Analytical Report 235651

for

3TM International

Project Manager: Randy Horsak

Koppers Creosote Facility

12-AUG-03

11381 Meadowglen, Suite L Houston, TX 77082 Ph:(281) 589-0692 Fax:(281) 589-0695

XENCO Laboratories

12-AUG-03

Project Manager: **Randy Horsak**
3TM International
1500 South Dairy Ashford, Suite 225
Houston , TX 77077

Reference: XENCO Report No: **235651**
Koppers Creosote Facility
Project Address: Grenada, Mississippi

Randy Horsak:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Chain of Custody Numbered 235651. All results being reported under this Chain of Custody apply to the samples analyzed and properly identified with a Laboratory ID number.

All the results for the quality control samples were reviewed. Also, all parameters for data reduction and validation were reviewed. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly flagged.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. 235651 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron
Laboratory Manager

XENCO Laboratories

☒ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com

Company COC No: | Work Order No: 30047 | Page 1 of 3

Lab Only: 235651-1

Company: 3TM International	Phone: 281-497-1230		
Project Name: Koppers Creosote Facility	☐ Previously done at XENCO	Project ID:	
Location: Grenada, Mississippi			
Project Manager (PM): Randy Horsak		Project Director (PD):	
Fax Results to: ☒ PM (and) / or T.J. Dunnahoe		Fax: 281-497-1676	
Invoice to: ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:			
Quote No.	P.O No	☐ Call for a P.O.	
Special DLs (RRI RRII DW QAPP See Lab PM Call Proj. PM)			
Specifications: QA/QC For Litigation			
Sampler Name: TJ. Dunnahoe	Signature		

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d (Standard) TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

	Sample ID	Sampling Date	Time	Depth (ft) in' m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418.1 8015 8015GRO 8015DRO TLPRO	PAHs by (8270) 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	TAT 5h 12h 20h 24h 48h 3d 5d 7d (10d) 14d 21d	Addn: PAH above mg/L W. mg/Kg $ Highest Hit	Hold Analysis	Remarks
1	3TM-KP-43-SS-01	21Jul03	1030	2'	S		X	1	8	GC	C4				X							
2	3TM-KP-43-SS-02		1040	2'																		
3	3TM-KP-SS-BB-1		1155	1'																		
4	3TM-KP-SS-BB-2		1235	0-3"																		
5	3TM-KP-SS-BB-03		1245	0-3"																		
6	3TM-KP-SW-BB-01		1255																			
7	3TM-KP-SS-7-01	22Jul03	0815	6"																		
8	3TM-KP-SS-7-02		0825	6"																		
9	3TM-KP-SS-303-01		1205	6"																		
10	3TM-KP-SS-303-02		1215	6"																		

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJD	7/24/03 1600	Fed Ex	7/24/03 1600
2 Fed Ex			
3 Fed Ex		Lab:	7/25/03 10:30

Total Containers per COC: 26 Cooler Temp: 3.0 °C

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Lab Only Additions: Date / Rcv by: From: (1) (2) (3)

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool, <4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

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ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www. XENCO.com

Company COC No: | Work Order No: 30046 |

Company: 3TM-International, Inc | Phone: 281-497-1230

Project Name: Koppers Creosote Facility | ☐ Previously done at XENCO | Project ID:

Location: Grenada, Mississippi

Project Manager (PM): Randy Horsak | Project Director (PD):

Fax Results to ☒ PM (and) or T.J. Dunnahoe | Fax: 281-497-1676

Invoice to ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:

Quote No. | P.O No | ☐ Call for a P.O.

Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)

Specifications: QA/QC For Litigation

Sampler Name: T.J. Dunnahoe | Signature: [signature]

Lab Only: 235651-H

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d (Standard TAT) is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

Analyses: BTEX by 8021 8260 602 624 Other; BTEX-MTBE by 8021 8260 602 624 Other; TPH by TX1005 418 1664 8015GRO 8015DRO PLPRO; PAHs by (8270) 8100 8310; METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List; VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM; SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM; TAT 5h 12h 20h 24h 48h 3d 5d 7d (10d) 14d 21d; Addn: PAH above mg/L W. mg/Kg s Highest Hit; Hold Analysis; Remarks

Lab Only Additions: Rcv by: From: Date (×3)

#	Sample ID	Sampling Date	Time	Depth (ft/in/m)	Matrix APSW	Composite	Grab	# Containers	Container Size	Type	Preservatives	PAHs by 8270
1	3TM-KP-SS-690-01	23Jul03	0950	1'	S		X	1	8	GC	C4	X
2	3TM-KP-SS-690-01-MS/MSD	↓	0950	1'	↓		↓	↓	↓	↓	↓	↓
3	3TM-KP-SS-690-02	↓	1005	1'	↓		↓	↓	↓	↓	↓	↓
4	3TM-KP-SS-1137-01	↓	1440	6"	↓		↓	↓	↓	↓	↓	↓
5	3TM-KP-SS-1137-02	↓	1450	6" bgs	↓		↓	↓	↓	↓	↓	↓
6	3TM-KP-SS-648-01	↓	1650	6"	↓		↓	↓	↓	↓	↓	↓
7	3TM-KP-SS-648-02	↓	1700	6"	↓		↓	↓	↓	↓	↓	↓
8	3TM-KP-[illegible] Equipment Rinse	24Jul03	0850	—	W		↓	↓	1	GA	↓	↓
9	3TM-KP-Field Blank	↓	0855	—	W		↓	↓	1	GA	↓	↓
10	3TM-KP-SS-5-01	↓	0950	6"	S		↓	↓	8	GC	↓	↓

#	Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1	TJD [signature]	7/24/03 1600	Fed Ex	7/24/03 1600
2	Fed Ex			
3			Lab.:	

Total Containers per COC: | Cooler Temp:
Rush TATs Fax Due: | Final Fax Due:
Final Report Data Package Due Date:
Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) ____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other ____ TYPE Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) ____

XENCO Laboratories

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☐ 5309 Wurzbach Rd, Ste 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Ste D, Dallas, TX 75229 972-481-9999
☐ 5757 N.W. 158th Street, Miami Lakes, Fl 33014 305-823-8500
☐ 2618 South Falkenburg Rd, Riverview, Fl 33569 , 813-620-2000

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

Serial #: 140020

Lab Only: 235651-H

Company: 3TM International	Phone: 281-497-1230
Project Name-State: Koppers Creosote Facility	☐ Previously done at XENCO / Project ID:
Site/Location: Grenada, Mississippi	Proj. Manager (PM): Randy Horsak
Fax Results to: ☒ PM and/or	Fax No:
e-mail Final Report to: T.J. Dunnahoe	281-497-1076
Invoice to ☐ Accounting ☒ Invoice with Final Report ☐ Invoice must have a P.O.	
Bill to:	
Quote No: / P.O No: / ☐ Call for a P.O.	
Reg Program: CLP AFCEE TRRP DW UST Other:	
Special DLs (GW DW TRRP QAPP MDLs See Lab PM Included Call PM)	
Specifications: Level I II III IV Custom with Raw Data EDD Dry Basis	
QA/QC for Litigation	
Sampler Name: T.J. Dunnahoe / Signature:	

TAT: 5h 12h 24h 48h 3d 5d 7d (10d) 14d 21d. Standard TAT is Quote Specific, please circle your required TAT.

	Sample ID	Sampling Date	Time	Depth	Matrix	# Containers	Container Size	Container Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 624 Other	TPH by TX1005 FL-Pro 418.1 8015GRO 8015DRO 1664	PAHs by 8270 8100 8310	Metals by 6010 or 6020 8RCRA Tot Pb TCLP8 13PP 23TAL	VOCs by 8021 8260 624 VOA VOH PPs TCL TCLP	SVOCs by 8270 625 PAHs BN&A TCL PPs TCLP	FL Preburn or Revised Preburn
1	3TM-KP-SS-5-02	24Jul03	1000	6"	S	1	8	GC	C4				X				
2	3TM-KP-SS-5-03	↓	1015	6"	S	↓	↓	↓	↓				↓				
3	3TM-KP-G-5-01		1020														
4	3TM-KP-SS-44-01		1035	6"	S												
5	3TM-KP-SS-44-02	↓	1045	6"	S												
6	Duplicate-1	↓			S	↓	↓	↓	↓				↓				
7																	
8																	
9																	
10																	

	TAT 5h 12h 24h 48h 3d 5d 7d (10d) 14d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold: Analysis Disposal
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Remarks

Addn: Date Rev by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1 TJD	7/24/03 1600	Fed Ex	7/24/03 1600
2 Fed Ex			
3		Lab:	

Total Containers per COC: Cooler Temp:
Specific Fax Due Date: ☐ Rush Preliminary Results Cost Approved
☐ Rush Data Package cost preapproved
Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives: Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), Asbc Acid&NaOH (A), ZnAc&NaOH (Z), (Cool,<4C) (C), None (NA), See Label (L), Other (O) _____

Cont. Size: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (5), Tedlar Bag (B), Wipe (W), Other _____ **Cont. Type:** Glass Amb (A), Glass Clear (C), Plastic (P), Other (O) _____

Matrix: Air (A), Product (P), Solid(S), Water (W)

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-001		235651-002		235651-003		235651-004		235651-005		235651-006	
	Field Id:	3TM-KP-43-SS-01		3TM-KP-43-SS-02		3TM-KP-SS-BB-1		3TM-KP-SS-BB-2		3TM-KP-SS-BB-03		3TM-KP-SW-BB-01	
	Depth:	2- ft		2- ft		1- ft		0-3 In		0-3 In		ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER	
	Sampled:	Jul-21-03 10:30		Jul-21-03 10:40		Jul-21-03 11:55		Jul-21-03 12:35		Jul-21-03 12:45		Jul-21-03 12:55	
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-25-03 18:32		Jul-25-03 18:34		Jul-25-03 18:36		Jul-25-03 18:38		Jul-25-03 18:40			
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		24.4	1.00	22.3	1.00	20.1	1.00	20.5	1.00	22.8	1.00		
SVOAs by EPA 8270C	*Extracted:*	Jul-28-03 10:12		Jul-28-03 10:15		Jul-28-03 10:18		Jul-28-03 10:21		Jul-28-03 10:24		Jul-29-03 10:10	
	Analyzed:	Aug-09-03 01:25		Aug-09-03 02:16		Aug-09-03 03:07		Aug-09-03 03:57		Aug-09-03 04:48		Aug-02-03 01:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL
Acenaphthene		BRL	0.220	BRL	1.07	6.78	0.208	0.561	0.209	8.89	0.216	0.408	0.025
Acenaphthylene		0.691	0.220	2.18	1.07	0.394	0.208	BRL	0.209	0.393	0.216	BRL	0.025
Anthracene		1.09	0.220	3.86	1.07	6.96	0.208	0.744	0.209	10.7	0.216	0.201	0.025
Benzo(a)anthracene		1.44	0.220	10.6	1.07	2.37	0.208	0.358	0.209	3.92	0.216	0.154	0.025
Benzo(a)pyrene		2.03	0.220	8.40	1.07	1.37	0.208	0.350	0.209	1.69	0.216	0.057	0.025
Benzo(b)fluoranthene		5.30	0.220	21.7	1.07	2.60	0.208	0.705	0.209	3.06	0.216	0.097	0.025
Benzo(g,h,i)perylene		0.805	0.220	3.07	1.07	0.341	0.208	BRL	0.209	0.388	0.216	BRL	0.025
Benzo(k)fluoranthene		1.13	0.220	6.20	1.07	0.955	0.208	0.285	0.209	0.919	0.216	0.033	0.025
Chrysene		2.49	0.220	14.2	1.07	2.64	0.208	0.444	0.209	3.68	0.216	0.159	0.025
Dibenz(a,h)Anthracene		BRL	0.220	BRL	1.07	BRL	0.208	BRL	0.209	BRL	0.216	BRL	0.025
Fluoranthene		2.90	0.220	30.5	1.07	11.4	0.208	1.47	0.209	33.8 D	2.16	0.794	0.025
Fluorene		BRL	0.220	BRL	1.07	7.40	0.208	0.679	0.209	11.0	0.216	0.491	0.025
Indeno(1,2,3-c,d)Pyrene		1.28	0.220	4.46	1.07	0.476	0.208	BRL	0.209	0.501	0.216	0.026	0.025
Naphthalene		BRL	0.220	BRL	1.07	4.47	0.208	BRL	0.209	2.05	0.216	BRL	0.025
Phenanthrene		0.784	0.220	5.54	1.07	24.5 D	1.04	2.22	0.209	61.5 D	2.16	1.18	0.025
Pyrene		2.80	0.220	24.5	1.07	7.58	0.208	0.967	0.209	12.6	0.216	0.548	0.025

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-001		235651-002		235651-003		235651-004		235651-005		235651-006	
	Field Id:	3TM-KP-43-SS-01		3TM-KP-43-SS-02		3TM-KP-SS-BB-1		3TM-KP-SS-BB-2		3TM-KP-SS-BB-03		3TM-KP-SW-BB-01	
	Depth:	2- ft		2- ft		1- ft		0-3 In		0-3 In		ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER	
	Sampled:	Jul-21-03 10:30		Jul-21-03 10:40		Jul-21-03 11:55		Jul-21-03 12:35		Jul-21-03 12:45		Jul-21-03 12:55	
VOAs by SW-846 8260B	*Extracted:*	Aug-01-03 16:12		Aug-01-03 12:06		Aug-01-03 12:08		Aug-01-03 12:10		Aug-01-03 12:12			
	Analyzed:	Aug-01-03 16:27		Aug-01-03 14:08		Aug-01-03 14:30		Aug-01-03 14:51		Aug-01-03 15:14			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Bromobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Bromochloromethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Bromodichloromethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Bromoform		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Bromomethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
MTBE		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
tert-Butylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Sec-Butylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
n-Butylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Carbon Tetrachloride		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Chlorobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Chloroethane		BRL	0.013	BRL	0.012	BRL	0.012	BRL	0.013	BRL	0.013		
Chloroform		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Chloromethane		BRL	0.013	BRL	0.012	BRL	0.012	BRL	0.013	BRL	0.013		
2-Chlorotoluene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
4-Chlorotoluene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
p-Cymene (p-Isopropyltoluene)		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	0.020	0.006		
1,2-Dibromo-3-Chloropropane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Dibromochloromethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Dibromomethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
1,2-Dichlorobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
1,3-Dichlorobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
1,4-Dichlorobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		
Dichlorodifluoromethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006		

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-001		235651-002		235651-003		235651-004		235651-005		235651-006
	Field Id:	3TM-KP-43-SS-01		3TM-KP-43-SS-02		3TM-KP-SS-BB-1		3TM-KP-SS-BB-2		3TM-KP-SS-BB-03		3TM-KP-SW-BB-01
	Depth:	2- ft		2- ft		1- ft		0-3 In		0-3 In		ft
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER
	Sampled:	Jul-21-03 10:30		Jul-21-03 10:40		Jul-21-03 11:55		Jul-21-03 12:35		Jul-21-03 12:45		Jul-21-03 12:55
VOAs by SW-846 8260B	*Extracted:*	Aug-01-03 16:12		Aug-01-03 12:06		Aug-01-03 12:08		Aug-01-03 12:10		Aug-01-03 12:12		
	Analyzed:	Aug-01-03 16:27		Aug-01-03 14:08		Aug-01-03 14:30		Aug-01-03 14:51		Aug-01-03 15:14		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
1,2-Dichloroethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	
1,1-Dichloroethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
trans-1,2-dichloroethene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
cis-1,2-Dichloroethene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,1-Dichloroethene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
2,2-Dichloropropane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,3-Dichloropropane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,2-Dichloropropane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
trans-1,3-dichloropropene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,1-Dichloropropene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
cis-1,3-Dichloropropene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Ethylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Hexachlorobutadiene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
isopropylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Methylene Chloride		BRL	0.027	BRL	0.025	BRL	0.025	BRL	0.006	0.009	0.006	
Naphthalene		BRL	0.013	BRL	0.012	0.197 D	0.062	0.077	0.013	10.4 D	1.30	
n-Propylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Styrene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,1,1,2-Tetrachloroethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,1,2,2-Tetrachloroethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Tetrachloroethylene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Toluene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,2,4-Trichlorobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,2,3-Trichlorobenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,1,2-Trichloroethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-001		235651-002		235651-003		235651-004		235651-005		235651-006
	Field Id:	3TM-KP-43-SS-01		3TM-KP-43-SS-02		3TM-KP-SS-BB-1		3TM-KP-SS-BB-2		3TM-KP-SS-BB-03		3TM-KP-SW-BB-01
	Depth:	2- ft		2- ft		1- ft		0-3 In		0-3 In		ft
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER
	Sampled:	Jul-21-03 10:30		Jul-21-03 10:40		Jul-21-03 11:55		Jul-21-03 12:35		Jul-21-03 12:45		Jul-21-03 12:55
VOAs by SW-846 8260B	*Extracted:*	Aug-01-03 16:12		Aug-01-03 12:06		Aug-01-03 12:08		Aug-01-03 12:10		Aug-01-03 12:12		
	Analyzed:	Aug-01-03 16:27		Aug-01-03 14:08		Aug-01-03 14:30		Aug-01-03 14:51		Aug-01-03 15:14		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
1,1,1-Trichloroethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Trichloroethene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
Trichlorofluoromethane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,2,3-Trichloropropane		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,2,4-Trimethylbenzene		BRL	0.007	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	
1,3,5-trimethylbenzene		BRL	0.007	BRL	0.006	0.014	0.006	BRL	0.006	0.145	0.006	
Vinyl Chloride		BRL	0.003	BRL	0.002	0.007	0.006	BRL	0.006	0.067	0.006	
o-Xylene		BRL	0.007	BRL	0.006	BRL	0.002	BRL	0.003	BRL	0.003	
m,p-Xylenes		BRL	0.013	BRL	0.012	BRL	0.006	BRL	0.006	BRL	0.006	
							0.012	BRL	0.013	BRL	0.013	

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-007		235651-008		235651-009		235651-010		235651-011		235651-012	
	Field Id:	3TM-KP-SS-7-01		3TM-KP-SS-7-02		3TM-KP-SS-303-01		3TM-KP-SS-303-02		3TM-KP-SS-690-01		3TM-KP-SS-690-02	
	Depth:	6 In		6 In		6 In		6 In		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-22-03 08:15		Jul-22-03 08:25		Jul-22-03 12:05		Jul-22-03 12:15		Jul-23-03 09:50		Jul-23-03 10:05	
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-25-03 18:42		Jul-25-03 18:44		Jul-25-03 18:46		Jul-25-03 18:48		Jul-25-03 18:50		Jul-25-03 18:54	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		14.3	1.00	15.6	1.00	13.3	1.00	10.3	1.00	19.6	1.00	13.6	1.00
SVOAs by EPA 8270C	*Extracted:*	Jul-28-03 10:27		Jul-28-03 10:30		Jul-28-03 10:33		Jul-28-03 10:36		Jul-28-03 10:45		Jul-28-03 10:48	
	Analyzed:	Aug-09-03 05:38		Aug-07-03 06:59		Aug-07-03 06:09		Aug-07-03 05:19		Aug-07-03 04:28		Aug-07-03 01:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Acenaphthene		BRL	0.973	BRL	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Acenaphthylene		BRL	0.973	0.358	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Anthracene		BRL	0.973	0.374	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Benzo(a)anthracene		BRL	0.973	0.927	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Benzo(a)pyrene		BRL	0.973	1.18	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Benzo(b)fluoranthene		BRL	0.973	2.92	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Benzo(g,h,i)perylene		BRL	0.973	0.374	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Benzo(k)fluoranthene		BRL	0.973	0.915	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Chrysene		BRL	0.973	1.39	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Dibenz(a,h)Anthracene		BRL	0.973	BRL	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Fluoranthene		BRL	0.973	1.36	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Fluorene		BRL	0.973	BRL	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Indeno(1,2,3-c,d)Pyrene		BRL	0.973	0.536	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Naphthalene		BRL	0.973	BRL	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Phenanthrene		BRL	0.973	0.275	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193
Pyrene		BRL	0.973	1.67	0.197	BRL	0.192	BRL	0.185	BRL	0.207	BRL	0.193

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am
Report Date: 12-AUG-03
Project Manager: Karen Olson

Analysis Requested													
	Lab Id:	235651-007		235651-008		235651-009		235651-010		235651-011		235651-012	
	Field Id:	3TM-KP-SS-7-01		3TM-KP-SS-7-02		3TM-KP-SS-303-01		3TM-KP-SS-303-02		3TM-KP-SS-690-01		3TM-KP-SS-690-02	
	Depth:	6 In		6 In		6 In		6 In		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-22-03 08:15		Jul-22-03 08:25		Jul-22-03 12:05		Jul-22-03 12:15		Jul-23-03 09:50		Jul-23-03 10:05	
VOAs by SW-846 8260B	*Extracted:*	Aug-01-03 17:04		Aug-01-03 12:16		Aug-04-03 16:04		Aug-01-03 12:58		Aug-01-03 12:00		Aug-04-03 11:40	
	Analyzed:	Aug-01-03 19:52		Aug-01-03 15:57		Aug-04-03 17:28		Aug-01-03 18:48		Aug-01-03 12:43		Aug-04-03 12:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Bromobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Bromochloromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Bromodichloromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Bromoform		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Bromomethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
MTBE		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
tert-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Sec-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
n-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Carbon Tetrachloride		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Chlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Chloroethane		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.011	BRL	0.012	BRL	0.012
Chloroform		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Chloromethane		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.011	BRL	0.012	BRL	0.012
2-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
4-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
p-Cymene (p-Isopropyltoluene)		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,2-Dibromo-3-Chloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Dibromochloromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Dibromomethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,2-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,3-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,4-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Dichlorodifluoromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-007		235651-008		235651-009		235651-010		235651-011		235651-012	
	Field Id:	3TM-KP-SS-7-01		3TM-KP-SS-7-02		3TM-KP-SS-303-01		3TM-KP-SS-303-02		3TM-KP-SS-690-01		3TM-KP-SS-690-02	
	Depth:	6 In		6 In		6 In		6 In		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-22-03 08:15		Jul-22-03 08:25		Jul-22-03 12:05		Jul-22-03 12:15		Jul-23-03 09:50		Jul-23-03 10:05	
VOAs by SW-846 8260B	*Extracted:*	Aug-01-03 17:04		Aug-01-03 12:16		Aug-04-03 16:04		Aug-01-03 12:58		Aug-01-03 12:00		Aug-04-03 11:40	
	Analyzed:	Aug-01-03 19:52		Aug-01-03 15:57		Aug-04-03 17:28		Aug-01-03 18:48		Aug-01-03 12:43		Aug-04-03 12:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
1,2-Dichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,1-Dichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
trans-1,2-dichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
cis-1,2-Dichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,1-Dichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
2,2-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,3-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,2-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
trans-1,3-dichloropropene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,1-Dichloropropene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
cis-1,3-Dichloropropene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
Ethylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
Hexachlorobutadiene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
isopropylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
Methylene Chloride		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
Naphthalene		BRL	0.023	BRL	0.024	BRL	0.023	BRL	0.022	BRL	0.025	BRL	0.023
n-Propylbenzene		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.011	BRL	0.012	BRL	0.012
Styrene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,1,1,2-Tetrachloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,1,2,2-Tetrachloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
Tetrachloroethylene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
Toluene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,2,4-Trichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,2,3-Trichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006
1,1,2-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006	BRL	0.006

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-007		235651-008		235651-009		235651-010		235651-011		235651-012	
	Field Id:	3TM-KP-SS-7-01		3TM-KP-SS-7-02		3TM-KP-SS-303-01		3TM-KP-SS-303-02		3TM-KP-SS-690-01		3TM-KP-SS-690-02	
	Depth:	6 In		6 In		6 In		6 In		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-22-03 08:15		Jul-22-03 08:25		Jul-22-03 12:05		Jul-22-03 12:15		Jul-23-03 09:50		Jul-23-03 10:05	
VOAs by SW-846 8260B	*Extracted:*	Aug-01-03 17:04		Aug-01-03 12:16		Aug-04-03 16:04		Aug-01-03 12:58		Aug-01-03 12:00		Aug-04-03 11:40	
	Analyzed:	Aug-01-03 19:52		Aug-01-03 15:57		Aug-04-03 17:28		Aug-01-03 18:48		Aug-01-03 12:43		Aug-04-03 12:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
1,1,1-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Trichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Trichlorofluoromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,2,3-Trichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,2,4-Trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
1,3,5-trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
Vinyl Chloride		BRL	0.002	BRL	0.002	BRL	0.002	BRL	0.002	BRL	0.002	BRL	0.002
o-Xylene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006
m,p-Xylenes		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.011	BRL	0.012	BRL	0.012

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-013		235651-014		235651-015		235651-016		235651-017		235651-018	
	Field Id:	3TM-KP-SS-1137-01		3TM-KP-SS-1137-02		3TM-KP-SS-688-01		3TM-KP-SS-688-02		3TM-KP-Equipment Rinse		3TM-KP-Field Blank	
	Depth:	6 In		6 In		6 In		6 In		In		ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		WATER		WATER	
	Sampled:	Jul-23-03 14:40		Jul-23-03 14:50		Jul-23-03 16:50		Jul-23-03 17:00		Jul-24-03 08:50		Jul-24-03 08:55	
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-25-03 18:56		Jul-25-03 18:58		Jul-25-03 19:00		Jul-25-03 19:02					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		11.5	1.00	11.0	1.00	6.59	1.00	19.2	1.00				
SVOAs by EPA 8270C	*Extracted:*	Jul-28-03 10:51		Jul-28-03 10:54		Jul-28-03 10:57		Jul-28-03 11:00		Jul-29-03 10:15		Jul-29-03 10:20	
	Analyzed:	Aug-07-03 01:04		Aug-07-03 00:12		Aug-06-03 23:20		Aug-06-03 22:27		Aug-02-03 00:14		Aug-02-03 01:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL	mg/L	RL
Acenaphthene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Acenaphthylene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Anthracene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Benzo(a)anthracene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Benzo(a)pyrene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Benzo(b)fluoranthene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Benzo(g,h,i)perylene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Benzo(k)fluoranthene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Chrysene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Dibenz(a,h)Anthracene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Fluoranthene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Fluorene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Indeno(1,2,3-c,d)Pyrene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Naphthalene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Phenanthrene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005
Pyrene		BRL	0.188	BRL	0.187	BRL	0.178	BRL	0.206	BRL	0.005	BRL	0.005

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-013		235651-014		235651-015		235651-016		235651-017	235651-018
	Field Id:	3TM-KP-SS-1137-01		3TM-KP-SS-1137-02		3TM-KP-SS-688-01		3TM-KP-SS-688-02		3TM-KP-Equipment Rinse	3TM-KP-Field Blank
	Depth:	6 In		6 In		6 In		6 In		In	ft
	Matrix:	SOIL		SOIL		SOIL		SOIL		WATER	WATER
	Sampled:	Jul-23-03 14:40		Jul-23-03 14:50		Jul-23-03 16:50		Jul-23-03 17:00		Jul-24-03 08:50	Jul-24-03 08:55
VOAs by SW-846 8260B	*Extracted:*	Aug-05-03 16:19		Aug-05-03 16:21		Aug-05-03 16:23		Aug-05-03 16:25			
	Analyzed:	Aug-05-03 18:07		Aug-05-03 18:28		Aug-05-03 18:50		Aug-05-03 19:12			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Bromobenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Bromochloromethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Bromodichloromethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Bromoform		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Bromomethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
MTBE		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
tert-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Sec-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
n-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Carbon Tetrachloride		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Chlorobenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Chloroethane		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.012		
Chloroform		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Chloromethane		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.012		
2-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
4-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
p-Cymene (p-Isopropyltoluene)		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,2-Dibromo-3-Chloropropane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Dibromochloromethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Dibromomethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,2-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,3-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,4-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Dichlorodifluoromethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-013	235651-014	235651-015	235651-016	235651-017	235651-018
	Field Id:	3TM-KP-SS-1137-01	3TM-KP-SS-1137-02	3TM-KP-SS-688-01	3TM-KP-SS-688-02	3TM-KP-Equipment Rinse	3TM-KP-Field Blank
	Depth:	6 In	6 In	6 In	6 In	In	ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	WATER	WATER
	Sampled:	Jul-23-03 14:40	Jul-23-03 14:50	Jul-23-03 16:50	Jul-23-03 17:00	Jul-24-03 08:50	Jul-24-03 08:55
VOAs by SW-846 8260B	*Extracted:*	Aug-05-03 16:19	Aug-05-03 16:21	Aug-05-03 16:23	Aug-05-03 16:25		
	Analyzed:	Aug-05-03 18:07	Aug-05-03 18:28	Aug-05-03 18:50	Aug-05-03 19:12		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
1,2-Dichloroethane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,1-Dichloroethane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
trans-1,2-dichloroethene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
cis-1,2-Dichloroethene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,1-Dichloroethene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
2,2-Dichloropropane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,3-Dichloropropane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,2-Dichloropropane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
trans-1,3-dichloropropene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,1-Dichloropropene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
cis-1,3-Dichloropropene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
Ethylbenzene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
Hexachlorobutadiene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
isopropylbenzene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
Methylene Chloride		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
Naphthalene		BRL 0.023	BRL 0.022	BRL 0.022	BRL 0.025		
n-Propylbenzene		BRL 0.011	BRL 0.011	BRL 0.011	BRL 0.012		
Styrene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,1,1,2-Tetrachloroethane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,1,2,2-Tetrachloroethane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
Tetrachloroethylene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
Toluene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,2,4-Trichlorobenzene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,2,3-Trichlorobenzene		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		
1,1,2-Trichloroethane		BRL 0.006	BRL 0.006	BRL 0.005	BRL 0.006		

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received In Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-013		235651-014		235651-015		235651-016		235651-017	235651-018
	Field Id:	3TM-KP-SS-1137-01		3TM-KP-SS-1137-02		3TM-KP-SS-688-01		3TM-KP-SS-688-02		3TM-KP-Equipment Rinse	3TM-KP-Field Blank
	Depth:	6 In		6 In		6 In		6 In		In	ft
	Matrix:	SOIL		SOIL		SOIL		SOIL		WATER	WATER
	Sampled:	Jul-23-03 14:40		Jul-23-03 14:50		Jul-23-03 16:50		Jul-23-03 17:00		Jul-24-03 08:50	Jul-24-03 08:55
VOAs by SW-846 8260B	*Extracted:*	Aug-05-03 16:19		Aug-05-03 16:21		Aug-05-03 16:23		Aug-05-03 16:25			
	Analyzed:	Aug-05-03 18:07		Aug-05-03 18:28		Aug-05-03 18:50		Aug-05-03 19:12			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
1,1,1-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Trichloroethene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Trichlorofluoromethane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,2,3-Trichloropropane		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,2,4-Trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
1,3,5-trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
Vinyl Chloride		BRL	0.002	BRL	0.002	BRL	0.002	BRL	0.002		
o-Xylene		BRL	0.006	BRL	0.006	BRL	0.005	BRL	0.006		
m,p-Xylenes		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.012		

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-019		235651-020		235651-021		235651-022		235651-023		235651-024	
	Field Id:	3TM-KP-SS-5-01		3TM-KP-SS-5-02		3TM-KP-SS-5-03		3TM-KP-G-5-01		3TM-KP-SS-44-01		3TM-KP-SS-44-02	
	Depth:	6 In		6 In		6 In				6 In		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-24-03 09:50		Jul-24-03 10:00		Jul-24-03 10:15		Jul-24-03 10:20		Jul-24-03 10:35		Jul-24-03 10:45	
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-25-03 19:04		Jul-25-03 19:06		Jul-25-03 19:08		Jul-25-03 19:10		Jul-25-03 19:16		Jul-25-03 19:12	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.56	1.00	5.77	1.00	12.1	1.00	13.2	1.00	19.1	1.00	16.6	1.00
SVOAs by EPA 8270C	*Extracted:*	Jul-30-03 09:39		Jul-30-03 09:42		Jul-30-03 09:45		Jul-30-03 09:48		Jul-30-03 09:51		Jul-30-03 09:54	
	Analyzed:	Aug-07-03 13:42		Aug-07-03 15:41		Aug-07-03 16:45		Aug-12-03 04:34		Aug-08-03 21:10		Aug-08-03 23:44	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Acenaphthene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Acenaphthylene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Anthracene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Benzo(a)anthracene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Benzo(a)pyrene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Benzo(b)fluoranthene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Benzo(g,h,I)perylene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Benzo(k)fluoranthene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Chrysene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Dibenz(a,h)Anthracene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Fluoranthene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Fluorene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Indeno(1,2,3-c,d)Pyrene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Naphthalene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Phenanthrene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199
Pyrene		BRL	0.176	BRL	0.177	BRL	0.190	BRL	1.15	BRL	0.206	BRL	0.199

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received In Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-019		235651-020		235651-021		235651-022		235651-023		235651-024	
	Field Id:	3TM-KP-SS-5-01		3TM-KP-SS-5-02		3TM-KP-SS-5-03		3TM-KP-G-5-01		3TM-KP-SS-44-0:		3TM-KP-SS-44-02	
	Depth:	6 In		6 In		6 In				6 In		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-24-03 09:50		Jul-24-03 10:00		Jul-24-03 10:15		Jul-24-03 10:20		Jul-24-03 10:35		Jul-24-03 10:45	
VOAs by SW-846 8260B	*Extracted:*	Aug-06-03 13:05		Aug-05-03 16:29		Aug-04-03 16:12		Aug-05-03 16:27		Aug-05-03 16:31		Aug-05-03 16:33	
	Analyzed:	Aug-06-03 14:09		Aug-05-03 19:55		Aug-04-03 18:55		Aug-05-03 19:33		Aug-05-03 20:16		Aug-05-03 20:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Bromobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Bromochloromethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Bromodichloromethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Bromoform		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Bromomethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
MTBE		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
tert-Butylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Sec-Butylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
n-Butylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Carbon Tetrachloride		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Chlorobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Chloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Chloroform		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.053	BRL	0.012	BRL	0.012
Chloromethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
2-Chlorotoluene		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.053	BRL	0.012	BRL	0.012
4-Chlorotoluene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
p-Cymene (p-Isopropyltoluene)		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2-Dibromo-3-Chloropropane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Dibromochloromethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Dibromomethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2-Dichlorobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,3-Dichlorobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,4-Dichlorobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Dichlorodifluoromethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-019		235651-020		235651-021		235651-022		235651-023		235651-024	
	Field Id:	3TM-KP-SS-5-01		3TM-KP-SS-5-02		3TM-KP-SS-5-03		3TM-KP-G-5-01		3TM-KP-SS-44-01		3TM-KP-SS-44-02	
	Depth:	6 In		6 In		6 In				6 In		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-24-03 09:50		Jul-24-03 10:00		Jul-24-03 10:15		Jul-24-03 10:20		Jul-24-03 10:35		Jul-24-03 10:45	
VOAs by SW-846 8260B	*Extracted:*	Aug-06-03 13:05		Aug-05-03 16:29		Aug-04-03 16:12		Aug-05-03 16:27		Aug-05-03 16:31		Aug-05-03 16:33	
	Analyzed:	Aug-06-03 14:09		Aug-05-03 19:55		Aug-04-03 18:55		Aug-05-03 19:33		Aug-05-03 20:16		Aug-05-03 20:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
1,2-Dichloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,1-Dichloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
trans-1,2-dichloroethene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
cis-1,2-Dichloroethene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,1-Dichloroethene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
2,2-Dichloropropane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,3-Dichloropropane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2-Dichloropropane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
trans-1,3-dichloropropene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,1-Dichloropropene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
cis-1,3-Dichloropropene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Ethylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Hexachlorobutadiene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Naphthalene		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.058	BRL	0.012	BRL	0.012
isopropylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Methylene Chloride		BRL	0.021	BRL	0.021	BRL	0.023	0.192	0.116	0.030	0.025	BRL	0.024
n-Propylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Styrene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,1,1,2-Tetrachloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,1,2,2-Tetrachloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Tetrachloroethylene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Toluene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2,4-Trichlorobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2,3-Trichlorobenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,1,2-Trichloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-019		235651-020		235651-021		235651-022		235651-023		235651-024	
	Field Id:	3TM-KP-SS-5-01		3TM-KP-SS-5-02		3TM-KP-SS-5-03		3TM-KP-G-5-01		3TM-KP-SS-44-01		3TM-KP-SS-44-02	
	Depth:	6 In		6 In		6 In				6 In		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-24-03 09:50		Jul-24-03 10:00		Jul-24-03 10:15		Jul-24-03 10:20		Jul-24-03 10:35		Jul-24-03 10:45	
VOAs by SW-846 8260B	*Extracted:*	Aug-06-03 13:05		Aug-05-03 16:29		Aug-04-03 16:12		Aug-05-03 16:27		Aug-05-03 16:31		Aug-05-03 16:33	
	Analyzed:	Aug-06-03 14:09		Aug-05-03 19:55		Aug-04-03 18:55		Aug-05-03 19:33		Aug-05-03 20:16		Aug-05-03 20:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
1,1,1-Trichloroethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Trichloroethene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Trichlorofluoromethane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2,3-Trichloropropane		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,2,4-Trimethylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
1,3,5-trimethylbenzene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
Vinyl Chloride		BRL	0.002	BRL	0.002	BRL	0.002	BRL	0.012	BRL	0.002	BRL	0.002
o-Xylene		BRL	0.005	BRL	0.005	BRL	0.006	BRL	0.029	BRL	0.006	BRL	0.006
m,p-Xylenes		BRL	0.011	BRL	0.011	BRL	0.011	BRL	0.058	BRL	0.012	BRL	0.012

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested							
	Lab Id:	235651-025					
	Field Id:	Duplicate 1					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jul-24-03 00:00					
Percent Moisture	*Extracted:*						
	Analyzed:	Jul-25-03 19:20					
	Units/RL:	%	RL				
Percent Moisture		8.64	1.00				
SVOAs by EPA 8270C	*Extracted:*	Jul-30-03 09:57					
	Analyzed:	Aug-09-03 00:34					
	Units/RL:	mg/kg	RL				
Acenaphthene		BRL	0.182				
Acenaphthylene		BRL	0.182				
Anthracene		BRL	0.182				
Benzo(a)anthracene		BRL	0.182				
Benzo(a)pyrene		BRL	0.182				
Benzo(b)fluoranthene		BRL	0.182				
Benzo(g,h,i)perylene		BRL	0.182				
Benzo(k)fluoranthene		BRL	0.182				
Chrysene		BRL	0.182				
Dibenz(a,h)Anthracene		BRL	0.182				
Fluoranthene		BRL	0.182				
Fluorene		BRL	0.182				
Indeno(1,2,3-c,d)Pyrene		BRL	0.182				
Naphthalene		BRL	0.182				
Phenanthrene		BRL	0.182				
Pyrene		BRL	0.182				

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-025					
	Field Id:	Duplicate 1					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jul-24-03 00:00					
VOAs by SW-846 8260B	*Extracted:*	Aug-05-03 16:35					
	Analyzed:	Aug-05-03 20:59					
	Units/RL:	mg/kg RL					
Benzene		BRL 0.005					
Bromobenzene		BRL 0.005					
Bromochloromethane		BRL 0.005					
Bromodichloromethane		BRL 0.005					
Bromoform		BRL 0.005					
Bromomethane		BRL 0.005					
MTBE		BRL 0.005					
tert-Butylbenzene		BRL 0.005					
Sec-Butylbenzene		BRL 0.005					
n-Butylbenzene		BRL 0.005					
Carbon Tetrachloride		BRL 0.005					
Chlorobenzene		BRL 0.005					
Chloroethane		BRL 0.011					
Chloroform		BRL 0.005					
Chloromethane		BRL 0.011					
2-Chlorotoluene		BRL 0.005					
4-Chlorotoluene		BRL 0.005					
p-Cymene (p-Isopropyltoluene)		BRL 0.005					
1,2-Dibromo-3-Chloropropane		BRL 0.005					
Dibromochloromethane		BRL 0.005					
Dibromomethane		BRL 0.005					
1,2-Dichlorobenzene		BRL 0.005					
1,3-Dichlorobenzene		BRL 0.005					
1,4-Dichlorobenzene		BRL 0.005					
Dichlorodifluoromethane		BRL 0.005					

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested							
	Lab Id:	235651-025					
	Field Id:	Duplicate 1					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jul-24-03 00:00					
VOAs by SW-846 8260B	*Extracted:*	Aug-05-03 16:35					
	Analyzed:	Aug-05-03 20:59					
	Units/RL:	mg/kg RL					
1,2-Dichloroethane		BRL 0.005					
1,1-Dichloroethane		BRL 0.005					
trans-1,2-dichloroethene		BRL 0.005					
cis-1,2-Dichloroethene		BRL 0.005					
1,1-Dichloroethene		BRL 0.005					
2,2-Dichloropropane		BRL 0.005					
1,3-Dichloropropane		BRL 0.005					
1,2-Dichloropropane		BRL 0.005					
trans-1,3-dichloropropene		BRL 0.005					
1,1-Dichloropropene		BRL 0.005					
cis-1,3-Dichloropropene		BRL 0.005					
Ethylbenzene		BRL 0.005					
Hexachlorobutadiene		BRL 0.005					
isopropylbenzene		BRL 0.005					
Methylene Chloride		BRL 0.022					
Naphthalene		BRL 0.011					
n-Propylbenzene		BRL 0.005					
Styrene		BRL 0.005					
1,1,1,2-Tetrachloroethane		BRL 0.005					
1,1,2,2-Tetrachloroethane		BRL 0.005					
Tetrachloroethylene		BRL 0.005					
Toluene		BRL 0.005					
1,2,4-Trichlorobenzene		BRL 0.005					
1,2,3-Trichlorobenzene		BRL 0.005					
1,1,2-Trichloroethane		BRL 0.005					

Brent Barron
Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 235651

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id:

Contact: Randy Horsak

Project Location: Grenada, Mississippi

Date Received in Lab: Fri Jul-25-03 10:30 am

Report Date: 12-AUG-03

Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	235651-025					
	Field Id:	Duplicate 1					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jul-24-03 00:00					
VOAs by SW-846 8260B	*Extracted:*	Aug-05-03 16:35					
	Analyzed:	Aug-05-03 20:59					
	Units/RL:	mg/kg RL					
1,1,1-Trichloroethane		BRL 0.005					
Trichloroethene		BRL 0.005					
Trichlorofluoromethane		BRL 0.005					
1,2,3-Trichloropropane		BRL 0.005					
1,2,4-Trimethylbenzene		BRL 0.005					
1,3,5-trimethylbenzene		BRL 0.005					
Vinyl Chloride		BRL 0.002					
o-Xylene		BRL 0.005					
m,p-Xylenes		BRL 0.011					

Brent Barron
Laboratory Manager

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 235651

Project ID:

Lab Batch ID: 640955 **QC- Sample ID:** 235651-011 **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

SVOAs by EPA 8270C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.207	2.07	1.80	87	2.07	1.76	85	2	41-134	19	
Acenaphthylene	<0.207	2.07	1.75	85	2.07	1.72	83	2	65-135	25	
Anthracene	<0.207	2.07	1.79	86	2.07	1.77	86	0	65-135	25	
Benzo(a)anthracene	<0.207	2.07	1.75	85	2.07	1.70	82	4	44-126	25	
Benzo(a)pyrene	<0.207	2.07	1.81	87	2.07	1.76	85	2	65-135	25	
Benzo(b)fluoranthene	<0.207	2.07	1.89	91	2.07	1.89	91	0	65-135	25	
Benzo(g,h,I)perylene	<0.207	2.07	1.15	56	2.07	1.11	54	4	65-135	25	X
Benzo(k)fluoranthene	<0.207	2.07	2.07	100	2.07	1.91	92	8	25-125	25	
Chrysene	<0.207	2.07	1.80	87	2.07	1.76	85	2	65-135	25	
Dibenz(a,h)Anthracene	<0.207	2.07	1.32	64	2.07	1.24	60	6	65-135	25	X
Fluoranthene	<0.207	2.07	1.82	88	2.07	1.75	85	3	65-135	25	
Fluorene	<0.207	2.07	1.83	88	2.07	1.77	86	2	65-135	25	
Indeno(1,2,3-c,d)Pyrene	<0.207	2.07	1.28	62	2.07	1.20	58	7	65-135	25	X
Naphthalene	<0.207	2.07	1.81	87	2.07	1.72	83	5	65-135	25	
Phenanthrene	<0.207	2.07	1.83	88	2.07	1.78	86	2	65-135	25	
Pyrene	<0.207	2.07	1.85	89	2.07	1.79	86	3	41-144	36	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 235651

Project ID:

Lab Batch ID: 641309 **QC- Sample ID:** 235651-023 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

SVOAs by EPA 8270C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.206	2.05	1.86	91	2.06	1.82	88	3	41-134	19	
Acenaphthylene	<0.206	2.05	1.81	88	2.06	1.82	88	0	65-135	25	
Anthracene	<0.206	2.05	1.83	89	2.06	1.83	89	0	65-135	25	
Benzo(a)anthracene	<0.206	2.05	1.77	86	2.06	1.78	86	0	44-126	25	
Benzo(a)pyrene	<0.206	2.05	1.87	91	2.06	1.88	91	0	65-135	25	
Benzo(b)fluoranthene	<0.206	2.05	1.92	94	2.06	1.88	91	3	65-135	25	
Benzo(g,h,i)perylene	<0.206	2.05	1.67	81	2.06	1.70	83	2	65-135	25	
Benzo(k)fluoranthene	<0.206	2.05	1.95	95	2.06	2.07	100	5	25-125	25	
Chrysene	<0.206	2.05	1.83	89	2.06	1.82	88	1	65-135	25	
Dibenz(a,h)Anthracene	<0.206	2.05	1.85	90	2.06	1.87	91	1	65-135	25	
Fluoranthene	<0.206	2.05	1.91	93	2.06	1.91	93	0	65-135	25	
Fluorene	<0.206	2.05	1.88	92	2.06	1.85	90	2	65-135	25	
Indeno(1,2,3-c,d)Pyrene	<0.206	2.05	1.74	85	2.06	1.78	86	1	65-135	25	
Naphthalene	<0.206	2.05	1.79	87	2.06	1.87	91	4	65-135	25	
Phenanthrene	<0.206	2.05	1.90	93	2.06	1.90	92	1	65-135	25	
Pyrene	<0.206	2.05	1.78	87	2.06	1.79	87	0	41-144	36	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 235651

Project ID:

Lab Batch ID: 640960 **QC- Sample ID:** 235651-011 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

VOAs by SW-846 8260B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.006	0.060	0.052	87	0.061	0.052	85	2	66-142	21	
Chlorobenzene	<0.006	0.060	0.057	95	0.061	0.056	92	3	60-133	21	
1,1-Dichloroethene	<0.006	0.060	0.045	75	0.061	0.049	80	6	59-172	22	
Toluene	<0.006	0.060	0.051	85	0.061	0052	85	0	59-139	21	
Trichloroethene	<0.006	0.060	0.054	90	0.061	0054	89	1	62-137	24	

Lab Batch ID: 641081 **QC- Sample ID:** 235651-012 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

VOAs by SW-846 8260B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.006	0.058	0.058	100	0.058	0.057	98	2	66-142	21	
Chlorobenzene	<0.006	0.058	0.057	98	0.058	0.058	100	2	60-133	21	
1,1-Dichloroethene	<0.006	0.058	0.058	100	0.058	0.059	102	2	59-172	22	
Toluene	<0.006	0.058	0.055	95	0.058	0.056	97	2	59-139	21	
Trichloroethene	<0.006	0.058	0.060	103	0.058	0.061	105	2	62-137	24	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 235651

Project ID:

Lab Batch ID: 641150 **QC- Sample ID:** 235801-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

VOAs by SW-846 8260B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.005	0.050	0.052	104	0.050	0.051	102	2	66-142	21	
Chlorobenzene	<0.005	0.050	0.053	106	0.050	0.052	104	2	60-133	21	
1,1-Dichloroethene	<0.005	0.050	0.051	102	0.050	0.048	96	6	59-172	22	
Toluene	<0.005	0.050	0.051	102	0.050	0.050	100	2	59-139	21	
Trichloroethene	<0.005	0.050	0.053	106	0.050	0.054	108	2	62-137	24	

Lab Batch ID: 641186 **QC- Sample ID:** 235651-019 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

VOAs by SW-846 8260B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Naphthalene	<0.011	0.053	0.051	96	0.053	0053	100	4	75-125	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Blank Spike Recovery

Project Name: Koppers Creosote Facility

Work Order #: 235651
Lab Batch #: 640960
Reporting Units: mg/kg
Project ID:
Sample: 461664-1-BKS **Matrix:** Solid
Batch #: 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.005	0.050	0.044	88	66-142	
Chlorobenzene	<0.005	0.050	0.047	94	60-133	
1,1-Dichloroethene	<0.005	0.050	0.042	84	59-172	
Toluene	<0.005	0.050	0.044	88	59-139	
Trichloroethene	<0.005	0.050	0.047	94	62-137	

Lab Batch #: 641081
Reporting Units: mg/kg
Sample: 461734-1-BKS **Matrix:** Solid
Batch #: 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.005	0.050	0.048	96	66-142	
Chlorobenzene	<0.005	0.050	0.049	98	60-133	
1,1-Dichloroethene	<0.005	0.050	0.049	98	59-172	
Toluene	<0.005	0.050	0.048	96	59-139	
Trichloroethene	<0.005	0.050	0.051	102	62-137	

Lab Batch #: 641150
Reporting Units: mg/kg
Sample: 461780-1-BKS **Matrix:** Solid
Batch #: 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.005	0.050	0.049	98	66-142	
Chlorobenzene	<0.005	0.050	0.049	98	60-133	
1,1-Dichloroethene	<0.005	0.050	0.048	96	59-172	
Toluene	<0.005	0.050	0.047	94	59-139	
Trichloroethene	<0.005	0.050	0.052	104	62-137	

Lab Batch #: 641186
Reporting Units: mg/kg
Sample: 461800-1-BKS **Matrix:** Solid
Batch #: 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Naphthalene	<0.005	0.050	0.053	106	65-135	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651

Lab Batch ID: 640955 **Sample:** 461660-1-BKS **Batch #:** 1

Project ID:

Units: mg/kg **Matrix:** Solid

SVOAs by EPA 8270C	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.167	1.67	1.37	82	1.67	1.28	77	6	41-134	19	
Acenaphthylene	<0.167	1.67	1.35	81	1.67	1.24	74	9	65-135	25	
Anthracene	<0.167	1.67	1.32	79	1.67	1.25	75	5	65-135	25	
Benzo(a)anthracene	<0.167	1.67	1.32	79	1.67	1.30	78	1	44-126	25	
Benzo(a)pyrene	<0.167	1.67	1.25	75	1.67	1.17	70	7	65-135	25	
Benzo(b)fluoranthene	<0.167	1.67	1.35	81	1.67	1.24	74	9	65-135	25	
Benzo(g,h,i)perylene	<0.167	1.67	1.30	78	1.67	1.19	71	9	65-135	25	
Benzo(k)fluoranthene	<0.167	1.67	1.21	72	1.67	1.18	71	1	25-125	25	
Chrysene	<0.167	1.67	1.37	82	1.67	1.29	77	6	65-135	25	
Dibenz(a,h)Anthracene	<0.167	1.67	1.38	83	1.67	1.29	77	8	65-135	25	
Fluoranthene	<0.167	1.67	1.36	81	1.67	1.29	77	5	65-135	25	
Fluorene	<0.167	1.67	1.38	83	1.67	1.29	77	8	65-135	25	
Indeno(1,2,3-c,d)Pyrene	<0.167	1.67	1.37	82	1.67	1.25	75	9	65-135	25	
Naphthalene	<0.167	1.67	1.31	78	1.67	1.25	75	4	65-135	25	
Phenanthrene	<0.167	1.67	1.33	80	1.67	1.27	76	5	65-135	25	
Pyrene	<0.167	1.67	1.38	83	1.67	1.31	78	6	41-144	16	

Relative Percent Difference RPD = 200*|(D-G)/(D+G)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651

Project ID:

Lab Batch ID: 641024 **Sample:** 461700-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

SVOAs by EPA 8270C	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.005	0.050	0.056	112	0.050	0.056	112	0	27-132	31	
Acenaphthylene	<0.005	0.050	0.056	112	0.050	0.056	112	0	46-108	25	H
Anthracene	<0.005	0.050	0.055	110	0.050	0.056	112	2	47-145	25	
Benzo(a)anthracene	<0.005	0.050	0.059	118	0.050	0.060	120	2	33-143	25	
Benzo(a)pyrene	<0.005	0.050	0.055	110	0.050	0.055	110	0	65-135	25	
Benzo(b)fluoranthene	<0.005	0.050	0.058	116	0.050	0.057	114	2	24-159	25	
Benzo(g,h,i)perylene	<0.005	0.050	0.056	112	0.050	0.057	114	2	65-135	25	
Benzo(k)fluoranthene	<0.005	0.050	0.051	102	0.050	0.052	104	2	25-125	25	
Chrysene	<0.005	0.050	0.059	118	0.050	0.059	118	0	65-135	25	
Dibenz(a,h)Anthracene	<0.005	0.050	0.053	106	0.050	0.054	108	2	50-125	25	
Fluoranthene	<0.005	0.050	0.057	114	0.050	0.057	114	0	47-125	25	
Fluorene	<0.005	0.050	0.056	112	0.050	0.057	114	2	48-139	25	
Indeno(1,2,3-c,d)Pyrene	<0.005	0.050	0.051	102	0.050	0.052	104	2	27-160	25	
Naphthalene	<0.005	0.050	0.052	104	0.050	0.051	102	2	26-175	25	
Phenanthrene	<0.005	0.050	0.055	110	0.050	0.056	112	2	65-135	25	
Pyrene	<0.005	0.050	0.059	118	0.050	0.060	120	2	23-152	31	

Relative Percent Difference RPD = 200*|(D-G)/(D+G)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651

Lab Batch ID: 641309 **Sample:** 461885-1-BKS **Batch #:** 1 **Project ID:**

Units: mg/kg **Matrix:** Solid

SVOAs by EPA 8270C	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.167	1.67	1.62	97	1.67	1.56	93	4	41-134	19	
Acenaphthylene	<0.167	1.67	1.57	94	1.67	1.52	91	3	65-135	25	
Anthracene	<0.167	1.67	1.61	96	1.67	1.55	93	3	65-135	25	
Benzo(a)anthracene	<0.167	1.67	1.56	93	1.67	1.49	89	4	44-126	25	
Benzo(a)pyrene	<0.167	1.67	1.60	96	1.67	1.56	93	3	65-135	25	
Benzo(b)fluoranthene	<0.167	1.67	1.60	96	1.67	1.57	94	2	65-135	25	
Benzo(g,h,i)perylene	<0.167	1.67	1.68	101	1.67	1.63	98	3	65-135	25	
Benzo(k)fluoranthene	<0.167	1.67	1.64	98	1.67	1.60	96	2	25-125	25	
Chrysene	<0.167	1.67	1.63	98	1.67	1.56	93	5	65-135	25	
Dibenz(a,h)Anthracene	<0.167	1.67	1.63	98	1.67	1.57	94	4	65-135	25	
Fluoranthene	<0.167	1.67	1.64	98	1.67	1.62	97	1	65-135	25	
Fluorene	<0.167	1.67	1.63	98	1.67	1.60	96	2	65-135	25	
Indeno(1,2,3-c,d)Pyrene	<0.167	1.67	1.60	96	1.67	1.53	92	4	65-135	25	
Naphthalene	<0.167	1.67	1.54	92	1.67	1.51	90	2	65-135	25	
Phenanthrene	<0.167	1.67	1.64	98	1.67	1.59	95	3	65-135	25	
Pyrene	<0.167	1.67	1.59	95	1.67	1.52	91	4	41-144	36	

Relative Percent Difference RPD = 200*|(D-G)/(D+G)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 235651-001 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.17	1.67	70	30-115	
2-Fluorophenol	0.948	1.67	57	25-121	
Nitrobenzene-d5	1.11	1.67	66	23-120	
Phenol-d6	1.03	1.67	62	24-113	
Terphenyl-D14	1.14	1.67	68	18-137	
2,4,6-Tribromophenol	1.34	1.67	80	19-122	

Lab Batch #: 640955 **Sample:** 235651-002 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.28	1.67	77	30-115	
2-Fluorophenol	0.747	1.67	45	25-121	
Nitrobenzene-d5	1.02	1.67	61	23-120	
Phenol-d6	0.873	1.67	52	24-113	
Terphenyl-D14	1.30	1.67	78	18-137	
2,4,6-Tribromophenol	1.08	1.67	65	19-122	

Lab Batch #: 640955 **Sample:** 235651-003 / DL **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.56	1.66	94	30-115	
2-Fluorophenol	1.19	1.66	72	25-121	
Nitrobenzene-d5	1.40	1.66	84	23-120	
Phenol-d6	1.12	1.66	67	24-113	
Terphenyl-D14	1.48	1.66	89	18-137	
2,4,6-Tribromophenol	1.58	1.66	95	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 235651-003 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.45	1.66	87	30-115	
2-Fluorophenol	1.17	1.66	70	25-121	
Nitrobenzene-d5	1.39	1.66	84	23-120	
Phenol-d6	1.29	1.66	78	24-113	
Terphenyl-D14	1.52	1.66	92	18-137	
2,4,6-Tribromophenol	1.77	1.66	107	19-122	

Lab Batch #: 640955 **Sample:** 235651-004 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.47	1.66	89	30-115	
2-Fluorophenol	1.19	1.66	72	25-121	
Nitrobenzene-d5	1.38	1.66	83	23-120	
Phenol-d6	1.29	1.66	78	24-113	
Terphenyl-D14	1.48	1.66	89	18-137	
2,4,6-Tribromophenol	1.69	1.66	102	19-122	

Lab Batch #: 640955 **Sample:** 235651-005 / DL **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.46	1.67	87	30-115	
2-Fluorophenol	1.10	1.67	66	25-121	
Nitrobenzene-d5	1.40	1.67	84	23-120	
Phenol-d6	1.09	1.67	65	24-113	
Terphenyl-D14	1.53	1.67	92	18-137	
2,4,6-Tribromophenol	1.18	1.67	71	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample: 235651-005 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.07	1.67	64	30-115	
2-Fluorophenol	0.813	1.67	49	25-121	
Nitrobenzene-d5	1.07	1.67	64	23-120	
Phenol-d6	0.943	1.67	56	24-113	
Terphenyl-D14	1.16	1.67	69	18-137	
2,4,6-Tribromophenol	1.48	1.67	89	19-122	

Lab Batch #: 640955 **Sample: 235651-007 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.969	1.67	58	30-115	
2-Fluorophenol	0.704	1.67	42	25-121	
Nitrobenzene-d5	0.919	1.67	55	23-120	
Phenol-d6	0.646	1.67	39	24-113	
Terphenyl-D14	1.05	1.67	63	18-137	
2,4,6-Tribromophenol	0.966	1.67	58	19-122	

Lab Batch #: 640955 **Sample: 235651-008 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.18	1.67	71	30-115	
2-Fluorophenol	0.943	1.67	56	25-121	
Nitrobenzene-d5	1.14	1.67	68	23-120	
Phenol-d6	0.984	1.67	59	24-113	
Terphenyl-D14	1.26	1.67	75	18-137	
2,4,6-Tribromophenol	1.12	1.67	67	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 235651-009 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.46	1.66	88	30-115	
2-Fluorophenol	1.21	1.66	73	25-121	
Nitrobenzene-d5	1.43	1.66	86	23-120	
Phenol-d6	1.26	1.66	76	24-113	
Terphenyl-D14	1.53	1.66	92	18-137	
2,4,6-Tribromophenol	1.33	1.66	80	19-122	

Lab Batch #: 640955 **Sample:** 235651-010 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.44	1.66	87	30-115	
2-Fluorophenol	1.16	1.66	70	25-121	
Nitrobenzene-d5	1.39	1.66	84	23-120	
Phenol-d6	1.19	1.66	72	24-113	
Terphenyl-D14	1.53	1.66	92	18-137	
2,4,6-Tribromophenol	1.29	1.66	78	19-122	

Lab Batch #: 640955 **Sample:** 235651-011 / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.50	1.66	90	30-115	
2-Fluorophenol	1.34	1.66	81	25-121	
Nitrobenzene-d5	1.50	1.66	90	23-120	
Phenol-d6	1.46	1.66	88	24-113	
Terphenyl-D14	1.60	1.66	96	18-137	
2,4,6-Tribromophenol	1.77	1.66	107	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 235651-011 / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.49	1.66	90	30-115	
2-Fluorophenol	1.26	1.66	76	25-121	
Nitrobenzene-d5	1.43	1.66	86	23-120	
Phenol-d6	1.35	1.66	81	24-113	
Terphenyl-D14	1.56	1.66	94	18-137	
2,4,6-Tribromophenol	1.74	1.66	105	19-122	

Lab Batch #: 640955 **Sample:** 235651-011 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.45	1.67	87	30-115	
2-Fluorophenol	1.21	1.67	72	25-121	
Nitrobenzene-d5	1.40	1.67	84	23-120	
Phenol-d6	1.22	1.67	73	24-113	
Terphenyl-D14	1.51	1.67	90	18-137	
2,4,6-Tribromophenol	1.32	1.67	79	19-122	

Lab Batch #: 640955 **Sample:** 235651-012 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.38	1.67	83	30-115	
2-Fluorophenol	1.14	1.67	68	25-121	
Nitrobenzene-d5	1.35	1.67	81	23-120	
Phenol-d6	1.15	1.67	69	24-113	
Terphenyl-D14	1.49	1.67	89	18-137	
2,4,6-Tribromophenol	1.17	1.67	70	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 235651-013 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.46	1.67	87	30-115	
2-Fluorophenol	1.09	1.67	65	25-121	
Nitrobenzene-d5	1.35	1.67	81	23-120	
Phenol-d6	1.16	1.67	69	24-113	
Terphenyl-D14	1.53	1.67	92	18-137	
2,4,6-Tribromophenol	1.37	1.67	82	19-122	

Lab Batch #: 640955 **Sample:** 235651-014 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.38	1.66	83	30-115	
2-Fluorophenol	1.09	1.66	66	25-121	
Nitrobenzene-d5	1.33	1.66	80	23-120	
Phenol-d6	1.14	1.66	69	24-113	
Terphenyl-D14	1.48	1.66	89	18-137	
2,4,6-Tribromophenol	1.25	1.66	75	19-122	

Lab Batch #: 640955 **Sample:** 235651-015 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.06	1.67	63	30-115	
2-Fluorophenol	0.777	1.67	47	25-121	
Nitrobenzene-d5	1.00	1.67	60	23-120	
Phenol-d6	0.835	1.67	50	24-113	
Terphenyl-D14	1.25	1.67	75	18-137	
2,4,6-Tribromophenol	0.937	1.67	56	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 235651-016 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.38	1.66	83	30-115	
2-Fluorophenol	1.11	1.66	67	25-121	
Nitrobenzene-d5	1.32	1.66	80	23-120	
Phenol-d6	1.14	1.66	69	24-113	
Terphenyl-D14	1.41	1.66	85	18-137	
2,4,6-Tribromophenol	1.37	1.66	83	19-122	

Lab Batch #: 640955 **Sample:** 461660-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.41	1.67	84	30-115	
2-Fluorophenol	1.28	1.67	77	25-121	
Nitrobenzene-d5	1.38	1.67	83	23-120	
Phenol-d6	1.32	1.67	79	24-113	
Terphenyl-D14	1.46	1.67	87	18-137	
2,4,6-Tribromophenol	1.36	1.67	81	19-122	

Lab Batch #: 640955 **Sample:** 461660-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.47	1.67	88	30-115	
2-Fluorophenol	1.28	1.67	77	25-121	
Nitrobenzene-d5	1.44	1.67	86	23-120	
Phenol-d6	1.29	1.67	77	24-113	
Terphenyl-D14	1.43	1.67	86	18-137	
2,4,6-Tribromophenol	1.30	1.67	78	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640955 **Sample:** 461660-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.38	1.67	83	30-115	
2-Fluorophenol	1.27	1.67	76	25-121	
Nitrobenzene-d5	1.36	1.67	81	23-120	
Phenol-d6	1.27	1.67	76	24-113	
Terphenyl-D14	1.44	1.67	86	18-137	
2,4,6-Tribromophenol	1.37	1.67	82	19-122	

Lab Batch #: 641024 **Sample:** 235651-006 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.060	0.050	120	43-116	**
2-Fluorophenol	0.025	0.050	50	21-100	
Nitrobenzene-d5	0.055	0.050	110	35-114	
Phenol-d6	0.018	0.050	36	10-94	
Terphenyl-D14	0.065	0.050	130	33-141	
2,4,6-Tribromophenol	0.061	0.050	122	10-123	

Lab Batch #: 641024 **Sample:** 235651-017 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.054	0.050	108	43-116	
2-Fluorophenol	0.024	0.050	48	21-100	
Nitrobenzene-d5	0.052	0.050	104	35-114	
Phenol-d6	0.015	0.050	30	10-94	
Terphenyl-D14	0.061	0.050	122	33-141	
2,4,6-Tribromophenol	0.061	0.050	122	10-123	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641024 **Sample: 235651-018 / SMP** **Batch: 1** **Matrix: Water**

Units: mg/L

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.053	0.050	106	43-116	
2-Fluorophenol	0.024	0.050	48	21-100	
Nitrobenzene-d5	0.051	0.050	102	35-114	
Phenol-d6	0.015	0.050	30	10-94	
Terphenyl-D14	0.061	0.050	122	33-141	
2,4,6-Tribromophenol	0.061	0.050	122	10-123	

Lab Batch #: 641024 **Sample: 461700-1-BKS / BKS** **Batch: 1** **Matrix: Water**

Units: mg/L

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.056	0.050	112	43-116	
2-Fluorophenol	0.027	0.050	54	21-100	
Nitrobenzene-d5	0.055	0.050	110	35-114	
Phenol-d6	0.018	0.050	36	10-94	
Terphenyl-D14	0.064	0.050	128	33-141	
2,4,6-Tribromophenol	0.061	0.050	122	10-123	

Lab Batch #: 641024 **Sample: 461700-1-BLK / BLK** **Batch: 1** **Matrix: Water**

Units: mg/L

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.052	0.050	104	43-116	
2-Fluorophenol	0.025	0.050	50	21-100	
Nitrobenzene-d5	0.050	0.050	100	35-114	
Phenol-d6	0.016	0.050	32	10-94	
Terphenyl-D14	0.058	0.050	116	33-141	
2,4,6-Tribromophenol	0.057	0.050	114	10-123	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641024 **Sample:** 461700-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.056	0.050	112	43-116	
2-Fluorophenol	0.026	0.050	52	21-100	
Nitrobenzene-d5	0.054	0.050	108	35-114	
Phenol-d6	0.018	0.050	36	10-94	
Terphenyl-D14	0.065	0.050	130	33-141	
2,4,6-Tribromophenol	0.061	0.050	122	10-123	

Lab Batch #: 641309 **Sample:** 235651-019 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.58	1.67	95	30-115	
2-Fluorophenol	0.902	1.67	54	25-121	
Nitrobenzene-d5	1.55	1.67	93	23-120	
Phenol-d6	1.06	1.67	63	24-113	
Terphenyl-D14	1.60	1.67	96	18-137	
2,4,6-Tribromophenol	1.15	1.67	69	19-122	

Lab Batch #: 641309 **Sample:** 235651-020 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.62	1.67	97	30-115	
2-Fluorophenol	0.715	1.67	43	25-121	
Nitrobenzene-d5	1.55	1.67	93	23-120	
Phenol-d6	0.866	1.67	52	24-113	
Terphenyl-D14	1.62	1.67	97	18-137	
2,4,6-Tribromophenol	0.862	1.67	52	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641309 **Sample: 235651-021 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.65	1.67	99	30-115	
2-Fluorophenol	1.33	1.67	80	25-121	
Nitrobenzene-d5	1.58	1.67	95	23-120	
Phenol-d6	1.46	1.67	87	24-113	
Terphenyl-D14	1.75	1.67	105	18-137	
2,4,6-Tribromophenol	1.71	1.67	102	19-122	

Lab Batch #: 641309 **Sample: 235651-022 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	5.62	5.00	112	30-115	
2-Fluorophenol	4.40	5.00	88	25-121	
Nitrobenzene-d5	5.43	5.00	109	23-120	
Phenol-d6	4.82	5.00	96	24-113	
Terphenyl-D14	5.93	5.00	119	18-137	
2,4,6-Tribromophenol	5.22	5.00	104	19-122	

Lab Batch #: 641309 **Sample: 235651-023 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.59	1.67	95	30-115	
2-Fluorophenol	1.33	1.67	80	25-121	
Nitrobenzene-d5	1.54	1.67	92	23-120	
Phenol-d6	1.43	1.67	86	24-113	
Terphenyl-D14	1.65	1.67	99	18-137	
2,4,6-Tribromophenol	1.66	1.67	99	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641309 **Sample:** 235651-023 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.60	1.66	96	30-115	
2-Fluorophenol	1.36	1.66	82	25-121	
Nitrobenzene-d5	1.58	1.66	95	23-120	
Phenol-d6	1.49	1.66	90	24-113	
Terphenyl-D14	1.60	1.66	96	18-137	
2,4,6-Tribromophenol	1.90	1.66	114	19-122	

Lab Batch #: 641309 **Sample:** 235651-023 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.63	1.66	98	30-115	
2-Fluorophenol	1.38	1.66	83	25-121	
Nitrobenzene-d5	1.62	1.66	98	23-120	
Phenol-d6	1.51	1.66	91	24-113	
Terphenyl-D14	1.64	1.66	99	18-137	
2,4,6-Tribromophenol	1.92	1.66	116	19-122	

Lab Batch #: 641309 **Sample:** 235651-024 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.57	1.66	95	30-115	
2-Fluorophenol	1.21	1.66	73	25-121	
Nitrobenzene-d5	1.51	1.66	91	23-120	
Phenol-d6	1.32	1.66	80	24-113	
Terphenyl-D14	1.57	1.66	95	18-137	
2,4,6-Tribromophenol	1.55	1.66	93	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641309 **Sample:** 235651-025 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.52	1.66	92	30-115	
2-Fluorophenol	1.24	1.66	75	25-121	
Nitrobenzene-d5	1.43	1.66	86	23-120	
Phenol-d6	1.34	1.66	81	24-113	
Terphenyl-D14	1.50	1.66	90	18-137	
2,4,6-Tribromophenol	1.48	1.66	89	19-122	

Lab Batch #: 641309 **Sample:** 461885-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.67	1.67	100	30-115	
2-Fluorophenol	1.41	1.67	84	25-121	
Nitrobenzene-d5	1.64	1.67	98	23-120	
Phenol-d6	1.60	1.67	96	24-113	
Terphenyl-D14	1.75	1.67	105	18-137	
2,4,6-Tribromophenol	2.04	1.67	122	19-122	

Lab Batch #: 641309 **Sample:** 461885-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.64	1.67	98	30-115	
2-Fluorophenol	1.41	1.67	84	25-121	
Nitrobenzene-d5	1.65	1.67	99	23-120	
Phenol-d6	1.52	1.67	91	24-113	
Terphenyl-D14	1.69	1.67	101	18-137	
2,4,6-Tribromophenol	1.74	1.67	104	19-122	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641309 **Sample:** 461885-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

SVOAs by EPA 8270C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	1.64	1.67	98	30-115	
2-Fluorophenol	1.44	1.67	86	25-121	
Nitrobenzene-d5	1.61	1.67	96	23-120	
Phenol-d6	1.61	1.67	96	24-113	
Terphenyl-D14	1.67	1.67	100	18-137	
2,4,6-Tribromophenol	1.96	1.67	117	19-122	

Lab Batch #: 640960 **Sample:** 235651-001 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0622	0.0500	124	74-121	**
Dibromofluoromethane	0.0531	0.0500	106	80-120	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0537	0.0500	107	81-117	

Lab Batch #: 640960 **Sample:** 235651-002 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0607	0.0500	121	74-121	
Dibromofluoromethane	0.0547	0.0500	109	80-120	
1,2-Dichloroethane-D4	0.0536	0.0500	107	80-120	
Toluene-D8	0.0532	0.0500	106	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640960 **Sample:** 235651-003 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0567	0.0500	113	74-121	
Dibromofluoromethane	0.0560	0.0500	112	80-120	
1,2-Dichloroethane-D4	0.0525	0.0500	105	80-120	
Toluene-D8	0.0510	0.0500	102	81-117	

Lab Batch #: 640960 **Sample:** 235651-004 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0533	0.0500	107	74-121	
Dibromofluoromethane	0.0556	0.0500	111	80-120	
1,2-Dichloroethane-D4	0.0531	0.0500	106	80-120	
Toluene-D8	0.0490	0.0500	98	81-117	

Lab Batch #: 640960 **Sample:** 235651-005 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0627	0.0500	125	74-121	**
Dibromofluoromethane	0.0587	0.0500	117	80-120	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0533	0.0500	107	81-117	

Lab Batch #: 640960 **Sample:** 235651-007 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0754	0.0500	151	74-121	**
Dibromofluoromethane	0.0512	0.0500	102	80-120	
1,2-Dichloroethane-D4	0.0589	0.0500	118	80-120	
Toluene-D8	0.0648	0.0500	130	81-117	**

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640960 **Sample: 235651-008 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0654	0.0500	131	74-121	**
Dibromofluoromethane	0.0549	0.0500	110	80-120	
1,2-Dichloroethane-D4	0.0590	0.0500	118	80-120	
Toluene-D8	0.0566	0.0500	113	81-117	

Lab Batch #: 640960 **Sample: 235651-010 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0573	0.0500	115	74-121	
Dibromofluoromethane	0.0528	0.0500	106	80-120	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0505	0.0500	101	81-117	

Lab Batch #: 640960 **Sample: 235651-011 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0533	0.0500	107	74-121	
Dibromofluoromethane	0.0541	0.0500	108	80-120	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0499	0.0500	100	81-117	

Lab Batch #: 640960 **Sample: 235651-011 S / MS** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0532	0.0500	106	74-121	
Dibromofluoromethane	0.0565	0.0500	113	80-120	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0503	0.0500	101	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 640960 **Sample:** 235651-011 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0527	0.0500	105	74-121	
Dibromofluoromethane	0.0551	0.0500	110	80-120	
1,2-Dichloroethane-D4	0.0528	0.0500	106	80-120	
Toluene-D8	0.0510	0.0500	102	81-117	

Lab Batch #: 640960 **Sample:** 461664-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0511	0.0500	102	74-121	
Dibromofluoromethane	0.0502	0.0500	100	80-120	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0506	0.0500	101	81-117	

Lab Batch #: 640960 **Sample:** 461664-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0526	0.0500	105	74-121	
Dibromofluoromethane	0.0511	0.0500	102	80-120	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0504	0.0500	101	81-117	

Lab Batch #: 641081 **Sample:** 235651-009 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0638	0.0500	128	74-121	**
Dibromofluoromethane	0.0541	0.0500	108	80-120	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0579	0.0500	116	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641081 **Sample:** 235651-012 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0524	0.0500	105	74-121	
Dibromofluoromethane	0.0550	0.0500	110	80-120	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0497	0.0500	99	81-117	

Lab Batch #: 641081 **Sample:** 235651-012 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0519	0.0500	104	74-121	
Dibromofluoromethane	0.0551	0.0500	110	80-120	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0502	0.0500	100	81-117	

Lab Batch #: 641081 **Sample:** 235651-012 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0524	0.0500	105	74-121	
Dibromofluoromethane	0.0552	0.0500	110	80-120	
1,2-Dichloroethane-D4	0.0548	0.0500	110	80-120	
Toluene-D8	0.0500	0.0500	100	81-117	

Lab Batch #: 641081 **Sample:** 235651-021 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0559	0.0500	112	74-121	
Dibromofluoromethane	0.0537	0.0500	107	80-120	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0514	0.0500	103	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641081 **Sample: 461734-1-BKS / BKS** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0519	0.0500	104	74-121	
Dibromofluoromethane	0.0533	0.0500	107	80-120	
1,2-Dichloroethane-D4	0.0529	0.0500	106	80-120	
Toluene-D8	0.0510	0.0500	102	81-117	

Lab Batch #: 641081 **Sample: 461734-1-BLK / BLK** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0540	0.0500	108	74-121	
Dibromofluoromethane	0.0516	0.0500	103	80-120	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0512	0.0500	102	81-117	

Lab Batch #: 641150 **Sample: 235651-005 / DL** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0511	0.0500	102	74-121	
Dibromofluoromethane	0.0528	0.0500	106	80-120	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0477	0.0500	95	81-117	

Lab Batch #: 641150 **Sample: 235651-013 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0634	0.0500	127	74-121	**
Dibromofluoromethane	0.0559	0.0500	112	80-120	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0525	0.0500	105	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641150 **Sample: 235651-014 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0616	0.0500	123	74-121	**
Dibromofluoromethane	0.0547	0.0500	109	80-120	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0524	0.0500	105	81-117	

Lab Batch #: 641150 **Sample: 235651-015 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0639	0.0500	128	74-121	**
Dibromofluoromethane	0.0586	0.0500	117	80-120	
1,2-Dichloroethane-D4	0.0562	0.0500	112	80-120	
Toluene-D8	0.0501	0.0500	100	81-117	

Lab Batch #: 641150 **Sample: 235651-016 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0590	0.0500	118	74-121	
Dibromofluoromethane	0.0556	0.0500	111	80-120	
1,2-Dichloroethane-D4	0.0539	0.0500	108	80-120	
Toluene-D8	0.0481	0.0500	96	81-117	

Lab Batch #: 641150 **Sample: 235651-020 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0669	0.0500	134	74-121	**
Dibromofluoromethane	0.0565	0.0500	113	80-120	
1,2-Dichloroethane-D4	0.0549	0.0500	110	80-120	
Toluene-D8	0.0534	0.0500	107	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641150 **Sample: 235651-022 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0693	0.0500	139	74-121	**
Dibromofluoromethane	0.0528	0.0500	106	80-120	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0601	0.0500	120	81-117	**

Lab Batch #: 641150 **Sample: 235651-023 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0601	0.0500	120	74-121	
Dibromofluoromethane	0.0566	0.0500	113	80-120	
1,2-Dichloroethane-D4	0.0551	0.0500	110	80-120	
Toluene-D8	0.0514	0.0500	103	81-117	

Lab Batch #: 641150 **Sample: 235651-024 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0585	0.0500	117	74-121	
Dibromofluoromethane	0.0574	0.0500	115	80-120	
1,2-Dichloroethane-D4	0.0541	0.0500	108	80-120	
Toluene-D8	0.0510	0.0500	102	81-117	

Lab Batch #: 641150 **Sample: 235651-025 / SMP** **Batch: 1** **Matrix: Solid**

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0611	0.0500	122	74-121	**
Dibromofluoromethane	0.0570	0.0500	114	80-120	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0512	0.0500	102	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641150 **Sample:** 235801-001 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0529	0.0500	106	74-121	
Dibromofluoromethane	0.0518	0.0500	104	80-120	
1,2-Dichloroethane-D4	0.0523	0.0500	105	80-120	
Toluene-D8	0.0500	0.0500	100	81-117	

Lab Batch #: 641150 **Sample:** 235801-001 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0532	0.0500	106	74-121	
Dibromofluoromethane	0.0522	0.0500	104	80-120	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0490	0.0500	98	81-117	

Lab Batch #: 641150 **Sample:** 461780-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0517	0.0500	103	74-121	
Dibromofluoromethane	0.0545	0.0500	109	80-120	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0490	0.0500	98	81-117	

Lab Batch #: 641150 **Sample:** 461780-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0530	0.0500	106	74-121	
Dibromofluoromethane	0.0535	0.0500	107	80-120	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0487	0.0500	97	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641186 **Sample:** 235651-003 / DL **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0542	0.0500	108	74-121	
Dibromofluoromethane	0.0568	0.0500	114	80-120	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0487	0.0500	97	81-117	

Lab Batch #: 641186 **Sample:** 235651-019 / SMP **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0586	0.0500	117	74-121	
Dibromofluoromethane	0.0515	0.0500	103	80-120	
1,2-Dichloroethane-D4	0.0523	0.0500	105	80-120	
Toluene-D8	0.0524	0.0500	105	81-117	

Lab Batch #: 641186 **Sample:** 235651-019 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0567	0.0500	113	74-121	
Dibromofluoromethane	0.0539	0.0500	108	80-120	
1,2-Dichloroethane-D4	0.0553	0.0500	111	80-120	
Toluene-D8	0.0537	0.0500	107	81-117	

Lab Batch #: 641186 **Sample:** 235651-019 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0581	0.0500	116	74-121	
Dibromofluoromethane	0.0535	0.0500	107	80-120	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0537	0.0500	107	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 235651 **Project ID:**

Lab Batch #: 641186 **Sample:** 461800-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0507	0.0500	101	74-121	
Dibromofluoromethane	0.0529	0.0500	106	80-120	
1,2-Dichloroethane-D4	0.0557	0.0500	111	80-120	
Toluene-D8	0.0501	0.0500	100	81-117	

Lab Batch #: 641186 **Sample:** 461800-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

VOAs by SW-846 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0522	0.0500	104	74-121	
Dibromofluoromethane	0.0531	0.0500	106	80-120	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0503	0.0500	101	81-117	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

SUMMARY OF SAMPLING AND ANALYSIS – PRELIMINARY, SUBJECT TO CHANGE
KOPPERS WOOD PRESERVING FACILITY
GRENADA, MISSISSIPPI CASE
FIELD CAMPAIGN NO. 1
MAY 29, 2003 VERSION

Site Name / Location	▸ Koppers wood treating facility ▸ Grenada, Mississippi
Environmental Media to be Sampled	▸ Indoor dust ▸ Stream and ditch sediments ▸ Groundwater (possible future field campaign)
Indoor Dust Sampling	▸ Collect 1 composite sample of indoor dust from each residence to be tested. Sample to be collected from attic, air and heating vents, behind appliances, bookshelves, and other areas that are not routinely cleaned. This will be representative of "old dust." ▸ Use HVS-3 forensic vacuum system to collect samples ▸ ASTM Standard D-5438 to be used as a guideline ▸ Field blanks and other QA/QC samples to be tested ▸ Samples of indoor dust will be collected at approximately 20-30 residences in or near Grenada; addresses to be sampled are summarized in Table 1 ▸ Samples of indoor dust will be collected at the Grenada Elementary School (dust + filters) ▸ Samples of indoor dust will be collected at the Grenada Middle School (dust + filters) ▸ Samples of indoor dust will be collected at the _____ Baptist Church (dust + filters) ▸ Samples of representative creosote material will be collected for forensic identification ▸ Test about 10 samples for Dioxins, and the remainder for PAHs

Stream and Ditch Sampling	▸ Use conventional techniques (grab, hand auguring) for sample retrieval and preservation ▸ Samples will be collected from the central / upgradient ditch at the southwest corner of the Koppers plant ▸ Samples will be collected in Batupan Bogue Creek near the intersection of Tie Plant Road and the Creek. ▸ Samples will be collected in the north ditch at the north corner of the Koppers plant ▸ Approximately 6 locations will be sampled at each of the ditches / creek areas. ▸ Collect discrete sediment samples at 0.5, 1.0, and 2.0 feet bgs using hand augers or similar sampling devices at each sampling point. ▸ Ditches will be sampled using hip waders, to the extent practical. ▸ Creek area will require a boat or similar means to support the sampling crew.
Sampling of Control Group	▸ No control group sampling will be performed as part of this phase of work. ▸ Samples of the following materials will be obtained from Koppers for future forensic identification: current production creosote oil, current production creosote impregnated cross-tie, current production creosote impregnated power pole, heavily contaminated / weathered creosote soil.
Sample Collection Documentation	▸ Standard 3TM International Sample Collection Log / Field Notes ▸ Chain-of-custody and sample preservation ▸ Photographs of sampling locations ▸ GPS readings of sampling locations

Analytical Testing	▸ Samples to be submitted to AXYS Analytical in Sidney, BC Canada for testing ▸ Samples to be tested for creosote PAHs using Method 8270mod low resolution GC/MS. ▸ Samples to be tested for chlorinated phenols using Method 1653mod low resolution GC/MS ▸ If sufficient sample aliquot is available, then several samples may be forensically tested using light / IR and/or electron microscopy ▸ If testing for PAHs indicates positive results, then samples will be tested for Dioxins / Furans using Methods 1613b high resolution GC/MS; if testing for PAHs does not indicate positive results, then samples will not be tested for Dioxins / Furans ▸ Laboratory to use high level QA/QC ▸ Laboratory data to be submitted to 3TM in hard copy, pdf format, and Excel format ▸ For samples with positive PAH results, forensic fingerprinting will be conducted on a representative number of samples to positively identify the material as creosote, and not some other material ▸ If sufficient sample extract is available, a portion of the sample will be archived by the laboratory for use by the defendant, if requested
Data Report	▸ Upon receipt of the analytical testing data, 3TM will prepare a formal Summary Report that includes the following: – Overview of the field program – Sample collection logs and field notes – Photographs – Site sketches – GPS readings – Summary of analytical testing results – Summary of forensic fingerprinting of selected samples – Other findings
Work Schedule	▸ Kick off field campaign in late June or early July 2003 ▸ Sample collection field work will require approximately _____ field days ▸ Analytical testing turnaround time will be approximately 4-6 weeks ▸ Summary Report will be submitted approximately 2-4 weeks after receipt of the final analytical data

Table 1
Names and Addresses of Residences to Be Sampled (Indoor Dust)

#	Address	Resident Name	Longitude	Latitude	PAHs	Dioxins
1	Steve Cole to fill in.....					
2						
3						
4						
5						
6						
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28						
29						
30						

S:\3TM International_New\Clients\Lundy & Davis\L&D-Koppers Wood Preserving\Field Campaign 1\Sampling Summary May292003.wpd

Analytical Report 236028

for

3TM International

Project Manager: Randy Horsak

Koppers Creosote Facility

3TM-LD-022003-02

19-AUG-03

XENCO Laboratories

FILE

11381 Meadowglen, Suite L Houston, TX 77082 Ph:(281) 589-0692 Fax:(281) 589-0695

XENCO Laboratories

19-AUG-03

Project Manager: **Randy Horsak**
3TM International
1500 South Dairy Ashford, Suite 225
Houston , TX 77077

Reference: XENCO Report No: **236028**
Koppers Creosote Facility
Project Address: Grenada, Mississippi

Randy Horsak:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Chain of Custody Numbered 236028. All results being reported under this Chain of Custody apply to the samples analyzed and properly identified with a Laboratory ID number.

All the results for the quality control samples were reviewed. Also, all parameters for data reduction and validation were reviewed. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly flagged.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. 236028 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron
Laboratory Manager

Xenco Laboratories

☒ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com.

Company COC No: Work Order No: 105160 Page 1 of 2

Lab Only: 236028-H

Company	3TM International, Inc.
Phone	(281) 497-1230
Project Name	☒ Previously done at XENCO — Kappers Creosote Facility
Project ID	3TM-LD-022003-02
Location	Grenada, Mississippi
Project Manager (PM)	Randy Horsak
Project Director (PD)	
Fax Results to	☒ PM and / or T.J. Dunnahoe
Fax	(281) 497-1676
Invoice to	☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:
Quote No.	
P.O No	
☐ Call for a P.O.	
Special DLs	(RR I RR II DW QAPP See Lab PM Call Proj. PM)
Specifications	QA/QC For Litigation
Sampler Name	T.J. Dunnahoe
Signature	

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

Lab Only Additions: From: / Rcv by: / Date

	Sample ID	Sampling Date	Time	Depth ft" in" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives
1	3TM-KP-SS-JC-01	8/6/03	1230	6"	S	X		1	8	GC	C4
2	3TM-KP-SS-JC-02	↓	1240	↓	↓	↓		↓	↓	↓	↓
3	3TM-KP-SS-JC-03	↓	1300	↓	↓	↓		↓	↓	↓	↓
4	3TM-KP-SS-ND-01	8/7/03	0810	1'	↓	↓		↓	↓	↓	↓
5	3TM-KP-SS-ND-02	↓	0845	↓	↓	↓		↓	↓	↓	↓
6	3TM-KP-SS-ND-03	↓	0930	↓	↓	↓		↓	↓	↓	↓
7	3TM-KP-SS-TA-01	↓	1045	↓	↓	↓		↓	↓	↓	↓
8	3TM-KP-SS-TA-02	↓	1100	6"	↓	↓		↓	↓	↓	↓
9	3TM-KP-SS-CD-01	↓	1145	↓	↓	↓		↓	↓	↓	↓
10	3TM-KP-SS-CD-02	↓	1240	↓	↓	↓		↓	↓	↓	↓

BTEX by 8021 / 8260 / 602 / 624 / Other
BTEX-MTBE by 8021 / 8260 / 602 / 624 / Other
TPH by TX1005 / 418 / 1664 / 8015GRO / 8015DRO / FLPRO
PAHs by 8270 / 8100 / 8310
METALS by 6020 / 8RCRA / Tot Pb / TCLP_8 / 13PP / 23TAL / List
VOAs by 8260 / 624 / BTEX MTBE / PPs / TCLP / See List / Call PM
SVOAs by 8270 / 625 / PAHs / BN&A / TCLP / PPs / See List / Call PM
TAT 5h 12h 20h 24h 48h 3d 5d 7d 10d 14d 21d
Addn: PAH above / mg/L W. / mg/Kg S / Highest Hit
Hold Analysis

Remarks

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJD	8/8/03 1500		
2			
3		Lab:	8/8/03 1505

Total Containers per COC: 12 Cooler Temp: 3-0 °C OK

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

☒ 11381 Meadowglen, Suite L Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com.

Company COC No:

Work Order No: 105161

Company	3TM International, Inc.
Phone	(281) 497-1230
Project Name ☒ Previously done at XENCO	Koppers Creosote Facility
Project ID	3TM-LD 022003-02
Location	Grenada, Mississippi
Project Manager (PM)	Randy Horsak
Project Director (PD)	
Fax Results to ☒ PM and / or	TJ. Dunnahoe
Fax	(281) 497-1676
Invoice to ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:	
Quote No.	
P.O No	
☐ Call for a P.O.	
Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)	
Specifications	QA/QC For Litigation
Sampler Name	T.J. Dunnahoe
Signature	

Lab Only: 236028-1

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TATs 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

Lab Only Additions

	Sample ID	Sampling Date	Time	Depth ft" in" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418 1664 8015GRO 8015DRO FLPRO	PAHs by 8270 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	TAT 5h 12h 20h 24h 48h 3d 5d 7d 10d 14d 21d	Addn: PAH above mg/L W. mg/Kg S Highest Hit	Hold Analysis	Remarks
1	3TM-KP SS-CD-03	8/7/03	1345	6"	S	X		1	8	GC	C4				X		X					
2	Trip Blank	—	—	—	W		X	1	1	GA	C4				X		X					
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJD	8/8/03 1500		
2			
3		Lab: Jack Seay	8/8/03 1500

Total Containers per COC: Cooler Temp:

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested													
	Lab Id:	236028-001		236028-002		236028-003		236028-004		236028-005		236028-006	
	Field Id:	3TM-KP-SS-JC-01		3TM-KP-SS-JC-02		3TM-KP-SS-JC-03		3TM-KP-SS-ND-01		3TM-KP-SS-ND-02		3TM-KP-SS-ND-03	
	Depth:	6- In		6- In		6- In		1- ft		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-06-03 12:30		Aug-06-03 12:40		Aug-06-03 13:00		Aug-07-03 08:10		Aug-07-03 08:45		Aug-07-03 09:30	
Percent Moisture	*Extracted:*												
	Analyzed:	Aug-11-03 15:24		Aug-11-03 15:28		Aug-11-03 15:30		Aug-11-03 15:32		Aug-11-03 15:34		Aug-11-03 15:36	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		20.5	1.00	19.7	1.00	17.3	1.00	21.3	1.00	26.7	1.00	16.4	1.00
SVOA PAHs List by EPA 8270C	*Extracted:*	Aug-11-03 10:09		Aug-11-03 10:12		Aug-11-03 10:15		Aug-11-03 10:18		Aug-11-03 10:21		Aug-11-03 10:24	
	Analyzed:	Aug-14-03 19:52		Aug-14-03 20:35		Aug-15-03 02:24		Aug-16-03 00:53		Aug-15-03 03:06		Aug-15-03 03:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Acenaphthene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Acenaphthylene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Anthracene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Benzo(a)anthracene		BRL	0.209	BRL	0.207	BRL	0.201	0.293	0.211	BRL	0.227	BRL	0.199
Benzo(a)pyrene		BRL	0.209	BRL	0.207	BRL	0.201	0.266	0.211	BRL	0.227	BRL	0.199
Benzo(b)fluoranthene		BRL	0.209	BRL	0.207	BRL	0.201	0.592	0.211	BRL	0.227	0.295	0.199
Benzo(g,h,i)perylene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Benzo(k)fluoranthene		BRL	0.209	BRL	0.207	BRL	0.201	0.709	0.211	BRL	0.227	BRL	0.199
Chrysene		BRL	0.209	BRL	0.207	BRL	0.201	0.404	0.211	BRL	0.227	0.230	0.199
Dibenz(a,h)Anthracene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Fluoranthene		BRL	0.209	BRL	0.207	BRL	0.201	0.495	0.211	BRL	0.227	0.326	0.199
Fluorene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Indeno(1,2,3-c,d)Pyrene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Naphthalene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Phenanthrene		BRL	0.209	BRL	0.207	BRL	0.201	BRL	0.211	BRL	0.227	BRL	0.199
Pyrene		BRL	0.209	BRL	0.207	BRL	0.201	0.608	0.211	BRL	0.227	0.288	0.199

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	236028-001		236028-002		236028-003		236028-004		236028-005		236028-006	
	Field Id:	3TM-KP-SS-JC-01		3TM-KP-SS-JC-02		3TM-KP-SS-JC-03		3TM-KP-SS-ND-01		3TM-KP-SS-ND-02		3TM-KP-SS-ND-03	
	Depth:	6- In		6- In		6- In		1- ft		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-06-03 12:30		Aug-06-03 12:40		Aug-06-03 13:00		Aug-07-03 08:10		Aug-07-03 08:45		Aug-07-03 09:30	
VOAs by SW-846 8260B	*Extracted:*	Aug-14-03 17:10		Aug-14-03 17:16		Aug-14-03 17:18		Aug-14-03 17:20		Aug-14-03 17:22		Aug-14-03 17:24	
	Analyzed:	Aug-14-03 18:23		Aug-14-03 19:27		Aug-14-03 19:49		Aug-14-03 20:10		Aug-14-03 20:32		Aug-14-03 20:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Bromobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Bromochloromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Bromodichloromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Bromoform		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Bromomethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
MTBE		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
tert-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Sec-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
n-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Carbon Tetrachloride		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Chlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Chloroethane		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.012
Chloroform		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Chloromethane		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.012
2-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
4-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
p-Cymene (p-Isopropyltoluene)		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2-Dibromo-3-Chloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Dibromochloromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Dibromomethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,3-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,4-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Dichlorodifluoromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested													
	Lab Id:	236028-001		236028-002		236028-003		236028-004		236028-005		236028-006	
	Field Id:	3TM-KP-SS-JC-01		3TM-KP-SS-JC-02		3TM-KP-SS-JC-03		3TM-KP-SS-ND-01		3TM-KP-SS-ND-02		3TM-KP-SS-ND-03	
	Depth:	6- In		6- In		6- In		1- ft		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-06-03 12:30		Aug-06-03 12:40		Aug-06-03 13:00		Aug-07-03 08:10		Aug-07-03 08:45		Aug-07-03 09:30	
VOAs by SW-846 8260B	*Extracted:*	Aug-14-03 17:10		Aug-14-03 17:16		Aug-14-03 17:18		Aug-14-03 17:20		Aug-14-03 17:22		Aug-14-03 17:24	
	Analyzed:	Aug-14-03 18:23		Aug-14-03 19:27		Aug-14-03 19:49		Aug-14-03 20:10		Aug-14-03 20:32		Aug-14-03 20:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
1,2-Dichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,1-Dichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
trans-1,2-dichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
cis-1,2-Dichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,1-Dichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
2,2-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,3-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
trans-1,3-dichloropropene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,1-Dichloropropene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
cis-1,3-Dichloropropene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Ethylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Hexachlorobutadiene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
isopropylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Methylene Chloride		BRL	0.025	BRL	0.025	BRL	0.024	BRL	0.025	BRL	0.027	BRL	0.024
Naphthalene		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.012
n-Propylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Styrene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,1,1,2-Tetrachloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,1,2,2-Tetrachloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Tetrachloroethylene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Toluene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2,4-Trichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2,3-Trichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,1,2-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested													
	Lab Id:	236028-001		236028-002		236028-003		236028-004		236028-005		236028-006	
	Field Id:	3TM-KP-SS-JC-01		3TM-KP-SS-JC-02		3TM-KP-SS-JC-03		3TM-KP-SS-ND-01		3TM-KP-SS-ND-02		3TM-KP-SS-ND-03	
	Depth:	6- In		6- In		6- In		1- ft		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-06-03 12:30		Aug-06-03 12:40		Aug-06-03 13:00		Aug-07-03 08:10		Aug-07-03 08:45		Aug-07-03 09:30	
VOAs by SW-846 8260B	***Extracted:***	Aug-14-03 17:10		Aug-14-03 17:16		Aug-14-03 17:18		Aug-14-03 17:20		Aug-14-03 17:22		Aug-14-03 17:24	
	Analyzed:	Aug-14-03 18:23		Aug-14-03 19:27		Aug-14-03 19:49		Aug-14-03 20:10		Aug-14-03 20:32		Aug-14-03 20:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
1,1,1-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Trichloroethene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Trichlorofluoromethane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2,3-Trichloropropane		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,2,4-Trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
1,3,5-trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
Vinyl Chloride		BRL	0.002	BRL	0.002	BRL	0.002	BRL	0.003	BRL	0.003	BRL	0.002
o-Xylene		BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.006
m,p-Xylenes		BRL	0.012	BRL	0.012	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.012

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested																			
	Lab Id:	236028-007		236028-008		236028-009		236028-010		236028-011		236028-012	
	Field Id:	3TM-KP-SS-TA-01		3TM-KP-SS-TA-02		3TM-KP-SS-CD-01		3TM-KP-SS-CD-02		3TM-KP-SS-CD-03		Trip Blank	
	Depth:	1- ft		6- In		6- In		6- In		6- In		In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER	
	Sampled:	Aug-07-03 10:45		Aug-07-03 11:00		Aug-07-03 11:45		Aug-07-03 12:40		Aug-07-03 13:45		Aug-07-03 00:00	
Percent Moisture	*Extracted:*												
	Analyzed:	Aug-11-03 15:38		Aug-11-03 15:40		Aug-11-03 15:42		Aug-11-03 15:44		Aug-11-03 16:10			
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		19.7	1.00	17.6	1.00	23.8	1.00	23.8	1.00	23.0	1.00		
SVOA PAHs List by EPA 8270C	*Extracted:*	Aug-11-03 10:33		Aug-11-03 10:36		Aug-11-03 10:39		Aug-11-03 10:42		Aug-11-03 10:45		Aug-12-03 10:10	
	Analyzed:	Aug-15-03 05:57		Aug-15-03 06:39		Aug-16-03 01:37		Aug-15-03 07:23		Aug-15-03 08:07		Aug-14-03 17:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL
Acenaphthene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Acenaphthylene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Anthracene		BRL	0.207	BRL	0.202	0.253	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Benzo(a)anthracene		BRL	0.207	BRL	0.202	0.428	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Benzo(a)pyrene		BRL	0.207	BRL	0.202	0.342	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Benzo(b)fluoranthene		BRL	0.207	BRL	0.202	0.790	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Benzo(g,h,i)perylene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Benzo(k)fluoranthene		BRL	0.207	BRL	0.202	0.289	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Chrysene		BRL	0.207	BRL	0.202	0.535	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Dibenz(a,h)Anthracene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Fluoranthene		BRL	0.207	BRL	0.202	1.48	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Fluorene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Indeno(1,2,3-c,d)Pyrene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Naphthalene		BRL	0.207	BRL	0.202	BRL	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Phenanthrene		BRL	0.207	BRL	0.202	0.545	0.218	BRL	0.219	BRL	0.216	BRL	0.006
Pyrene		BRL	0.207	BRL	0.202	1.85	0.218	BRL	0.219	BRL	0.216	BRL	0.006

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	236028-007		236028-008		236028-009		236028-010		236028-011		236028-012	
	Field Id:	3TM-KP-SS-TA-01		3TM-KP-SS-TA-02		3TM-KP-SS-CD-01		3TM-KP-SS-CD-02		3TM-KP-SS-CD-03		Trip Blank	
	Depth:	1- ft		6- In		6- In		6- In		6- In		In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER	
	Sampled:	Aug-07-03 10:45		Aug-07-03 11:00		Aug-07-03 11:45		Aug-07-03 12:40		Aug-07-03 13:45		Aug-07-03 00:00	
VOAs by SW-846 8260B	*Extracted:*	Aug-14-03 17:26		Aug-14-03 17:28		Aug-15-03 15:36		Aug-15-03 15:38		Aug-15-03 15:40		Aug-12-03 18:15	
	Analyzed:	Aug-14-03 21:15		Aug-14-03 21:37		Aug-15-03 17:53		Aug-15-03 18:15		Aug-15-03 18:36		Aug-13-03 00:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL
Benzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Bromobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Bromochloromethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Bromodichloromethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Bromoform		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Bromomethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
MTBE		BRL	0.006	BRL	0.006	0.008	0.007	BRL	0.007	BRL	0.006	BRL	0.005
tert-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Sec-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
n-Butylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Carbon Tetrachloride		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Chlorobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Chloroethane		BRL	0.013	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.013	BRL	0.010
Chloroform		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Chloromethane		BRL	0.013	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.013	BRL	0.010
2-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
4-Chlorotoluene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
p-Cymene (p-Isopropyltoluene)		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2-Dibromo-3-Chloropropane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Dibromochloromethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Dibromomethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,3-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,4-Dichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Dichlorodifluoromethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested													
	Lab Id:	236028-007		236028-008		236028-009		236028-010		236028-011		236028-012	
	Field Id:	3TM-KP-SS-TA-01		3TM-KP-SS-TA-02		3TM-KP-SS-CD-01		3TM-KP-SS-CD-02		3TM-KP-SS-CD-03		Trip Blank	
	Depth:	1- ft		6- In		6- In		6- In		6- In		In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER	
	Sampled:	Aug-07-03 10:45		Aug-07-03 11:00		Aug-07-03 11:45		Aug-07-03 12:40		Aug-07-03 13:45		Aug-07-03 00:00	
VOAs by SW-846 8260B	***Extracted:***	Aug-14-03 17:26		Aug-14-03 17:28		Aug-15-03 15:36		Aug-15-03 15:38		Aug-15-03 15:40		Aug-12-03 18:15	
	Analyzed:	Aug-14-03 21:15		Aug-14-03 21:37		Aug-15-03 17:53		Aug-15-03 18:15		Aug-15-03 18:36		Aug-13-03 00:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL
1,2-Dichloroethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,1-Dichloroethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
trans-1,2-dichloroethene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
cis-1,2-Dichloroethene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,1-Dichloroethene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
2,2-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,3-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2-Dichloropropane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
trans-1,3-dichloropropene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,1-Dichloropropene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
cis-1,3-Dichloropropene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Ethylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Hexachlorobutadiene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
isopropylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Methylene Chloride		BRL	0.025	BRL	0.024	BRL	0.026	BRL	0.026	BRL	0.026	BRL	0.005
Naphthalene		BRL	0.013	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.013	BRL	0.010
n-Propylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Styrene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,1,1,2-Tetrachloroethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,1,2,2-Tetrachloroethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Tetrachloroethylene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Toluene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2,4-Trichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2,3-Trichlorobenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,1,2-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005

Brent Barron
Laboratory Manager

Certificate of Analysis Summary 236028

3TM International, Houston , TX

Project Name: Koppers Creosote Facility

Project Id: 3TM-LD-022003-02
Contact: Randy Horsak
Project Location: Grenada, Mississippi

Date Received in Lab: Fri Aug-08-03 03:00 pm
Report Date: 19-AUG-03
Project Manager: Karen Olson

Analysis Requested	*Lab Id:*	236028-007		236028-008		236028-009		236028-010		236028-011		236028-012	
	Field Id:	3TM-KP-SS-TA-01		3TM-KP-SS-TA-02		3TM-KP-SS-CD-01		3TM-KP-SS-CD-02		3TM-KP-SS-CD-03		Trip Blank	
	Depth:	1- ft		6- In		6- In		6- In		6- In		In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		WATER	
	Sampled:	Aug-07-03 10:45		Aug-07-03 11:00		Aug-07-03 11:45		Aug-07-03 12:40		Aug-07-03 13:45		Aug-07-03 00:00	
VOAs by SW-846 8260B	*Extracted:*	Aug-14-03 17:26		Aug-14-03 17:28		Aug-15-03 15:36		Aug-15-03 15:38		Aug-15-03 15:40		Aug-12-03 18:15	
	Analyzed:	Aug-14-03 21:15		Aug-14-03 21:37		Aug-15-03 17:53		Aug-15-03 18:15		Aug-15-03 18:36		Aug-13-03 00:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/L	RL
1,1,1-Trichloroethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Trichloroethene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Trichlorofluoromethane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2,3-Trichloropropane		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,2,4-Trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
1,3,5-trimethylbenzene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
Vinyl Chloride		BRL	0.002	BRL	0.002	BRL	0.003	BRL	0.003	BRL	0.003	BRL	0.002
o-Xylene		BRL	0.006	BRL	0.006	BRL	0.007	BRL	0.007	BRL	0.006	BRL	0.005
m,p-Xylenes		BRL	0.013	BRL	0.012	BRL	0.013	BRL	0.013	BRL	0.013	BRL	0.010

Brent Barron
Laboratory Manager

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 236028

Project ID: 3TM-LD-022003-02

Lab Batch ID: 641520 **QC- Sample ID:** 236028-006 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

SVOA PAHs List by EPA 8270C	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.199	1.99	1.65	83	1.99	1.75	88	6	41-134	19	
Acenaphthylene	<0.199	1.99	1.68	84	1.99	1.76	88	5	65-135	25	
Anthracene	<0.199	1.99	1.84	92	1.99	1.69	85	8	65-135	25	
Benzo(a)anthracene	<0.199	1.99	1.96	98	1.99	1.75	88	11	44-126	25	
Benzo(a)pyrene	<0.199	1.99	1.90	95	1.99	1.72	86	10	65-135	25	
Benzo(b)fluoranthene	0.295	1.99	2.17	94	1.99	1.80	76	21	65-135	25	
Benzo(g,h,i)perylene	<0.199	1.99	1.86	93	1.99	1.81	91	2	65-135	25	
Benzo(k)fluoranthene	<0.199	1.99	1.85	93	1.99	1.71	86	8	25-125	25	
Chrysene	0.230	1.99	2.10	94	1.99	1.81	79	17	65-135	25	
Dibenz(a,h)Anthracene	<0.199	1.99	1.78	89	1.99	1.78	89	0	65-135	25	
Fluoranthene	0.326	1.99	2.04	86	1.99	1.81	75	14	65-135	25	
Fluorene	<0.199	1.99	1.71	86	1.99	1.77	89	3	65-135	25	
Indeno(1,2,3-c,d)Pyrene	<0.199	1.99	1.88	94	1.99	1.86	93	1	65-135	25	
Naphthalene	<0.199	1.99	1.60	80	1.99	1.61	81	1	65-135	25	
Phenanthrene	<0.199	1.99	1.74	87	1.99	1.65	83	5	65-135	25	
Pyrene	0.288	1.99	2.17	95	1.99	1.90	81	16	41-144	36	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 236028 **Project ID:** 3TM-LD-022003-02

Lab Batch ID: 641408 **QC- Sample ID:** 236087-003 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

VOAs by SW-846 8260B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.005	0.050	0.053	106	0.050	0.052	104	2	66-142	21	
Chlorobenzene	<0.005	0.050	0.052	104	0.050	0.052	104	0	60-133	21	
1,1-Dichloroethene	<0.005	0.050	0.051	102	0.050	0.052	104	2	59-172	22	
Toluene	<0.005	0.050	0.051	102	0.050	0.051	102	0	59-139	21	
Trichloroethene	<0.005	0.050	0.052	104	0.050	0.050	100	4	62-137	24	

Lab Batch ID: 641504 **QC- Sample ID:** 236028-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

VOAs by SW-846 8260B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.006	0.062	0.063	102	0.063	0.060	95	7	66-142	21	
Chlorobenzene	<0.006	0.062	0.060	97	0.063	0.061	97	0	60-133	21	
1,1-Dichloroethene	<0.006	0.062	0.061	98	0.063	0.059	94	4	59-172	22	
Toluene	<0.006	0.062	0.058	94	0.063	0.058	92	2	59-139	21	
Trichloroethene	<0.006	0.062	0.059	95	0.063	0.054	86	10	62-137	24	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Koppers Creosote Facility

Work Order # : 236028

Project ID: 3TM-LD-022003-02

Lab Batch ID: 641529

QC- Sample ID: 236068-001 S **Batch #:** 1 **Matrix:** Solid

Reporting Units: mg/kg

VOAs by SW-846 8260B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.007	0.066	0.057	86	0.066	0.059	89	3	66-142	21	
Chlorobenzene	<0.007	0.066	0.062	94	0.066	0.062	94	0	60-133	21	
1,1-Dichloroethene	<0.007	0.066	0.062	94	0.066	0.059	89	5	59-172	22	
Toluene	<0.007	0.066	0.064	97	0.066	0.064	97	0	59-139	21	
Trichloroethene	<0.007	0.066	0.060	91	0.066	0.063	95	4	62-137	24	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Blank Spike Recovery

Project Name: Koppers Creosote Facility

Work Order #: 236028 **Project ID:** 3TM-LD-022003-02

Lab Batch #: 641408 **Sample:** 461937-1-BKS **Matrix:** Water

Reporting Units: mg/L **Batch #:** 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Benzene	<0.005	0.050	0.053	106	66-142	
Chlorobenzene	<0.005	0.050	0.054	108	60-133	
1,1-Dichloroethene	<0.005	0.050	0.052	104	59-172	
Toluene	<0.005	0.050	0.053	106	59-139	
Trichloroethene	<0.005	0.050	0.052	104	62-137	

Lab Batch #: 641504 **Sample:** 462000-1-BKS **Matrix:** Solid

Reporting Units: mg/kg **Batch #:** 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Benzene	<0.005	0.050	0.049	98	66-142	
Chlorobenzene	<0.005	0.050	0.048	96	60-133	
1,1-Dichloroethene	<0.005	0.050	0.048	96	59-172	
Toluene	<0.005	0.050	0.048	96	59-139	
Trichloroethene	<0.005	0.050	0.047	94	62-137	

Lab Batch #: 641529 **Sample:** 462019-1-BKS **Matrix:** Solid

Reporting Units: mg/kg **Batch #:** 1

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Benzene	<0.005	0.050	0.046	92	66-142	
Chlorobenzene	<0.005	0.050	0.048	96	60-133	
1,1-Dichloroethene	<0.005	0.050	0.043	86	59-172	
Toluene	<0.005	0.050	0.046	92	59-139	
Trichloroethene	<0.005	0.050	0.045	90	62-137	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 236028 **Project ID:** 3TM-LD-022003-02

Lab Batch ID: 641612 **Sample:** 461962-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

SVOA PAHs List by EPA 8270C Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.005	0.050	0.054	108	0.050	0.053	106	2	27-132	31	
Acenaphthylene	<0.005	0.050	0.050	100	0.050	0.050	100	0	46-108	25	
Anthracene	<0.005	0.050	0.054	108	0.050	0.056	112	4	47-145	25	
Benzo(a)anthracene	<0.005	0.050	0.051	102	0.050	0.052	104	2	33-143	25	
Benzo(a)pyrene	<0.005	0.050	0.052	104	0.050	0.052	104	0	65-135	25	
Benzo(b)fluoranthene	<0.005	0.050	0.054	108	0.050	0.056	112	4	24-159	25	
Benzo(g,h,i)perylene	<0.005	0.050	0.039	78	0.050	0.040	80	3	65-135	25	
Benzo(k)fluoranthene	<0.005	0.050	0.056	112	0.050	0.056	112	0	25-125	25	
Chrysene	<0.005	0.050	0.053	106	0.050	0.054	108	2	65-135	25	
Dibenz(a,h)Anthracene	<0.005	0.050	0.041	82	0.050	0.042	84	2	50-125	25	
Fluoranthene	<0.005	0.050	0.054	108	0.050	0.056	112	4	47-125	25	
Fluorene	<0.005	0.050	0.054	108	0.050	0.053	106	2	48-139	25	
Indeno(1,2,3-c,d)Pyrene	<0.005	0.050	0.041	82	0.050	0.041	82	0	27-160	25	
Naphthalene	<0.005	0.050	0.048	96	0.050	0.050	100	4	26-175	25	
Phenanthrene	<0.005	0.050	0.054	108	0.050	0.057	114	5	65-135	25	
Pyrene	<0.005	0.050	0.049	98	0.050	0.049	98	0	23-152	31	

Relative Percent Difference RPD = 200*|(D-G)/(D+G)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Koppers Creosote Facility

Work Order #: 236028 **Project ID:** 3TM-LD-022003-02

Lab Batch ID: 641520 **Sample:** 462012-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

SVOA PAHs List by EPA 8270C Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Acenaphthene	<0.167	1.67	1.50	90	1.67	1.58	95	5	41-134	19	
Acenaphthylene	<0.167	1.67	1.51	90	1.67	1.53	92	2	65-135	25	
Anthracene	<0.167	1.67	1.49	89	1.67	1.43	86	3	65-135	25	
Benzo(a)anthracene	<0.167	1.67	1.49	89	1.67	1.49	89	0	44-126	25	
Benzo(a)pyrene	<0.167	1.67	1.46	87	1.67	1.48	89	2	65-135	25	
Benzo(b)fluoranthene	<0.167	1.67	1.41	84	1.67	1.47	88	5	65-135	25	
Benzo(g,h,i)perylene	<0.167	1.67	1.41	84	1.67	1.55	93	10	65-135	25	
Benzo(k)fluoranthene	<0.167	1.67	1.51	90	1.67	1.56	93	3	25-125	25	
Chrysene	<0.167	1.67	1.53	92	1.67	1.51	90	2	65-135	25	
Dibenz(a,h)Anthracene	<0.167	1.67	1.49	89	1.67	1.52	91	2	65-135	25	
Fluoranthene	<0.167	1.67	1.47	88	1.67	1.53	92	4	65-135	25	
Fluorene	<0.167	1.67	1.50	90	1.67	1.60	96	6	65-135	25	
Indeno(1,2,3-c,d)Pyrene	<0.167	1.67	1.55	93	1.67	1.61	96	3	65-135	25	
Naphthalene	<0.167	1.67	1.43	86	1.67	1.35	81	6	65-135	25	
Phenanthrene	<0.167	1.67	1.45	87	1.67	1.48	89	2	65-135	25	
Pyrene	<0.167	1.67	1.55	93	1.67	1.51	90	3	41-144	36	

Relative Percent Difference RPD = 200*|(D-G)/(D+G)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

July 8, 2002

Mr. Steve Holsenback
1002 Lakeview Drive
Grenada, MS 38901

Dear Mr. Holsenback:

Re: Sample Well No. H997043
Sample I.D. No. SW01043

As you may remember, in May, 2002, I collected a re-sample of your well and also collected a sample from Batupan Bogue underneath the bridge of Highway 8. The purpose of this letter is to advise you of the results which have just been received from the Mississippi State University Chemical Laboratory.

The laboratory analyses of the re-sample of your well did not indicate the presence of any of the compounds detected in the original samples. These included ACIFLUORFEN, CADMIUM and BIS(2-ETHYLHEXYL)PHTHALATE. Also, the analyses of the surface water sample from Batupan Bogue did not detect any semi-volatile compound. I was not surprised that CADMIUM was not detected in the re-sample since this inorganic compound is rarely found in groundwater. I had suspected the first detect was the result of external contamination of the collected sample or a reporting error of some kind from the laboratory. However, I felt the other two compounds would probably still be present.

I am relieved that the second set of analyses did not indicate any areas of concern. However, since the first analyses did indicate the presence of the three compounds, I would like to sample your well one more time in order to verify these last results. If there is a problem of any kind with your well we certainly would like to find it.

FILE

For your information, I have enclosed copies of the laboratory analyses of these latest samples. You will notice that the semi-volatile analyses on your well and also Batupan Bogue indicate the presence of DI-N-BUTYLPHTHALATE. However, you will also notice in the footnotes that this compound was detected in the laboratory blank on both samples. This blank is de-mineralized or purified water and the analyses are conducted along with your collected samples as part of the laboratory Quality Control Procedure. The presence of this compound in the blank indicates that it was somehow introduced at the laboratory and was not in the submitted sample. I spoke with Mrs. Reba Ingram at the laboratory about this, and she said she would be happy to discuss this with you if there are concerns of any kind. Her telephone number is (662) 325-7808.

I am not sure what my schedule will be, but I would like to re-sample your well sometime within the next few weeks. If it is O.K. with you, I will just stop by and collect the samples the next time I am in the area. In the meantime, please do not hesitate to contact me if you have any questions.

Sincerely,

Shedd Landreth

Shedd Landreth, P.E.
AgChem Unit Coordinator
Groundwater Planning Branch

TARGET COMPOUND LIST OF SEMI-VOLATILE ORGANIC COMPOUNDS

ISCL No. 24,741 Sample ID: Batupan 043-SW01

COMPOUND	CONC. ug/l	MQL ug/l	COMPOUND	CONC. ug/l	MQL ug/l
Phenol	ND	1.0	3-Nitroaniline	ND	1.0
bis (2-Chloroethyl)ether	ND	1.0	Acenaphthene	ND	1.0
2-Chlorophenol	ND	1.0	2,4-Dinitrophenol	ND	1.0
1,3-Dichlorobenzene	ND	1.0	4-Nitrophenol	ND	1.0
1,4-Dichlorobenzene	ND	1.0	Dibenzofuran	ND	1.0
Benzyl Alcohol	ND	1.0	2,4-Dinitrotoluene	ND	1.0
1,2-Dichlorobenzene	ND	1.0	Diethylphthalate	ND	1.0
2-Methylphenol	ND	1.0	Fluorene	ND	1.0
bis (2-Chloroisopropyl)ether	ND	1.0	4-Chlorophenyl-phenyl ether	ND	1.0
4-Methylphenol	ND	1.0	4-Nitroaniline	ND	1.0
N-nitroso-di-n-propylamine	ND	1.0	4,6-Dinitro-2-methylphenol	ND	1.0
Hexachloroethane	ND	1.0	N-nitrosodiphenylamine	ND	1.0
Nitrobenzene	ND	1.0	4-Bromophenyl phenyl ether	ND	1.0
Isophorone	ND	1.0	Hexachlorobenzene	ND	1.0
2-Nitrophenol	ND	1.0	Pentachlorophenol	ND	1.0
2,4-Dimethylphenol	ND	1.0	Phenanthrene	ND	1.0
Benzoic Acid	ND	1.0	Anthracene	ND	1.0
bis (2-Chloroethoxy)methane	ND	1.0	Di-n-butylphthalate	2.5*	1.0
2,4-Dichlorophenol	ND	1.0	Fluoranthene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0	Pyrene	ND	1.0
Naphthalene	ND	1.0	Benzidine	ND	1.0
4-Chloroaniline	ND	1.0	Butylbenzylphthalate	ND	1.0
Hexachlorobutadiene	ND	1.0	Benzo(a)anthracene	ND	1.0
4-Chloro-3-methylphenol	ND	1.0	Chrysene	ND	1.0
2-Methylnaphthalene	ND	1.0	3,3'-Dichlorobenzidine	ND	1.0
Hexachlorocyclopentadiene	ND	1.0	bis (2-Ethylhexyl)phthalate	ND	1.0
2,4,6-Trichlorophenol	ND	1.0	Di-n-octylphthalate	ND	1.0
2,4,5-Trichlorophenol	ND	1.0	Benzo(b)fluoranthene	ND	1.0
2-Chloronaphthalene	ND	1.0	Benzo(k)fluoranthene	ND	1.0
2-Nitroaniline	ND	1.0	Benzo(a)pyrene	ND	1.0
Dimethylphthalate	ND	1.0	Ideno(1,2,3-cd)pyrene	ND	1.0
Acenaphthylene	ND	1.0	Dibenz(a,h)anthracene	ND	1.0
2,6-Dinitrotoluene	ND	1.0	Benzo(g,h.I)perylene	ND	1.0

D = None Detected
QL = Minimum Quantifiable Level
resent in the blank at 3.0 ppb

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
CHLORINATED ACIDS AND PHENOLS
METHOD 3

WELL ID: H997043 COLLECTION DATE: 05/17/2002 MSCL#: 24740

ANALYSIS	RESULTS*
Acifluorfen	0.000
Bentazon	0.000
2,4-D	0.000
2,4-DB	0.000
Dalapon	0.000
Dicamba	0.000
Dichloroprop	0.000
Dinoseb	0.000
4-Nitrophenol	0.000
Pentachlorophenol	0.000
Picloram	0.000
2,4,5-T	0.000
2,4,5-TP	0.000

Comment: RESAMPLE-ANALYZED FOR PESTICIDE METHOD 3 ONLY

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
INORGANICS (MINERALS, RESIDUES, NUTRIENTS & METALS)
METHOD 9

WELL ID: H997043 COLLECTION DATE: 05/17/2002 MSCL#: 24740

ANALYSIS	RESULTS*
Calcium, Total	0.000
Chlorides, Total	0.000
Hardness (CA, MG)	0.000
Sulfates	0.000
Total Kjeldahl Nitrogen	0.000
Ammonia Nitrogen	0.000
Nitrate-Nitrite Nitrogen	0.000
Phosphates, Total	0.000
Phosphates, Ortho	0.000
Total Solids @ 180 C	0.000
Dissolved Solids @ 180 C	0.000
Suspended Solids	0.000
Magnesium	0.000
Manganese	0.000
Sodium	0.000
Potassium	0.000
Chromium	0.000
Iron	0.000
Arsenic	0.000
Barium	0.000
Cadmium	0.000
Lead	0.000
Mercury	0.000
Silver	0.000
Selenium	0.000
Beryllium	0.000
Cyanide	0.000
Fluoride	0.000
Nickel	0.000
Antimony	0.000
Thallium	0.000
Copper	0.000
Zinc	0.000
Aluminum	0.000
Conductivity	0.000
Ph	0.00
Temperature	0.00

Comment: RESAMPLE-CADMIUM ANALYSIS ONLY

*RESULTS IN PARTS PER MILLION (mg/l)

TARGET COMPOUND LIST OF SEMI-VOLATILE ORGANIC COMPOUNDS

MSCL No. 24,740

Sample ID: Holsenback 043-H997

COMPOUND	CONC. ug/l	MQL ug/l	COMPOUND	CONC. ug/l	MQL ug/l
Phenol	ND	1.0	3-Nitroaniline	ND	1.0
bis (2-Chloroethyl)ether	ND	1.0	Acenaphthene	ND	1.0
2-Chlorophenol	ND	1.0	2,4-Dinitrophenol	ND	1.0
1,3-Dichlorobenzene	ND	1.0	4-Nitrophenol	ND	1.0
1.4-Dichlorobenzene	ND	1.0	Dibenzofuran	ND	1.0
Benzyl Alcohol	ND	1.0	2,4-Dinitrotoluene	ND	1.0
1,2-Dichlorobenzene	ND	1.0	Diethylphthalate	ND	1.0
2-Methylphenol	ND	1.0	Fluorene	ND	1.0
bis (2-Chloroisopropyl)ether	ND	1.0	4-Chlorophenyl-phenyl ether	ND	1.0
4-Methylphenol	ND	1.0	4-Nitroaniline	ND	1.0
N-nitroso-di-n-propylamine	ND	1.0	4,6-Dinitro-2-methylphenol	ND	1.0
Hexachloroethane	ND	1.0	N-nitrosodiphenylamine	ND	1.0
Nitrobenzene	ND	1.0	4-Bromophenyl phenyl ether	ND	1.0
Isophorone	ND	1.0	Hexachlorobenzene	ND	1.0
2-Nitrophenol	ND	1.0	Pentachlorophenol	ND	1.0
2,4-Dimethylphenol	ND	1.0	Phenanthrene	ND	1.0
Benzoic Acid	ND	1.0	Anthracene	ND	1.0
bis (2-Chloroethoxy)methane	ND	1.0	Di-n-butylphthalate	2.6*	1.0
2,4-Dichlorophenol	ND	1.0	Fluoranthene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0	Pyrene	ND	1.0
Naphthalene	ND	1.0	Benzidine	ND	1.0
4-Chloroaniline	ND	1.0	Butylbenzylphthalate	ND	1.0
Hexachlorobutadiene	ND	1.0	Benzo(a)anthracene	ND	1.0
4-Chloro-3-methylphenol	ND	1.0	Chrysene	ND	1.0
2-Methylnaphthalene	ND	1.0	3,3'-Dichlorobenzidine	ND	1.0
Hexachlorocyclopentadiene	ND	1.0	bis (2-Ethylhexyl)phthalate	ND	1.0
2,4,6-Trichlorophenol	ND	1.0	Di-n-octylphthalate	ND	1.0
2,4,5-Trichlorophenol	ND	1.0	Benzo(b)fluoranthene	ND	1.0
2-Chloronaphthalene	ND	1.0	Benzo(k)fluoranthene	ND	1.0
2-Nitroaniline	ND	1.0	Benzo(a)pyrene	ND	1.0
Dimethylphthalate	ND	1.0	Ideno(1,2,3-cd)pyrene	ND	1.0
Acenaphthylene	ND	1.0	Dibenz(a,h)anthracene	ND	1.0
2,6-Dinitrotoluene	ND	1.0	Benzo(g,h.i)perylene	ND	1.0

ND = None Detected
MQL = Minimum Quantifiable Level
*Present in the blank at 3.0 ppb

STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

May 9, 2002

Mr. Steve Holsenback
1002 Lakeview Drive
Grenada, MS 38901

Dear Mr. Holsenback:

Re: Sample of Well No. H997043

The purpose of this letter is to advise you of the results we discussed of the laboratory analyses of your well which was sampled in March, 2002.

The Mississippi Office of Pollution Control determines groundwater quality using standards and guidelines established for drinking water by the United States Environmental Protection Agency (USEPA). These national drinking water standards have been divided into Primary and Secondary Regulations. Primary Regulations are based on health considerations and are the most important. Secondary Regulations are guidelines relating to other qualities such as color, taste, odor, staining, etc. and are lesser in importance. In addition, the State of Mississippi has established groundwater standards which are also utilized in determining groundwater quality. Maximum Contaminant Levels (MCL's) have been established for many items considered to be the most important in both Primary and Secondary Regulations, and Mississippi Groundwater Standards.

As we discussed, there was one semi-volatile compound that was indicated at a level exceeding Primary Drinking Water Standards, and this was:

BIS(2-ETHYLHEXYL)PHTHALATE at 14 Parts Per Billion (current MCL is 6 Parts Per Billion)

This compound is not normally a part of our AgChem Program analyses and I am not completely familiar with its uses or probable source. I have been advised that it is not likely to be associated with wood treating operations, but is used as a plasticizer in rubber and resins: associated with some chemical plants: and is commonly found in analytical laboratories.

There was also one compound which slightly exceeded Secondary Guidelines, and this was:

MANGANESE at 0.26 Parts Per Million (current MCL is 0.05 PPM)

While this constituent may cause a slight metallic taste and build-up on fixtures, it does not present any health concerns.

In addition to these two compounds there was one herbicide indicated at an extremely low level, and this was:

ACIFLUORFEN at 0.800 Parts Per Billion

There are presently no drinking water standards on this compound, but there is an advisory level of 9.0 Parts Per Billion which was published several years ago. Since we have no established drinking water standards and the advisory level is more than 10 times greater than the indicated amount in your sample, there should not be any concerns regarding this compound. With the exception of BIS(2-ETHYLHEXYL)PHTHALATE mentioned above, the overall quality of your water would appear to be good at this time.

As we discussed by telephone, I would like to re-sample your well on Friday, May 17, in order to verify these initial results. In addition, even though I am not equipped for surface water sampling, I hope to collect a sample from the creek near your property for semi-volatile analyses. It would be interesting to see if the compound detected in your well is also present in the creek. Normally, any contaminants are more likely to be found in surface water rather than groundwater, so these analyses may be of some importance.

Attached you will find a copy of the laboratory analyses on your well. Please feel free to contact me at any time if you have any questions or if you wish additional information. I will be happy to help in any way that I can.

Sincerely,

Shedd Landreth

Shedd Landreth, P.E.
AgChem Unit Coordinator
Groundwater Planning Branch

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF POLLUTION CONTROL
AGCHEM GIS
GENERAL REPORT

Wellcode: H997043
County: GRENADA
Latitude (NAD 83): 33 46 23.07
Longitude (NAD 83): 89 47 28.83
Quad:
Section,Township,Range: S17 T22N R05E
Quarter-Quarter:
Owner: STEVE HOLSENBACK
Address 1: 1002 LAKEVIEW DRIVE
Address 2:
City: GRENADA
State: MS
Zip Code: 38901
Phone: 662-294-0646
Fax:
Aquifer:
Well Depth: 80

Comment 1: GPS ELEVATION - 187 FEET
Comment 2: OWNER CONCERNED WITH WOOD TREATING CHEMICALS CONTAMINATION

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
NITROGEN/PHOSPHORUS PESTICIDES
METHOD 1

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Alachlor	0.000
Ametryn	0.000
Atrazine	0.000
Bromacil	0.000
Butylate	0.000
Carboxin	0.000
Chlorpyrifos	0.000
Curacron	0.000
Cycloate	0.000
DEF (Tribufos)	0.000
Diazinon	0.000
Diphenamid	0.000
Disulfoton	0.000
Disulfoton Sulfone	0.000
Disulfoton Sulfoxide	0.000
EPN	0.000
Hexazinone	0.000
Iprodione	0.000
Methazole	0.000
Methyl Paraoxon	0.000
Metolachlor	0.000
Metribuzin	0.000
Molinate (Ordram)	0.000
Prometon	0.000
Pronamide	0.000
Propazine	0.000
Simazine	0.000
Tebuthiuron	0.000
Terbacil	0.000
Terbufos	0.000
Zorial	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
CHLORINATED PESTICIDES
METHOD 2

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Aldrin	0.000
Basalin	0.000
Captan	0.000
Chlordane-Gamma	0.000
Chlordane-Alpha	0.000
Chlorothalonil	0.000
4,4-DDD	0.000
4,4-DDE	0.000
4,4-DDT	0.000
Dacthal (DCPA)	0.000
Dicofol	0.000
Dieldrin	0.000
Endosulfan	0.000
Endosulfan II	0.000
Endosulfan Sulfate	0.000
Endrin	0.000
HCH-Alpha	0.000
HCH-Beta	0.000
HCH-Gamma	0.000
HCH-Delta	0.000
Heptachlor	0.000
Heptachlor Epoxide	0.000
Hexachlorobenzene	0.000
Methoxychlor	0.000
PCB's	0.000
PCNB	0.000
Pendamethalin	0.000
CIS-Permethrin	0.000
TRANS-Permethrin	0.000
Toxaphene	0.000
Trifluralin	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
CHLORINATED ACIDS AND PHENOLS
METHOD 3

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Acifluorfen	0.800
Bentazon	0.000
2,4-D	0.000
2,4-DB	0.000
Dalapon	0.000
Dicamba	0.000
Dichloroprop	0.000
Dinoseb	0.000
4-Nitrophenol	0.000
Pentachlorophenol	0.000
Picloram	0.000
2,4,5-T	0.000
2,4,5-TP	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
HERBICIDES
METHOD 4

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Atrazine Dealkylated	0.000
Barban	0.000
Carbofuran Phenol	0.000
Carbofuran Phenol 3-KETO	0.000
Cyanazine	0.000
Diuron	0.000
Fenamiphos	0.000
Fenamiphos Sulfone	0.000
Fenamiphos Sulfoxide	0.000
Fluometuron	0.000
Linuron	0.000
Metribuzin DA	0.000
Metribuzin DADK	0.000
Metribuzin DK	0.000
Neburon	0.000
Pronamide Metabolite	0.000
Propanil	0.000
Propham	0.000
SWEP	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
CARBAMATES
METHOD 5

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Aldicarb	0.000
Aldicarb Sulfone	0.000
Aldicarb Sulfoxide	0.000
Baygon	0.000
Carbaryl	0.000
Carbofuran	0.000
Carbofuran 3-OH	0.000
Methomyl	0.000
Napthol-Gamma	0.000
Oxamyl	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
VOLATILE ORGANICS
METHOD 8(a)

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Acrolein	0.000
Acrylonitrile	0.000
Benzene	0.000
Bromobenzene	0.000
Bromochloromethane	0.000
Bromodichloromethane	0.000
Bromoform	0.000
Bromomethane	0.000
Carbon Tetrachloride	0.000
Chlorobenzene	0.000
Chloroethane	0.000
2-Chloroethylvinyl Ether	0.000
Chloroform	0.000
Chloromethane	0.000
2-Chlorotoluene	0.000
4-Chlorotoluene	0.000
Dibromochloromethane	0.000
1,2-Dibromoethane	0.000
Dibromomethane	0.000
1,2-Dichlorobenzene	0.000
1,3-Dichlorobenzene	0.000
1,4-Dichlorobenzene	0.000
Dichlorodifluoromethane	0.000
1,1-Dichloroethane	0.000
1,2-Dichloroethane	0.000
1,1-Dichloroethene	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
INORGANICS (MINERALS, RESIDUES, NUTRIENTS & METALS)
METHOD 9

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
Calcium, Total	26.000
Chlorides, Total	4.600
Hardness (CA, MG)	100.000
Sulfates	43.000
Total Kjeldahl Nitrogen	0.450
Ammonia Nitrogen	0.270
Nitrate-Nitrite Nitrogen	0.000
Phosphates, Total	2.410
Phosphates, Ortho	0.230
Total Solids @ 180 C	212.000
Dissolved Solids @ 180 C	197.000
Suspended Solids	15.000
Magnesium	9.000
Manganese	0.260
Sodium	19.000
Potassium	5.800
Chromium	0.000
Iron	1.300
Arsenic	0.000
Barium	0.014
Cadmium	0.003
Lead	0.000
Mercury	0.000
Silver	0.000
Selenium	0.000
Beryllium	0.000
Cyanide	0.000
Fluoride	0.000
Nickel	0.004
Antimony	0.000
Thallium	0.000
Copper	0.001
Zinc	0.001
Aluminum	0.038
Conductivity	260.000
Ph	6.49
Temperature	17.80

Comment:

*RESULTS IN PARTS PER MILLION (mg/l)

MISSISSIPPI STATE CHEMICAL LABORATORY
GROUNDWATER ANALYSIS
VOLATILE ORGANICS
METHOD 8(b)

WELL ID: H997043 COLLECTION DATE: 03/21/2002 MSCL#: 24217

ANALYSIS	RESULTS*
CIS-1,2-Dichloroethene	0.000
TRANS-1,2-Dichloroethene	0.000
1,2-Dichloropropane	0.000
1,3-Dichloropropane	0.000
2,2-Dichloropropane	0.000
1,1-Dichloropropene	0.000
CIS-1,3-Dichloropropene	0.000
TRANS-1,3-Dichloropropene	0.000
Ethylbenzene	0.000
Hexachloro-1,3-Butadiene	0.000
Methylene Chloride	0.000
Naphthalene	0.000
Styrene	0.000
1,1,1,2-Tetrachloroeethane	0.000
1,1,2,2-Tetrachloroethane	0.000
Tetrachloroethene	0.000
Toluene	0.000
Trichloroethene	0.000
Trichlorofluoromethane	0.000
1,2,3-Trichloropropane	0.000
Vinyl Chloride	0.000
O-Xylene	0.000
M-Xylene	0.000
P-Xylene	0.000

Comment:

*RESULTS IN PARTS PER BILLION (ug/l)

TARGET COMPOUND LIST OF SEMIVOLATILE ORGANIC COMPOUNDS

MSCL #: 24217 Marked: Holsenback (043-H997)

Analysis of: Drinking well Water

Compounds	Conc. ug/L	MQL ug/L	Compounds	Conc. ug/L	MQL ug/L
Phenol	ND	1.0	3-Nitroaniline	ND	1.0
bis(2-Chloroethyl)ether	ND	1.0	Acenaphthene	ND	1.0
2-Chlorophenol	ND	1.0	2,4-Dinitrophenol	ND	1.0
1,3-Dichlorobenzene	ND	1.0	4-Nitrophenol	ND	1.0
1,4-Dichlorobenzene	ND	1.0	Dibenzofuran	ND	1.0
Benzyl Alcohol	ND	1.0	2,4-Dinitrotoluene	ND	1.0
1,2-Dichlorobenzene	ND	1.0	Diethylphthalate	ND	1.0
2-Methylphenol	ND	1.0	Fluorene	ND	1.0
bis(2-Chloroisopropyl)ether	ND	1.0	4-Chlorophenyl-phenyl ether	ND	1.0
4-Methylphenol	ND	1.0	4-Nitroaniline	ND	1.0
N-nitroso-di-n-propylamine	ND	1.0	4,6-Dinitro-2-methylphenol	ND	1.0
Hexachloroethane	ND	1.0	N-nitrosodiphenylamine	ND	1.0
Nitrobenzene	ND	1.0	4-Bromophenyl phenyl ether	ND	1.0
Isophorone	ND	1.0	Hexachlorobenzene	ND	1.0
2-Nitrophenol	ND	1.0	Pentachlorophenol	ND	1.0
2,4-Dimethylphenol	ND	1.0	Phenanthrene	ND	1.0
Benzoic Acid	ND	1.0	Anthracene	ND	1.0
bis(2-Chloroethoxy)methane	ND	1.0	Di-n-butylphthalate	ND	1.0
2,4-Dichlorophenol	ND	1.0	Fluoranthene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0	Pyrene	ND	1.0
Naphthalene	ND	1.0	Benzidine	ND	1.0
4-Chloroaniline	ND	1.0	Butylbenzylphthalate	ND	1.0
Hexachlorobutadiene	ND	1.0	Benzo(a)anthracene	ND	1.0
4-Chloro-3-methylphenol	ND	1.0	Chrysene	ND	1.0
2-Methylnaphthalene	ND	1.0	3,3'-Dichlorobenzidine	ND	1.0
Hexachlorocyclopentadiene	ND	1.0	bis(2-Ethylhexyl)phthalate	14	1.0
2,4,6-Trichlorophenol	ND	1.0	Di-n-octylphthalate	ND	1.0
2,4,5-Trichlorophenol	ND	1.0	Benzo(b)fluoranthene	ND	1.0
2-Chloronaphthalene	ND	1.0	Benzo(k)fluoranthene	ND	1.0
2-Nitroaniline	ND	1.0	Benzo(a)pyrene	ND	1.0
Dimethylphthalate	ND	1.0	Indeno(1,2,3-cd)pyrene	ND	1.0
Acenaphthylene	ND	1.0	Dibenz(a,h)anthracene	ND	1.0
2,6-Dinitrotoluene	ND	1.0	Benzo(g,h,I)perylene	ND	1.0

Surrogates	Recovery, %
2-fluorophenol	33
phenol-d5	26
nitrobenzene-d5	95
2-fluorobiphenyl	100
2,4,6-tribromophenol	62
p-terphenyl-d14	89

ND = None Detected

MQL = Minimum Quantifiable Level

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

CLIENT ID:
3TM-KP-DS-BB-11C

Form 1A
PCDD/PCDF ANALYSIS REPORT

		Sample Collection:	10-Jan-2004 10:50
Lab Name: AXYS ANALYTICAL SERVICES			
Contract No.:	4182	Lab Sample ID:	L6466-11 (A)
Matrix:	DITCH SEDIMENT	Sample Size:	10.1 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	09-Feb-2004 Time: 2:05:29	GC Column ID:	DB-5
Extract Volume (µL):	20	Sample Datafile:	DX42_057 S:8
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	N/A	Cal. Ver. Data Filename:	DX42_057 S:1
Concentration Units:	pg/g (dry weight basis)	% Moisture:	19.0

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDD		0.542	0.0500	0.68	1.001
1,2,3,7,8-PeCDD [3]		0.449	0.0500	0.64	1.000
1,2,3,4,7,8-HxCDD		2.13	0.510	1.16	1.000
1,2,3,6,7,8-HxCDD		10.3	0.510	1.21	1.000
1,2,3,7,8,9-HxCDD		17.6	0.510	1.28	1.010
1,2,3,4,6,7,8-HpCDD		728	0.560	1.05	1.000
OCDD	E				
2,3,7,8-TCDF		0.472	0.0500	0.86	1.003
1,2,3,7,8-PeCDF		0.163	0.0500	1.49	1.001
2,3,4,7,8-PeCDF		0.370	0.0500	1.54	1.000
1,2,3,4,7,8-HxCDF		2.33	0.0600	1.22	1.000
1,2,3,6,7,8-HxCDF		0.718	0.0600	1.32	1.000
1,2,3,7,8,9-HxCDF		0.107	0.0600	1.14	1.000
2,3,4,6,7,8-HxCDF		0.572	0.0600	1.30	1.000
1,2,3,4,6,7,8-HpCDF		47.1	0.120	1.06	1.000
1,2,3,4,7,8,9-HpCDF		3.52	0.120	1.01	1.000
OCDF		229	0.0500	0.90	1.002
Total Tetra-Dioxins		36.4	0.0500		
Total Penta-Dioxins		28.6	0.0500		
Total Hexa-Dioxins		372	0.510		
Total Hepta-Dioxins		5600	0.560		
Total Tetra-Furans		3.97	0.0500		
Total Penta-Furans		4.99	0.0500		
Total Hexa-Furans		37.4	0.0600		
Total Hepta-Furans		232	0.120		

(1) U = not detected; K = peak detected, but did not meet quantification criteria; E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD3_1.xls, S6

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

0131

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C

		Sample Collection:	10-Jan-2004 10:50
Lab Name: AXYS ANALYTICAL SERVICES			
Contract No.:	4182	Lab Sample ID:	L6466-11 W (A)
Matrix:	DITCH SEDIMENT	Sample Size:	10.1 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	10-Feb-2004 Time: 3:55:12	GC Column ID:	DB-5
Extract Volume (µL):	200	Sample Datafile:	DX42_059 S:10
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	10	Cal. Ver. Data Filename:	DX42_059 S:1
Concentration Units:	pg/g (dry weight basis)		

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDD					
1,2,3,7,8-PeCDD [3]					
1,2,3,4,7,8-HxCDD					
1,2,3,6,7,8-HxCDD					
1,2,3,7,8,9-HxCDD					
1,2,3,4,6,7,8-HpCDD					
OCDD	D	7060	0.484	0.89	1.000
2,3,7,8-TCDF					
1,2,3,7,8-PeCDF					
2,3,4,7,8-PeCDF					
1,2,3,4,7,8-HxCDF					
1,2,3,6,7,8-HxCDF					
1,2,3,7,8,9-HxCDF					
2,3,4,6,7,8-HxCDF					
1,2,3,4,6,7,8-HpCDF					
1,2,3,4,7,8,9-HpCDF					
OCDF					
Total Tetra-Dioxins					
Total Penta-Dioxins					
Total Hexa-Dioxins					
Total Hepta-Dioxins					
Total Tetra-Furans					
Total Penta-Furans					
Total Hexa-Furans					
Total Hepta-Furans					

(1) U = not detected; K = peak detected, but did not meet quantification criteria; E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD4_1.xls, S8

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

0133

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C

		Sample Collection:	10-Jan-2004 10:50
Lab Name: AXYS ANALYTICAL SERVICES			
Contract No.:	4182	Lab Sample ID:	L6466-11 W (A)
Matrix:	DITCH SEDIMENT	Sample Size:	10.1 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	10-Feb-2004 Time: 3:55:12	GC Column ID:	DB-5
Extract Volume (µL):	200	Sample Datafile:	DX42_059 S:10
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	10	Cal. Ver. Data Filename:	DX42_059 S:1
Concentration Units:	pg absolute		

LABELED COMPOUND	LAB FLAG[1]	SPIKE CONC.	CONC. FOUND	R(%)[2]	ION ABUND. RATIO[3]	RRT[3]
13C-2,3,7,8-TCDD						
13C-1,2,3,7,8-PeCDD [4]						
13C-1,2,3,4,7,8-HxCDD						
13C-1,2,3,6,7,8-HxCDD						
13C-1,2,3,4,6,7,8-HpCDD						
13C-OCDD	D	4000	2310	57.8	0.87	1.177
13C-2,3,7,8-TCDF						
13C-1,2,3,7,8-PeCDF						
13C-2,3,4,7,8-PeCDF						
13C-1,2,3,4,7,8-HxCDF						
13C-1,2,3,6,7,8-HxCDF						
13C-1,2,3,7,8,9-HxCDF						
13C-2,3,4,6,7,8-HxCDF						
13C-1,2,3,4,6,7,8-HpCDF						
13C-1,2,3,4,7,8,9-HpCDF						
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD						

(1) E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).
(4) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD4_1.xls, S8

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

0134

AXYS METHOD DX-S-1613/Ver.3
1613DB225-DB004-D1

Form 1B
2,3,7,8 - TCDF CONFIRMATION ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C

Sample Collection: 10-Jan-2004 10:50

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4182	Lab Sample ID:	L6466-11 (A)
Matrix:	DITCH SEDIMENT	Sample Size:	10.1 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	14-Jan-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	07-Feb-2004 Time: 4:01:51	GC Column ID:	DB-225
Extract Volume (µL):	20	Sample Datafile:	DB43_042 S:16
Injection Volume (µL):	2.0	Blank Data Filename:	DB43_042 S:5
Dilution Factor:	N/A	Cal. Ver. Data Filename:	DB43_042 S:2
Concentration Units:	pg/g (dry weight basis)		

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDF		0.148	0.0362	0.69	1.001

(1) U = not detected; K = peak detected, but did not meet quantification criteria; D = dilution data

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

11004cDD1_1.xls, S13

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS METHOD DX-S-1613/Ver.3
DXTEQ-D1

CLIENT ID:
3TM-KP-DS-BB-11C

PCDD/PCDF ANALYSIS TEQ DATA REPORT

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4182

Matrix: DITCH SEDIMENT

Sample Size: 10.1 g (dry)

Concentration Units: pg/g (dry weight basis)

Sample Collection: 10-Jan-2004 10:50

Lab Sample ID: L6466-11 (A)

GC Column ID(s): DB-5
DB-225

Sample Datafile(s): DX42_057 S:8
DX42_059 S:10
DB43_042 S:16

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ U=1/2 DL	TEQ U=0
2,3,7,8-TCDD		0.542	0.0500	1	5.42E-01	5.42E-01
1,2,3,7,8-PeCDD		0.449	0.0500	1	4.49E-01	4.49E-01
1,2,3,4,7,8-HxCDD		2.13	0.510	0.1	2.13E-01	2.13E-01
1,2,3,6,7,8-HxCDD		10.3	0.510	0.1	1.03E+00	1.03E+00
1,2,3,7,8,9-HxCDD		17.6	0.510	0.1	1.76E+00	1.76E+00
1,2,3,4,6,7,8-HpCDD		728	0.560	0.01	7.28E+00	7.28E+00
OCDD		7060	0.484	0.0001	7.06E-01	7.06E-01
2,3,7,8-TCDF		0.148	0.0362	0.1	1.48E-02	1.48E-02
1,2,3,7,8-PeCDF		0.163	0.0500	0.05	8.15E-03	8.15E-03
2,3,4,7,8-PeCDF		0.370	0.0500	0.5	1.85E-01	1.85E-01
1,2,3,4,7,8-HxCDF		2.33	0.0600	0.1	2.33E-01	2.33E-01
1,2,3,6,7,8-HxCDF		0.718	0.0600	0.1	7.18E-02	7.18E-02
1,2,3,7,8,9-HxCDF		0.107	0.0600	0.1	1.07E-02	1.07E-02
2,3,4,6,7,8-HxCDF		0.572	0.0600	0.1	5.72E-02	5.72E-02
1,2,3,4,6,7,8-HpCDF		47.1	0.120	0.01	4.71E-01	4.71E-01
1,2,3,4,7,8,9-HpCDF		3.52	0.120	0.01	3.52E-02	3.52E-02
OCDF		229	0.0500	0.0001	2.29E-02	2.29E-02
			TOTAL TEQ		13.1	13.1

(1) U = not detected
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

11004DXTEQ_1.xls, S14 (TEQ)

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

0136

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C
(DUPLICATE)

Sample Collection: 10-Jan-2004 10:50

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4182	Lab Sample ID:	WG11004-103 (DUP L6466-11)
Matrix:	DITCH SEDIMENT	Sample Size:	10.9 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	09-Feb-2004 Time: 3:00:15	GC Column ID:	DB-5
Extract Volume (µL):	20	Sample Datafile:	DX42_057 S:9
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	N/A	Cal. Ver. Data Filename:	DX42_057 S:1
Concentration Units:	pg/g (dry weight basis)	% Moisture:	12.8

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDD		0.530	0.0500	0.81	1.001
1,2,3,7,8-PeCDD [3]		0.410	0.0500	0.59	1.000
1,2,3,4,7,8-HxCDD		1.80	0.340	1.21	1.000
1,2,3,6,7,8-HxCDD		9.64	0.340	1.28	1.000
1,2,3,7,8,9-HxCDD		16.5	0.340	1.23	1.009
1,2,3,4,6,7,8-HpCDD		703	0.410	1.06	1.000
OCDD	E				
2,3,7,8-TCDF		0.429	0.0500	0.80	1.002
1,2,3,7,8-PeCDF		0.113	0.0500	1.59	1.001
2,3,4,7,8-PeCDF		0.256	0.0500	1.76	1.000
1,2,3,4,7,8-HxCDF		1.87	0.0500	1.32	1.000
1,2,3,6,7,8-HxCDF		0.503	0.0500	1.40	1.001
1,2,3,7,8,9-HxCDF		0.075	0.0500	1.38	1.000
2,3,4,6,7,8-HxCDF		0.492	0.0500	1.34	1.000
1,2,3,4,6,7,8-HpCDF		39.3	0.100	1.05	1.000
1,2,3,4,7,8,9-HpCDF		2.99	0.100	1.03	1.000
OCDF		210	0.0500	0.90	1.002
Total Tetra-Dioxins		30.3	0.0500		
Total Penta-Dioxins		23.1	0.0500		
Total Hexa-Dioxins		342	0.340		
Total Hepta-Dioxins		5320	0.410		
Total Tetra-Furans		3.53	0.0500		
Total Penta-Furans		3.69	0.0500		
Total Hexa-Furans		31.2	0.0500		
Total Hepta-Furans		203	0.100		

(1) U = not detected; K = peak detected, but did not meet quantification criteria; E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD3_1.xls, S7

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C
(DUPLICATE)

		Sample Collection:	10-Jan-2004 10:50
Lab Name: AXYS ANALYTICAL SERVICES			
Contract No.:	4182	Lab Sample ID:	WG11004-103 W (DUP L6466-11)
Matrix:	DITCH SEDIMENT	Sample Size:	10.9 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	10-Feb-2004 Time: 4:49:58	GC Column ID:	DB-5
Extract Volume (µL):	200	Sample Datafile:	DX42_059 S:11
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	10	Cal. Ver. Data Filename:	DX42_059 S:1
Concentration Units:	pg/g (dry weight basis)		

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDD					
1,2,3,7,8-PeCDD [3]					
1,2,3,4,7,8-HxCDD					
1,2,3,6,7,8-HxCDD					
1,2,3,7,8,9-HxCDD					
1,2,3,4,6,7,8-HpCDD					
OCDD	D	6590	0.378	0.90	1.000
2,3,7,8-TCDF					
1,2,3,7,8-PeCDF					
2,3,4,7,8-PeCDF					
1,2,3,4,7,8-HxCDF					
1,2,3,6,7,8-HxCDF					
1,2,3,7,8,9-HxCDF					
2,3,4,6,7,8-HxCDF					
1,2,3,4,6,7,8-HpCDF					
1,2,3,4,7,8,9-HpCDF					
OCDF					
Total Tetra-Dioxins					
Total Penta-Dioxins					
Total Hexa-Dioxins					
Total Hepta-Dioxins					
Total Tetra-Furans					
Total Penta-Furans					
Total Hexa-Furans					
Total Hepta-Furans					

(1) U = not detected; K = peak detected, but did not meet quantification criteria; E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD4_1.xls, S9

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C
(DUPLICATE)

		Sample Collection:	10-Jan-2004 10:50
Lab Name: AXYS ANALYTICAL SERVICES			
Contract No.:	4182	Lab Sample ID:	WG11004-103 W (DUP L6466-11)
Matrix:	DITCH SEDIMENT	Sample Size:	10.9 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	10-Feb-2004 Time: 4:49:58	GC Column ID:	DB-5
Extract Volume (µL):	200	Sample Datafile:	DX42_059 S:11
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	10	Cal. Ver. Data Filename:	DX42_059 S:1
Concentration Units:	pg absolute		

LABELED COMPOUND	LAB FLAG[1]	SPIKE CONC.	CONC. FOUND	R(%)[2]	ION ABUND. RATIO[3]	RRT[3]
13C-2,3,7,8-TCDD						
13C-1,2,3,7,8-PeCDD [4]						
13C-1,2,3,4,7,8-HxCDD						
13C-1,2,3,6,7,8-HxCDD						
13C-1,2,3,4,6,7,8-HpCDD						
13C-OCDD	D	4000	3010	75.2	0.88	1.177
13C-2,3,7,8-TCDF						
13C-1,2,3,7,8-PeCDF						
13C-2,3,4,7,8-PeCDF						
13C-1,2,3,4,7,8-HxCDF						
13C-1,2,3,6,7,8-HxCDF						
13C-1,2,3,7,8,9-HxCDF						
13C-2,3,4,6,7,8-HxCDF						
13C-1,2,3,4,6,7,8-HpCDF						
13C-1,2,3,4,7,8,9-HpCDF						
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD						

(1) E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).
(4) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD4_1.xls, S9

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB225-DB004-D1

Form 1B
2,3,7,8 - TCDF CONFIRMATION ANALYSIS REPORT

CLIENT ID:
3TM-KP-DS-BB-11C
(DUPLICATE)

		Sample Collection:	10-Jan-2004 10:50
Lab Name: AXYS ANALYTICAL SERVICES			
Contract No.:	4182	Lab Sample ID:	WG11004-103 (DUP L6466-11)
Matrix:	DITCH SEDIMENT	Sample Size:	10.9 g (dry)
Sample Receipt Date:	21-Jan-2004	Initial Calibration Date:	14-Jan-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	07-Feb-2004 Time: 4:37:29	GC Column ID:	DB-225
Extract Volume (µL):	20	Sample Datafile:	DB43_042 S:17
Injection Volume (µL):	2.0	Blank Data Filename:	DB43_042 S:5
Dilution Factor:	N/A	Cal. Ver. Data Filename:	DB43_042 S:2
Concentration Units:	pg/g (dry weight basis)		

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDF		0.136	0.0344	0.88	1.001

(1) U = not detected; K = peak detected, but did not meet quantification criteria; D = dilution data

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

11004cDD1_1.xls, S14

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
DXTEQ-D1

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT ID:
3TM-KP-DS-BB-11C
(DUPLICATE)

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4182

Matrix: DITCH SEDIMENT

Sample Size: 10.9 g (dry)

Concentration Units: pg/g (dry weight basis)

Sample Collection: 10-Jan-2004 10:50

Lab Sample ID: WG11004-103 (DUP L6466-11)

GC Column ID(s): DB-5, DB-225

Sample Datafile(s): DX42_057 S:9, DX42_059 S:11, DB43_042 S:17

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ U=1/2 DL	TEQ U=0
2,3,7,8-TCDD		0.530	0.0500	1	5.30E-01	5.30E-01
1,2,3,7,8-PeCDD		0.410	0.0500	1	4.10E-01	4.10E-01
1,2,3,4,7,8-HxCDD		1.80	0.340	0.1	1.80E-01	1.80E-01
1,2,3,6,7,8-HxCDD		9.64	0.340	0.1	9.64E-01	9.64E-01
1,2,3,7,8,9-HxCDD		16.5	0.340	0.1	1.65E+00	1.65E+00
1,2,3,4,6,7,8-HpCDD		703	0.410	0.01	7.03E+00	7.03E+00
OCDD		6590	0.378	0.0001	6.59E-01	6.59E-01
2,3,7,8-TCDF		0.136	0.0344	0.1	1.36E-02	1.36E-02
1,2,3,7,8-PeCDF		0.113	0.0500	0.05	5.65E-03	5.65E-03
2,3,4,7,8-PeCDF		0.256	0.0500	0.5	1.28E-01	1.28E-01
1,2,3,4,7,8-HxCDF		1.87	0.0500	0.1	1.87E-01	1.87E-01
1,2,3,6,7,8-HxCDF		0.503	0.0500	0.1	5.03E-02	5.03E-02
1,2,3,7,8,9-HxCDF		0.075	0.0500	0.1	7.50E-03	7.50E-03
2,3,4,6,7,8-HxCDF		0.492	0.0500	0.1	4.92E-02	4.92E-02
1,2,3,4,6,7,8-HpCDF		39.3	0.100	0.01	3.93E-01	3.93E-01
1,2,3,4,7,8,9-HpCDF		2.99	0.100	0.01	2.99E-02	2.99E-02
OCDF		210	0.0500	0.0001	2.10E-02	2.10E-02
			TOTAL TEQ		12.3	12.3

(1) U = not detected
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

11004DXTEQ_1.xls, S3 (TEQ)

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

LAB BLANKS

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
LAB BLANK

Sample Collection: N/A

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4182	Lab Sample ID:	WG11004-101
Matrix:	N/A	Sample Size:	10.0 g
Sample Receipt Date:	N/A	Initial Calibration Date:	03-Feb-2004
Extraction Date:	27-Jan-2004	Instrument ID:	HR GC/MS
Analysis Date:	08-Feb-2004 Time: 11:24:32	GC Column ID:	DB-5
Extract Volume (µL):	20	Sample Datafile:	DX42_056 S:5
Injection Volume (µL):	1.0	Blank Data Filename:	DX42_056 S:5
Dilution Factor:	N/A	Cal. Ver. Data Filename:	DX42_056 S:1
Concentration Units:	pg/g		

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDD	U		0.0500		
1,2,3,7,8-PeCDD [3]	U		0.0500		
1,2,3,4,7,8-HxCDD	U		0.0500		
1,2,3,6,7,8-HxCDD		0.053	0.0500	1.06	1.001
1,2,3,7,8,9-HxCDD		0.062	0.0500	1.29	1.011
1,2,3,4,6,7,8-HpCDD	K	0.139	0.0500	0.69	1.000
OCDD		0.674	0.0500	0.93	1.000
2,3,7,8-TCDF	U		0.0500		
1,2,3,7,8-PeCDF	U		0.0500		
2,3,4,7,8-PeCDF		0.068	0.0500	1.43	1.001
1,2,3,4,7,8-HxCDF	K	0.061	0.0500	1.57	1.000
1,2,3,6,7,8-HxCDF		0.060	0.0500	1.33	1.000
1,2,3,7,8,9-HxCDF		0.072	0.0500	1.26	1.000
2,3,4,6,7,8-HxCDF	K	0.070	0.0500	2.15	1.000
1,2,3,4,6,7,8-HpCDF	K	0.128	0.0500	1.37	1.001
1,2,3,4,7,8,9-HpCDF	K	0.101	0.0500	0.76	1.000
OCDF		0.225	0.0500	0.94	1.002
Total Tetra-Dioxins	U		0.0500		
Total Penta-Dioxins	U		0.0500		
Total Hexa-Dioxins		0.115	0.0500		
Total Hepta-Dioxins	U		0.0500		
Total Tetra-Furans	U		0.0500		
Total Penta-Furans		0.068	0.0500		
Total Hexa-Furans		0.132	0.0500		
Total Hepta-Furans		0.058	0.0500		

(1) U = not detected; K = peak detected, but did not meet quantification criteria; E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD1_1.xls, S2

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT ID:
LAB BLANK

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4182		Sample Collection:	N/A
Matrix:	N/A		Lab Sample ID:	WG11004-101
Sample Receipt Date:	N/A		Sample Size:	10.0 g
Extraction Date:	27-Jan-2004		Initial Calibration Date:	03-Feb-2004
Analysis Date:	08-Feb-2004	Time: 11:24:32	Instrument ID:	HR GC/MS
Extract Volume (µL):	20		GC Column ID:	DB-5
Injection Volume (µL):	1.0		Sample Datafile:	DX42_056 S:5
Dilution Factor:	N/A		Blank Data Filename:	DX42_056 S:5
Concentration Units:	pg absolute		Cal. Ver. Data Filename:	DX42_056 S:1

LABELED COMPOUND	LAB FLAG[1]	SPIKE CONC.	CONC. FOUND	R(%)[2]	ION ABUND. RATIO[3]	RRT[3]
13C-2,3,7,8-TCDD		2000	1280	63.8	0.81	1.013
13C-1,2,3,7,8-PeCDD[4]		2000	1730	86.3	0.63	1.382
13C-1,2,3,4,7,8-HxCDD		2000	1460	72.9	1.27	0.986
13C-1,2,3,6,7,8-HxCDD		2000	1400	70.2	1.25	0.989
13C-1,2,3,4,6,7,8-HpCDD		2000	1390	69.3	1.08	1.094
13C-OCDD		4000	2280	57.0	0.90	1.178
13C-2,3,7,8-TCDF		2000	1430	71.6	0.80	0.966
13C-1,2,3,7,8-PeCDF		2000	1480	74.1	1.58	1.283
13C-2,3,4,7,8-PeCDF		2000	1420	71.2	1.60	1.351
13C-1,2,3,4,7,8-HxCDF		2000	1360	68.0	0.53	0.953
13C-1,2,3,6,7,8-HxCDF		2000	1360	68.2	0.53	0.958
13C-1,2,3,7,8,9-HxCDF		2000	1390	69.6	0.55	1.005
13C-2,3,4,6,7,8-HxCDF		2000	1470	73.3	0.53	0.980
13C-1,2,3,4,6,7,8-HpCDF		2000	1410	70.6	0.46	1.062
13C-1,2,3,4,7,8,9-HpCDF		2000	1350	67.7	0.46	1.104
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD		200	124	61.9		1.014

(1) E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).
(4) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

11004DD1_1.xls, S2

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB225-DB004-D1

Form 1B
2,3,7,8 - TCDF CONFIRMATION ANALYSIS REPORT

CLIENT ID:
LAB BLANK

			Sample Collection:	N/A
Lab Name: AXYS ANALYTICAL SERVICES				
Contract No.:	4182		Lab Sample ID:	WG11004-101
Matrix:	N/A		Sample Size:	10.0 g
Sample Receipt Date:	N/A		Initial Calibration Date:	14-Jan-2004
Extraction Date:	27-Jan-2004		Instrument ID:	HR GC/MS
Analysis Date:	06-Feb-2004	Time: 21:29:46	GC Column ID:	DB-225
Extract Volume (µL):	20		Sample Datafile:	DB43_042 S:5
Injection Volume (µL):	2.0		Blank Data Filename:	DB43_042 S:5
Dilution Factor:	N/A		Cal. Ver. Data Filename:	DB43_042 S:2
Concentration Units:	pg/g			

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	ION ABUND. RATIO[2]	RRT[2]
2,3,7,8-TCDF	U		0.0500		

(1) U = not detected; K = peak detected, but did not meet quantification criteria; D = dilution data

(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

11004cDD1_1.xls, S2

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

0146

AXYS METHOD DX-S-1613/Ver.3
DXTEQ-D1

CLIENT ID:
LAB BLANK

PCDD/PCDF ANALYSIS TEQ DATA REPORT

Lab Name: AXYS ANALYTICAL SERVICES		**Sample Collection:**	N/A
Contract No.:	4182		
Matrix:	N/A	**Lab Sample ID:**	WG11004-101
Sample Size:	10.0 g	**GC Column ID(s):**	DB-5 DB-225
Concentration Units:	pg/g	**Sample Datafile(s):**	DX42_056 S:5 DB43_042 S:5

COMPOUND	LAB FLAG[1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ U=1/2 DL	TEQ U=0
2,3,7,8-TCDD	U		0.0500	1	2.50E-02	0.00E+00
1,2,3,7,8-PeCDD	U		0.0500	1	2.50E-02	0.00E+00
1,2,3,4,7,8-HxCDD	U		0.0500	0.1	2.50E-03	0.00E+00
1,2,3,6,7,8-HxCDD		0.053	0.0500	0.1	5.30E-03	5.30E-03
1,2,3,7,8,9-HxCDD		0.062	0.0500	0.1	6.20E-03	6.20E-03
1,2,3,4,6,7,8-HpCDD	U		0.0500	0.01	2.50E-04	0.00E+00
OCDD		0.674	0.0500	0.0001	6.74E-05	6.74E-05
2,3,7,8-TCDF	U		0.0500	0.1	2.50E-03	0.00E+00
1,2,3,7,8-PeCDF	U		0.0500	0.05	1.25E-03	0.00E+00
2,3,4,7,8-PeCDF		0.068	0.0500	0.5	3.40E-02	3.40E-02
1,2,3,4,7,8-HxCDF	U		0.0500	0.1	2.50E-03	0.00E+00
1,2,3,6,7,8-HxCDF		0.060	0.0500	0.1	6.00E-03	6.00E-03
1,2,3,7,8,9-HxCDF		0.072	0.0500	0.1	7.20E-03	7.20E-03
2,3,4,6,7,8-HxCDF	U		0.0500	0.1	2.50E-03	0.00E+00
1,2,3,4,6,7,8-HpCDF	U		0.0500	0.01	2.50E-04	0.00E+00
1,2,3,4,7,8,9-HpCDF	U		0.0500	0.01	2.50E-04	0.00E+00
OCDF		0.225	0.0500	0.0001	2.25E-05	2.25E-05
			TOTAL TEQ		0.121	0.0588

(1) U = not detected
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

11004DXTEQ_1.xls, S2 (TEQ)

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

0147

ONGOING PRECISION AND RECOVERY

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 8A
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4182		
Matrix:	SOLID	**OPR Data Filename:**	DX42_056 S:2
Extraction Date:	27-Jan-2004	**Lab Sample I.D.:**	WG11004-102
Analysis Date:	08-Feb-2004	**Time:**	8:38:45

CONCENTRATIONS REPORTED ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20-µL EXTRACT VOLUME

COMPOUND	LAB FLAG[1]	ION ABUND. RATIO[2]	SPIKE CONC. (ng/mL)	CONC. FOUND	OPR CONC. LIMITS[3] (ng/mL)	R(%)[4]
2,3,7,8-TCDD		0.78	11.0	11.4	7.4 - 17.4	103
1,2,3,7,8-PeCDD[5]		0.63	50.0	50.9	35 - 71	102
1,2,3,4,7,8-HxCDD		1.26	50.0	46.7	35 - 82	93.5
1,2,3,6,7,8-HxCDD		1.27	50.0	49.9	38 - 67	99.8
1,2,3,7,8,9-HxCDD		1.27	50.0	47.8	32 - 81	95.5
1,2,3,4,6,7,8-HpCDD		1.04	50.0	47.5	35 - 70	95.0
OCDD		0.89	100	95.1	78 - 144	95.1
2,3,7,8-TCDF		0.80	10.0	10.2	7.5 - 15.8	102
1,2,3,7,8-PeCDF		1.55	50.0	48.5	40 - 67	96.9
2,3,4,7,8-PeCDF		1.55	50.0	48.6	34 - 80	97.2
1,2,3,4,7,8-HxCDF		1.24	50.0	47.3	36 - 67	94.6
1,2,3,6,7,8-HxCDF		1.24	50.0	48.4	42 - 65	96.9
1,2,3,7,8,9-HxCDF		1.24	50.0	47.9	39 - 65	95.9
2,3,4,6,7,8-HxCDF		1.25	50.0	47.8	35 - 78	95.6
1,2,3,4,6,7,8-HpCDF		1.04	50.0	49.3	41 - 61	98.6
1,2,3,4,7,8,9-HpCDF		1.04	50.0	47.1	39 - 69	94.1
OCDF		0.90	100	95.4	63 - 170	95.4

(1) E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613.
(4) R% = percent recovery
(5) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

Form 8B
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4182		
Matrix:	SOLID	**OPR Data Filename:**	DX42_056 S:2
Extraction Date:	27-Jan-2004	**Lab Sample I.D.:**	WG11004-102
Analysis Date:	08-Feb-2004	**Time:**	8:38:45

CONCENTRATIONS REPORTED ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20-µL EXTRACT VOLUME

	LAB FLAG[1]	ION ABUND. RATIO[2]	SPIKE CONC. (ng/mL)	CONC. FOUND	OPR CONC. LIMITS[3] (ng/mL)	R(%)[4]
LABELED COMPOUND						
13C-2,3,7,8-TCDD		0.79	100	47.7	20 - 175	47.7
13C-1,2,3,7,8-PeCDD[5]		0.64	100	71.9	21 - 227	71.9
13C-1,2,3,4,7,8-HxCDD		1.28	100	62.3	21 - 193	62.3
13C-1,2,3,6,7,8-HxCDD		1.24	100	59.0	25 - 163	59.0
13C-1,2,3,4,6,7,8-HpCDD		1.06	100	68.8	26 - 166	68.8
13C-OCDD		0.90	200	117	26 - 397	58.3
13C-2,3,7,8-TCDF		0.79	100	54.3	22 - 152	54.3
13C-1,2,3,7,8-PeCDF		1.57	100	60.2	21 - 192	60.2
13C-2,3,4,7,8-PeCDF		1.59	100	61.1	13 - 328	61.1
13C-1,2,3,4,7,8-HxCDF		0.53	100	63.1	19 - 202	63.1
13C-1,2,3,6,7,8-HxCDF		0.54	100	62.2	21 - 159	62.2
13C-1,2,3,7,8,9-HxCDF		0.53	100	56.8	17 - 205	56.8
13C-2,3,4,6,7,8-HxCDF		0.53	100	59.6	22 - 176	59.6
13C-1,2,3,4,6,7,8-HpCDF		0.46	100	70.1	21 - 158	70.1
13C-1,2,3,4,7,8,9-HpCDF		0.46	100	65.7	20 - 186	65.7
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD			10.0	5.25	3.1 - 19.1	52.5

(1) E = exceeds calibrated linear range, see dilution data; D = dilution data; Z = compound not requested; X = results reported separately
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labelled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) R% = percent recovery
(5) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

INSTRUMENT QC

Experiment : DX-DB225-1_02
3C Program : DX-DB225-1_01
Column type : DB225
Serial # : US3276917H
kPa : 150
Vol injected: 2.0
PMT Voltage : 396

Temps -source: 240
-s resv: 160
-re_ent: 220
-cap_1 : 220
-cap_2 : 220

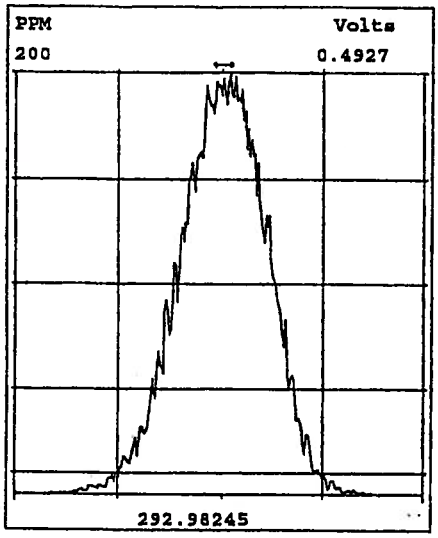
Tune : GW
List : GW
Check :
LIMS :

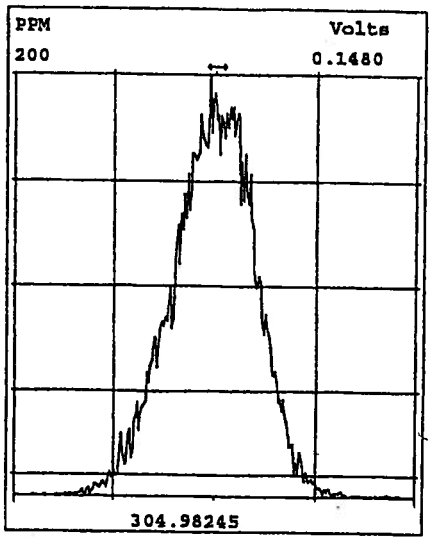
Date -list : 14-JAN-2004
-liner : 09-DEC-2003
-septum: 09-DEC-2003
-guard : 5CM 14-JAN-04
-column: 10cm 17-DEC-03
-t line: 29-OCT-03
-bake :
-source:

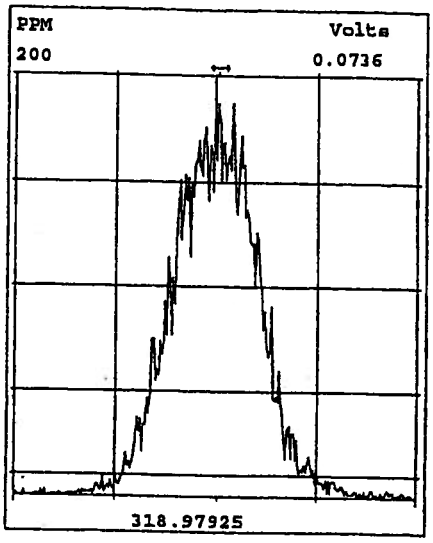
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DB43_011B	1	1	DX0001A-RSN,,01-05	1,,2.0uL WIN/RES	14-JAN-04 17:21:52
2	DB43_011B	2	2	DX023F-CAL,,	1,,2.0uL CS-5	14-JAN-04 17:57:31
3	DB43_011B	3	3	DX023E-CAL,,	1,,2.0uL CS-4	14-JAN-04 18:33:11
4	DB43_011B	4	4	DX023D-CAL,,/03-01	1,,2.0uL CS-3	14-JAN-04 19:08:50
5	DB43_011B	5	5	DX023C-CAL,,	1,,2.0uL CS-2	14-JAN-04 19:44:30
6	DB43_011B	6	6	DX023B-CAL,,	1,,2.0uL CS-1	14-JAN-04 20:20:09
7	DB43_011B	7	7	DX023A-CAL,,	1,,2.0uL CS-0.2	14-JAN-04 20:55:49

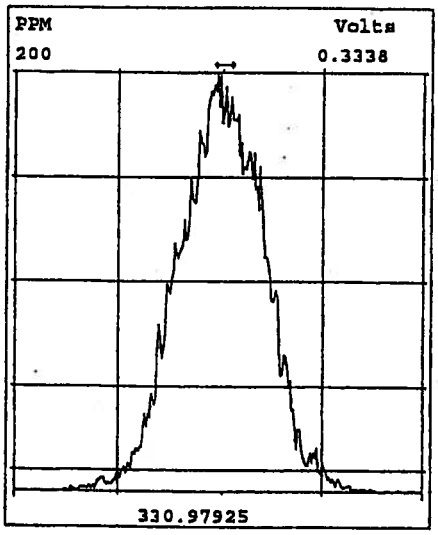
Approved GW 14 Jan 04

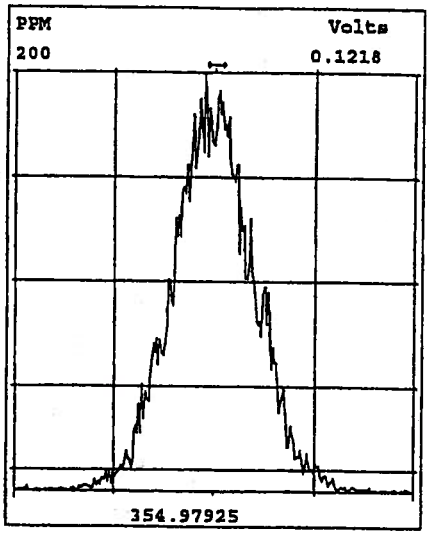
Peak Locate Examination:14-JAN-2004:17:18 File:DB43_011BCAL
Experiment:DX-DB225-1_02 Function:1 Reference:PFK

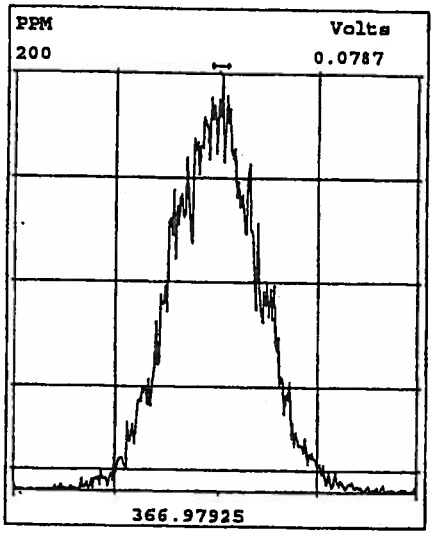


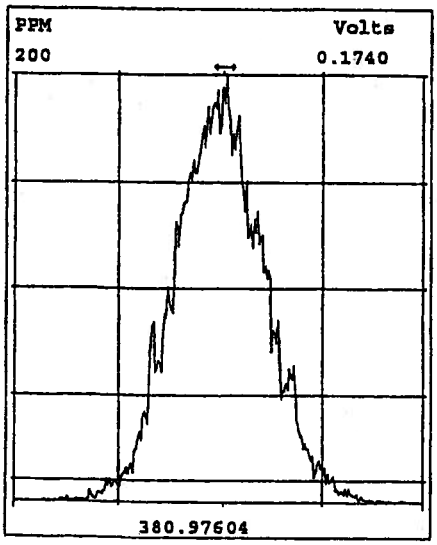








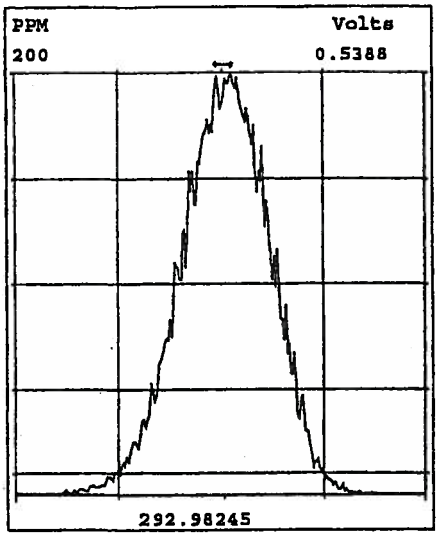


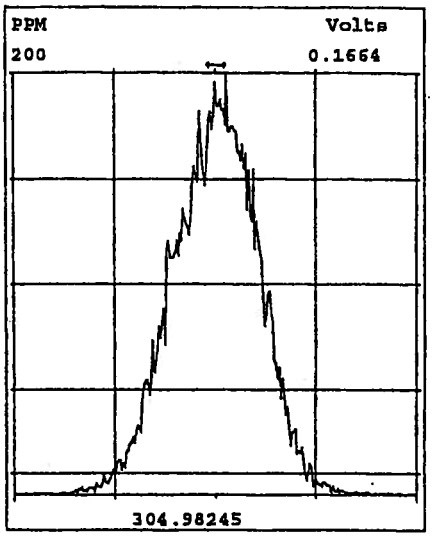


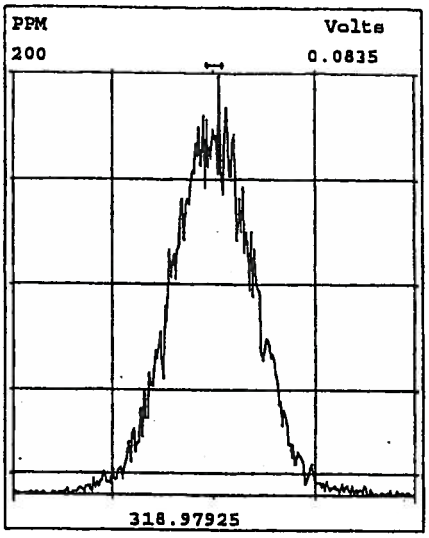
Approved By AL 14Jan04

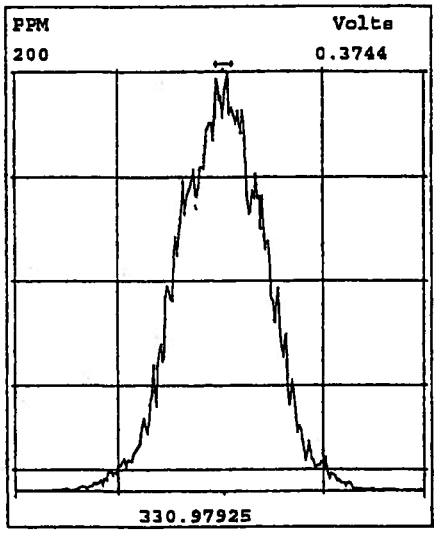
Peak Locate Examination:14-JAN-2004:21:34 File:DB43_011BCAL2/_012CAL1

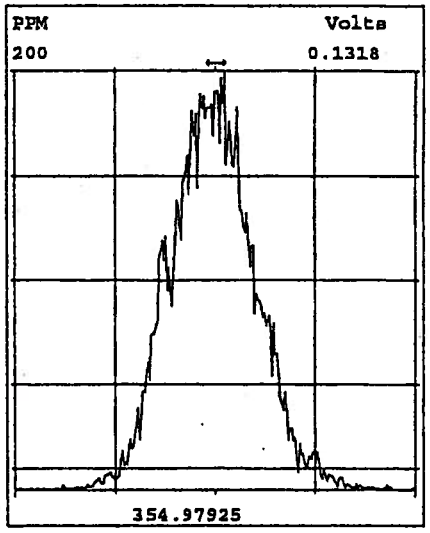
Experiment:DX-DB225-1_02 Function:1 Reference:PFK

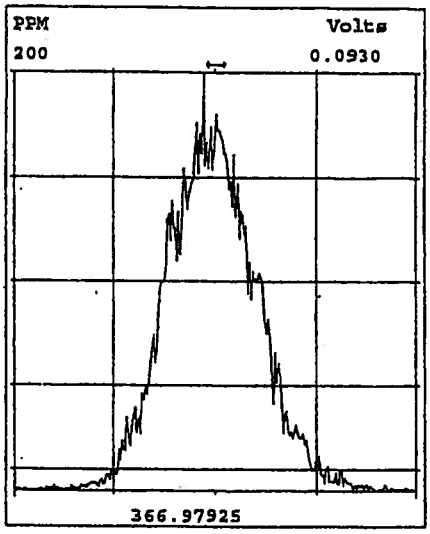


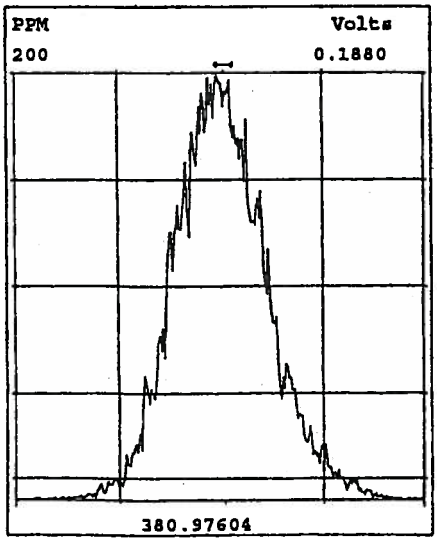












DB43_011B-B

c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
2 c	STEM-DEFAULT	DB43_011B	6	1	1613b-db004	1.0000	1.0000	1.000000	y	DX023B-CAL,,	1,,2.0uL CS-1	y
3 c	STEM-DEFAULT	DB43_011B	5	1	1613b-db004	4.0000	1.0000	1.000000	y	DX023C-CAL,,	1,,2.0uL CS-2	y
4 c	STEM-DEFAULT	DB43_011B	4	1	1613b-db004	20.0000	1.0000	1.000000	y	DX023D-CAL,,»	1,,2.0uL CS-3	y
5 c	STEM-DEFAULT	DB43_011B	3	1	1613b-db004	80.0000	1.0000	1.000000	y	DX023E-CAL,,	1,,2.0uL CS-4	y
6 c	STEM-DEFAULT	DB43_011B	2	1	1613b-db004	400.0000	1.0000	1.000000	y	DX023F-CAL,,	1,,2.0uL CS-5	y

AXYS Analytical Services Ltd.
PO Box 2219, 2045 Mills Road W.
Sidney, British Columbia
Canada V8L 3S8
Phone: 250-655-5800
Fax: 250-655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB225-DB004-D1

Form 3
PCDD/PCDF INITIAL CALIBRATION RELATIVE RESPONSES AND ION ABUNDANCE RATIOS

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	14-Jan-2004		
Instrument ID:	HR GC/MS	GC Column ID:	DB-225
CS1 Data Filename:	DB43_011B S: 6	CS4 Data Filename:	DB43_011B S: 3
CS2 Data Filename:	DB43_011B S: 5	CS5 Data Filename:	DB43_011B S: 2
CS3 Data Filename:	DB43_011B S: 4		

COMPOUND	LAB FLAG[1]	RELATIVE RESPONSE (RR) CS1	CS2	CS3	CS4	CS5	MEAN RR	CV (%RSD)[2]
2,3,7,8-TCDF		0.86	0.91	0.91	0.94	0.96	0.92	4.04

COMPOUND	LAB FLAG[1]	M/Z'S FORMING RATIO[3]	ION ABUNDANCE RATIO CS1	CS2	CS3	CS4	CS5	QC LIMITS[4]
2,3,7,8-TCDF		M/M+2	0.67	0.72	0.74	0.73	0.77	0.65-0.89

(1) Z = compound not requested; X = results reported separately
(2) For contract CV specifications, see Section 10.5.4, Method 1613.
(3) See Table 8, Method 1613, for m/z specifications.
(4) Ion Abundance Ratio Control Limits from Table 9, Method 1613.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

Form 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: AXYS ANALYTICAL SERVICES

Instrument ID:	HR GC/MS	**Initial Calibration Date:**	14-Jan-2004	
RT Window Data Filename:		**Analysis Date:**		**Time:**
DB5 IS Data Filename:		**Analysis Date:**		**Time:**
DB-225 IS Data Filename:	DB43_011B S:1	**Analysis Date:**	14-Jan-2004	**Time:** 17:21:52

DB-5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	NA	1,3,6,8-TCDF (F)	NA
1,2,8,9-TCDD (L)	NA	1,2,8,9-TCDF (L)	NA
1,2,4,7,9-PeCDD (F)	NA	1,3,4,6,8-PeCDF (F)	NA
1,2,3,8,9-PeCDD (L)	NA	1,2,3,8,9-PeCDF (L)	NA
1,2,4,6,7,9-HxCDD (F)	NA	1,2,3,4,6,8-HxCDF (F)	NA
1,2,3,4,6,7-HxCDD (L)	NA	1,2,3,4,8,9-HxCDF (L)	NA
1,2,3,4,6,7,9-HpCDD (F)	NA	1,2,3,4,6,7,8-HpCDF(F)	NA
1,2,3,4,6,7,8-HpCDD (L)	NA	1,2,3,4,7,8,9-HpCDF (L)	NA

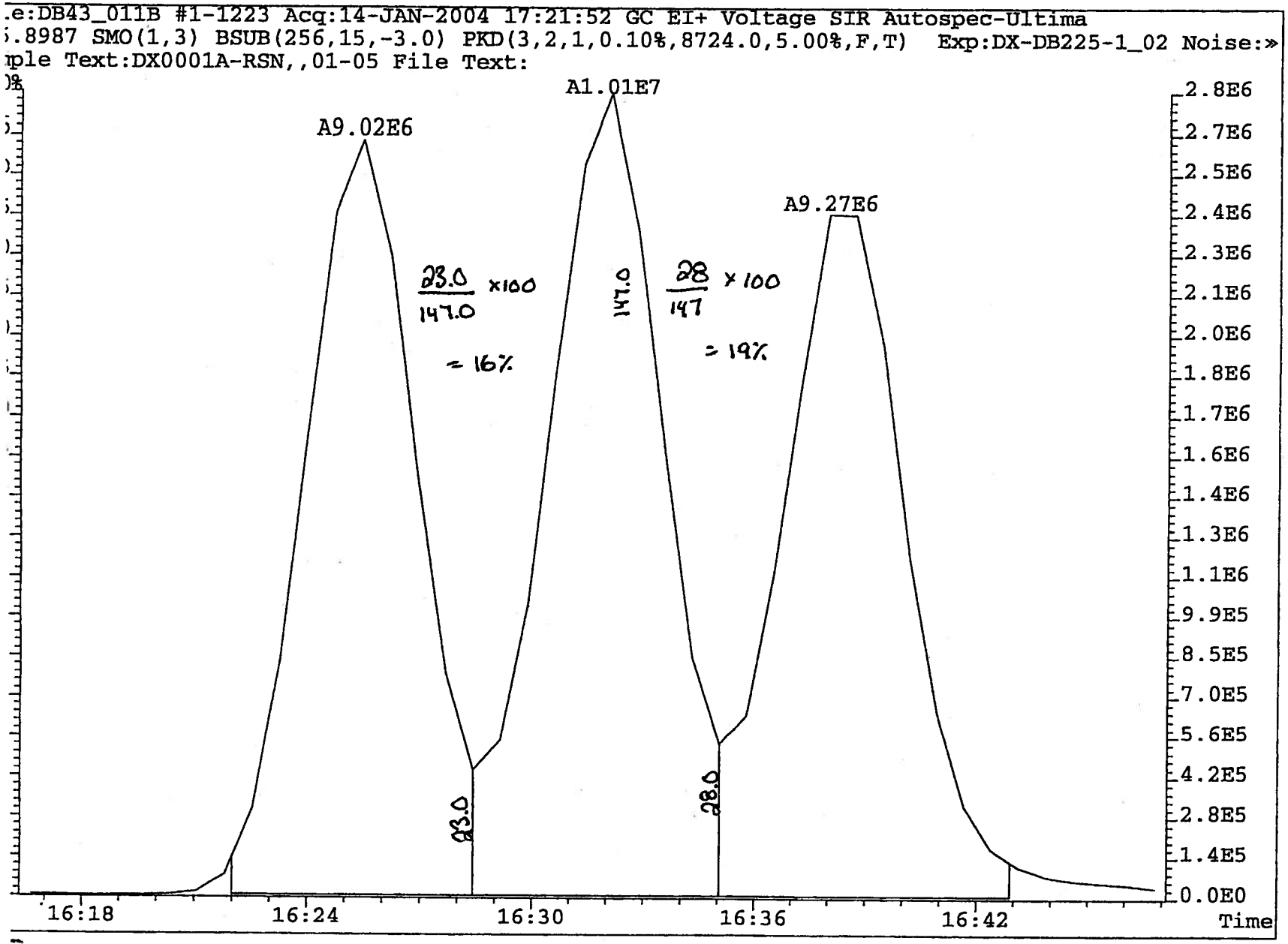
(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULTS

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	0	1,2,3,8-TCDD 2,3,7,8-TCDD	NA
1,2,7,8-TCDD 1,4,7,8-TCDD	0	2,3,4,7-TCDF 2,3,7,8-TCDF	16
1,4,7,8-TCDD 1,2,3,7-TCDD	0	2,3,7,8-TCDF 1,2,3,9-TCDF	19
1,2,3,7-TCDD 1,2,3,8-TCDD	0		

 Approved by: _____ QA/QC Chemist 18-02-2004 dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3C8 TEL (250) 655-5800 FAX (250) 655-5811



Checked by SM
21-Jan-04

Coded by CA
15-JAN-04

Instrument Acquisition Runlog — Axys Analytical

Experiment : DX-DB5-1_03
GC Program : DX-DB5-1_01
Column type : DB-5
Serial # : US3274825H
kPa : 208
Vol injected: 1.00L
PMT Voltage : 389

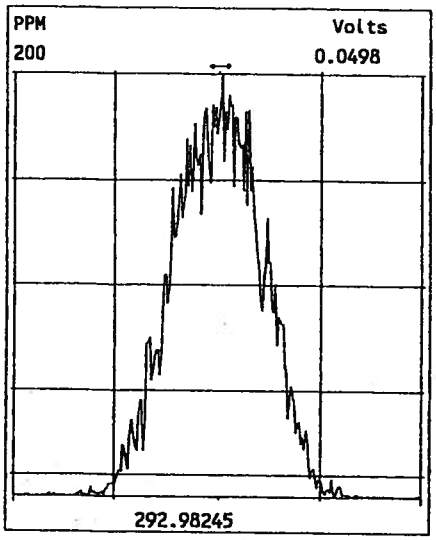
Temps -source: 300 Tune : AL
-s resv: 160 List : RT/AL
-re_ent: 305 Check :
-cap_1 : 320 LIMS :
-cap_2 : 305

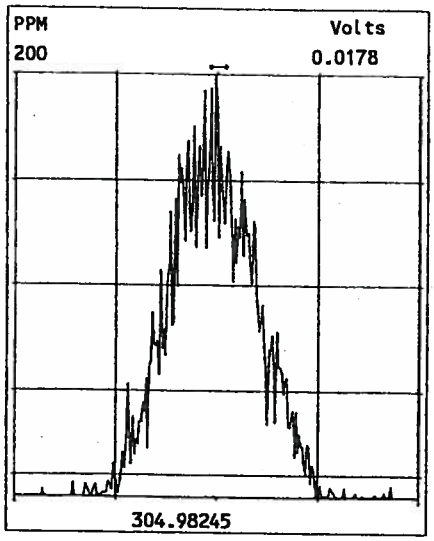
Date -list : 03-FEB-2004
-liner : 02-FEB-2004
-septum: 02-FEB-2004
-guard : 30cm 03-FEB-04
-column: New 03-FEB-04
-t line: New 03-FEB-04
-bake :
-source:

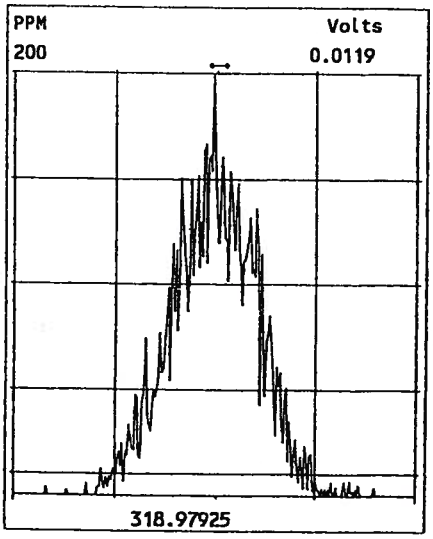
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DX42_048	1	1	DX023A-CAL,,/02-01	1,,1.0uL CS-0/Sens	3-FEB-04 19:07:07
2	DX42_048	2	2	DX023B-CAL,,/02-08	1,,1.0uL CS-1	3-FEB-04 20:01:59
3	DX42_048	3	3	DX023C-CAL,,/02-06	1,,1.0uL CS-2	3-FEB-04 20:56:51
4	DX42_048	4	4	DX023F-CAL,,/02-05	1,,1.0uL CS-5	3-FEB-04 21:51:49
5	DX42_048	5	5	DX023E-CAL,,/02-07	1,,1.0uL CS-4	3-FEB-04 22:46:41
6	DX42_048	6	6	DX023D-CAL,,/03-03	1,,1.0uL Cal Win/Reg	3-FEB-04 23:41:32
7	DX42_048	7	7	DX023D3-CAL,,/02-06	1,,1.0uL CS-3/Cal	4-FEB-04 00:36:24
8	DX42_048	8	8	Toluene,,	1,,1.0uL	4-FEB-04 01:31:15
9	DX42_048	9	9	Toluene,,	1,,1.0uL	4-FEB-04 02:26:07
10	DX42_048	10	10	DX023B-CAL,,/02-07	1,,1.0uL CS-1	4-FEB-04 03:20:57
11	DX42_048	11	11	DX023D-CAL,,/04-09	1,,1.0uL Cal	4-FEB-04 04:15:54
12	DX42_048	12	12	DX023D-CAL,,/04-10	1,,1.0uL Cal	4-FEB-04 05:10:45
13	DX42_048	13	13	Toluene,,	1,,1.0uL	4-FEB-04 06:05:37

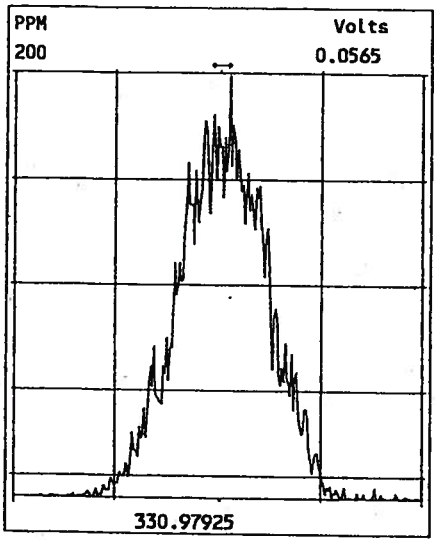
Approved DL 3 Feb 04

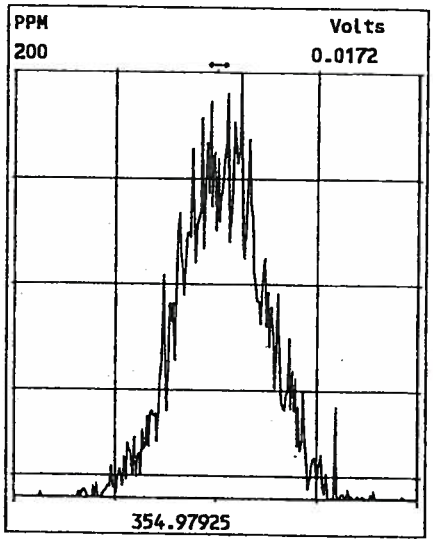
Peak Locate Examination: 3-FEB-2004:19:01 File:DX42_048CAL1
Experiment:DX-DB5-1_03 Function:3 Reference:PFK

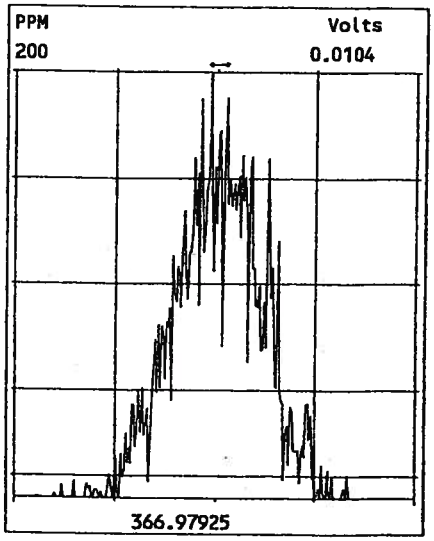


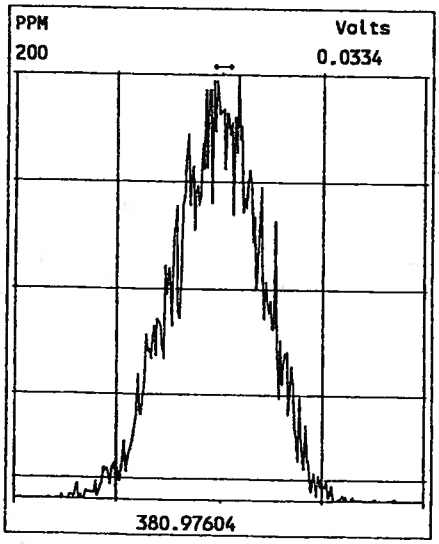




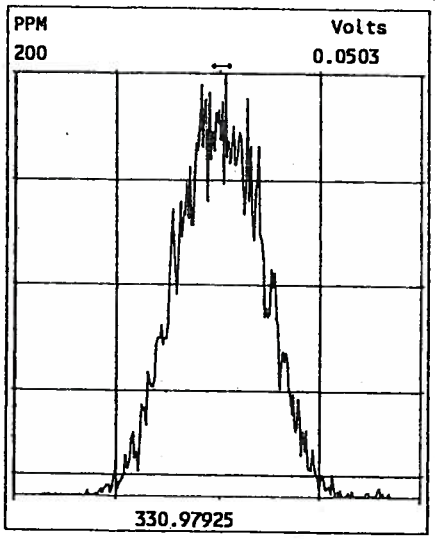


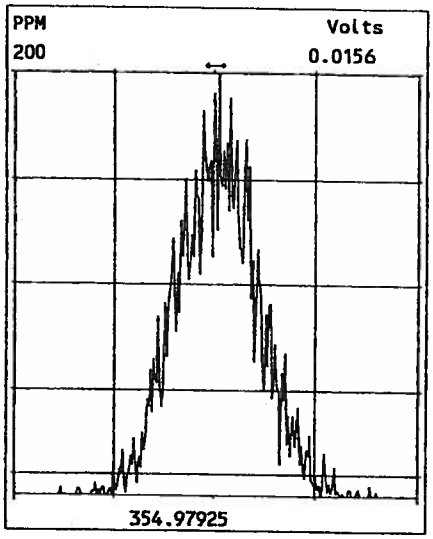


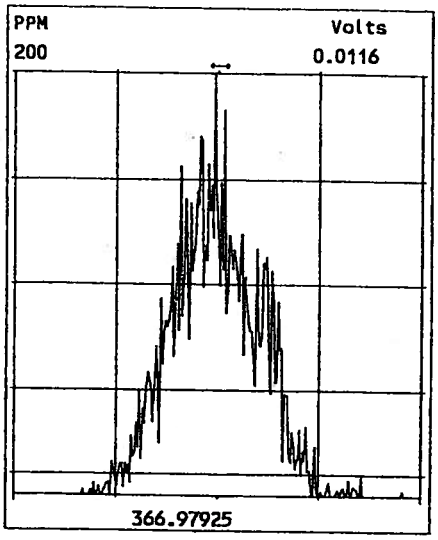


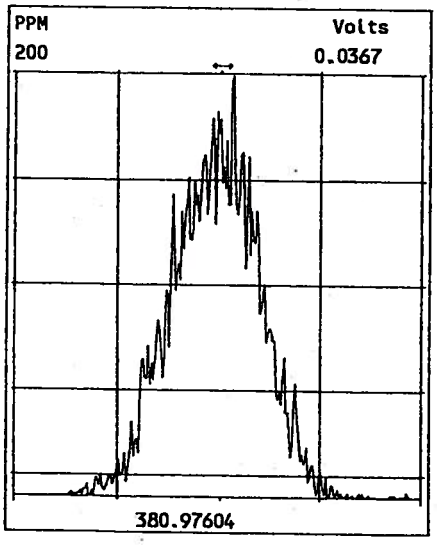


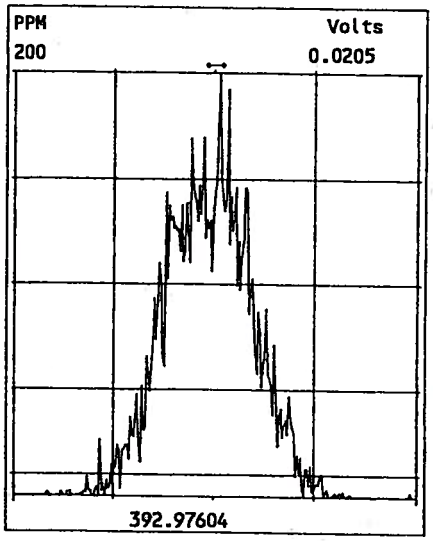
Peak Locate Examination: 3-FEB-2004:19:01 File:DX42_048CAL1
Experiment:DX-DB5-1_03 Function:4 Reference:PFK

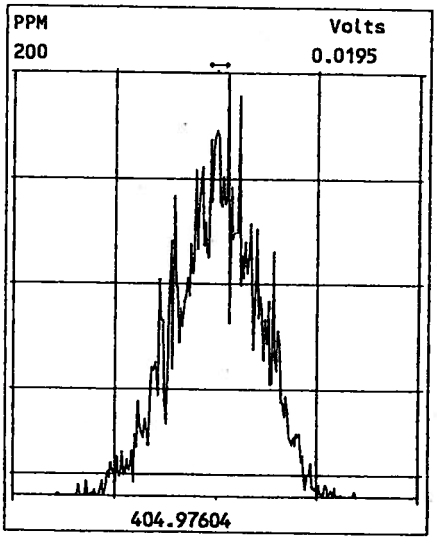


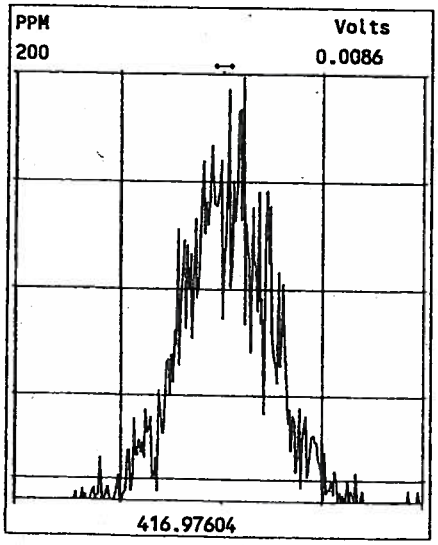




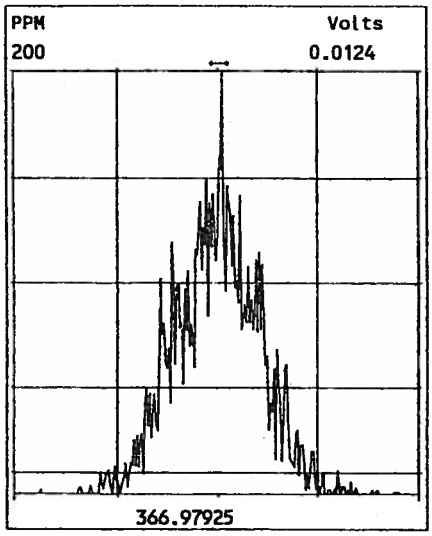


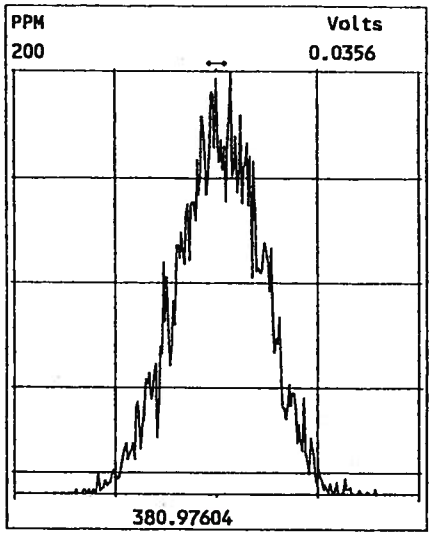


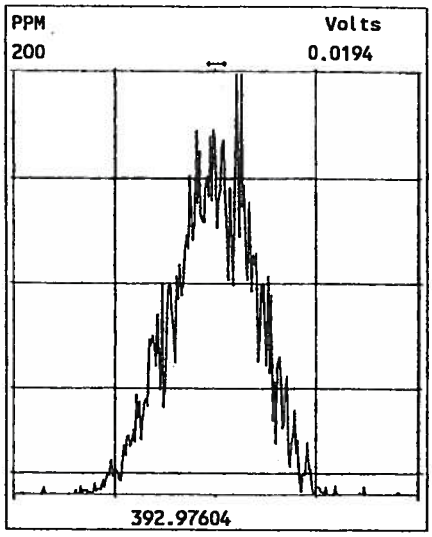


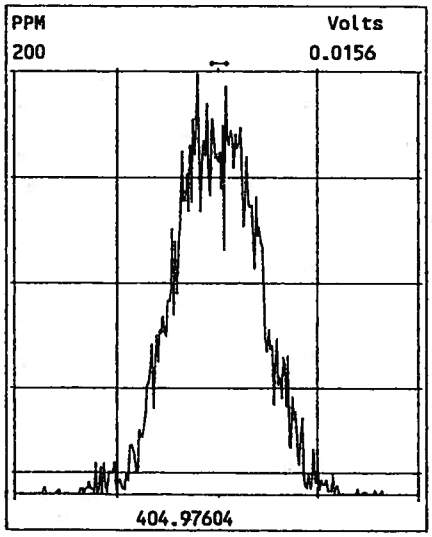


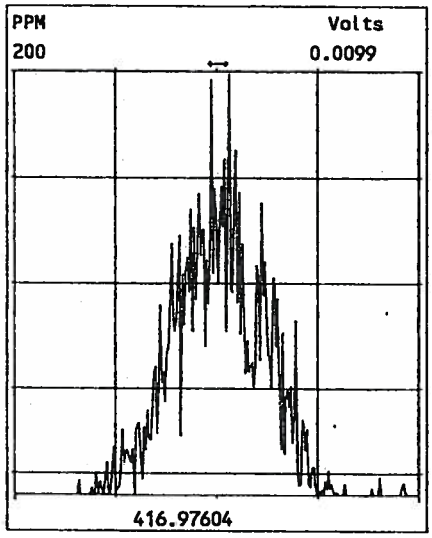
Peak Locate Examination: 3-FEB-2004:19:02 File:DX42_048CAL1
Experiment:DX-DB5-1_03 Function:5 Reference:PFK

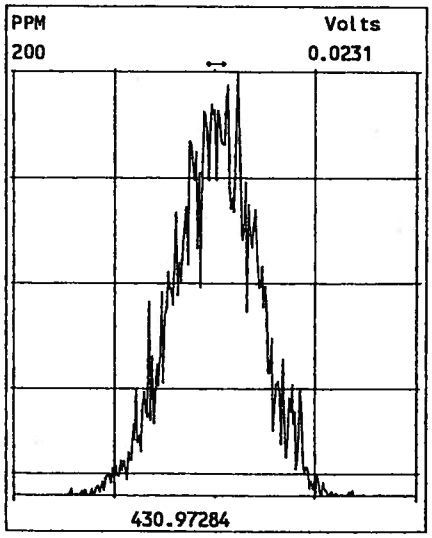


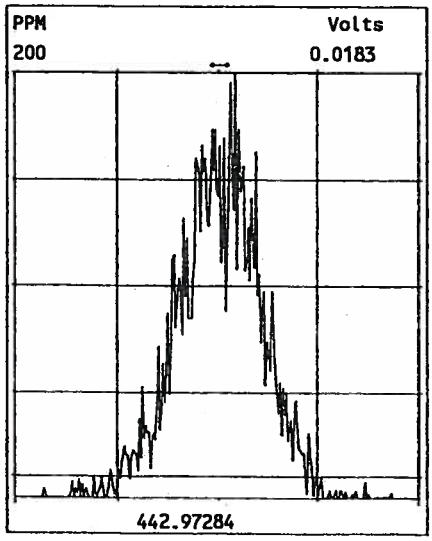


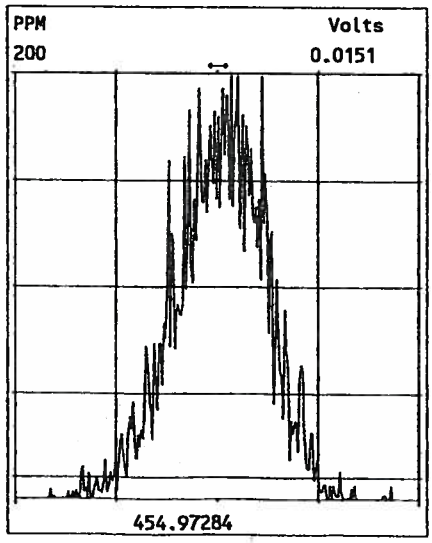




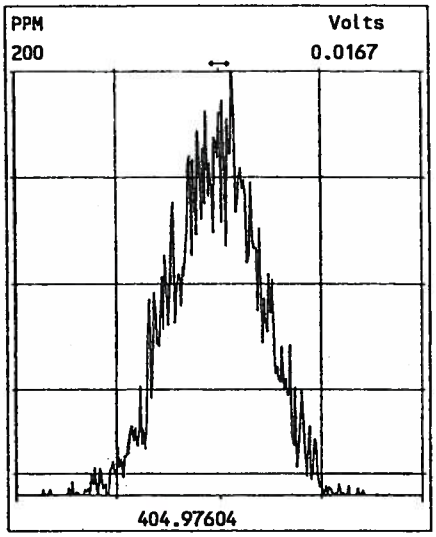


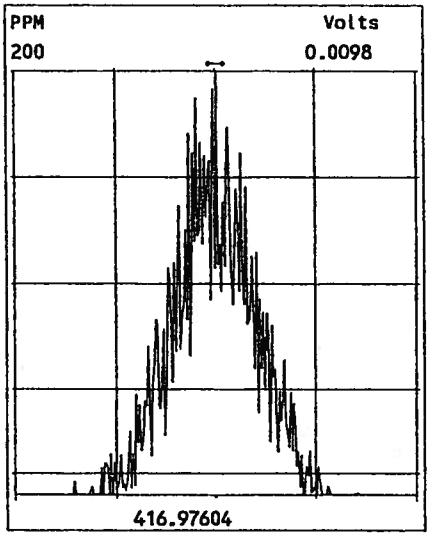


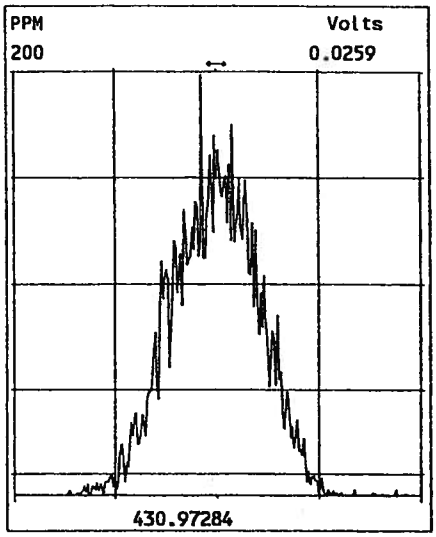


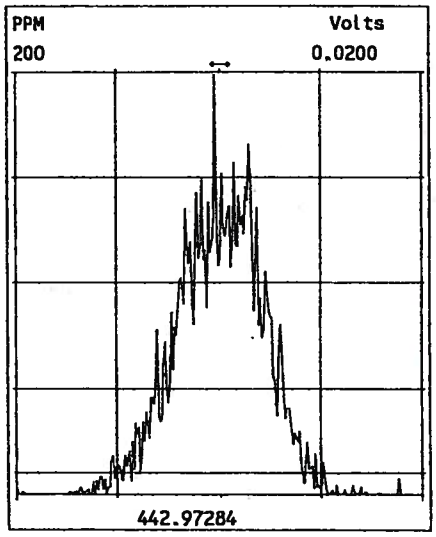


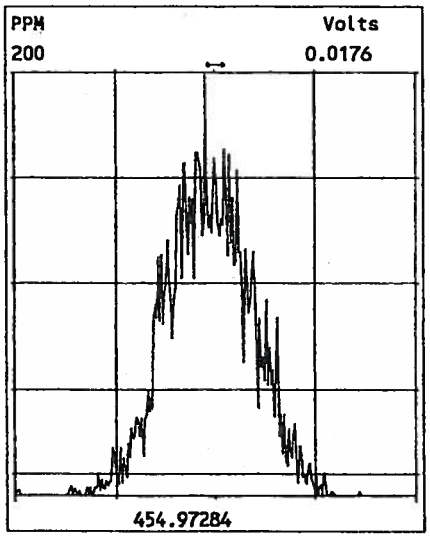
Peak Locate Examination: 3-FEB-2004:19:02 File:DX42_048CAL1
Experiment:DX-DB5-1_03 Function:6 Reference:PFK

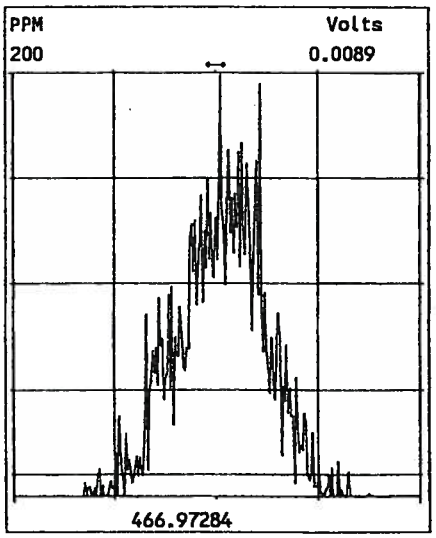


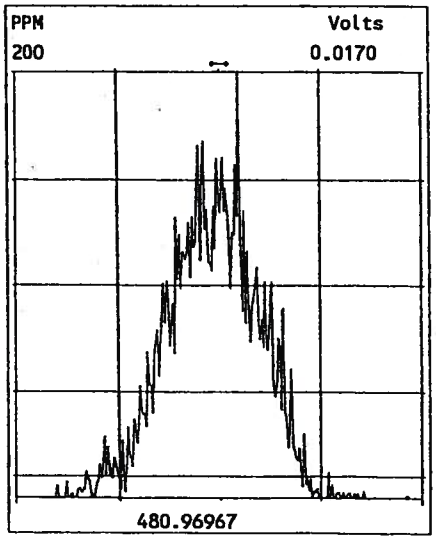


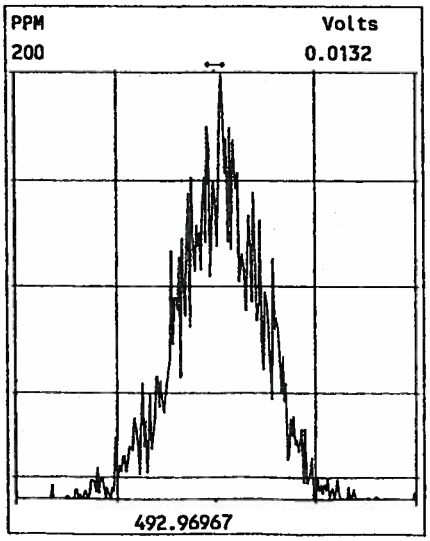




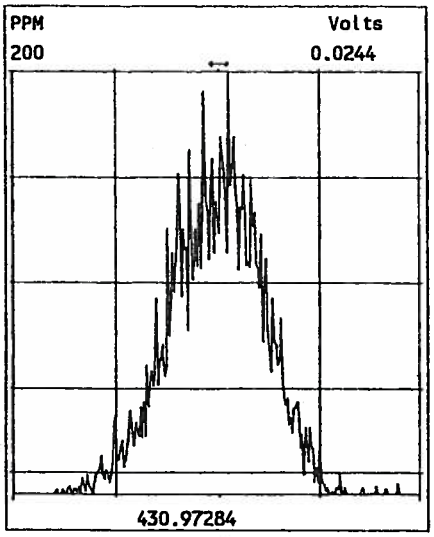


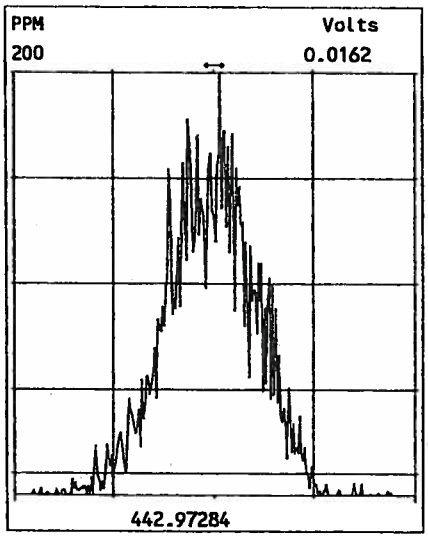


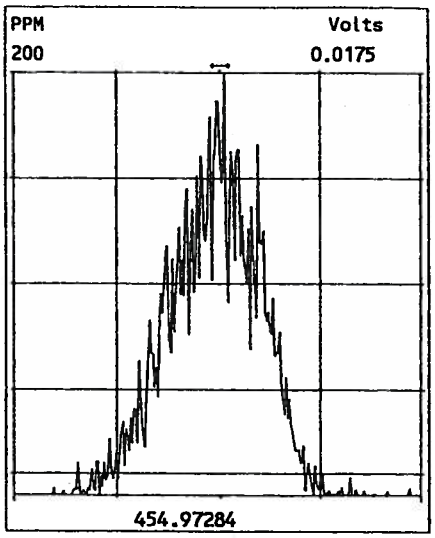


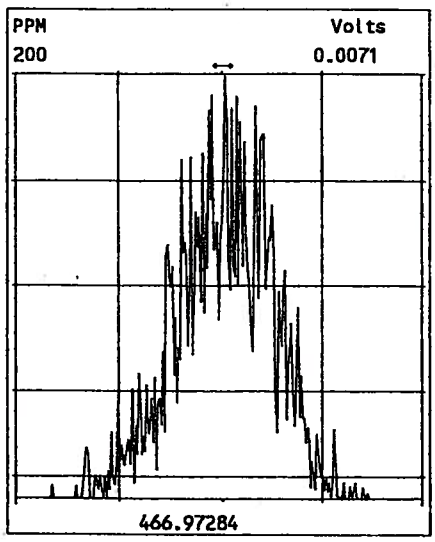


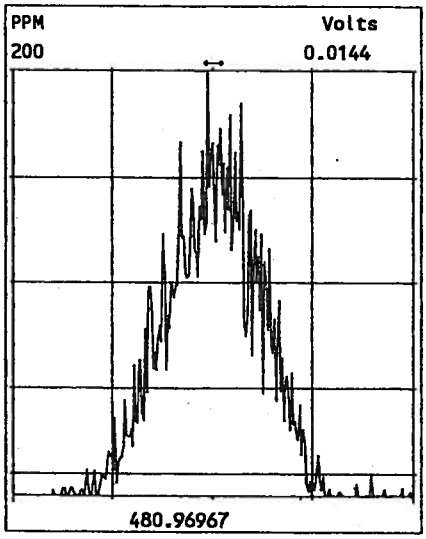
Peak Locate Examination: 3-FEB-2004:19:03 File:DX42_048CAL1
Experiment:DX-DB5-1_03 Function:7 Reference:PFK

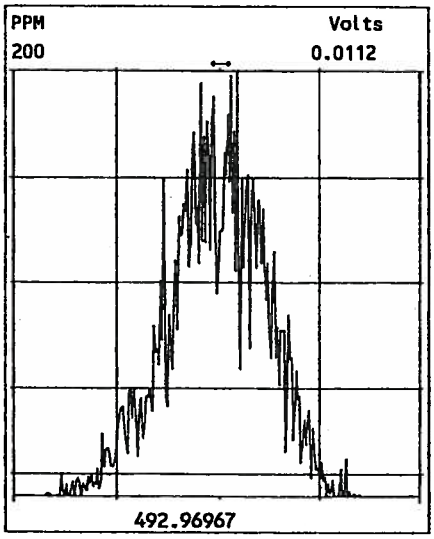


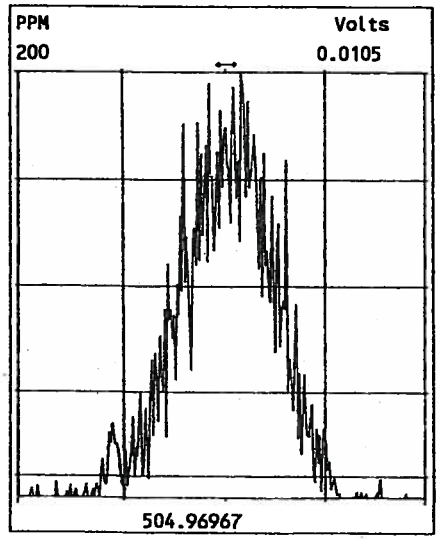


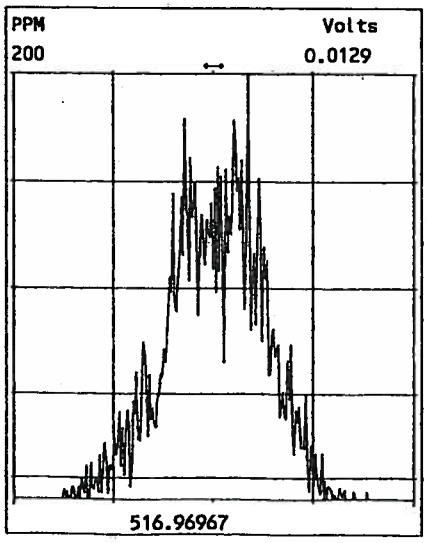






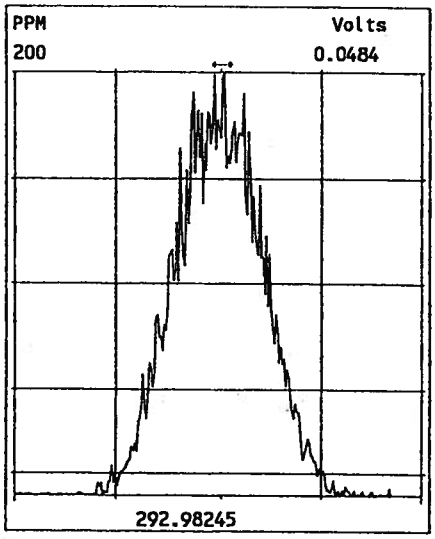


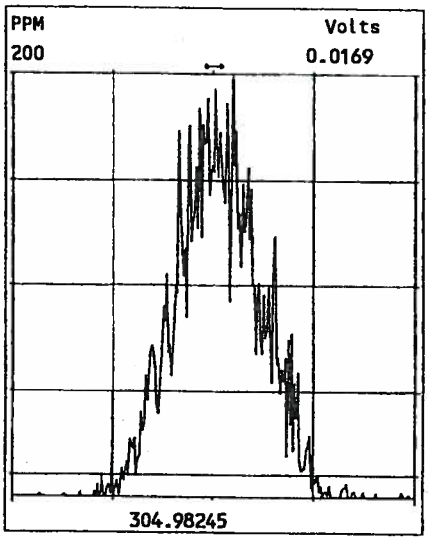


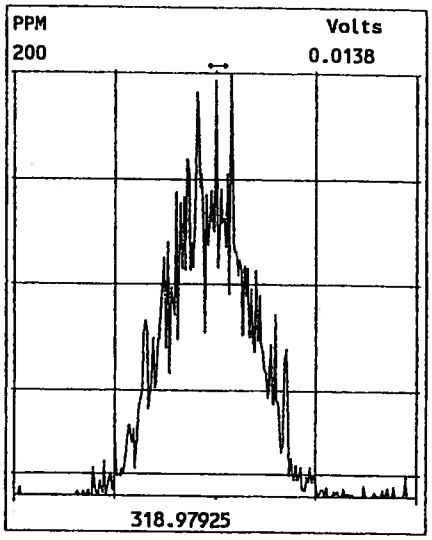


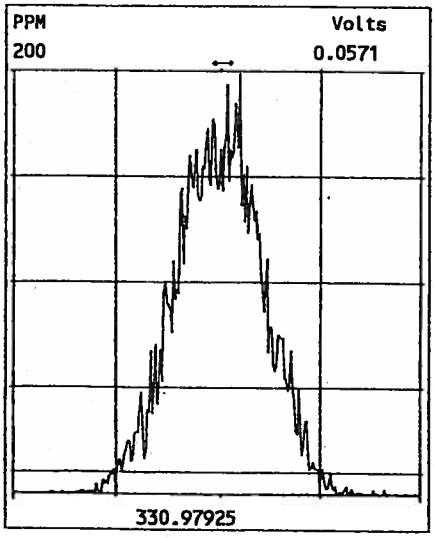
Approved GW 04 Feb.04

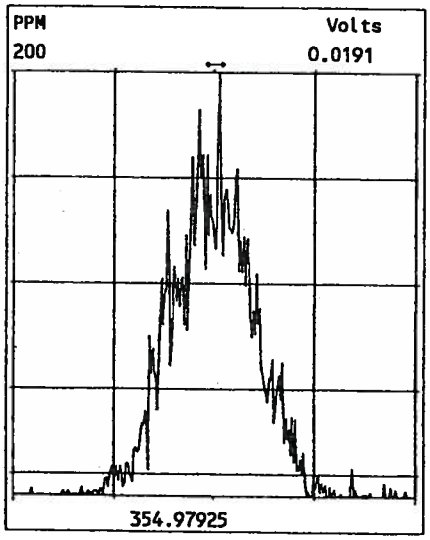
Peak Locate Examination: 4-FEB-2004:07:02 File:DX42_049CAL/_048CAL2
Experiment:DX-DB5-1_03 Function:3 Reference:PFK

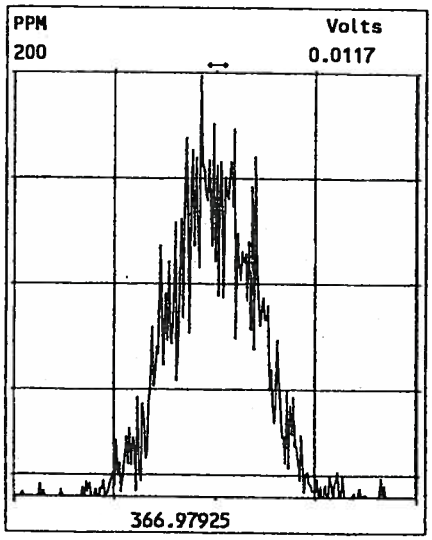


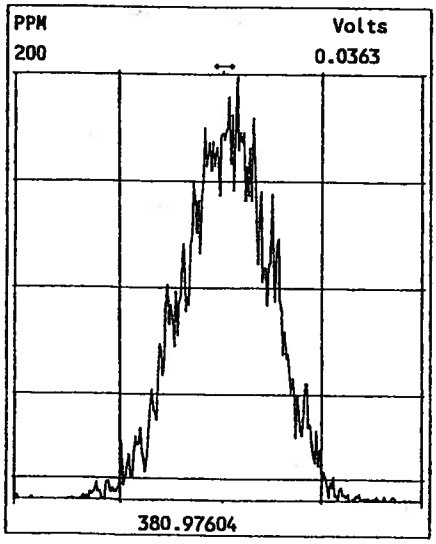




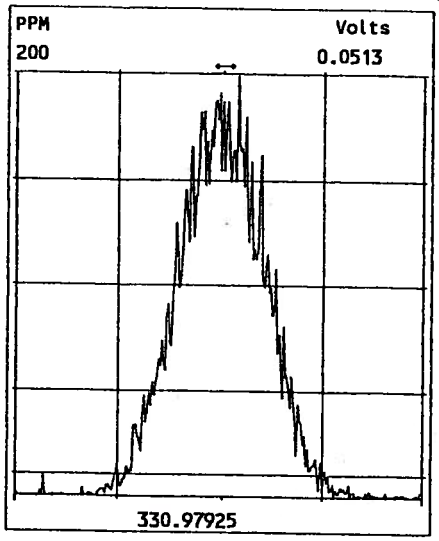


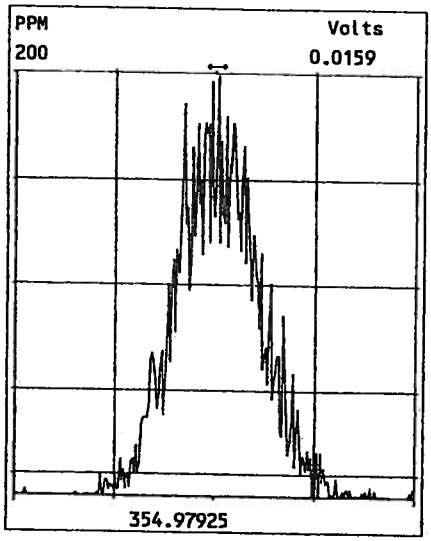


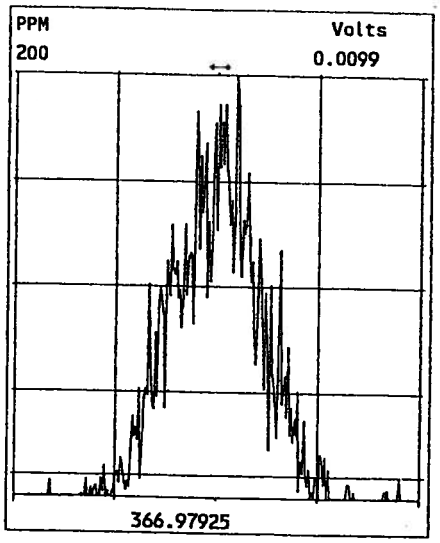


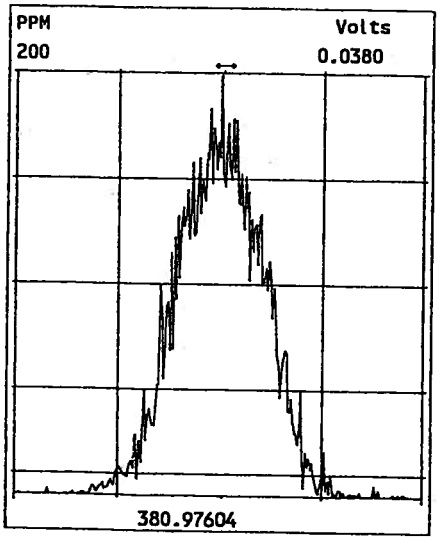


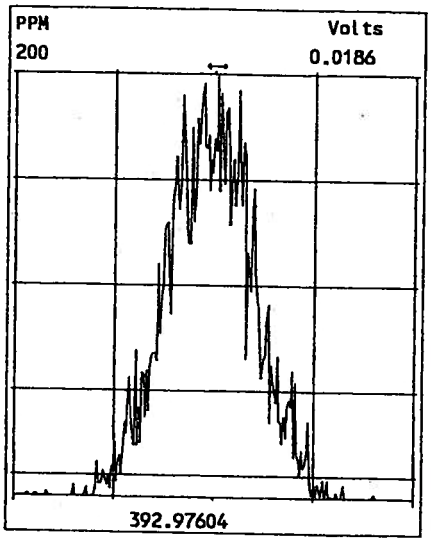
Peak Locate Examination: 4-FEB-2004:07:03 File:DX42_049CAL/_048CAL2
Experiment:DX-DB5-1_03 Function:4 Reference:PFK

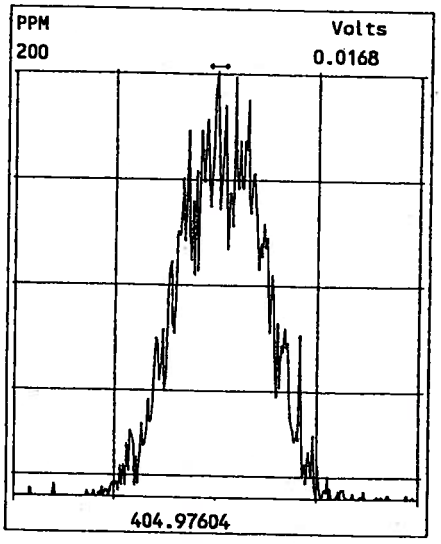


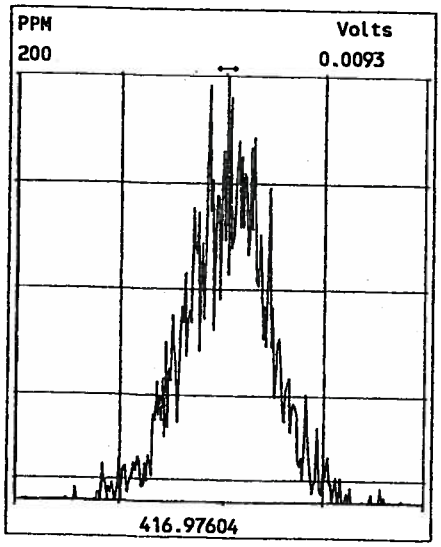




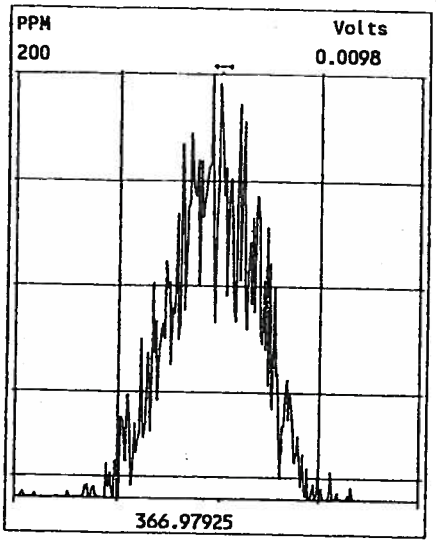


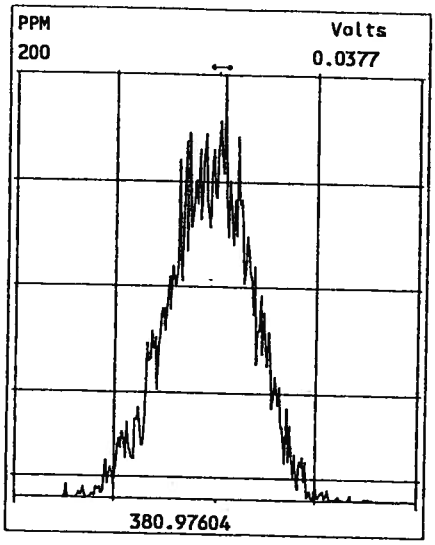


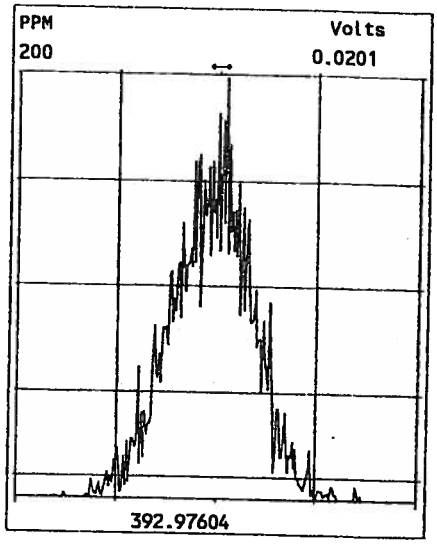


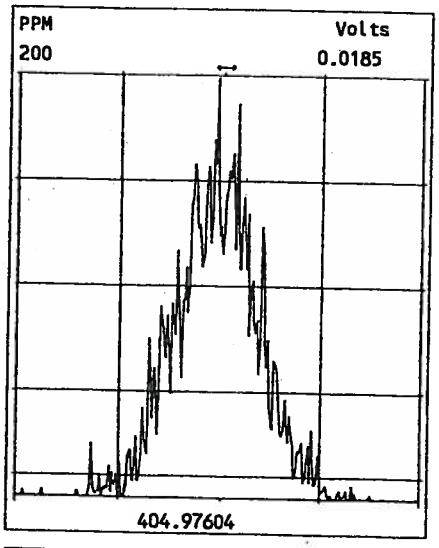


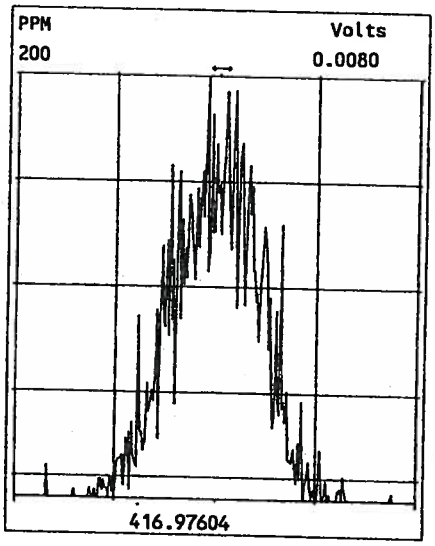
Peak Locate Examination: 4-FEB-2004:07:03 File:DX42_049CAL/_048CAL2
Experiment:DX-DB5-1_03 Function:5 Reference:PFK

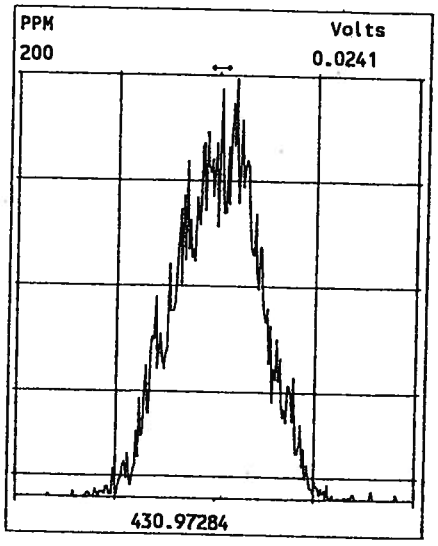


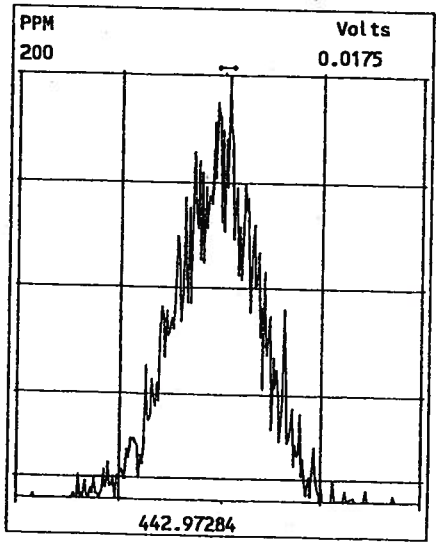


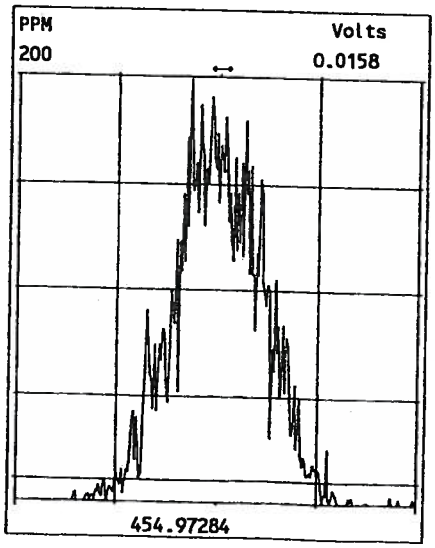




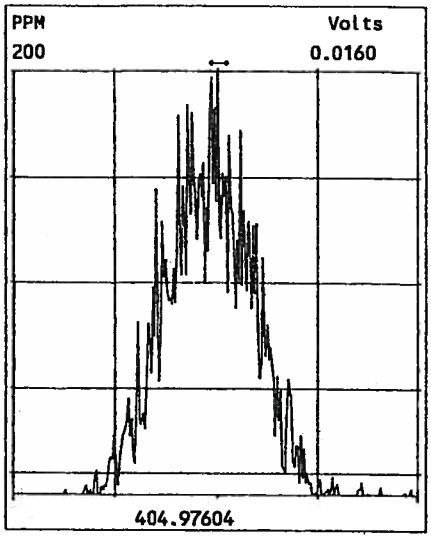


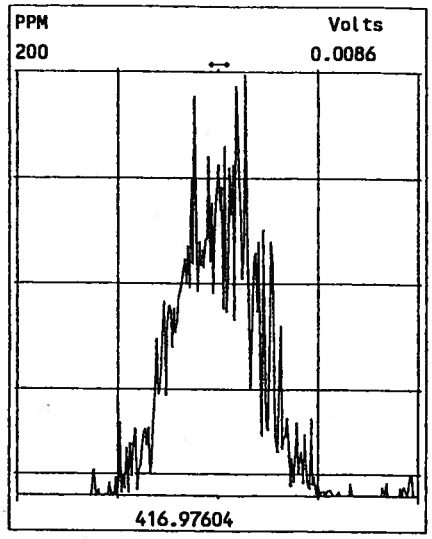


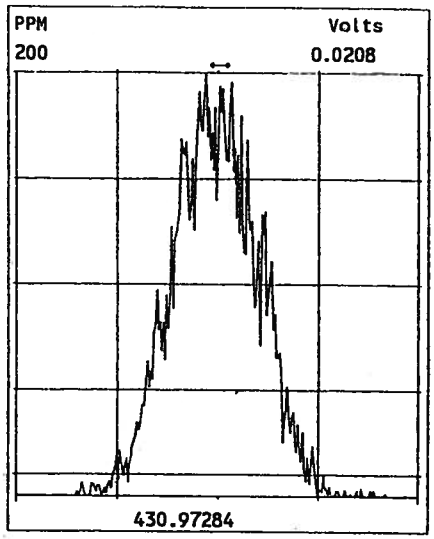


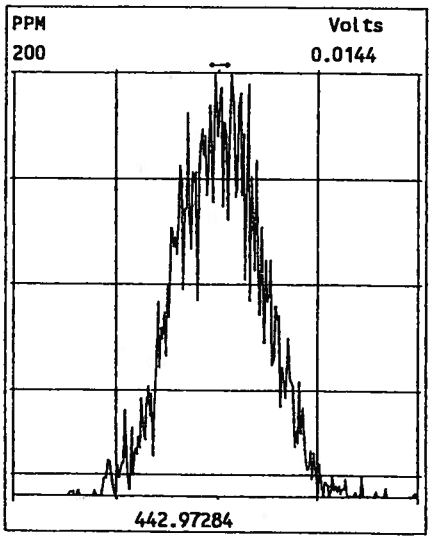


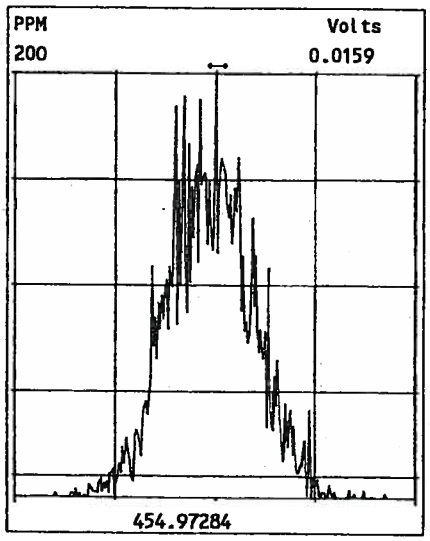
Peak Locate Examination: 4-FEB-2004:07:03 File:DX42_049CAL/_048CAL2
Experiment:DX-DB5-1_03 Function:6 Reference:PFK

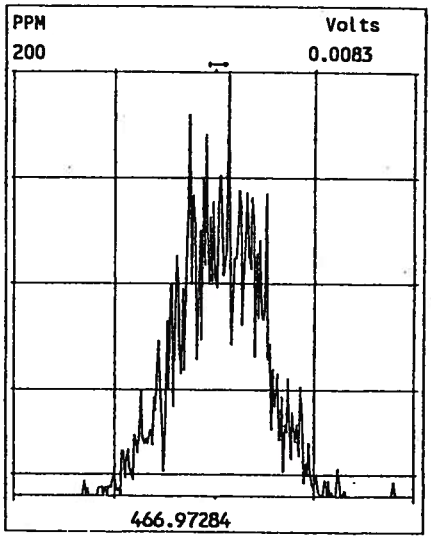


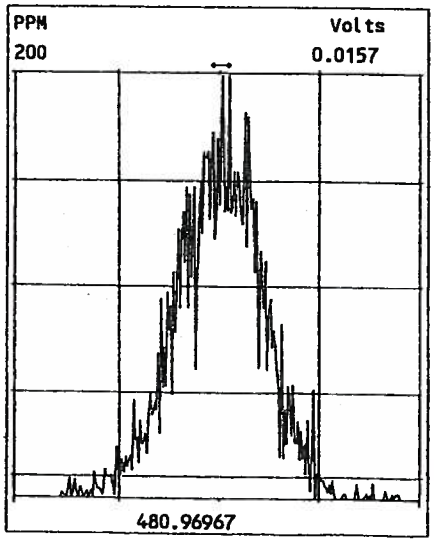


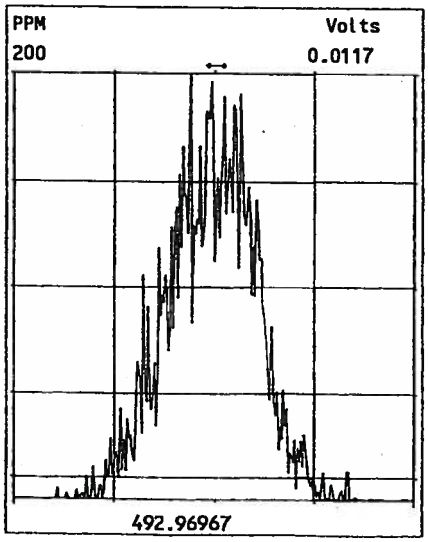




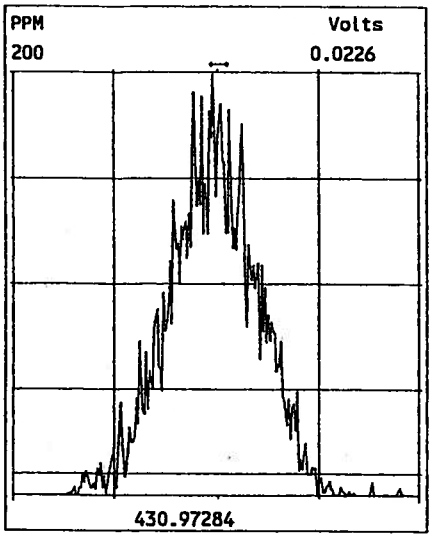


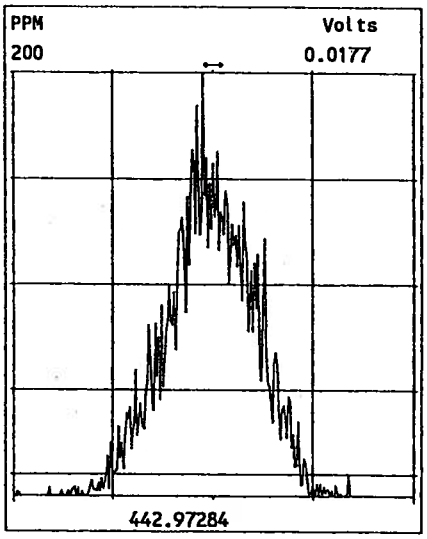


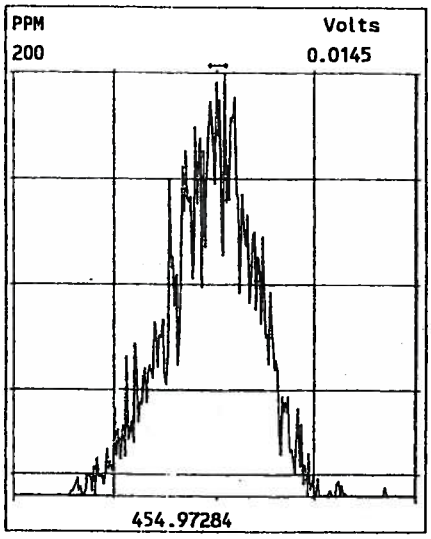


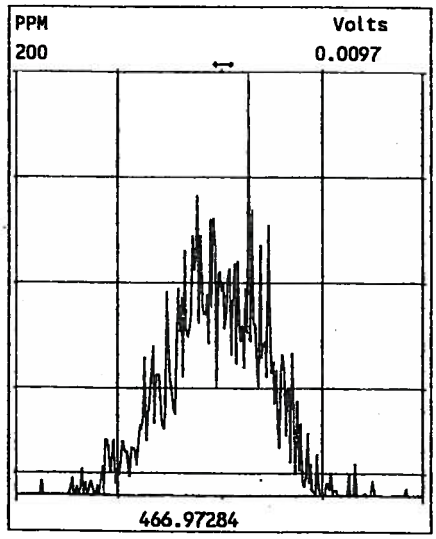


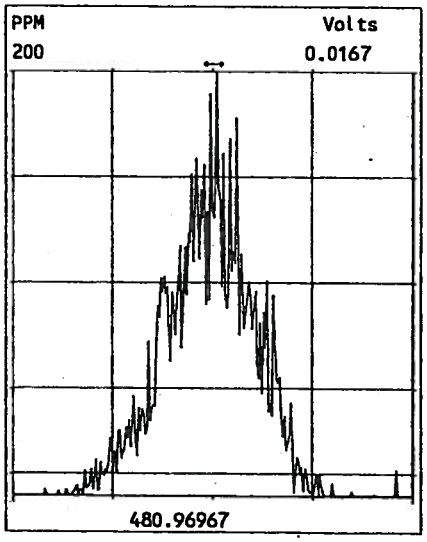
Peak Locate Examination: 4-FEB-2004:07:04 File:DX42_049CAL/_048CAL2
Experiment:DX-DB5-1_03 Function:7 Reference:PFK

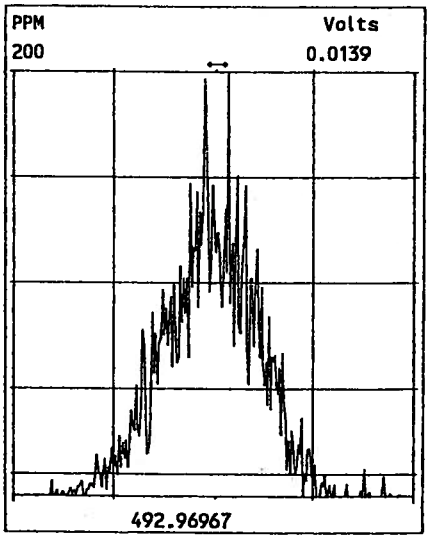


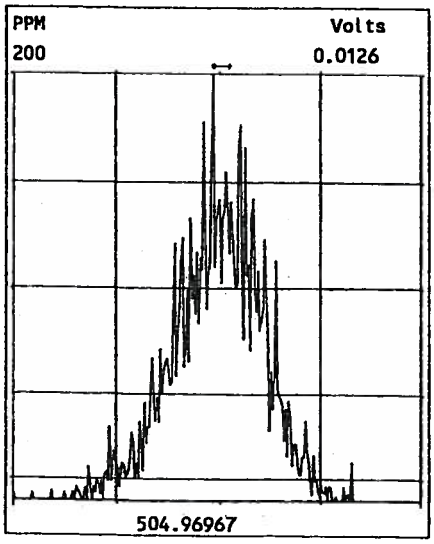


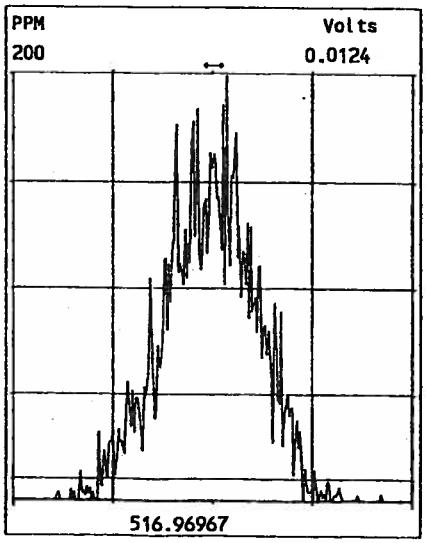












DX42_048-B

	c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
1	c	STEM-DEFAULT	DX42_048	10	1	1613b-c005	1.0000	1.0000	1.000000	y	DX023B-CAL,,»	1,,1.0uL CS-1	y
2	c	STEM-DEFAULT	DX42_048	3	1	1613b-c005	4.0000	1.0000	1.000000	y	DX023C-CAL,,»	1,,1.0uL CS-2	y
3	c	STEM-DEFAULT	DX42_048	6	1	1613b-c005	20.0000	1.0000	1.000000	y	DX023D-CAL,,»	1,,1.0uL Cal Win»	y
4	c	STEM-DEFAULT	DX42_048	5	1	1613b-c005	80.0000	1.0000	1.000000	y	DX023E-CAL,,»	1,,1.0uL CS-4	y
5	c	STEM-DEFAULT	DX42_048	4	1	1613b-c005	400.0000	1.0000	1.000000	y	DX023F-CAL,,»	1,,1.0uL CS-5	y

Checked by
DNO 13-Feb-04

Form 3A
PCDD/PCDF INITIAL CALIBRATION RELATIVE RESPONSES

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004		
Instrument ID:	HR GC/MS	**GC Column ID:**	DB-5
CS1 Data Filename:	DX42_048 S:10	**CS4 Data Filename:**	DX42_048 S:5
CS2 Data Filename:	DX42_048 S:3	**CS5 Data Filename:**	DX42_048 S:4
CS3 Data Filename:	DX42_048 S:6		

COMPOUND	LAB FLAG[1]	RELATIVE RESPONSE (RR) CS1	CS2	CS3	CS4	CS5	MEAN RR	CV (%RSD)[2]
2,3,7,8-TCDD		0.91	0.94	0.95	0.94	0.92	0.93	1.83
1,2,3,7,8-PeCDD[3]		1.00	1.04	1.09	1.08	1.03	1.05	3.54
1,2,3,4,7,8-HxCDD		1.10	1.10	1.15	1.15	1.05	1.11	3.81
1,2,3,6,7,8-HxCDD		0.86	0.86	0.98	0.92	0.88	0.90	5.75
1,2,3,7,8,9-HxCDD[4]		0.99	0.99	1.09	1.04	0.97	1.02	4.98
1,2,3,4,6,7,8-HpCDD		1.05	0.98	1.10	1.05	0.97	1.03	5.28
OCDD		1.16	1.05	1.20	1.12	1.04	1.11	6.50
2,3,7,8-TCDF		0.92	1.01	1.04	1.01	0.98	0.99	4.59
1,2,3,7,8-PeCDF		0.95	1.01	1.08	1.04	1.01	1.02	4.69
2,3,4,7,8-PeCDF		0.97	1.00	1.08	1.05	1.01	1.03	4.29
1,2,3,4,7,8-HxCDF		1.21	1.21	1.36	1.27	1.21	1.25	5.25
1,2,3,6,7,8-HxCDF		1.13	1.14	1.24	1.20	1.13	1.17	4.32
1,2,3,7,8,9-HxCDF		1.11	1.09	1.16	1.16	1.08	1.12	3.70
2,3,4,6,7,8-HxCDF		1.09	1.06	1.19	1.12	1.06	1.10	4.87
1,2,3,4,6,7,8-HpCDF		1.31	1.27	1.42	1.34	1.26	1.32	4.97
1,2,3,4,7,8,9-HpCDF		1.26	1.16	1.32	1.23	1.15	1.23	5.65
OCDF[5]		1.55	1.36	1.62	1.55	1.43	1.50	7.16

(1) Z = compound not requested; X = results reported separately
(2) For contract CV specifications, see Section 10.5.4, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.
(4) Response Ratios are calculated relative to the labeled analogs of the other two HxCDDs (Section 17.1.2, Method 1613).
(5) Response Ratios are calculated relative to the labeled analog of OCDD (Section 17.1.1, Method 1613).

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 3B
PCDD/PCDF INITIAL CALIBRATION RELATIVE RESPONSES

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004		
Instrument ID:	HR GC/MS	**GC Column ID:**	DB-5
CS1 Data Filename:	DX42_048 S:10	**CS4 Data Filename:**	DX42_048 S:5
CS2 Data Filename:	DX42_048 S:3	**CS5 Data Filename:**	DX42_048 S:4
CS3 Data Filename:	DX42_048 S:6		

LABELED COMPOUND	LAB FLAG[1]	RELATIVE RESPONSE (RR) CS1	CS2	CS3	CS4	CS5	MEAN RR	CV (%RSD)[2]
13C-2,3,7,8-TCDD		1.09	1.05	1.07	1.11	1.17	1.10	4.11
13C-1,2,3,7,8-PeCDD[3]		0.69	0.67	0.66	0.74	0.84	0.72	9.77
13C-1,2,3,4,7,8-HxCDD		0.97	0.95	0.96	0.93	0.98	0.96	2.03
13C-1,2,3,6,7,8-HxCDD		1.15	1.09	1.04	1.12	1.08	1.10	3.67
13C-1,2,3,4,6,7,8-HpCDD		0.73	0.76	0.72	0.74	0.77	0.75	2.82
13C-OCDD		0.61	0.65	0.61	0.68	0.75	0.66	8.43
13C-2,3,7,8-TCDF		1.72	1.64	1.63	1.72	1.75	1.69	3.18
13C-1,2,3,7,8-PeCDF		1.20	1.16	1.15	1.27	1.40	1.24	8.15
13C-2,3,4,7,8-PeCDF		1.15	1.12	1.09	1.21	1.33	1.18	8.31
13C-1,2,3,4,7,8-HxCDF		1.37	1.30	1.30	1.32	1.29	1.31	2.41
13C-1,2,3,6,7,8-HxCDF		1.56	1.46	1.48	1.52	1.51	1.51	2.67
13C-1,2,3,7,8,9-HxCDF		1.21	1.18	1.15	1.20	1.21	1.19	2.11
13C-2,3,4,6,7,8-HxCDF		1.40	1.39	1.33	1.35	1.35	1.37	2.23
13C-1,2,3,4,6,7,8-HpCDF		1.03	1.03	0.98	1.01	1.01	1.01	2.06
13C-1,2,3,4,7,8,9-HpCDF		0.89	0.90	0.86	0.91	0.94	0.90	3.13
CLEANUP								
37Cl-2,3,7,8-TCDD		1.18	1.12	1.09	1.14	1.18	1.14	3.27

(1) Z = compound not requested; X = results reported separately
(2) For assignment of labeled compounds to internal standards, see Table 2. For contract CV specifications, see Section 10.6.3, Method 1613.
(3) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 3C
PCDD/PCDF INITIAL CALIBRATION ION ABUNDANCE RATIOS

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004		
Instrument ID:	HR GC/MS	**GC Column ID:**	DB-5
CS1 Data Filename:	DX42_048 S:10	**CS4 Data Filename:**	DX42_048 S:5
CS2 Data Filename:	DX42_048 S:3	**CS5 Data Filename:**	DX42_048 S:4
CS3 Data Filename:	DX42_048 S:6		

COMPOUND	LAB FLAG[1]	M/Z'S FORMING RATIO[2]	ION ABUNDANCE RATIO					QC LIMITS[3]
			CS1	CS2	CS3	CS4	CS5	
2,3,7,8-TCDD		M/M+2	0.76	0.78	0.79	0.78	0.78	0.65-0.89
1,2,3,7,8-PeCDD[4]		M/M+2	0.59	0.63	0.63	0.63	0.63	0.51-0.70
1,2,3,4,7,8-HxCDD		M+2/M+4	1.30	1.27	1.26	1.31	1.27	1.05-1.43
1,2,3,6,7,8-HxCDD		M+2/M+4	1.26	1.28	1.27	1.22	1.27	1.05-1.43
1,2,3,7,8,9-HxCDD		M+2/M+4	1.23	1.29	1.27	1.26	1.24	1.05-1.43
1,2,3,4,6,7,8-HpCDD		M+2/M+4	1.11	1.04	1.05	1.06	1.05	0.88-1.20
OCDD		M+2/M+4	0.89	0.90	0.90	0.90	0.90	0.76-1.02
2,3,7,8-TCDF		M/M+2	0.80	0.78	0.78	0.78	0.78	0.65-0.89
1,2,3,7,8-PeCDF		M+2/M+4	1.56	1.55	1.58	1.56	1.56	1.32-1.78
2,3,4,7,8-PeCDF		M+2/M+4	1.56	1.54	1.56	1.56	1.55	1.32-1.78
1,2,3,4,7,8-HxCDF		M+2/M+4	1.24	1.25	1.25	1.25	1.24	1.05-1.43
1,2,3,6,7,8-HxCDF		M+2/M+4	1.23	1.25	1.24	1.25	1.25	1.05-1.43
1,2,3,7,8,9-HxCDF		M+2/M+4	1.25	1.25	1.25	1.25	1.24	1.05-1.43
2,3,4,6,7,8-HxCDF		M+2/M+4	1.25	1.23	1.25	1.24	1.25	1.05-1.43
1,2,3,4,6,7,8-HpCDF		M+2/M+4	1.00	1.05	1.03	1.04	1.04	0.88-1.20
1,2,3,4,7,8,9-HpCDF		M+2/M+4	1.06	1.03	1.04	1.04	1.04	0.88-1.20
OCDF		M+2/M+4	0.90	0.90	0.91	0.91	0.91	0.76-1.02

(1) Z = compound not requested; X = results reported separately
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.
(4) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 3D
PCDD/PCDF INITIAL CALIBRATION ION ABUNDANCE RATIOS

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004		
Instrument ID:	HR GC/MS	**GC Column ID:**	DB-5
CS1 Data Filename:	DX42_048 S:10	**CS4 Data Filename:**	DX42_048 S:5
CS2 Data Filename:	DX42_048 S:3	**CS5 Data Filename:**	DX42_048 S:4
CS3 Data Filename:	DX42_048 S:6		

LABELED COMPOUND	LAB FLAG[1]	M/Z'S FORMING RATIO[2]	ION ABUNDANCE RATIO CS1	CS2	CS3	CS4	CS5	QC LIMITS[3]
13C-2,3,7,8-TCDD		M/M+2	0.79	0.77	0.78	0.80	0.79	0.65-0.89
13C-1,2,3,7,8-PeCDD[4]		M/M+2	0.64	0.63	0.63	0.63	0.63	0.51-0.70
13C-1,2,3,4,7,8-HxCDD		M+2/M+4	1.27	1.27	1.27	1.29	1.27	1.05-1.43
13C-1,2,3,6,7,8-HxCDD		M+2/M+4	1.24	1.26	1.24	1.25	1.24	1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD		M+2/M+4	1.05	1.04	1.05	1.03	1.05	0.88-1.20
13C-OCDD		M+2/M+4	0.90	0.90	0.89	0.89	0.89	0.76-1.02
13C-2,3,7,8-TCDF		M/M+2	0.79	0.79	0.79	0.79	0.79	0.65-0.89
13C-1,2,3,7,8-PeCDF		M+2/M+4	1.58	1.57	1.58	1.56	1.57	1.32-1.78
13C-2,3,4,7,8-PeCDF		M+2/M+4	1.58	1.58	1.58	1.58	1.58	1.32-1.78
13C-1,2,3,4,7,8-HxCDF		M/M+2	0.53	0.52	0.53	0.52	0.53	0.43-0.59
13C-1,2,3,6,7,8-HxCDF		M/M+2	0.53	0.53	0.53	0.53	0.53	0.43-0.59
13C-1,2,3,7,8,9-HxCDF		M/M+2	0.52	0.54	0.53	0.54	0.53	0.43-0.59
13C-2,3,4,6,7,8-HxCDF		M/M+2	0.53	0.53	0.53	0.54	0.53	0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF		M/M+2	0.46	0.46	0.46	0.46	0.46	0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF		M/M+2	0.46	0.46	0.46	0.47	0.46	0.37-0.51

(1) Z = compound not requested; X = results reported separately
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits from Table 9, Method 1613.
(4) Alternate ions used for native and labeled P5CDD and quantitation.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: AXYS ANALYTICAL SERVICES

Instrument ID:	HR GC/MS	**Initial Calibration Date:**	03-Feb-2004	
RT Window Data Filename:	DX42_048 S:6	**Analysis Date:**	03-Feb-2004	**Time:** 23:41:32
DB5 IS Data Filename:	DX42_048 S:6	**Analysis Date:**	03-Feb-2004	**Time:** 23:41:32
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB-5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:58	1,3,6,8-TCDF (F)	21:27
1,2,8,9-TCDD (L)	28:19	1,2,8,9-TCDF (L)	28:10
1,2,4,7,9-PeCDD (F)	32:01	1,3,4,6,8-PeCDF (F)	28:52
1,2,3,8,9-PeCDD (L)	37:01	1,2,3,8,9-PeCDF (L)	37:06
1,2,4,6,7,9-HxCDD (F)	39:59	1,2,3,4,6,8-HxCDF (F)	38:57
1,2,3,4,6,7-HxCDD (L)	42:38	1,2,3,4,8,9-HxCDF (L)	42:59
1,2,3,4,6,7,9-HpCDD (F)	45:43	1,2,3,4,6,7,8-HpCDF(F)	45:16
1,2,3,4,6,7,8-HpCDD (L)	46:39	1,2,3,4,7,8,9-HpCDF (L)	47:04

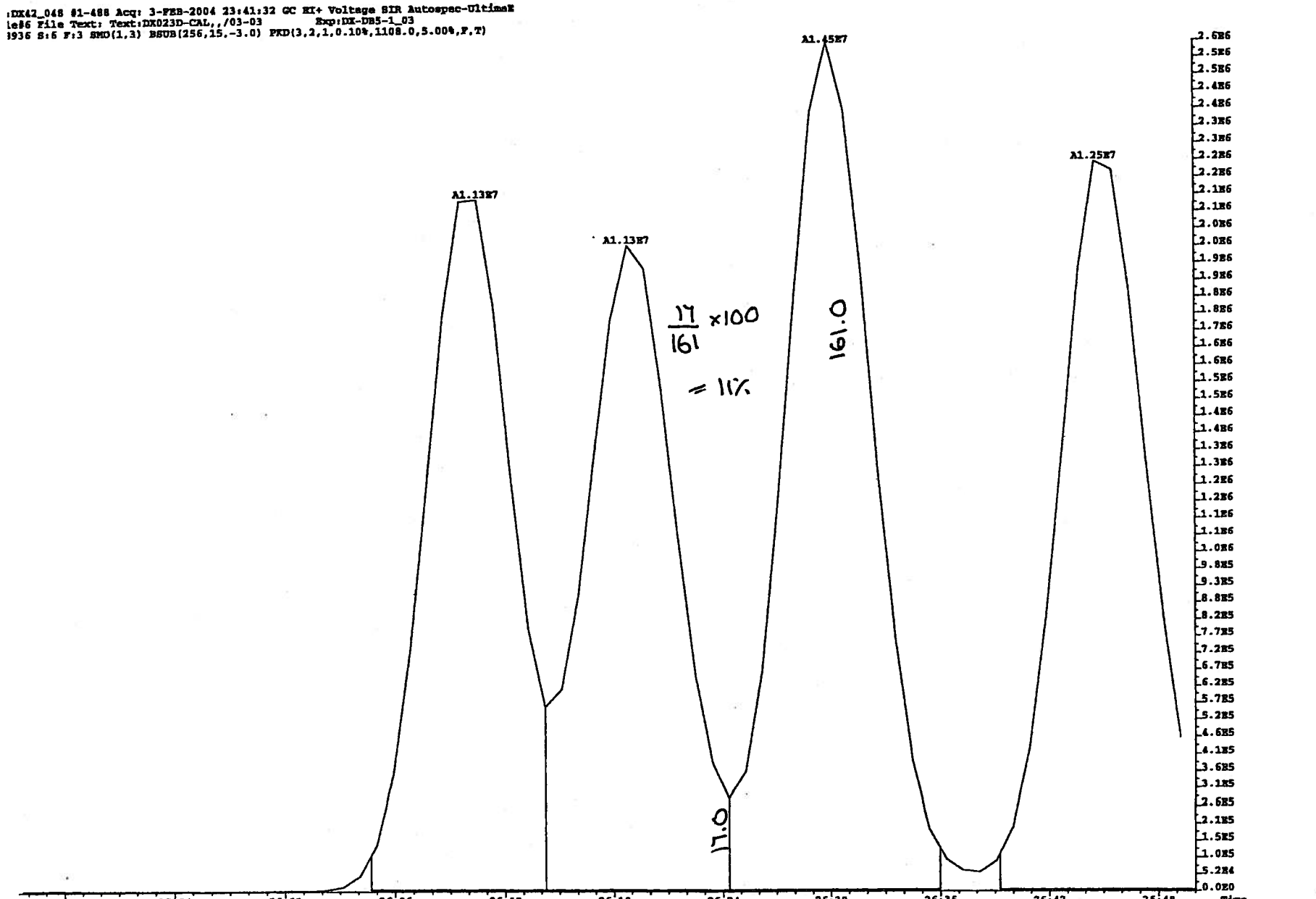
(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

ISOMER SPECIFICITY (IS) TEST STANDARDS RESULTS

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	0	1,2,3,8-TCDD 2,3,7,8-TCDD	11
1,2,7,8-TCDD 1,4,7,8-TCDD	0	2,3,4,7-TCDF 2,3,7,8-TCDF	N/A
1,4,7,8-TCDD 1,2,3,7-TCDD	0	2,3,7,8-TCDF 1,2,3,9-TCDF	N/A
1,2,3,7-TCDD 1,2,3,8-TCDD	DB-5 column; co-elute as per Figure 6 in Method		

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy



0174

checked by
pm 13-Feb-04

Coded by dg
4-FEB-04

Experiment : DX-DB225-1_02
GC Program : DX-DB225-1_01
Column type : DB225
Serial # : US3276917H
kPa : 145
Vol injected: 2.0
MT Voltage : 396

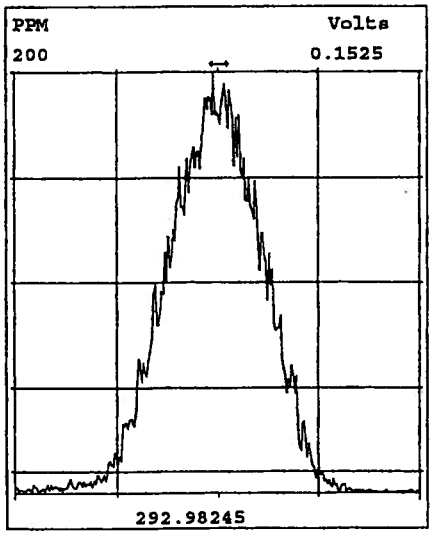
Temps -source: 240 Tune :
-s resv: 160 List : GW
-re_ent: 220 Check :
-cap_1 : 220 LIMS :
-cap_2 : 220

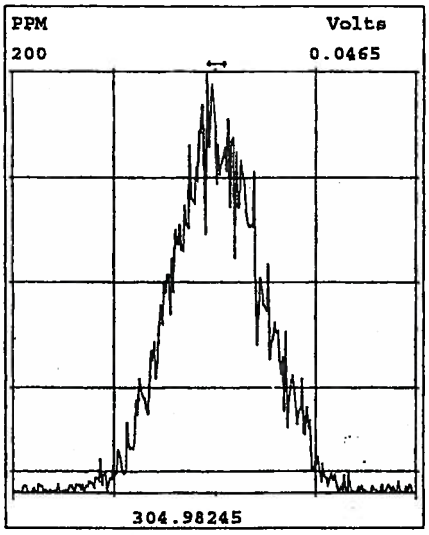
Date -list : 06-FEB-2004
-liner : 24-JAN-2004
-septum: 24-JAN-2004
-guard : 30CM 29-JAN-04
-column: 10cm 17-DEC-03
-t line: 29-OCT-03
-bake :
-source:

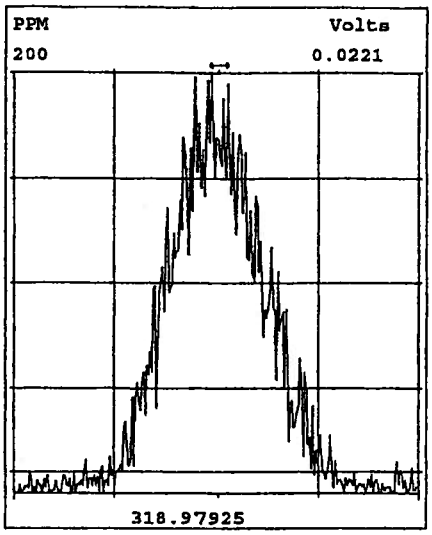
	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
	DB43_042	1	1	DX001A-RSN,,	1,,2.0uL WIN/RES	6-FEB-04 19:07:08
	DB43_042	2	2	DX023D-CAL,,/03-04	1,,2.0uL CS-3	6-FEB-04 19:42:47
	DB43_042	3	3	TOLUENE,,	1,,2.0uL	6-FEB-04 20:18:27
	DB43_042	4	4	TOLUENE,,	1,,2.0uL	6-FEB-04 20:54:06
	DB43_042	5	5	WG11004-101,,	1,WG11004,2.0/20uL	6-FEB-04 21:29:46
	DB43_042	6	6	L6466-1,,	1,WG11004,2.0/20uL	6-FEB-04 22:05:25
	DB43_042	7	7	L6466-2,,	1,WG11004,2.0/20uL	6-FEB-04 22:41:05
	DB43_042	8	8	L6466-3,,	1,WG11004,2.0/20uL	6-FEB-04 23:16:43
	DB43_042	9	9	L6466-4,,	1,WG11004,2.0/20uL	6-FEB-04 23:52:23
0	DB43_042	10	10	L6466-5,,	1,WG11004,2.0/20uL	7-FEB-04 00:28:01
1	DB43_042	11	11	L6466-6,,	1,WG11004,2.0/20uL	7-FEB-04 01:03:40
2	DB43_042	12	12	L6466-7,,	1,WG11004,2.0/20uL	7-FEB-04 01:39:18
3	DB43_042	13	13	L6466-8,,	1,WG11004,2.0/20uL	7-FEB-04 02:14:57
4	DB43_042	14	14	L6466-9,,	1,WG11004,2.0/20uL	7-FEB-04 02:50:35
5	DB43_042	15	15	L6466-10,,	1,WG11004,2.0/20uL	7-FEB-04 03:26:13
6	DB43_042	16	16	L6466-11,,	1,WG11004,2.0/20uL	7-FEB-04 04:01:51
7	DB43_042	17	17	WG11004-102,,	1,WG11004,2.0/20uL	7-FEB-04 04:37:29
8	DB43_042	18	18	DX023D-CAL,,/03-04	1,,2.0uL CS-3	7-FEB-04 05:13:06

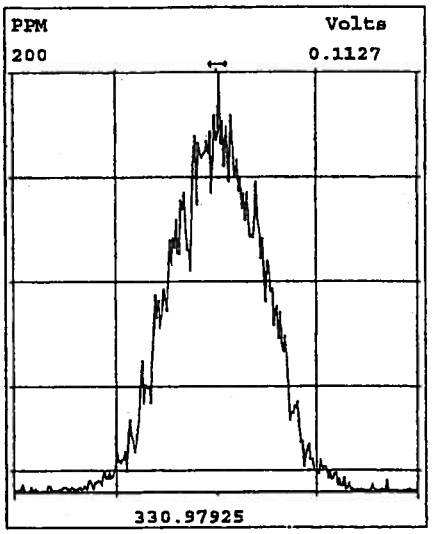
Approved By AL 6Feb04

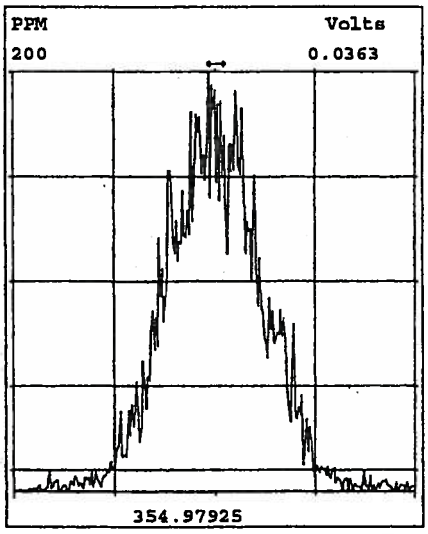
Peak Locate Examination: 6-FEB-2004:19:05 File:DB43_041ACAL2/_042CAL1
Experiment:DX-DB225-1_02 Function:1 Reference:PFK

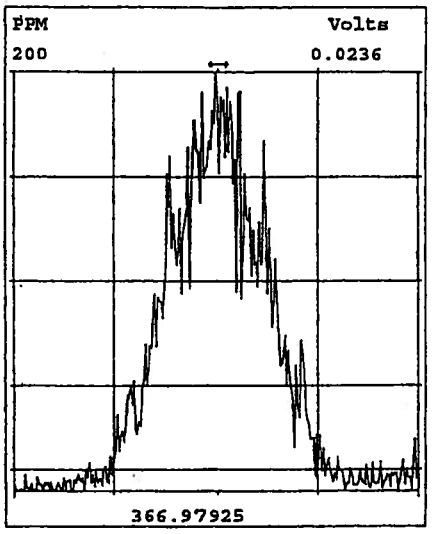


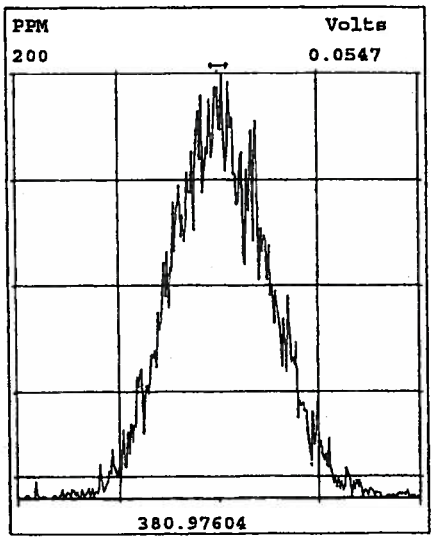






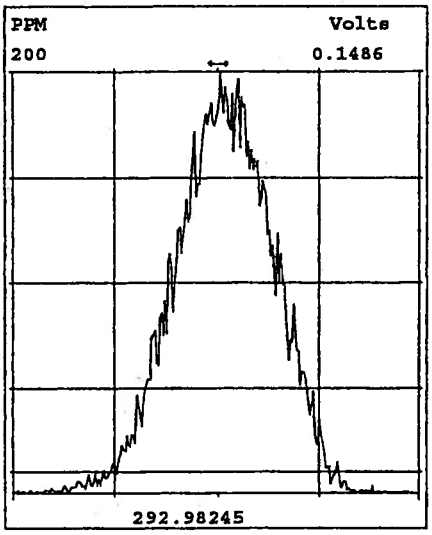


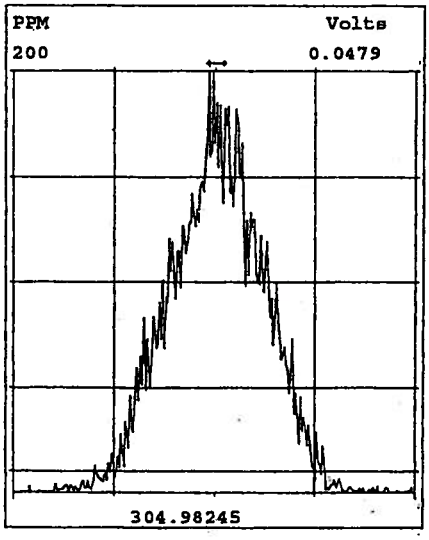


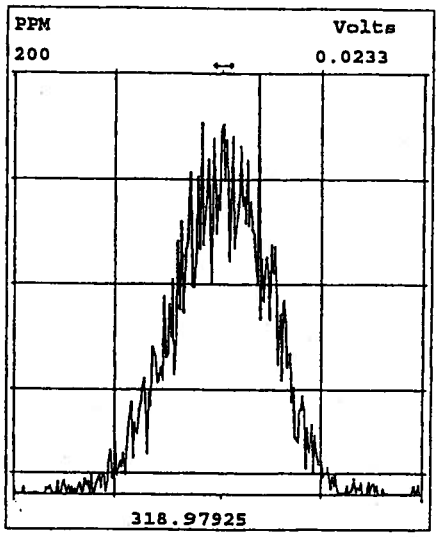


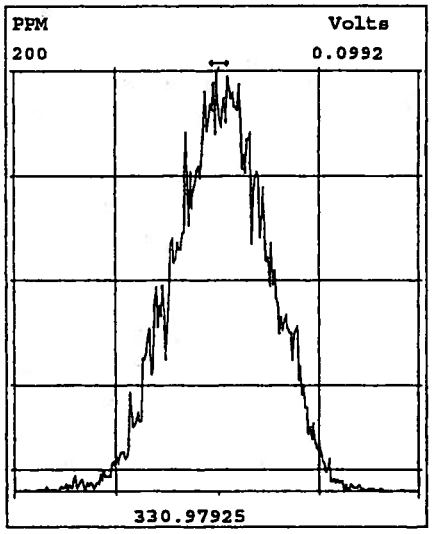
Approved GW 07 Feb 04

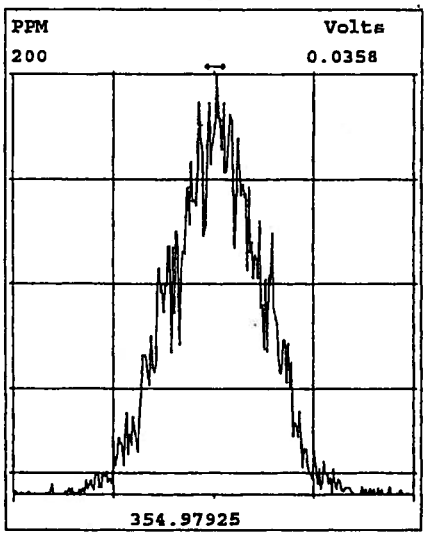
Peak Locate Examination: 7-FEB-2004:06:56 File:DB43_043CAL0/042CAL2
Experiment:DX-DB225-1_02 Function:1 Reference:PFK

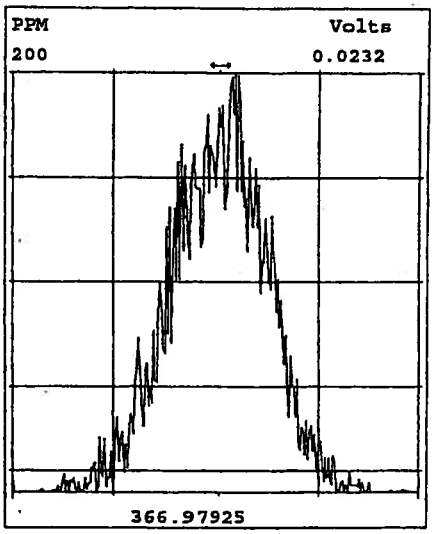


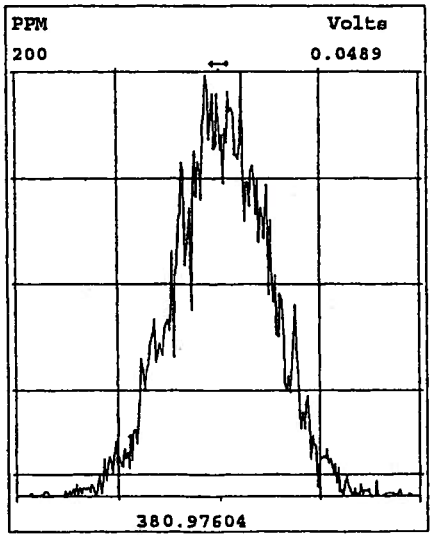












DB43_042-A

	c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
1	c	STEM-DEFAULT	DB43_011B	6	1	1613b-db004	1.0000	1.0000	1.000000	y	DX023B-CAL,,	1,,2.0uL CS-1	y
2	c	STEM-DEFAULT	DB43_011B	5	1	1613b-db004	4.0000	1.0000	1.000000	y	DX023C-CAL,,	1,,2.0uL CS-2	y
3	c	STEM-DEFAULT	DB43_011B	4	1	1613b-db004	20.0000	1.0000	1.000000	y	DX023D-CAL,,»	1,,2.0uL CS-3	y
4	c	STEM-DEFAULT	DB43_011B	3	1	1613b-db004	80.0000	1.0000	1.000000	y	DX023E-CAL,,	1,,2.0uL CS-4	y
5	c	STEM-DEFAULT	DB43_011B	2	1	1613b-db004	400.0000	1.0000	1.000000	y	DX023F-CAL,,	1,,2.0uL CS-5	y
6	q	STEM-DEFAULT	DB43_042	2	1	1613b-db004	20.0000	1.0000	1.000000	y	DX023D-CAL,,»	1,,2.0uL CS-3	y
7	q	STEM-DEFAULT	DB43_042	18	1	1613b-db004	20.0000	1.0000	1.000000	y	DX023D-CAL,,»	1,,2.0uL CS-3	y
8	q	STEM-DEFAULT	DB43_042	3	1	1613b-db004	1.0000	1.0000	1.000000	y	TOLUENE,,	1,,2.0uL	y
9	q	STEM-DEFAULT	DB43_042	4	1	1613b-db004	1.0000	1.0000	1.000000	y	TOLUENE,,	1,,2.0uL	y
10	q	STEM-DEFAULT	DB43_042	5	1	1613b-db004	1.0000	20.0000	10.000000	y	WG11004-101,,	1,WG11004,2.0/20»	y
11	q	STEM-DEFAULT	DB43_042	6	1	1613b-db004	1.0000	20.0000	9.760000	y	L6466-1,,	1,WG11004,2.0/20»	y
12	q	STEM-DEFAULT	DB43_042	7	1	1613b-db004	1.0000	20.0000	9.790000	y	L6466-2,,	1,WG11004,2.0/20»	y
13	q	STEM-DEFAULT	DB43_042	8	1	1613b-db004	1.0000	20.0000	9.810000	y	L6466-3,,	1,WG11004,2.0/20»	y
14	q	STEM-DEFAULT	DB43_042	9	1	1613b-db004	1.0000	20.0000	6.210000	y	L6466-4,,	1,WG11004,2.0/20»	y
15	q	STEM-DEFAULT	DB43_042	10	1	1613b-db004	1.0000	20.0000	9.170000	y	L6466-5,,	1,WG11004,2.0/20»	y
16	q	STEM-DEFAULT	DB43_042	11	1	1613b-db004	1.0000	20.0000	10.050000	y	L6466-6,,	1,WG11004,2.0/20»	y
17	q	STEM-DEFAULT	DB43_042	12	1	1613b-db004	1.0000	20.0000	9.830000	y	L6466-7,,	1,WG11004,2.0/20»	y
18	q	STEM-DEFAULT	DB43_042	13	1	1613b-db004	1.0000	20.0000	9.980000	y	L6466-8,,	1,WG11004,2.0/20»	y
19	q	STEM-DEFAULT	DB43_042	14	1	1613b-db004	1.0000	20.0000	10.050000	y	L6466-9,,	1,WG11004,2.0/20»	y
20	q	STEM-DEFAULT	DB43_042	15	1	1613b-db004	1.0000	20.0000	9.760000	y	L6466-10,,	1,WG11004,2.0/20»	y
21	q	STEM-DEFAULT	DB43_042	16	1	1613b-db004	1.0000	20.0000	10.140000	y	L6466-11,,	1,WG11004,2.0/20»	y
22	q	STEM-DEFAULT	DB43_042	17	1	1613b-db004	1.0000	20.0000	10.890000	y	WG11004-103,,	1,WG11004,2.0/20»	y
23	q	STEM-DEFAULT	DB43_042	1	1	1613b-db004	1.0000	20.0000	1.000000	y	DX001A-RSN,,	1,,2.0uL WIN/RES	y

AXYS METHOD DX-S-1613/Ver.3
1613DB225-DB004-D1

Form 4 & 6
PCDD/PCDF CALIBRATION VERIFICATION & RELATIVE RETENTION TIMES

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	14-Jan-2004	**GC Column ID:**	DB-225
Instrument ID:	HR GC/MS	**Analysis Date:**	06-Feb-2004
VER Data Filename:	DB43_042 S:2	**Time:**	19:42:47

COMPOUND	LAB FLAG[1]	M/Z'S FORMING RATIO[2]	ION ABUND. RATIO	QC LIMITS[3]	CONC. FOUND (ng/mL)	CONC RANGE[4] (ng/mL)
2,3,7,8-TCDF		M/M+2	0.74	0.65-0.89	10.3	8.4 - 12.0

Compounds using 13C-1234-TCDD as Internal Standard

COMPOUND	LAB FLAG[1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS[5]
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.000	0.999 - 1.003

(1) Z = compound not requested; X = results reported separately
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

11004cDD1_1.xls, Form 4 & 6 Approved by: [signature] QA/QC Chemist 18-02-2004 dd-mm-yyyy

Form 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: AXYS ANALYTICAL SERVICES

Instrument ID:	HR GC/MS	**Initial Calibration Date:**	14-Jan-2004		
RT Window Data Filename:		**Analysis Date:**		**Time:**	
DB5 IS Data Filename:		**Analysis Date:**		**Time:**	
DB-225 IS Data Filename:	DB43_042 S:1	**Analysis Date:**	06-Feb-2004	**Time:**	19:07:08

DB-5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	NA	1,3,6,8-TCDF (F)	NA
1,2,8,9-TCDD (L)	NA	1,2,8,9-TCDF (L)	NA
1,2,4,7,9-PeCDD (F)	NA	1,3,4,6,8-PeCDF (F)	NA
1,2,3,8,9-PeCDD (L)	NA	1,2,3,8,9-PeCDF (L)	NA
1,2,4,6,7,9-HxCDD (F)	NA	1,2,3,4,6,8-HxCDF (F)	NA
1,2,3,4,6,7-HxCDD (L)	NA	1,2,3,4,8,9-HxCDF (L)	NA
1,2,3,4,6,7,9-HpCDD (F)	NA	1,2,3,4,6,7,8-HpCDF(F)	NA
1,2,3,4,6,7,8-HpCDD (L)	NA	1,2,3,4,7,8,9-HpCDF (L)	NA

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

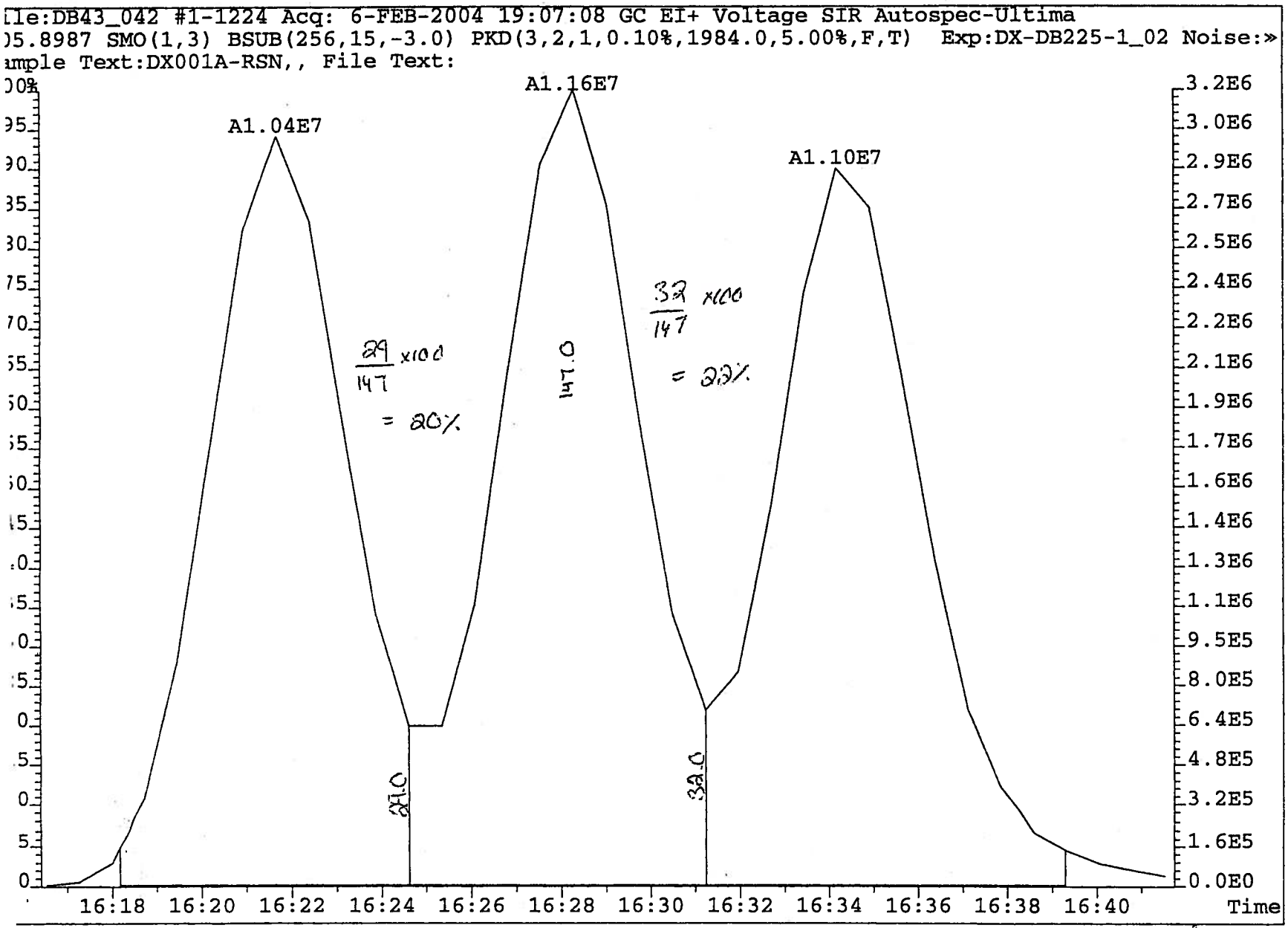
ISOMER SPECIFICITY (IS) TEST STANDARDS RESULTS

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	0	1,2,3,8-TCDD 2,3,7,8-TCDD	NA
1,2,7,8-TCDD 1,4,7,8-TCDD	0	2,3,4,7-TCDF 2,3,7,8-TCDF	20
1,4,7,8-TCDD 1,2,3,7-TCDD	0	2,3,7,8-TCDF 1,2,3,9-TCDF	22
1,2,3,7-TCDD 1,2,3,8-TCDD	0		

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD



0181

checked by
AR 18 Feb 04

Coded by AA
11-FEB-04

Instrument Acquisition Runlog — Axys Analytical

Experiment : DX-DB5-1_03
GC Program : DX-DB5-1_01
Column type : DB-5
Serial # : US3274825H
kPa : 206
Vol injected: 1.0uL
PMT Voltage : 389

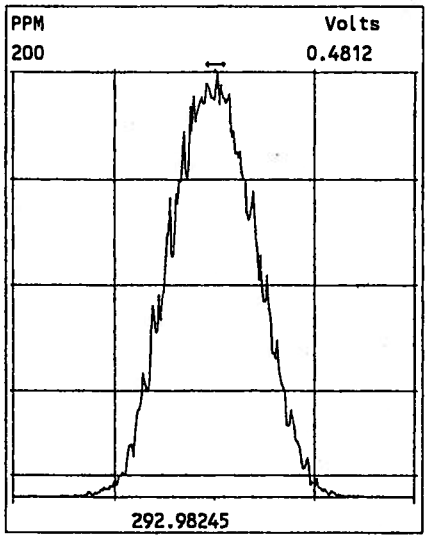
Temps -source: 300 Tune : XX
-s resv: 160 List : AB
-re_ent: 305 Check :
-cap_1 : 320 LIMS :
-cap_2 : 305

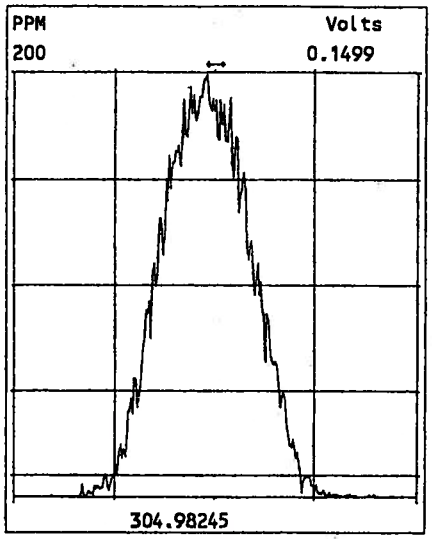
Date -list : 08-FEB-2004
-liner : 06-JAN-2004
-septum: 06-JAN-2004
-guard : 30cm 06-FEB-04
-column: New 03-FEB-04
-t line: New 03-FEB-04
-bake :
-source:

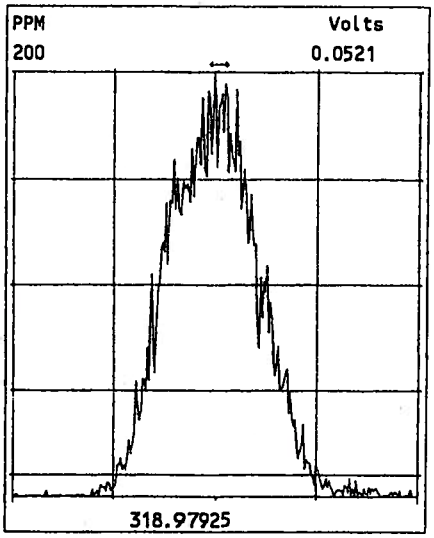
#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DX42_056	1	1	DX0230-CAL,,	1,,1.0uL Cal	8-FEB-04 07:43:57
2	DX42_056	2	2	WG11004-102,,	1,WG11004,1.0/20uL	8-FEB-04 08:38:45
3	DX42_056	3	3	DX0208-SUR,,	1,,1.0uL	8-FEB-04 09:34:59
4	DX42_056	4	4	DX0208-SUR,,	1,,1.0uL	8-FEB-04 10:29:46
5	DX42_056	5	5	WG11004-101,,	1,WG11004,1.0/20uL	8-FEB-04 11:24:32
6	DX42_056	6	6	L6466-1,,	1,WG11004,1.0/20uL	8-FEB-04 12:19:18
7	DX42_056	7	7	TOLUENE,,	1,,1.0uL	8-FEB-04 13:14:31
8	DX42_056	8	8	L6466-2,,	1,WG11004,1.0/20uL	8-FEB-04 14:09:17
9	DX42_056	9	9	L6466-3,,	1,WG11004,1.0/20uL	8-FEB-04 15:04:10
10	DX42_056	10	10	L6466-4,,	1,WG11004,1.0/20uL	8-FEB-04 15:58:56
11	DX42_056	11	11	L6466-5,,	1,WG11004,1.0/20uL	8-FEB-04 16:53:42
12	DX42_056	12	12	L6466-6,,	1,WG11004,1.0/20uL	8-FEB-04 17:48:28
13	DX42_056	13	13	DX0230-CAL,,	1,,1.0uL Cal	8-FEB-04 18:43:14

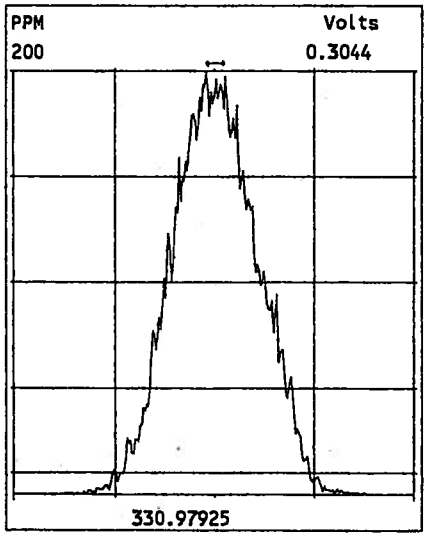
Approved by AA
08 Feb 04

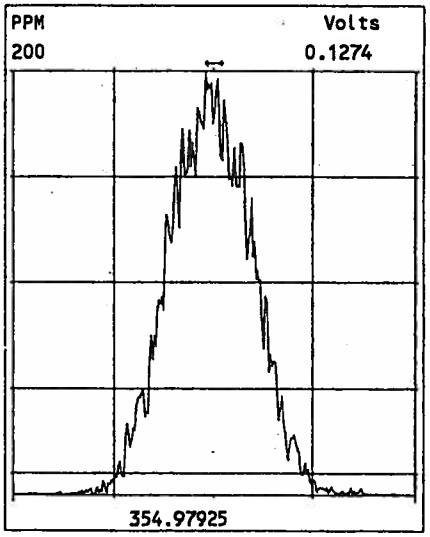
Peak Locate Examination: 8-FEB-2004:07:41 File:DX42_056CAL(055CAL2)
Experiment:DX-DB5-1_03 Function:3 Reference:PFK

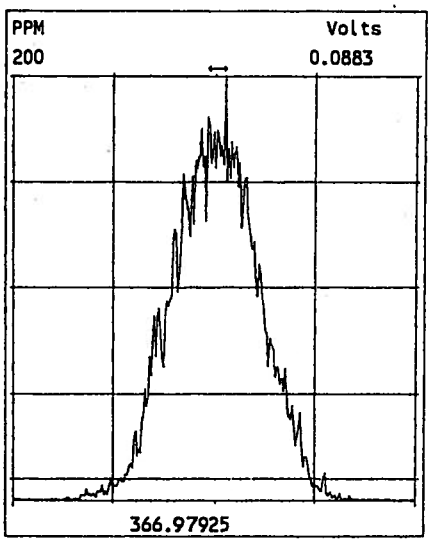


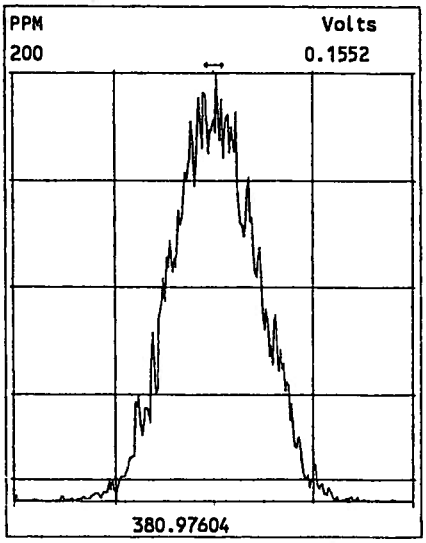




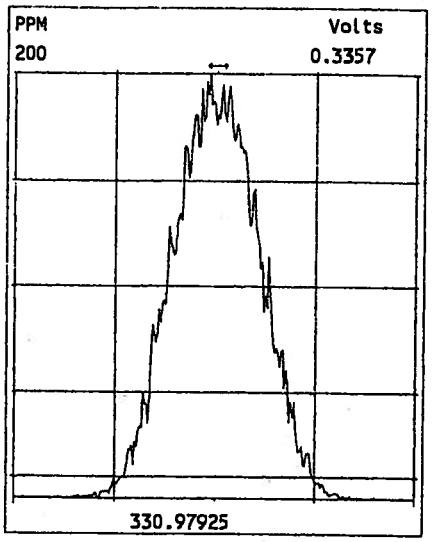


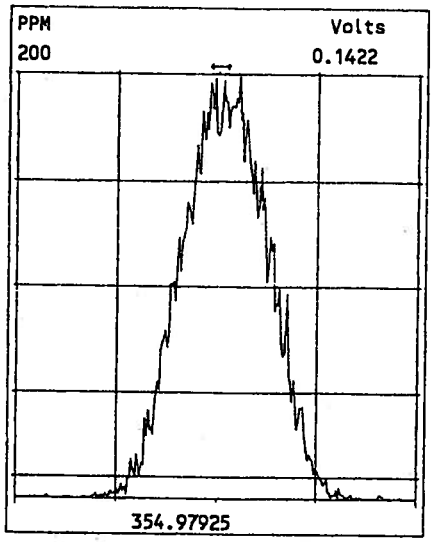


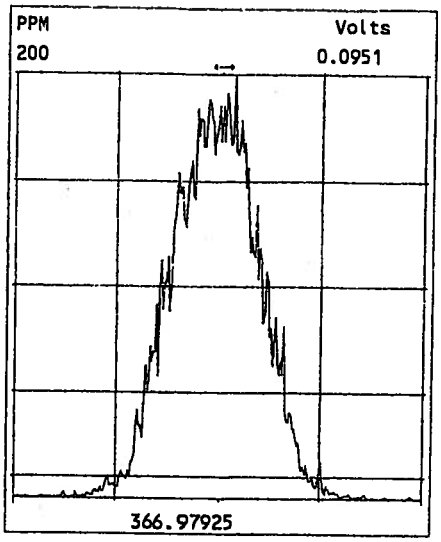


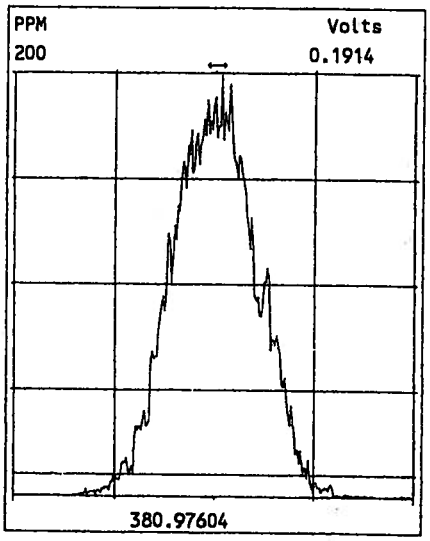


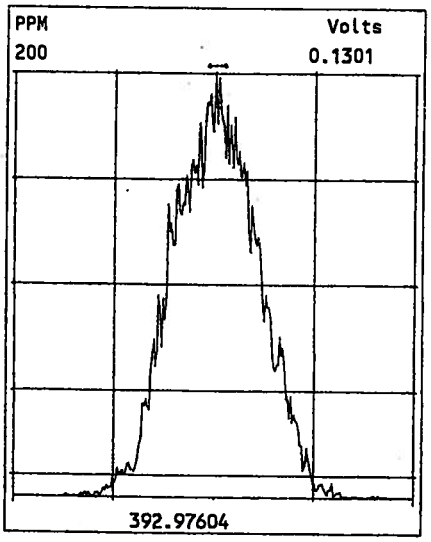
Peak Locate Examination: 8-FEB-2004:07:41 File:DX42_056CAL(055CAL2)
Experiment:DX-DB5-1_03 Function:4 Reference:PFK

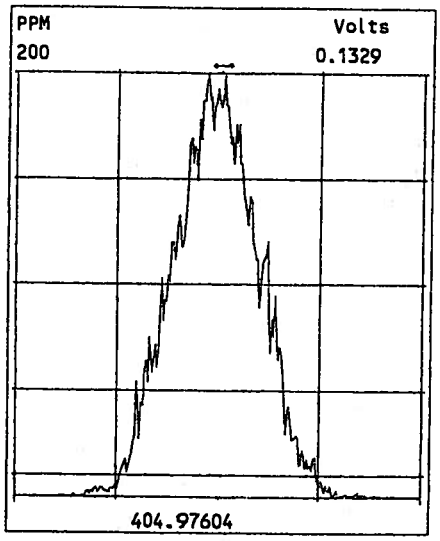


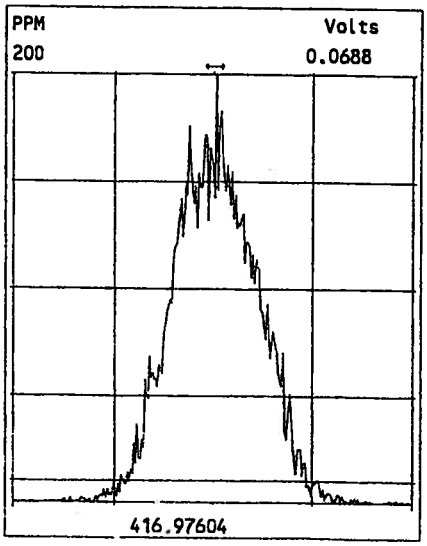




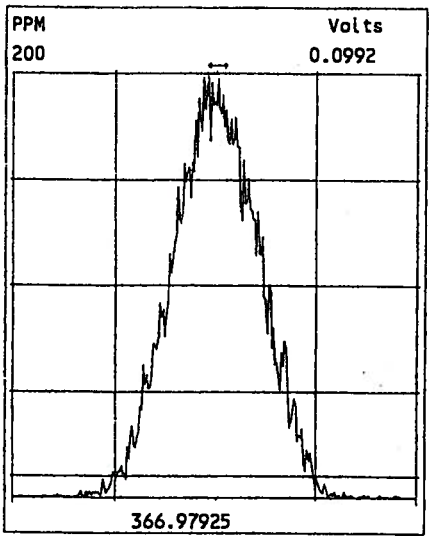


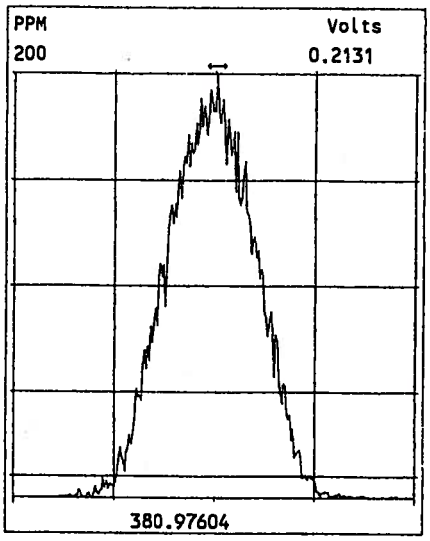


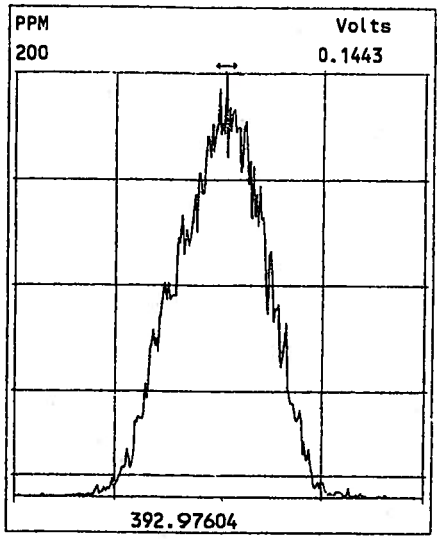


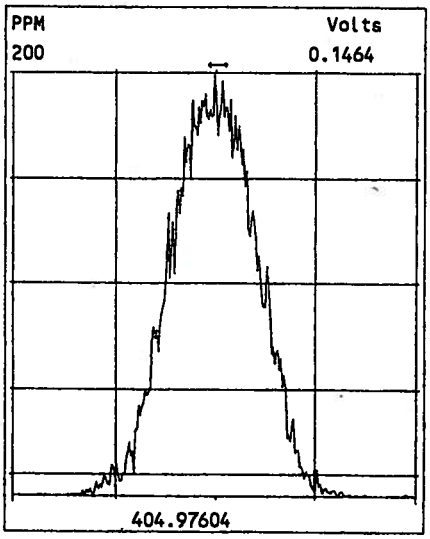


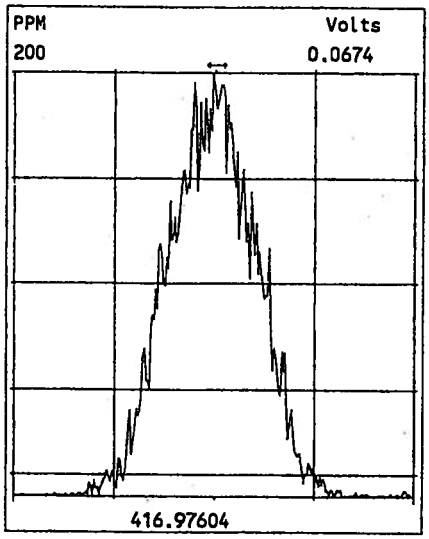
Peak Locate Examination: 8-FEB-2004:07:42 File:DX42_056CAL(055CAL2)
Experiment:DX-DB5-1_03 Function:5 Reference:PFK

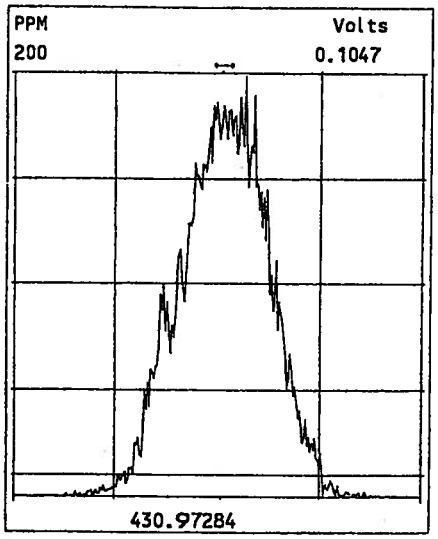


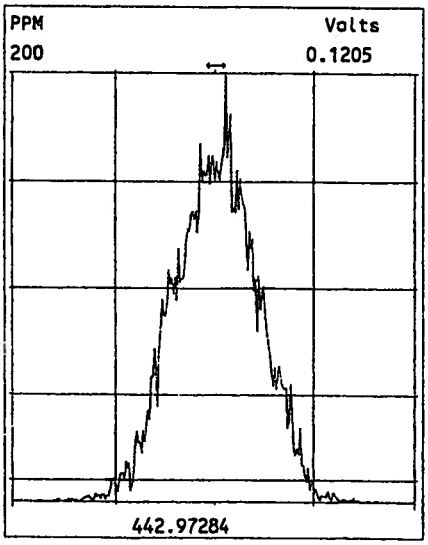


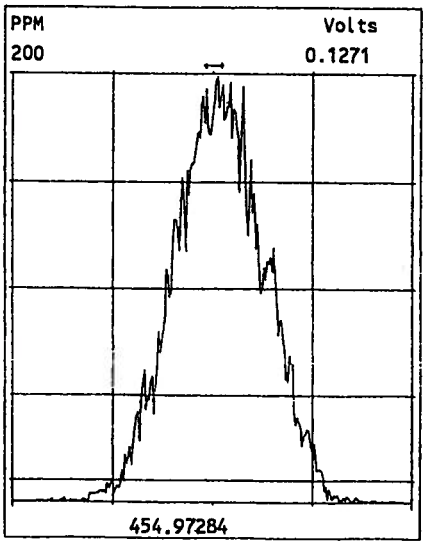




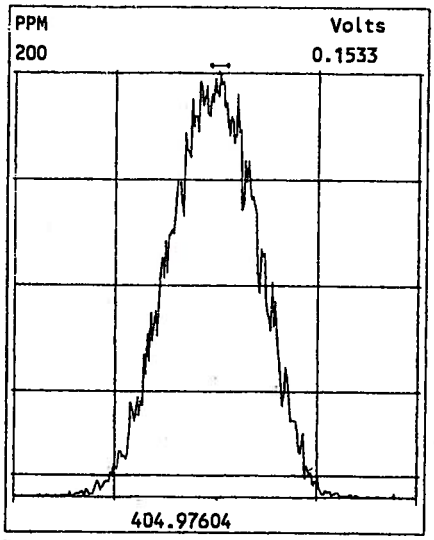


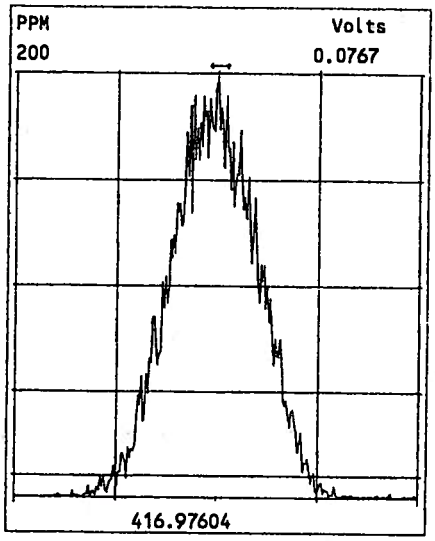


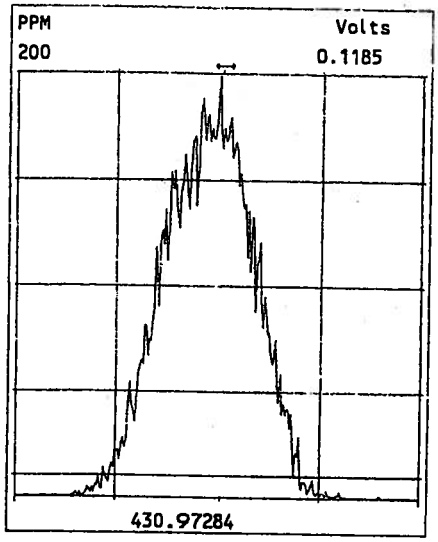


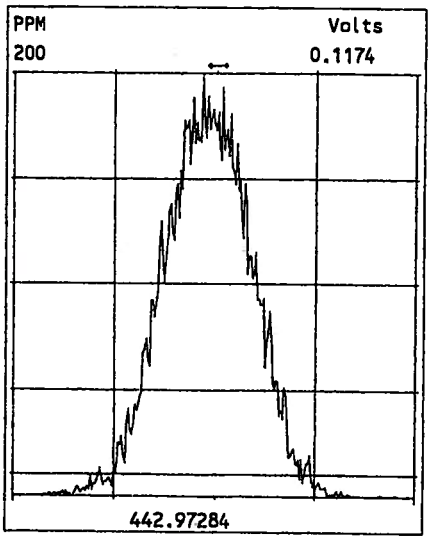


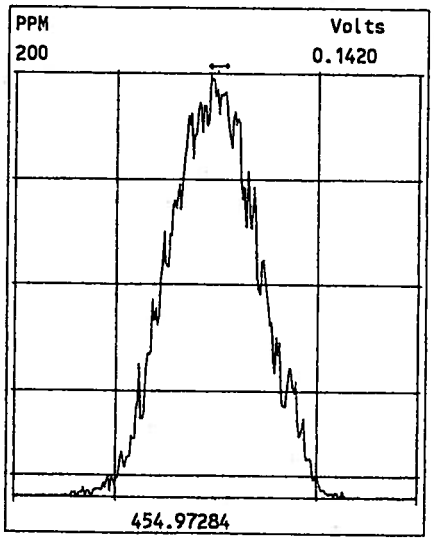
Peak Locate Examination: 8-FEB-2004:07:42 File:DX42_056CAL(055CAL2)
Experiment:DX-DB5-1_03 Function:6 Reference:PFK

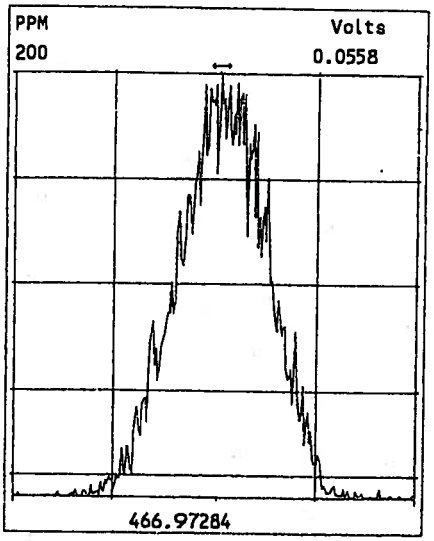


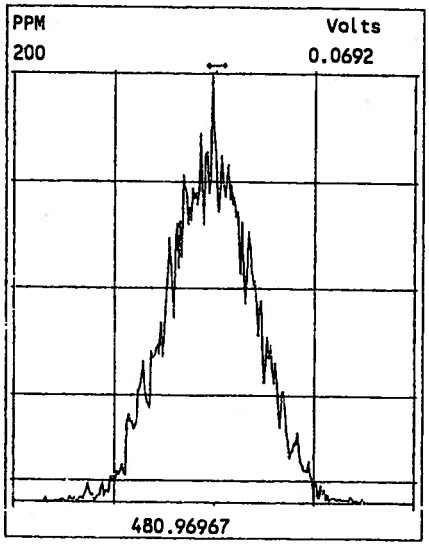


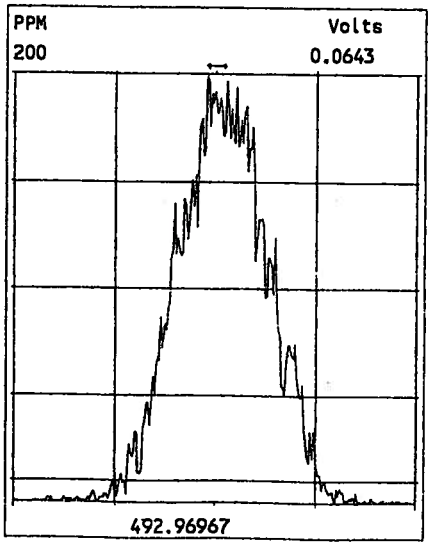




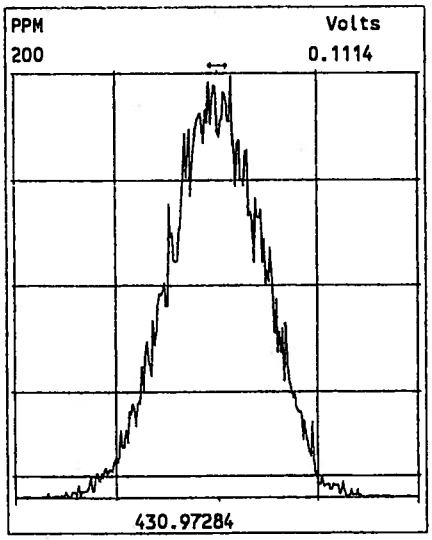


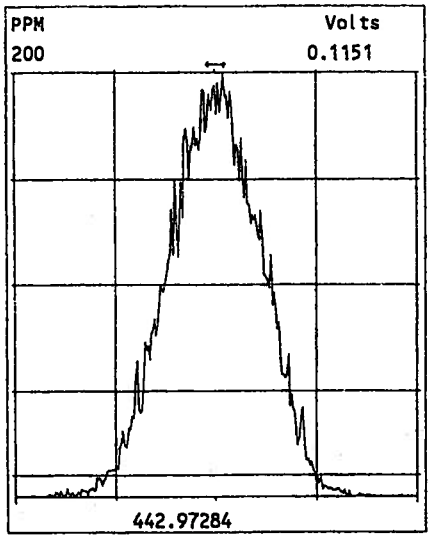


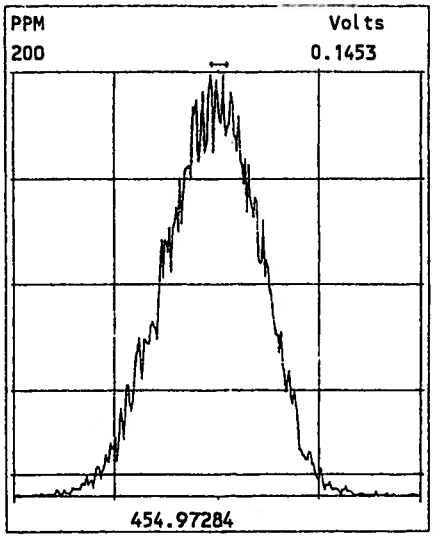


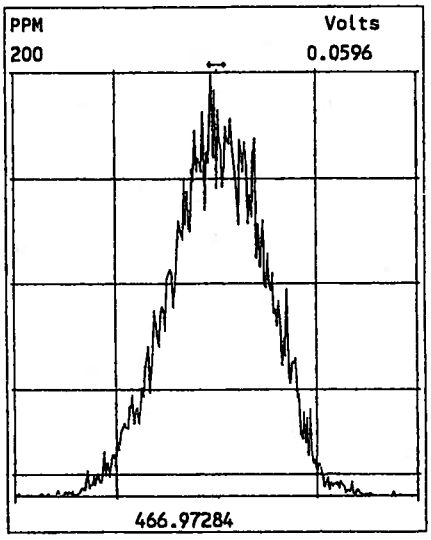


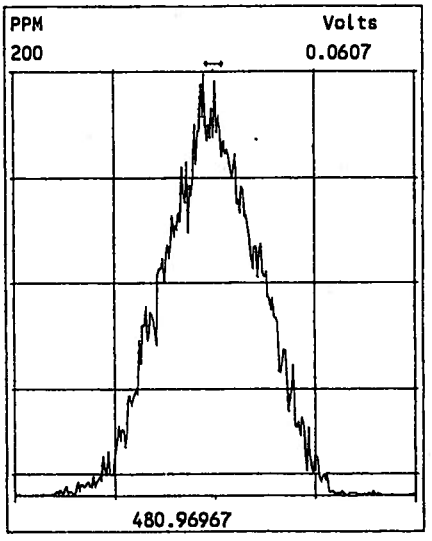
Peak Locate Examination: 8-FEB-2004:07:43 File:DX42_056CAL(055CAL2)
Experiment:DX-085-1_03 Function:7 Reference:PFK

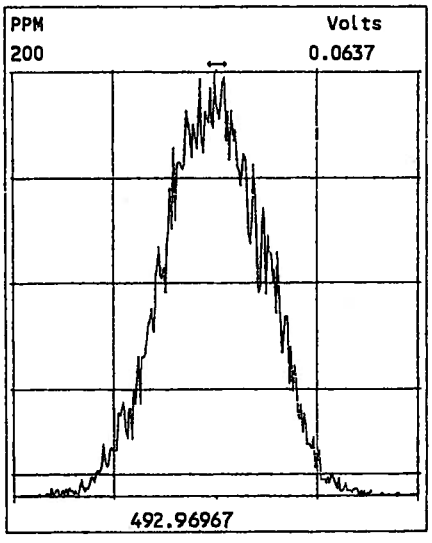


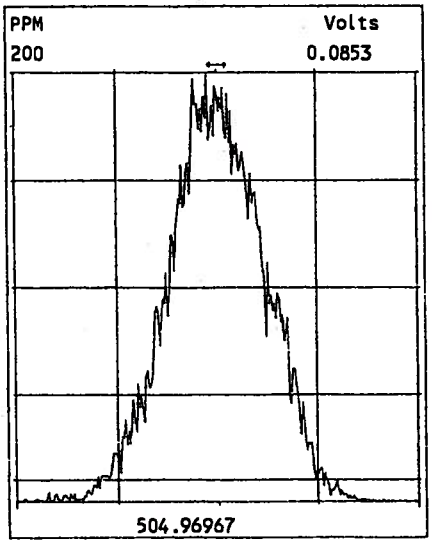


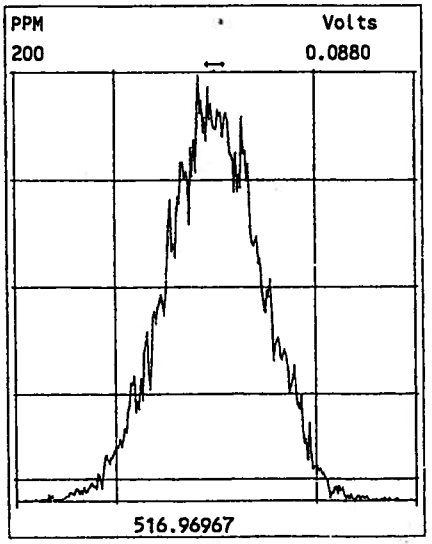






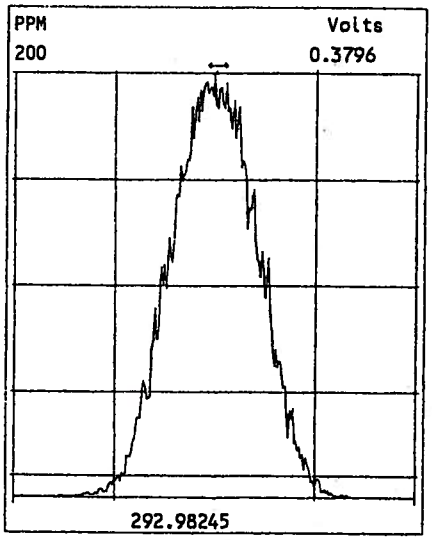


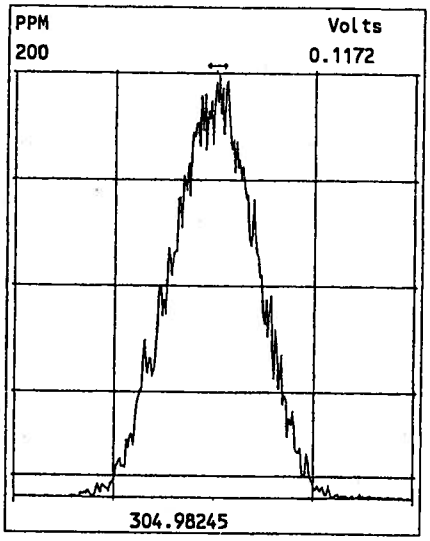


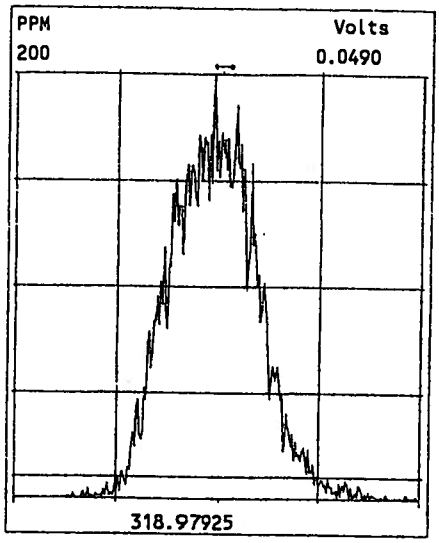


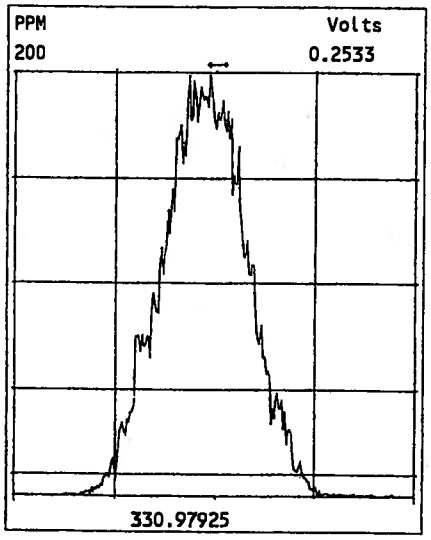
Approved QF
Feb 8/04

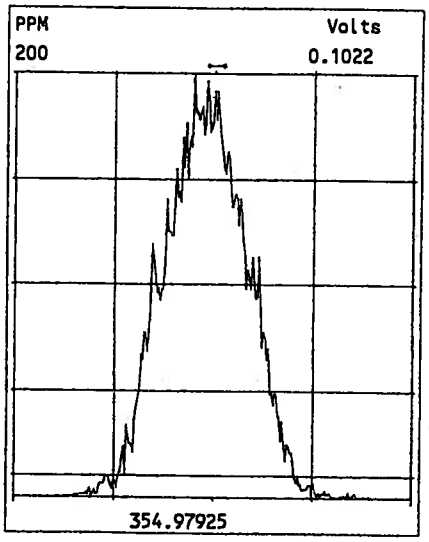
Peak Locate Examination: 8-FEB-2004:19:39 File:DX42_057CAL(056CAL2)
Experiment:DX-DB5-1_03 Function:3 Reference:PFK

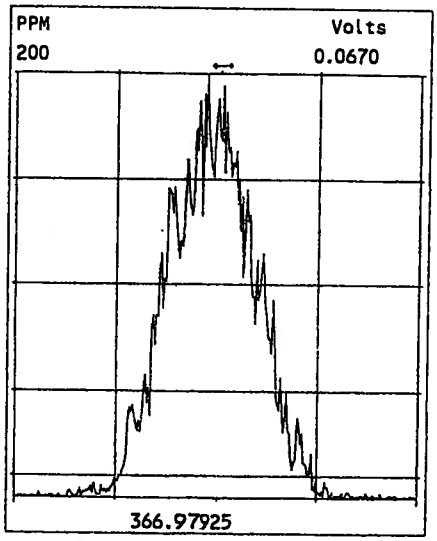


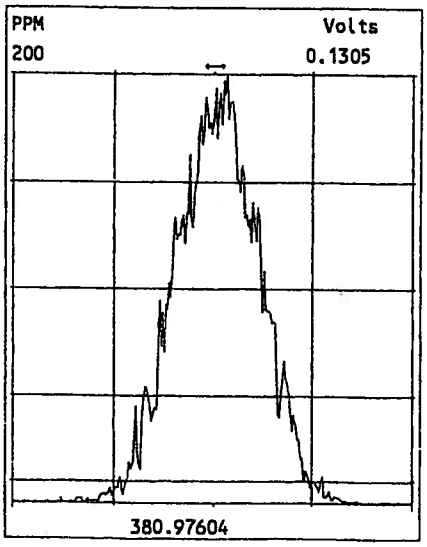




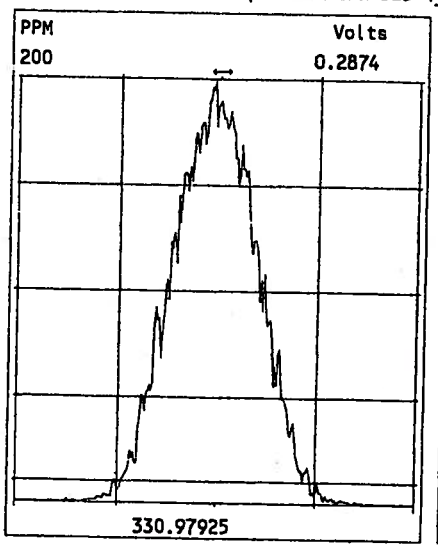


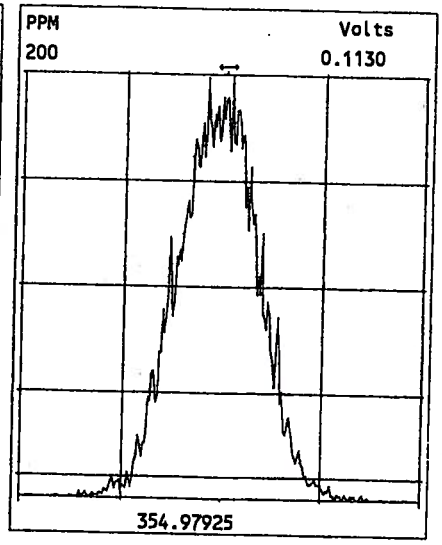


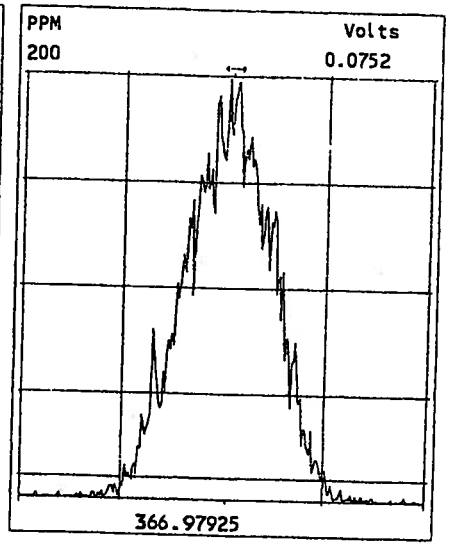


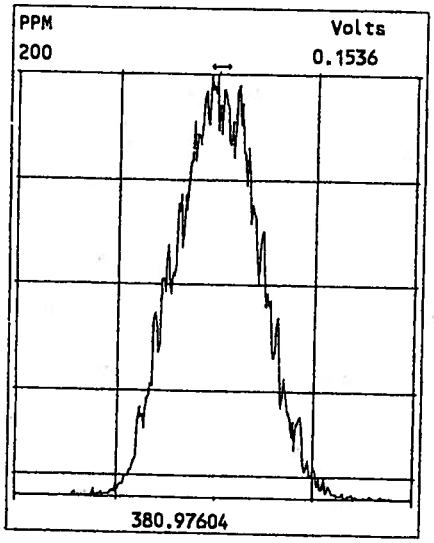


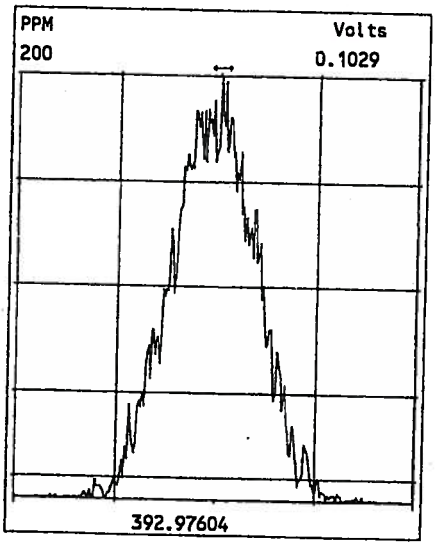
Peak Locate Examination: 8-FEB-2004:19:39 File:DX42_057CAL(056CAL2)
Experiment:DX-DB5-1_03 Function:4 Reference:PFK

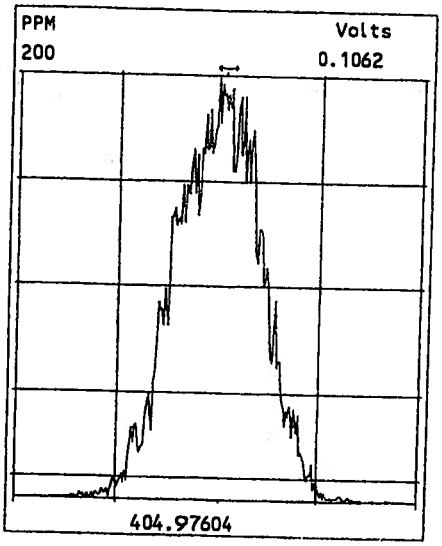


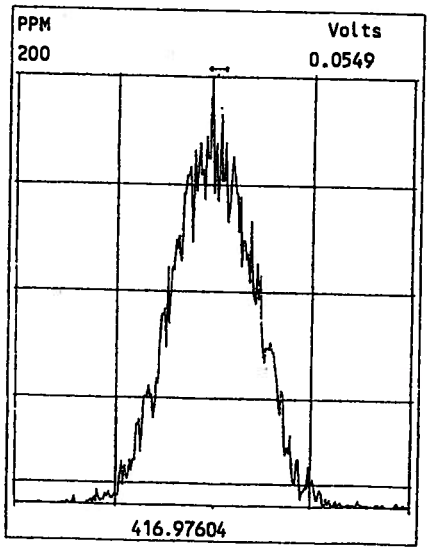




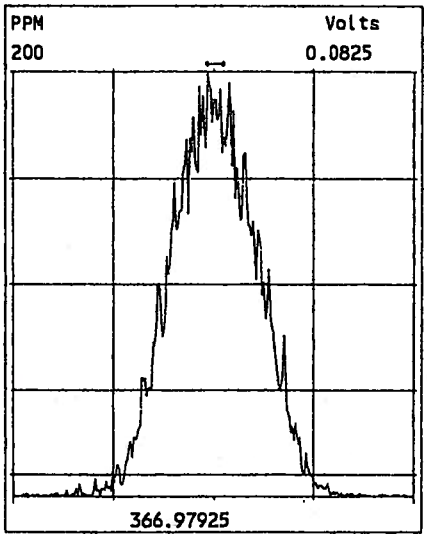


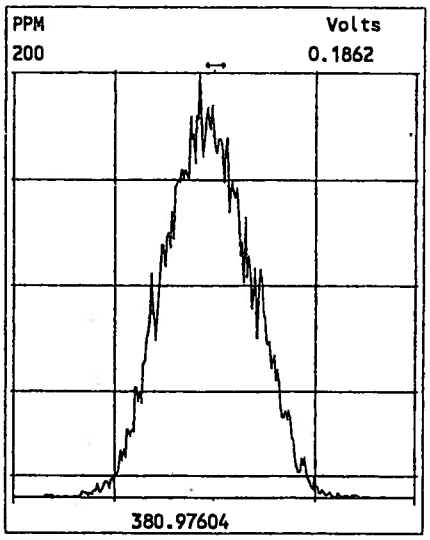


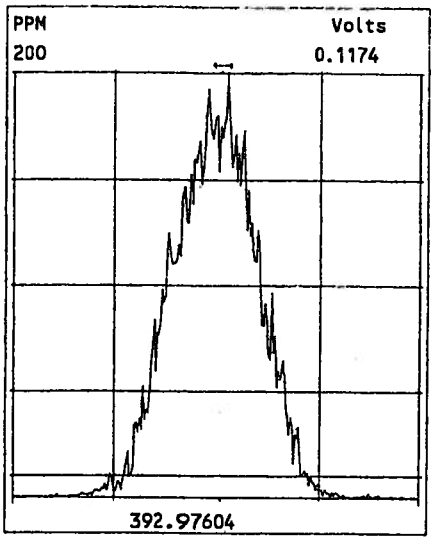


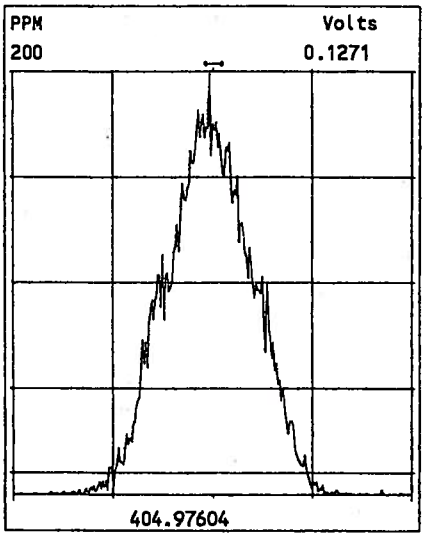


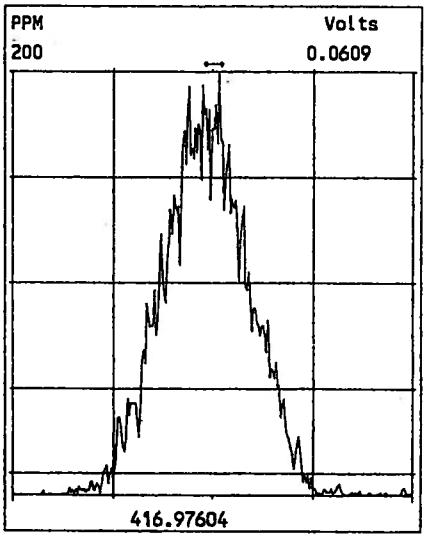
Peak Locate Examination: 8-FEB-2004:19:40 File:DX42_057CAL(056CAL2)
Experiment:DX-DB5-1_03 Function:5 Reference:PFK

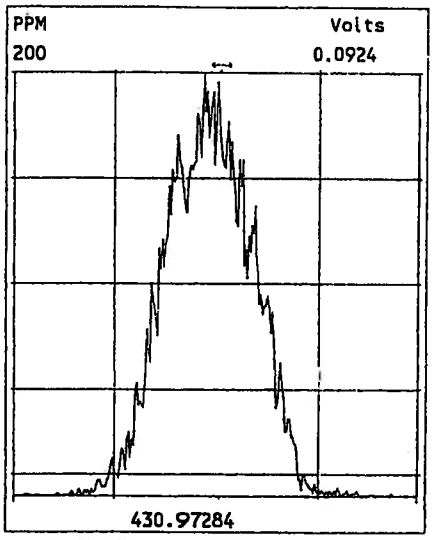


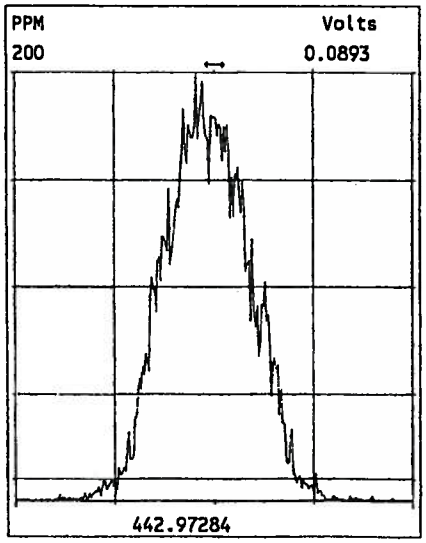


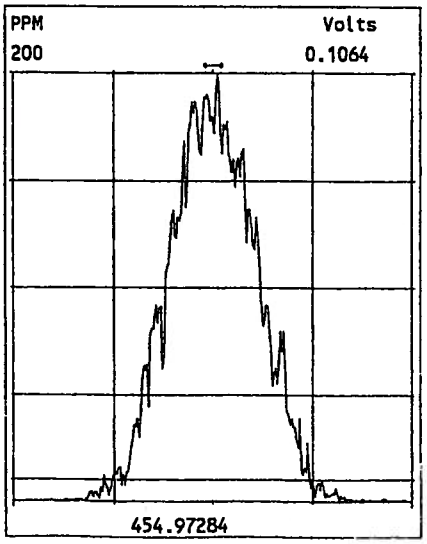




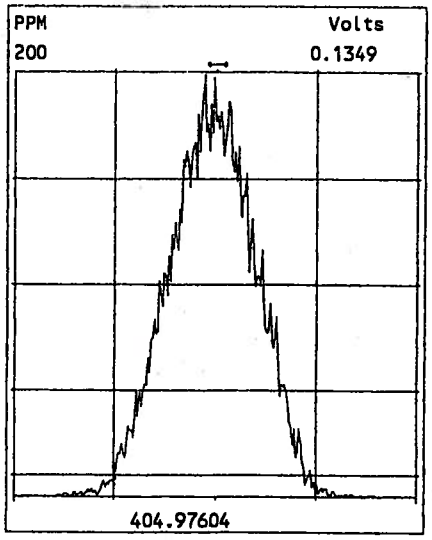


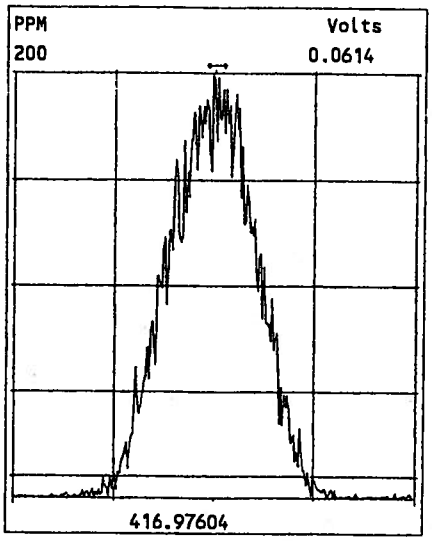


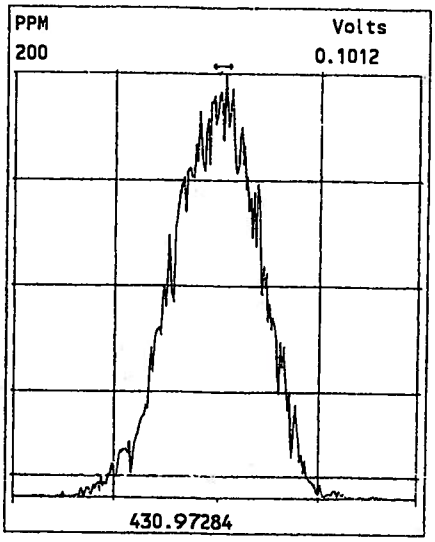


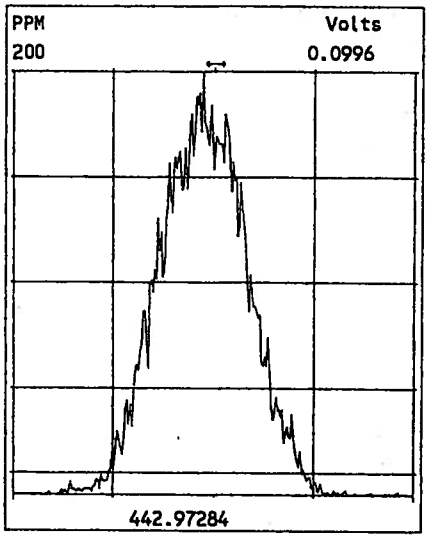


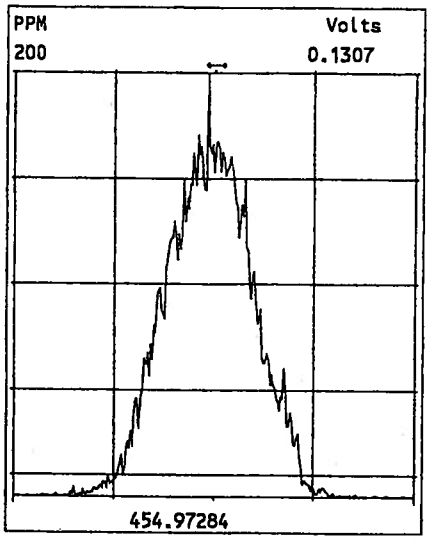
Peak Locate Examination: 8-FEB-2004:19:40 File:DX42_057CAL(056CAL2)
Experiment:DX-DB5-1_03 Function:6 Reference:PFK

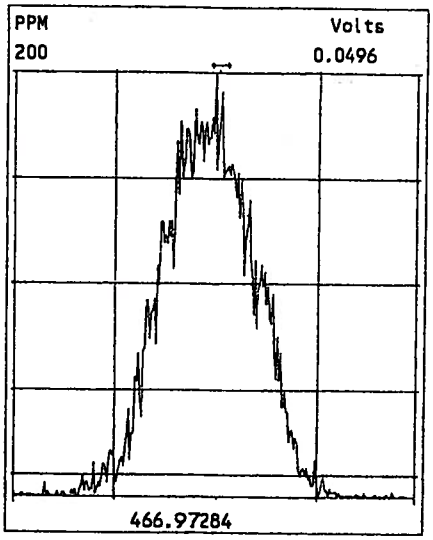


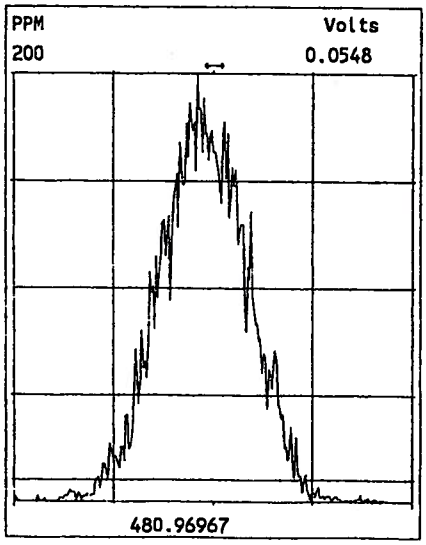


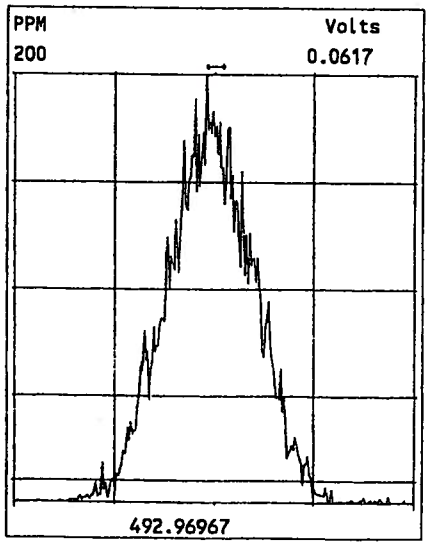




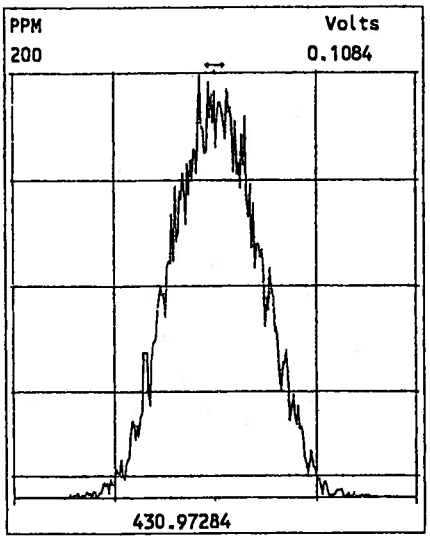


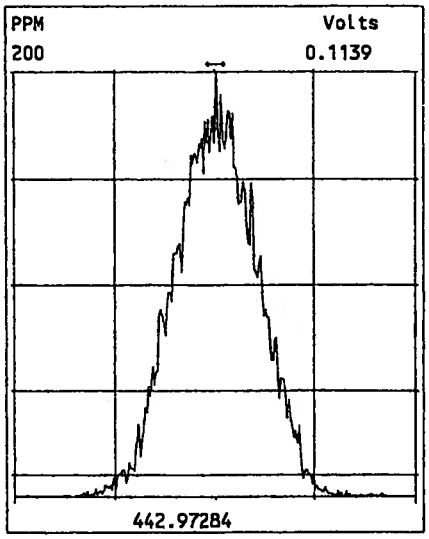


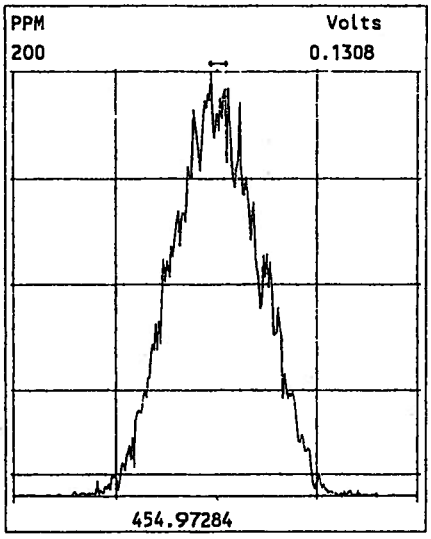


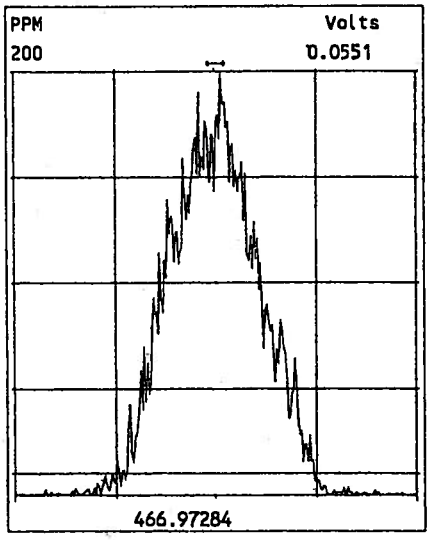


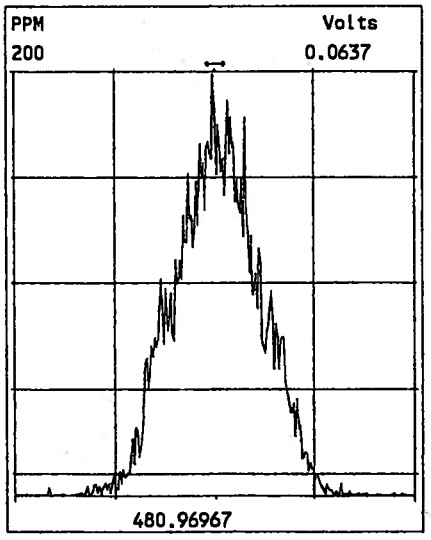
Peak Locate Examination: 8-FEB-2004:19:41 File:DX42_057CAL(056CAL2)
Experiment:DX-DB5-1_03 Function:7 Reference:PFK

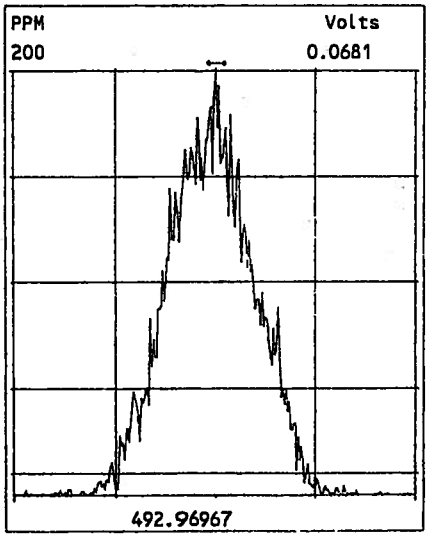


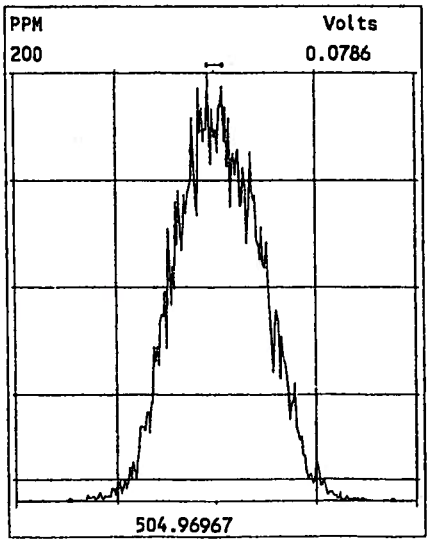


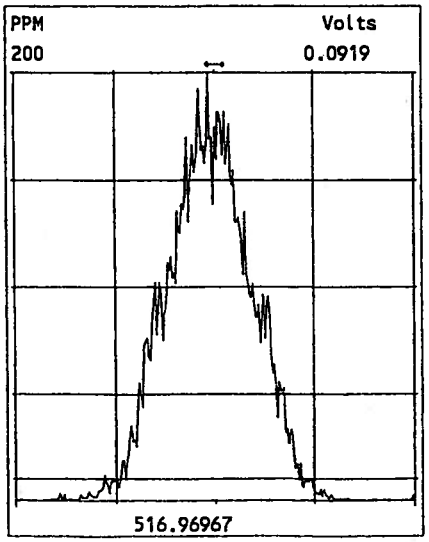












DX42-056-A

	c/q	Data Area	Data File	S	I	AnalyteTable	Factr #1	Factr #2	Size	HC	Sample Text	Comments	Done
1	c	STEM-DEFAULT	DX42_048	10	1	1613b-c005	1.0000	1.0000	1.000000	y	DX023B-CAL,,»	1,,1.0uL CS-1	y
2	c	STEM-DEFAULT	DX42_048	3	1	1613b-c005	4.0000	1.0000	1.000000	y	DX023C-CAL,,»	1,,1.0uL CS-2	y
3	c	STEM-DEFAULT	DX42_048	6	1	1613b-c005	20.0000	1.0000	1.000000	y	DX023D-CAL,,»	1,,1.0uL Cal Win»	y
4	c	STEM-DEFAULT	DX42_048	5	1	1613b-c005	80.0000	1.0000	1.000000	y	DX023E-CAL,,»	1,,1.0uL CS-4	y
5	c	STEM-DEFAULT	DX42_048	4	1	1613b-c005	400.0000	1.0000	1.000000	y	DX023F-CAL,,»	1,,1.0uL CS-5	y
6	q	STEM-DEFAULT	DX42_056	1	1	1613b-c005	20.0000	1.0000	1.000000	y	DX023D-CAL,,	1,,1.0uL Cal	y
7	q	STEM-DEFAULT	DX42_056	13	1	1613b-c005	20.0000	1.0000	1.000000	y	DX023D-CAL,,	1,,1.0uL Cal	y
8	q	STEM-DEFAULT	DX42_056	2	1	1613b-s005	1.0000	1.0000	20.000000	y	WG11004-102,,	1,WG11004,1.0/20»	y
9	q	STEM-DEFAULT	DX42_056	3	1	1613b-s005	1.0000	0.1000	1.000000	y	DX020B-SUR,,	1,,1.0uL	y
10	q	STEM-DEFAULT	DX42_056	4	1	1613b-s005	1.0000	0.1000	1.000000	y	DX020B-SUR,,	1,,1.0uL	y
11	q	STEM-DEFAULT	DX42_056	5	1	1613b-s005	1.0000	1.0000	10.000000	y	WG11004-101,,	1,WG11004,1.0/20»	y
12	q	STEM-DEFAULT	DX42_056	6	1	1613b-s005	1.0000	1.0000	9.760000	y	L6466-1,,	1,WG11004,1.0/20»	y
13	q	STEM-DEFAULT	DX42_056	7	1	1613b-s005	1.0000	1.0000	1.000000	y	TOLUENE,,	1,,1.0uL	y
14	q	STEM-DEFAULT	DX42_056	8	1	1613b-s005	1.0000	1.0000	9.790000	y	L6466-2,,	1,WG11004,1.0/20»	y
15	q	STEM-DEFAULT	DX42_056	9	1	1613b-s005	1.0000	1.0000	9.810000	y	L6466-3,,	1,WG11004,1.0/20»	y
16	q	STEM-DEFAULT	DX42_056	10	1	1613b-s005	1.0000	1.0000	6.210000	y	L6466-4,,	1,WG11004,1.0/20»	y
17	q	STEM-DEFAULT	DX42_056	11	1	1613b-s005	1.0000	1.0000	9.170000	y	L6466-5,,	1,WG11004,1.0/20»	y
18	q	STEM-DEFAULT	DX42_056	12	1	1613b-s005	1.0000	1.0000	10.050000	y	L6466-6,,	1,WG11004,1.0/20»	y

Form 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004	**GC Column ID:**	DB-5
Instrument ID:	HR GC/MS	**Analysis Date:**	08-Feb-2004
VER Data Filename:	DX42_056 S:1	**Time:**	7:43:57

COMPOUND	LAB FLAG[1]	M/Z'S FORMING RATIO[2]	ION ABUND. RATIO	QC LIMITS[3]	CONC. FOUND (ng/mL)	CONC RANGE[4] (ng/mL)
2,3,7,8-TCDD		M/M+2	0.79	0.65-0.89	11.6	8.6 - 14.2
1,2,3,7,8-PeCDD[5]		M/M+2	0.63	0.51-0.70	49.5	39 - 65
1,2,3,4,7,8-HxCDD		M+2/M+4	1.26	1.05-1.43	48.6	39 - 64
1,2,3,6,7,8-HxCDD		M+2/M+4	1.28	1.05-1.43	47.2	39 - 64
1,2,3,7,8,9-HxCDD		M+2/M+4	1.25	1.05-1.43	48.3	41 - 61
1,2,3,4,6,7,8-HpCDD		M+2/M+4	1.05	0.88-1.20	47.6	43 - 58
OCDD		M+2/M+4	0.90	0.76-1.02	94.0	79 - 126
2,3,7,8-TCDF		M/M+2	0.79	0.65-0.89	10.3	8.4 - 12
1,2,3,7,8-PeCDF		M+2/M+4	1.55	1.32-1.78	49.2	41 - 60
2,3,4,7,8-PeCDF		M+2/M+4	1.56	1.32-1.78	48.5	41 - 61
1,2,3,4,7,8-HxCDF		M+2/M+4	1.25	1.05-1.43	48.7	45 - 56
1,2,3,6,7,8-HxCDF		M+2/M+4	1.25	1.05-1.43	48.0	44 - 57
1,2,3,7,8,9-HxCDF		M+2/M+4	1.26	1.05-1.43	45.6	45 - 56
2,3,4,6,7,8-HxCDF		M+2/M+4	1.25	1.05-1.43	47.6	44 - 57
1,2,3,4,6,7,8-HpCDF		M+2/M+4	1.04	0.88-1.20	47.2	45 - 55
1,2,3,4,7,8,9-HpCDF		M+2/M+4	1.04	0.88-1.20	46.5	43 - 58
OCDF		M+2/M+4	0.91	0.76-1.02	89.6	63 - 159

(1) Z = compound not requested; X = results reported separately
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.

Approved by: Raunshorne QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

Form 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004	**GC Column ID:**	DB-5
Instrument ID:	HR GC/MS	**Analysis Date:**	08-Feb-2004
VER Data Filename:	DX42_056 S:1	**Time:**	7:43:57

	LAB FLAG[1]	M/Z'S FORMING RATIO[2]	ION ABUND. RATIO	QC LIMITS[3]	CONC. FOUND (ng/mL)	CONC RANGE[4] (ng/mL)
LABELED COMPOUND						
13C-2,3,7,8-TCDD		M/M+2	0.80	0.65-0.89	96.6	82 - 121
13C-1,2,3,7,8-PeCDD[5]		M/M+2	0.64	0.51-0.70	98.5	62 - 160
13C-1,2,3,4,7,8-HxCDD		M+2/M+4	1.26	1.05-1.43	94.0	85 - 117
13C-1,2,3,6,7,8-HxCDD		M+2/M+4	1.26	1.05-1.43	95.2	85 - 118
13C-1,2,3,4,6,7,8-HpCDD		M+2/M+4	1.07	0.88-1.20	115	72 - 138
13C-OCDD		M+2/M+4	0.90	0.76-1.02	217	96 - 415
13C-2,3,7,8-TCDF		M/M+2	0.80	0.65-0.89	105	71 - 140
13C-1,2,3,7,8-PeCDF		M+2/M+4	1.59	1.32-1.78	103	76 - 130
13C-2,3,4,7,8-PeCDF		M+2/M+4	1.59	1.32-1.78	102	77 - 130
13C-1,2,3,4,7,8-HxCDF		M/M+2	0.52	0.43-0.59	101	76 - 131
13C-1,2,3,6,7,8-HxCDF		M/M+2	0.53	0.43-0.59	98.2	70 - 143
13C-1,2,3,7,8,9-HxCDF		M/M+2	0.53	0.43-0.59	94.8	74 - 135
13C-2,3,4,6,7,8-HxCDF		M/M+2	0.53	0.43-0.59	97.5	73 - 137
13C-1,2,3,4,6,7,8-HpCDF		M/M+2	0.45	0.37-0.51	104	78 - 129
13C-1,2,3,4,7,8,9-HpCDF		M/M+2	0.45	0.37-0.51	114	77 - 129
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD[6]					9.26	7.9 - 12.7

(1) Z = compound not requested; X = results reported separately
(2) See Table 8, Method 1613, for m/z specifications.
(3) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
(4) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under VER.
(5) Alternate ions used for native and labeled P5CDD for confirmation and quantitation.
(6) No ion abundance ratio; concentration reported.

11004DD1_1.xls, 4A,B

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

Form 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004	**GC Column ID:**	DB-5
Instrument ID:	HR GC/MS	**Analysis Date:**	08-Feb-2004
CS3/VER Data Filename:	DX42_056 S:1	**Time:**	7:43:57

Compounds using 13C-1234-TCDD as Internal Standard

COMPOUND	LAB FLAG[1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS[2]
2,3,7,8-TCDF		13C-2,3,7,8-TCDF	1.001	0.999 - 1.003
2,3,7,8-TCDD		13C-2,3,7,8-TCDD	1.001	0.999 - 1.002
1,2,3,7,8-PeCDF		13C-1,2,3,7,8-PeCDF	1.000	0.999 - 1.002
2,3,4,7,8-PeCDF		13C-2,3,4,7,8-PeCDF	1.000	0.999 - 1.002
1,2,3,7,8-PeCDD[3]		13C-1,2,3,7,8-PeCDD	1.001	0.999 - 1.002
LABELED COMPOUND				
13C-2,3,7,8-TCDF		13C-1,2,3,4-TCDD	0.966	0.923 - 1.103
13C-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.013	0.976 - 1.043
37Cl-2,3,7,8-TCDD		13C-1,2,3,4-TCDD	1.013	0.989 - 1.052
13C-1,2,3,7,8-PeCDF		13C-1,2,3,4-TCDD	1.284	1.000 - 1.425
13C-2,3,4,7,8-PeCDF		13C-1,2,3,4-TCDD	1.351	1.011 - 1.526
13C-1,2,3,7,8-PeCDD[3]		13C-1,2,3,4-TCDD	1.382	1.000 - 1.567

(1) Z = compound not requested; X = results reported separately
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.
(3) Alternate Ions used for native and labeled P5CDD for confirmation and quantitation.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

Form 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: AXYS ANALYTICAL SERVICES

Initial Calibration Date:	03-Feb-2004	**GC Column ID:**	DB-5
Instrument ID:	HR GC/MS	**Analysis Date:**	08-Feb-2004
CS3/VER Data Filename:	DX42_056 S:1	**Time:**	7:43:57

Compounds using 13C-123789-HxCDD as Internal Standard

COMPOUND	LAB FLAG[1]	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS[2]
1,2,3,4,7,8-HxCDF		13C-1,2,3,4,7,8-HxCDF	1.001	0.999 - 1.001
1,2,3,6,7,8-HxCDF		13C-1,2,3,6,7,8-HxCDF	1.000	0.997 - 1.005
1,2,3,7,8,9-HxCDF		13C-1,2,3,7,8,9-HxCDF	1.000	0.999 - 1.001
2,3,4,6,7,8-HxCDF		13C-2,3,4,6,7,8-HxCDF	1.001	0.999 - 1.001
1,2,3,4,7,8-HxCDD		13C-1,2,3,4,7,8-HxCDD	1.000	0.999 - 1.001
1,2,3,6,7,8-HxCDD		13C-1,2,3,6,7,8-HxCDD	1.000	0.998 - 1.004
1,2,3,7,8,9-HxCDD		13C-1,2,3,6,7,8-HxCDD	1.011	1.000 - 1.019
1,2,3,4,6,7,8-HpCDF		13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999 - 1.001
1,2,3,4,6,7,8-HpCDD		13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999 - 1.001
1,2,3,4,7,8,9-HpCDF		13C-1,2,3,4,7,8,9-HpCDF	1.000	0.999 - 1.001
OCDD		13C-OCDD	1.000	0.999 - 1.001
OCDF		13C-OCDD	1.002	0.999 - 1.008
LABELED COMPOUND				
13C-1,2,3,4,7,8-HxCDF		13C-1,2,3,7,8,9-HxCDD	0.954	0.944 - 0.970
13C-1,2,3,6,7,8-HxCDF		13C-1,2,3,7,8,9-HxCDD	0.958	0.949 - 0.975
13C-1,2,3,7,8,9-HxCDF		13C-1,2,3,7,8,9-HxCDD	1.005	0.977 - 1.047
13C-2,3,4,6,7,8-HxCDF		13C-1,2,3,7,8,9-HxCDD	0.980	0.959 - 1.021
13C-1,2,3,4,7,8-HxCDD		13C-1,2,3,7,8,9-HxCDD	0.987	0.977 - 1.000
13C-1,2,3,6,7,8-HxCDD		13C-1,2,3,7,8,9-HxCDD	0.990	0.981 - 1.003
13C-1,2,3,4,6,7,8-HpCDF		13C-1,2,3,7,8,9-HxCDD	1.062	1.043 - 1.085
13C-1,2,3,4,6,7,8-HpCDD		13C-1,2,3,7,8,9-HxCDD	1.094	1.086 - 1.110
13C-1,2,3,4,7,8,9-HpCDF		13C-1,2,3,7,8,9-HxCDD	1.104	1.057 - 1.151
13C-OCDD		13C-1,2,3,7,8,9-HxCDD	1.178	1.032 - 1.311

(1) Z = compound not requested; X = results reported separately
(2) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Approved by: _____ QA/QC Chemist

18-02-2004
dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD DX-S-1613/Ver.3
1613DB5-S005-D1

Form 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: AXYS ANALYTICAL SERVICES

Instrument ID:	HR GC/MS	**Initial Calibration Date:**	03-Feb-2004	
RT Window Data Filename:	DX42_056 S:1	**Analysis Date:**	08-Feb-2004	**Time:** 7:43:57
DB5 IS Data Filename:	DX42_056 S:1	**Analysis Date:**	08-Feb-2004	**Time:** 7:43:57
DB-225 IS Data Filename:		**Analysis Date:**		**Time:**

DB-5 RT WINDOW DEFINING STANDARDS RESULT

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:56	1,3,6,8-TCDF (F)	21:24
1,2,8,9-TCDD (L)	28:17	1,2,8,9-TCDF (L)	28:08
1,2,4,7,9-PeCDD (F)	31:59	1,3,4,6,8-PeCDF (F)	28:50
1,2,3,8,9-PeCDD (L)	36:59	1,2,3,8,9-PeCDF (L)	37:04
1,2,4,6,7,9-HxCDD (F)	39:59	1,2,3,4,6,8-HxCDF (F)	38:56
1,2,3,4,6,7-HxCDD (L)	42:37	1,2,3,4,8,9-HxCDF (L)	42:57
1,2,3,4,6,7,9-HpCDD (F)	45:43	1,2,3,4,6,7,8-HpCDF(F)	45:15
1,2,3,4,6,7,8-HpCDD (L)	46:38	1,2,3,4,7,8,9-HpCDF (L)	47:03

(F) = First eluting isomer (DB-5); (L) = Last eluting isomer (DB-5)

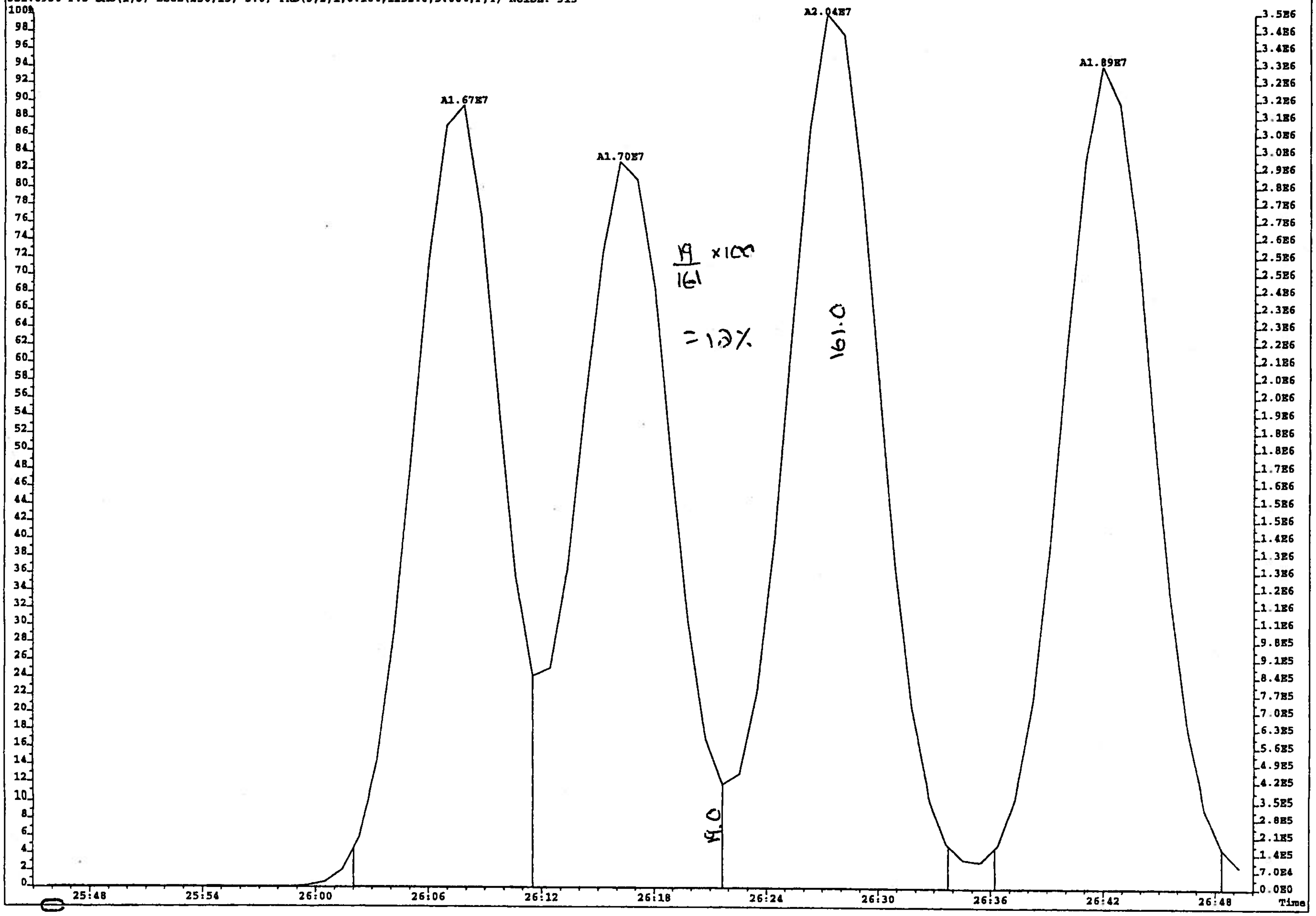
ISOMER SPECIFICITY (IS) TEST STANDARDS RESULTS

Isomers	% Valley Height Between Compared Peaks	Isomers	% Valley Height Between Compared Peaks
1,2,3,4-TCDD 1,2,7,8-TCDD	0	1,2,3,8-TCDD 2,3,7,8-TCDD	12
1,2,7,8-TCDD 1,4,7,8-TCDD	0	2,3,4,7-TCDF 2,3,7,8-TCDF	N/A
1,4,7,8-TCDD 1,2,3,7-TCDD	0	2,3,7,8-TCDF 1,2,3,9-TCDF	N/A
1,2,3,7-TCDD 1,2,3,8-TCDD	DB-5 column; co-elute as per Figure 6 in Method		

11004DD1_1.xls, Form 5 Approved by: _____ QA/QC Chemist 18-02-2004 dd-mm-yyyy

AXYS ANALYTICAL SERVICES LTD P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

File:DX42_056 #1-488 Acq: 8-FEB-2004 07:43:57 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text: Text:DX023D-CAL,, Exp:DX-DB5-1_03
321.8936 F:3 SMO(1,3) BSUB(256,15,-3.0) PKD(3,2,1,0.10%,1252.0,5.00%,F,T) NOISE: 313



0199

checked by
[illegible]

Coded by [illegible]
9-FEB-04

Instrument Acquisition Runlog Axys Analytical

Experiment : DX-DB5-1_03
GC Program : DX-DB5-1_01
Column type : DB-5
Serial # : US3274825H
kPa : 206
Vol injected: 1.0uL
PMT Voltage : 389

Temps -source: 300 Tune :
-s resv: 160 List : AB
-re_ent: 305 Check :
-cap_1 : 320 LIMS :
-cap_2 : 305

Date -list : 07-FEB-2004
-liner : 06-JAN-2004
-septum: 06-JAN-2004
-guard : 30cm 06-FEB-04
-column: New 03-FEB-04
-t line: New 03-FEB-04
-bake :
-source:

#	Data file	S	V	Sample Text	Comments	Acquisition Date/Time
1	DX42_057	1	1	DX023D-CAL,,	1,,1.0uL Cal	8-FEB-04 19:42:03
2	DX42_057	2	2	DX020B-SUR,,	1,,1.0uL	8-FEB-04 20:36:51
3	DX42_057	3	3	DX020B-SUR,,	1,,1.0uL	8-FEB-04 21:31:34
4	DX42_057	4	4	L6466-7,,	1,WG11004,1.0/20uL	8-FEB-04 22:26:23
5	DX42_057	5	5	L6466-8,,	1,WG11004,1.0/20uL	8-FEB-04 23:21:05
6	DX42_057	6	6	L6466-9,,	1,WG11004,1.0/20uL	9-FEB-04 00:15:56
7	DX42_057	7	7	L6466-10,,	1,WG11004,1.0/20uL	9-FEB-04 01:10:43
8	DX42_057	8	8	L6466-11,,	1,WG11004,1.0/20uL	9-FEB-04 02:05:29
9	DX42_057	9	9	WG11004-103,,	1,WG11004,1.0/20uL	9-FEB-04 03:00:15
10	DX42_057	10	10	WG11136-101,,	1,WG11136,1.0/20uL	9-FEB-04 03:55:06
11	DX42_057	11	11	WG11136-102,,	1,WG11136,1.0/20uL	9-FEB-04 04:49:52
12	DX42_057	12	12	WG11136-103,,	1,WG11136,1.0/20uL	9-FEB-04 05:44:44
13	DX42_057	13	13	DX023D-CAL,,	1,,1.0uL Cal	9-FEB-04 06:39:30