<i>1.00</i>	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*



Sult File : /DATA/RESULT/EF05059.RES  
 Sample Name : Q1452426  
 Sample Comment : LB  
 Injection Time : 1600 06Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0

Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

File Method : /DATA/METHOD/EF'HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF'0606.SEQ  
 Inj/Seq/Sample : 1/ 4

#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.19	0.00	7352491	BS	144.007	
2	1.85	0.00	445159	BT	8.719	
	2.12	2.16	155604	PT	157.798	DALAFON
	2.34	0.00	3342023	PT	65.458	
5	2.48	0.00	82058	UT	1.607	
6	2.58	0.00	31349	PT	.614	
7	2.75	0.00	150935	PT	2.956	
8	2.90	0.00	178416	PT	3.494	
9	2.97	0.00	42248	PT	.827	
0	3.21	0.00	888763	PT	17.407	
1	4.60	0.00	393027	BB	7.698	
2	5.11	0.00	58309	BB	1.142	
3	9.66	0.00	47076	BB	.922	
4	12.01	#11.88	137246	BB	87.336	<del>2,4-DICHLOROPHENYL ACET</del>
5	25.40	#25.48	3009637	BB	315.200	PICLORAM
6	31.46	0.00	517651	BB	10.139	

1007  
 6/13/94

Result File : /DATA/RESULT/EF05059.RES  
Sample Name : Q1452426  
Sample Comment : LB  
Injection Time : 1600 06Jun1994  
Instrument : HPEF  
Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: D Maximum mv: D

~~DALAPON~~ 1.853  
~~0.888~~ 3.210  
2.339  
4.602  
5.113

9.660

2,4-DICHLOROPHENYL ACETIC ACID

PICLORAM

31.456

EcoTek LSI

Result File : /DATA/RESULT/EB04916.RES  
 Sample Name : Q1452426  
 Sample Comment : LB  
 Injection Time : 1650 06Jun1994  
 Instrument : HPEB  
 Column/Amt Inj : RTX-5 / 2uL

HP5890I Instrument Method

Initial Temp	100.0	Equilibration Time	5.0
Initial Time	2.0	Oven Rate	3.5
Final Time	0.0	Rate A	50.0
Final Time A	5.0	Rate B	0.0
Final Time B	0.0	Final Temp	215.0
		Final Temp A	260.0
		Final Temp B	0.0
Injector Temp A	215.0	Injector Temp B	215.0
		Detector Temp A	300.0
		Detector Temp B	300.0

lib Method : /DATA/METHOD/EB'HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB'0606.SEQ  
 bseq/Sample : 1/ 5

k#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.07	0.00	960599	BS	18.814	
	1.23	0.00	3339680	HS	65.432	
3	1.54	0.00	18216052	HS	356.783	
4	2.14	0.00	1786791	HS	34.996	
5	2.47	2.39	503486	HS	516.103	<del>DALAPON</del> 1204 6 113194
6	2.97	0.00	203010	VT	3.976	
7	3.40	0.00	112910	PT	2.211	
8	3.99	0.00	192488	PT	3.770	
9	5.09	0.00	51613	RB	1.011	
10	5.35	0.00	99639	BB	1.952	
11	25.27	#25.28	1076082	BB	319.237	PICLORAM
12	29.61	0.00	332687	BB	6.516	

Result File : /DATA/RESULT/EB04916.RES  
Sample Name : Q1452426  
Sample Comment : LB  
Injection Time : 1650 06Jun1994  
Instrument : HPEB  
Column/Amt Inj : RTX-5 / 2uL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: D

Maximum mv: D

1.538

DALAPON 2.136

2.967

3.402

3.987

PICLORAM

29.607

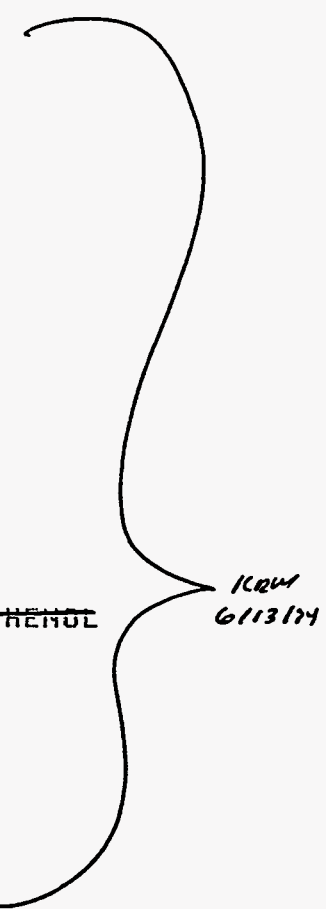
Result File : /DATA/RESULT/EF05132.RES  
 Sample Name : 3214004  
 Sample Comment : 1661B-61  
 Injection Time : 2120 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF'HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF'0610.SEG  
 Subseq/Sample : 1/ 15

PK#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.12	0.00	2755918	PH	53.978	
2	1.49	0.00	189910	BT	3.720	
3	1.61	0.00	199628	PT	3.910	
4	1.79	0.00	128466	PT	2.516	
5	2.12	2.16	167525	PT	169.887	DALAPON
6	2.27	0.00	2805292	PT	54.945	
7	2.59	0.00	39713	PT	.778	
8	2.75	0.00	159210	PT	3.118	
9	2.89	0.00	78385	PT	1.535	
10	2.94	0.00	21996	PT	.431	
11	3.20	0.00	40663	BT	.796	
12	4.60	0.00	98469	BB	1.929	
13	5.87	0.00	46369	BB	.908	
14	9.16	0.00	179449	BB	3.515	
15	9.66	0.00	73876	BB	1.447	
16	9.91	0.00	75934	BB	1.487	
17	10.26	0.00	2261048	BB	44.285	
18	11.67	0.00	89556	BB	1.754	
19	12.46	0.00	164978	BB	3.231	
20	12.91	0.00	97847	BB	1.916	
21	13.22	0.00	130558	BB	2.557	
22	14.11	0.00	273511	BB	5.357	
23	14.58	0.00	84975	BB	1.664	
24	15.04	15.17	1031163	BB	41.795	PENTACHLOROPHENOL
25	15.85	0.00	32517	BB	.637	
26	16.38	16.55	210557	BB	112.030	<del>2,4-D</del>
27	16.73	0.00	141708	BB	2.776	
28	16.97	0.00	103682	BB	2.031	
29	17.41	0.00	89686	BB	1.757	
30	18.49	0.00	194251	BB	3.805	
31	19.10	0.00	246009	BB	4.818	
32	20.25	20.08	64889	BB	6.834	<del>2,4,5-T</del>



Result File : /DATA/RESULT/EF05152.RES  
Sample Name : 3214004  
Sample Comment : 1661B-61  
Injection Time : 2120 10Jun1994  
Instrument : HPEF  
Column/Amt Inj : RTX200 / 2uL

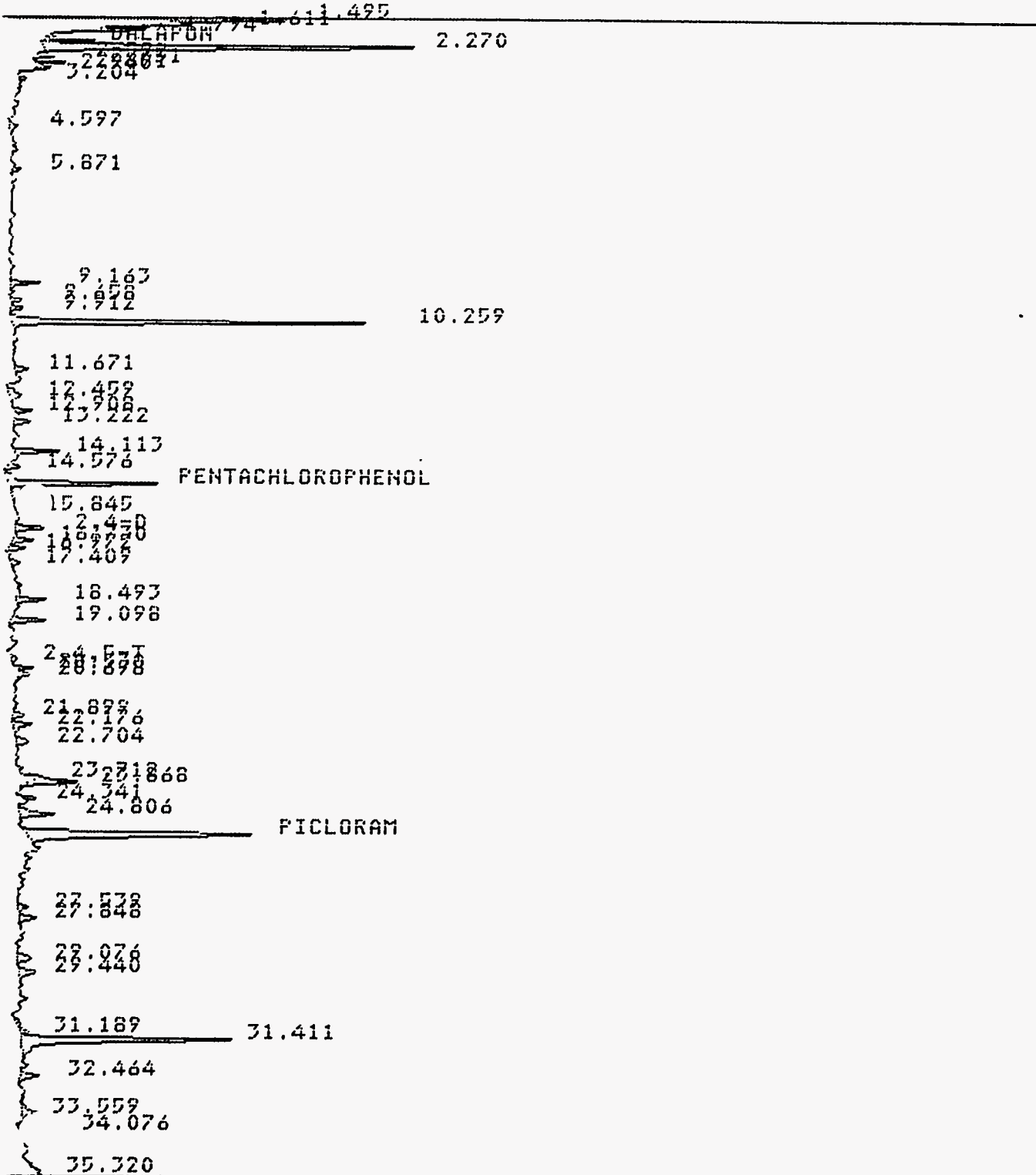
Pk#	Act RT	Exp RT	Area	Code	FPB	Name
33	20.53	0.00	91960	BB	1.801	
34	20.70	0.00	81599	BB	1.598	
35	21.90	0.00	89157	BB	1.746	
36	22.18	0.00	178209	BB	3.490	
37	22.70	0.00	132475	BB	2.595	
38	23.71	0.00	12503	BB	.245	
39	23.87	0.00	338040	BB	6.621	
40	24.34	0.00	79423	BB	1.556	
41	24.81	0.00	306653	BB	6.006	
42	25.37	#25.48	2300494	BB	240.931	PICLORAM
43	27.54	0.00	65221	BB	1.277	
44	27.85	0.00	141761	BB	2.777	
45	29.08	0.00	154981	BB	3.035	
46	29.44	0.00	163570	BB	3.204	
47	31.19	0.00	95062	BB	1.862	
48	31.41	0.00	1887264	BB	36.964	
49	32.46	0.00	164682	BB	3.226	
50	33.56	0.00	131576	BB	2.577	
51	34.08	0.00	345178	BB	6.761	
52	35.32	0.00	54801	BB	1.073	

Result File : /DATA/RESULT/EF05132.RES  
 Sample Name : 3214004  
 Sample Comment : 1661B-61  
 Injection Time : 2120 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

Sealing for Chromatogram (-1 - Autoscale)

Minimum mo: D

Maximum mo: D



Result File : /DATA/RESULT/EB04989.RES  
 Sample Name : 3214004  
 Sample Comment : 1661B-01  
 Injection Time : 2210 10Jun1994  
 Instrument : HPEB  
 Column/Amt Inj : RTX-5 / 2uL

HP5890I Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EB/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB/0610.SEQ  
 Subseq/Sample : 1/ 16

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.06	0.00	1502716	BS	29.433	
2	1.24	0.00	2298496	HS	45.019	
3	1.48	0.00	12445206	HS	243.754	
4	1.90	0.00	133710	BT	2.619	
5	2.13	0.00	813866	HS	15.941	
6	2.30	2.39	34405	BT	35.267	DILUTION
7	2.75	0.00	64540	BT	1.264	
8	5.36	0.00	83721	BB	1.640	
9	10.18	0.00	159207	BB	3.118	
10	11.55	0.00	108263	BB	2.120	
11	11.98	0.00	62466	BB	1.223	
12	13.53	#13.02	1554501	BS	1253.339	<del>2,4-DICHLOROPHENYL ACET</del>
13	15.50	0.00	166755	BB	3.266	
14	15.95	0.00	74497	BB	1.459	
15	16.42	0.00	92234	BB	1.807	
16	17.43	16.95	74325	BB	64.302	<del>2,4-D 7.0</del>
17	17.80	0.00	75879	BB	1.486	
18	19.10	19.18	515783	BS	33.477	PENTACHLOROPHENOL
19	19.83	0.00	111410	BB	2.182	
20	20.54	20.39	82199	BB	14.182	SILVEX <i>mc</i>
21	20.81	0.00	97671	BB	1.913	
22	22.18	0.00	91637	BB	1.795	
23	22.65	0.00	113002	BB	2.213	
24	22.94	23.11	222173	BB	64.117	DINOSOL
25	25.24	#25.28	659821	BS	195.747	PICLORAM
26	27.49	0.00	127474	BB	2.497	
27	29.55	0.00	1088414	BS	21.318	
28	30.71	0.00	77613	BB	1.520	

*KRM*  
*6/13/94*



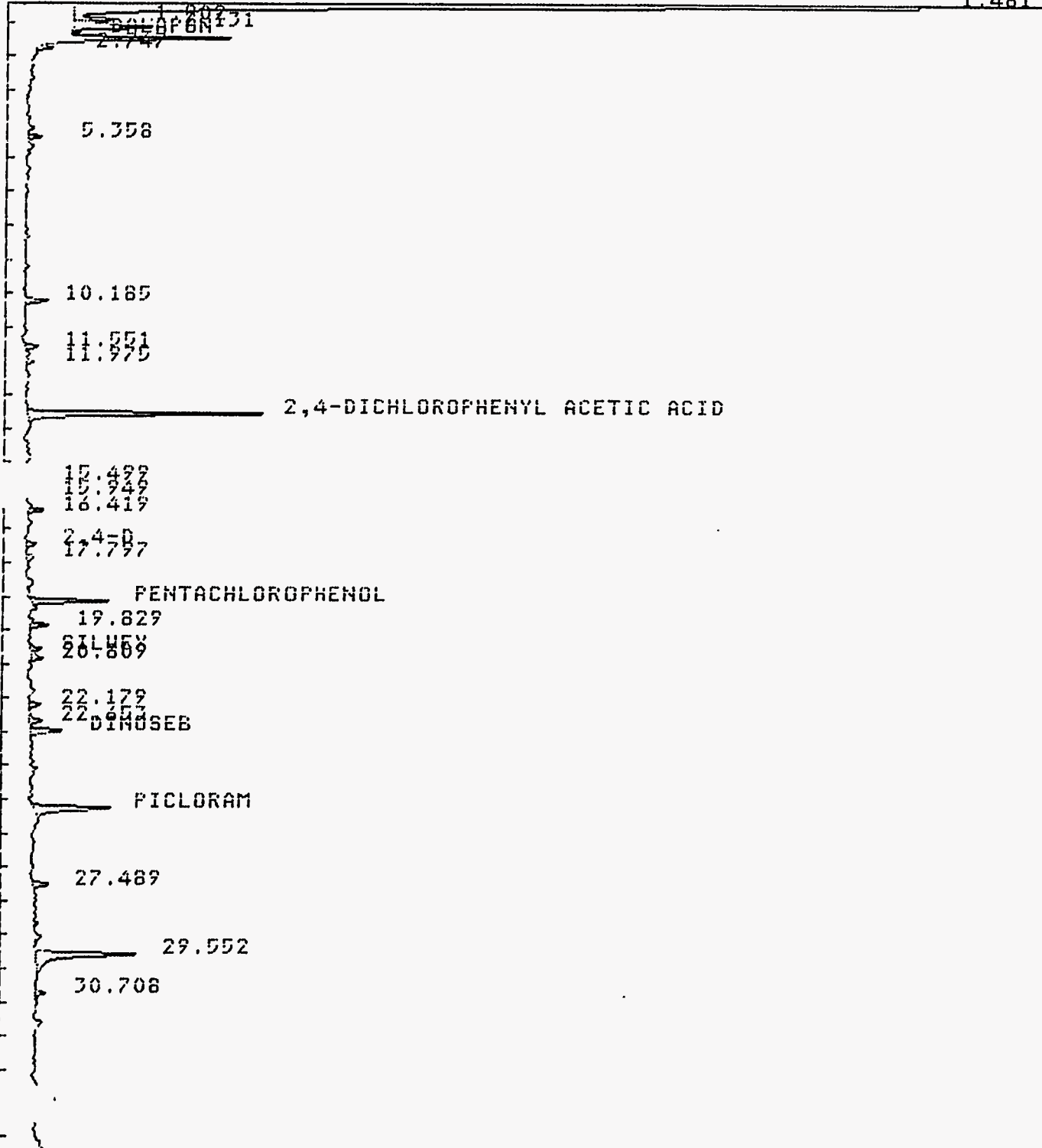


Result File : /DATA/RESULT/EB04989.RES  
Sample Name : 3214004  
Sample Comment : 1661B-61  
Injection Time : 2210 10Jun1994  
Instrument : HFEB  
Column/Amb Inj : RTX-5 / 2uL  
Scaling for Chromatogram (-1 - Autoscale)

Minimum mv = 0

Maximum mv = 0

1.461



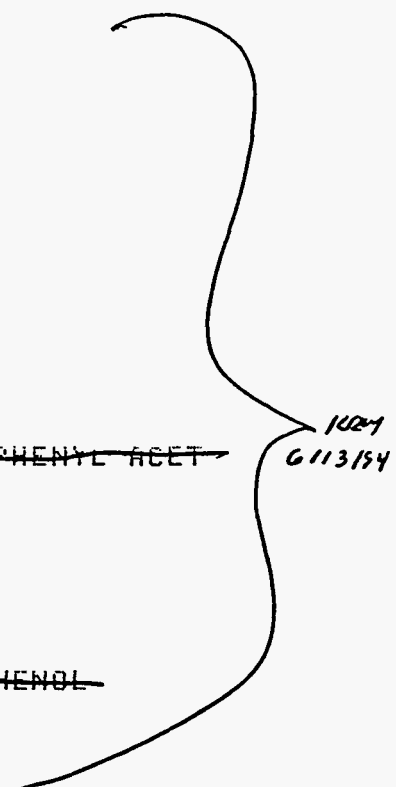
Result File : /DATA/RESULT/EF05135.RES  
 Sample Name : 5214009  
 Sample Comment : 1661B-135  
 Injection Time : 2210 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP5890I Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 5.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF/0610.SEQ  
 Subseq/Sample : 1/ 16

Pk#	Act RT	Exp RT	Area	Code	FPB	Name
1	1.15	0.00	4094855	BS	80.203	
2	1.61	0.00	415788	BT	8.105	
3	1.79	0.00	504991	PT	9.891	
4	2.12	2.16	2168279	UT	2198.851	<del>DALATON</del>
5	2.27	0.00	5550582	UT	65.621	
6	2.59	0.00	76191	PT	1.492	
7	2.75	0.00	107297	PT	2.102	
8	2.85	0.00	36214	PT	.709	
9	3.21	0.00	162806	BT	5.189	
10	4.59	0.00	65862	BB	1.290	
11	5.30	0.00	99257	BB	1.944	
12	5.74	0.00	85706	BB	1.679	
13	6.15	0.00	104425	BB	2.045	
14	9.16	0.00	208588	BB	4.085	
15	9.66	0.00	73286	BB	1.435	
16	9.91	0.00	84807	BB	1.661	
17	10.25	0.00	410903	BB	8.048	
18	10.63	0.00	53724	BB	1.052	
19	11.98	#11.88	140721	BB	84.420	<del>2,4-DICHLOROPHENYL ACET</del>
20	12.33	0.00	133586	BB	2.616	
21	12.56	0.00	80747	BB	1.582	
22	13.08	0.00	5661	BB	.111	
23	13.22	0.00	704564	BB	13.800	
24	13.81	0.00	91576	BB	1.794	
25	14.11	0.00	115830	BB	2.269	
26	15.13	15.17	682947	BB	27.681	<del>PENTACHLOROPHENOL</del>
27	16.11	0.00	197732	BB	3.873	
28	16.37	0.00	56393	BB	1.105	
29	16.60	16.55	281751	BB	149.911	<del>2,4-DNC</del>
30	17.14	0.00	117899	BB	2.309	
31	17.83	0.00	126891	BB	2.485	
32	18.24	0.00	454460	BB	8.901	



Result File : /DATA/RESULT/EF05133.RES  
 Sample Name : 3214009  
 Sample Comment : 1661B-135  
 Injection Time : 2210 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
33	18.76	18.75	104640	BB	10.172	SILVER<DL
34	19.50	0.00	83775	BB	1.641	
35	19.67	0.00	59572	BB	1.167	
36	20.69	0.00	178556	BB	3.497	
37	20.91	0.00	225676	BB	4.420	
38	21.58	0.00	73493	BB	1.439	
39	21.85	0.00	112569	BB	2.205	
40	22.15	0.00	219308	BB	4.295	
41	22.30	0.00	62945	BB	1.233	
42	22.72	0.00	144502	BB	2.830	
43	22.91	0.00	67400	BB	1.320	
44	23.17	0.00	44998	BB	.881	
45	23.37	0.00	71216	BB	1.395	
46	24.33	0.00	458624	BB	8.983	
47	24.65	0.00	24084	BB	.472	
48	24.80	0.00	5823972	BS	114.069	
49	25.19	0.00	173176	BB	3.392	
50	25.33	#25.48	1497991	BB	156.885	PICLORAM
51	25.69	0.00	164665	BB	3.225	
52	26.01	0.00	213664	BB	4.185	
53	26.24	0.00	696155	BB	13.635	
54	26.56	26.71	208400	BB	26.619	DINGSB
55	26.87	0.00	358219	BB	7.016	
56	27.47	0.00	334133	BB	6.544	
57	27.82	0.00	902710	BB	17.681	
58	28.16	0.00	27922	BB	.547	
59	28.48	0.00	122914	BB	2.407	
60	29.00	0.00	249059	BB	4.878	
61	29.27	0.00	54962	BB	1.076	
62	29.78	0.00	264890	BB	5.188	
63	30.07	0.00	40162	BB	.787	
64	30.21	0.00	100055	BB	1.960	
65	30.55	0.00	120113	BB	2.353	
66	30.83	0.00	59188	BB	1.159	
67	31.17	0.00	162419	BB	3.181	
68	31.44	0.00	8980782	BS	175.899	
69	32.00	0.00	39202	BB	.768	
70	32.16	0.00	90599	BB	1.774	
71	32.44	0.00	423701	BB	8.299	
72	32.89	0.00	176557	BB	3.458	
73	33.22	0.00	147550	BB	2.890	
74	33.37	0.00	124522	BB	2.439	
75	33.58	0.00	163327	BB	3.199	
76	33.79	0.00	100760	BB	1.973	
77	34.07	0.00	2790314	BB	54.652	
78	34.43	0.00	317376	BB	6.216	
79	35.07	0.00	94928	BB	1.859	

*Handwritten notes:*  
 A large curly bracket on the right side of the table spans from peak 33 down to peak 54. To the right of this bracket, the text "KRM 6/13/94" is written.

EcoTek LSI

Result File : /DATA/RESULT/EF05135.RES  
Sample Name : 3214009  
Sample Comment : 1661B-135  
Injection Time : 2210 10Jun1994  
Instrument : HPEF  
Column/Amt Inj : RTX200 / 2uL

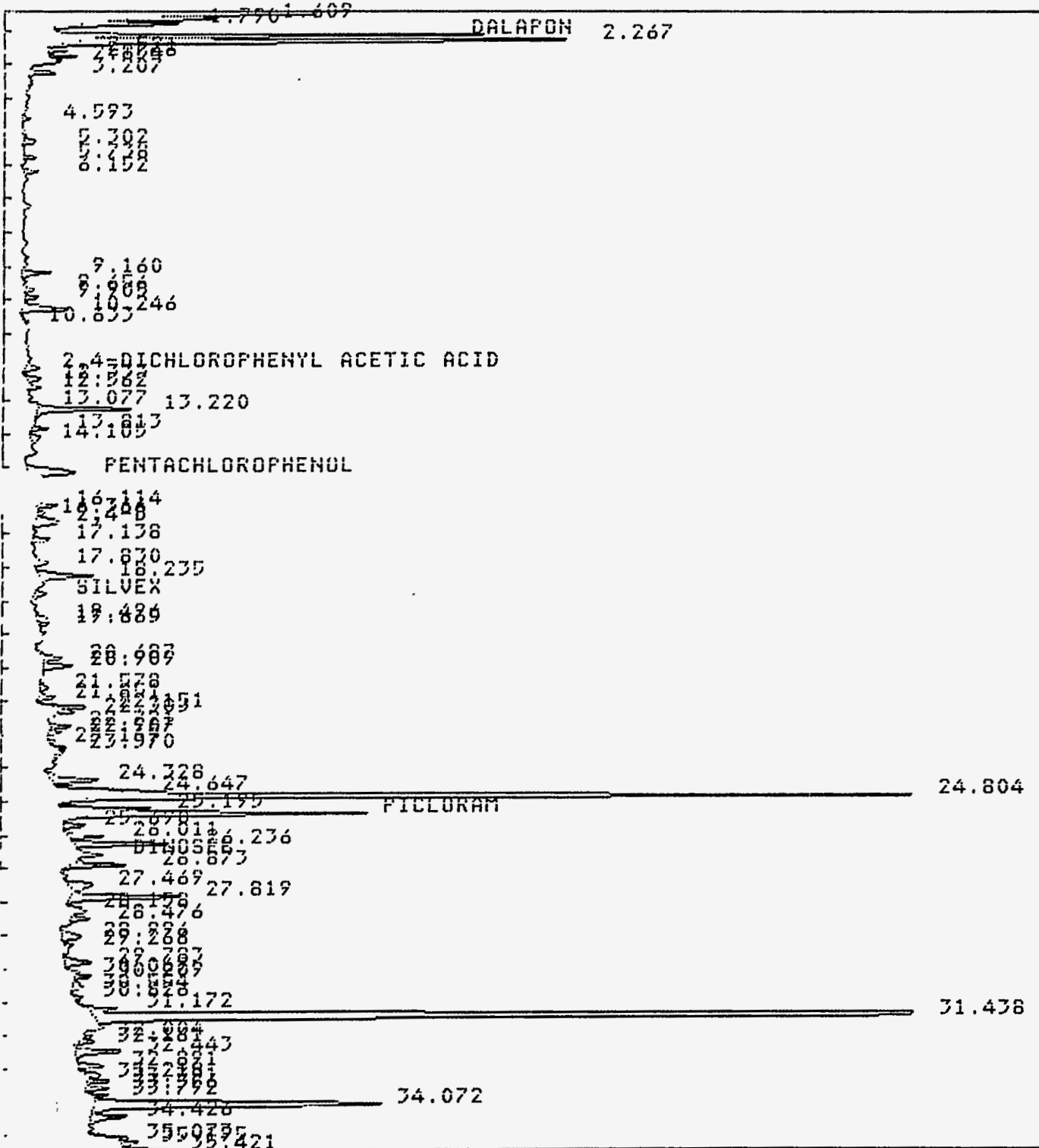
Pk#	Act RT	Exp RT	Area	Code	PPB	Name
80	35.19	0.00	125760	BB	2.463	
81	35.42	0.00	98729	BB	1.934	

Result File : /DATA/RESULT/EF05133.RES  
 Sample Name : 3214009  
 Sample Comment : 1661B-135  
 Injection Time : 2210 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 - Autoscale)

Minimum mu: 0

Maximum mu: 0



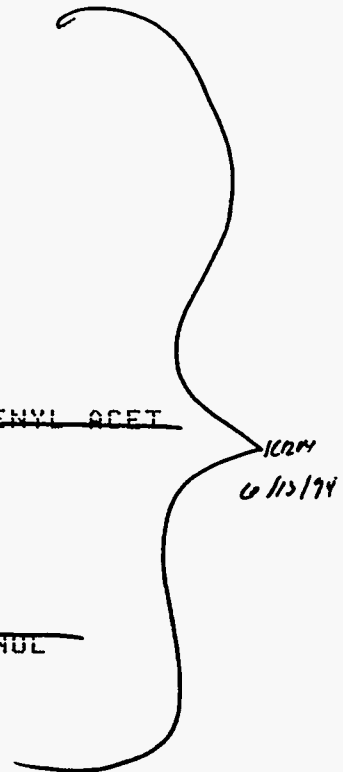
Result File : /DATA/RESULT/EB04990.RES  
 Sample Name : 3214009  
 Sample Comment : 1661B-135  
 Injection Time : 2300 10Jun1994  
 Instrument : HP5890  
 Column/Amt Inj : RTX-5 / 2uL

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EB'HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB'0610.SEQ  
 Subseq/Sample : 1/ 17

Pk#	Act RT	Exp RT	Area	Code	FPB	Name
1	1.06	0.00	1044574	BS	20.459	
2	1.25	0.00	2875015	HS	56.311	
3	1.49	0.00	14331722	HS	280.704	
4	1.90	0.00	624234	HS	12.226	
5	2.04	0.00	441834	HS	8.654	
6	2.12	0.00	1127176	HS	22.077	
7	2.30	0.00	1490265	HS	29.189	
8	2.46	2.39	2088626	HS	2140.964	<del>DALAPIN</del>
9	2.72	0.00	16145	BT	.316	
10	3.22	0.00	20199	FT	.396	
11	5.09	0.00	102786	BB	2.013	
12	5.35	0.00	69665	BB	1.364	
13	9.19	0.00	47477	BB	.930	
14	10.18	0.00	149384	BB	2.926	
15	11.53	0.00	247590	BB	4.849	
16	11.97	0.00	15545	BB	.304	
17	12.40	0.00	151794	BB	2.973	
18	12.79	0.00	155007	BB	3.036	
19	13.18	0.00	44242	BB	.867	
20	13.52	#13.02	302315	BB	243.746	<del>2,4-DICHLOROPHENYL ACET</del>
21	13.94	0.00	225401	BB	4.415	
22	14.92	0.00	177084	BB	3.468	
23	15.95	0.00	101299	BB	1.984	
24	17.88	0.00	252300	BB	4.942	
25	18.08	0.00	62479	BB	1.224	
26	18.61	0.00	134038	BB	2.625	
27	19.12	19.18	160586	BB	10.423	<del>PENTACHLOROPHENOL</del>
28	19.88	0.00	91253	BB	1.787	
29	20.26	20.39	65112	BB	11.234	<del>SILVEX &lt;DL</del>
30	20.83	0.00	115592	BB	2.264	
1	21.61	0.00	366886	BB	7.186	
32	22.64	0.00	3126768	BS	61.242	

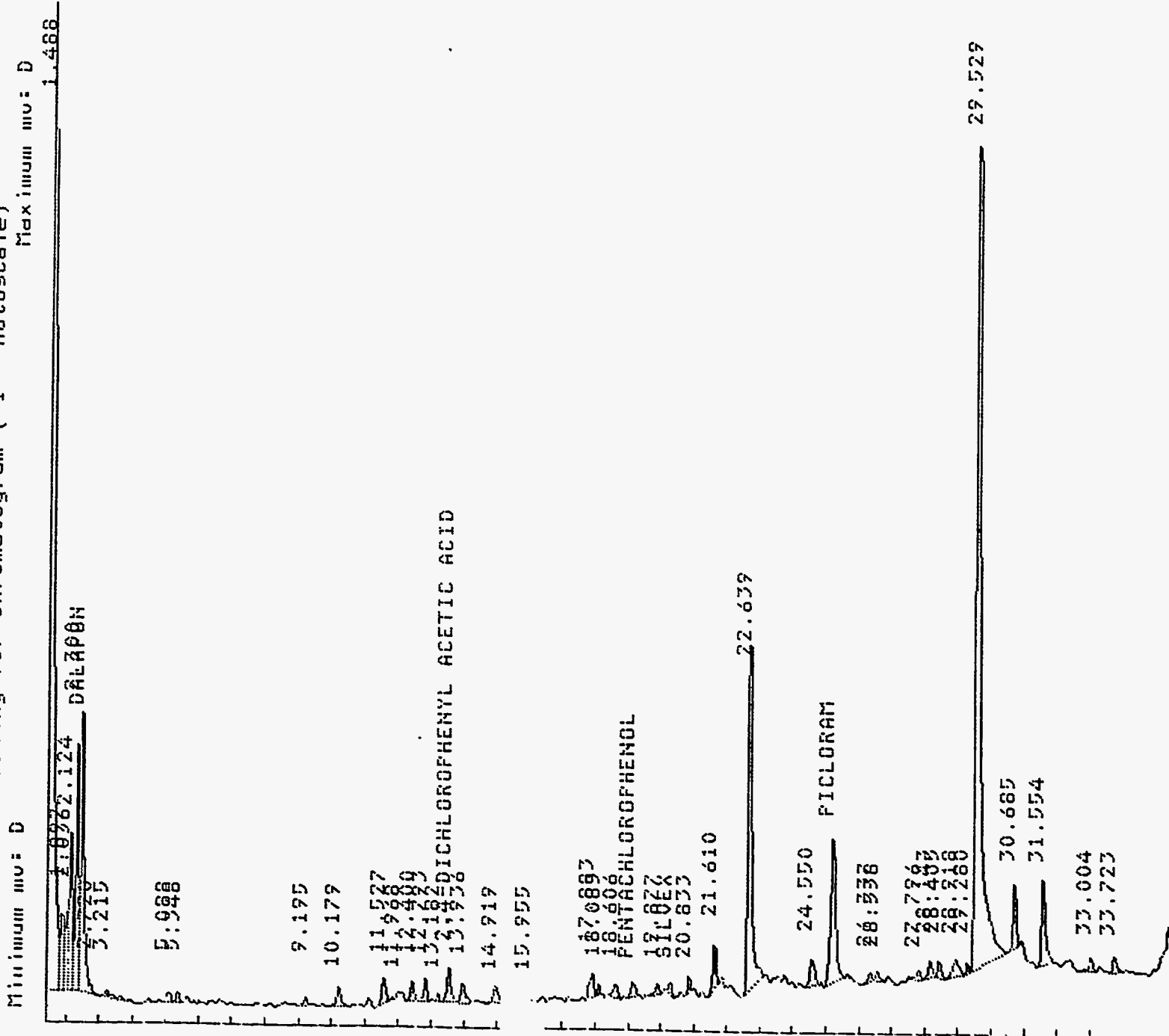


Result File : /DATA/RESULT/EB04990.RES  
Sample Name : 3214009  
Sample Comment : 1661B-135  
Injection Time : 2300 10Jun1994  
Instrument : HPEB  
Column/Amt Inj : RTX-5 / 2uL

Pk#	Act RT	Exp RT	Area	Code	FPB	Name
33	24.55	0.00	291026	BB	5.700	
34	25.20	#25.28	1582948	BS	469.607	PICLORAM
35	26.34	0.00	70072	BB	1.372	
36	26.54	0.00	70492	BB	1.381	
37	27.80	0.00	88389	BB	1.731	
38	28.14	0.00	156396	BB	3.063	
39	28.40	0.00	137236	BB	2.688	
40	28.92	0.00	255476	BB	4.612	
41	29.28	0.00	73143	BB	1.433	
42	29.53	0.00	9708700	BS	190.157	
43	30.69	0.00	477446	BB	9.351	
44	31.55	0.00	776386	BS	15.206	
45	33.00	0.00	125561	BB	2.459	
46	33.72	0.00	151959	BB	2.976	

Result File : /DATA/RESULT/EB04990.RES  
 Sample Name : 3214009  
 Sample Comment : 1661B-175  
 Injection Time : 2300 10Jun1994  
 Instrument : HPFB  
 Column/Amb Inj : RTX-5 / 2ul

Scaling for Chromatogram (-1 - Autoscale)





## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-61*

*Lab Sample ID: 3214004MS*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
<i>95757</i>	<i>2,4-D</i>	<i>1</i>	<i>6/10/94</i>	<i>0.0448</i>	<i>0.0100</i>	<i>10.0</i>	
<i>93721</i>	<i>2,4,5-TP (Silvex)</i>	<i>1</i>	<i>6/10/94</i>	<i>0.00507</i>	<i>0.00200</i>	<i>1.00</i>	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

Result File : /DATA/RESULT/EF05134.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 2300 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP5890I Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF/0610.SEQ  
 Subseq/Sample : 1/ 17

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.16	0.00	4816487	BS	94.337	
2	1.49	0.00	194982	BT	3.819	
3	1.61	0.00	191341	PT	3.748	
4	1.79	0.00	124242	PT	2.433	
5	2.12	2.16	2005783	PT	2034.064	<del>DALAPOM</del>
6	2.27	0.00	2634950	PT	51.609	
7	2.59	0.00	34456	PT	.675	
8	2.75	0.00	82839	PT	1.623	
9	2.85	0.00	90810	PT	1.779	
10	3.20	0.00	64158	BV	1.257	
11	4.60	0.00	93788	BB	1.837	
12	9.16	0.00	94560	BB	1.852	
13	9.65	0.00	60506	BB	1.181	
14	9.91	0.00	73964	BB	1.449	
15	10.26	0.00	1954084	BB	38.273	
16	12.45	0.00	149439	BB	2.927	
17	12.90	0.00	81325	BB	1.593	
18	13.22	0.00	112817	BB	2.210	
19	14.11	0.00	229062	BB	4.486	
20	14.57	0.00	81916	BB	1.604	
21	15.04	15.17	904397	BB	36.657	<del>PENTACHLOROPHENOL</del>
22	15.84	0.00	35469	BB	.695	
23	16.41	16.55	842527	BB	448.281	2,4-D ✓
24	16.72	0.00	106910	BB	2.094	
25	16.97	0.00	107073	BB	2.097	
26	17.40	0.00	89824	BB	1.759	
27	17.83	0.00	45237	BB	.886	
28	18.49	0.00	26992	BB	.529	
29	18.62	18.75	521792	BB	50.721	SILVEX ✓
30	19.09	0.00	222680	BB	4.361	
31	19.49	0.00	88541	BB	1.734	
32	19.77	0.00	148184	BB	2.902	

*(Handwritten)*  
 6/13/94

Result File : /DATA/RESULT/EF05134.RES  
 Sample Name : J214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 2300 10Jun1994  
 Instrument : HPEF  
 Column/Amb Inj : RTX200

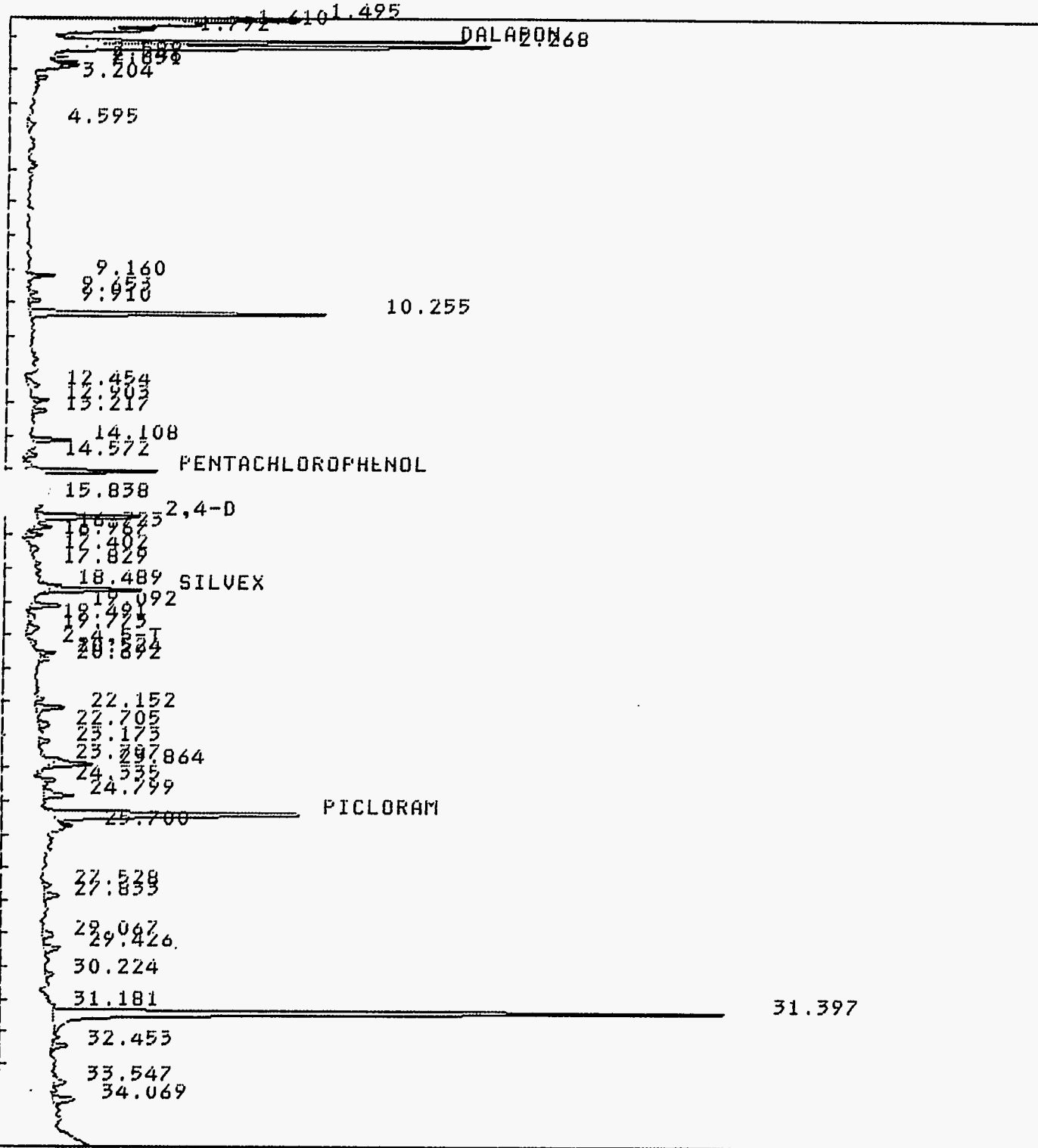
PK#	Ret RT	Exp RT	Area	Zul	PPB	Name
33	20.24	20.08	66323	BB	6.985	<del>2445</del> -Kant C113/94
34	20.52	0.00	99013	BB	1.939	
35	20.69	0.00	71249	BB	1.396	
36	22.15	0.00	272232	BB	5.332	
37	22.70	0.00	117423	BB	2.300	
38	23.17	0.00	84498	BB	1.655	
39	23.71	0.00	12779	BB	.250	
40	23.86	0.00	313710	BB	6.144	
41	24.34	0.00	93044	BB	1.822	
42	24.80	0.00	260987	BB	5.112	
43	25.35	#25.48	2566303	BB	270.864	FICLORAM
44	25.70	0.00	66337	BB	1.299	
45	27.53	0.00	73944	BB	1.448	
46	27.83	0.00	138259	BB	2.708	
47	29.07	0.00	131291	BB	2.571	
48	29.43	0.00	150799	BB	2.954	
49	30.22	0.00	61620	BB	1.207	
50	31.18	0.00	69515	BB	1.362	
51	31.40	0.00	5603307	BB	109.747	
52	32.45	0.00	135334	BB	2.651	
53	33.55	0.00	130515	BB	2.556	
54	34.07	0.00	236046	BB	4.623	

Result File : /DATA/RESULT/EF05134.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 2300 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: 0

Maximum mv: 0



Result File : /DATA/RESULT/EB04991.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 2350 10Jun1994  
 Instrument : HPEB  
 Column/Amt Inj : RTX-5 / 2uL

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EB/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB/0610.SEQ  
 Subseq/Sample : 1/ 18

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.06	0.00	1201289	BS	23.529	
2	1.24	0.00	3135563	HS	61.414	
3	1.49	0.00	13509690	HS	264.604	
4	1.90	0.00	492126	HS	9.639	
5	2.13	0.00	1058093	HS	20.724	
6	2.30	0.00	1270127	HS	24.877	
7	2.46	2.39	1158298	HS	1187.323	<del>DALAPON</del>
8	3.22	0.00	60603	VT	1.187	
9	5.35	0.00	70100	BB	1.373	
10	10.18	0.00	144144	BB	2.823	
11	11.54	0.00	104600	BB	2.049	
12	13.52	#13.02	1367987	BS	1102.959	<del>2,4-DICHLOROPHENYL ACET</del>
13	15.49	0.00	122290	BB	2.395	
14	15.94	0.00	67690	BB	1.326	
15	16.41	0.00	90189	BB	1.766	
16	16.86	16.93	535091	BS	462.931	2,4-D ✓
17	17.42	0.00	86619	BB	1.697	
18	17.78	0.00	87946	BB	1.723	
19	19.09	19.18	455020	BS	29.533	<del>PENTACHLOROPHENOL</del>
20	19.82	0.00	114416	BB	2.241	
21	20.31	20.39	375923	BB	64.861	SILVEX ✓
22	20.53	0.00	48906	BB	.958	
23	21.52	0.00	69223	BB	1.356	
24	21.76	0.00	56243	BB	1.102	
25	22.17	0.00	94682	BB	1.854	
26	22.64	0.00	100763	BB	1.974	
27	22.93	23.11	206674	BB	59.644	<del>DINoseb</del>
28	25.22	#25.28	877840	BS	260.425	PICLORAM
29	27.48	0.00	119909	BB	2.349	
30	29.53	0.00	3836959	BS	75.151	

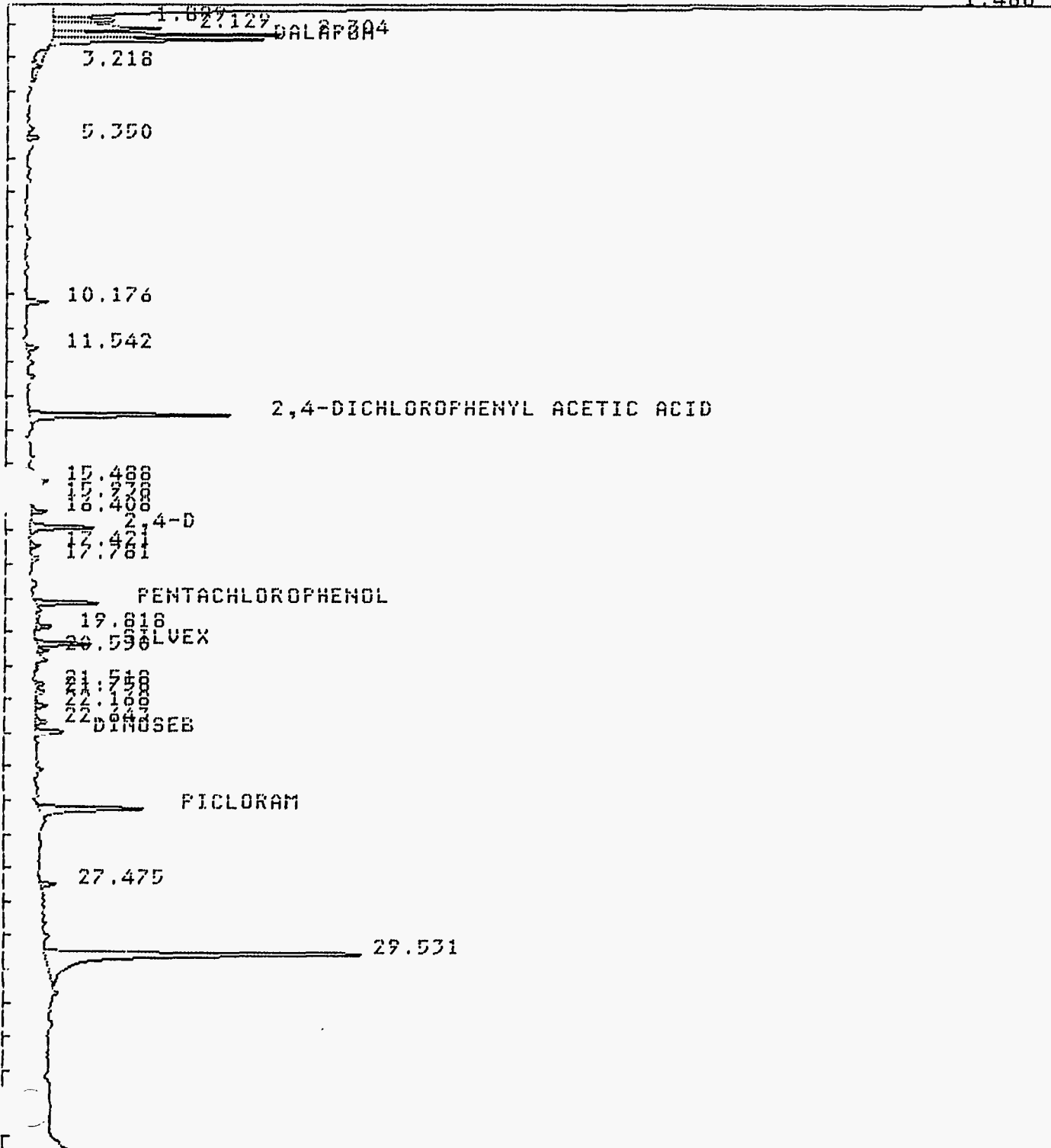
*Handwritten notes:*  
 A large bracket on the right side of the table groups peaks 7 through 28.  
 Next to peak 7: ~~DALAPON~~  
 Next to peak 12: ~~2,4-DICHLOROPHENYL ACET~~  
 Next to peak 16: 2,4-D ✓  
 Next to peak 19: ~~PENTACHLOROPHENOL~~  
 Next to peak 21: SILVEX ✓  
 Next to peak 27: ~~DINoseb~~  
 Next to peak 28: PICLORAM  
 At the bottom right: KCM 6/13/94

Result File : /DATA/RESULT/EB04991.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 2350 10Jun1994  
 Instrument : HFEB  
 Column/Amt Inj : RTX-5 / 2uL

Scaling for Chromatogram (-1 - Autoscale)

Minimum mo: D

Maximum mo: D



## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-61*

*Lab Sample ID: 3214004MSD*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
<i>95757</i>	<i>2,4-D</i>	<i>1</i>	<i>6/10/94</i>	<i>0.0493</i>	<i>0.0100</i>	<i>10.0</i>	
<i>93721</i>	<i>2,4,5-TP (Silvex)</i>	<i>1</i>	<i>6/10/94</i>	<i>0.00501</i>	<i>0.00200</i>	<i>1.00</i>	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

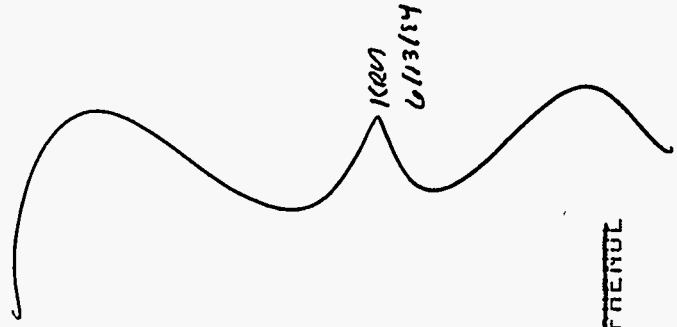
EvoTek LSI

Result File : /DATA/RESULT/EF05135.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 2350 10Jun1994  
 Instrument : HPEF  
 Column/Amb Inj : RTX200 / 2ul

HP58901 Instrument Method  
 100.0  
 Initial Temp 2.0 Equilibration Time 5.0  
 Final Temp 0.0 Rate A 3.5 Final Temp 215.0  
 Final Temp A 5.0 Rate B 50.0 Final Temp A 260.0  
 Final Temp B 0.0 Final Temp B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF/0610.SEQ  
 Subseq/Sample : 1/ 16

PK#	Ret	RT	Exp	RT	Area	Code	FFB	Name
1	1.16	0.00			3669903	BS	75.797	
2	1.49	0.00			181186	BT	3.549	
3	1.61	0.00			452350	FT	8.860	
4	1.79	0.00			478776	FT	9.377	
5	2.12	2.16			1360013	HS	1379.168	DALAPTON
6	2.27	0.00			2996521	BT	58.690	
7	2.59	0.00			53794	FT	1.054	
8	2.74	0.00			130084	FT	2.548	
9	2.86	0.00			43853	FT	.859	
10	3.20	0.00			73926	BT	1.448	
11	5.86	0.00			98605	BB	1.931	
12	9.16	0.00			101514	BB	1.988	
13	9.65	0.00			72589	BB	1.422	
14	9.91	0.00			109307	BB	2.141	
15	10.25	0.00			2410822	BB	47.219	
16	11.66	0.00			60858	BB	1.192	
17	12.45	0.00			171919	BB	3.367	
18	12.90	0.00			110201	BB	2.158	
19	13.21	0.00			125494	BB	2.458	
20	14.11	0.00			290137	BB	5.683	
21	14.57	0.00			89027	BB	1.744	
22	14.81	0.00			15691	BB	.307	
23	15.04	15.17			983027	BB	39.844	PENTACHLOROPHENOL
24	15.83	0.00			26114	BB	.511	
25	16.11	0.00			344991	BB	6.757	
26	16.41	16.55			926383	BB	492.898	2,4-D ✓
27	16.72	0.00			121816	BB	2.386	
28	16.97	0.00			202358	BB	3.963	
29	17.40	0.00			92913	BB	1.820	
30	17.83	0.00			171684	BB	3.363	
31	18.49	0.00			51037	BB	1.000	
32	18.61	18.75			515685	BB	50.128	SILVEX ✓





Result File : /DATA/RESULT/EF05135.RES  
 Sample Name : 5214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 2350 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

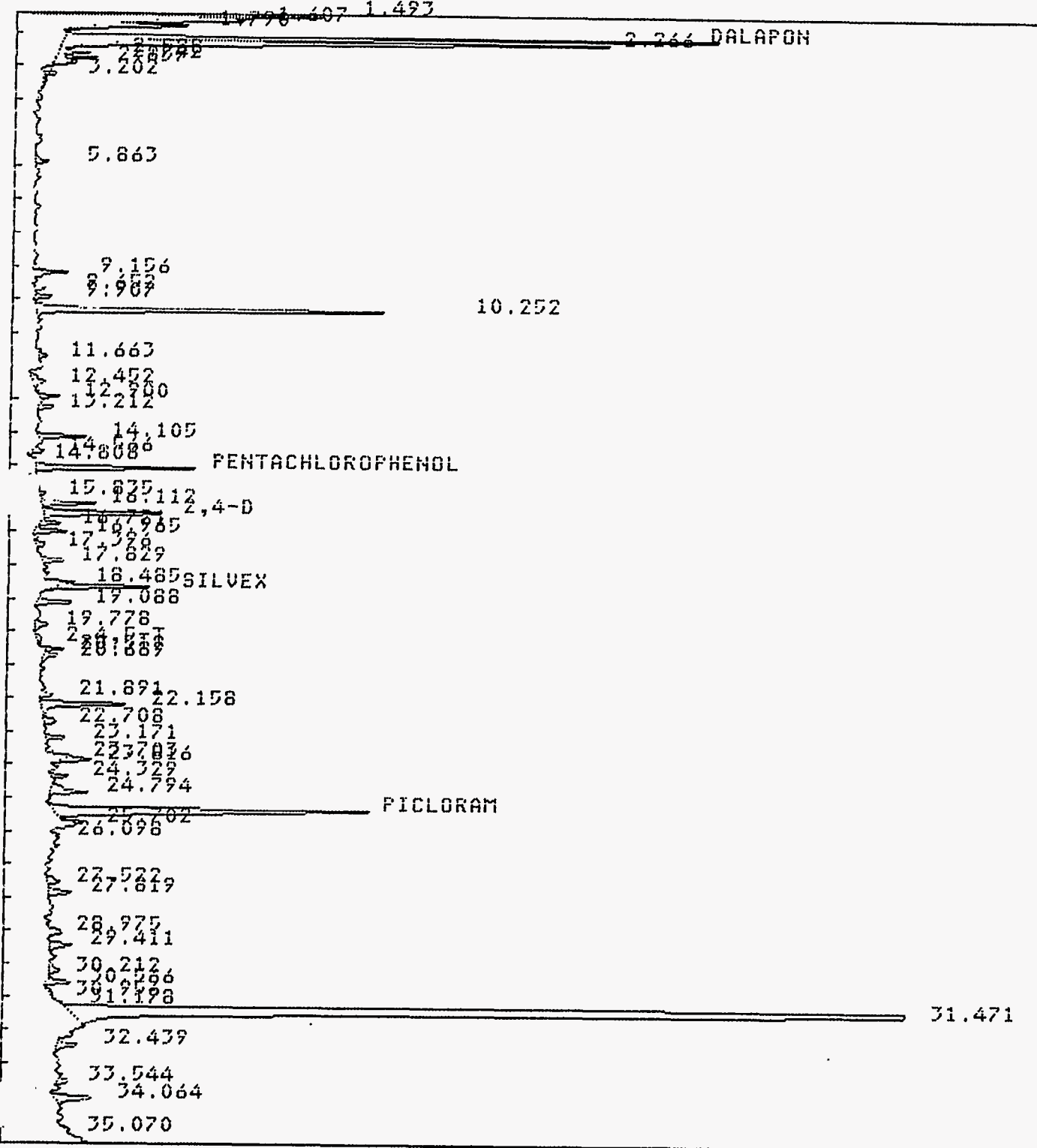
Pk#	Act RT	Exp RT	Area	Code	PPB	Name
33	19.09	0.00	274459	BB	5.375	
34	19.78	0.00	154582	BB	2.636	
35	20.27	20.08	74350	BB	7.828	<del>2,4,5</del> KRM 6/13/94
36	20.52	0.00	111917	BB	2.192	
37	20.69	0.00	111050	BB	2.175	
38	21.89	0.00	93144	BB	1.824	
39	22.16	0.00	734790	BB	14.392	
40	22.71	0.00	129498	BB	2.536	
41	23.17	0.00	124469	BB	2.438	
42	23.70	0.00	4773	BB	.093	
43	23.82	0.00	175962	BB	3.446	
44	24.53	0.00	101561	BB	1.985	
45	24.79	0.00	324951	BB	6.365	
46	25.53	#25.48	3027414	BB	317.062	PICLORAM
47	25.70	0.00	81607	BB	1.598	
48	26.10	0.00	24950	BB	.489	
49	27.52	0.00	137642	BB	2.696	
50	27.82	0.00	206947	BB	4.053	
51	28.97	0.00	14003	BB	.274	
52	29.41	0.00	192907	BB	3.778	
53	30.21	0.00	102895	BB	2.015	
54	30.57	0.00	158744	BB	3.109	
55	30.96	0.00	45645	BB	.894	
56	31.18	0.00	18971	BB	.372	
57	31.47	0.00	12385724	BS	242.589	
58	32.44	0.00	184194	BB	3.608	
59	33.54	0.00	105238	BB	2.022	
60	34.06	0.00	397301	BB	7.782	
61	35.07	0.00	50140	BB	.982	

Result File : /DATA/RESULT/EF05135.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 2350 10Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 - Autoscale)

Minimum mv: 0

Maximum mv: 0



Result File : /DATA/RESULT/EB04992.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 0040 11Jun1994  
 Instrument : HPFB  
 Column/Amt Inj : RTX-5 / 2uL

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EB/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB/0610.SEQ  
 Subseq/Sample : 1/ 19

PK#	Act RT	Exp RT	Area	Code	FPB	Name
1	1.06	0.00	1147011	BS	22.466	
2	1.24	0.00	3426447	HS	67.111	
3	1.49	0.00	14103298	HS	276.230	
4	1.90	0.00	639414	HS	12.524	
5	2.13	0.00	1296708	HS	25.398	
6	2.31	0.00	1971123	HS	38.607	
7	2.46	2.39	1555530	HS	1594.509	<del>DALAPON</del>
8	5.35	0.00	87052	BB	1.705	
9	10.18	0.00	186933	BB	3.661	
10	11.54	0.00	109302	BB	2.141	
11	11.96	0.00	66032	BB	1.293	
12	12.39	0.00	361509	BB	7.081	
13	13.51	#13.02	1686454	BS	1359.728	2,4-DICHLOROPHENYL ACET
14	14.31	0.00	116421	BB	2.280	
15	15.49	0.00	178095	BB	3.488	
16	15.94	0.00	89701	BB	1.757	
17	16.41	0.00	114091	BB	2.235	
18	16.86	16.93	577854	BB	499.926	2,4-D
19	17.42	0.00	113485	BB	2.223	
20	17.77	0.00	285157	BB	5.585	
21	18.51	0.00	14389	BB	.282	
22	19.09	19.18	571330	BS	37.082	PENTACHLOROPHENOL
23	20.31	20.39	424707	BB	73.278	SILVEX
24	20.53	0.00	64080	BB	1.255	
25	21.52	0.00	113096	BB	2.215	
26	21.76	0.00	106769	BB	2.091	
27	22.16	0.00	93774	BB	1.837	
28	22.64	0.00	123443	BB	2.418	
29	22.93	23.11	296677	BB	85.618	DINOSER
30	24.07	0.00	36886	BB	.722	
31	25.21	#25.28	1034982	BS	307.044	PICLORAM
32	27.47	0.00	163162	BB	3.196	

*Handwritten notes and arrows:*  
 A large bracket on the right side of the table groups rows 7 through 32.  
 Arrows point from the handwritten labels 'DALAPON', '2,4-D', 'PENTACHLOROPHENOL', 'SILVEX', and 'DINOSER' to their respective rows in the table.  
 At the bottom right, there is a handwritten signature 'KRM' and the date '6/13/94'.

Result File : /DATA/RESULT/EB04992.RES  
Sample Name : 5214004MSD  
Sample Comment : 1661B-61  
Injection Time : 0040 11Jun1994  
Instrument : HPEB  
Column/Amt Inj : RTX-5 / 2uL

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
33	27.97	0.00	71166	BB	1.394	
34	29.02	0.00	104435	BB	2.045	
35	29.60	0.00	18009484	BS	352.737	

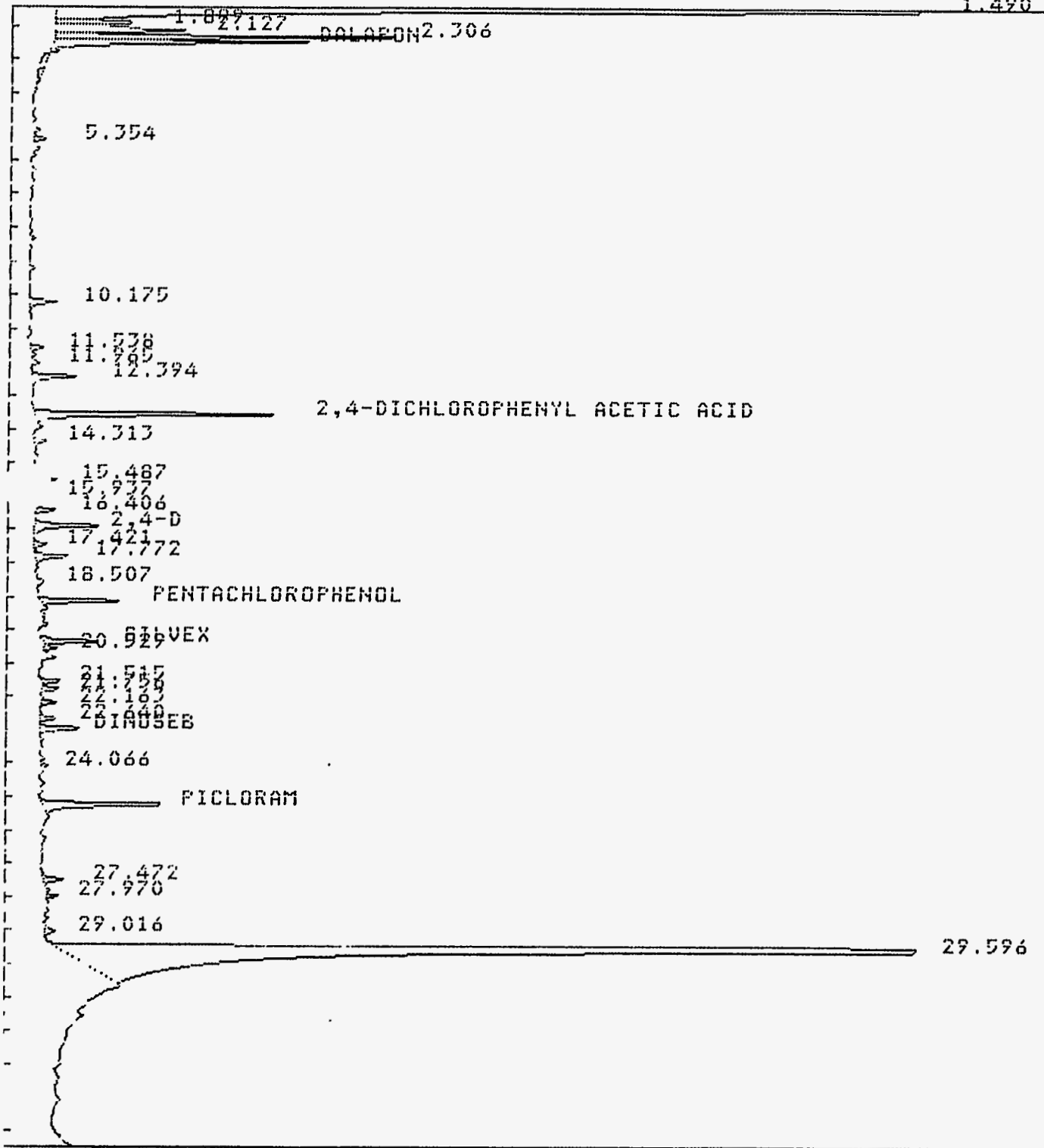
Result File : /DATA/RESULT/EB04992.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 0040 11Jun1994  
 Instrument : HPFB  
 Column/Amt Inj : RTX-5 / 2uL

Sealing for Chromatogram (-1 - Autoscale)

Minimum mv: 0

Maximum mv: 0

1.490



## *Herbicide TCLP Analytical Results*

*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-135*

*Lab Sample ID: 3214009MS*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
95757	2,4-D	1	6/11/94	0.0339	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	0.00821	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

Result File : /DATA/RESULT/EF05136.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 0040 11Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP5890I Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF/0610.SEQ  
 Subseq/Sample : 1/ 19

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.19	0.00	399268	BS	7.820	
2	1.61	0.00	666078	BT	15.046	
3	1.79	0.00	641266	PT	12.560	
4	2.60	0.00	170825	BT	3.346	
5	2.75	0.00	219288	PT	4.295	
6	2.86	0.00	69585	PT	1.363	
7	3.22	0.00	59204	PT	1.160	
8	5.24	0.00	58548	BB	1.147	
9	6.16	0.00	117303	BB	2.298	
10	9.16	0.00	120331	BB	2.357	
11	9.66	0.00	75485	BB	1.478	
12	9.90	0.00	173634	BB	3.401	
13	10.25	0.00	333523	BB	6.532	
14	10.63	0.00	43591	BB	.854	
15	11.98	#11.88	183215	BB	109.913	<del>2,4-DICHLOROPHENYL ACET</del>
16	12.33	0.00	157855	BB	3.092	
17	12.56	0.00	52979	BB	1.038	
18	13.22	0.00	704229	BB	13.793	
19	13.81	0.00	83737	BB	1.640	
20	14.10	0.00	134539	BB	2.635	
21	15.13	15.17	726777	BB	29.458	<del>PENTACHLOROPHENYL</del>
22	16.11	0.00	322174	BB	6.310	
23	16.41	16.55	636384	BB	358.599	2,4-D
24	16.97	0.00	64962	BB	1.272	
25	17.14	0.00	104720	BB	2.051	
26	17.83	0.00	166634	BB	3.264	
27	18.24	0.00	580298	BB	11.366	
28	18.61	18.75	844159	BB	82.057	SILVEX
29	19.50	0.00	79470	BB	1.557	
30	19.67	0.00	87982	BB	1.723	
31	20.69	0.00	170993	BB	3.349	
32	20.91	0.00	238557	BB	4.672	

*Handwritten notes:*  
 A large curly bracket on the right side of the table groups rows 15 through 23.  
 Next to row 15: ~~2,4-DICHLOROPHENYL ACET~~  
 Next to row 21: ~~PENTACHLOROPHENYL~~  
 Next to row 23: 2,4-D  
 Next to row 28: SILVEX  
 To the right of the bracket: *KOM 6/13/94*

Result File : /DATA/RESULT/EF05136.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 0040 11Jun1994  
 Instrument : HPEF

Column/Amb Inj : RTX200 / 2ul

Pk#	Ret RT	Exp RT	Area	Code	Name	PPB
33	22.14	0.00	505844	88		9.908
34	22.72	0.00	174723	88		2.639
35	22.91	0.00	69920	88		1.369
36	23.17	0.00	169221	88		3.314
37	23.36	0.00	68172	88		1.335
38	23.51	0.00	61128	88		1.197
39	23.88	0.00	381942	88		7.481
40	24.32	0.00	876295	88		17.163
41	24.65	0.00	51608	88		1.015
42	24.80	0.00	5871968	88		115.010
43	25.19	0.00	136377	88		2.671
44	25.33	#25.48	1823055	88	PICLORAM	190.929
45	25.69	0.00	287744	88		5.636
46	26.01	0.00	199001	88		3.898
47	26.24	0.00	813521	88		15.934
48	26.43	0.00	39702	88		.778
49	26.55	26.71	104887	88		13.397
50	26.87	0.00	388824	88		7.616
51	27.40	0.00	82554	88		1.617
52	27.82	0.00	814072	88		15.945
53	28.16	0.00	18965	88		.371
54	28.26	0.00	59848	88		1.172
55	28.47	0.00	88574	88		1.735
56	29.00	0.00	217582	88		4.262
57	29.25	0.00	42174	88		.826
58	29.78	0.00	276885	88		5.423
59	30.07	0.00	61469	88		1.204
60	30.21	0.00	85919	88		1.683
61	30.56	0.00	178892	88		3.504
62	30.83	0.00	59630	88		1.168
63	31.17	0.00	106456	88		2.085
64	31.47	0.00	11043072	88		216.292
65	32.01	0.00	58720	88		1.150
66	32.44	0.00	335911	88		6.579
67	32.89	0.00	176827	88		3.463
68	33.13	0.00	15034	88		.294
69	33.37	0.00	155868	88		3.053
70	33.57	0.00	179477	88		3.515
71	33.79	0.00	105486	88		2.066
72	34.07	0.00	2850745	88		55.835
73	34.42	0.00	335110	88		6.564
74	35.07	0.00	90443	88		1.771
75	35.21	0.00	219181	88		4.293
76	35.42	0.00	88586	88		1.735

*DINSEB Rev 6/13/94*

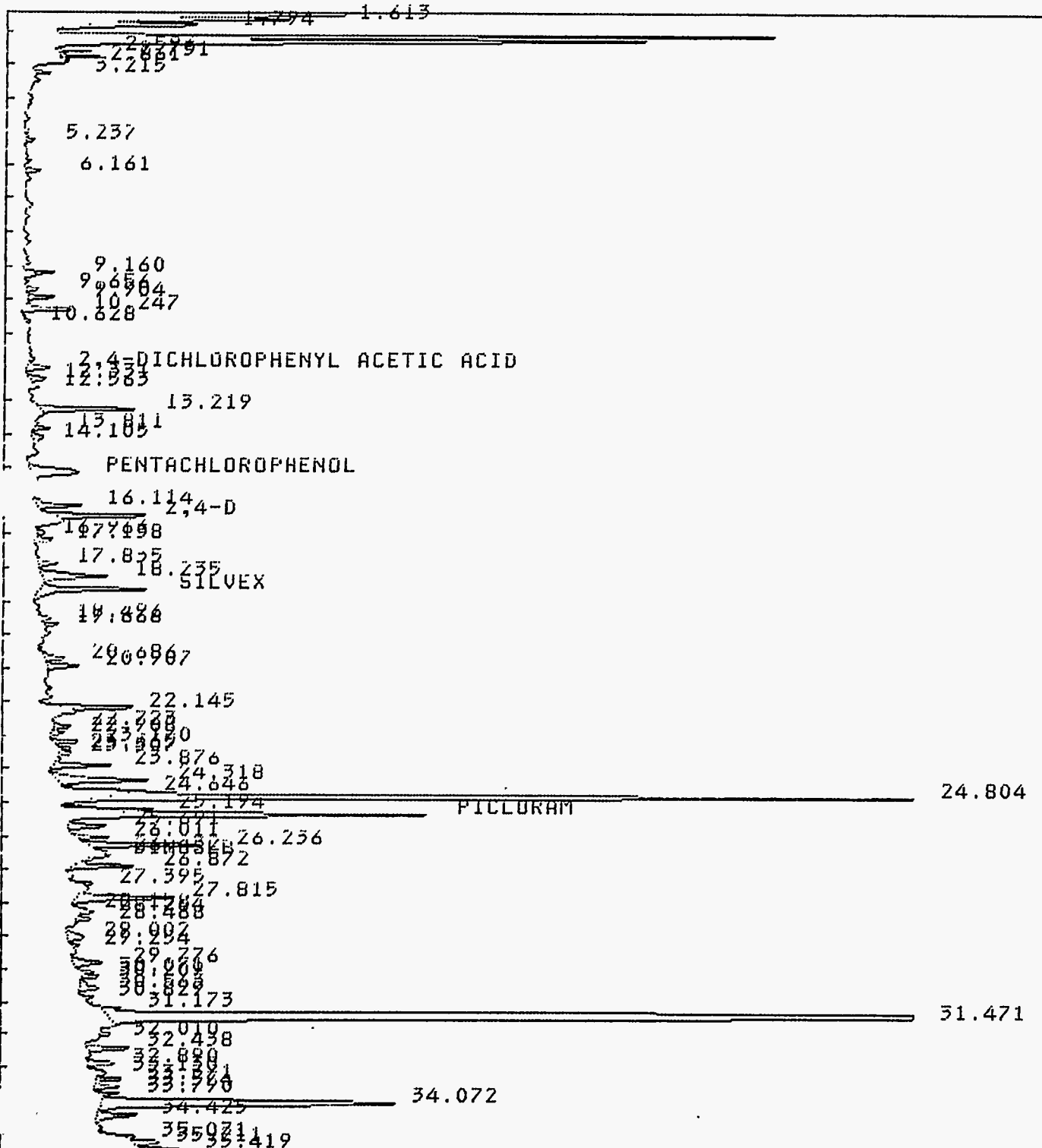


Result File : /DATA/RESULT/EF05156.RES  
 Sample Name : 5214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 0040 11Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: 0

Maximum mv: 0



## Herbicide TCLP Analytical Results

40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*

*Client Sample ID: 1661B-135*

*Lab Sample ID: 3214009MSD*

*Client Project Code: LEFPC*

*Matrix: Leachate*

*Date of Extraction: 5/31/94*

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	0.0341	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	0.00829	0.00200	1.00	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

**Herbicide TCLP Analytical Results**

40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.

Client Sample ID: 1661B-135

Lab Sample ID: 3214009MSD

Client Project Code: LEFPC

Matrix: Leachate

Date of Extraction: 5/31/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
95757	2,4-D	1	6/11/94	0.0341	0.0100	10.0	
93721	2,4,5-TP (Silvex)	1	6/11/94	0.00829	0.00200	1.00	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

MCL = Maximum Contaminant Level

<i>Herbicide Surrogate Results</i>			
<i>Lab Sample ID: 3214009MSD</i>		<i>Client Sample ID: 1661B-135</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Picloram</i>	<i>102</i>	<i>51-179</i>	

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.  
 Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

Result File : /DATA/RESULT/EF05137.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 0130 11Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP5890I Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 3.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF-HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF-0610.SEQ  
 Subseq/Sample : 1/ 20

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.20	0.00	5062561	BS	99.156	
2	1.61	0.00	456931	BT	8.950	
3	1.79	0.00	179735	PT	3.520	
4	2.15	2.16	1681759	HS	1705.471	<del>HALA-PH</del>
5	2.28	0.00	1025238	BT	20.081	
6	2.59	0.00	115742	BT	2.267	
7	2.75	0.00	196048	PT	3.840	
8	5.21	0.00	137665	BB	2.696	
9	6.15	0.00	83665	BB	1.639	
10	6.35	0.00	54884	BB	1.075	
11	9.16	0.00	154596	BB	3.028	
12	9.65	0.00	79621	BB	1.559	
13	9.90	0.00	136595	BB	2.675	
14	10.25	0.00	452483	BB	8.862	
15	10.63	0.00	45193	BB	.885	
16	11.97	#11.88	141191	BB	84.702	<del>2,4-DICHLOROPHENYL ACET</del>
17	12.33	0.00	193095	BB	3.782	
18	13.22	0.00	766166	BB	15.006	
19	13.81	0.00	113451	BB	2.222	
20	14.04	0.00	129813	BB	2.543	
21	14.46	0.00	137885	BB	2.701	
22	15.12	15.17	768050	BB	31.131	<del>PENTACHLOROPHENOL</del>
23	16.12	0.00	2890487	BB	56.614	
24	16.41	16.55	640453	BB	340.764	2,4-D ✓
25	16.74	0.00	84312	BB	1.651	
26	17.13	0.00	123251	BB	2.414	
27	17.83	0.00	696986	BB	13.651	
28	18.23	0.00	451737	BB	8.848	
29	18.61	18.75	853165	BB	82.933	SILVEX ✓
30	19.50	0.00	69594	BB	1.363	
31	19.66	0.00	52530	BB	1.029	
32	19.79	20.08	41908	BB	4.414	<del>2,4,5-T</del>

1007  
6/13/94

Result File : /DATA/RESULT/EF05137.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 0130 11Jun1994  
 Instrument : HPEF

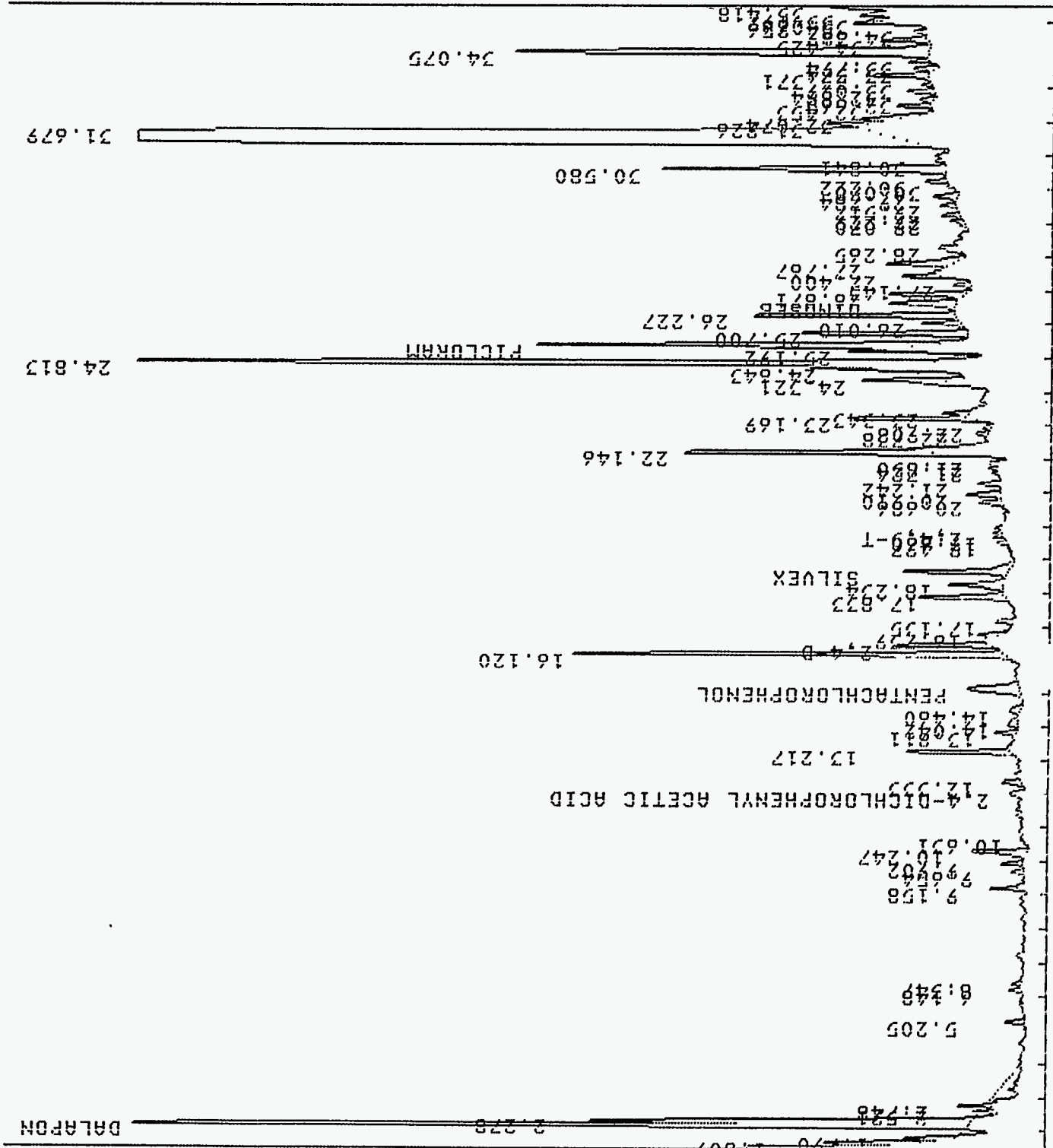
Column/Amb	Inj	RT	Exp	RT	Area	Code	Name
Fk#	Aut	RT	Exp	RT			FPB
33	20.69	0.00	190716	BB			3.735
34	20.91	0.00	278468	BB			5.454
35	21.24	0.00	131628	BB			2.578
36	21.72	0.00	32695	BB			.640
37	21.85	0.00	73753	BB			1.445
38	22.15	0.00	1946297	BB			38.121
39	22.74	0.00	73373	BB			1.437
40	22.91	0.00	49047	BB			.961
41	23.17	0.00	833070	BB			16.317
42	23.34	0.00	150017	BB			2.938
43	24.32	0.00	446983	BB			8.755
44	24.64	0.00	142415	BB			2.789
45	24.81	0.00	6153325	BS			120.520
46	25.19	0.00	257798	BB			5.049
47	25.34	#25.48	2430169	BB			254.512
48	25.70	0.00	1214589	BB			23.789
49	26.01	0.00	227025	BB			4.447
50	26.23	0.00	1569859	BB			30.748
51	26.60	26.71	610339	BB			77.959
52	26.87	0.00	517448	BB			10.135
53	27.14	0.00	122810	BB			2.405
54	27.40	0.00	300175	BB			5.879
55	27.77	0.00	593532	BB			11.625
56	28.27	0.00	225003	BB			4.407
57	29.07	0.00	119087	BB			2.332
58	29.23	0.00	117816	BB			2.308
59	29.52	0.00	99094	BB			1.941
60	29.78	0.00	195189	BB			3.823
61	30.07	0.00	39930	BB			.782
62	30.22	0.00	146216	BB			2.864
63	30.58	0.00	2041537	BB			39.986
64	30.84	0.00	53450	BB			1.047
65	31.68	0.00	20765592	BS			406.719
66	31.93	0.00	190850	BB			3.738
67	32.07	0.00	177171	BB			3.470
68	32.45	0.00	220808	BB			4.325
69	32.66	0.00	85721	BB			1.679
70	32.89	0.00	165988	BB			3.251
71	33.10	0.00	59599	BB			1.167
72	33.37	0.00	381451	BB			7.471
73	33.57	0.00	143243	BB			2.806
74	33.79	0.00	130095	BB			2.548
75	34.07	0.00	3989212	BB			78.134
76	34.43	0.00	354080	BB			6.935
77	34.69	0.00	72956	BB			1.429
78	34.96	0.00	175993	BB			3.447
79	35.07	0.00	54941	BB			1.076

FICLORAM

BIMOSEB KEM C/13/94

Result File : /DATA/RESULT/EF05137.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 0130 11Jun1994  
Instrument : HPEF  
Column/Amt Inj : RTX200 / 2uL

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
80	35.20	0.00	183187	BB	3.588	
81	35.42	0.00	156920	BB	2.682	



Result File : /DATA/RESULT/EF05137.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 0130 11JUN1994  
 Instrument : HPEF  
 Column/Int Inj : RTX200 / 2UL  
 Scaling for Chromatogram (-1 - Autoscale)  
 Minimum int: 0

EWTEK LSI



Result File : /DATA/RESULT/EB04994.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 0220 11Jun1994  
 Instrument : HFEB  
 Column/Amt Inj : RTX-5 / 2ul

HP58901 Instrument Method  
 Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Over Rate 7.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Callib Method : /DATA/METHOD/EB/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB/0610.SEG  
 Subseq/Sample : 1/ 21

PK#	Avl RT	Exp RT	Area	Code	FPB	Name
1	1.06	0.00	919645	BS	18.012	
2	1.23	0.00	4225908	HS	82.769	
3	1.49	0.00	13737086	HS	269.057	
4	1.90	0.00	537669	HS	10.531	
5	2.04	0.00	329032	HS	6.444	
6	2.12	0.00	445535	HS	8.726	
7	2.31	0.00	6042414	HS	118.348	
8	2.47	2.39	703786	HS	721.422	DALAFON
9	4.79	0.00	47957	BS	.939	
10	5.09	0.00	98984	BS	1.939	
11	5.35	0.00	70523	BS	1.381	
12	8.60	0.00	49488	BS	.969	
13	9.19	0.00	99292	BS	1.945	
14	10.17	0.00	166248	BS	3.256	
15	11.52	0.00	285129	BS	5.585	
16	12.01	0.00	186410	BS	3.651	
17	12.40	#17.02	2460100	BS	1983.491	<del>2,4-DICHLOROPHENYL ACET</del>
18	12.78	0.00	154530	BS	3.027	
19	13.17	0.00	48691	BS	.954	
20	13.51	0.00	308191	BS	6.036	
21	13.93	0.00	234174	BS	4.587	
22	14.32	0.00	384136	BS	7.524	
23	14.94	0.00	203750	BS	3.991	
24	15.95	0.00	72528	BS	1.421	
25	16.21	0.00	74137	BS	1.452	
26	16.86	16.93	535808	BS	463.551	2,4-D
27	17.78	0.00	753823	BS	14.765	
28	18.07	0.00	198428	BS	3.886	
29	18.60	0.00	152660	BS	2.990	
30	19.11	19.18	202624	BS	13.151	PERFACHLOROPHENOL
31	19.53	0.00	209388	BS	4.101	
32	19.95	0.00	47381	BS	.928	

1000  
6/13/94

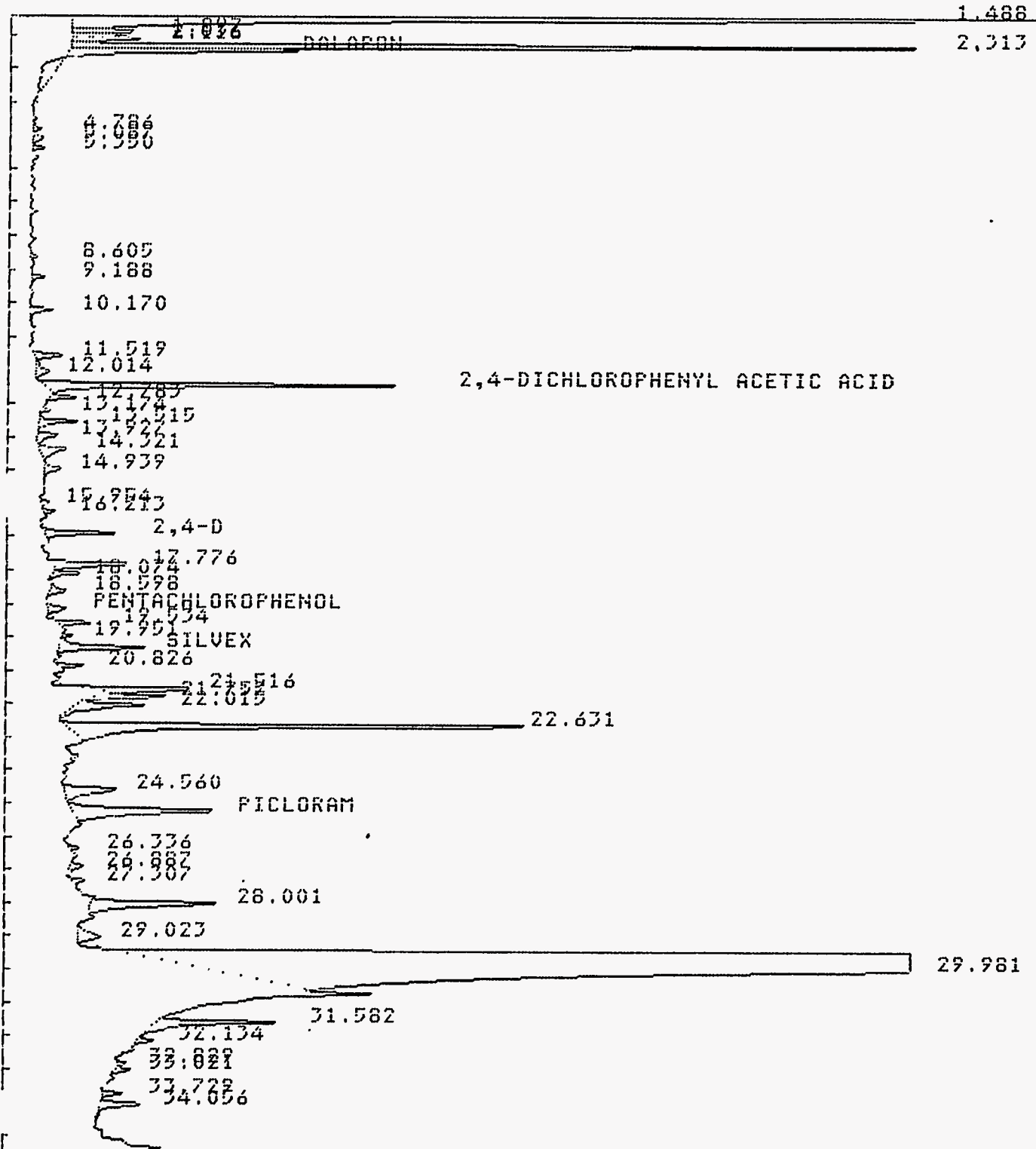
Result File : /DATA/RESULT/EB04994.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 0220 11Jun1994  
 Instrument : HPEB  
 Column/Amt Inj : RTX-5 / 2uL

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
33	20.28	20.39	775897	BB	133.871	SILVEX ←
34	20.83	0.00	166814	BB	3.267	
35	21.52	0.00	987725	BS	19.346	
36	21.75	0.00	405756	BB	7.947	
37	22.01	0.00	720482	BB	14.111	
38	22.63	0.00	4405123	BS	86.280	
39	24.56	0.00	748770	BB	14.666	
40	25.21	#25.28	1834527	BS	544.242	PICLORAM —
41	26.34	0.00	76731	BB	1.503	
42	26.89	0.00	146442	BB	2.868	
43	27.31	0.00	108184	BB	2.119	
44	28.00	0.00	1405048	BS	27.520	
45	29.02	0.00	342996	BB	6.718	
46	29.98	0.00	36747128	BS	719.737	
47	31.58	0.00	1069728	BS	20.952	
48	32.13	0.00	110196	BB	2.158	
49	32.83	0.00	57029	BB	1.117	
50	33.02	0.00	110289	BB	2.160	
51	33.73	0.00	141613	BB	2.774	
52	34.06	0.00	363964	BB	7.129	

Result File : /DATA/RESULT/EB04994.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 0220 11Jun1994  
 Instrument : HPFB  
 Column/Amt Inj : RTX-5 / 2uL  
 Scaling for Chromatogram (-1 - Autoscale)

Minimum mv: D

Maximum mv: D



Result File = .DATA/RESULT/EF09138.RES  
 Sample Name = Q1453125  
 Sample Comment = BS  
 Injection Time = 0220 1130m1994  
 Instrument = HPEF  
 Column/Amt Inj = RTX200 / 2ul

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 1.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time A 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method = /DATA/METHOD/EF/HERB15.MTH  
 Sequence = /DATA/SEQUENCE/EF/0610.SEG  
 Subseq/Sample = 1/ 21

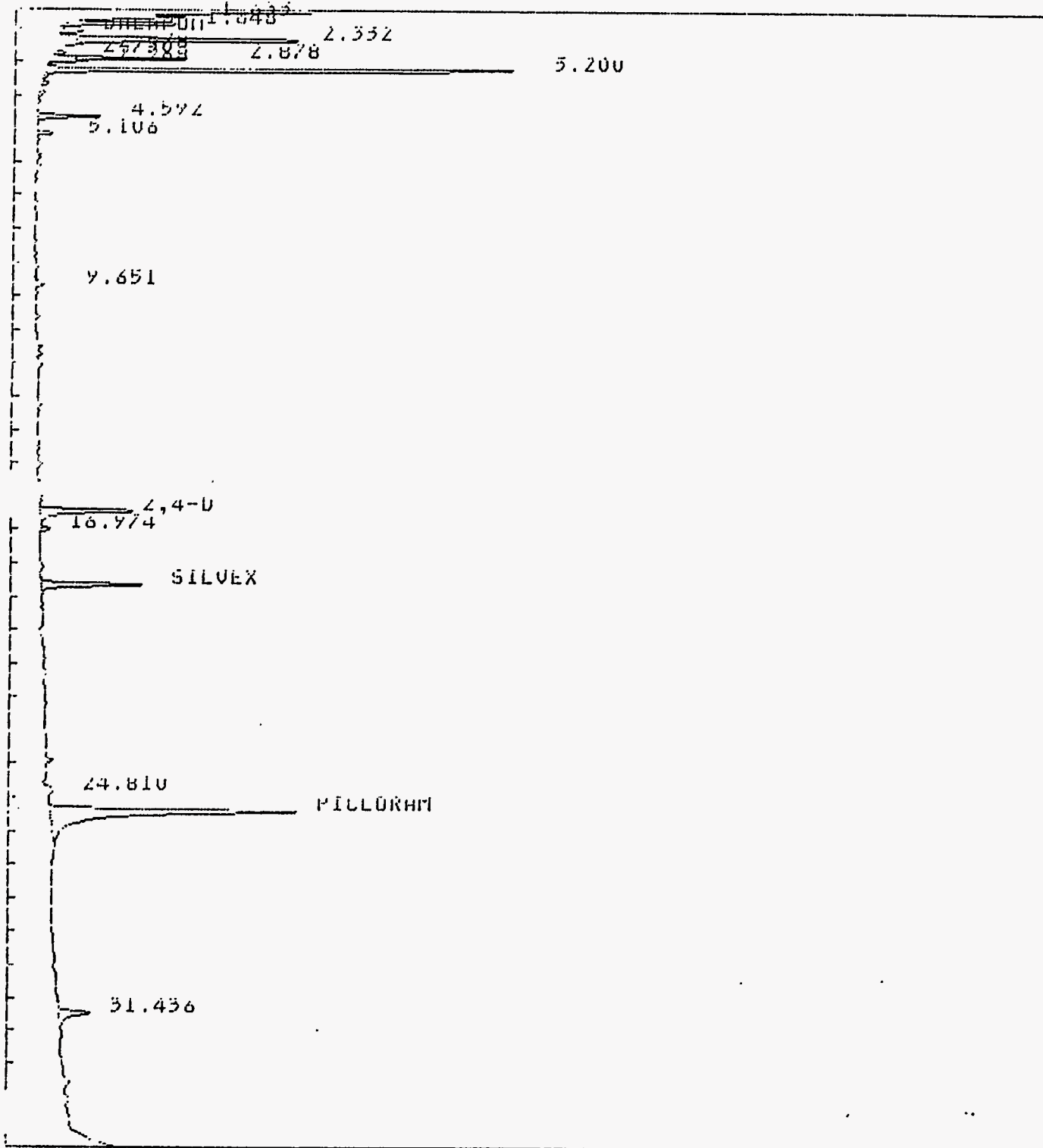
PK#	Ret	RT	Exp	Area	Code	PPB	Name
1	1.13	0.00		3619745	BS	70.897	
2	1.63	0.00		281920	BT	5.522	
3	1.85	0.00		648007	PT	12.704	
4	2.08	2.16		149118	PT	151.221	<del>DALEPOT</del> (COM 6/13/94)
5	2.33	0.00		1956064	PT	38.312	
6	2.58	0.00		6150	PT	.120	
7	2.75	0.00		57067	PT	1.118	
8	2.88	0.00		597674	PT	11.706	
9	2.97	0.00		21648	PT	.424	
10	3.20	0.00		1283254	HS	25.134	
11	4.59	0.00		366118	BB	7.171	
12	5.11	0.00		80417	BB	1.575	
13	9.65	0.00		49743	BB	.974	
14	16.42	10.55		795400	BB	423.206	2,4-D ✓
15	16.97	0.00		53725	BB	1.052	
16	18.02	18.75		758796	BB	73.565	SILVEX ✓
17	24.81	0.00		91345	BB	1.789	
18	25.37	#25.48		3204310	BB	341.872	PICLOKAM ✓
19	31.44	0.00		364439	BB	2.138	

Result File : /DATA/RESULT/EF05138.RES  
Sample Name : Q1455125  
Sample Comment : B5  
Injection Time : 0220 11Jun1994  
Instrument : HP11  
Column/Inj : RIA200 / 2uL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: 0

Maximum mv: 0



Result File : /DATA/RESULT/EB04995.RES  
 Sample Name : 01453125  
 Sample Comment : BS  
 Injection Time : 0310 11Jun1994  
 Instrument : HP88  
 Column/Amt Inj : RTX-5 / 2uL

HP58701 Instrument Method

Initial Temp	100.0	Equilibration time	5.0
Initial Time	2.0	Oven Rate	3.5
Final Time	6.0	Rate A	50.0
Final time A	5.0	Rate B	0.0
Final Time B	0.0	Final Temp	215.0
Injector Temp A	215.0	Final Temp A	260.0
Injector Temp B	215.0	Final Temp B	0.0
Detector Temp A	300.0	Detector Temp B	300.0

Calib Method : /DATA/METHOD/EB/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EB/0310.SEG  
 Subseq/sample : 1/ 22

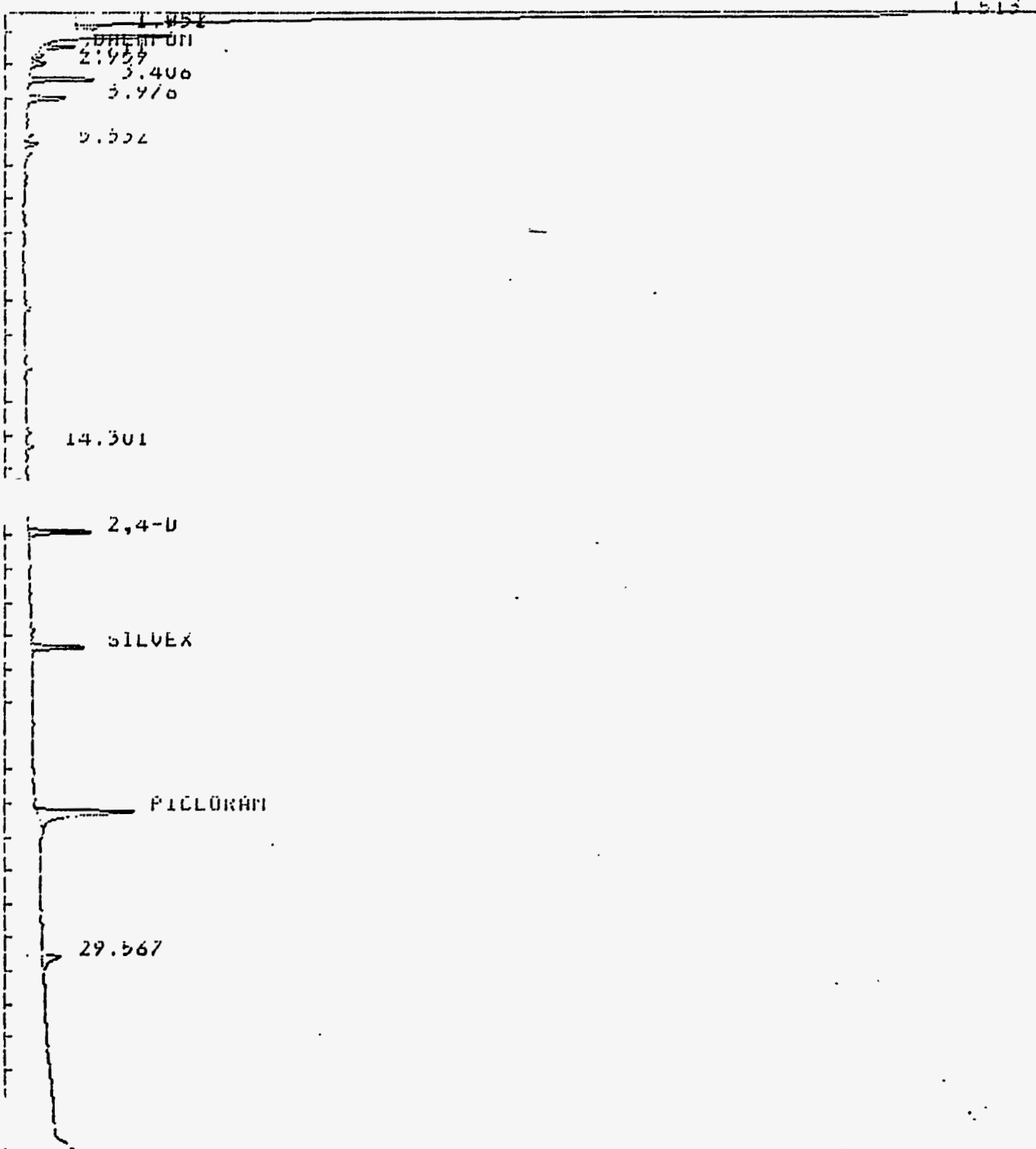
PK#	Act RT	Exp RT	Area	Code	PPB	Name
1	1.06	0.00	1326090	BS	25.973	
2	1.24	0.00	2672901	HS	52.352	
3	1.51	0.00	14994482	HS	293.685	
4	1.85	0.00	134596	HS	2.636	
5	1.93	0.00	116321	HS	2.278	
6	2.46	2.39	189288	BT	194.031	<del>DALAPON</del> KRM 6/13/94
7	2.71	0.00	52183	PT	1.022	
8	2.96	0.00	110509	PT	2.164	
9	3.41	0.00	204153	HS	3.999	
10	3.98	0.00	268207	BS	5.253	
11	5.33	0.00	75793	BS	1.485	
12	14.30	0.00	50212	BS	.983	
13	16.86	16.93	494249	BS	427.596	2,4-D ✓
14	20.31	20.39	409625	BS	70.676	SILVEX ✓
15	25.23	#25.28	1059036	BS	314.180	PICLORAM ✓
16	29.57	0.00	267563	BS	5.241	

Result File : /DATA/RESULT/EB04995.RES  
Sample Name : Q1450125  
Sample Comment : BS  
Injection Time : 0510 11Jun1994  
Instrument : HPFB  
Column/Unit Inj : RTA-5 / ZUL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: 0

Maximum mv: 0



Result File : /DATA/RESULT/EF05179.RES  
 Sample Name : 01450126  
 Sample Comment : BSD  
 Injection Time : 0310 11Jun1994  
 Instrument : HPEF  
 Column/Amt Inj : RTX200 / 2uL

HP58901 Instrument Method

Initial Temp 100.0 Equilibration Time 5.0  
 Initial Time 2.0 Oven Rate 7.5 Final Temp 215.0  
 Final Time 0.0 Rate A 50.0 Final Temp A 260.0  
 Final Time B 5.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 215.0 Injector Temp B 215.0 Detector Temp A 300.0 Detector Temp B 300.0

Calib Method : /DATA/METHOD/EF/HERB15.MTH  
 Sequence : /DATA/SEQUENCE/EF/0310.SEQ  
 Subseq/Sample : 1/ 22

PK#	Ret RT	Exp RT	Area	Code	PPB	Name
1	1.12	0.00	4787669	BS	93.694	
2	1.85	0.00	521378	BT	10.212	
3	2.12	2.16	382810	PT	388.208	<del>SALATON</del> KRM 6/13/94
4	2.33	0.00	1836481	PT	39.970	
5	2.58	0.00	46358	PT	.908	
6	2.73	0.00	61970	PT	1.214	
7	2.88	0.00	252171	PT	4.939	
8	3.20	0.00	1045516	HS	20.478	
9	4.59	0.00	295325	BB	5.784	
10	5.11	0.00	54667	BB	1.071	
11	9.65	0.00	57435	BB	1.125	
12	16.42	16.55	772781	BB	411.171	2,4-D ✓
13	18.62	18.75	757885	BB	73.671	SILVEX ✓
14	23.89	0.00	352212	BB	6.898	
15	24.81	0.00	81617	BB	1.599	
16	25.38	#25.48	2988203	BB	312.955	PICLORAM ✓
17	31.44	0.00	257719	BB	5.048	

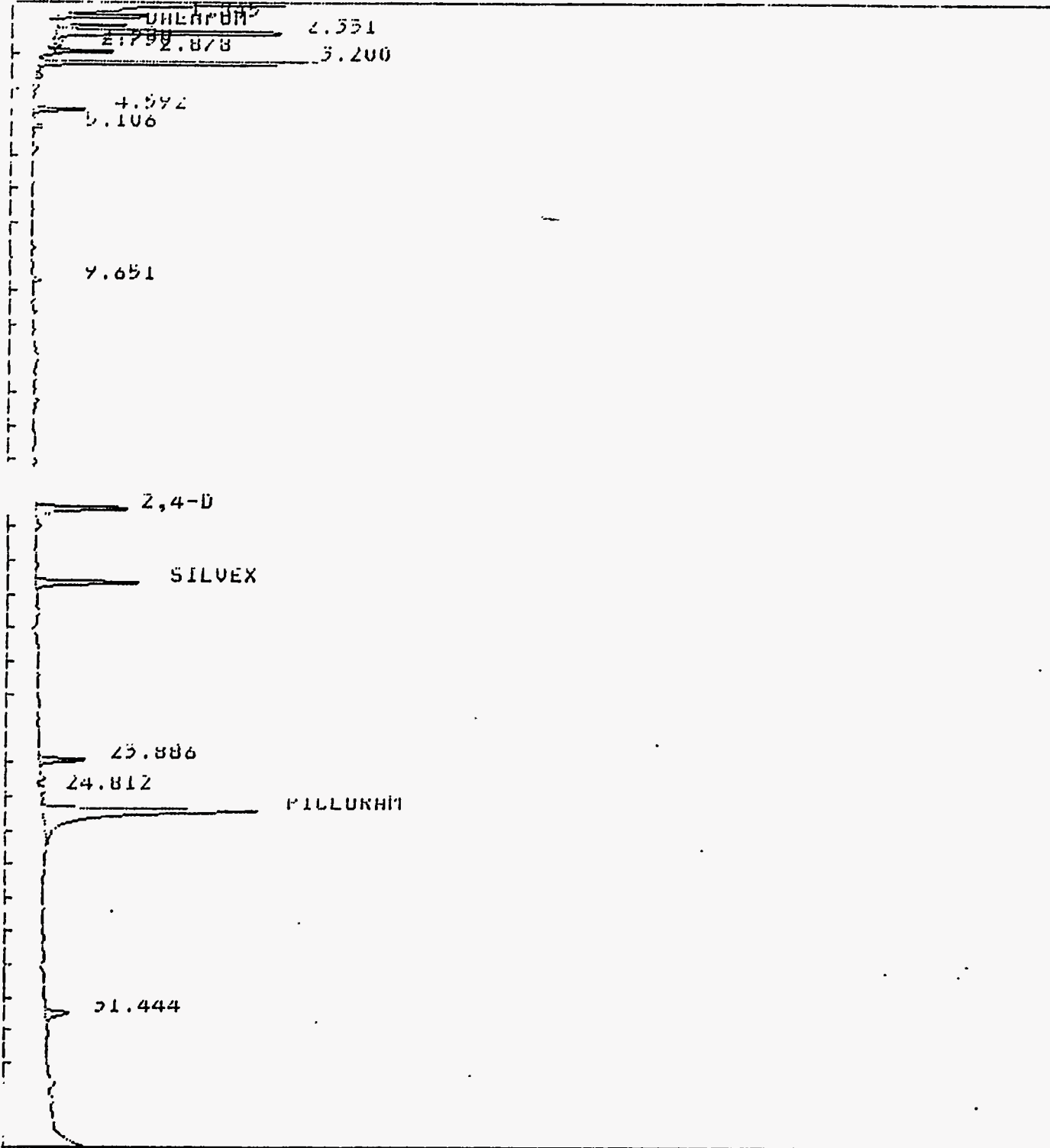


Result File : /DATA/RESULT/EF05139.RES  
Sample Name : Q1453126  
Sample Comment : B50  
Injection Time : 0510 11Jun1994  
Instrument : HPEF  
Column/Amt Inj : RTX200 / 2uL

Scaling for Chromatogram (-1 = Autoscale)

Minimum mv: 0

Maximum mv: 0



Ecoltek LSI

Result File : /DATA/RESULTS/ES04998.RES  
 Sample Name : 01455126  
 Sample Comment : 350  
 Injection Time : 0400 11Jun1994  
 Instrument : HP68B  
 Column/Inj : RTX-5 / 2uL

HP68B Instrument Method

Initial Temp	100.0	Equilibration Time	5.0
Initial Time	2.0	Open Rate	3.5
Final Time	0.0	Rate II	50.0
Final Time H	0.0	Rate B	0.0
Final Time B	0.0	Final Temp	215.0
Final Temp H	215.0	Final Temp H	200.0
Final Temp B	215.0	Final Temp B	0.0
Injector Temp H	215.0	Injector Temp B	215.0
Detector Temp H	300.0	Detector Temp B	300.0

Calib Method : /DATA/METHOD/EB HERB15.MIH  
 Sequence : /DATA/SEQUENCE/EB/0610.SLQ  
 Subseq/Sample : 1/ 25

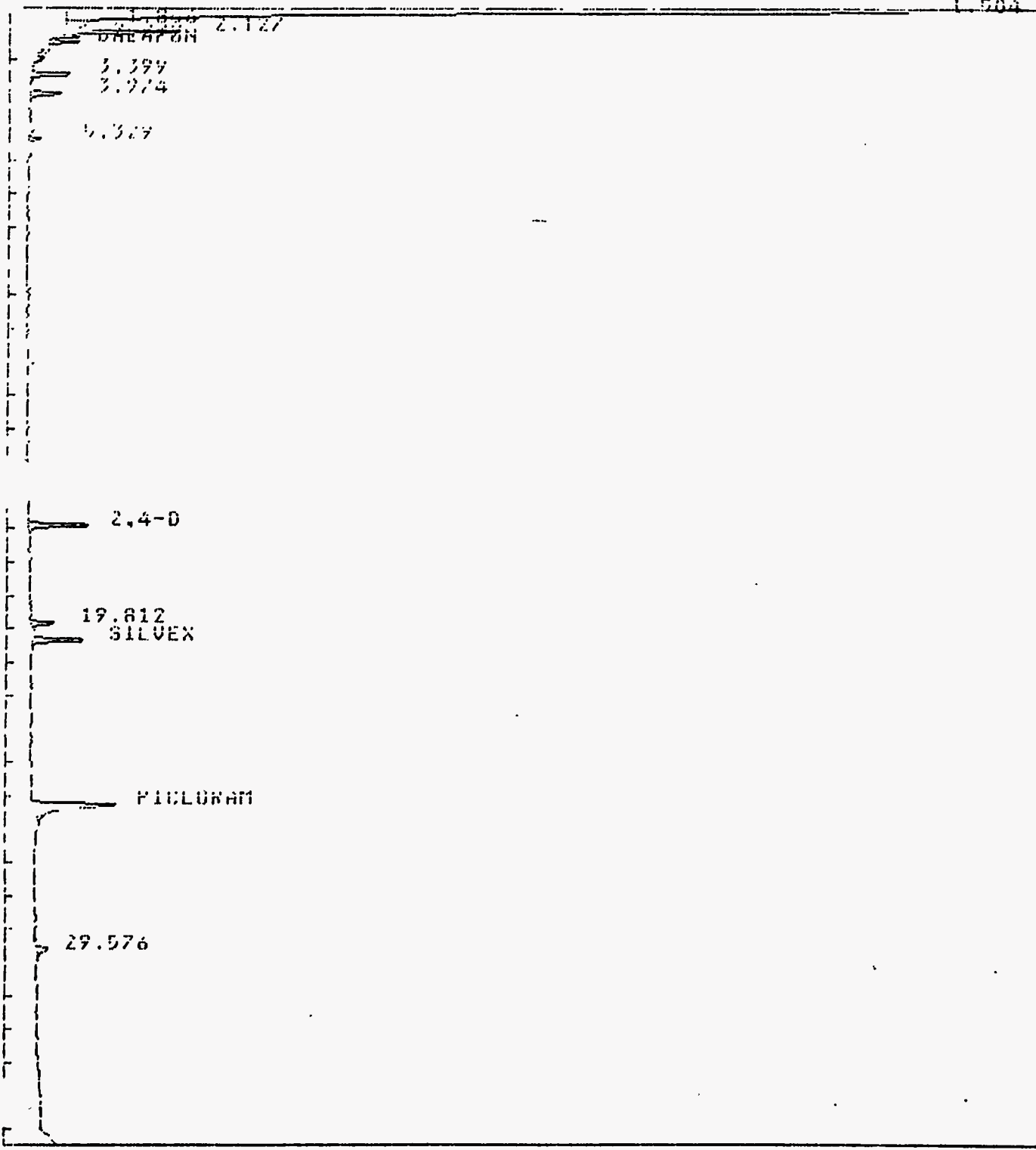
PK#	Ret RI	Exp RI	Area	Code	PPS	Name
1	1.06	0.00	1165855	BS	22.855	
2	1.25	0.00	2220584	HS	45.646	
3	1.50	0.00	14555492	HS	285.048	
4	1.85	0.00	264500	HS	5.178	
5	2.15	0.00	419885	HS	8.224	
6	2.30	0.00	81251	BT	1.591	
7	2.46	2.39	168447	PT	172.668	<del>1000</del> 1000 6/10/94
8	3.40	0.00	255989	BS	5.014	
9	3.97	0.00	210524	BB	4.119	
10	5.53	0.00	64567	BB	1.265	
11	16.86	16.93	484890	BS	419.505	2,4-D ✓
12	19.81	0.00	153084	BB	2.998	
13	20.50	20.39	393140	BB	67.831	SILVEX ✓
14	25.23	#25.28	940666	BS	279.064	PICLORAM ✓
15	29.58	0.00	124963	BB	2.448	

Result File : /DATA/RESULT/EBG4996.RES  
Sample Name : 01497128  
Sample Comment : RSD  
Injection Time : 0400 11Jun1974  
Instrument : HPFB  
Column/Amt Inj : RTX-5 / 2uL

Scaling for Chromatogram (-1 - Autoscale)

Minimum mo: 0

Maximum mo: 6



## GC-ECD Instrument Logsheet - Inst E

Pest/PCB \_\_\_\_\_ Herb  TPH \_\_\_\_\_ Nitroaromatics \_\_\_\_\_ Other \_\_\_\_\_

Date: 6/6/94  
 Analyst(s): KRM  
 Front Col. ID: RTX-5  
 Back Col ID: RTX-200  
 Front Col. Meth. File EF Herb 15  
 Back Col. Meth. File EB Herb 15

Inj/Det Temp (°C): 215/300  
 Herb GC Program (°C): 100(2)-3.5-215-50-260(5)  
 Nitro GC Program (°C): 140(3)-5-155(3)-6-225-60-270(5)  
 GC Program (°C): \_\_\_\_\_  
 ul Inj Front/Back: 2/2

Filename Front Inj	BTL #	Laboratory Sample ID	Client Sample ID	Df	Run Notes	Filename Back Inj	BTL #	Df	Laboratory Sample ID	Client Sample ID	Run Notes
EF	—	—	—	—		EB 04912	1		Hexane	Hexane	
EF 05056	2	Herb #3	HR66-4-023			EB 913	2		Herb #3	HR66-4-023	
EF 057	3	Q1453127	HBLK			EB 914	3		Q1453127	HBLK	
EF 058	4	Q1453128	HBLK			EB 915	4		Q1453128	HBLK	
EF 059	5	Q1452426	LB			EB 916	5		Q1452426	LB	
EF 060	6	3212101	22340			EB 917	6		3212101	22340	
EF 061	7	3212102	22335			EB 918	7		3212102	22335	
EF 062	8	3212103	22339			EB 919	8		3212103	22339	
EF 063	9	3212104	22336			EB 920	9		3212104	22336	
EF 064	10	Q1452125	BS			EB 921	10		Q1452125	BS	
EF 065	11	Q1452126	BSO			EB 922	11		Q1452126	BSO	
EF 066	12	Hexane	Hexane			EB 923	12		Hexane	Hexane	
EF 067	13	Herb #3	HR66-4-023			EB 924	13		Herb #3	HR66-4-023	
EF						EB					
EF						EB					
EF						EB					
EF						EB					
EF						EB					
EF						EB					
EF						EB					
EF						EB					
EF						EB					
EF						EB					

Signature/Date: KRM 6/6/94  
(with corrections)

Approved/Date: [Signature] 6/8/94

Surrogate Limits	Picloram	2,4,6-T
Water/Soil	Not yet established	Not yet established

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- NRE = Needs Reextraction
- NRIN = Needs Reinjection
- NDL = Needs Dilution
- ✓ = OK
- RE = Reextraction Analysis
- RIN = Reinjection Analysis
- DL = Dilution Analysis
- NA = Not Applicable

## GC-ECD Instrument Logsheet - Inst E

Pest/PCB \_\_\_\_\_ Herb  TPH \_\_\_\_\_ Nitroaromatics \_\_\_\_\_ Other \_\_\_\_\_

Date: 6/10/94  
 Analyst(s): KRM  
 Front Col. ID: RTX-5  
 Back Col ID: RTX-200  
 Front Col. Meth. File EF Herb 15  
 Back Col. Meth. File EB Herb 15

Inj/Det Temp (°C): 215/300  
 Herb GC Program (°C): 100(2)-3.5-215-50-260(5)  
 Nitro GC Program (°C): 140(3)-5-155(3)-6-225-60-270(5)  
 GC Program (°C): —  
 ul Inj Front/Back: 2/2

Filename Front Inj	BTL #	Laboratory Sample ID	Client Sample ID	Df	Run Notes	Filename Back Inj	BTL #	Df	Laboratory Sample ID	Client Sample ID	Run Notes
EF —	—	—	—	—	—	EB 04974	1		Herb #3	Herb #3	
EF 05118	2	HSPC #3	HSPC-4-024			EB 975	2		HSPC #3	HSPC-4-024	
EF 119	3	01460920	MBLK			EB 976	3		01460920	MBLK	
EF 120	4	01460921	MBLK			EB 977	4		01460921	MBLK	
EF 121	5	3205629	HERBICIDES CONC.1	50		EB 978	5	50	3205629	HERBICIDES CONC.1	
EF 127	6	3205630	HERBICIDES CONC.2	50		EB 979	6	50	3205630	HERBICIDES CONC.2	
EF 123	7	3205629	HERBICIDES CONC.1	10		EB 980	7	10	3205629	HERBICIDES CONC.1	
EF 124	8	3205630	HERBICIDES CONC.2	10		EB 981	8	10	3205630	HERBICIDES CONC.2	
EF 125	9	3205629	HERBICIDES CONC.1			EB 982	9		3205629	HERBICIDES CONC.1	
EF 126	10	3205630	HERBICIDES CONC.2			EB 983	10		3205630	HERBICIDES CONC.2	
EF 127	11	01460718	BS			EB 984	11		01460718	BS	
EF 128	12	01460719	BSD			EB 985	12		01460719	BSD	
EF 129	13	Herb #3	HSPC-4-023			EB 986	13		Herb #3	HSPC-4-023	
EF 130	14	01453127	MBLK			EB 987	14		01453127	MBLK	
EF 131	15	01453128	MBLK			EB 988	15		01453128	MBLK	
EF 132	16	3214004	1661B-61			EB 989	16		3214004	1661B-61	
EF 133	17	3214009	1661B-135			EB 990	17		3214009	1661B-135	
EF 134	18	3214004 MS	1661B-61			EB 991	18		3214004 MS	1661B-61	
EF 135	19	3214004 MSD	1661B-61			EB 992	19		3214004 MSD	1661B-61	
EF 136	20	3214004 MS	1661B-135			EB 993	20		3214004 MS	1661B-135	
EF 137	21	3214004 MSD	1661B-135			EB 994	21		3214004 MSD	1661B-135	
EF 138	22	01453125	BS			EB 995	22		01453125	BS	
EF 139	23	01453126	BSD			EB 996	23		01453126	BSD	
EF 140	24	Herb #3	HSPC-4-023			EB 997	24		Herb #3	HSPC-4-023	

Signature/Date: KRM 6/10/94  
 (with corrections)

Approved/Date: [Signature] 6/13/94

Surrogate Limits	Picogram	2,4,5-T
Water/Soil	Not yet established	Not yet established

Comments: 50X dilution = 20ul diluted to 1000ul  
10X dilution = 100ul diluted to 1000ul

- Key:
- NRE = Needs Reextraction
  - NRIN = Needs Reinjection
  - NDL = Needs Dilution
  - ✓ = OK
  - RE = Reextraction Analysis
  - RIN = Reinjection Analysis
  - DL = Dilution Analysis
  - NA = Not Applicable

# TCLP Pesticide

LSDG: 32136

**CASE NARRATIVE FOR TCLP PESTICIDE ANALYSIS**  
**USING SW-846 METHOD 8080**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32136

**Analytical Summary**

Sixteen (16) soil samples were received on 5/17/94. Sample were analyzed using a Hewlett-Packard gas chromatograph equipped with an electron capture detector.

**Procedural Summary**

- Analysis - Chromatography was performed on a DB-608 and RTX-1701 column using a temperature program suitable for resolving the target analytes. Quantitation of sample concentrations were performed using a five point calibration. All appropriate control samples were analyzed with the sample batch.
- Scope and Limitations - The initial sample was approximately 200 mls of the leachate extract unless noted otherwise.

The samples were extracted with methylene chloride exchanged to hexane and brought to 10 ml final effective volume.

Practical Quantitation Limits (PQL) are based upon the lowest standard and then factored for the initial sample amount, final sample extract volume, any necessary dilution, and percent moisture (for solids).

**QA/QC Summary**

A method blank and leaching blank were extracted and analyzed with sample batch and found to be free of target analyte contamination.

Method QC, consisting of a blank spike and blank spike duplicate were batched. Accuracy and precision were within acceptable QC limits.

**CASE NARRATIVE FOR TCLP PESTICIDE ANALYSIS**  
**USING SW-846 METHOD 8080**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.


**Project ID:** LEFPC

**Batch ID:** 32136

**General Discussion**

No analytical problems were encountered.

  
GC Section Supervisor (designee)

  
Date



*Pesticide TCLP Analytical Results*  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: 3213655*  
*Matrix: Leachate*

*Client Sample ID: 1661B-67*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3213655*

*Client Sample ID: 1661B-67*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>84</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>93</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
**40 CFR 261, June 29, 1990**

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213656*  
*Matrix: Leachate*

*Client Sample ID: 1661B-94*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3213656*

*Client Sample ID: 1661B-94*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>83</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>83</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
 40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213657*  
*Matrix: Leachate*

*Client Sample ID: 1661B-104*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3213657*

*Client Sample ID: 1661B-104*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>82</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>91</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213658*  
*Matrix: Leachate*

*Client Sample ID: 1661B-109*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*



*Pesticide Surrogate Results*

*Lab Sample ID: 3213658*

*Client Sample ID: 1661B-109*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>83</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>91</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



**Pesticide TCLP Analytical Results**  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213659*  
*Matrix: Leachate*

*Client Sample ID: 1661B-114*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3213659*

*Client Sample ID: 1661B-114*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>83</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>90</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213660*  
*Matrix: Leachate*

*Client Sample ID: 1661B-119*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3213660</i>		<i>Client Sample ID: 1661B-119</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>66</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>73</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213661  
Matrix: Leachate

Client Sample ID: 1661B-124  
Client Reference No.: LEFPC  
Date of TCLP Extraction: 6/1/94  
Date Leached: 5/25/94  
Date Received: 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit  
MCL = Maximum Contaminant Level

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3213661</i>		<i>Client Sample ID: 1661B-124</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>82</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>92</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213662*  
*Matrix: Leachate*

*Client Sample ID: 1661B-129*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3213662</i>		<i>Client Sample ID: 1661B-129</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>73</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>79</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*



*Pesticide Surrogate Results*

*Lab Sample ID: 3213664*

*Client Sample ID: 1661B-143*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>81</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>95</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
 40 CFR 261, June 29, 1990

Client Sample ID: 1661B-151

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

Lab Sample ID: 3213665

Date of TCLP Extraction: 6/1/94

Matrix: Leachate

Date Leached: 5/25/94

Date Received: 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.00250	0.4	
76448	Hepiachlor	1	6/26/94	BQL	0.00250	0.008	
1024573	Hepiachlor Epoxide	1	6/26/94	BQL	0.00250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

PQL = Practical Quantitation Limit  
 BQL = Below Quantitation Limit  
 MCL = Maximum Contaminant Level

*Pesticide Surrogate Results*

*Lab Sample ID: 3213665*

*Client Sample ID: 1661B-151*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>81</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>76</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
 40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.  
 Lab Sample ID: 3213666  
 Matrix: Leachate  
 Client Reference No.: LEFPC  
 Date of TCLP Extraction: 6/1/94

Date Leached: 5/25/94  
 Date Received: 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.00250	0.4	
76448	Hepachlor	1	6/26/94	BQL	0.00250	0.008	
1024573	Hepachlor Epoxide	1	6/26/94	BQL	0.00250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

PQL = Practical Quantitation Limit  
 BQL = Below Quantitation Limit  
 MCL = Maximum Contaminant Level

*Pesticide Surrogate Results*

*Lab Sample ID: 3213666*

*Client Sample ID: 1661B-159*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>66</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>96</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
 40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.  
 Lab Sample ID: 3213667  
 Matrix: Leachate

Client Sample ID: 1661B-168  
 Client Reference No.: LEFPC  
 Date of TCLP Extraction: 6/1/94  
 Date Leached: 5/25/94  
 Date Received: 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

PQL = Practical Quantitation Limit  
 BQL = Below Quantitation Limit  
 MCL = Maximum Contaminant Level

*Pesticide Surrogate Results*

*Lab Sample ID: 3213667*

*Client Sample ID: 1661B-168*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>82</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>96</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
 40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.  
 Lab Sample ID: 3213668  
 Matrix: Leachate  
 Client Reference No.: LEFPC  
 Client Sample ID: 1661B-175

Date of TCLP Extraction: 6/1/94  
 Date Leached: 5/25/94  
 Date Received: 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.00250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.00250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.00250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

PQL = Practical Quantitation Limit  
 BQL = Below Quantitation Limit  
 MCL = Maximum Contaminant Level



*Pesticide Surrogate Results*

*Lab Sample ID: 3213668*

*Client Sample ID: 1661B-175*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>86</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>102</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services, Inc.  
Lab Sample ID: 3213669  
Matrix: Leachate

Client Sample ID: 1661B-184  
Client Reference No.: LEFPC  
Date of TCLP Extraction: 6/1/94  
Date Leached: 5/25/94  
Date Received: 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit  
MCL = Maximum Contaminant Level

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3213669</i>		<i>Client Sample ID: 1661B-184</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>89</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>107</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: 3213670*  
*Matrix: Leachate*

*Client Sample ID: 1661B-192*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3213670*

*Client Sample ID: 1661B-192*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>92</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>109</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
**40 CFR 261, June 29, 1990**

**Client:** Nuclear Fuel Services, Inc.  
**Lab Sample ID:** 3213671  
**Matrix:** Leachate

**Client Sample ID:** 1661B-200  
**Client Reference No.:** LEFPC  
**Date of TCLP Extraction:** 6/1/94  
**Date Leached:** 5/25/94  
**Date Received:** 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

**PQL = Practical Quantitation Limit**  
**BQL = Below Quantitation Limit**  
**MCL = Maximum Contaminant Level**



**Pesticide Surrogate Results**

Lab Sample ID: 3213671

Client Sample ID: 1661B-200

Surrogate Compound	Percent Recovery	QC Limits	Note
Tetrachloro-m-xylene	93	60-150	
Decachlorobiphenyl	108	60-150	

QC Limits are based upon CLP OLM01.8 SOW

\*\*\* = Surrogate recovery outside QC limits

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.

*Pesticide TCLP Analytical Results*  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: Q1460111*  
*Matrix: Water*

*Client Sample ID: Method Blank*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: NA*  
*Date Received: NA*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.0000500	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.0000500	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.0000500	0.008	
72208	Endrin	1	6/26/94	BQL	0.000100	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.000500	10	
57749	Chlordane	1	6/26/94	BQL	0.00100	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.00500	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*



*Pesticide Surrogate Results*

*Lab Sample ID: Q1460111*

*Client Sample ID: Method Blank*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>92</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>102</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: Q1452529*  
*Matrix: Leachate*

*Client Sample ID: PBLKL1*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: NA*

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: Q1452529*

*Client Sample ID: PBLKL1*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>93</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>80</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services, Inc.*  
*Lab Sample ID: Q1452530*  
*Matrix: Leachate*

*Client Sample ID: PBLKL2*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: 5/25/94*  
*Date Received: NA*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/26/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/26/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/26/94	BQL	0.000250	0.008	
72208	Endrin	1	6/26/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/26/94	BQL	0.00250	10	
57749	Chlordane	1	6/26/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/26/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: Q1452530*

*Client Sample ID: PBLKL2*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>92</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>105</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP QC Data**  
*SW-846, Method 8080*

*Client: Nuclear Fuel Service, Inc.*  
*Lab Sample ID: Q1460113/Q1460114*  
*Matrix: Water*  
*Dilution: 1*

*Client Sample ID: BLANK SPIKES*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 6/1/94*  
*Date Leached: NA*  
*Date of Analysis: 6/26/94*  
*Date Received: NA*

<i>Compound</i>	<i>Sample Concentration</i> <i>µg/l</i>	<i>BS Spike Amount</i> <i>µg/l</i>	<i>BS Concentration</i> <i>µg/l</i>	<i>Blank Spike Spike % Recovery</i>	<i>BSD Spike Amount</i> <i>µg/l</i>	<i>BSD Concentration</i> <i>µg/l</i>	<i>Blank Spike Duplicate % Recovery</i>	<i>QC Limits *</i>	<i>RPD</i>
<i>Gamma-BHC</i>	<i>0</i>	<i>0.250</i>	<i>0.265</i>	<i>106</i>	<i>0.250</i>	<i>0.276</i>	<i>110</i>	<i>32-127</i>	<i>4.2</i>
<i>Heptachlor</i>	<i>0</i>	<i>0.250</i>	<i>0.226</i>	<i>90</i>	<i>0.250</i>	<i>0.243</i>	<i>97</i>	<i>34-111</i>	<i>7.2</i>
<i>Endrin</i>	<i>0</i>	<i>0.500</i>	<i>0.553</i>	<i>111</i>	<i>0.500</i>	<i>0.536</i>	<i>107</i>	<i>30-147</i>	<i>3.2</i>
<i>Methoxychlor</i>	<i>0</i>	<i>2.50</i>	<i>2.75</i>	<i>110</i>	<i>2.50</i>	<i>2.89</i>	<i>115</i>	<i>NA</i>	<i>4.9</i>
<i>Chlordane</i>	<i>0</i>	<i>2.50</i>	<i>2.62</i>	<i>105</i>	<i>2.50</i>	<i>2.71</i>	<i>108</i>	<i>45-119</i>	<i>3.5</i>
<i>Toxaphene</i>	<i>0</i>	<i>25.0</i>	<i>18.0</i>	<i>72</i>	<i>25.0</i>	<i>19.5</i>	<i>78</i>	<i>41-126</i>	<i>8.1</i>

\* These limits are based upon SW-846, Method 8080, Table 3.  
NA= Not Applicable, none specified in the method.

**CASE NARRATIVE FOR TCLP PESTICIDE ANALYSIS**  
**USING SW-846 METHOD 8080**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32140

**Analytical Summary**

Two (2) soil samples were received on 5/17/94. Sample were analyzed using a Hewlett-Packard gas chromatograph equipped with an electron capture detector.

**Procedural Summary**

- Analysis - Chromatography was performed on a RTX-1701 and DB608 column using a temperature program suitable for resolving the target analytes. Quantitation of sample concentrations were performed using a five point calibration. All appropriate control samples were analyzed with the sample batch.
- Scope and Limitations - The initial sample was approximately 200 mls of the leachate extract unless noted otherwise.

The samples were extracted with methylene chloride exchanged to hexane and brought to 10 ml final effective volume.

Practical Quantitation Limits (PQL) are based upon the lowest standard and then factored for the initial sample amount, final sample extract volume, any necessary dilution, and percent moisture (for solids).

**QA/QC Summary**

A method blank and leaching blank were extracted and analyzed with sample batch and found to be free of target analyte contamination.

Two sets of method QC are included in the package. A matrix spike and matrix spike duplicate were extracted for each sample. All spiking compounds were within acceptable QC limits except for gamma-BHC, heptachlor, and endrin which were above recovery limits due to interferences by chlordane and toxaphene.

**CASE NARRATIVE FOR TCLP PESTICIDE ANALYSIS**  
**USING SW-846 METHOD 8080**  
**FOLLOWING TCLP EXTRACTION**

**Client:** Nuclear Fuel Services, Inc.

**Project ID:** LEFPC

**Batch ID:** 32140

**General Discussion**

No analytical problems were encountered.

Scott Selman for ET.  
GC Section Supervisor (designee)

6/30/94  
Date



**Pesticide TCLP Analytical Results**  
**40 CFR 261, June 29, 1990**

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: 3214004*  
*Matrix: Leachate*

*Client Sample ID: 1661B-61*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 5/31/94*  
*Date Leached: 5/24/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/16/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/16/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/16/94	BQL	0.000250	0.008	
72208	Endrin	1	6/16/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/16/94	BQL	0.00250	10	
57749	Chlordane	1	6/16/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/16/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3214004</i>		<i>Client Sample ID: 1661B-61</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>45</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>76</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

*Pesticide TCLP Analytical Results*  
40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: 3214009*  
*Matrix: Leachate*

*Client Sample ID: 1661B-135*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 5/31/94*  
*Date Leached: 5/24/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/16/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/16/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/16/94	BQL	0.000250	0.008	
72208	Endrin	1	6/16/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/16/94	BQL	0.00250	10	
57749	Chlordane	1	6/16/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/16/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3214009</i>		<i>Client Sample ID: 1661B-135</i>	
<i>Surrogate Compound</i>	<i>Percents Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>46</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>109</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

**Pesticide TCLP Analytical Results**  
40 CFR 261, June 29, 1990

Client: Nuclear Fuel Services Inc.  
Lab Sample ID: Q1453111  
Matrix: Water

Client Sample ID: PBLK  
Client Reference No.: LEFPC  
Date of TCLP Extraction: NA  
Date Leached: 5/24/94  
Date Received: NA

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/14/94	BQL	0.0000500	0.4	
76448	Heptachlor	1	6/14/94	BQL	0.0000500	0.008	
1024573	Heptachlor Epoxide	1	6/14/94	BQL	0.0000500	0.008	
72208	Endrin	1	6/14/94	BQL	0.000100	0.02	
72435	Methoxychlor	1	6/14/94	BQL	0.000500	10	
57749	Chlordane	1	6/14/94	BQL	0.00100	0.03	
8001352	Toxaphene	1	6/14/94	BQL	0.00500	0.5	

PQL = Practical Quantitation Limit  
BQL = Below Quantitation Limit  
MCL = Maximum Contaminant Level

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: Q1453111</i>		<i>Client Sample ID: PBLK</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>49</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>64</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/DF06419.RES  
 Sample Name : Q1453111  
 Sample Comment : PELK 32140,32121  
 Injection Time : 1753 14Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

## HF5890A Instrument Method

Initial Temp	160.0	Equilibration Time	2.0
Initial Time	1.0	Oven Rate	5.0
Final Time	8.0	Rate A	0.0
Final Time A	0.0	Rate B	0.0
Final Time B	0.0	Final Temp	270.0
		Final Temp A	0.0
		Final Temp B	0.0
Injector Temp A	250.0	Injector Temp B	215.0
		Detector Temp A	325.0
		Detector Temp B	325.0

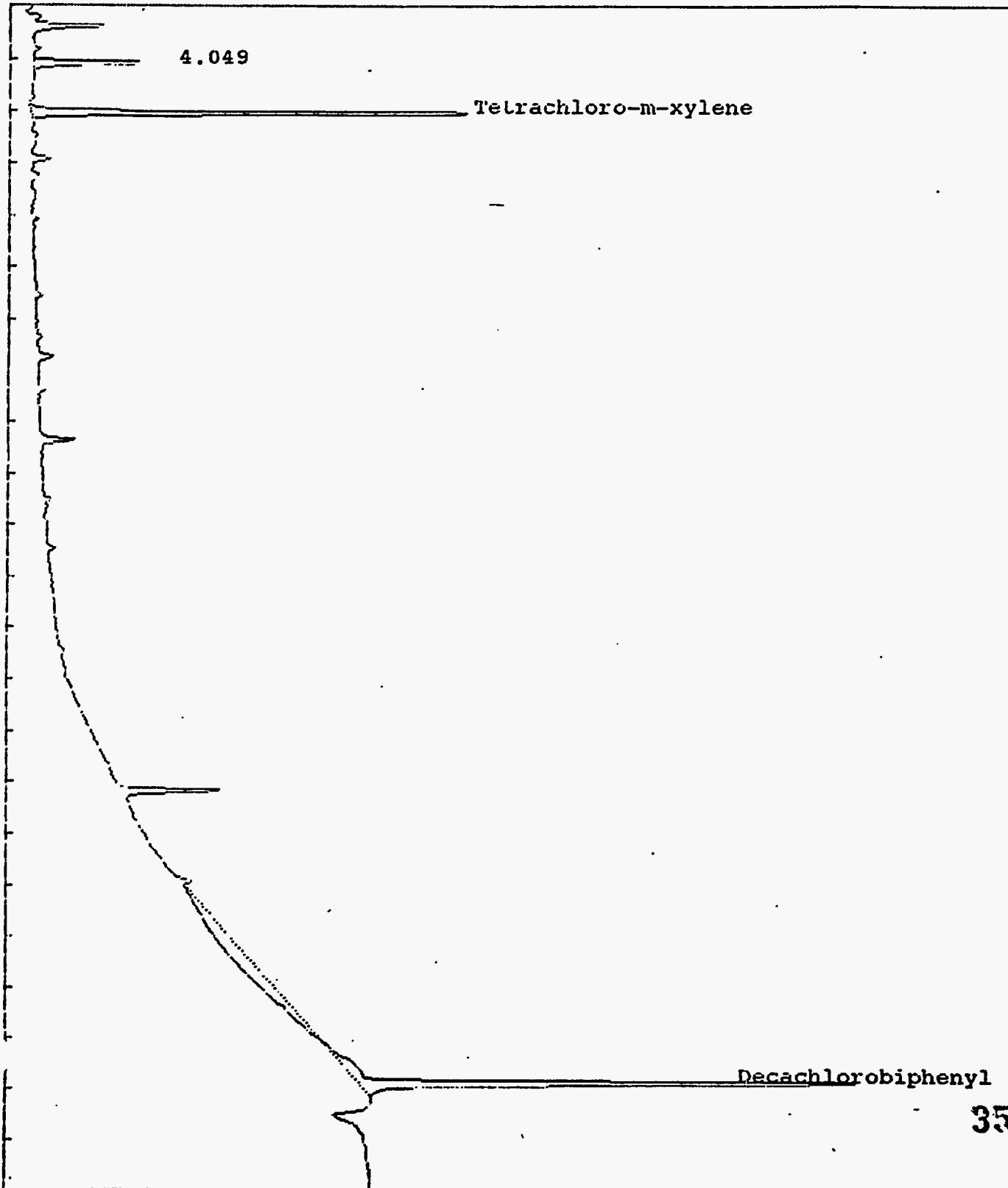
Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SEQ  
 Subseq/Sample : 1/ 6  
 160C(1)-5C/MIN-270(8MIN)

Pk#	AcL	RT	Exp	RT	Area	Code	UG/L	Name
1	4.05	0.00			68379	BB	3.932	
2	5.00	#4.96			273166	BB	9.717	Tetrachloro-m-xylene
3	23.89	#23.83			185565	BB	12.723	Decachlorobiphenyl

Result File : /DATA/RESULT/DF06419.RES  
Sample Name : Q1453111  
Sample Comment : PBLK 32140,32121  
Injection Time : 1753 14Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
Minimum mv: D            Maximum mv: D

1X

15X

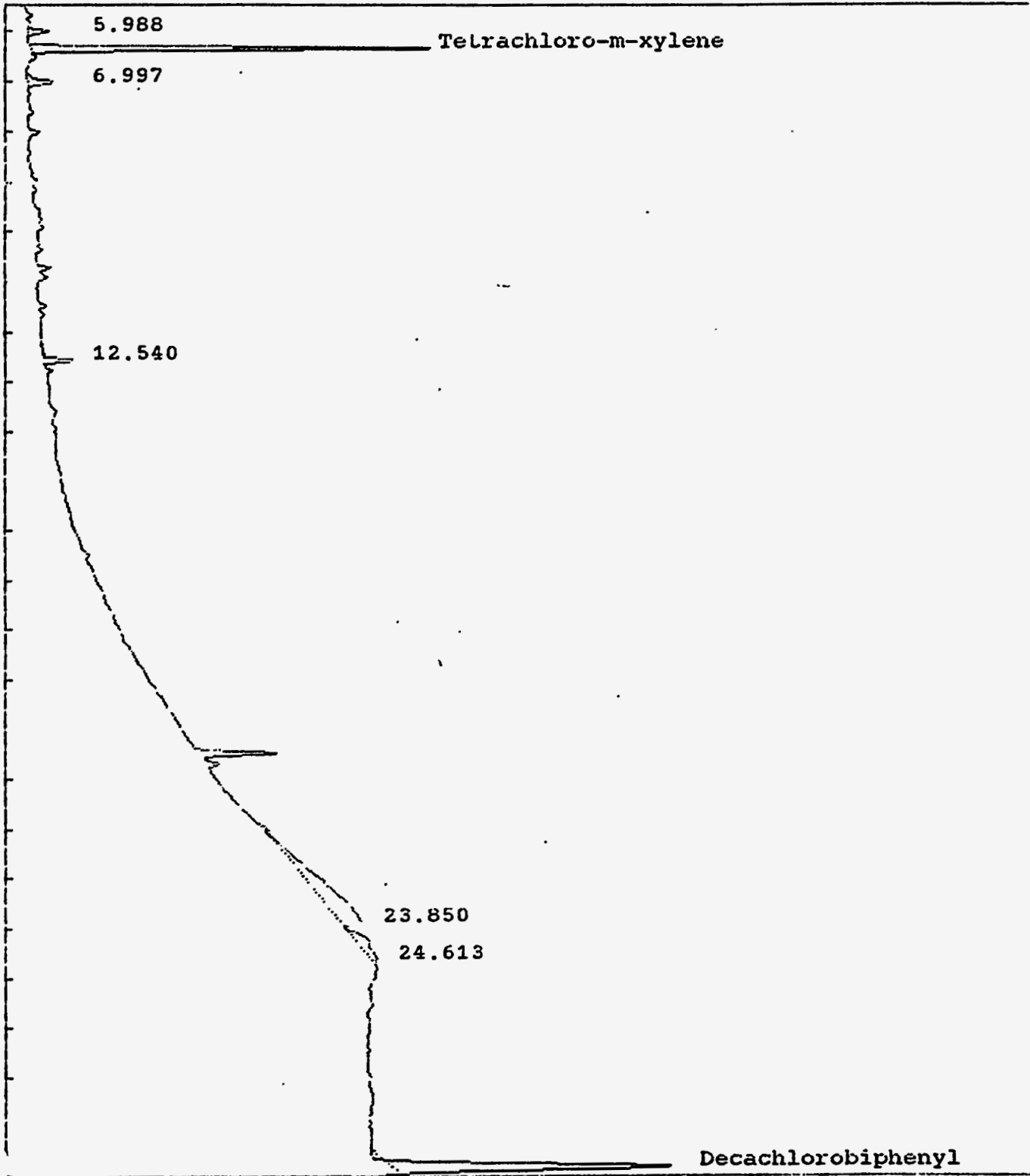




Result File : /DATA/RESULT/DB06419.RES  
Sample Name : Q1453111  
Sample Comment : PBLK 32140,32121  
Injection Time : 1753 14Jun1994  
Instrument : HPDB  
Column/Amt Inj : DB608 .53MM / 1.5ul  
Temp Program : 160C(1MIN)-5-270(8MIN)  
Calib Method : /DATA/METHOD/DB'PEST24.MTH  
Sequence : /DATA/SEQUENCE/DB'0614.SEQ  
Subseq/Sample : 1/ 6  
%Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.56	0.00	90218	BB	6.554	
2	3.85	0.00	60670	BB	4.407	
3	5.99	0.00	23713	BB	1.723	
4	6.32	#6.28	378706	BB	15.475	Tetrachloro-m-xylene
5	7.00	0.00	34457	BB	2.503	
6	12.54	0.00	29946	BB	2.175	
7	23.85	0.00	299263	BB	21.739	
8	24.61	0.00	74447	BB	5.408	
9	28.83	#28.72	489433	BB	19.325	Decachlorobiphenyl

Result File : /DATA/RESULT/DB06419.RES  
Sample Name : Q1453111  
Sample Comment : PBLK 32140,32121  
Injection Time : 1753 14Jun1994  
Instrument : HPDB  
Column/Amt Inj : DB608 .53MM / 1.5ul



**Pesticide TCLP Analytical Results**  
40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: Q1452426*  
*Matrix: Leachate*

*Client Sample ID: PBLKL1*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 5/31/94*  
*Date Leached: 5/24/94*  
*Date Received: NA*

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/14/94	BQL	0.000250	0.4	
76448	Heptachlor	1	6/14/94	BQL	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/14/94	BQL	0.000250	0.008	
72208	Endrin	1	6/14/94	BQL	0.000500	0.02	
72435	Methoxychlor	1	6/14/94	BQL	0.00250	10	
57749	Chlordane	1	6/14/94	BQL	0.00500	0.03	
8001352	Toxaphene	1	6/14/94	BQL	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: Q1452426</i>		<i>Client Sample ID: PBLKL1</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>58</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>54</i>	<i>60-150</i>	<i>***</i>

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/DF06421.RES  
 Sample Name : Q1452426  
 Sample Comment : LB 32140,32121  
 Injection Time : 1905 14Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

## HP5890A Instrument Method

Initial Temp	160.0	Equilibration Time	2.0
Initial Time	1.0	Oven Rate	5.0
Final Time	8.0	Rate A	0.0
Final Time A	0.0	Rate B	0.0
Final Time B	0.0	Final Temp	270.0
		Final Temp A	0.0
		Final Temp B	0.0
Injector Temp A	250.0	Injector Temp B	215.0
		Detector Temp A	325.0
		Detector Temp B	325.0

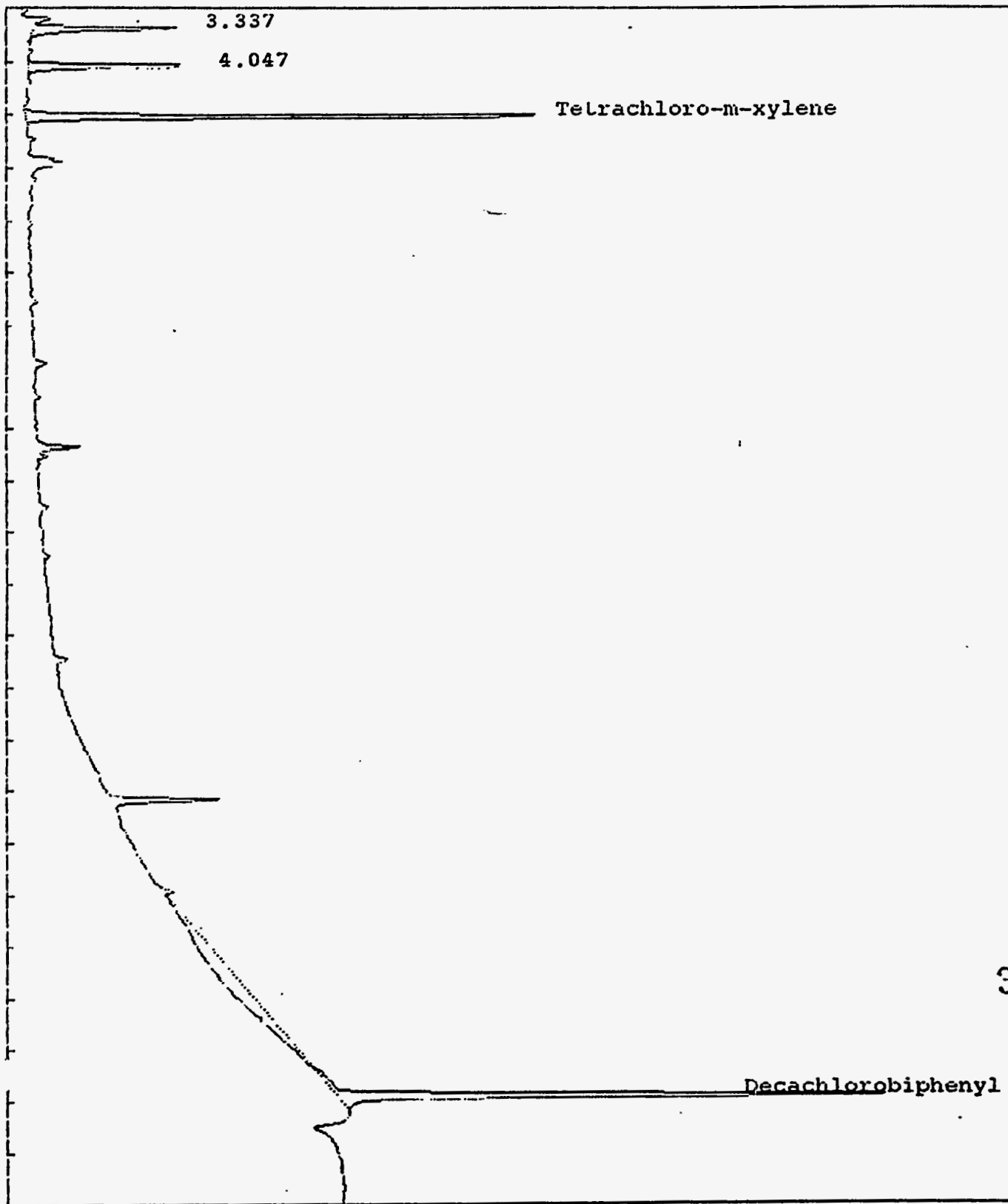
Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SEQ  
 Subseq/Sample : 1/ 8  
 160C(1)-5C/MIN-270(8MIN)

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.34	0.00	88753	BB	5.104	
2	4.05	0.00	97473	BB	5.605	
3	5.00	#4.96	323688	BB	11.514	Tetrachloro-m-xylene
4	23.88	#23.83	156542	BB	10.733	Decachlorobiphenyl

Result File : /DATA/RESULT/DF06421.RES  
Sample Name : Q1452426  
Sample Comment : LB 32140,32121  
Injection Time : 1905 14Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
Minimum mv: D            Maximum mv: D

1X

15X

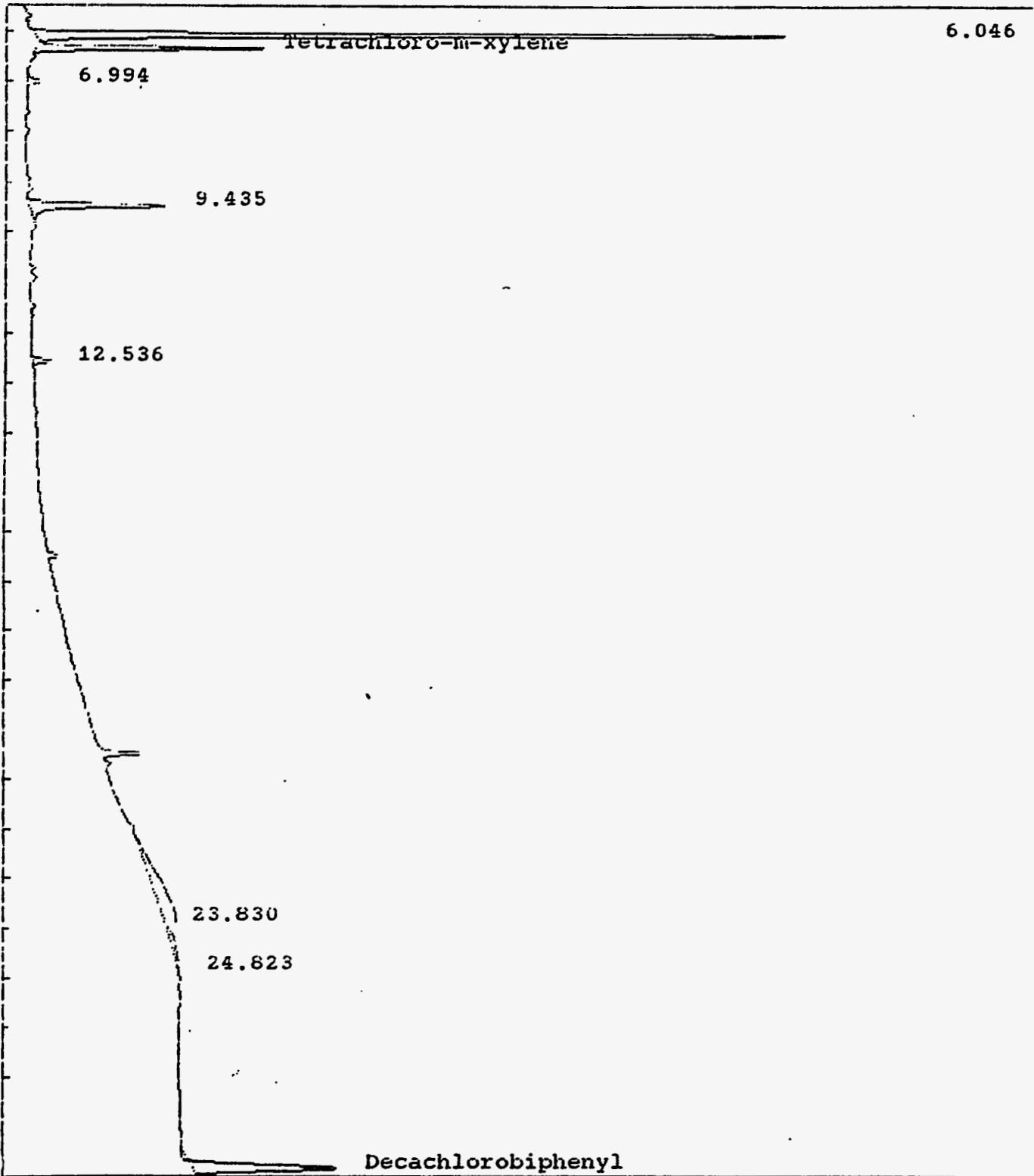


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Result File : /DATA/RESULT/DB06421.RES  
 Sample Name : Q1452426  
 Sample Comment : LB 32140,32121  
 Injection Time : 1905 14Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SEQ  
 Subseq/Sample : 1/ 8  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.56	0.00	121963	BB	8.860	
2	3.85	0.00	194363	BB	14.119	
3	6.05	0.00	1716994	BB	124.727	
4	6.32	#6.28	430374	BB	17.586	Tetrachloro-m-xylene
5	6.99	0.00	32743	BB	2.379	
6	9.44	0.00	376142	BB	27.324	
7	12.54	0.00	39030	BB	2.835	
8	23.83	0.00	386515	BB	28.077	
9	24.82	0.00	64446	BB	4.682	
10	28.81	#28.72	538232	BB	21.252	Decachlorobiphenyl

Result File : /DATA/RESULT/DB06421.RES  
Sample Name : Q1452426  
Sample Comment : LB 32140,32121  
Injection Time : 1905 14Jun1994  
Instrument : HPDB  
Column/Amt Inj : DB608 .53MM / 1.5ul





Result File : /DATA/RESULT/DF06474.RES  
 Sample Name : 3214004  
 Sample Comment : 1661B-61  
 Injection Time : 1313 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

## HP5890A Instrument Method

Initial Temp	160.0	Equilibration Time	2.0
Initial Time	1.0	Oven Rate	5.0
Final Time	8.0	Rate A	0.0
Final Time A	0.0	Rate B	0.0
Final Time B	0.0	Final Temp	270.0
		Final Temp A	0.0
		Final Temp B	0.0
Injector Temp A	250.0	Injector Temp B	215.0
		Detector Temp A	325.0
		Detector Temp B	325.0

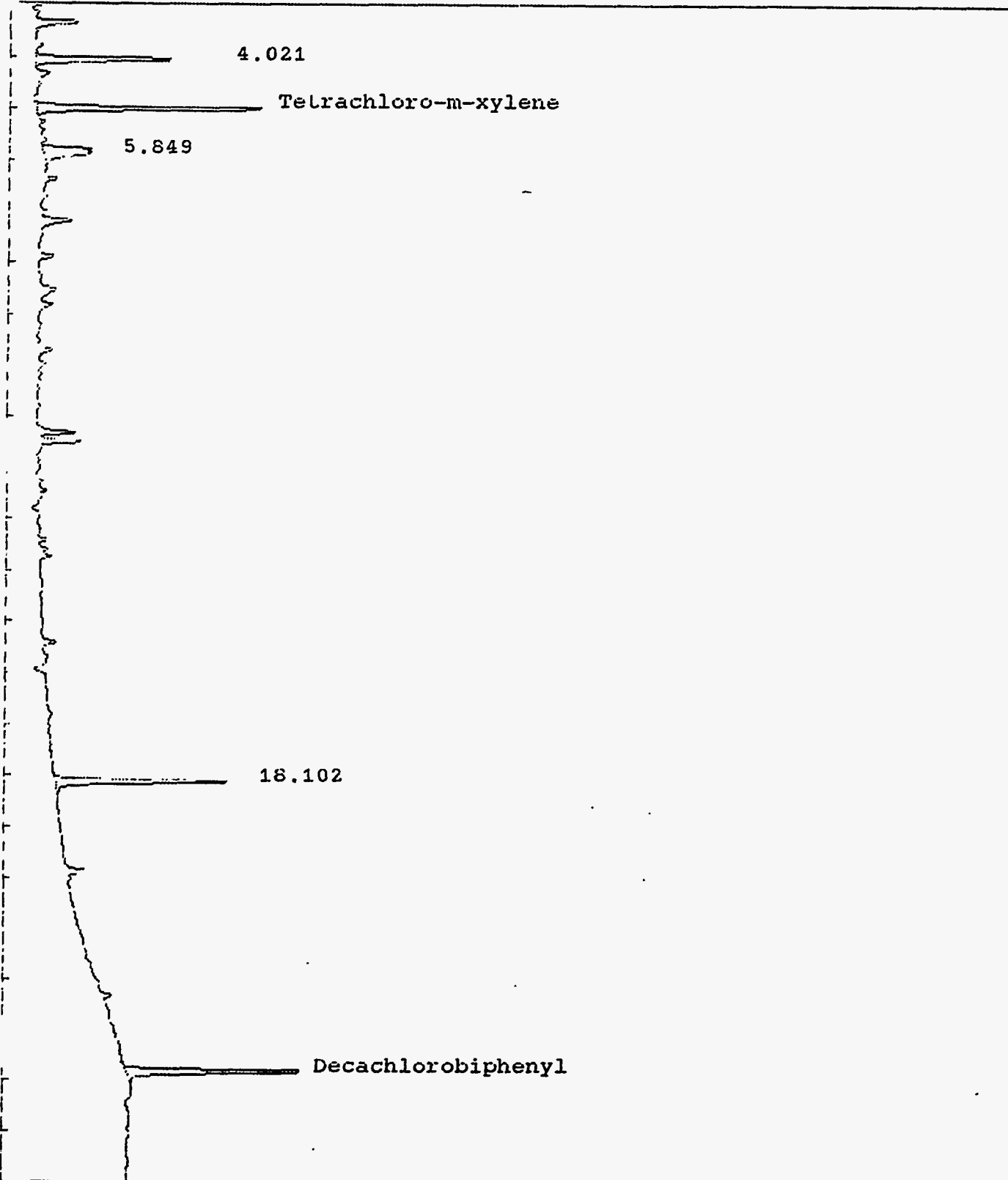
Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 7  
 160C(1)-5C/MIN-270(8MIN)

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	4.02	0.00	151398	BB	8.706	
2	4.97	#4.96	253358	BE	9.012	Tetrachloro-m-xylene
3	5.85	0.00	124286	BE	7.147	
4	18.10	0.00	203252	BE	11.688	
5	23.83	#23.83	220485	BE	15.118	Decachlorobiphenyl

Result File : /DATA/RESULT/DF06474.RES  
Sample Name : 3214004  
Sample Comment : 1661B-61  
Injection Time : 1313 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
Minimum mv: D           Maximum mv: D

1X

15X



Result File : /DATA/RESULT/DB06474.RES  
 Sample Name : 3214004  
 Sample Comment : 1661B-61  
 Injection Time : 1313 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 7  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.54	0.00	200100	BB	14.536	
2	3.83	0.00	72050	BB	5.234	
3	4.05	0.00	64598	BB	4.693	
4	4.38	0.00	31745	BB	2.306	
5	4.66	0.00	127171	BB	9.238	
6	5.74	0.00	89135	BB	6.475	
7	6.01	0.00	5915462	BS	429.713	
8	6.29	#6.28	302109	BB	12.345	Tetrachloro-m-xylene
9	6.95	0.00	41308	BB	3.001	
10	7.75	0.00	24806	BB	1.802	
11	8.00	0.00	99764	BB	7.247	
12	8.35	0.00	149221	BB	10.840	
13	9.14	0.00	126424	BB	9.184	
14	9.39	0.00	1568543	BB	113.943	
15	10.18	0.00	20780	BB	1.510	
16	10.55	0.00	38743	BB	2.814	
17	11.43	0.00	43565	BB	3.165	
18	11.71	0.00	21608	BB	1.570	
19	12.50	0.00	44564	BB	3.237	
20	13.55	0.00	25228	BB	1.833	
21	15.80	0.00	39436	BB	2.865	
22	16.42	0.00	38693	BB	2.811	
23	17.28	0.00	25995	BB	1.888	
24	17.77	0.00	21133	BB	1.535	
25	20.41	20.42	236665	BB	12.387	<del>Endosulfan Sulfate</del>
26	20.63	0.00	26269	BB	1.908	
27	23.82	0.00	95417	BB	6.931	
28	24.59	0.00	49791	BB	3.617	
29	28.74	#28.72	403193	BB	15.920	Decachlorobiphenyl

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*6/17/94*

Result File : /DATA/RESULT/DB06474.RES  
Sample Name : 3214004  
Sample Comment : 1661B-61  
Injection Time : 1313 16Jun1994  
Instrument : HPDE  
Column/Amt Inj : DB608 .53MM / 1.5ul

5.742	
Tetrachloro-m-xylene	6.013
6.954	
7.749	
7.999	
8.347	
9.139	
	9.390
10.177	
10.550	
11.425	
11.706	
12.499	
13.546	
15.796	
16.420	
17.284	
17.768	
Endosulfan Sulfate	
20.634	
23.818	
24.587	
Decachlorobiphenyl	

**Pesticide TCLP QC Data**  
**SW-846, Method 8080**

**Client:** Nuclear Fuel Service, Inc.  
**Lab Sample ID:** 3214004MS/3214004MSD  
**Matrix:** Leachate  
**Dilution:** 1

**Client Sample ID:** 1661B-61  
**Client Reference No.:** LEFPC  
**Date of TCLP Extraction:** 5/31/94  
**Date of TCLP Analysis:** 6/16/94  
**Date Leached:** 5/24/94  
**Date Received:** 5/17/94

Compound	Sample Concentration mg/l	MS Spike Amount mg/l	MS Concentration mg/l	Matrix Spike % Recovery	MSD Spike Amount mg/l	MSD Concentration mg/l	Matrix Spike Duplicate % Recovery	QC Limits *	RPD
Gamma-BHC	0	0.00125	0.00236	189	0.00125	0.00194	155	32-127	19.5
Heptachlor	0	0.00125	0.00236	189	0.00125	0.0022	176	34-111	7.0
Endrin	0	0.0025	0.00533	213	0.0025	0.00437	175	30-147	19.8
Methoxychlor	0	0.0125	0.0171	137	0.0125	0.0148	118	NA	14.4
Chlordane	0	0.0125	0.0152	122	0.0125	0.0134	107	45-119	12.6
Toxaphene	0	0.125	0.114	91	0.125	0.0886	71	41-126	25.1

\* These limits are based upon SW-846, Method 8080, Table 3.

NA= Not Applicable, none specified in the method.

*Pesticide TCLP Analytical Results*  
*40 CFR 261, June 29, 1990*

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: 3214004MS*  
*Matrix: Leachate*

*Client Sample ID: 1661B-61*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 5/31/94*  
*Date Leached: 5/24/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/16/94	0.00236	0.000250	0.4	
76448	Heptachlor	1	6/16/94	0.00236	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/16/94	BQL	0.000250	0.008	
72208	Endrin	1	6/16/94	0.00533	0.000500	0.02	
72435	Methoxychlor	1	6/16/94	0.0171	0.00250	10	
57749	Chlordane	1	6/16/94	0.0152	0.00500	0.03	
8001352	Toxaphene	1	6/16/94	0.114	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3214004MS*

*Client Sample ID: 1661B-61*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>52</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>87</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/DF06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-01  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDF  
 Column/Aml Inj : RTX1701 .53MM ; 1.5ul

HP5890A Instrument Method  
 160.0  
 Initial Temp 1.0 Oven Rate 5.0 Equilibration Time 2.0  
 Final Temp 6.0 Rate A 0.0 Final Temp 270.0  
 Final Temp A 0.0 Rate B 0.0 Final Temp A 0.0  
 Final Temp B 0.0 Rate C 0.0 Final Temp B 0.0  
 Injector Temp A 250.0 Injector Temp B 215.0 Detector Temp A 325.0 Detector Temp B 325.0

Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 8  
 160C(1)-5C/MIN-270(8MIN)

Pk#	ACL	RT	Exp	RT	Area	Code	UG/L	Name
1	3.32	0.00			125716	BB	7.229	
2	4.03	0.00			108979	BB	6.267	
3	4.97	#4.96			293599	BB	10.444	Tetrachloro-m-xylene
4	5.78	0.00			176278	BB	10.137	
5	8.82	8.81			549148	BB	47.261	gamma-BHC
6	9.38	9.36			718922	BB	47.173	HepLachlor
7	11.11	0.00			131467	BB	7.560	
8	11.26	0.00			122355	BB	7.036	
9	11.98	0.00			150389	BB	8.648	
10	12.48	12.54			64058	BB	3.943	Heptachlor-epoxide
11	12.69	0.00			119426	BB	6.868	
12	12.94	0.00			112884	BB	6.491	
13	13.27	0.00			89951	BB	5.173	
14	13.72	13.68			747791	BB	38.675	gamma-Chlordane
15	13.93	13.89			213754	BB	10.615	alpha-Chlordane
16	14.48	0.00			345050	BB	19.842	
17	14.68	14.66			111233	BB	6.489	Dieldrin
18	14.95	0.00			414975	BB	23.863	
19	15.19	0.00			289427	BB	16.644	
20	15.36	15.35			1467970	BB	106.660	Endrin
21	15.60	0.00			199210	BB	11.456	
22	15.79	0.00			359163	BB	20.654	
23	15.98	0.00			396975	BB	22.828	
24	16.21	0.00			203372	BB	11.695	
25	16.40	0.00			436670	BB	25.111	
26	16.54	0.00			221745	BB	12.752	
27	17.03	17.05			1208057	BB	115.223	4,4'-DDD
28	17.27	0.00			510918	BB	29.381	4,4'-DDD
29	17.50	17.55			295630	BB	28.832	
30	17.89	0.00			496593	BB	28.557	
31	18.10	0.00			283680	BB	16.313	
32	18.37	0.00			221819	BB	12.756	

SR  
6/17/94



Result File : /DATA/RESULT/DF06475.RES  
Sample Name : 3214004MS  
Sample Comment : 1661B-61  
Injection Time : 1349 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul

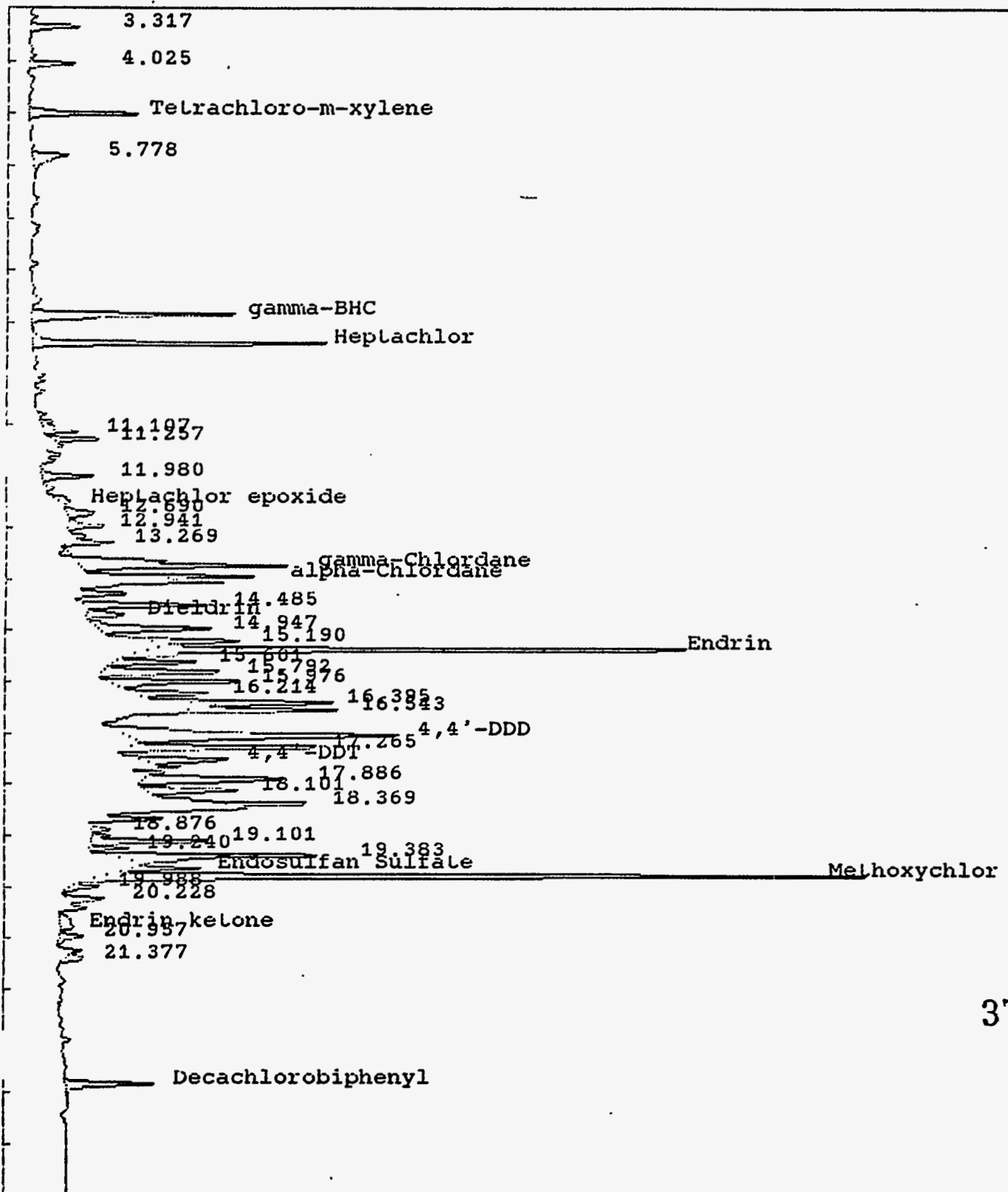
Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
33	18.88	0.00	56333	BB	3.239	
34	19.10	0.00	324088	BB	18.637	
35	19.24	0.00	78717	BB	4.527	
36	19.38	0.00	671864	BB	38.636	
37	19.64	19.65	127458	BB	11.209	<del>Endosulfan Sulfate</del>
38	19.79	19.78	1932368	BB	341.295	Methoxychlor —
39	19.99	0.00	78384	BB	4.507	
40	20.23	0.00	107975	BB	6.209	
41	20.78	20.85	95008	BB	11.846	<del>Endrin ketone</del>
42	20.96	0.00	74723	BB	4.297	
43	21.38	0.00	58179	BB	3.346	
44	23.84	#23.83	254773	BB	17.469	Decachlorobiphenyl

SOB  
6/17/94

Result File : /DATA/RESULT/DF06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
 Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
 Minimum mv: D Maximum mv: D

1X

15X



Alt File : /DATA/RESULT/DF06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'CHLOR0527B.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 8  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.97	#4.96	293537	BB	13.407	Tetrachloro-m-xylene
2	11.11	11.08	65281	FF	54.485	CHLORDANE
3	11.26	11.24	124877	FF	76.481	CHLORDANE
4	13.73	13.73	819880	FF	74.510	CHLORDANE
5	13.94	13.94	802023	FF	48.365	CHLORDANE
6	14.69	14.70	119269	FF	50.417	CHLORDANE
7	23.84	#23.83	253024	BB	22.128	Decachlorobiphenyl

} 304.258 ppb

Result File : /DATA/RESULT/DF06475.RFS  
File Name : 3214004MS  
Sample Comment : 1661B-61  
Injection Time : 1349 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

Tetrachloro-m-xylene

CHLOROBENZENE

CHLORDANE

CHLORDANE

Decachlorobiphenyl

Ult File : /DATA/RESULT/DF06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H9890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 8  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.97	#4.96	293537	BB	12.108	Tetrachloro-m-xylene
2	14.49	14.47	353471	FF	491.006	TOXAPH
3	14.95	14.93	361828	FF	415.533	TOXAPH
4	15.98	15.96	408068	FF	682.255	TOXAPH
5	17.27	17.25	496182	BB	372.819	TOXAPH
6	19.39	19.36	637200	FF	320.567	TOXAPH
7	23.84	#23.83	253024	BB	15.217	Decachlorobiphenyl

} 2282.180 ppb

Result File : /DATA/RESULT/DF06475.RES  
Sample Name : 3214004MS  
Sample Comment : 1661B-61  
Injection Time : 1349 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

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Tetrachloro-m-xylene

TOXAPH  
TOXAPH

TOXAPH

TOXAPH

TOXAPH

Decachlorobiphenyl

Result File : /DATA/RESULT/DB06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 8  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.17	0.00	40861	BB	2.968	
2	3.40	0.00	37860	BB	2.750	
3	3.54	0.00	121872	BB	8.853	
4	3.83	0.00	160991	BB	11.695	
5	4.04	0.00	120245	BB	8.735	
6	4.38	0.00	51353	BB	3.730	
7	4.66	0.00	170585	BB	12.392	
8	5.57	0.00	48003	BB	3.487	
9	5.74	0.00	65787	BB	4.779	
10	6.02	0.00	6068534	BS	440.833	
11	6.29	#6.28	327194	BB	13.370	Tetrachloro-m-xylene
12	6.48	0.00	22436	BB	1.630	
13	6.75	0.00	157277	BB	11.425	
14	7.27	0.00	22317	BB	1.621	
15	7.74	0.00	64753	BB	4.704	
16	8.00	0.00	634778	BB	46.112	
17	8.36	0.00	68397	BB	4.969	
18	8.88	0.00	54493	BB	3.959	
19	9.14	0.00	240696	BB	17.485	
20	9.39	0.00	2297669	BB	166.908	
21	10.04	10.02	790136	BB	30.244	gamma-BHC
22	10.62	0.00	344022	BB	24.991	
23	10.88	0.00	51655	BB	3.752	
24	11.19	11.17	1059207	BB	39.519	Heptachlor
25	11.43	0.00	156375	BB	11.359	
26	11.62	11.60	42556	BB	1.665	delta-BHC
27	12.36	12.30	61193	BB	2.303	Aldrin
28	12.60	0.00	27976	BB	2.032	
29	12.71	0.00	23103	BB	1.678	
30	12.85	0.00	39255	BB	2.852	
31	13.04	0.00	63543	BB	4.616	
32	13.15	0.00	134500	BB	9.770	
33	13.44	0.00	244034	BB	17.727	
34	13.67	0.00	21698	BB	1.576	
35	13.96	0.00	24900	BB	1.809	
36	14.15	0.00	69373	BB	5.039	
37	14.32	14.38	81773	BB	3.236	Heptachlor epoxide
38	14.47	0.00	64871	BB	4.712	
39	14.84	0.00	290790	BB	21.124	

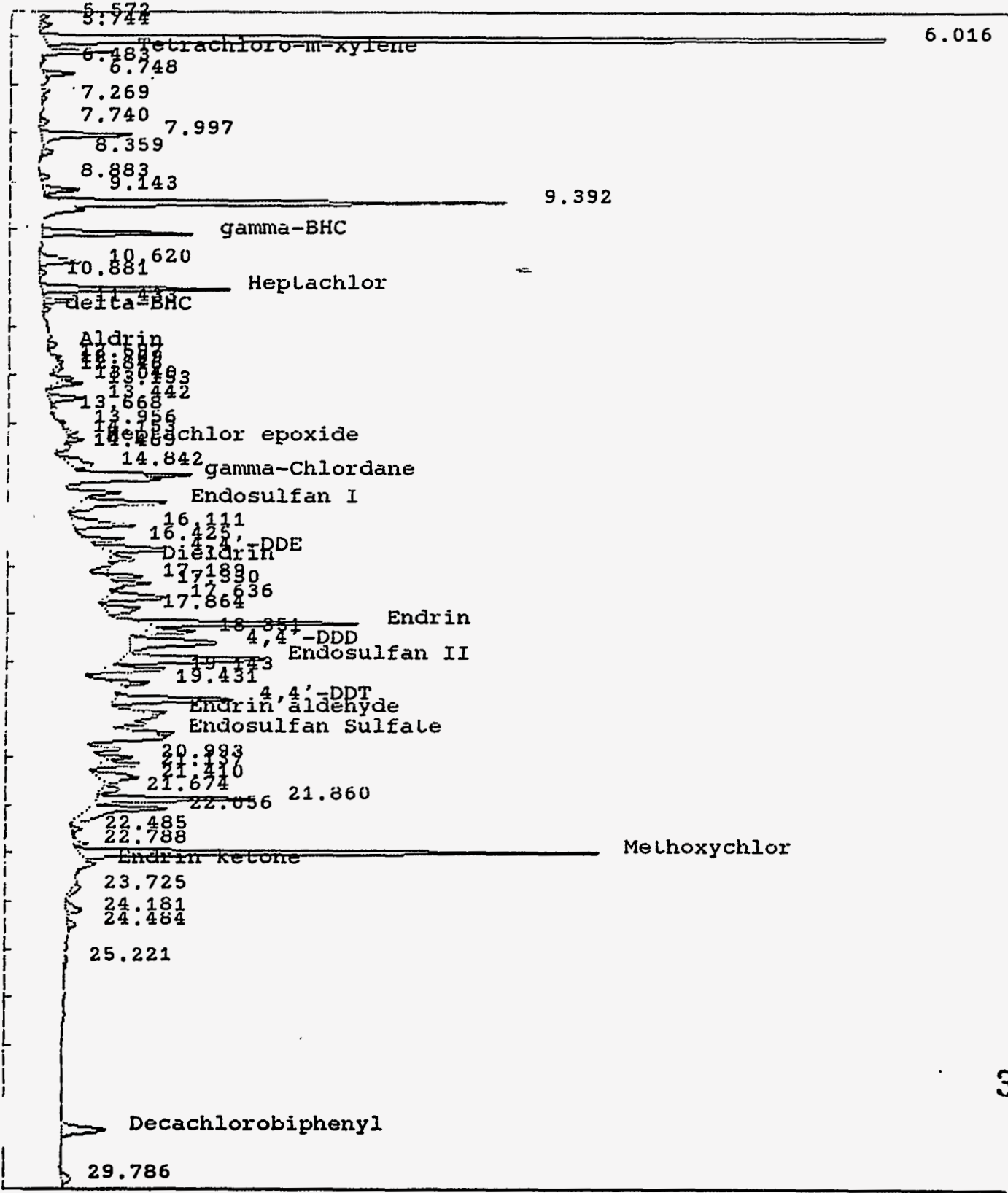
Result File : /DATA/RESULT/DB06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	15.05	14.97	307837	BB	11.001	<del>gamma-Chlordane</del>
41	15.64	15.66	639063	BB	29.199	<del>Endosulfan I</del>
42	16.11	0.00	524595	BB	38.108	
43	16.42	0.00	209014	BB	15.183	
44	16.63	16.58	520861	BB	22.405	<del>4,4'-DDE</del>
45	16.83	16.82	124544	BB	5.743	<del>Dieldrin</del>
46	17.19	0.00	56203	BB	4.083	
47	17.33	0.00	165521	BB	12.024	
48	17.64	0.00	439580	BB	31.932	
49	17.86	0.00	326749	BB	23.736	
50	18.17	18.15	1258718	BB	72.502	Endrin
51	18.35	0.00	264749	BB	19.232	
52	18.59	18.67	924455	BB	59.922	<del>4,4'-DDD</del>
53	18.92	18.77	1291937	BB	61.199	<del>Endosulfan II</del>
54	19.14	0.00	359165	BB	26.091	
55	19.43	0.00	231117	BB	16.789	
56	19.77	19.75	872444	BB	50.248	<del>4,4'-DDT</del>
57	20.05	19.98	140813	BB	8.229	<del>Endrin aldehyde</del>
58	20.48	20.42	176014	BB	9.212	<del>Endosulfan Sulfate</del>
59	20.99	0.00	155053	BB	11.263	
60	21.14	0.00	233707	BB	16.977	
61	21.41	0.00	429310	BB	31.186	
62	21.67	0.00	142573	BB	10.357	
63	21.86	0.00	882437	BB	64.102	
64	22.06	0.00	736285	BB	53.486	
65	22.48	0.00	54969	BB	3.993	
66	22.79	0.00	85274	BB	6.194	
67	22.98	22.96	2963814	BB	401.775	Methoxychlor
68	23.22	23.15	101886	BB	4.562	<del>Endrin ketone</del>
69	23.73	0.00	75195	BB	5.462	
70	24.18	0.00	164023	BB	11.915	
71	24.48	0.00	65127	BB	4.731	
72	25.22	0.00	27681	BB	2.011	
73	28.75	#28.72	452933	BB	17.884	Decachlorobiphenyl
74	29.79	0.00	93884	BB	6.820	

SES  
6/17/94



Result File : /DATA/RESULT/DB06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul

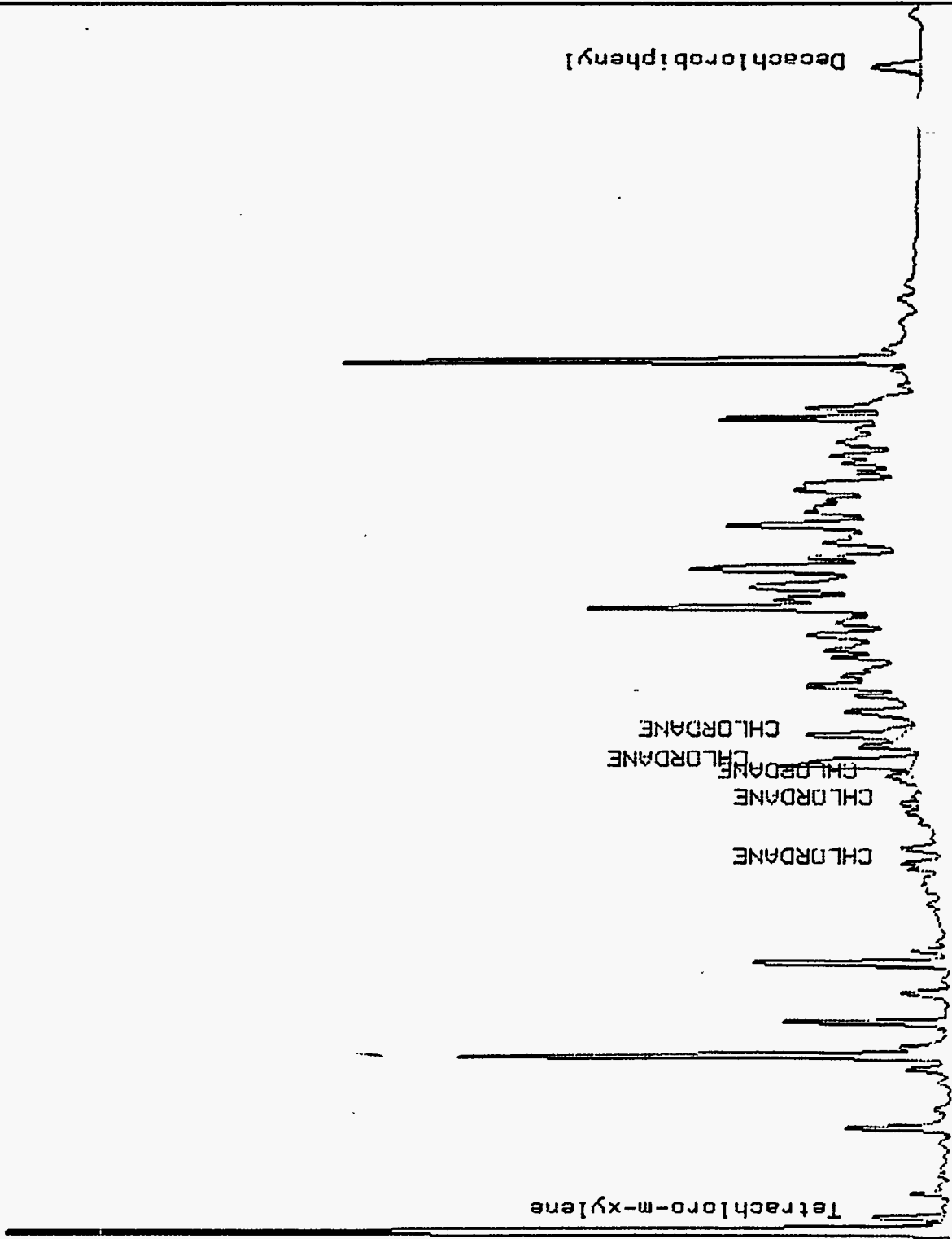


Ult File : /DATA/RESULT/DB06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'CHLOR05278.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 8  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.30	#6.28	345334	FF	14.584	Tetrachloro-m-xylene
2	13.16	13.16	136136	FF	64.059	CHLORDANE
3	14.33	14.34	90314	FF	35.012	CHLORDANE
4	14.84	14.82	278535	FF	67.722	CHLORDANE
5	15.06	14.98	1292627	BB	46.200	CHLORDANE
6	15.64	15.65	638027	BB	60.688	CHLORDANE
7	28.75	#28.72	447790	BB	23.951	Decachlorobiphenyl

} 273.681 ppb

File Name : /DATA/RESULT/DB06475.RES  
Sample Name : 3214004MS  
Sample Comment : 1661B-61  
Injection Time : 1349 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul



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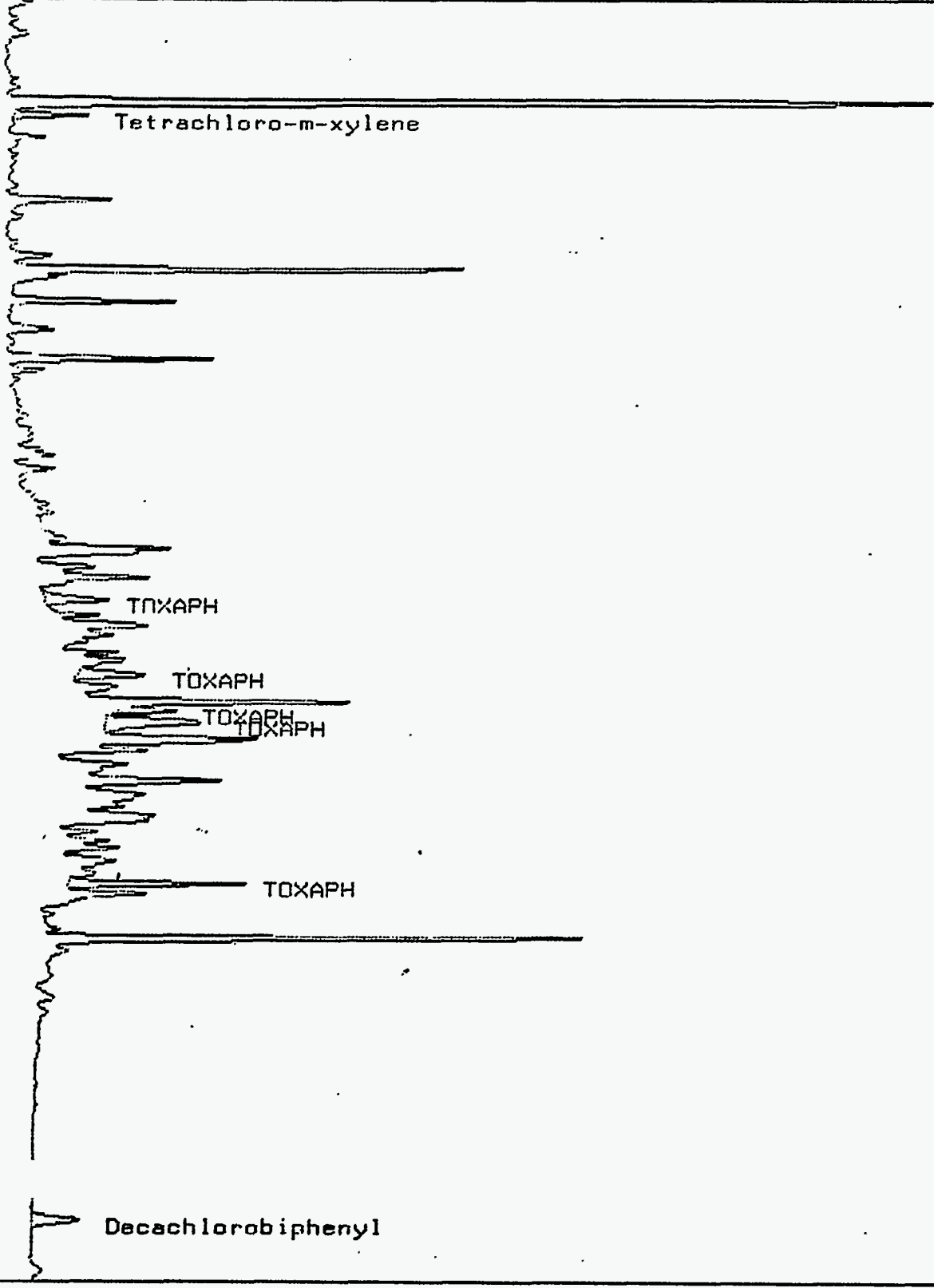
Ult File : /DATA/RESULT/DB06475.RES  
 Sample Name : 3214004MS  
 Sample Comment : 1661B-61  
 Injection Time : 1349 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5.0-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 8  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.30	#6.28	334531	FF	12.738	Tetrachloro-m-xylene
2	16.11	16.19	522734	BB	695.591	TOXAPH
3	17.63	17.62	515783	BB	466.749	TOXAPH
4	18.35	18.33	287899	FF	245.678	TOXAPH
5	18.60	18.57	937553	FF	385.475	TOXAPH
6	21.86	21.84	899228	FF	303.388	TOXAPH
7	28.75	#28.72	447790	BB	18.414	Decachlorobiphenyl

*2096.881 ppb*

Result File : /DATA/RESULT/DB06475.RES  
File Name : 3214004MS  
Sample Comment : 1661B-61  
Injection Time : 1349 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

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**Pesticide TCLP Analytical Results**  
40 CFR 261, June 29, 1990

**Client:** Nuclear Fuel Services Inc.  
**Lab Sample ID:** 3214004MSD  
**Matrix:** Leachate

**Client Sample ID:** 1661B-61  
**Client Reference No.:** LEFPC  
**Date of TCLP Extraction:** 5/31/94  
**Date Leached:** 5/24/94  
**Date Received:** 5/17/94

CAS Number	Compound	Dilution	Date of Analysis	Result mg/l	PQL mg/l	MCL mg/l	Note
58899	Gamma-BHC	1	6/16/94	0.00194	0.000250	0.4	
76448	Heptachlor	1	6/16/94	0.00220	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/16/94	BQL	0.000250	0.008	
72208	Endrin	1	6/16/94	0.00437	0.000500	0.02	
72435	Methoxychlor	1	6/16/94	0.0148	0.00250	10	
57749	Chlordane	1	6/16/94	0.0134	0.00500	0.03	
8001352	Toxaphene	1	6/16/94	0.0950	0.0250	0.5	

**PQL = Practical Quantitation Limit**  
**BQL = Below Quantitation Limit**  
**MCL = Maximum Contaminant Level**

<i>Pesticide Surrogate Results</i>			
<i>Lab Sample ID: 3214004MSD</i>		<i>Client Sample ID: 1661B-61</i>	
<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>53</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>77</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/DF06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDF  
 Column/AmL Inj : RTX1701 .53MM ; 1.5ul

HP5890A Instrument Method  
 160.0  

Initial Temp	1.0	Open Rate	5.0	Equilibration Time	2.0
Initial Time	8.0	Rate A	0.0	Final Temp	270.0
Final Time A	0.0	Rate B	0.0	Final Temp A	0.0
Final Time B	0.0			Final Temp B	0.0

Injector Temp A	250.0	Injector Temp B	215.0	Detector Temp A	325.0	Detector Temp B	325.0
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Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'9616.SEQ  
 Subseq/Sample : 1/ 9  
 160C(1)-5C/MIN-270(8MIN)

Pk#	ACL	RT	Exp	RT	Area	Code	UG/L	Name
1	3.32	0.00			73245	BB	4.212	
2	4.03	0.00			121738	BB	7.001	
3	4.98	#4.96			298202	BB	10.608	Tetrachloro-m-xylene
4	5.79	0.00			124016	BB	7.132	
5	7.15	0.00			50987	BB	2.932	
6	8.83	8.81			451641	BB	38.869	gamma-BHC
7	9.38	9.36			671247	BB	44.045	Heptachlor
8	11.11	0.00			71357	BB	4.103	
9	11.26	0.00			112442	BB	6.466	
10	11.99	0.00			126862	BB	7.295	
11	12.48	12.54			56643	BB	3.487	Heptachlor epoxide
12	12.69	0.00			96168	BB	5.530	
13	12.95	0.00			105771	BB	6.082	
14	13.27	0.00			72174	BB	4.150	
15	13.72	13.68			720200	BB	37.248	gamma-Chlordane
16	13.94	13.89			187066	BB	9.289	alpha-Chlordane
17	14.49	0.00			287186	BB	16.515	
18	14.69	14.66			93228	BB	5.439	Dieldrin
19	14.95	0.00			355660	BB	20.452	
20	15.19	0.00			254168	BB	14.616	
21	15.37	15.35			1202316	BB	87.358	Endrin
22	15.61	0.00			167359	BB	9.624	
23	15.80	0.00			310977	BB	17.883	
24	15.98	0.00			328321	BB	18.880	
25	16.22	0.00			171150	BB	9.842	
26	16.40	0.00			380707	BB	21.893	
27	16.55	0.00			196503	BB	11.300	
28	17.04	17.05			1023638	BB	97.634	<del>4-4</del> -DDS
29	17.27	0.00			417717	BB	24.021	<del>4-4</del> -DDT
30	17.51	17.55			250064	BB	24.388	
31	17.89	0.00			480462	BB	27.629	
32	18.11	0.00			241119	BB	13.866	

SS  
6/17/94



Result File : /DATA/RESULT/DF06476.RES  
Sample Name : 3214004MSD  
Sample Comment : 1661B-61  
Injection Time : 1425 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul

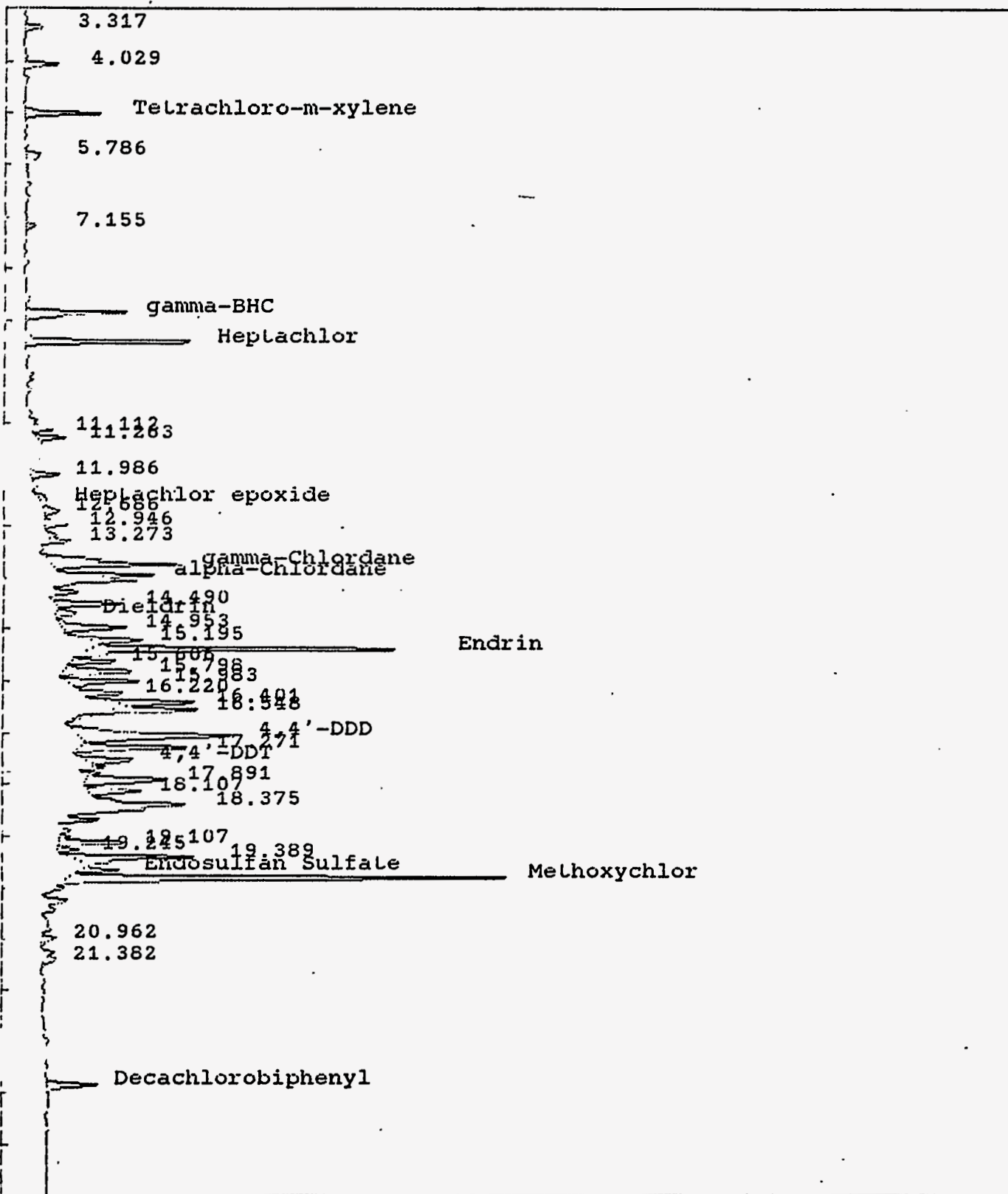
Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
33	18.37	0.00	193737	BB	11.141	
34	19.11	0.00	275589	BB	15.848	
35	19.25	0.00	66561	BB	3.828	
36	19.39	0.00	567649	BB	32.643	
37	19.65	19.65	109145	BB	9.599	<del>Endosulfan Sulfate</del>
38	19.80	19.78	1678308	BB	296.423	Methoxychlor —
39	20.96	0.00	61729	BB	3.550	
40	21.38	0.00	51053	BB	2.936	
41	23.85	#23.83	224820	BB	15.415	Decachlorobiphenyl

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Result File : /DATA/RESULT/DF06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
 Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
 Minimum mv: D Maximum mv: D

1X

15X



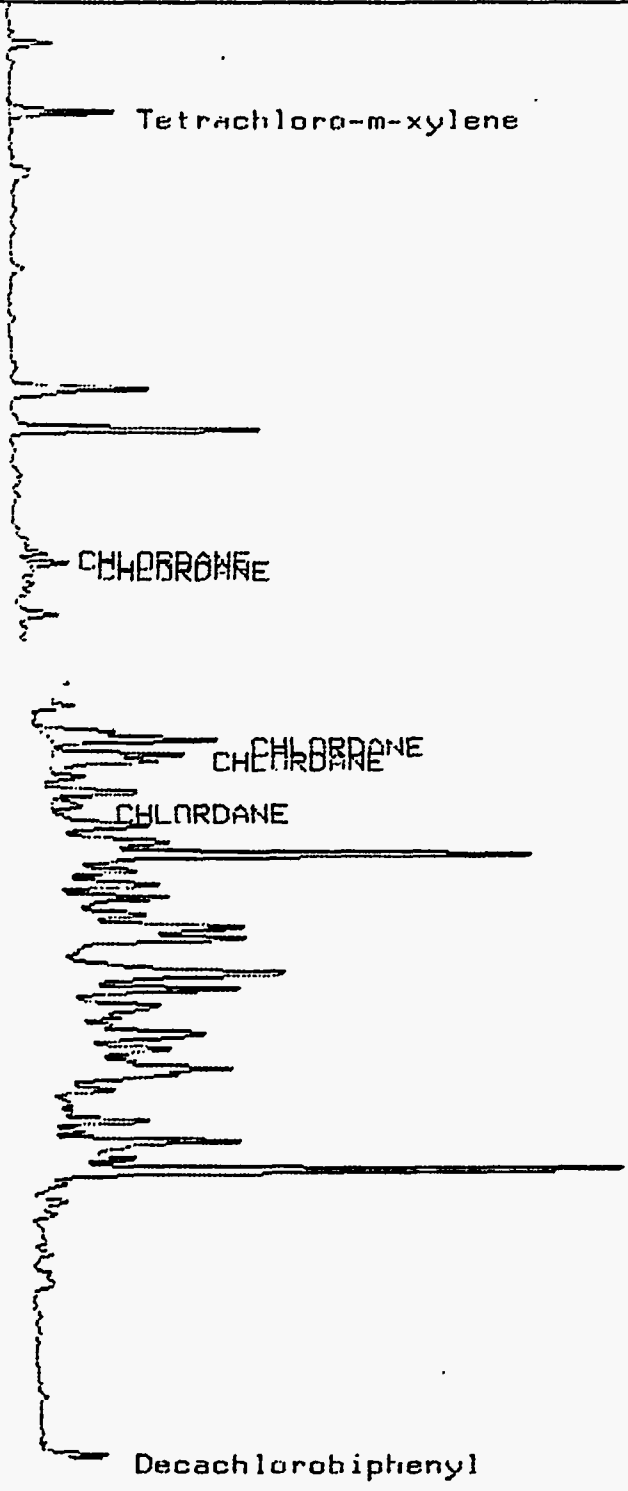
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 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'CHLOR0527B.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 9  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.98	#4.96	296159	BB	13.527	Tetrachloro-m-xylene
2	11.12	11.08	56528	FF	47.887	CHLORDANE
3	11.27	11.24	114301	FF	70.198	CHLORDANE
4	13.73	13.73	693114	FF	63.829	CHLORDANE
5	13.95	13.94	686109	BB	42.042	CHLORDANE
6	14.70	14.70	98969	FF	43.192	CHLORDANE
7	23.85	#23.83	222052	BB	19.420	Decachlorobiphenyl

} 267.148 ppb

Result File : /DATA/RESULT/DF06476.RES  
File Name : 3214004MSD  
Sample Comment : 1661B-61  
Injection Time : 1425 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

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Result File : /DATA/RESULT/DB06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDB  
 Column/Aml Inj : DB608 .53MM / 1.5uI  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 9  
 %Dil-Facl : 100.000 Smp-Aml : 0.000

PK#	ACL	RT	Exp	RT	Area	Code	UG/L	Name
1	3.55	0.00			152180	BB	11.055	
2	3.84	0.00			1002220	BB	7.280	
3	4.05	0.00			91293	BB	6.632	
4	4.40	0.00			30897	BB	2.244	
5	4.66	0.00			147794	BB	10.736	
6	5.75	0.00			91445	BB	6.643	
7	6.02	0.00			5960268	BS	432.968	
8	6.30	#6.28			319689	BB	13.063	Tetrachloro-m-xylene
9	6.75	0.00			74020	BB	5.377	
10	6.96	0.00			25037	BB	1.819	
11	7.10	0.00			20155	BB	1.464	
12	7.76	0.00			30521	BB	2.217	
13	8.01	0.00			120519	BB	8.755	
14	8.36	0.00			161186	BB	11.709	
15	9.15	0.00			121143	BB	8.800	
16	9.40	0.00			1622204	BB	117.841	
17	10.05	10.02			597239	BB	22.861	gamma-BHC
18	10.63	0.00			291859	BB	21.201	
19	10.87	0.00			37061	BB	2.692	
20	11.19	11.17			1023824	BB	38.199	HepLachlor
21	11.44	0.00			30565	BB	2.220	
22	11.62	11.60			41553	BB	1.626	delta-BHC
23	12.20	0.00			20448	BB	1.485	
24	12.37	12.30			50075	BB	1.885	Ala...
25	12.60	0.00			34825	BB	2.530	
26	12.72	0.00			83489	BB	6.065	
27	13.05	0.00			52549	BB	3.817	
28	13.16	0.00			115894	BB	8.419	
29	13.45	0.00			218228	BB	15.853	
30	13.68	0.00			21389	BB	1.554	
31	14.16	0.00			56312	BB	4.091	
32	14.33	14.38			75268	BB	2.979	Heptachlor epoxide
33	14.47	0.00			59924	BB	4.353	
34	14.85	0.00			276736	BB	20.103	
35	15.06	14.97			301512	BB	10.775	gamma-Chlordane
36	15.65	15.66			391620	BB	17.893	Endosulfan I
37	16.11	0.00			175607	BB	12.757	
38	16.43	0.00			167159	BB	12.143	
39	16.63	16.58			453255	BB	19.497	4,4'-DDE

SES  
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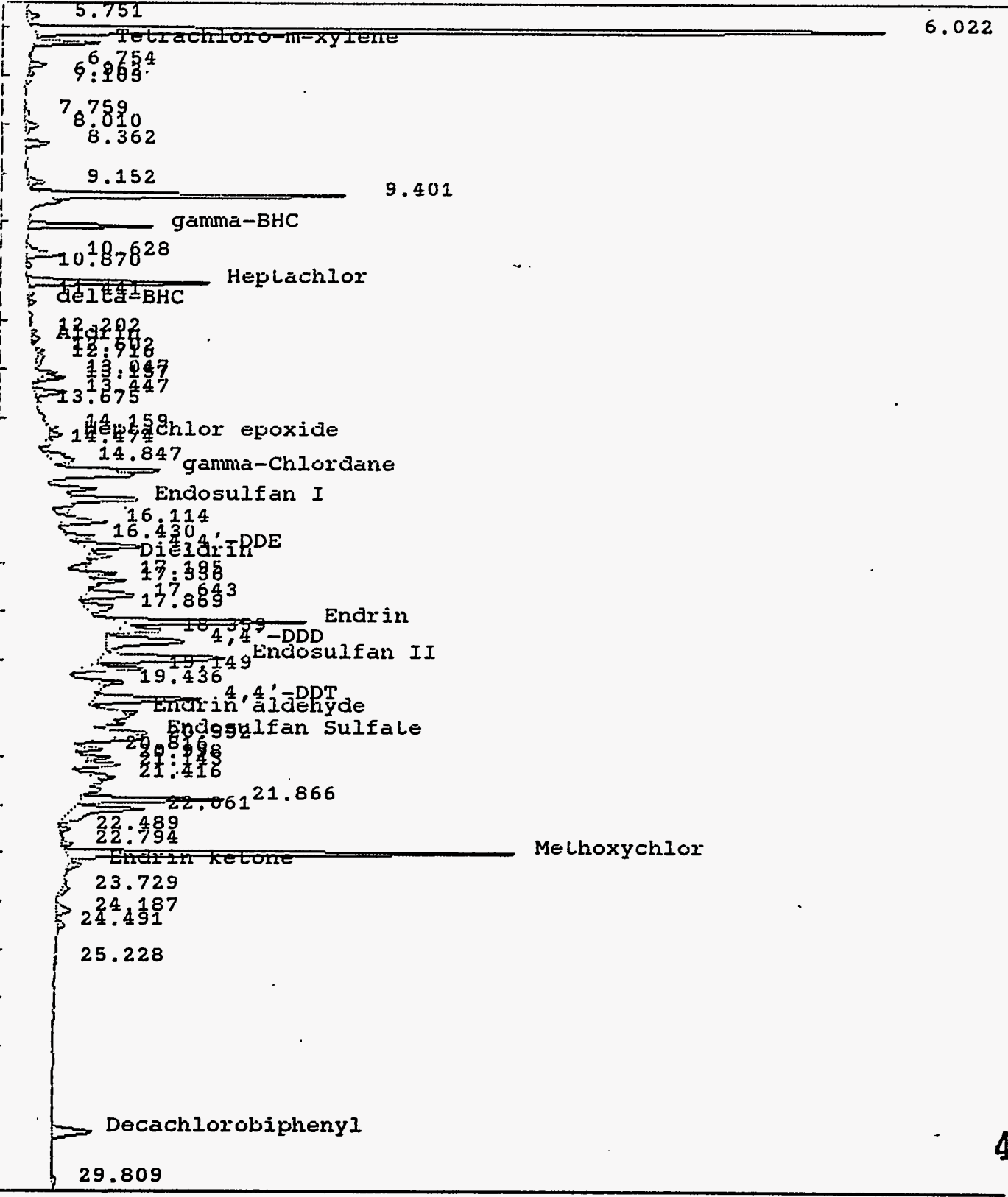
398

Result File : /DATA/RESULT/DB06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	16.84	16.82	109785	BB	5.063	<del>Dieldrin</del>
41	17.19	0.00	21667	BB	1.574	
42	17.34	0.00	151804	BB	11.027	
43	17.64	0.00	398137	BB	28.922	
44	17.87	0.00	271172	BB	19.699	
45	18.18	18.15	1053111	BB	60.659	Endrin
46	18.36	0.00	225967	BB	16.415	
47	18.60	18.67	814957	BB	52.825	<del>4,4'-DDD</del>
48	18.92	18.77	1106471	BB	52.414	<del>Endosulfan II</del>
49	19.15	0.00	321766	BB	23.374	
50	19.44	0.00	189667	BB	13.778	
51	19.78	19.75	761575	BB	43.863	<del>4,4'-DDT</del>
52	20.05	19.98	123217	BB	7.201	Endrin aldehyde
53	20.49	20.42	161714	BB	8.464	<del>Endosulfan Sulfate</del>
54	20.59	0.00	133172	BB	9.674	
55	20.82	0.00	134120	BB	9.743	
56	21.00	0.00	137574	BB	9.994	
57	21.14	0.00	200800	BB	14.587	
58	21.42	0.00	187189	BB	13.598	
59	21.87	0.00	771989	BB	56.079	
60	22.06	0.00	648978	BB	47.143	
61	22.49	0.00	49526	BB	3.598	
62	22.79	0.00	69996	BB	5.085	
63	22.99	22.96	2554120	BB	346.237	Methoxychlor
64	23.22	23.15	88634	BB	3.969	<del>Endrin ketone</del>
65	23.73	0.00	61902	BB	4.497	
66	24.19	0.00	142267	BB	10.335	
67	24.49	0.00	57540	BB	4.180	
68	25.23	0.00	24726	BB	1.796	
69	28.77	#28.72	393010	BB	15.518	Decachlorobiphenyl
70	29.81	0.00	28247	BB	2.052	

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Result File : /DATA/RESULT/DB06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul



Result File : /DATA/RESULT/DR06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'CHLOR0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 9  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

PK#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.30	#6.28	309915	BB	13.088	Tetrachloro-m-xylene
2	13.16	13.16	130536	FF	61.348	CHLORDANE
3	14.33	14.34	85749	FF	33.246	CHLORDANE
4	14.85	14.82	271471	FF	66.027	CHLORDANE
5	15.06	14.98	1179599	BB	42.184	CHLORDANE
6	15.65	15.65	575586	BB	54.791	CHLORDANE
7	28.77	#28.72	404328	BB	21.626	Decachlorobiphenyl

} 257.596 ppb



File : /DATA/RESULT/DB06476.RES  
Sample Name : 3214004MSD  
Sample Comment : 1661B-61  
Injection Time : 1425 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

Tetrachloro-m-xylene

CHLORDANE

CHLORDANE

CHLORDANE

CHLORDANE

CHLORDANE

Decachlorobiphenyl

Result File : /DATA/RESULT/DB06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5.0-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SFQ  
 Subseq/Sample : 1 / 9  
 Dil-Fact : 100.000 Smp-Amt: 0.000

PK#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.30	#6.28	309915	BB	11.801	Tetrachloro-m-xylene
2	16.11	16.19	420881	BB	562.623	TOXAPH
3	17.63	17.62	432542	BB	392.258	TOXAPH
4	18.37	18.33	248286	FF	212.128	TOXAPH
5	18.61	18.57	829780	FF	342.180	TOXAPH
6	21.87	21.84	780081	FF	263.435	TOXAPH
7	28.77	#28.72	404328	BB	16.627	Decachlorobiphenyl

} 1772.624 ppb

Result File : /DATA/RESULT/DB06476.RES  
Sample Name : 3214004MSD  
Sample Comment : 1661B-61  
Injection Time : 1425 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

Tetrachloro-m-xylene

TOXAPH

TOXAPH

TOXAPH  
TOXAPH

TOXAPH

Decachlorobiphenyl

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All File : /DATA/RESULT/DF06476.RES  
 Sample Name : 3214004MSD  
 Sample Comment : 1661B-61  
 Injection Time : 1425 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'TOXAPH05276.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SFQ  
 Subseq/Sample : 1 / 9  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.98	#4.96	296159	BB	12.216	Tetrachloro-m-xylene
2	14.50	14.47	292408	FF	410.907	TOXAPH
3	14.96	14.93	313457	FF	363.693	TOXAPH
4	15.99	15.96	308720	BR	522.365	TOXAPH
5	17.28	17.25	426744	FF	324.220	TOXAPH
6	19.39	19.36	543186	FF	279.709	TOXAPH
7	23.85	#23.83	222052	RB	13.354	Decachlorobiphenyl

} 1900.894 ppb

Result File : /DATA/RESULT/DF06476.RES  
File Name : 3214004MSD  
Sample Comment : 1661B-61  
Injection Time : 1425 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

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Tetrachloro-m-xylene

TOXAPH  
TOXAPH  
TOXAPH  
TOXAPH  
TOXAPH

Decachlorobiphenyl

Result File : /DATA/RESULT/DF06477.RES  
 Sample Name : 3214009  
 Sample Comment : 1661B-135  
 Injection Time : 1501 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

## HP5890A Instrument Method

Initial Temp	100.0	Equilibration Time	2.0
Initial Time	1.0	Oven Rate	5.0
Final Time	8.0	Rate A	0.0
Final Time A	0.0	Rate B	0.0
Final Time B	0.0	Final Temp	270.0
		Final Temp A	0.0
		Final Temp B	0.0
Injector Temp A	250.0	Injector Temp B	215.0
		Detector Temp A	325.0
		Detector Temp B	325.0

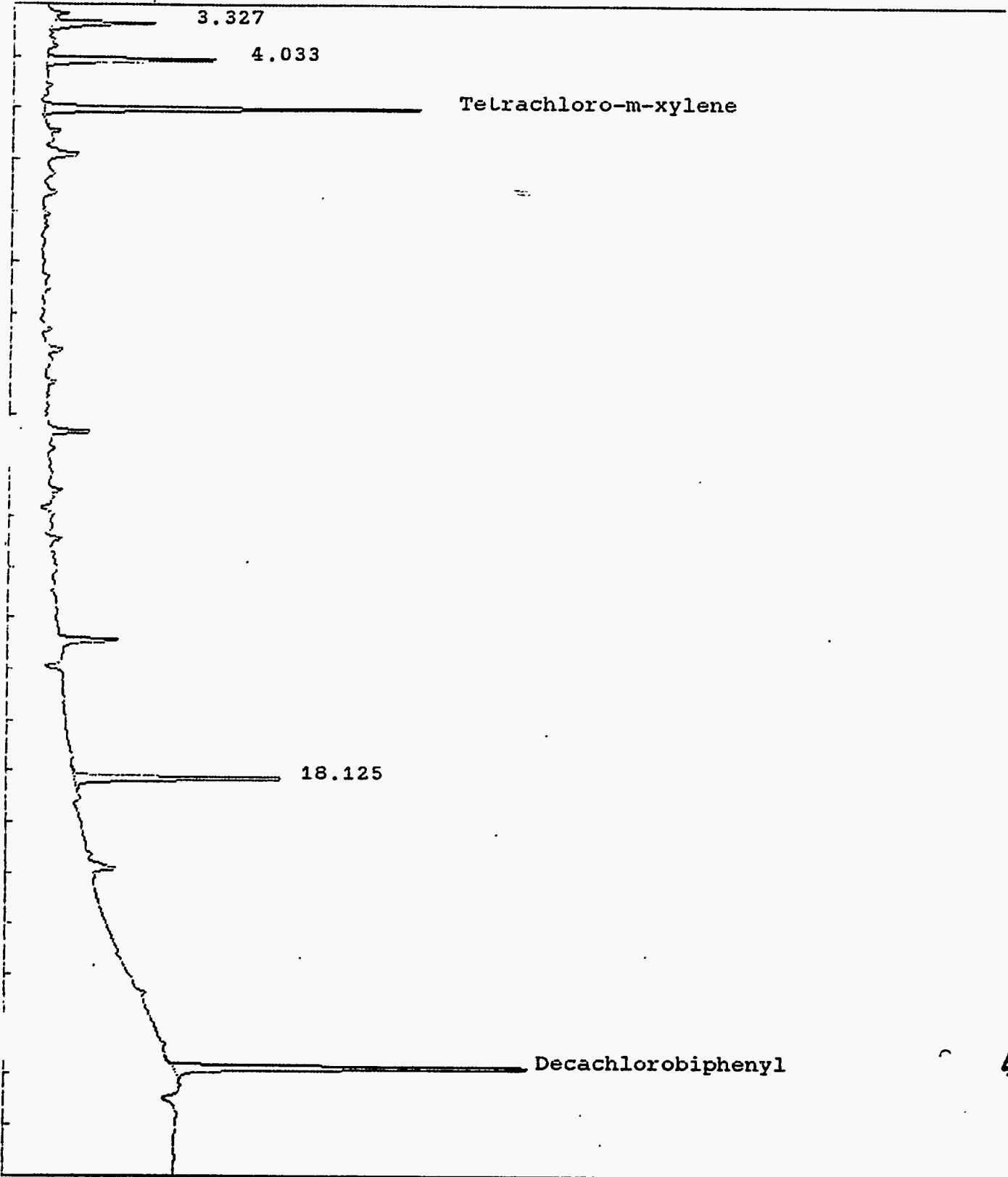
Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 10  
 160C(1)-5C/MIN-270(8MIN)

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.33	0.00	75064	BB	4.317	
2	4.03	0.00	120581	BB	6.934	
3	4.98	#4.96	259046	BB	9.215	Tetrachloro-m-xylene
4	18.12	0.00	190635	BB	10.963	
5	23.86	#23.83	318695	BB	21.851	Decachlorobiphenyl

Result File : /DATA/RESULT/DF06477.RES  
Sample Name : 3214009  
Sample Comment : 1661B-135  
Injection Time : 1501 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
Minimum mv: D Maximum mv: D

1X

15X



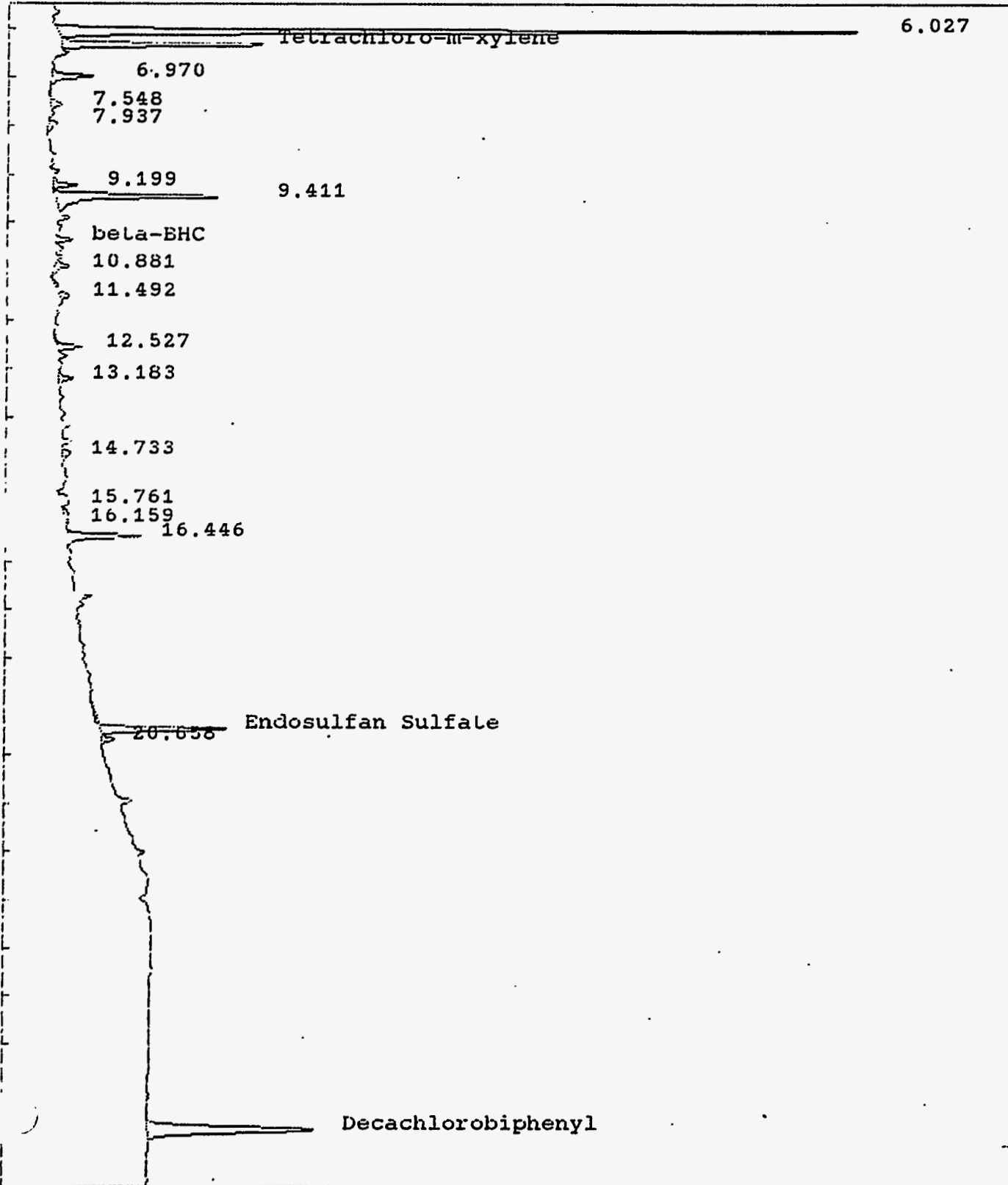
Result File : /DATA/RESULT/DB06477.RES  
 Sample Name : 3214009  
 Sample Comment : 1661B-135  
 Injection Time : 1501 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 10  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.55	0.00	158822	BB	11.537	
2	3.84	0.00	78498	BB	5.702	
3	4.40	0.00	36715	BB	2.667	
4	4.86	0.00	30360	BB	2.205	
5	6.03	0.00	1434215	BB	104.185	
6	6.30	#6.28	371952	BB	15.199	Tetrachloro-m-xylene
7	6.97	0.00	84341	BB	6.127	
8	7.55	0.00	21860	BB	1.568	
9	7.94	0.00	28741	BB	2.088	
10	9.20	0.00	46499	BB	3.378	
11	9.41	0.00	383702	BB	27.873	
12	10.33	10.29	22267	BB	1.726	<del>beta-BHC</del>
13	10.88	0.00	34021	BB	2.471	
14	11.49	0.00	37325	BB	2.711	
15	12.53	0.00	43282	BB	3.144	
16	13.18	0.00	34172	BB	2.482	
17	14.73	0.00	25632	BB	1.862	
18	15.76	0.00	38444	BB	2.793	
19	16.16	0.00	22635	BB	1.644	
20	16.45	0.00	148080	BB	10.757	
21	20.43	20.42	232748	BB	12.182	<del>Endosulfan Sulfate</del>
22	20.66	0.00	23133	BB	1.680	
23	28.79	#28.72	548183	BB	21.644	Decachlorobiphenyl

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Result File : /DATA/RESULT/DB06477.RES  
Sample Name : 3214009  
Sample Comment : 1661B-135  
Injection Time : 1501 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : DB608 .53MM / 1.5ul



*Pesticide TCLP QC Data  
SW-846, Method 8080*

*Client: Nuclear Fuel Service, Inc.  
Lab Sample ID: 3214009MS/3214009MSD  
Matrix: Leachate  
Dilution: 1*

*Client Sample ID: 1661B-135  
Client Reference No.: LEFPC  
Date of TCLP Extraction: 5/31/94  
Date of TCLP Analysis: 6/16/94  
Date Leached: 5/24/94  
Date Received: 5/17/94*

<i>Compound</i>	<i>Sample Concentration mg/l</i>	<i>MS Spike Amount mg/l</i>	<i>MS Concentration mg/l</i>	<i>Matrix Spike % Recovery</i>	<i>MSD Spike Amount mg/l</i>	<i>MSD Concentration mg/l</i>	<i>Matrix Spike Duplicate % Recovery</i>	<i>QC Limits *</i>	<i>RPD</i>
<i>Gamma-BHC</i>	<i>0</i>	<i>0.00125</i>	<i>0.00274</i>	<i>219</i>	<i>0.00125</i>	<i>0.00276</i>	<i>221</i>	<i>32-127</i>	<i>0.7</i>
<i>Heptachlor</i>	<i>0</i>	<i>0.00125</i>	<i>0.00256</i>	<i>205</i>	<i>0.00125</i>	<i>0.00304</i>	<i>243</i>	<i>34-111</i>	<i>17.1</i>
<i>Endrin</i>	<i>0</i>	<i>0.0025</i>	<i>0.0058</i>	<i>232</i>	<i>0.0025</i>	<i>0.006</i>	<i>240</i>	<i>30-147</i>	<i>3.4</i>
<i>Methoxychlor *</i>	<i>0</i>	<i>0.0125</i>	<i>0.0195</i>	<i>156</i>	<i>0.0125</i>	<i>0.0196</i>	<i>157</i>	<i>NA</i>	<i>0.5</i>
<i>Chlordane</i>	<i>0</i>	<i>0.0125</i>	<i>0.0164</i>	<i>131</i>	<i>0.0125</i>	<i>0.0175</i>	<i>140</i>	<i>45-119</i>	<i>6.5</i>
<i>Toxaphene</i>	<i>0</i>	<i>0.125</i>	<i>0.132</i>	<i>106</i>	<i>0.125</i>	<i>0.13</i>	<i>104</i>	<i>41-126</i>	<i>1.5</i>

*\* These limits are based upon SW-846, Method 8080, Table 3.*

*NA= Not Applicable, none specified in the method.*

**Pesticide TCLP Analytical Results**  
**40 CFR 261, June 29, 1990**

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: 3214009MS*  
*Matrix: Leachate*

*Client Sample ID: 1661B-135*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 5/31/94*  
*Date Leached: 5/24/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/16/94	0.00274	0.000250	0.4	
76448	Heptachlor	1	6/16/94	0.00256	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/16/94	BQL	0.000250	0.008	
72208	Endrin	1	6/16/94	0.00580	0.000500	0.02	
72435	Methoxychlor	1	6/16/94	0.0195	0.00250	10	
57749	Chlordane	1	6/16/94	0.0164	0.00500	0.03	
8001352	Toxaphene	1	6/16/94	0.132	0.0250	0.5	

*PQL = Practical Quantitation Limit*  
*BQL = Below Quantitation Limit*  
*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3214009MS*

*Client Sample ID: 1661B-135*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>60</i>	<i>60-150</i>	<i>***</i>
<i>Decachlorobiphenyl</i>	<i>106</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/DF06478.RES
Sample Name : 3214009MS
Sample Comment : 1661B-135
Injection Time : 1537 16Jun1994
Instrument : HPDF
Column/Amt Inj : RTX1701 .53MM ; 1.5ul

HP5890A Instrument Method

Initial Temp 160.0 Equilibration Time 2.0
Initial Time 1.0 Oven Rate 5.0 Final Temp 270.0
Final Time 8.0 Rate A 0.0 Final Temp A 0.0
Final Time A 0.0 Rate B 0.0 Final Temp B 0.0
Final Time B 0.0
Injector Temp A 250.0 Injector Temp B 215.0 Detector Temp A 325.0 Detector Temp B 325.0

Calib Method : /DATA/METHOD/DF'PEST24.MTH
Sequence : /DATA/SEQUENCE/DF'Q616.SEQ
Subseq/Sample : 1/ 11
160C(1)-5C/MIN-270(8MIN)

Table with columns: Pk#, Act RT, Exp RT, Area, Code, UG/L, Name. Contains 32 rows of peak data including compounds like Tetrachloro-m-xylene, gamma-BHC, Heptachlor, gamma-Chlordane, alpha-Chlordane, Dieldrin, and Endrin.

Handwritten signature and date '6/17/94' with a large bracket grouping rows 11-32 of the table.

Result File : /DATA/RESULT/DF06478.RES

Sample Name : 3214009MS

Sample Comment : 1661B-135

Injection Time : 1537 16Jun1994

Instrument : HPDF

Column/Ampl Inj : RTX1701 .53MM ; 1.5ul

Pk# Acl RT Exp RT Area Code UG/L Name

33 18.39 0.00 231822 BB 13.331

34 18.90 0.00 63167 BB 3.632

35 19.13 0.00 401882 BB 23.110

36 19.26 0.00 92018 BB 5.292

37 19.41 0.00 817842 BB 47.030

38 19.66 19.65 149832 BB 13.177

39 19.81 19.78 2209605 BB 390.260

40 20.01 0.00 91684 BB 5.272

41 20.25 0.00 130584 BB 7.509

42 20.43 0.00 55532 BB 3.193

43 20.98 0.00 89072 BB 5.122

44 21.40 0.00 71233 BB 4.096

45 23.87 #23.83 310102 BB 21.262

Decachlorobiphenyl

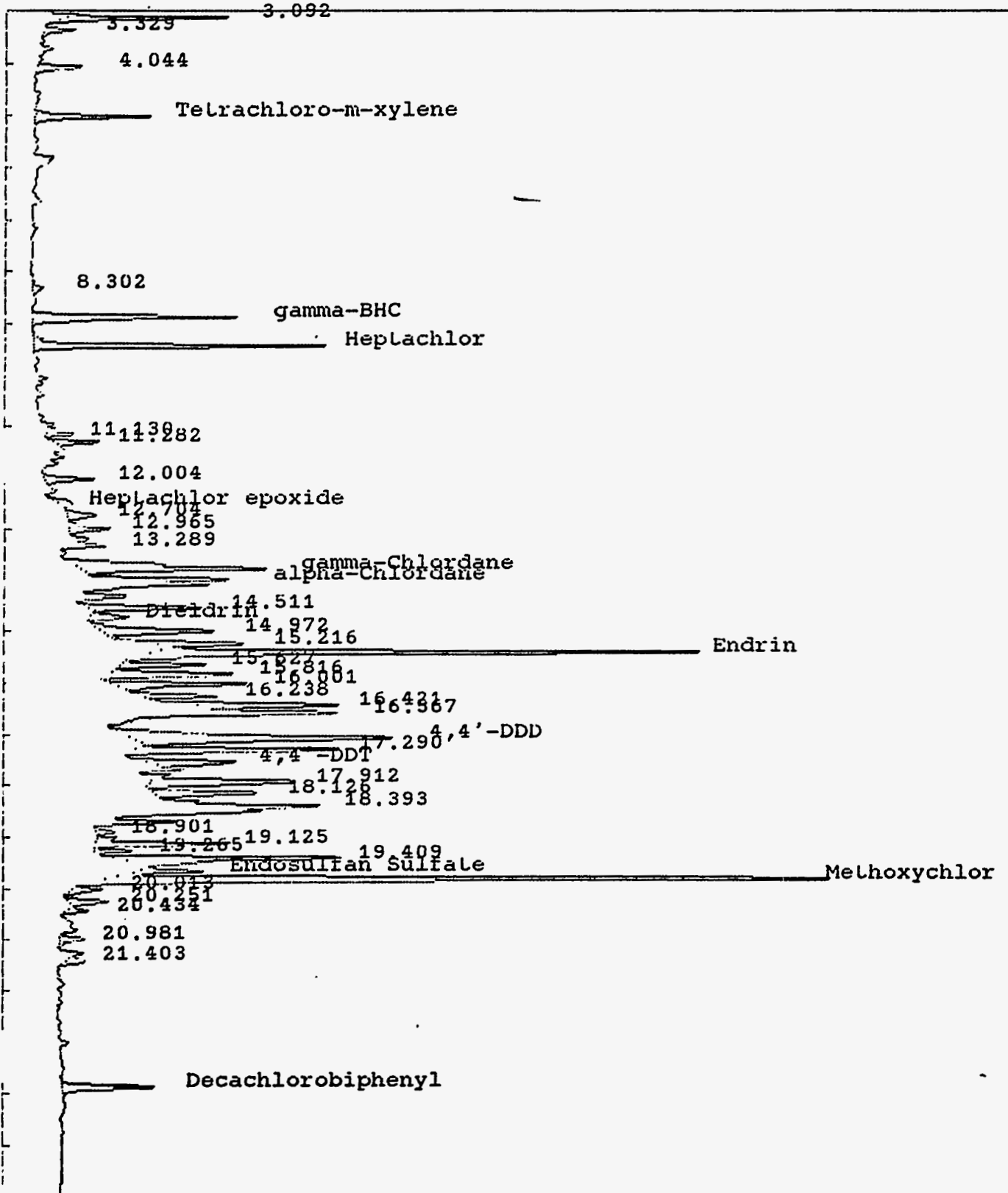
9/28  
6/17/94

~~Endosulfan sulfate~~  
Methoxychlor

Result File : /DATA/RESULT/DF06478.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 1537 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
 Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
 Minimum mv: D Maximum mv: D

1X

15X



Result File : /DATA/RESULT/DF06478.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 1537 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'CHLOR0527B.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 11  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.99	#4.96	341795	BB	15.612	Tetrachloro-m-xylene
2	11.13	11.08	69845	FF	57.925	CHLORDANE
3	11.28	11.24	136699	FF	83.505	CHLORDANE
4	13.75	13.73	917252	FF	82.715	CHLORDANE
5	13.96	13.94	848648	FF	50.908	CHLORDANE
6	14.71	14.70	127668	FF	53.406	CHLORDANE
7	23.87	#23.83	309050	BB	27.028	Decachlorobiphenyl

} 328.459 ppb



Result File : /DATA/RESULT/DF06478.RES  
Sample Name : 3214009MS  
Sample Comment : 1661B-135  
Injection Time : 1537 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

Tetrachloro-m-xylene

CHLORDANE

CHLORDANE

CHLORDANE

Decachlorobiphenyl

Result File : /DATA/RESULT/DF06478.RES  
Sample Name : 3214009MS  
Sample Comment : 1661B-135  
Injection Time : 1537 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
Temp Program : 160 C(1MIN)-5-270 (8MIN)  
Calib Method : /DATA/METHOD/DF'TOXAPH0527B.MTH  
Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
Subseq/Sample : 1/ 11  
%Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.99	#4.96	341795	BB	14.099	Tetrachloro-m-xylene
2	14.52	14.47	380934	FF	527.031	TOXAPH
3	14.98	14.93	435506	FF	494.497	TOXAPH
4	16.00	15.96	468940	FF	780.222	TOXAPH
5	17.29	17.25	623295	FF	461.783	TOXAPH
6	19.41	19.36	780170	FF	382.700	TOXAPH
7	23.87	#23.83	309050	BB	18.586	Decachlorobiphenyl

} 2646.233 ppb

Result File : /DATA/RESULT/DF06478.RES  
Sample Name : 3214009MS  
Sample Comment : 1661B-135  
Injection Time : 1537 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

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Tetrachloro-m-xylene

TOXAPH  
TOXAPH

TOXAPH

TOXAPH

TOXAPH

Decachlorobiphenyl

Result File : /DATA/RESULT/DB06478.RES  
 Sample Name : 3214089MS  
 Sample Comment : 1661B-135  
 Injection Time : 1537 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 11  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

PK#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.14	0.00	1422233	BB	103.314	
2	3.62	0.00	263200	BB	19.119	
3	3.85	0.00	30514	BB	2.217	
4	4.30	0.00	1323890	BB	96.171	
5	5.00	0.00	226038	BB	16.420	
6	5.38	0.00	21800	BR	1.584	
7	6.03	0.00	1698490	BB	123.382	
8	6.31	6.28	880417	BR	35.976	Tetrachloro-m-xylene
9	6.77	0.00	99257	BB	7.210	
10	6.97	0.00	72088	BR	5.237	
11	7.14	0.00	152245	BB	11.059	
12	7.37	0.00	37948	BR	2.757	
13	7.73	0.00	120692	BB	8.767	
14	8.57	8.62	42794	BR	1.577	<del>alpha-BHC</del>
15	9.00	0.00	602359	BB	43.757	
16	9.41	0.00	569934	BB	41.401	
17	9.65	0.00	37693	BB	2.738	
18	9.87	0.00	36492	BR	2.651	
19	10.06	10.02	752092	BB	28.788	gamma-BHC
20	10.37	10.29	41983	BB	3.254	<del>beta-BHC</del>
21	10.56	0.00	136290	BB	9.900	
22	11.01	0.00	20073	BR	1.458	
23	11.21	11.17	1037363	BB	38.704	Heptachlor
24	11.43	0.00	28100	BR	2.041	
25	11.65	11.60	44232	BB	1.731	<del>delta-BHC</del>
26	11.87	0.00	39954	BR	2.902	
27	12.23	12.30	26824	BB	1.010	<del>Aldrin</del>
28	12.42	0.00	74931	BR	5.443	
29	12.62	0.00	28101	BB	2.041	
30	12.75	0.00	320403	BR	23.275	
31	13.06	0.00	71163	BB	5.169	
32	13.18	0.00	151388	BR	10.997	
33	13.47	0.00	259569	BB	18.856	
34	13.98	0.00	24001	BB	1.743	
35	14.18	0.00	84129	BB	6.111	
36	14.35	14.38	110417	BB	4.370	Heptachlor epoxide
37	14.50	0.00	70716	BB	5.137	
38	14.86	0.00	306628	BR	22.274	
39	15.08	0.00	359223	BB	26.095	

509  
6/27/94

423

Result File : /DATA/RESULT/DB06478.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 1537 16Jun1994  
 Instrument : HPDB

Column/Amt Inj : DB608 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	15.67	15.66	734022	BB	33.537	<del>Endosulfan I</del>
41	16.13	0.00	585488	BB	42.531	
42	16.32	0.00	26488	BR	1.924	
43	16.45	0.00	291030	BB	21.141	
44	16.65	16.58	504205	BB	21.688	<del>4,4'-DDE</del>
45	16.85	16.82	180848	BB	8.339	Dieldrin
46	17.21	0.00	51203	BB	3.720	
47	17.36	0.00	177525	BB	12.896	
48	17.67	0.00	468470	BB	34.031	
49	17.89	0.00	341684	BB	24.821	
50	18.20	18.15	1326612	BB	76.413	Endrin
51	18.38	0.00	291781	BB	21.196	
52	18.62	18.67	1008393	BB	65.363	<del>4,4'-DDD</del>
53	18.95	18.77	1387576	BB	65.727	<del>Endosulfan II</del>
54	19.17	0.00	388824	BR	28.245	
55	19.46	0.00	229467	BB	16.669	
56	19.59	0.00	39176	BR	2.846	
	19.80	19.75	1019158	BB	58.698	<del>4,4'-DDT</del>
58	20.07	19.98	164838	BB	9.633	<del>Endrin aldehyde</del>
59	20.50	20.42	239595	BB	12.540	<del>Endosulfan Sulfate</del>
60	21.02	0.00	169526	BB	12.315	
61	21.16	0.00	259862	BR	18.877	
62	21.43	0.00	475725	BR	34.558	
63	21.70	0.00	155170	BB	11.272	
64	21.89	0.00	979823	BB	71.177	
65	22.08	0.00	831753	BB	60.421	
66	22.51	0.00	64283	BR	4.670	
67	23.00	22.96	3145474	BB	426.400	Methoxychlor
68	23.24	23.15	122444	BB	5.483	<del>Endrin ketone</del>
69	23.75	0.00	159297	BB	11.572	
70	24.21	0.00	175988	BR	12.784	
71	24.52	0.00	75535	BB	5.487	
72	28.80	#28.72	525761	BB	20.759	Decachlorobiphenyl

SB  
6/27/94



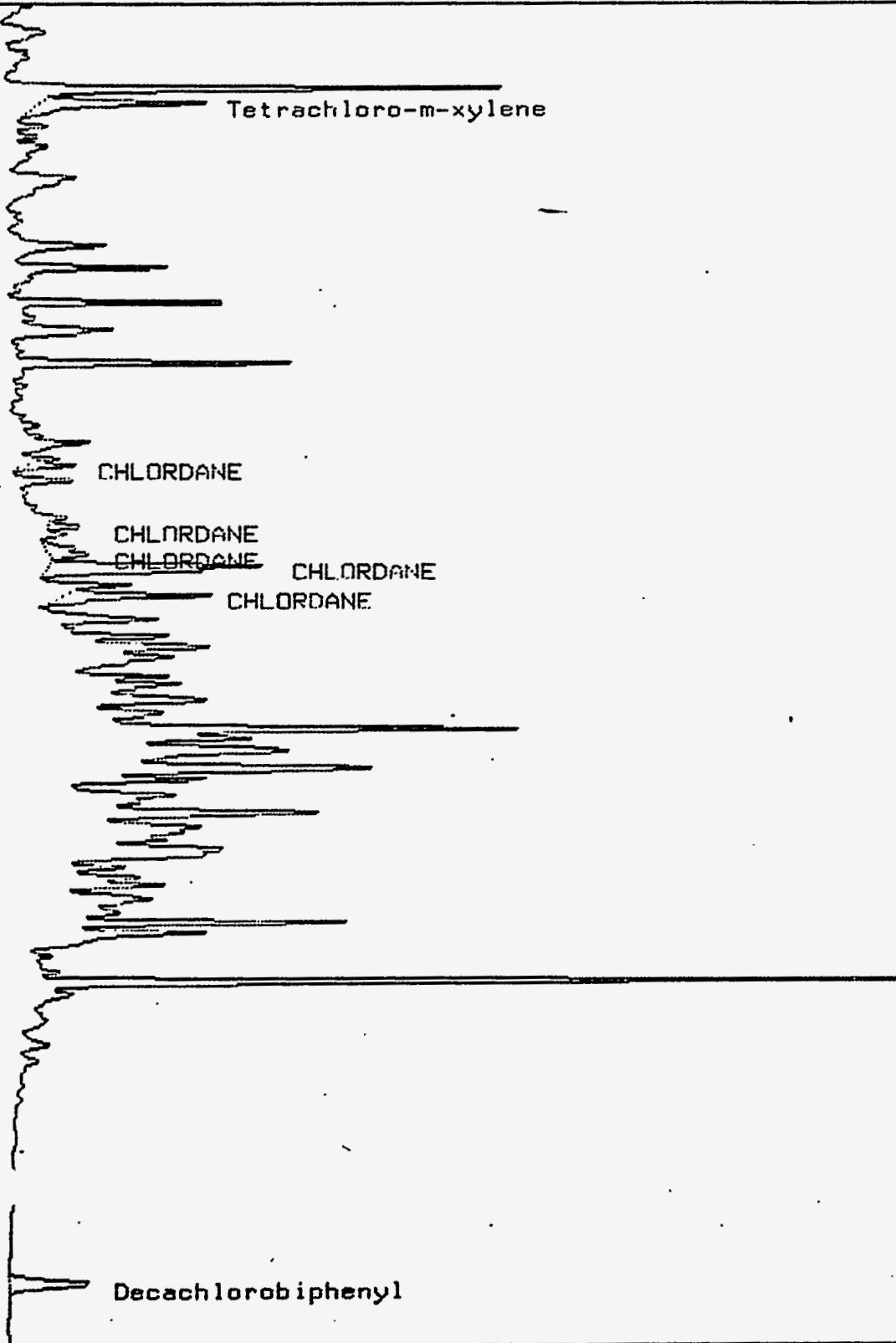
Result File : /DATA/RESULT/DB06478.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 1537 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'CHLOR0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 11  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.32	#6.28	877036	BB	37.039	Tetrachloro-m-xylene
2	13.18	13.16	178382	FF	84.515	CHLORDANE
3	14.36	14.34	122703	FF	47.542	CHLORDANE
4	14.87	14.82	312061	FF	75.767	CHLORDANE
5	15.08	14.98	1454096	FF	51.938	CHLORDANE
6	15.67	15.65	705706	BB	67.080	CHLORDANE
7	28.80	#28.72	523353	BB	27.992	Decachlorobiphenyl

} 316.842 ppb

Result File : /DATA/RESULT/DB06478.RES  
Sample Name : 3214009MS  
Sample Comment : 1661B-135  
Injection Time : 1537 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

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42T



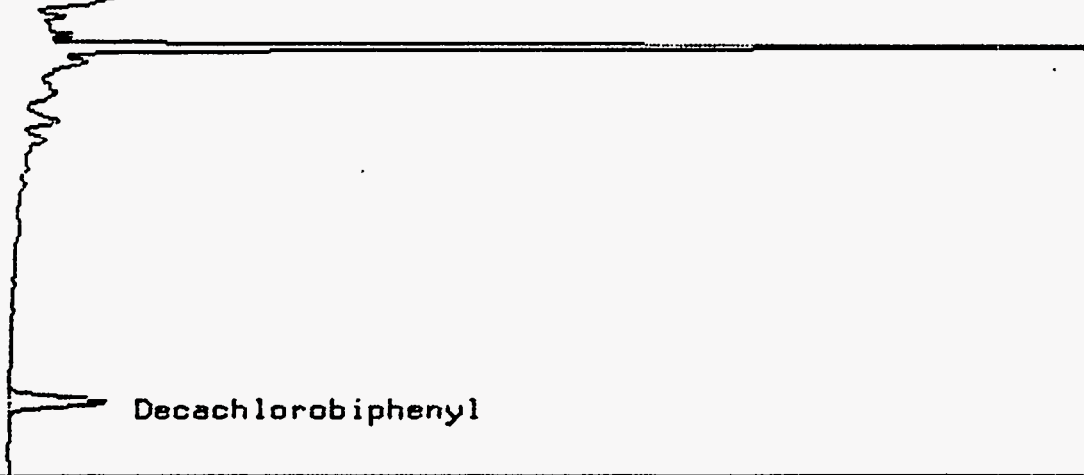
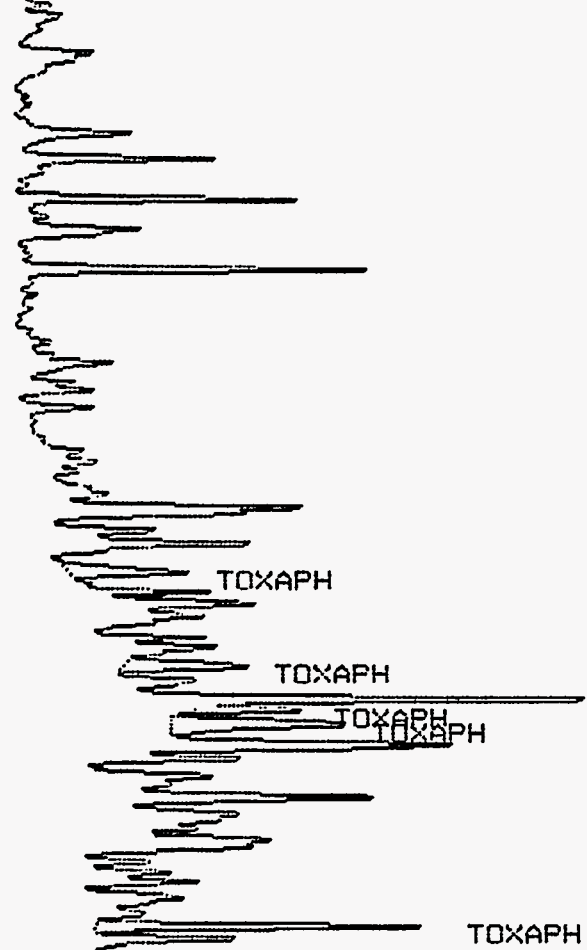
Result File : /DATA/RESULT/DB06478.RES  
 Sample Name : 3214009MS  
 Sample Comment : 1661B-135  
 Injection Time : 1537 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5.0-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 11  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.32	#6.28	877036	BB	33.396	Tetrachloro-m-xylene
2	16.13	16.19	572134	BB	760.083	TOXAPH
3	17.66	17.62	564173	BB	510.052	TOXAPH
4	18.38	18.33	302193	FF	257.784	TOXAPH
5	18.63	18.57	1011250	FF	415.081	TOXAPH
6	21.89	21.84	991034	FF	334.173	TOXAPH
7	28.80	#28.72	523353	BB	21.521	Decachlorobiphenyl

} 2277.173 ppb

Result File : /DATA/RESULT/DB06478.RES  
Sample Name : 3214009MS  
Sample Comment : 1661B-135  
Injection Time : 1537 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

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*Pesticide TCLP Analytical Results*  
40 CFR 261, June 29, 1990

*Client: Nuclear Fuel Services Inc.*  
*Lab Sample ID: 3214009MSD*  
*Matrix: Leachate*

*Client Sample ID: 1661B-135*  
*Client Reference No.: LEFPC*  
*Date of TCLP Extraction: 5/31/94*  
*Date Leached: 5/24/94*  
*Date Received: 5/17/94*

<i>CAS Number</i>	<i>Compound</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result mg/l</i>	<i>PQL mg/l</i>	<i>MCL mg/l</i>	<i>Note</i>
58899	Gamma-BHC	1	6/16/94	0.00276	0.000250	0.4	
76448	Heptachlor	1	6/16/94	0.00304	0.000250	0.008	
1024573	Heptachlor Epoxide	1	6/16/94	BQL	0.000250	0.008	
72208	Endrin	1	6/16/94	0.00600	0.000500	0.02	
72435	Methoxychlor	1	6/16/94	0.0196	0.00250	10	
57749	Chlordane	1	6/16/94	0.0175	0.00500	0.03	
8001352	Toxaphene	1	6/16/94	0.130	0.0250	0.5	

*PQL = Practical Quantitation Limit*

*BQL = Below Quantitation Limit*

*MCL = Maximum Contaminant Level*

*Pesticide Surrogate Results*

*Lab Sample ID: 3214009MSD*

*Client Sample ID: 1661B-135*

<i>Surrogate Compound</i>	<i>Percent Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>Tetrachloro-m-xylene</i>	<i>67</i>	<i>60-150</i>	
<i>Decachlorobiphenyl</i>	<i>118</i>	<i>60-150</i>	

*QC Limits are based upon CLP OLM01.8 SOW*

*\*\*\* = Surrogate recovery outside QC limits*

*Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.*

*Lower recoveries may indicate possible/probable matrix effect and/or lower extraction efficiency.*

Result File : /DATA/RESULT/DF06479.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 1613 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

HP5890A Instrument Method

Initial Temp 160.0 Equilibration Time 2.0  
 Initial Time 1.0 Oven Rate 5.0 Final Temp 270.0  
 Final Time 6.0 Rate A 0.0 Final Temp A 0.0  
 Final Time A 0.0 Rate B 0.0 Final Temp B 0.0  
 Final Time B 0.0  
 Injector Temp A 250.0 Injector Temp B 215.0 Detector Temp A 325.0 Detector Temp B 325.0

Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 12  
 160C(1)-5C/MIN-270(8MIN)

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.33	0.00	82780	BB	4.760	
2	4.04	0.00	84952	BB	4.885	
3	4.99	#4.96	373876	BB	13.300	Tetrachloro-m-xylene
4	8.85	8.81	640512	BB	55.124	gamma-BHC
5	9.41	9.36	927169	BB	60.837	Heptachlor
6	11.13	0.00	97606	BB	5.613	
7	11.28	0.00	138238	BB	7.949	
8	12.01	0.00	159899	BB	9.195	
9	12.51	12.54	84644	BB	5.211	Heptachlor epoxide
10	12.71	0.00	130678	BB	7.515	
11	12.97	0.00	150758	BB	8.669	
12	13.29	0.00	217539	BB	12.510	
13	13.75	13.68	953332	BB	49.305	gamma-Chlordane
14	13.96	13.89	231994	BB	11.520	alpha-Chlordane
15	14.51	0.00	371189	BB	21.345	
16	14.71	14.66	133814	BB	7.806	Dieldrin
17	14.98	0.00	488338	BB	28.082	
18	15.22	0.00	343866	BB	19.774	
19	15.39	15.35	1650321	BB	119.909	Endrin
20	15.63	0.00	223166	BB	12.833	
21	15.82	0.00	438848	BB	25.236	
22	16.00	0.00	449902	BB	25.872	
23	16.24	0.00	240843	BB	13.850	
24	16.42	0.00	526802	BB	30.294	
25	16.57	0.00	275084	BB	15.819	
26	17.06	17.05	1373576	BB	131.010	4,4'-DDB
27	17.29	0.00	581733	BB	33.453	
28	17.53	17.55	347078	BB	33.849	4,4'-DDT
29	17.91	0.00	583943	BB	33.580	
30	18.13	0.00	298444	BB	17.162	
31	18.39	0.00	241784	BB	13.904	
32	18.90	0.00	65268	BB	3.753	

*Handwritten notes:*  
 A large bracket on the right side of the table groups rows 9 through 28.  
 Next to the bracket, it says "4/17/94".  
 There are checkmarks next to several names: gamma-BHC, Heptachlor, Heptachlor epoxide, gamma-Chlordane, alpha-Chlordane, Dieldrin, Endrin, 4,4'-DDB, and 4,4'-DDT.

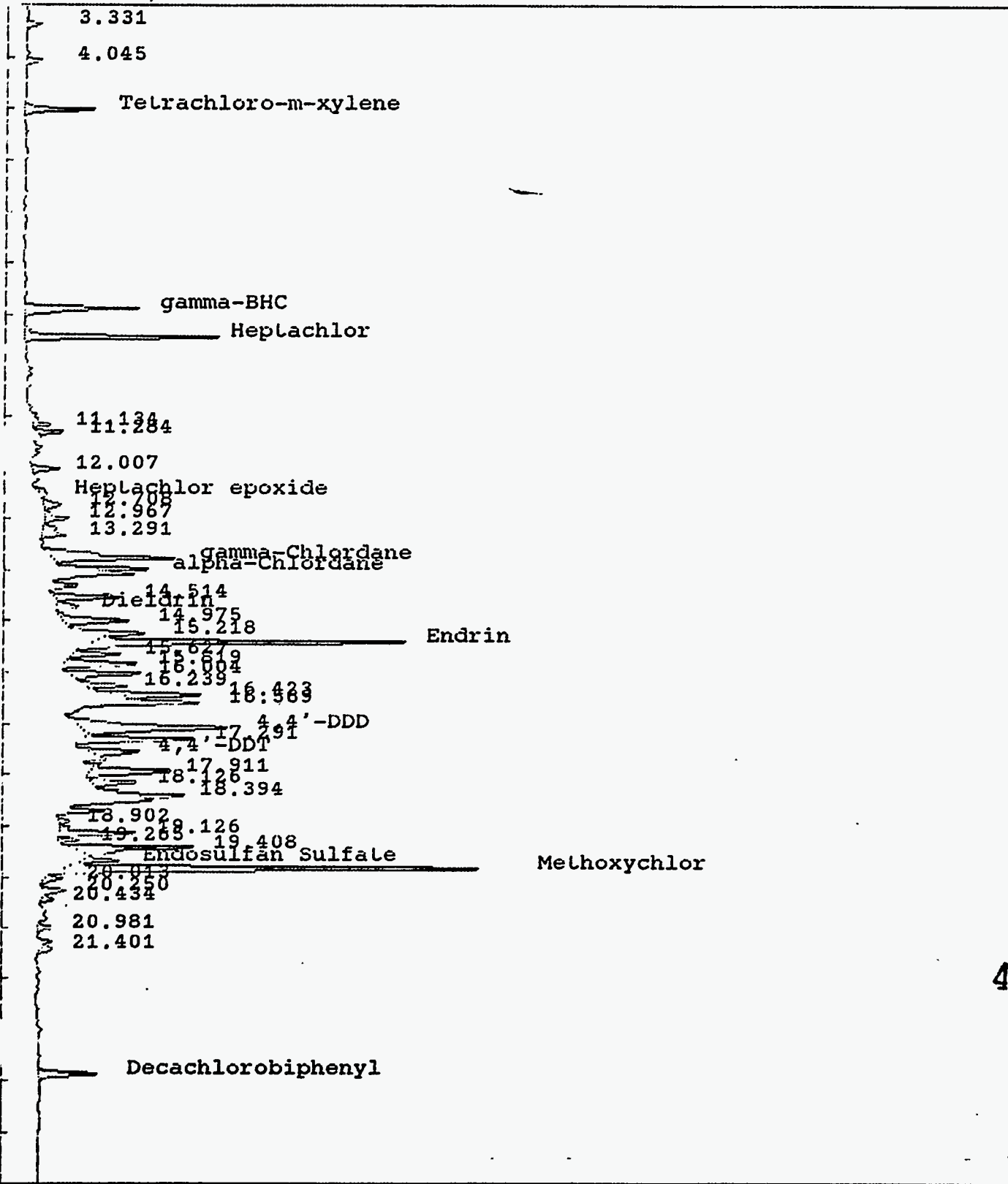
Result File : /DATA/RESULT/DF06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
33	19.13	0.00	401460	BB	23.086	
34	19.27	0.00	88110	BB	5.067	
35	19.41	0.00	788281	BB	45.330	
36	19.66	19.65	150686	BB	13.252	Endosulfan Sulfate
37	19.81	19.78	2219993	BB	392.095	Methoxychlor
38	20.01	0.00	89970	BB	5.174	
39	20.25	0.00	129804	BB	7.464	
40	20.43	0.00	55207	BB	3.175	
41	20.98	0.00	85569	BB	4.921	
42	21.40	0.00	73651	BB	4.235	
43	23.87	#23.83	344945	BB	23.651	Decachlorobiphenyl

Result File : /DATA/RESULT/DF06479.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 1613 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul  
 Fixed Scale for 1X Chromatogram (-1 - Autoscale)  
 Minimum mv: D Maximum mv: D

1X

15X



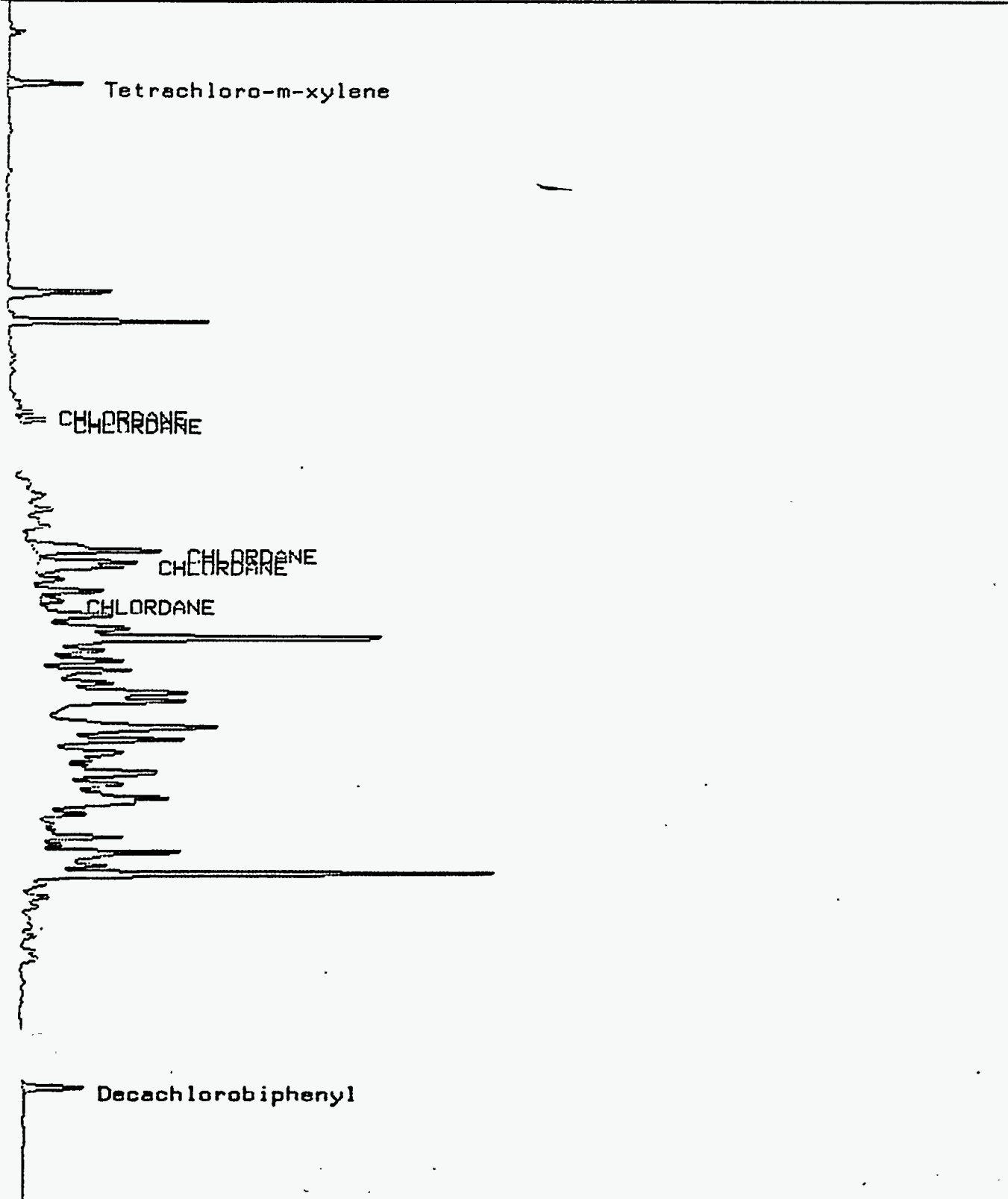
Result File : /DATA/RESULT/DF06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
Temp Program : 160 C(1MIN)-5-270 (8MIN)  
Calib Method : /DATA/METHOD/DF'CHLOR0527B.MTH  
Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
Subseq/Sample : 1/ 12  
%Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.99	#4.96	369110	BB	16.859	Tetrachloro-m-xylene
2	11.14	11.08	75338	FF	62.065	CHLORDANE
3	11.29	11.24	142013	FF	86.661	CHLORDANE
4	13.75	13.73	964392	FF	86.687	CHLORDANE
5	13.96	13.94	950582	FF	56.468	CHLORDANE
6	14.72	14.70	139899	FF	57.759	CHLORDANE
7	23.87	#23.83	342502	BB	29.954	Decachlorobiphenyl

} 349.640 ppb



Result File : /DATA/RESULT/DF06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul



Result File : /DATA/RESULT/DF06479.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 1613 16Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DF'0616.SEQ  
 Subseq/Sample : 1/ 12  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

PK#	Act RT	Exp RT	Area	Code	PPB	Name
1	4.99	#4.96	369110	BB	15.225	Tetrachloro-m-xylene
2	14.52	14.47	379830	FF	525.583	TOXAPH
3	14.98	14.93	442148	FF	501.615	TOXAPH
4	16.01	15.96	450338	FF	750.283	TOXAPH
5	17.30	17.25	590729	FF	438.991	TOXAPH
6	19.41	19.36	761578	FF	374.620	TOXAPH
7	23.87	#23.83	342502	BB	20.598	Decachlorobiphenyl

*2591.092 ppb*

Result File : /DATA/RESULT/DF06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul

Tetrachloro-m-xylene

TOXAPH

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TOXAPH

438

Decachlorobiphenyl

Control - Instrument 07 will not continue, LAS A/D not ready  
Instrument status is 07

EcoTek LSI

Result File : /DATA/RESULT/DB06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : DB608 .53MM / 1.5ul  
Temp Program : 160C(1MIN)-5-270(8MIN)  
Calib Method : /DATA/METHOD/DB'PEST24.MTH  
Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
Subseq/Sample : 1/ 12  
%Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.14	0.00	23922	BB	1.738	
2	3.56	0.00	118967	BB	8.642	
3	3.85	0.00	36575	BB	2.657	
4	4.05	0.00	33008	BB	2.398	
5	4.40	0.00	53360	BB	3.876	
6	4.60	0.00	29538	BB	2.146	
7	4.87	0.00	37388	BB	2.716	
8	5.67	0.00	30206	BB	2.194	
9	6.04	0.00	1564802	BB	113.671	
10	6.32	#6.28	481608	BB	19.679	Tetrachloro-m-xylene
11	6.78	0.00	105335	BB	7.652	
12	6.98	0.00	50327	BB	3.656	
13	7.56	0.00	34219	BB	2.486	
14	9.21	0.00	42924	BB	3.118	
15	9.42	0.00	427807	BB	31.077	
16	10.07	10.02	802520	BB	30.718	gamma-BHC
17	10.35	10.29	32373	BB	2.509	beta-BHC
18	10.65	0.00	269469	BB	19.575	
19	10.89	0.00	29261	BB	2.126	
20	11.22	11.17	1370946	BB	51.150	Heptachlor
21	11.65	11.60	45350	BB	1.775	delta-BHC
22	11.91	0.00	34559	BB	2.510	
23	12.40	0.00	63565	BB	4.618	
24	12.62	0.00	48451	BB	3.520	
25	12.74	0.00	50484	BB	3.667	
26	13.18	0.00	155726	BB	11.312	
27	13.47	0.00	271061	BB	19.691	
28	13.70	0.00	27651	BB	2.009	
29	13.98	0.00	22675	BB	1.647	
30	14.18	0.00	73914	BB	5.369	
31	14.35	14.38	96004	BB	3.799	Heptachlor epoxide
32	14.50	0.00	83631	BB	6.075	
33	14.87	0.00	379517	BB	27.569	
34	15.08	0.00	379741	BB	27.585	
35	15.67	15.66	805678	BB	36.811	Endosulfan I
36	16.13	0.00	596832	BB	43.355	
37	16.45	0.00	409843	BB	29.772	
38	16.65	16.58	517890	BB	22.277	4,4'-DDE
39	16.85	16.82	146854	BB	6.772	Dieldrin

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Result File : /DATA/RESULT/DB06479.RES

Sample Name : 3214009MSD

Sample Comment : 1661B-135

Injection Time : 1613 16Jun1994

Instrument : HPDB

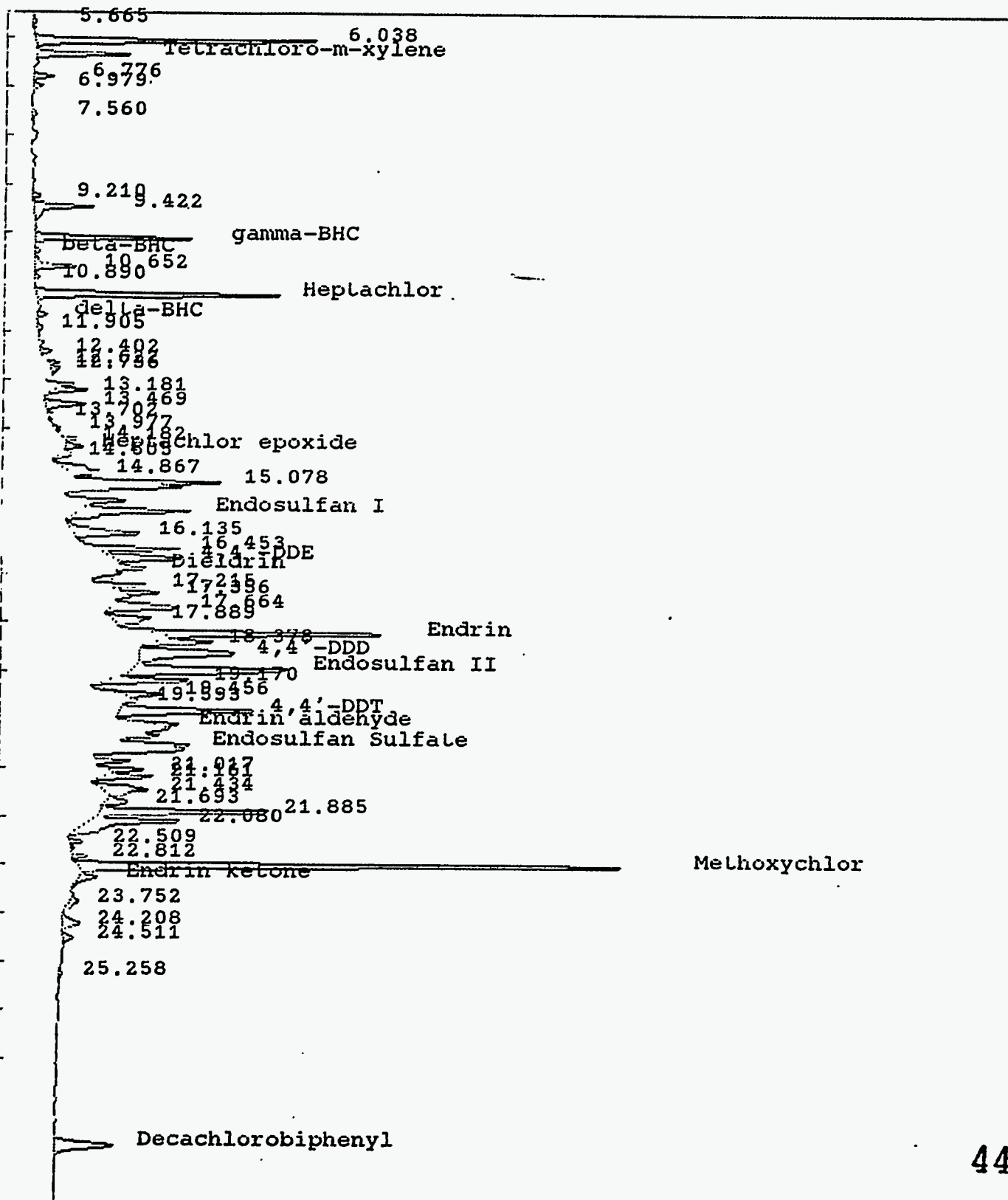
Column/AmI Inj : DB608

PK# Acl RT Exp RT Column/AmI Inj : DB608 .53MM / 1.5uI

PK#	Acl	RT	Exp	RT	Area	Code	UG/L	Name
40		17.22	0.00		53191	BB	3.864	
41		17.36	0.00		179448	BB	13.036	
42		17.66	0.00		516787	BB	37.541	
43		17.89	0.00		356080	BB	25.867	
44		18.20	18.15		1381949	BB	79.600	Endrin
45		18.38	0.00		277685	BB	20.172	
46		18.62	18.67		1020228	BB	66.130	4'-DD
47		18.95	18.77		1396243	BB	66.140	Endosulfan II
48		19.17	0.00		432152	BB	31.393	
49		19.46	0.00		259258	BB	18.833	
50		19.59	0.00		39643	BB	2.880	
51		19.80	19.75		1043494	BB	60.100	4'-DDE
52		20.07	19.98		165978	BB	9.700	Endrin aldehyde
53		20.51	20.42		185831	BB	9.726	Endosulfan sulfate
54		21.02	0.00		182011	BB	13.222	
55		21.16	0.00		257240	BB	18.687	
56		21.43	0.00		480562	BB	34.909	
57		21.69	0.00		166618	BB	12.104	
58		21.88	0.00		1001738	BB	72.769	
59		22.08	0.00		862309	BB	62.640	
60		22.51	0.00		70269	BB	5.104	
61		22.81	0.00		95433	BB	6.932	
62		23.00	22.96		328824	BB	445.833	Melnoxychlor
63		23.24	23.15		131271	BB	5.878	Endrin ketone
64		23.75	0.00		82918	BB	6.023	
65		24.21	0.00		174360	BB	12.666	
66		24.51	0.00		77391	BB	5.622	
67		25.26	0.00		20645	BB	1.500	
68		28.79	#28.72		584805	BB	23.090	Decachlorobiphenyl

6/17/94  


Result File : /DATA/RESULT/DB06479.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 1613 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul



Result File : /DATA/RESULT/DB06479.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 1613 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'CHLOR0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 12  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.32	#6.28	479808	BB	20.263	Tetrachloro-m-xylene
2	13.18	13.16	175677	FF	83.205	CHLORDANE
3	14.35	14.34	106737	FF	41.365	CHLORDANE
4	14.87	14.82	378888	FF	91.804	CHLORDANE
5	15.08	14.98	1585117	FF	56.594	CHLORDANE
6	15.67	15.65	786990	BB	74.756	CHLORDANE
7	28.79	#28.72	588472	BB	31.475	Decachlorobiphenyl

*37.24 ppb*

Result File : /DATA/RESULT/DB06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

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Tetrachloro-m-xylene

CHLORDANE

CHLORDANE

CHLORDANE

CHLORDANE

CHLORDANE

Decachlorobiphenyl



Result File : /DATA/RESULT/DB06479.RES  
 Sample Name : 3214009MSD  
 Sample Comment : 1661B-135  
 Injection Time : 1613 16Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB#08 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5.0-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0616.SEQ  
 Subseq/Sample : 1/ 12  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.32	#6.28	479808	RB	18.270	Tetrachloro-m-xylene
2	16.13	16.19	584878	BB	276.720	TOXAPH
3	17.66	17.62	582339	BB	526.308	TOXAPH
4	18.38	18.33	270992	FF	231.359	TOXAPH
5	18.63	18.57	1040231	FF	426.723	TOXAPH
6	21.89	21.84	1026404	FF	346.034	TOXAPH
7	28.79	#28.72	588472	RB	24.199	Decachlorobiphenyl

*2307.144 ppb*

Result File : /DATA/RESULT/DB06479.RES  
Sample Name : 3214009MSD  
Sample Comment : 1661B-135  
Injection Time : 1613 16Jun1994  
Instrument : HPDB  
Column/Amt Inj : H5890 GC/EC ; DB608 .53MN 1.5ul

Tetrachloro-m-xylene

TOXAPH

TOXAPH

TOXAPH

TOXAPH

Decachlorobiphenyl

\* These limits are based upon SW-846, Method 8080, Table 3.  
 NA = Not Applicable, none specified in the method.

Pesticide TCLP QC Data SW-846, Method 8080									
Client: Nuclear Fuel Service, Inc. Lab Sample ID: Q1453113/Q1453114 Matrix: Water Dilution: 1 APON: NA									
Client Sample ID: BLANK SPIKES Client Reference No.: LEFPC Date of TCLP Extraction: 5/31/94 Date Leached: NA Date of Analysis: 6/15/94 Date Received: NA									
Compound	Sample Concentration µg/kg	BS Amount µg/kg	BS Concentration µg/kg	Blank Spike % Recovery	BSD Spike Amount µg/kg	BSD Concentration µg/kg	Blank Spike % Recovery	QC Limits *	RPD
Gamma-BHC	0	0.250	0.457	183	0.250	0.460	184	32-127	0.6
Hepachlor	0	0.250	0.516	206	0.250	0.512	205	34-111	0.7
Endrin	0	0.500	1.01	203	0.500	1.03	206	30-147	1.4
Methoxychlor	0	2.50	3.39	135	2.50	3.43	137	NA	1.4
Chlordane	0	2.50	3.08	123	2.50	3.19	128	45-119	3.7
Toxaphene	0	25.0	21.1	84	25.0	23.2	93	41-126	9.3

Result File : /DATA/RESULT/DF06435.RES  
 Sample Name : Q1453113  
 Sample Comment : ES  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

HP5890A Instrument Method

Initial Temp 100.0 Equilibration Time 2.0  
 Initial Time 1.0 Oven Rate 5.0 Final Temp 270.0  
 Final Time 8.0 Rate A 0.0 Final Temp B 0.0  
 Final Time A 0.0 Rate B 0.0 Final Temp C 0.0  
 Final Time C 0.0  
 Injector Temp A 250.0 Injector Temp B 215.0 Detector Temp A 325.0 Detector Temp B 325.0

Calib Method : /DATA/METHOD/DF'FEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SEO  
 Subseq/Sample : 1/ 22  
 160C(1)-5C/MIN-270(8MIN)

Pk#	AcL	RT	Exp	RT	Area	Code	UG/L	Name
1		4.01		0.00	80403	BB	4.624	
2		4.96	#4.96		331672	BB	11.798	Tetrachloro-m-xylene
3		8.81		8.81	531117	BB	45.709	gamma-BHC
4		9.36		9.36	786028	BB	51.576	Heptachlor
5		11.09		0.00	144896	BB	8.332	
6		11.24		0.00	124551	BB	7.162	
7		11.96		0.00	143262	BB	8.238	
8		12.47		12.54	67466	BB	4.153	Heptachlor epoxide
9		12.66		0.00	98487	BB	5.663	
10		12.92		0.00	118294	BB	6.803	
11		13.25		0.00	90943	BB	5.230	
12		13.70		13.68	779129	BB	40.296	gamma-Chlordane
13		13.92		13.89	227858	BB	11.315	alpha-Chlordane
14		14.47		0.00	348090	BB	20.017	
15		14.67		14.66	114729	BB	6.693	Dieldrin
16		14.93		0.00	432915	BB	24.895	
17		15.17		0.00	293328	BB	16.868	
18		15.34		15.35	1395459	BB	101.391	Endrin
19		15.58		0.00	201248	BB	11.573	
20		15.77		0.00	353674	BB	20.338	
21		15.96		0.00	383369	BB	22.046	
22		16.20		0.00	205152	BB	11.797	
23		16.38		0.00	459871	BB	26.445	
24		16.53		0.00	223296	BB	12.841	
25		17.01		17.05	1210824	BB	115.487	4,4'-DDB
26		17.25		0.00	497425	BB	28.605	
27		17.49		17.55	312298	BB	30.457	4,4'-DBT
28		17.87		0.00	562405	BB	32.341	
29		18.08		0.00	267049	BB	15.357	
30		18.35		0.00	218175	BB	12.546	
31		18.86		0.00	59942	BB	3.447	
32		19.08		0.00	352047	BB	20.245	

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6/16/94

Result File : /DATA/RESULT/DF06435.RES  
Sample Name : Q1453113  
Sample Comment : ES  
Injection Time : 0327 15Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
33	19.22	0.00	78727	BB	4.527	
34	19.36	0.00	665926	BB	38.294	
35	19.62	19.65	128505	BB	11.302	<del>Endosulfan Sulfate</del>
36	19.77	19.78	1916750	BE	338.536	Methoxychlor
37	19.97	0.00	77032	BB	4.430	
38	20.21	0.00	108132	BB	6.216	
39	20.94	20.85	71807	BE	8.953	<del>Endrin ketone</del>
40	21.36	0.00	61450	BB	3.534	
41	23.82	#23.83	407304	BE	27.927	Decachlorobiphenyl

Result file : /DATA/RESULT/DF06435.RES

Sample Name : Q1453113

Sample Comment : RS

Injection Time : 0327 15Jun1994

Instrument : HPD

Column/AmI Inj : RTX1701.53M ; 1.5ul

Fixed Scale for 1X Chromatogram (-1 - Autoscale)

Maximum mv : D

1X

15X

4.015

Tetrachloro-m-xylene

gamma-BHC

Heptachlor

11.0941

11.963

Heptachlor epoxide

12.663

12.924

13.253

alpha-Chloro-dane

14.467

14.930

15.172

Endrin

15.529

16.156

16.975

4'-DDP

17.244

17.867

18.054

18.351

18.861

19.082

Endosulfan sulfate

19.364

Methoxychlor

20.208

Endrin kelone

21.356

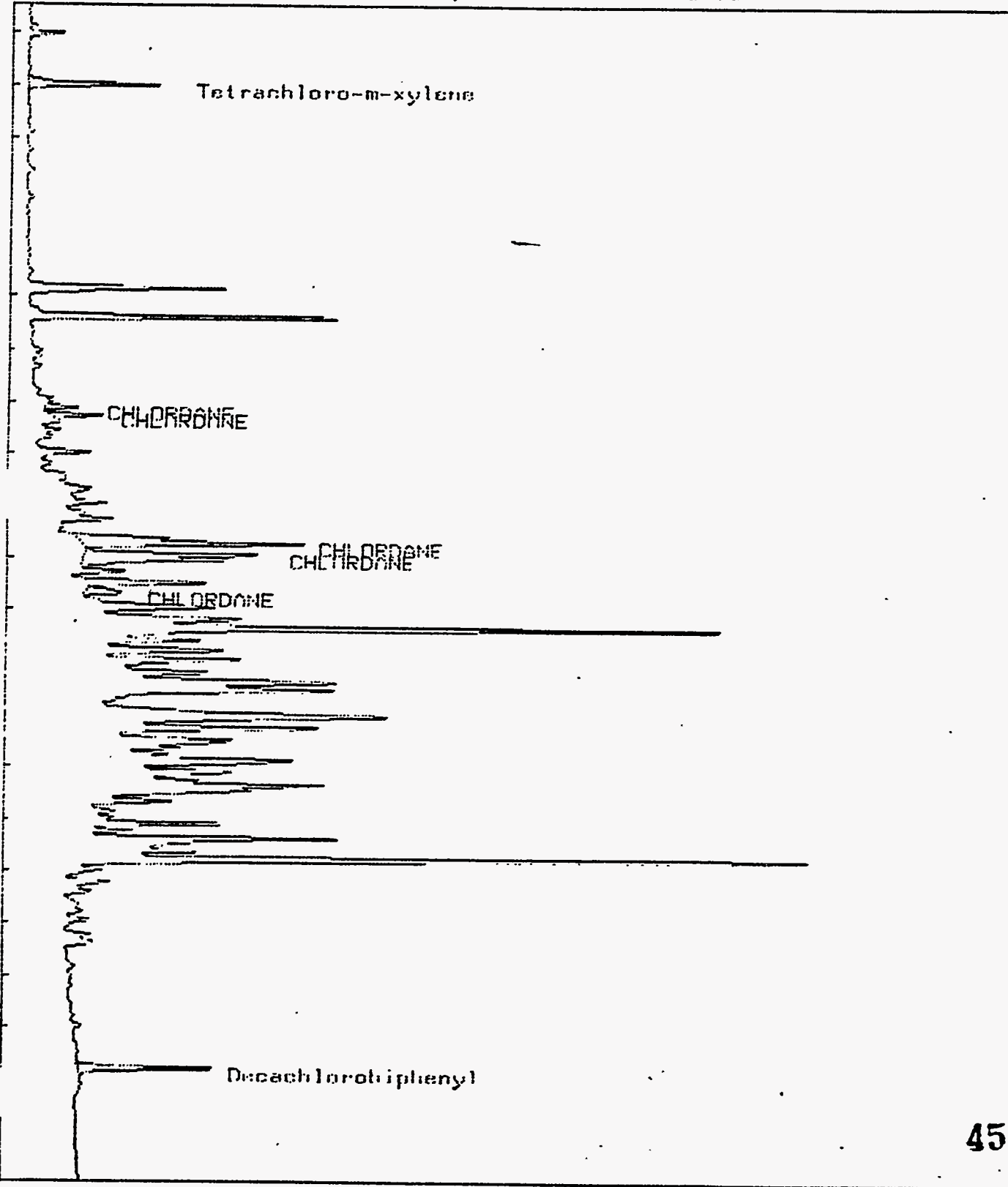
Decachlorobiphenyl

Multi File : /DATA/RESULT/DF06435.RES  
 Sample Name : Q1453113  
 Sample Comment : RS  
 Injection Time : 0327 19Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5R90 GC/EC ; RTX1701 .53MM 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (6MIN)  
 Calib Method : /DATA/METHOD/DF'CHLORDANE.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SFQ  
 Subseq/Sample : 1/ 22  
 %Dil-Fact : 100.000      Smp-Amt : 0.000

PK#	Out RT	Exp RT	Area	Code	PPB	Name
1	4.96	4.96	331654	BB	15.148	Tetrachloro-m-xylene
2	11.10	11.08	67235	FF	55.957	CHLORDANE
3	11.24	11.24	129400	FF	79.168	CHLORDANE
4	13.70	13.73	777602	BB	70.948	CHLORDANE
5	13.92	13.94	853296	BB	51.161	CHLORDANE
6	14.67	14.70	119419	FF	50.470	CHLORDANE
7	23.82	23.83	404411	BB	35.368	Decachlorobiphenyl

} 307.704 ppb

Result File : /DATA/RESULT/DF06435.RES  
Sample Name : Q1453113  
Sample Comment : BS  
Injection Time : 0327 15 Jun 1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul



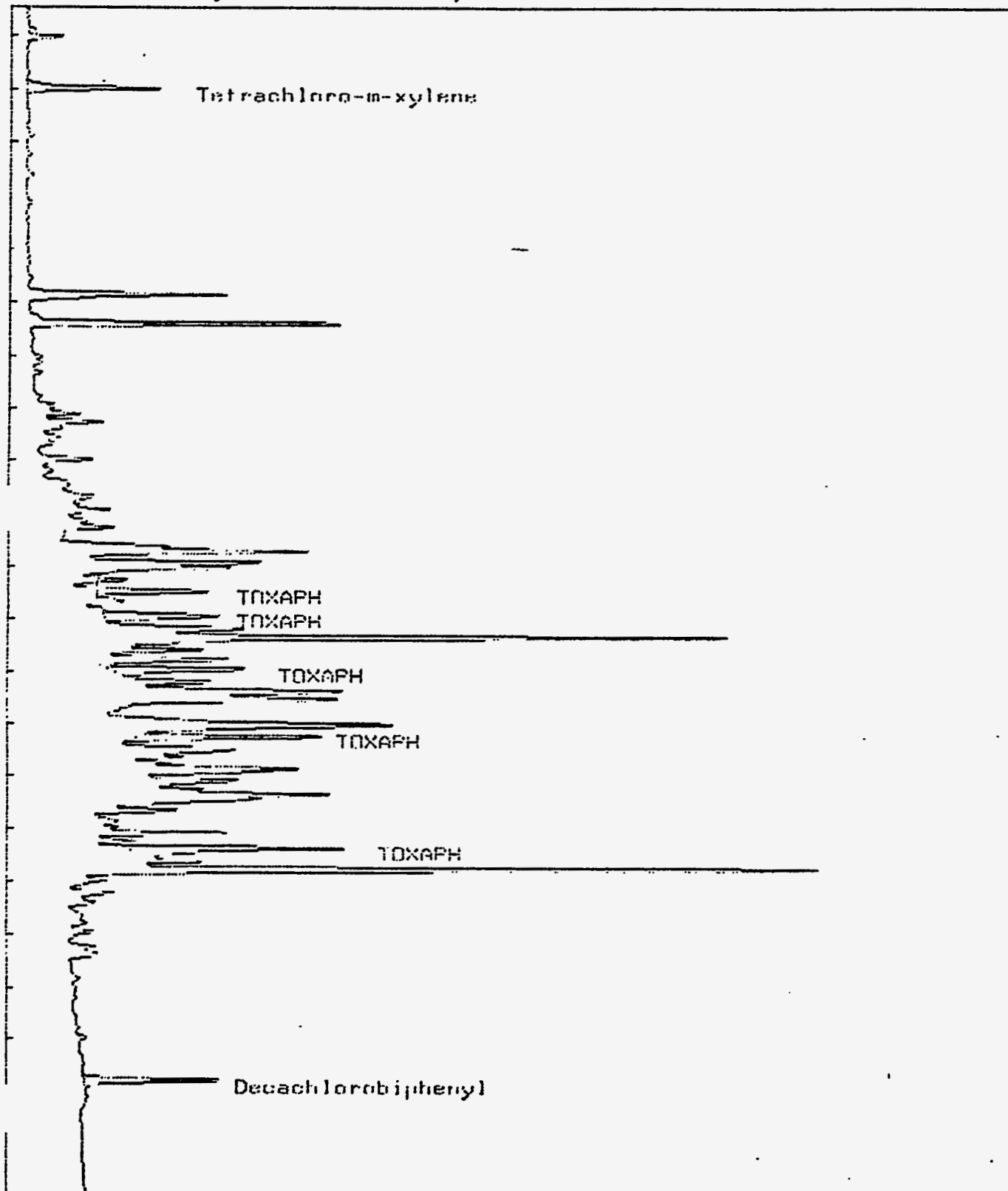


Result File : /DATA/RESULT/DF06435.RFS  
 Sample Name : Q1493113  
 Sample Comment : BS  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MM 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'TOXAPH0527R.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SFQ  
 Subseq/Sample : 1/ 22  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

PK#	Amt	RT	Exp RT	Area	Code	PPB	Name
1	4.96	4.96	4.96	331654	BB	13.680	Tetrachloro-m-xylene
2	14.47	14.47	14.47	276134	BB	337.089	TOXAPH
3	14.93	14.93	14.93	371145	FF	425.519	TOXAPH
4	15.96	15.96	15.96	408316	FF	682.654	TOXAPH
5	17.25	17.25	17.25	463381	BB	349.862	TOXAPH
6	19.37	19.36	19.36	627720	FF	316.447	TOXAPH
7	23.82	23.83	23.83	404411	BB	24.321	Decachlorobiphenyl

} 2111.571 ppb

Result File : /DATA/RESULT/DF06435.RFS  
Sample Name : Q1493113  
Sample Comment : BS  
Injection Time : 0327 15Jun1994  
Instrument : HPDF  
Column/Aut Inj : H5890 GC/EC ; RTX1701 .53MM 1.5ul



Result File : /DATA/RESULT/DF00445.RES  
 Sample Name : Q1455114  
 Sample Comment : ESD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : RTX1701 .53MM ; 1.5ul

HP5890A Instrument Method

Initial Temp 160.0 Equilibration Time 2.0  
 Initial Time 1.0 Oven Rate 5.0 Final Temp 270.0  
 Final Time 8.0 Rate A 0.0 Final Temp A 0.0  
 Final Time B 0.0 Rate B 0.0 Final Temp B 0.0  
 Final Time C 0.0  
 Injector Temp A 250.0 Injector Temp B 215.0 Detector Temp A 325.0 Detector Temp B 325.0

Calib Method : /DATA/METHOD/DF'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SEQ  
 Subseq/Sample : 1/ 32  
 160C(1)-5C/MIN-270(8MIN)

PK#	ACT RT	Exp RT	Area	Code	UG/L	Name
1	3.31	0.00	68887	BB	3.961	
2	4.02	0.00	55885	BB	3.214	
3	4.97	#4.96	319414	BB	11.362	Tetrachloro-m-xylene
4	8.82	8.81	534559	BB	46.005	gamma-BHC
5	9.38	9.36	780779	BB	51.232	Heptachlor
6	11.11	0.00	146513	BB	8.425	
7	11.26	0.00	124338	BB	7.150	
8	11.98	0.00	145936	BB	8.392	
9	12.48	12.54	66956	BB	4.122	Heptachlor epoxide
10	12.68	0.00	100269	BB	5.766	
11	12.94	0.00	120260	BB	6.916	
12	13.27	0.00	92011	BB	5.291	
13	13.72	13.68	793607	BB	41.045	gamma-Chlordane
14	13.93	13.89	231576	BB	11.500	alpha-Chlordane
15	14.48	0.00	353883	BB	20.350	
16	14.68	14.66	115786	BB	6.754	Dieldrin
17	14.95	0.00	446804	BB	25.694	
18	15.19	0.00	302919	BB	17.419	
19	15.36	15.35	1415282	BB	102.832	Endrin
20	15.60	0.00	208019	BB	11.962	
21	15.79	0.00	364538	BB	20.963	
22	15.98	0.00	397364	BB	22.851	
23	16.21	0.00	206256	BB	11.861	
24	16.40	0.00	467614	BB	26.890	
25	16.54	0.00	225742	BB	12.981	
26	17.03	17.05	1235357	BB	117.827	4,4'-DDB
27	17.26	0.00	503069	BB	28.929	
28	17.50	17.55	318143	BB	31.027	4,4'-DDT
29	17.88	0.00	510984	BB	29.384	
30	18.10	0.00	253545	BB	14.580	
31	18.37	0.00	228452	BB	13.137	
32	18.88	0.00	61196	BB	3.519	

Handwritten notes and a large bracket on the right side of the table. The bracket groups rows 13 through 28. Next to the bracket is the handwritten text "ES" and "6/16/94".

Result File : /DATA/RESULT/DF06445.RES  
Sample Name : Q1453114  
Sample Comment : BSD  
Injection Time : 0926 15Jun1994  
Instrument : HPDF  
Column/Amt Inj : RTX1701 .53MM ; 1.5ul

Pk#	AcL	RT	Exp	RT	Area	Code	UG/L	Name
33	19.10	0.00			360766	BB	20.746	
34	19.24	0.00			80656	BB	4.638	
35	19.38	0.00			679930	BB	39.100	
36	19.64	19.65			129405	BB	11.381	<del>Endosulfan Sulfate</del>
37	19.79	19.78			1943178	BB	343.204	Methoxychlor
38	19.99	0.00			79269	BB	4.558	
39	20.22	0.00			109549	BB	6.300	
40	20.95	0.00			73439	BB	4.223	
41	21.37	0.00			61232	BB	3.521	
42	23.84	#23.83			363395	BB	24.916	Decachlorobiphenyl

See  
6/16/94

Result File : /DATA/RESULT/DF06445.RES

Sample Name : Q1453114

Sample Comment : BSD

Injection Time : 0926 15Jun1994

Instrument : HPDF

Column/Int Inj : RTX1701 .53MM ; 1.5ul

Fixed Scale for 1X Chromatogram (-1 - Autoscale)

Minimum mv: D

Maximum mv: D

15X

3.313

4.023

Tetrachloro-m-xylene

gamma-BHC

Heptachlor

11.1956

11.980

Heptachlor epoxide

12.940

13.270

alpha-Chloridane

14.484

14.947

15.190

Endrin

15.609

15.875

16.214

16.386

4,4'-DDE

17.885

18.099

18.369

18.679

19.100

Endosulfan sulfate

19.362

20.225

20.955

21.374

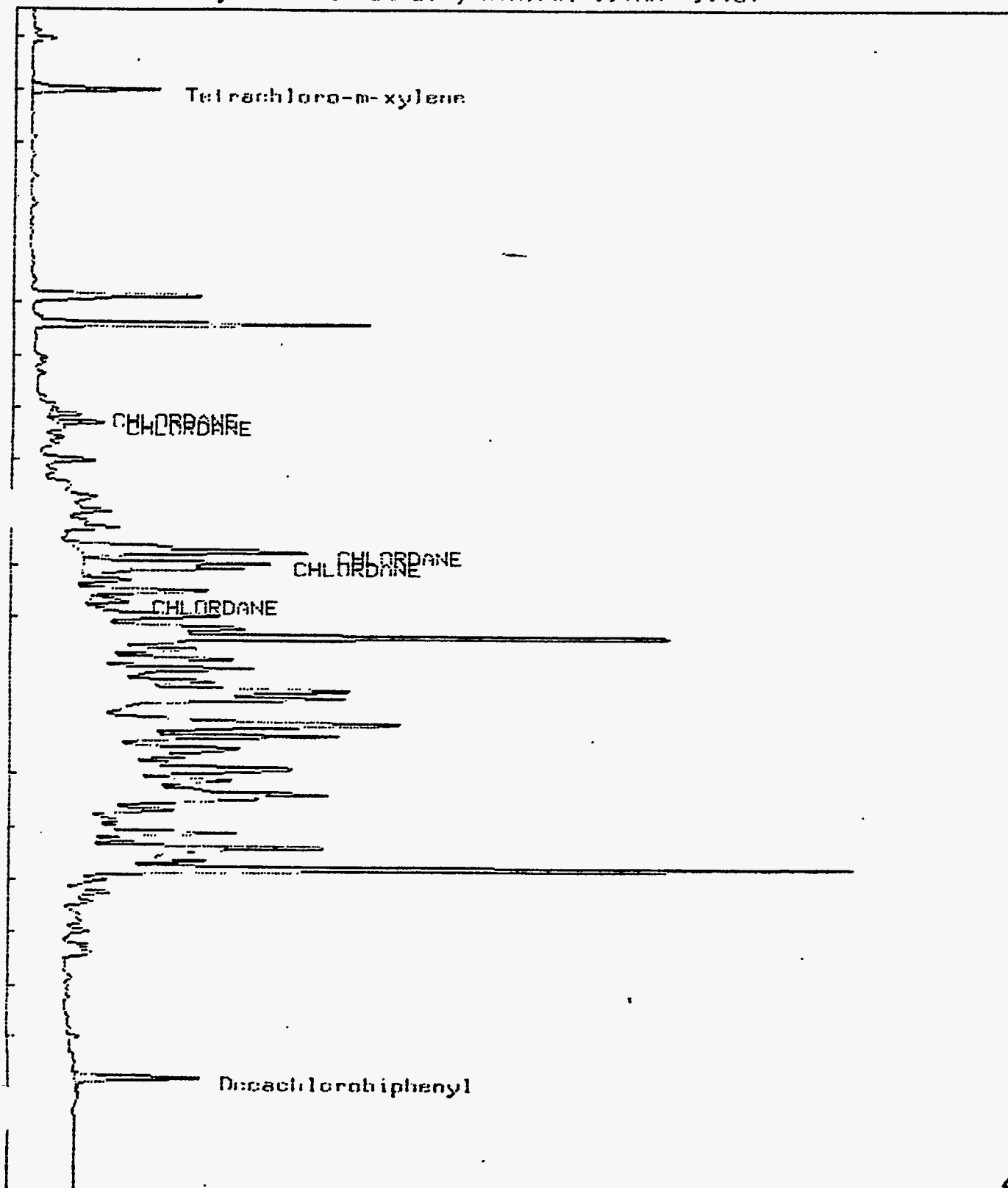
Decachlorobiphenyl

Result File : /DATA/RESULT/DF06445.RFS  
 Sample Name : Q1453114  
 Sample Comment : BSD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF 'CHLORDANE.MTH  
 Sequence : /DATA/SEQUENCE/DF '0614.SEQ  
 Subseq/Sample : 1 / 32  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Amt	RT	Exp	RT	Area	Code	PPB	Name
1	4.97	#4.96			318932	BB	14.567	Tetrachloro-m-xylene
2	11.11	11.08			68855	FF	57.178	CHLORDANE
3	11.26	11.24			124936	FF	76.516	CHLORDANE
4	13.72	13.73			885362	FF	80.028	CHLORDANE
5	13.94	13.94			914492	FF	54.499	CHLORDANE
6	14.69	14.70			121086	FF	51.064	CHLORDANE
7	23.84	#23.83			359211	BB	31.415	Decachlorobiphenyl

} 319.285 ppb

Result File : /DATA/RESULT/DF06445.RFS  
Sample Name : Q1453114  
Sample Comment: BSI  
Injection Time : 0926 15 Jun 1994  
Instrument : HPDF  
Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MN 1.5ul



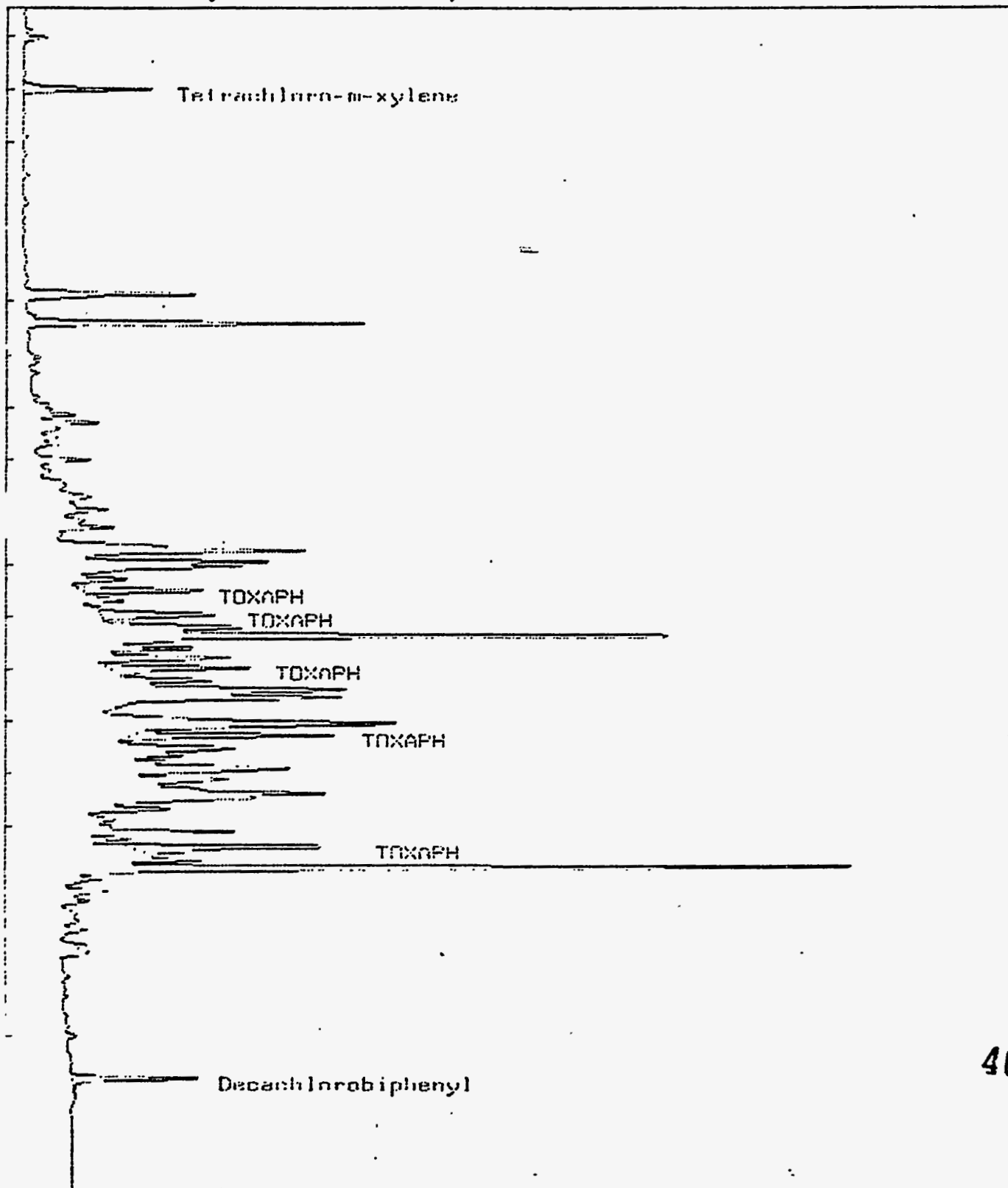
Result File : /DATA/RESULT/DF06445.RES  
 Sample Name : Q1453114  
 Sample Comment : BSD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDF  
 Column/Amt Inj : H5890 GC/EC ; RTX1701 .53MM 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 (8MIN)  
 Calib Method : /DATA/METHOD/DF'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DF'0614.SFQ  
 Subseq/Sample : 1/ 32  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

PK#	Ant	RT	Exp	RT	Area	Code	PPB	Name
1	4.97	4.96			318932	RB -	13.155	Tetrachloro-m-xylene
2	14.49	14.47			364003	FF	504.822	TOXAPH
3	14.95	14.93			391515	FF	447.350	TOXAPH
4	15.98	15.96			411698	FF	688.098	TOXAPH
5	17.27	17.25			487780	RB	366.588	TOXAPH
6	19.39	19.36			614965	RB	310.904	TOXAPH
7	23.84	23.83			359211	RB	21.602	Decachlorobiphenyl

} 2317.762 ppb



Result File : /DATA/RESULT/DF06449.RFS  
Sample Name : Q1453114  
Sample Comment : BSD  
Injection Time : 0926 15 Jun 1994  
Instrument : HPDF  
Column/Atl Inj : H5890 GC/EC ; RTX1701 .53MM 1.5ul



Result File : /DATA/RESULT/DE06435.RES  
 Sample Name : Q1453113  
 Sample Comment : ES  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SEQ  
 Subseq/Sample : 1/ 22  
 %Dil-Fact : 100.000 Smp-Amt: 0.000

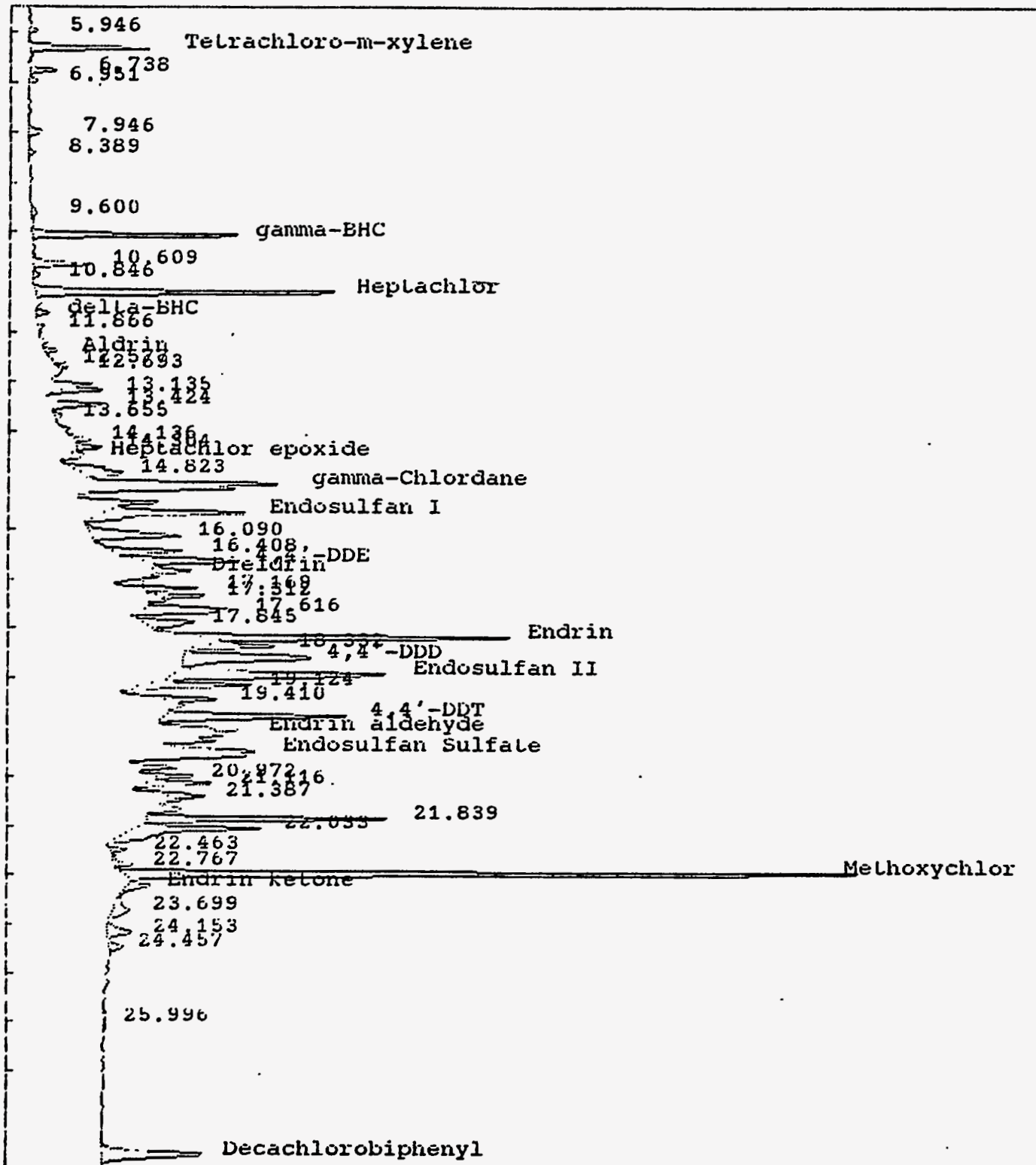
Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.53	0.00	114541	BB	8.321	
2	3.82	0.00	50838	BB	3.693	
3	4.02	0.00	28832	BB	2.094	
4	5.95	0.00	29560	BB	2.147	
5	6.28	#6.28	414409	BB	16.934	Tetrachloro-m-xylene
6	6.74	0.00	88937	BB	6.461	
7	6.95	0.00	30528	BB	2.218	
8	7.95	0.00	73976	BB	5.374	
9	8.39	0.00	26245	BB	1.907	
10	9.60	0.00	37115	BB	2.696	
11	10.03	10.02	716272	BB	27.417	gamma-BHC
12	10.61	0.00	235319	BB	17.094	
13	10.85	0.00	26283	BB	1.909	
14	11.17	11.17	1234057	BB	46.043	Heptachlor
15	11.60	11.60	47529	BB	1.860	delta-BHC
16	11.87	0.00	27469	BB	1.995	
17	12.36	12.30	47395	BB	1.784	Aldrin
18	12.58	0.00	39927	BB	2.900	
19	12.69	0.00	23915	BB	1.737	
20	13.13	0.00	138273	BB	10.044	
21	13.42	0.00	249722	BB	18.140	
22	13.66	0.00	27050	BB	1.965	
23	14.14	0.00	66821	BB	4.854	
24	14.30	0.00	89892	BB	6.530	
25	14.45	14.38	73053	BB	2.891	Heptachlor epoxide
26	14.82	0.00	326996	BB	23.754	
27	15.03	14.97	352881	BB	12.611	gamma-Chlordane
28	15.62	15.66	659229	BB	30.120	Endosulfan
29	16.09	0.00	513684	BB	37.315	
30	16.41	0.00	245400	BB	17.826	
31	16.61	16.58	513908	BB	22.106	4,4'-DDE
32	16.81	16.82	131256	BB	6.053	Dieldrin
33	17.17	0.00	49107	BB	3.567	
34	17.31	0.00	170251	BB	12.367	
35	17.62	0.00	473104	BB	34.367	
36	17.85	0.00	311593	BB	22.635	
37	18.15	18.15	1216816	BB	70.089	Endrin
38	18.33	0.00	251282	BB	18.254	
39	18.57	18.67	912280	BB	59.133	4,4'-DDD

Result File : /DATA/RESULT/DE06435.RES  
 Sample Name : Q1453113  
 Sample Comment : BS  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDE  
 Column/Amt Inj : DE608 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	18.90	18.77	1240637	BB	58.769	<del>Endosulfan II</del>
41	19.12	0.00	393546	BB	28.588	
42	19.41	0.00	219720	BB	15.961	
43	19.75	19.75	864823	BB	49.810	<del>4,4'-DDT</del>
44	20.03	19.98	137649	BB	8.044	<del>Endrin aldehyde</del>
45	20.46	20.42	174773	BB	9.147	<del>Endosulfan Sulfate</del>
46	20.97	0.00	162304	BB	11.790	
47	21.12	0.00	220837	BB	16.042	
48	21.39	0.00	213859	BB	15.535	
49	21.84	0.00	864183	BB	62.776	
50	22.03	0.00	746857	BB	54.253	
51	22.46	0.00	60883	BB	4.423	
52	22.77	0.00	84320	BB	6.125	
53	22.96	22.96	2921945	BB	396.099	Methoxychlor
54	23.19	23.15	117751	BB	5.273	<del>Endrin ketone</del>
55	23.70	0.00	154677	BB	11.236	
56	24.15	0.00	161239	BB	11.713	
57	24.46	0.00	72913	BB	5.297	
58	26.00	0.00	35478	BB	2.577	
59	28.71	#28.72	673755	BB	26.603	Decachlorobiphenyl

BS  
6/16/94

Result File : /DATA/RESULT/DB06435.RES  
 Sample Name : Q1453113  
 Sample Comment : BS  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul

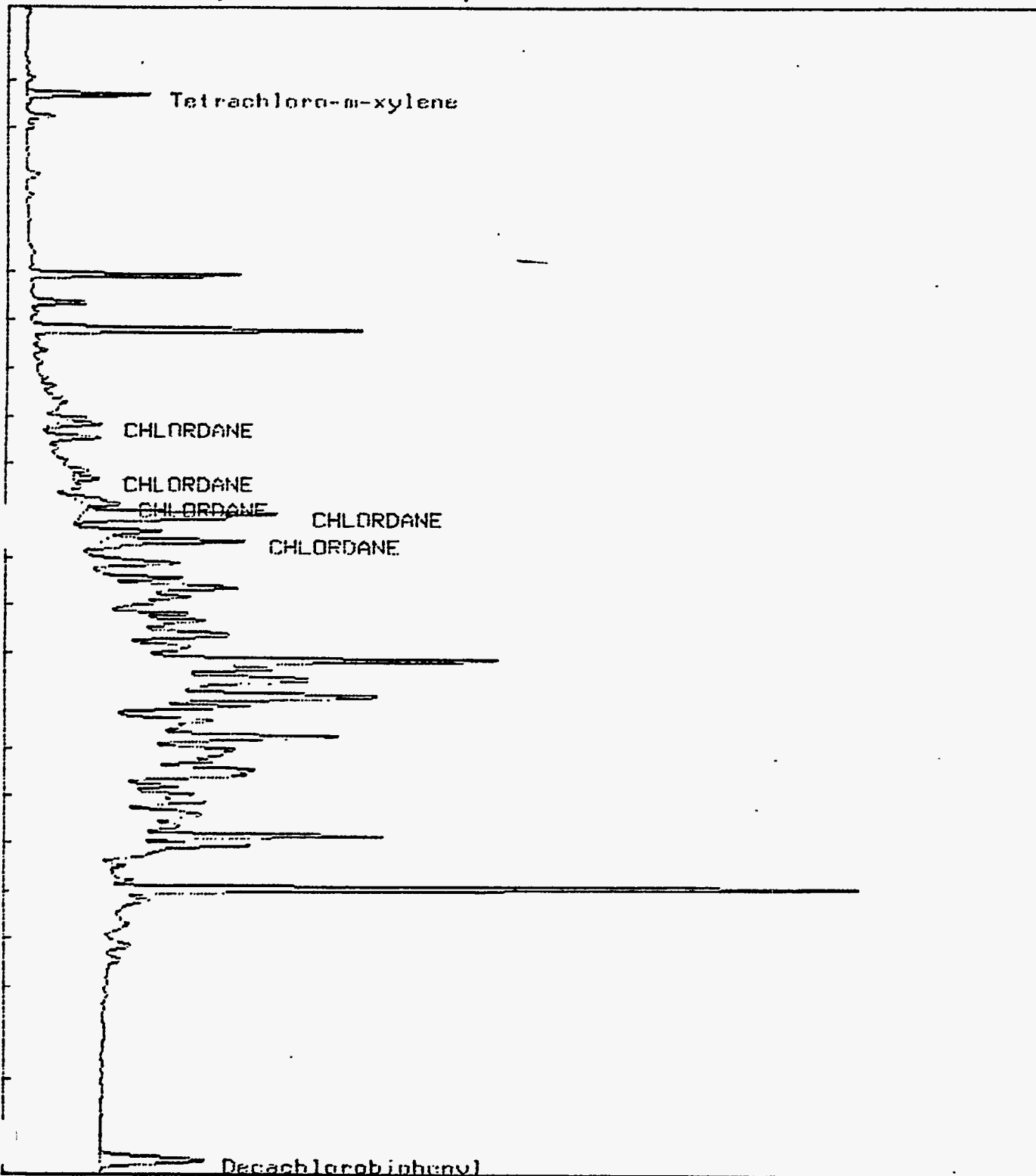


Result File : /DATA/RESULT/DB06435.RFS  
 Sample Name : Q1453113  
 Sample Comment : RS  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DB608 .57MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DR'CHLORDANE.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SEQ  
 Subseq/Sample : 1/ 22  
 %Dil-Fact : 100.000 Sup-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.28	#6.28	437641	BB	18.482	Tetrachloro-m-xylene
2	13.14	13.16	160305	FF	75.762	CHLORDANE
3	14.31	14.34	102322	FF	39.657	CHLORDANE
4	14.83	14.87	288470	FF	70.106	CHLORDANE
5	15.04	14.98	1402864	BB	50.117	CHLORDANE
6	15.62	15.65	644344	BB	61.284	CHLORDANE
7	28.71	#28.72	672350	BB	35.961	Decachlorobiphenyl

*296.926 ppb*

Result File : /DATA/RESULT/DR06435.RFS  
Sample Name : Q1453113  
Sample Comment : BS  
Injection Time : 0327 15Jun1994  
Instrument : HPDB  
Column/Aut Inj : HP890 GC/EC ; DB608 .53MN 1.5ul

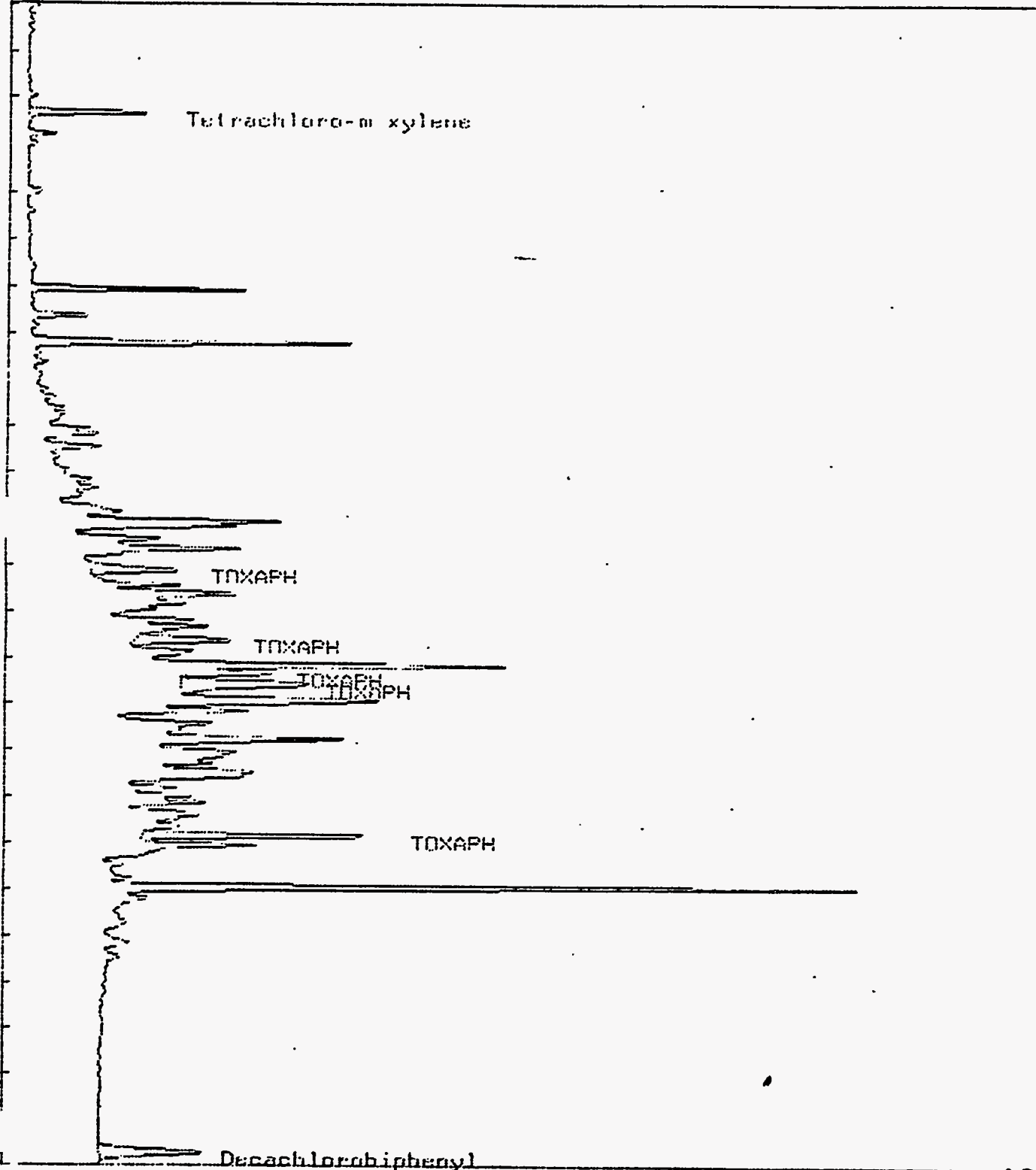


Result File : /DATA/RESULT/DR06435.RFS  
 Sample Name : Q1453113  
 Sample Comment : BS  
 Injection Time : 0327 15Jun1994  
 Instrument : HPDB  
 Column/Ampl Inj : H5890 GC/EC ; DB#08 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5.0-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'TOXAPH0527B.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SFQ  
 Subseq/Sample : 1/??  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

PK#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.28	46.28	437641	RB	16.664	Tetrachloro-m-xylene
2	16.10	16.14	488356	FF	650.711	TOXAPH
3	17.63	17.62	545651	FF	493.477	TOXAPH
4	18.34	18.33	275655	FF	235.308	TOXAPH
5	18.58	18.57	932571	FF	383.474	TOXAPH
6	21.84	21.84	883677	FF	298.174	TOXAPH
7	28.71	28.72	672350	BB	27.648	Decachlorobiphenyl

*2061.144 ppb*

Result File : /DATA/RESULT/DR06435.RFS  
Sample Name : Q1457113  
Sample Comment : RS  
Injection Time : 0327 15Jun1994  
Instrument : HPDB  
Column/Amb Inj : H5890 GC/EC ; DB408 .53MN 1.5ul





Result File : /DATA/RESULT/DB06445.RES  
 Sample Name : Q1453114  
 Sample Comment : ESD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDB  
 Column/Aml Inj : DE608 .53MM / 1.5uL  
 Temp Program : 160C(1MIN)-5-270(8MIN)  
 Calib Method : /DATA/METHOD/DB'PEST24.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SEO  
 Subseq/Sample : 1/ 32  
 %Dil-Facl : 100.000 Smp-Aml: 0.000

PK#	ACL RT	Exp RT	Area	Code	UG/L	Name
1	3.54	0.00	83681	BB	6.079	
2	3.83	0.00	99065	BB	7.196	
3	4.03	0.00	32605	BB	2.368	
4	5.96	0.00	29166	BB	2.119	
5	6.29	#6.28	408400	BB	16.688	Tetrachloro-m-xylene
6	6.75	0.00	93081	BB	6.762	
7	6.96	0.00	20222	BB	1.469	
8	8.01	0.00	55201	BB	4.010	
9	8.40	0.00	26886	BB	1.953	
10	9.62	0.00	38240	BB	2.778	
11	10.04	10.02	736138	BB	28.177	gamma-BHC
12	10.63	0.00	239126	BB	17.371	
13	10.86	0.00	28359	BB	2.060	
14	11.19	11.17	1257590	BB	46.921	Heplachlor
15	11.62	11.60	48782	BB	1.909	delta-BHC
16	11.88	0.00	26496	BB	2.070	
17	12.37	12.30	52107	BB	1.961	Alachlor
18	12.59	0.00	38968	BB	2.831	
19	12.71	0.00	25795	BB	1.874	
20	13.15	0.00	140938	BB	10.238	
21	13.44	0.00	258131	BB	18.751	
22	13.67	0.00	27426	BB	1.992	
23	13.95	0.00	20722	BB	1.505	
24	14.15	0.00	71006	BB	5.158	
25	14.32	14.38	92220	BB	3.650	Heptachlor epoxide
26	14.48	0.00	70514	BB	5.122	
27	14.84	0.00	335974	BB	24.406	
28	15.05	14.97	351860	BB	12.574	gamma-Chlordane
29	15.64	15.66	470405	BB	21.493	Endosulfan I
30	16.11	0.00	253727	BB	18.431	
31	16.42	0.00	199061	BB	14.460	
32	16.63	16.58	546702	BB	23.516	<del>gamma-BHC</del>
33	16.83	16.82	137295	BB	6.331	<del>delta-BHC</del>
34	17.19	0.00	48851	BB	3.549	
35	17.33	0.00	173330	BB	12.591	
36	17.63	0.00	493081	BB	35.819	
37	17.86	0.00	323598	BB	23.507	
38	18.17	18.15	1245880	BB	71.763	Endrin ✓
39	18.35	0.00	255926	BB	18.591	

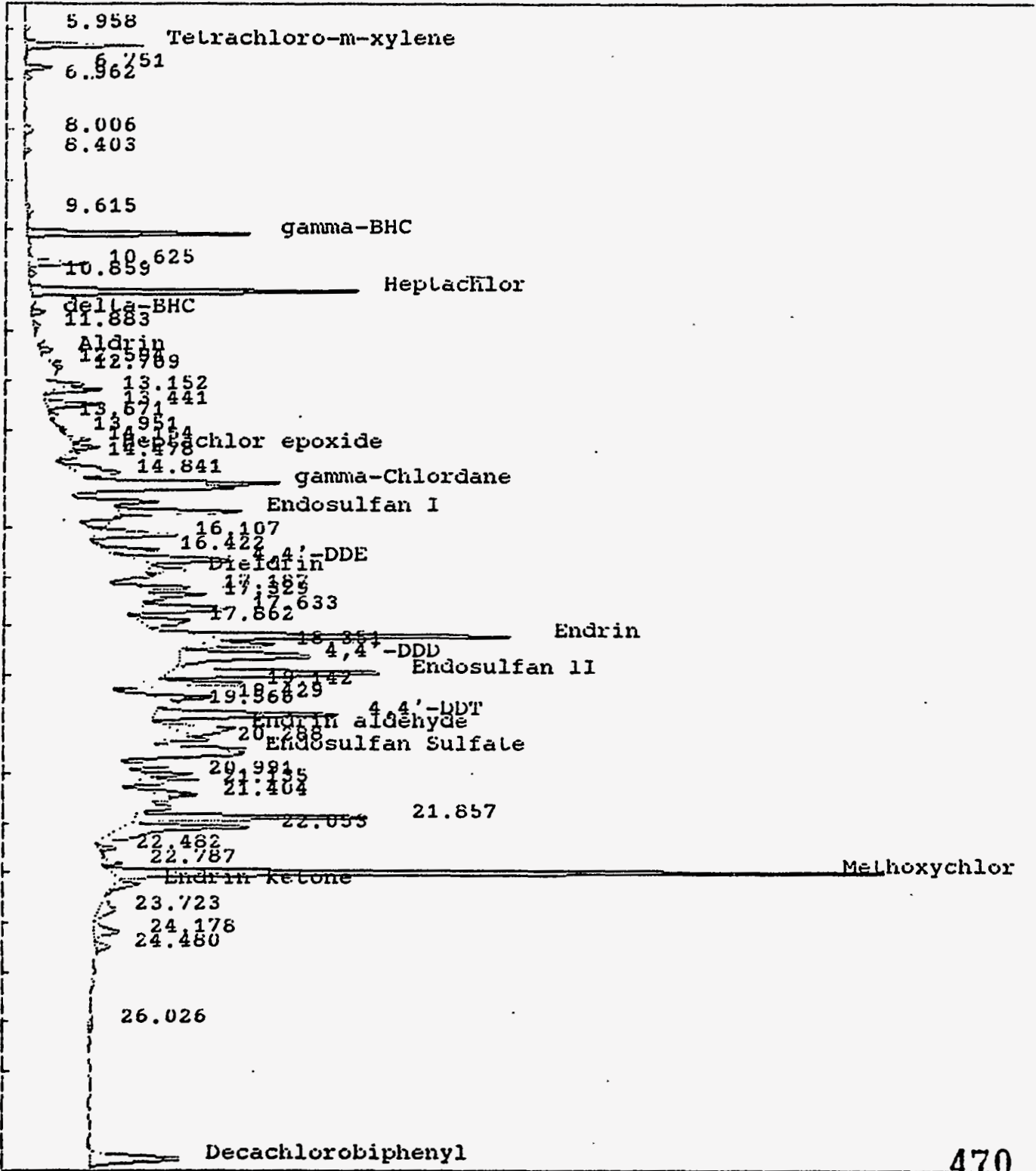
488  
6/16/1

Result File : /DATA/RESULT/DB06445.RES  
 Sample Name : Q1453114  
 Sample Comment : BSD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDE  
 Column/Amt Inj : DB608 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	18.59	18.67	955393	BB	61.928	<del>4,4'-DDD</del>
41	18.92	18.77	1295583	BB	61.372	<del>Endosulfan II</del>
42	19.14	0.00	398517	BB	28.949	
43	19.43	0.00	240428	BB	17.465	
44	19.57	0.00	33518	BB	2.435	
45	19.77	19.75	960040	BB	55.293	<del>4,4'-DDT</del>
46	20.05	19.98	476523	BB	27.848	<del>Endrin aldehyde</del>
47	20.29	0.00	104072	BB	7.560	
48	20.48	20.42	157657	BB	8.251	<del>Endosulfan Sulfate</del>
49	20.99	0.00	169562	BB	12.317	
50	21.13	0.00	234713	BB	17.050	
51	21.40	0.00	225125	BB	16.354	
52	21.86	0.00	912891	BB	66.315	
53	22.05	0.00	794389	BB	57.706	
54	22.48	0.00	63179	BB	4.590	
55	22.79	0.00	85339	BB	6.199	
56	22.98	22.96	3001225	BB	406.846	Methoxychlor
57	23.21	23.15	124644	BB	5.581	<del>Endrin ketone</del>
58	23.72	0.00	152165	BB	11.054	
59	24.18	0.00	163308	BB	11.863	
60	24.48	0.00	73032	BB	5.305	
61	26.03	0.00	38996	BB	2.833	
62	28.75	#28.72	605168	BB	23.894	Decachlorobiphenyl

SP  
6/16/94

Result File : /DATA/RESULT/DB06445.RES  
 Sample Name : Q1453114  
 Sample Comment : ESD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : DB608 .53MM / 1.5ul

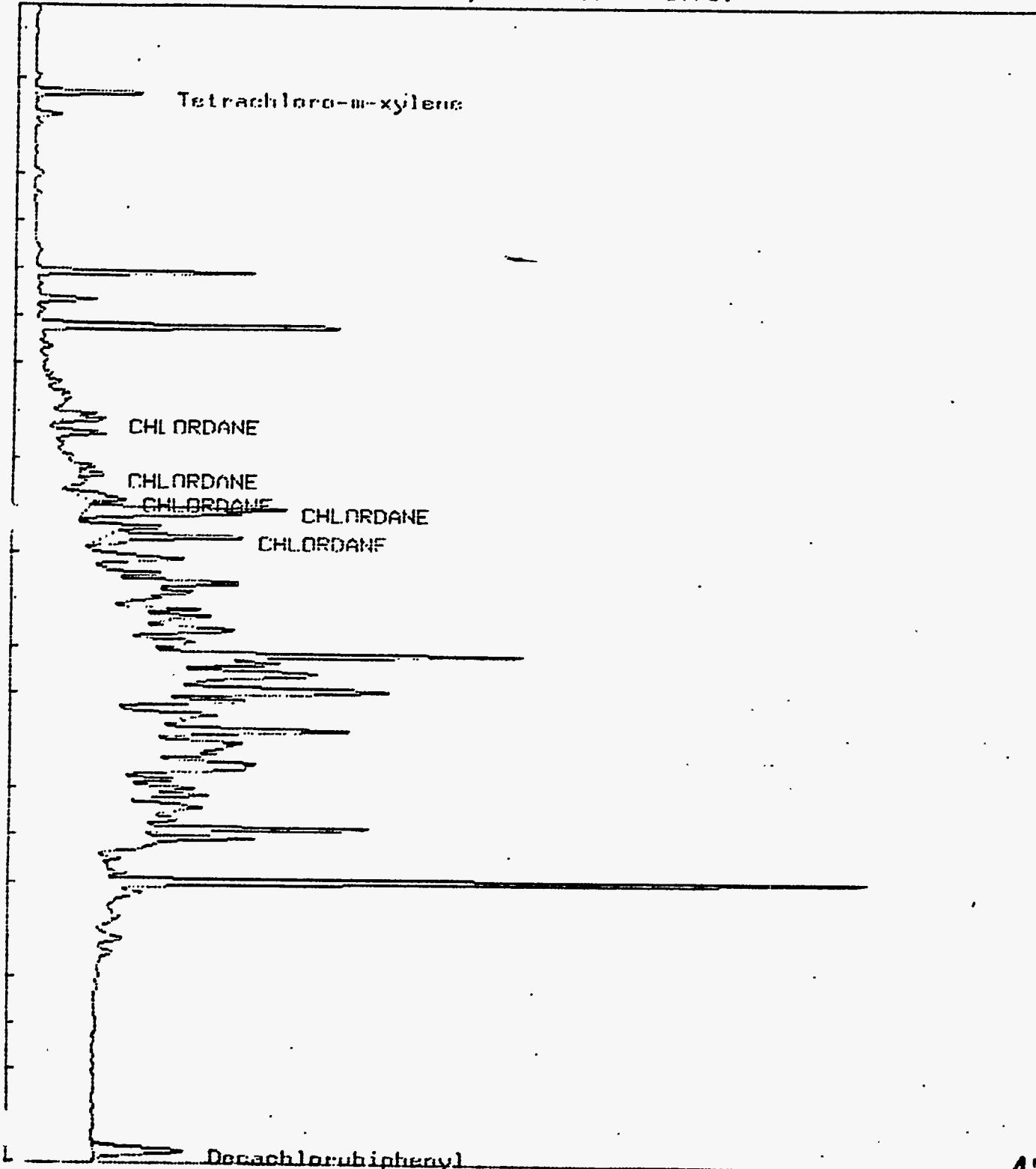


Result File : /DATA/RESULT/DR06445.RFS  
 Sample Name : Q1457114  
 Sample Comment : BSD  
 Injection Time : 0926 19Jun1994  
 Instrument : HPDB  
 Column/Amt Inj : H5890 GC/EC ; DBK08 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DR'CHI DR05278.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SEQ  
 Subseq/Sample : 1/ 32  
 %Dil-Fact : 100.000                      Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UC/L	Name
1	6.29	#6.28	426520	RB	18.013	Tetrachloro-m-xylene
2	13.15	13.16	152684	FF	72.072	CHLORDANE
3	14.33	14.34	97448	FF	37.772	CHLORDANE
4	14.84	14.82	324098	FF	78.656	CHLORDANE
5	15.06	14.98	1435731	RB	51.285	CHLORDANE
6	15.64	15.65	668554	BB	63.571	CHLORDANE
7	28.75	#28.72	590882	BB	31.604	Decachlorobiphenyl

*303,356 ppb*

Result File : /DATA/RESULT/DR06445.RES  
Sample Name : Q1453114  
Sample Comment : BSD  
Injection Time : 0926 15Jun1994  
Instrument : HPDB  
Column/Aml Inj : H5890 GC/EC ; DBA08 .53MN 1.5ul

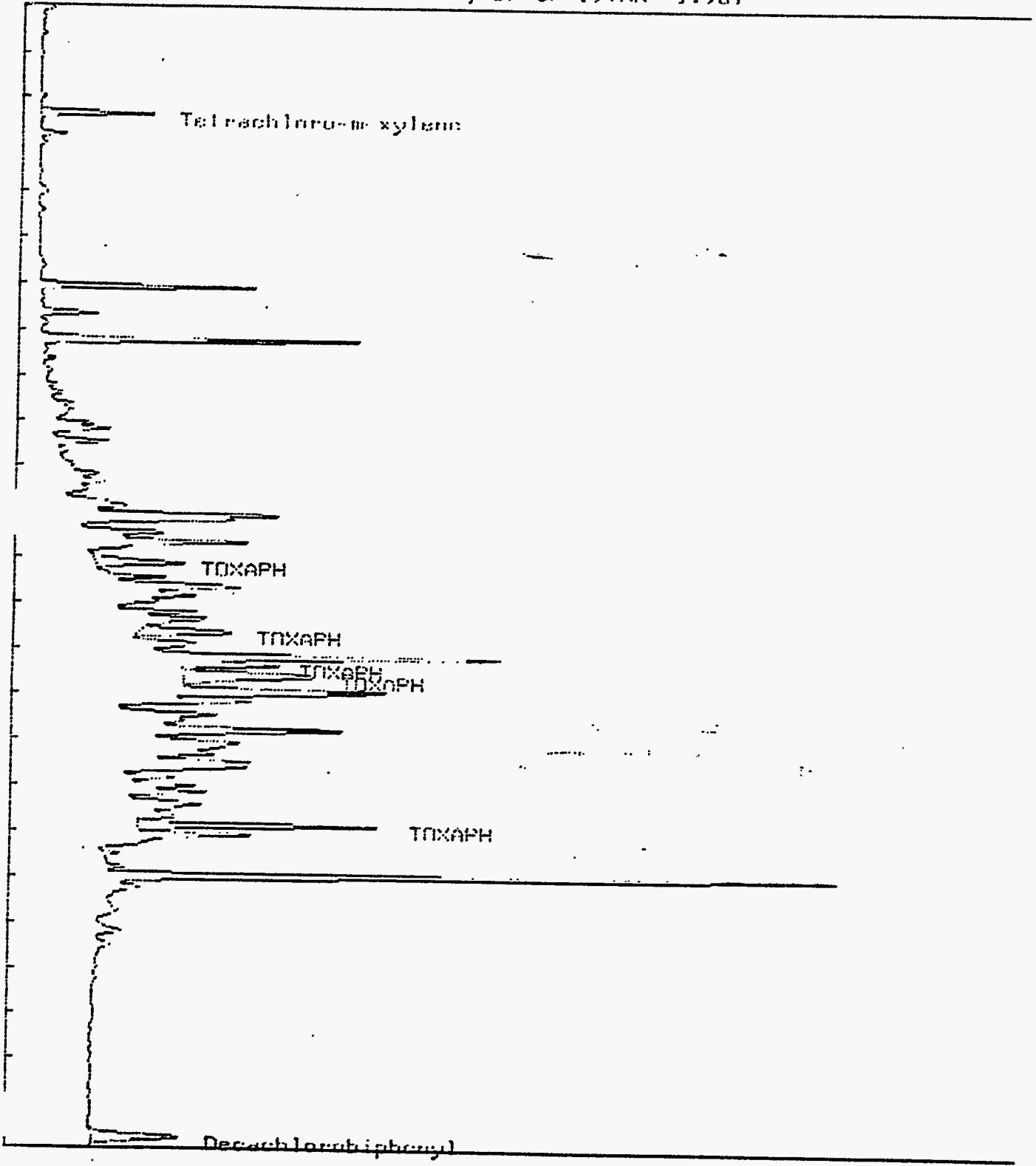


Result File : /DATA/RESULT/DB06445.RFS  
 Sample Name : Q1493114  
 Sample Comment : BFD  
 Injection Time : 0926 15Jun1994  
 Instrument : HPDB  
 Column/amt Inj : H9890 GC/EC ; DB#08 .53MN 1.5ul  
 Temp Program : 160 C(1MIN)-5.0-270 C (8MIN)  
 Calib Method : /DATA/METHOD/DB'TOXAPH0527R.MTH  
 Sequence : /DATA/SEQUENCE/DB'0614.SFQ  
 Subseq/Sample : 1/ 32  
 %Dil-Fact : 100.000 Smp-Amt : 0.000

PK#	Ret	RT	Exp	FT	Area	Code	UCL	Name
1	6.29	6.28			426520	RB	16.241	Tetrachloro- <i>m</i> -xylene
2	16.10	16.19			519224	BB	691.009	TOXAPH
3	17.63	17.62			545100	RB	492.983	TOXAPH
4	18.36	18.33			773308	FF	233.320	TOXAPH
5	18.60	18.57			948399	FF	389.832	TOXAPH
6	21.86	21.84			922749	FF	311.275	TOXAPH
7	28.75	28.72			590882	RB	24.298	Decachlorobiphenyl

} 218.419 ppb

Result File : /DATA/RESIII T/DR06445.RFS  
Sample Name : Q1453114  
Sample Comment : RSD  
Injection Time : 0926 15Jun1994  
Instrument : HPDB  
Column/And Inj : H5890 GC/EC ; DRA08 .53MN 1.5u





## GC-ECD Instrument Logsheet - Inst D

Pest/PCB  Herb  TPH  Nitroaromatics  Other

Date: 6/14/94  
 Analyst(s): SES  
 Col. ID: RTX-50 DBL SEA 6/14/94  
 Meth. File: DF' Ret 24  
 Meth. File: DB' Ret 24

Inj/Det Temp (°C): 220/300  
 Standard GC Program (°C): 175(15)-3.5-216(5)-5-270(1)  
 Alternate GC Program (°C): 165(1)-5-270(1)  
 ul Inj Front/Back: 2/2

Sample #	BTL #	Laboratory Sample ID	Client Sample ID	Filename Back Inj	BTL #	Df	Comments	S1/S2 Note	F N
1	1	INDAHH	15-4-060	DB 06 414	1				
2	2	INDA An	15-4-030	DB 415	2				
3	3	PEM	15-4-061	DB 416	3				
4	4	G1452601	PBLK 3212, 3214	DB 417	4				
5	5	G1452604	PBLK 3215, 3214	DB 418	5				
6	6	G1453111	PBLK 3214, 3212	DB 419	6				
7	7	G1452428	PBLK 3210, 3213	DB 420	7				
8	8	G1452421	LB 3214, 3212	DB 421	8				
9	9	G1451939	LB 3216, 3213	DB 422	9				
10	10	G1452617	LB 3212	DB 423	10				
11	11	G1452103	LB 3212	DB 424	11				
12	12	G1460129	CB 3214	DB 425	12				
13	13	G1460129	MC-94-052	DB 426	13				
14	14	2216806	WMS1994-01C	DB 427	14				
15	15	2212101	22340	DB 428	15				
16	16	2212102	22335	DB 429	16				
17	17	2212105	22339	DB 430	17				
18	18	2212104	22336	DB 431	18				
19	19	2211601	CB-S-018	DB 432	19				
20	20	221602MS	CB-S-018 MS/MS	DB 433	20				
21	21	221602MS	CB-S-018 MS/MS	DB 434	21				
22	22	223113	BS	DB 435	22				
23	23	223114	MC-94-047	DB 436	23				
24	24	221602MS	CB-S-018 MS/MS	DB 437	24				

Signatures: SES 6/14/94

Approved/Date: 6/15/94

Surrogate Limits: IOLM01.81	TCX (S11)	DCB (S2)
Water/Soil	80-150	80-150

Other Comments:

Notes:

- RE = Needs Reextraction
- RIN = Needs Reinjection
- DL = Needs Dilution

- RE = Reextraction Analysis
- RIN = Reinjection Analysis
- DL = Dilution Analysis

Surr Notes:

- W = Within limits
- L = Below lower limit
- H = Above upper limit
- D = Dilution; not usable
- M = Missing

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## GC-ECD Instrument Logsheet - Inst D

Pest/PCB  Herb  TPH  Nitroaromatics  Other

Date: 6/14/94  
 Analyst(s): SES  
 Front Col. ID: RTX-5 RTX1701  
 Back Col. ID: RTX-50 01508  
 Front Col. Meth. File: DF1 Pest24  
 Back Col. Meth. File: DB1 Pest24

Inj/Det Temp (°C): 220/300  
 Standard GC Program (°C): 175(15)-3.5-216(5)-5-270(15)  
 Alternate GC Program (°C): 160(1)-5-270(5)  
 ul Inj Front/Back: 2/2

Filename Front Inj	BTL #	Laboratory Sample ID	Client Sample ID	Filename Back Inj	BTL #	DF	Comments	S1/S2 Note	Rur Note
DF 06438	25	321062001	CB-5-018	DB 06438	25				
DF 439	26	3210602	CB-5-019	DB 439	26				
DF 440	27	3210604	CB-5-020	DB 440	27				
DF 441	28	3211301	CB-5-021	DB 441	28				
DF 442	29	3211302	CB-5-022	DB 442	29				
DF 443	30	3211303	CB-5-022	DB 443	30				
DF 444	31	3211304	CB-5-023	DB 444	31				
DF 445	32	6.1453114	BSB	DB 445	32				
DF 446	33	JMDAM	BS-4-030	DB 446	33				
DF 447	34	PEM	BS-4-061	DB 447	34				
DF 448	35	3211305	CB-5-024	DB 448	35				
DF 449	36	3212201	CB-5-025	DB 449	36				
DF 450	37	3212202	CB-5-026	DB 450	37				
DF 451	38	3212203MS	CB-5-026	DB 451	38				
DF 452	39	3212203MSD	CB-5-026	DB 452	39				
DF 453	40	3212204	CB-5-027	DB 453	40				
DF 454	41	3212901	CB-5-028	DB 454	41				
DF 455	42	3212901MS	CB-5-028	DB 455	42				
DF 456	43	3212901MSD	CB-5-028	DB 456	43				
DF 457	44	Phlor	NC-44-069	DB 457	44		Standard Failed		MSD
DF 458	45	3212902	CB-5-029	DB 458	45				
DF 459	46	3212903	CB-5-030	DB 459	46				
DF 460	47	3214001	16615-61	DB 460	47				
DF 461	48	3214004MS	16615-61	DB 461	48				✓

Signatures or Initials/Date: SES 6/14/94  
 (with corrections)

Approved/Date: 1627 6/15/94

TCX = Tetrachlorometaxylene  
 DCB = Decachlorobiphenyl

Surrogate Limits: (OLM01.8)	TCX (S1)	DCB (S2)
Water/Soil	60-150	60-150

Other Comments:

Notes:

NRE = Needs Reextraction  
 NRIN = Needs Reinjection  
 NDJ = Needs Dilution

RE = Reextraction Analysis  
 RIN = Reinjection Analysis  
 DL = Dilution Analysis

Sur Notes:

W = Within limits  
 L = Below lower limit  
 H = Above upper limit  
 D = Dilution; not usable  
 M = Matrix effect

## GC-ECD Instrument Logsheet - Inst D

Pest/PCB  Herb  TPH  Nitroaromatics  Other

Date: 6/14/94  
 Analyst(s): SCS  
 Front Col. ID: RTX-5  
 Back Col. ID: RTX-50  
 Front Col. Meth. File: DF'kat24  
 Back Col. Meth. File: DB'kat24

Inj/Det Temp (°C): 220/300  
 Standard GC Program (°C): 175(15)-3.5-216(5)-5-270(15)  
 Alternate GC Program (°C): 160(6)-5-270(8)  
 ul Inj Front/Back: 2/2

Filename Front Inj	BTL #	Laboratory Sample ID	Client Sample ID	Filename Back Inj	BTL #	Df	Comments	S1/S2 Note	Run Notes
DF 462	49	3214009ASD	16616-61	DB 06462	49				NRIN
DF 463	50	3214009	16616-135	DB 463	50				
DF 464	51	3214009AS	16616-135	DB 464	51				
DF 465	52	3214009ASD	16616-135	DB 465	52				
DF 466	53	3214001	WASTE 5-26-01	DB 466	53				
DF 467	54	Tox #4	MC 94-047	DB 467	54				
DF				DB					
DF				DB					
DF				DB					
DF				DB					
DF				DB					
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DF				DB					
DF				DB					
DF				DB					

Signatures or Initials/Date: SCS 6/14/94  
(with corrections)

Approved/Date: KRM 6/15/94

TCX = Tetrachlorometaxylene  
 DCS = Decachlorobiphenyl

Surrogate Limits: (OLM01.8)	TCX (S1)	DCS (S2)
Water/Soil	80-150	80-150

Other Comments: \_\_\_\_\_

- Notes:
- NRE = Needs Reextraction
  - NRIN = Needs Reinjection
  - NDL = Needs Dilution

- RE = Reextraction Analysis
- RIN = Reinjection Analysis
- DL = Dilution Analysis

- Burr Notes:
- W = Within limits
  - L = Below lower limit
  - H = Above upper limit
  - D = Dilution; not usable
  - M = Matrix effect