



REPORT OF ANALYSIS

*Hazeltor*

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604772

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 7-20: 1A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

<u>PPM</u>	<u>COMPOUND</u>
0.042	ODE
0.009	ODD
LESS THAN 0.005	ODT



SAT NUMBER: 50604772

PAGE 2

FISH TISSUE (WHOLE), 7-20: 1A-5

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.12	PCB 1260
0.020	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	N.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHEHE
9.5	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

.51 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604772

PAGE 3

FIS. TISSUE (WHOLE), 7-20: 1A-S

METHOD REFERENCES (CONTINUED)**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**ICP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

SAMPLE NUMBER: 50604772

PAGE 4

15. ISSUE (WHOLE), 7-20: 1A-5

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

REPORT OF ANALYSIS

JRS-DALTON  
 4E1L CHASE  
 1605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 50604773  
 DATE ENTERED: 06/19/85  
 REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1-6: 1A-M

ASSAY	ANALYSIS	UNITS
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
TNALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

PPM  
 0.045  
 0.007  
 LESS THAN 0.005

COMPOUND  
 DDE  
 DDD  
 DDT

SAMPLE NUMBER: 50604773

PAGE 2

F1 TISSUE (WHOLE), 1-6: 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.14	PCB 1260
0.017	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	MCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	M.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
7.6	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENDLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1965) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



AM NUMBER: 50604773

PAGE 3

FISH TISSUE (WHOLE), 1-6: 1A-M

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIFFUSION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2>J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604773

PAGE 4

15th ISSUE (WHOLE), 1-6: 1A-M

METHOD REFERENCES (CONTINUED)

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
MORRISVILLE, CT, JANUARY 1982

**ICP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

**CHLORINATED INSECTICIDE, PCB**

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

**PHENOLS**

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 50604774

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 21-27: 1A-L

ANTIMONY

LESS THAN 0.12 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.06 PPM

LEAD

.10 PPM

MERCURY

.124 PPM

NICKEL

.720 PPM

SELENIUM

.72 PPM

SILVER

.146 PPM

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.034	DDE
0.006	DOD
LESS THAN 0.005	DDT
0.36	PCB 1254
0.007	DIELORIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB



SAMPLE NUMBER: 50604774

PAGE 2

ISSUE (WHOLE), 21-27: 1A-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ENORIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TUXAPHEHE
1.9	% LIPIUS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENDLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1167-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1; U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 50604774

PAGE 3

F TISSUE (WHOLE), 21-27: 1A-L

METHOD REFERENCES (CONTINUED)

LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604774

PAGE 4

FILE ISSUE (WHOLE), 21-27: 1A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS  
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604775  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 4-6, 10, 20-27: 2A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

<u>PPM</u>	<u>COMPOUND</u>
0.134	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DUT

SAMPLE NUMBER: 50604775

PAGE 2

F TISSUE (WHOLE), 4-6, 18, 20-27: 2A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.31	PCB 1260
0.445	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
0.006	EHDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
5.0	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

SAMPLE NUMBER: 50604775

PAGE 3

FILE TISSUE (WHOLE), 4-6, 18, 20-27: 2A-S

METHOD REFERENCES (CONTINUED)

**CADMIUM**

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIED, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

**LEAD**

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.N. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

AMPI NUMBER: 50604775

PAGE 4

ISH ISSUE (WHOLE), 4-6, 18, 20-27: 2A-5

METHOD REFERENCES (CONTINUED)

HALLIUM

ERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

CP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).





## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 50604776

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

ANTIMONY

LESS THAN 0.12 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.06 PPM

LEAD

.07 PPM

MERCURY

.165 PPM

NICKEL

.362 PPM

SELENIUM

.93 PPM

SILVER

.320 PPM

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.165	DOE
LESS THAN 0.005	DOD
LESS THAN 0.005	DDT
0.40	PCB 1260
0.431	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB

SAMPLE NUMBER: 50604776

PAGE 2

FIS. TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

CHLORINATED INSECTICIDE, PCB (CONTINUED)

0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TUXAPHENE
3.7	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS 10.3 MG/KG

METHOD REFERENCES

**ANTIMONY**  
ANALYST, VOLUME 99, PAGE 595, (1975)  
DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

**ARSENIC**  
1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.  
2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)  
3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)  
4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

**CADMIUM**  
1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.  
2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)  
4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 50604776

PAGE 3

F. TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

METHOD REFERENCES (CONTINUED)

LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

SAMPLE NUMBER: 50604776

PAGE 4

FI. TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 90604777

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

ANTIMONY	LESS THAN 0.12 PPM
ARSENIC	LESS THAN 0.05 PPM
CADMIUM	LESS THAN 0.04 PPM
LEAD	.06 PPM
MERCURY	.118 PPM
NICKEL	LESS THAN 0.20 PPM
SELENIUM	.96 PPM
SILVER	.135 PPM
THALLIUM	LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.118	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.63	PCB 1254
0.244	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC

SAMPLE NUMBER: 50604777

PAGE 2

F TISSUE (WHOLE), 2, 7-9: 2A-L

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	NCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.5	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

1.1

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 50604777

PAGE 3

F 1 TISSUE (WHOLE), 2, 7-9: 2A-L

METHOD REFERENCES (CONTINUED)

LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J. W. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604777

PAGE 4

F1 TISSUE (WHOLE), 2, 7-9: 2A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 50604778

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 17-20, 22-29: 4-S

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
CADMIUM	LESS THAN 0.04	PPM
LEAD	LESS THAN 0.05	PPM
MERCURY	.084	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	.87	PPM
SILVER	.130	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLDRINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND NAME</u>
0.116	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DUT
1.90	PCB 1254
0.123	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.019	BETA-BHC

SAMPLE NUMBER: 5060477B

PAGE 2

FISH TISSUE (WHOLE), 17-20, 22-29: 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
4.7	% LIPID

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENDLS

.50 MG/XG

#### METHOD REFERENCES

##### ANTIMONY

1-ANALYST, VOLUME 99, PAGE 595, (1975)

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

##### ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

##### CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 50604778

PAGE 3

FILE ISSUE (WHOLE), 17-20, 22-29: 4-5

METHOD REFERENCES (CONTINUED)

LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, ADAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, ADAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, ADAC, ARLINGTON, VA.  
J. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

SAMPLE NUMBER: 50604778

PAGE 4

ISI ISSUE (WHOLE), 17-20, 22-29: 4-5

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
DATA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
1968, REVISED 1969-1983.  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 50604779

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

ANTIMONY

LESS THAN 0.12 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

LESS THAN 0.04 PPM

LEAD

.18 PPM

MERCURY

.118 PPM

NICKEL

.840 PPM

SELENIUM

.54 PPM

SILVER

.135 PPM

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND NAME
0.131	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
1.88	PCB 1254
0.091	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.016	BETA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604779

PAGE 2

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TUXAPHENE
2.7	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

.58

MG/KG

METHOD REFERENCES

## ANTIMONY

- 1-ALYST, VOLUME 99, PAGE 595, (1975)
- 2-SECTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



S. FILE NUMBER: 50604779

PAGE 3

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604779

PAGE 4

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).





REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604780

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
CAESIUM	LESS THAN 0.04	PPM
LEAD	.10	PPM
MERCURY	.232	PPM
NICKEL	.482	PPM
SELENIUM	.50	PPM
SILVER	.158	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND NAME</u>
0.192	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.87	PCB 1254
0.115	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.007	BETA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC



FILE NUMBER: 50604780

PAGE 2

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	HLB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.1	% LIPIDS

HIGH ODE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ANTIMONY

- 1-ANALYST, VOLUME 99, PAGE 595, (1975)
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



FILE NUMBER: 50604780

PAGE 3

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

METHOD REFERENCES (CONTINUED)

LEAD  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094,  
33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC  
ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY  
DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND  
METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107,  
154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL  
MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38,  
NUMBER 1, JANUARY 1966

SILVER  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND  
METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY  
INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1979).



SAMPLE NUMBER: 50604780

PAGE 4

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

HAZLETON LABORATORIES AMERICA, INC. P.O. BOX 7545 HAZLETON, WIS. 53707

REPORT: ELEMENTAL ANALYSIS BY ICP SPECTROSCOPY

URS DALTON RECEIVED 19-JUN-85 ANALYZED 3-JUL-85

PARTS PER MILLION

SAMPLE ID	RE	CR	CU	ZN
50604774	< 0.005	0.39	2.09	20.2
50604776	< 0.005	0.32	2.04	28.5
50604777	< 0.005	0.49	2.20	19.6
50604778	< 0.005	0.46	2.05	22.9
50604779	< 0.005	0.58	5.43	22.8
50604780	< 0.005	4.40	3.08	19.8



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604772  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 7-20: 1A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED;	INSUFFICIENT SAMPLE
ARSENIC	CANCELLED;	INSUFFICIENT SAMPLE
CADMIUM	CANCELLED;	INSUFFICIENT SAMPLE
LEAD	CANCELLED;	INSUFFICIENT SAMPLE
MERCURY	CANCELLED;	INSUFFICIENT SAMPLE
NICKEL	CANCELLED;	INSUFFICIENT SAMPLE
SELENIUM	CANCELLED;	INSUFFICIENT SAMPLE
SILVER	CANCELLED;	INSUFFICIENT SAMPLE
THALLIUM	CANCELLED;	INSUFFICIENT SAMPLE
ICP EMISSION SPECTROMETRY	CANCELLED;	INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.042	DDE
0.009	DDD
LESS THAN 0.009	DIT



SAMPLE NUMBER: 50604772

PAGE 2

FISH TISSUE (WHOLEF), 7-20: 1A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.12	PCB 1260
0.020	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
9.5	* LIPIUS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS .51 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

FRYDEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604772

PAGE 3

FISH TISSUE (WHOLE), 7-20: 1A-S

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).





SAMPLE NUMBER: 90604772

PAGE 4

FISH TISSUE (WHOLE), 7-20: 1A-S

METHOD REFERENCES (CONTINUED.)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703816 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NETL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604273

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1-6: 1A-M

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.045	DDE
0.007	DDD
LESS THAN 0.005	DDT



SAMPLE NUMBER: 50604773

PAGE 2

FISH TISSUE (WHOLE), 1-6: 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.14	PCB 1260
0.017	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
7.6	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



SAMPLE NUMBER: 50604773

PAGE 3

FISH TISSUE (WHOLE), 1-6: 1A-M

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- ...GESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604773

PAGE 4

FISH TISSUE (WHOLE), 1-6: 1A-M

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

## CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604774

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 21-27: 1A-L

ANTIMONY

LESS THAN 0.12 PPM

ARSENIC

LESS THAN 0.05 PPM

BARIUM

.06 PPM

LEAD

.10 PPM

MERCURY

.124 PPM

NICKEL

.720 PPM

SELENIUM

.72 PPM

SILVER

.146 PPM

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.034	DDE
0.006	DDD
LESS THAN 0.005	DUT
0.36	PCB 1254
0.007	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB



SAMPLE NUMBER: 50604774

PAGE 2

FISH TISSUE (WHOLE), 21-27: 1A-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
1.9	% LIPIOS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604774

PAGE 3

FISH TISSUE (WHOLE), 21-27: 1A-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).





SAMPLE NUMBER: 50604774

PAGE 4

FISH TISSUE (WHOLE), 21-27: 1A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINGMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (800) 241-4471 • TLX 703858 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604775  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 4-6, 18, 20-27: 2A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.134	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT



SAMPLE NUMBER: 50604775

PAGE 2

FISH TISSUE (WHOLE), 4-6, 18, 20-27: 2A-5

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.31	PCB 1260
0.445	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
0.006	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
5.0	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



SAMPLE NUMBER: 50604775

PAGE 3

FISH TISSUE (WHOLE), 4-6, 10, 20-27: 2A-S

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604775

PAGE 4

FISH TISSUE (WHOLE), 4-6, 18, 20-27: 2A-S

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (800) 241-4471 • TLX 703958 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604776  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
BARIUM	.06	PPM
LEAD	.07	PPM
MERCURY	.165	PPM
NICKEL	.362	PPM
SELENIUM	.93	PPM
SILVER	.320	PPM
THALLIUM	LESS THAN 0.25 PPM	

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.165	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.40	PCB 1260
0.431	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB



SAMPLE NUMBER: 50604776

PAGE 2

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TDXAPHENE
3.7	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

10.3

MG/KG

METHOD REFERENCES

## ANTIMONY

- 1-ANALYST, VOLUME 99, PAGE 595, (1975)
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIENO, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604776

PAGE 3

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).





SAMPLE NUMBER: 50604776

PAGE 4

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7345 • MADISON, WISCONSIN 53707 • PHONE (800) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604777

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

ANTIMONY	LESS THAN 0.12	PPM
ARSENIC	LESS THAN 0.05	PPM
BARIUM	LESS THAN 0.04	PPM
LEAD	.06	PPM
MERCURY	.118	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	.96	PPM
SILVER	.135	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.118	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DUT
0.63	PCB 1254
0.244	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604777

PAGE 2

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	MCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.5	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

1.1

MG/KG

METHOD REFERENCES...TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604777

PAGE 3

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUORIMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604727

PAGE 4

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604778  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 17-20, 22-29: 4-5

ANTIMONY	LESS THAN 0.12 PPM
ARSENIC	LESS THAN 0.05 PPM
CAESIUM	LESS THAN 0.04 PPM
LEAD	LESS THAN 0.05 PPM
MERCURY	.084 PPM
NICKEL	LESS THAN 0.20 PPM
SELENIUM	.87 PPM
SILVER	.130 PPM
THALLIUM	LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND NAME</u>
0.116	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
1.90	PCB 1254
0.123	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.019	BETA-BHC



SAMPLE NUMBER: 5060477B

PAGE 2

FISH TISSUE (WHOLE), 17-20, 22-29: 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	HCB
LESS THAN 0.005	ENORIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
4.7	% LIPID

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

.50

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604778

PAGE 3

FISH TISSUE (WHOLE), 17-20, 22-29: 4-5

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).





SAMPLE NUMBER: 50604778

PAGE 4

FISH TISSUE (WHOLE), 17-20, 22-29: 4-5

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS  
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604779  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
BIUM	LESS THAN 0.04	PPM
LEAD	.18	PPM
MERCURY	.118	PPM
NICKEL	.840	PPM
SELENIUM	.54	PPM
SILVER	.135	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND NAME
0.131	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
1.88	PCB 1254
0.091	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.016	BETA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604779

PAGE 2

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.7	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

.58

MG/KG

METHOD REFERENCES

## TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1107-1108, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604779

PAGE 3

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604779

PAGE 4

FISH TISSUE (WHOLE), 3-6, 21, B-16: 4-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703256 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604780  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

ANTIMONY	LESS THAN 0.12	PPM
ARSENIC	LESS THAN 0.05	PPM
CAESIUM	LESS THAN 0.04	PPM
LEAD	.10	PPM
MERCURY	.232	PPM
NICKEL	.482	PPM
SELENIUM	.50	PPM
SILVER	.158	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND NAME</u>
0.192	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.87	PCB 1254
0.115	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.007	BETA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604780

PAGE 2

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

CHLORINATED INSECTICIDES, PCB

(CONTINUED)

LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.1	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENDLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604780

PAGE 3

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).





SAMPLE NUMBER: 50604780

PAGE 4

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

## REPORT: ELEMENTAL ANALYSIS BY ICP SPECTROSCOPY

URS DALTON

RECEIVED 19-JUN-85 ANALYZED 3-JUL-85

PARTS PER MILLION

SAMPLE ID	BE	CR	CU	ZN
50604774	< 0.005	0.39	2.09	20.2
50604776	< 0.005	0.32	2.04	20.5
50604777	< 0.005	0.49	2.20	19.6
50604778	< 0.005	0.46	2.05	22.9
50604779	< 0.005	0.58	5.43	22.8
50604780	< 0.005	4.40	3.08	19.8



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7645 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703256 HAZRAL MOS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604772  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 7-20: 1A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED;	INSUFFICIENT SAMPLE
ARSENIC	CANCELLED;	INSUFFICIENT SAMPLE
CADMIUM	CANCELLED;	INSUFFICIENT SAMPLE
LEAD	CANCELLED;	INSUFFICIENT SAMPLE
MERCURY	CANCELLED;	INSUFFICIENT SAMPLE
NICKEL	CANCELLED;	INSUFFICIENT SAMPLE
SELENIUM	CANCELLED;	INSUFFICIENT SAMPLE
SILVER	CANCELLED;	INSUFFICIENT SAMPLE
THALLIUM	CANCELLED;	INSUFFICIENT SAMPLE
ICP EMISSION SPECTROMETRY	CANCELLED;	INSUFFICIENT SAMPLE

ORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.042	DDE
0.009	DDD
LESS THAN 0.005	DOT



SAMPLE NUMBER: 50604772

PAGE 2

FISH TISSUE (WHOLE), 7-20: 1A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.12	PCB 1260
0.020	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
9.5	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

.51

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.067, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

RIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604772

PAGE 3

FISH TISSUE (WHOLE), 7-20: 1A-S

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604772

PAGE 4

FISH TISSUE (WHOLE), 7-20: 1A-S

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7848 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604773  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1-6: 1A-M

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
BARIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

<u>PPM</u>	<u>COMPOUND</u>
0.045	DDE
0.007	DDD
LESS THAN 0.005	DDT



SAMPLE NUMBER: 50604773

PAGE 2

FISH TISSUE (WHOLE), 1-6: 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.14	PCB 1260
0.017	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
7.6	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)





SAMPLE NUMBER: 50604773

PAGE 3

FISH TISSUE (WHOLE), 1-6: 1A-M

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- REGISTRATION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604773

PAGE 4

FISH TISSUE (WHOLE), 1-6: 1A-M

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 524 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604274

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 21-27: 1A-L

ANTIMONY

LESS THAN 0.12 PPM

ARSENIC

LESS THAN 0.05 PPM

BARIUM

.06 PPM

LEAD

.10 PPM

MERCURY

.124 PPM

NICKEL

.720 PPM

SELENIUM

.72 PPM

SILVER

.146 PPM

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.034	DDE
0.006	DDD
LESS THAN 0.005	DDT
0.36	PCB 1254
0.007	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB



SAMPLE NUMBER: 50604774

PAGE 2

FISH TISSUE (WHOLE), 21-27: 1A-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TUXAPHENE
1.9	* LIPIDS

HIGH DUE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## IMDNY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, ADAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1989) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, ADAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604774

PAGE 3

FISH TISSUE (WHOLE), 21-27: 1A-L

METHOD REFERENCES (CONTINUED)**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**ICP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604274

PAGE 4

FISH TISSUE (WHOLE), 21-27: 1A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENDLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

**Chemical & BioMedical Sciences Division**

3301 KINSMAN BLVD. • P.O. BOX 7645 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 709950 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604775  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 4-6, 18, 20-27: 2A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.134	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT



SAMPLE NUMBER: 50604775

PAGE 2

FISH TISSUE (WHOLE), 4-6, 18, 20-27: 2A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

0.31	PLB 1260
0.445	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
0.006	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
5.0	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)





SAMPLE NUMBER: 50604775

PAGE 3

FISH TISSUE (WHOLE), 4-6, 10, 20-27: 2A-S

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- TEST METHOD: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604775

PAGE 4

FISH TISSUE (WHOLE), 4-6, 18, 20-27: 2A-5

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

## CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983),

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703986 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604276

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
BARIUM	.06	PPM
LEAD	.07	PPM
MERCURY	.165	PPM
NICKEL	.362	PPM
SELENIUM	.93	PPM
SILVER	.320	PPM
THALLIUM	LESS THAN 0.25 PPM	

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.165	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.40	PCB 1260
0.431	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB



SAMPLE NUMBER: 50604776

PAGE 2

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

CHLORINATED INSECTICIDE, PCB (CONTINUED)

0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
3.7	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS 10.3 MG/KG

METHOD REFERENCES

ANTIMONY

- 1-ANALYST, VOLUME 99, PAGE 595, (1975)
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604776

PAGE 3

FISH TISSUE (WHOLE), 1, 3, 10-17, 19: 2A-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604776

PAGE 4

FISH TISSUE (WHOLE), 1, 3, 10-17, 19; 2A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604777  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
BIUM	LESS THAN 0.04 PPM	
LEAD	.06	PPM
MERCURY	.118	PPM
NICKEL	LESS THAN 0.20 PPM	
SELENIUM	.96	PPM
SILVER	.135	PPM
THALLIUM	LESS THAN 0.25 PPM	

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.118	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.63	PCB 1254
0.244	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604777

PAGE 2

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.5	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENDLS

1.1

MG/KG

METHOD REFERENCES

## TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH





SAMPLE NUMBER: 50604777

PAGE 3

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604777

PAGE 4

FISH TISSUE (WHOLE), 2, 7-9: 2A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENDLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604778

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 17-20, 22-29: 4-5

ANTIMONY	LESS THAN 0.12 PPM	
ARSENIC	LESS THAN 0.05	PPM
BARIUM	LESS THAN 0.04	PPM
LEAD	LESS THAN 0.05	PPM
MERCURY	.084	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	.87	PPM
SILVER	.130	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY  
SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND NAME</u>
0.116	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
1.90	PCB 1254
0.123	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.019	BETA-BHC



SAMPLE NUMBER: 50604778

PAGE 2

FISH TISSUE (WHOLE), 17-20, 22-29: 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
4.7	% LIPID

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

.50

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, (CINCINNATI), OH



SAMPLE NUMBER: 50604778

PAGE 3

FISH TISSUE (WINDLE), 17-20, 22-29: 4-S

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604228

PAGE 4

FISH TISSUE (WHOLE), 17-20, 22-29: 4-S

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS  
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (808) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 511604779  
DATE ENTERED: 06/19/85  
REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

ANTIMONY	LESS THAN 0.12 PPM
ARSENIC	LESS THAN 0.05 PPM
BARIUM	LESS THAN 0.04 PPM
LEAD	.18 PPM
MERCURY	.118 PPM
NICKEL	.840 PPM
SELENIUM	.54 PPM
SILVER	.135 PPM
THALLIUM	LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND NAME</u>
0.131	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
1.88	PCB 1254
0.091	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.016	BETA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604779

PAGE 2

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

CHLORINATED INSECTICIDE, PCB (CONTINUED)

LESS THAN 0.005	HLB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.7	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENDLS .58 MG/KG

METHOD REFERENCES

TIMONY

- ANALYST, VOLUME 99, PAGE 595, (1975)
- DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX 111 (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH





SAMPLE NUMBER: 50604779

PAGE 3

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604779

PAGE 4

FISH TISSUE (WHOLE), 3-6, 21, 8-16: 4-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 50604780

DATE ENTERED: 06/19/85

REPORT PRINTED: 07/17/85

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

ANTIMONY

LESS THAN 0.12 PPM

ARSENIC

LESS THAN 0.05 PPM

OMIUM

LESS THAN 0.04 PPM

LEAD

.10 PPM

MERCURY

.232 PPM

NICKEL

.482 PPM

SELENIUM

.50 PPM

SILVER

.158 PPM

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND NAME
0.192	DDE
LESS THAN 0.005	DDD
LESS THAN 0.005	DDT
0.87	PCB 1254
0.115	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
0.007	BETA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 50604780

PAGE 2

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	HLB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.1	% LIPIDS

HIGH DDE VALUES DUE TO PCB INTERFERENCE.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## MERCURY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.069, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, H. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 50604780

PAGE 3

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).



SAMPLE NUMBER: 50604780

PAGE 4

FISH TISSUE (WHOLE), 1, 2, 7: 4-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207443

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-S

ASSAY  
ANTIMONY

ANALYSIS      UNITS

CANCELLED; INSUFFICIENT SAMPLE

ARSENIC

CANCELLED; INSUFFICIENT SAMPLE

CADMIUM

CANCELLED; INSUFFICIENT SAMPLE

LEAD

CANCELLED; INSUFFICIENT SAMPLE

MERCURY

CANCELLED; INSUFFICIENT SAMPLE

NICKEL

CANCELLED; INSUFFICIENT SAMPLE

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

CANCELLED; INSUFFICIENT SAMPLE

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

ORIGINATED INSECTICIDE, PCB

PPM  
0.025  
LESS THAN 0.005  
LESS THAN 0.006\*

COMPOUND  
DDE  
DDD  
DDT



SAMPLE NUMBER: 51207443

PAGE 2

FISH TISSUE (WHOLE): 1A-S

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.006*	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
0.018	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.12	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)





SAMPLE NUMBER: 51207443

PAGE 3

FISH TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38. NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207443

PAGE 4

FISH TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207444

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-M

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED;	INSUFFICIENT SAMPLE
ARSENIC	CANCELLED;	INSUFFICIENT SAMPLE
CADMIUM	CANCELLED;	INSUFFICIENT SAMPLE
LEAD	CANCELLED;	INSUFFICIENT SAMPLE
MERCURY	CANCELLED;	INSUFFICIENT SAMPLE
NICKEL	CANCELLED;	INSUFFICIENT SAMPLE
SELENIUM	CANCELLED;	INSUFFICIENT SAMPLE
SILVER	CANCELLED;	INSUFFICIENT SAMPLE
THALLIUM	CANCELLED;	INSUFFICIENT SAMPLE
ICP EMISSION SPECTROMETRY	CANCELLED;	INSUFFICIENT SAMPLE

ORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.040	ODE
LESS THAN 0.005	ODD
LESS THAN 0.010*	DDT



SAMPLE NUMBER: 51207444

PAGE 2

FISH TISSUE (WHOLE): 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.29	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLDR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.8

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207444

PAGE 3

FISH TISSUE (WHOLE): 1A-M

METHOD REFERENCES (CONTINUED)

ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1968)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-RIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38. NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207444

PAGE 4

FISH TISSUE (WHOLE): 1A-M

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, CINCINNATI, OH.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703959 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 91207446

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 2A-S

ASSAY  
ANTIMONY

ANALYSIS      UNITS

CANCELLED; INSUFFICIENT SAMPLE

ARSENIC

CANCELLED; INSUFFICIENT SAMPLE

CADMIUM

LESS THAN 0.10 PPM

LEAD

.52      PPM

MERCURY

.12      PPM

NICKEL

.77      PPM

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

CANCELLED; INSUFFICIENT SAMPLE

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

PPM  
0.040  
LESS THAN 0.02\*  
LESS THAN 0.006\*  
0.180  
LESS THAN 0.005  
LESS THAN 0.005

COMPOUND  
DDE  
DDD  
DDT  
DIELDRIN  
ALPHA-BHC  
BETA-BHC



SAMPLE NUMBER: 51207446

PAGE 2

FISH TISSUE (WHOLE): 2A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.3

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)





SAMPLE NUMBER: 51207446

PAGE 3

FISH TISSUE (WHOLE): 2A-S

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINDNAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207446

PAGE 4

FISH TISSUE (WHOLE): 2A-S

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1983), REVISED 1969-1983.

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207449

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 4-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	.10	PPM
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

PPM  
 0.065  
 LESS THAN 0.02\*  
 LESS THAN 0.08\*  
 0.099

COMPOUND  
 DDE  
 DDD  
 DDT  
 DIELDRIN



SAMPLE NUMBER: 51207449

PAGE 2

FISH TISSUE (WHOLE): 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.89	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLDR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207449

PAGE 3

FISH TISSUE (WHOLE): 4-S

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207449

PAGE 4

FISH TISSUE (WHOLE): 4-8

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA, INC

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 51207445

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/27/86

FISH TISSUE (WHOLE): 1A-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.08 PPM

LEAD

.22 PPM

MERCURY

.15 PPM

NICKEL

.39 PPM

SELENIUM

.51 PPM

SILVER

LESS THAN 0.10 PPM

THALLIUM

LESS THAN 0.75 PPM

## ICP EMISSION SPECTROMETRY

ASSAYSPPM

CALCIUM

9160.0

PHOSPHORUS

6070.0

MAGNESIUM

379.0

SODIUM

1200.0

ALUMINUM

23.4

IRON

56.7

STRONTIUM

8.28

BORON

LESS THAN 1.0

COPPER

3.22

ZINC

25.7

MANGANESE

7.35



SAMPLE NUMBER: 51207445

PAGE 2

FISH TISSUE (WHOLE): 1A-L

ICP EMISSION SPECTROMETRY

(CONTINUED)

CHROMIUM

LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.035	DDE
LESS THAN 0.005	DOD
LESS THAN 0.02*	DUT
LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TUXAPHEN
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25

MG/KG





SAMPLE NUMBER: 51207445

PAGE 5

FISH TISSUE (WHOLE): 1A-L

METHOD REFERENCES**ANTIMONY**

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

**ARSENIC**

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)**CAUDIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207449

PAGE 4

FISH TISSUE (WHOLE): 1A-L

METHOD REFERENCES (CONTINUED)

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.A. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## 2 EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207447

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/27/86

FISH TISSUE (WHOLE): 2A-M

ANTIMONY	LESS THAN 0.25 PPM	
ARSENIC	LESS THAN 0.10 PPM	
CADMIUM	LESS THAN 0.09 PPM	
LEAD	.30	PPM
MERCURY	.23	PPM
NICKEL	.38	PPM
SELENIUM	.33	PPM
SILVER	1.60	PPM
THALLIUM	LESS THAN 1.5 PPM	

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.08	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.006*	DDT
0.099	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN



SAMPLE NUMBER: 51207447

PAGE 2

FISH TISSUE (WHOLE): 2A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.14	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



SAMPLE NUMBER: 51207447

PAGE 3

FISH TISSUE (WHOLE): 2A-M

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.087-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-TESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207442

PAGE 4

FISH TISSUE (WHOLE): 2A-M

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207448

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 2A-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC .086 PPM

CADMIUM .15 PPM

LEAD .70 PPM

MERCURY .22 PPM

NICKEL .46 PPM

SELENIUM .58 PPM

SILVER .35 PPM

THALLIUM

LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

ASSAYS

PPM

CALCIUM 9940.0

PHOSPHORUS 5930.0

MAGNESIUM 380.0

SODIUM 1260.0

ALUMINUM 84.0

IRON 103.0

STRONTIUM 7.70

BORON LESS THAN 1.0

COPPER 3.68

ZINC 27.9

MANGANESE 14.2

CHROMIUM 27.9



SAMPLE NUMBER: 51207448

PAGE 2

FISH TISSUE (WHOLE): 2A-L

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.04	DDE
LESS THAN 0.006*	DDD
LESS THAN 0.005	DDT
0.025	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.04	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY  
ANALYST, VOLUME 99, PAGE 595, (1975)  
DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656  
(1960)





SAMPLE NUMBER: 51207448

PAGE 3

FISH TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207448

PAGE 4

FISH TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207450

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 4-M

ANTIMONY	LESS THAN 0.125 PPM	
ARSENIC	LESS THAN 0.05 PPM	
BARIUM	LESS THAN 0.04 PPM	
LEAD	.06	PPM
MERCURY	.10	PPM
NICKEL	LESS THAN 0.10 PPM	
SELENIUM	.53	PPM
SILVER	LESS THAN 0.10 PPM	
THALLIUM	LESS THAN 0.75 PPM	

ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	8410.0
PHOSPHORUS	5470.0
MAGNESIUM	345.0
SODIUM	978.0
ALUMINUM	6.94
IRON	24.8
STRONTIUM	7.79
BORON	LESS THAN 1.0
COPPER	1.83



SAMPLE NUMBER: 51207450

PAGE 2

FISH TISSUE (WHOLE): 4-M

ICP EMISSION SPECTROMETRY

(CONTINUED)

ZINC	21.7
MANGANESE	5.02
CHROMIUM	LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.13	DDE
LESS THAN 0.02*	DDO
LESS THAN 0.12*	DDT
0.039	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLDRANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.37	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG



SAMPLE NUMBER: 51207450

PAGE 3

FISH TISSUE (WHOLE): 4-M

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207450

PAGE 4

FISH TISSUE (WHOLE): 4-M

METHOD REFERENCES (CONTINUED)

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA, INC

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 51207451

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 4-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

BARIUM

.05 PPM

LEAD

.09 PPM

MERCURY

.11 PPM

NICKEL

.13 PPM

SELENIUM

.36 PPM

SILVER

.26 PPM

THALLIUM

LESS THAN 0.75 PPM

## ICP EMISSION SPECTROMETRY

ASSAYSPPM

CALCIUM	7700.0
PHOSPHORUS	5280.0
MAGNESIUM	340.0
SODIUM	1070.0
ALUMINUM	7.68
IRON	28.0
STRONTIUM	6.89
BORON	LESS THAN 1.0
COPPER	1.58
ZINC	19.2
MANGANESE	3.70
CHROMIUM	LESS THAN 1.0



SAMPLE NUMBER: 51207451

PAGE 2

FISH TISSUE (WHOLE): 4-L

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.093	DDE
LESS THAN 0.008*	DDD
LESS THAN 0.11*	DDT
0.02	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.01	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
LESS THAN 0.01	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY  
ANALYST, VOLUME 99, PAGE 595, (1975)  
DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656  
960)





SAMPLE NUMBER: 51207451

PAGE 3

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, ADAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, ADAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, ADAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, ADAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, ADAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207451

PAGE 4

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENDLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

REPORT: ELEMENTAL ANALYSIS BY ICP SPECTROSCOPY

RECEIVED 19-JUN-85 ANALYZED 3-JUL-85

HR

UKS DALTON

PARTS PER MILLION

SAMPLE ID	BE	CR	CU	ZN
50604774	< 0.005	0.39	2.09	20.2
50604776	< 0.005	0.32	2.04	20.5
50604777	< 0.005	0.49	2.20	19.6
50604778	< 0.005	0.46	2.05	22.9
50604779	< 0.005	0.58	5.43	22.0
50604780	< 0.005	4.40	3.08	19.8



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207443

DATE ENTERED: 12/10/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CHROMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	

ORIGINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.025	DDE
LESS THAN 0.005	DDD
LESS THAN 0.006*	DDT



SAMPLE NUMBER: 51207443

PAGE 2

FISH TISSUE (WHOLE): 1A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.006*	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
0.018	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLDR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.12	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207443

PAGE 3

FISH TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207443

PAGE 4

FISH TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLYD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207444

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-M

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED;	INSUFFICIENT SAMPLE
ARSENIC	CANCELLED;	INSUFFICIENT SAMPLE
CADMIUM	CANCELLED;	INSUFFICIENT SAMPLE
LEAD	CANCELLED;	INSUFFICIENT SAMPLE
MERCURY	CANCELLED;	INSUFFICIENT SAMPLE
NICKEL	CANCELLED;	INSUFFICIENT SAMPLE
SELENIUM	CANCELLED;	INSUFFICIENT SAMPLE
SILVER	CANCELLED;	INSUFFICIENT SAMPLE
THALLIUM	CANCELLED;	INSUFFICIENT SAMPLE
ICP EMISSION SPECTROMETRY	CANCELLED;	INSUFFICIENT SAMPLE

ORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.040	DDE
LESS THAN 0.005	DDD
LESS THAN 0.010*	DDT





SAMPLE NUMBER: 51207444

PAGE 2

FISH TISSUE (WHOLE): 1A-M

CHLDRINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.29	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.8

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207444

PAGE 3

FISH TISSUE (WHOLE): 1A-M

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207444

PAGE 4

FISH TISSUE (WHOLE): 1A-M

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENDLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (808) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207446

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 2A-S

ASSAY  
ANTIMONY

ANALYSIS      UNITS

CANCELLED; INSUFFICIENT SAMPLE

ARSENIC

CANCELLED; INSUFFICIENT SAMPLE

CADMIUM

LESS THAN 0.10 PPM

LEAD

.52      PPM

MERCURY

.12      PPM

NICKEL

.77      PPM

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

CANCELLED; INSUFFICIENT SAMPLE

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

PPM  
0.040  
LESS THAN 0.02\*  
LESS THAN 0.006\*  
0.180  
LESS THAN 0.005  
LESS THAN 0.005

COMPOUND  
DDE  
DDD  
DDT  
DIELDRIN  
ALPHA-BHC  
BETA-BHC



SAMPLE NUMBER: 51207446

PAGE 2

FISH TISSUE (WHOLE): 2A-S

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.3

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



SAMPLE NUMBER: 51207446

PAGE 3

FISH TISSUE (WHOLE): 2A-S

METHOD REFERENCES (CONTINUED)

CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

CURRY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207446

PAGE 4

FISH TISSUE (WHOLE): 2A-S

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703958 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207449

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 4-5

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	.10	PPM
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	

CHLORINATED INSECTICIDE, PCB

PPM  
0.065  
LESS THAN 0.02\*  
LESS THAN 0.08\*  
0.099

COMPOUND  
DDE  
DDD  
DDT  
DIELDRIN





SAMPLE NUMBER: 51207449

PAGE 2

FISH TISSUE (WHOLE): 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.89	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207449

PAGE 3

FISH TISSUE (WHOLE): 4-5

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2185 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207449

PAGE 4

FISH TISSUE (WHOLE): 4-5

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1969, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA INC.

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (800) 241-4471 • TLX 703958 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 51207448

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 2A-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

.086 PPM

CADMIUM

.15 PPM

AD

.70 PPM

MERCURY

.22 PPM

NICKEL

.46 PPM

SELENIUM

.58 PPM

SILVER

.35 PPM

THALLIUM

LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

ASSAYSPPM

CALCIUM	9940.0
PHOSPHORUS	5930.0
MAGNESIUM	380.0
SODIUM	1260.0
ALUMINUM	84.0
IRON	103.0
STRONTIUM	7.70
BORON	LESS THAN 1.0
COPPER	3.68
ZINC	27.9
MANGANESE	14.2
CHROMIUM	27.9



SAMPLE NUMBER: 51207448

PAGE 2

FISH TISSUE (WHOLE): 2A-L

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.04	ODE
LESS THAN 0.006*	ODD
LESS THAN 0.005	DDT
0.025	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.04	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENDLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207448

PAGE 3

FISH TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUORIMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207448

PAGE 4

FISH TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3101-3.004, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207450

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 4-m

ANTIMONY	LESS THAN 0.125 PPM	
ARSENIC	LESS THAN 0.05 PPM	
BARIUM	LESS THAN 0.04 PPM	
LEAD	.06	PPM
MERCURY	.10	PPM
NICKEL	LESS THAN 0.10 PPM	
SELENIUM	.53	PPM
SILVER	LESS THAN 0.10 PPM	
THALLIUM	LESS THAN 0.75 PPM	

ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	9410.0
PHOSPHORUS	5470.0
MAGNESIUM	345.0
SODIUM	978.0
ALUMINUM	6.94
IRON	24.8
STRONTIUM	7.79
BORON	LESS THAN 1.0
COPPER	1.83





SAMPLE NUMBER: 51207450

PAGE 2

FISH TISSUE (WHOLE): 4-M

ICP EMISSION SPECTROMETRY

(CONTINUED)

ZINC	21.7
MANGANESE	5.02
CHROMIUM	LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.13	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.12*	DDT
0.039	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.37	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLDR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG



SAMPLE NUMBER: 51207450

PAGE 3

FISH TISSUE (WHOLE): 4-M

METHOD REFERENCES**ANTIMONY**

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

**ARSENIC**

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)**CADMIUM**

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207450

PAGE 4

FISH TISSUE (WHOLE): 4-M

METHOD REFERENCES (CONTINUED)

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38. NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

..LP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLDRINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207451

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 4-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.05 PPM

LEAD

.09 PPM

MERCURY

.11 PPM

NICKEL

.13 PPM

SELENIUM

.36 PPM

SILVER

.26 PPM

THALLIUM

LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

ASSAYS

PPM

CALCIUM	7700.0
PHOSPHORUS	5280.0
MAGNESIUM	340.0
SODIUM	1070.0
ALUMINUM	7.68
IRON	28.0
STRONTIUM	6.89
BORON	LESS THAN 1.0
COPPER	1.58
ZINC	19.2
MANGANESE	3.70
CHROMIUM	LESS THAN 1.0



SAMPLE NUMBER: 51207451

PAGE 2

FISH TISSUE (WHOLE): 4-L

## CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.093	DDE
LESS THAN 0.008*	DDD
LESS THAN 0.11*	DDT
0.02	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.01	TECHNICAL CHLOROANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
LESS THAN 0.01	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

## PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207451

PAGE 3

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1980)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207451

PAGE 4

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 31.01-31.04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207445  
DATE ENTERED: 12/18/85  
REPORT PRINTED: 01/22/86

FISH TISSUE (WHOLE): 1A-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.08 PPM

LEAD

.22 PPM

MERCURY

.15 PPM

NICKEL

.39 PPM

SELENIUM

.51 PPM

SILVER

LESS THAN 0.10 PPM

THALLIUM

LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	9160.0
PHOSPHORUS	6070.0
MAGNESIUM	379.0
SODIUM	1200.0
ALUMINUM	25.4
IRON	56.7
STRONTIUM	8.28
BORON	LESS THAN 1.0
COPPER	3.22
ZINC	25.7
MANGANESE	7.35





SAMPLE NUMBER: 51207445

PAGE 2

FISH TISSUE (WHOLE): 1A-L

ICP EMISSION SPECTROMETRY

(CONTINUED)

CHROMIUM

LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.035	DDE
LESS THAN 0.005	DDD
LESS THAN 0.02*	DDT
LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25

MG/KG



SAMPLE NUMBER: 5120/445

PAGE 3

FISH TISSUE (WHOLE): 1A-L

METHOD REFERENCES**ANTIMONY**

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

**ARSENIC**

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

**CADMIUM**

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207445

PAGE 4

FISH TISSUE (WHOLE): 1A-L

METHOD REFERENCES (CONTINUED)

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## P EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 5120/44/  
DATE ENTERED: 12/18/85  
REPORT PRINTED: 01/27/86

FISH TISSUE (WHOLE): 2A-M

ANTIMONY	LESS THAN 0.25 PPM	
ARSENIC	LESS THAN 0.10 PPM	
CADMIUM	LESS THAN 0.09 PPM	
LEAD	.30	PPM
MERCURY	.23	PPM
NICKEL	.38	PPM
SELENIUM	.33	PPM
SILVER	1.60	PPM
THALLIUM	LESS THAN 1.5 PPM	

ICP EMISSION SPECTROMETRY  
CANCELLED; INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.08	DDE
LESS THAN 0.02*	DDU
LESS THAN 0.006*	DDT
0.099	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN



SAMPLE NUMBER: 51207447

PAGE 2

FISH TISSUE (WHOLE): 2A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.14	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



SAMPLE NUMBER: 51207447

PAGE 3

FISH TISSUE (WHOLE): 2A-M

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- TESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207447

PAGE 4

FISH TISSUE (WHOLE): 2A-M

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296,  
ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD  
3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7645 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 512074

DATE ENTERED: 12/18/1

REPORT PRINTED: 01/24/1

FISH TISSUE (WHOLE): 2A-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC	.086	PPM
CADMIUM	.15	PPM
LEAD	.70	PPM
MERCURY	.22	PPM
NICKEL	.46	PPM
SELENIUM	.58	PPM
SILVER	.35	PPM
THALLIUM		

LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	9940.0
PHOSPHORUS	5930.0
MAGNESIUM	380.0
SODIUM	1260.0
ALUMINUM	84.0
IRON	103.0
STRONTIUM	7.70
BORON	LESS THAN 1.0
COPPER	3.68
ZINC	27.9
MANGANESE	14.2
CHROMIUM	27.9





SAMPLE NUMBER: 51207448

PAGE 2

FISH TISSUE (WHOLE): 2A-L

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.04	DDE
LESS THAN 0.006*	DDO
LESS THAN 0.005	DDT
0.025	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 124B
0.04	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENDLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY  
ANALYST, VOLUME 99, PAGE 595, (1975)  
DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656  
(1960)



SAMPLE NUMBER: 51207448

PAGE 3

FISH TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207448

PAGE 4

FISH TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.001-3.004, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 5120745

DATE ENTERED: 12/18/8

REPORT PRINTED: 01/24/8

FISH TISSUE (WHOLE): 4-M

ANTIMONY	LESS THAN 0.125 PPM
ARSENIC	LESS THAN 0.05 PPM
CADMIUM	LESS THAN 0.04 PPM
LEAD	.06 PPM
MERCURY	.10 PPM
NICKEL	LESS THAN 0.10 PPM
SELENIUM	.53 PPM
SILVER	LESS THAN 0.10 PPM
THALLIUM	LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	8410.0
PHOSPHORUS	5470.0
MAGNESIUM	345.0
SODIUM	978.0
ALUMINUM	6.94
IRON	24.8
STRONTIUM	7.79
BORON	LESS THAN 1.0
COPPER	1.83



SAMPLE NUMBER: 51207450

PAGE 2

FISH TISSUE (WHOLE): 4-M

ICP EMISSION SPECTROMETRY

(CONTINUED)

ZINC	21.7
MANGANESE	5.02
CHROMIUM	LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.13	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.12*	DDT
0.039	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TDXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.37	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCNLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG



SAMPLE NUMBER: 51207450

PAGE 3

FISH TISSUE (WHOLE): 4-M

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207450

PAGE 4

FISH TISSUE (WHOLE): 4-M

METHOD REFERENCES (CONTINUED)

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 5120745

DATE ENTERED: 12/18/86

REPORT PRINTED: 01/24/87

FISH TISSUE (WHOLE): 4-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

ADMIMUM

.05 PPM

LEAD

.09 PPM

MERCURY

.11 PPM

NICKEL

.13 PPM

SELENIUM

.36 PPM

SILVER

.26 PPM

THALLIUM

LESS THAN 0.75 PPM

ICP EMISSION SPECTROMETRY

ASSAYS

PPM

CALCIUM	7700.0
PHOSPHDRUS	5280.0
MAGNESIUM	340.0
SODIUM	1070.0
ALUMINUM	7.68
IRON	28.0
STRONTIUM	6.89
BORDN	LESS THAN 1.0
COPPER	1.58
ZINC	19.2
MANGANEESE	3.70
CHROMIUM	LESS THAN 1.0





SAMPLE NUMBER: 51207451

PAGE 2

FISH TISSUE (WHOLE): 4-L

## CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.093	ODE
LESS THAN 0.008*	DDD
LESS THAN 0.11*	DDT
0.02	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.01	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
LESS THAN 0.01	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

## PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207451

PAGE 3

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207451

PAGE 4

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207443

DATE ENTERED: 12/18/85

REPDRT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-S

ASSAY  
ANTIMONY

ANALYSIS UNITS

CANCELLED; INSUFFICIENT SAMPLE

ARSENIC

CANCELLED; INSUFFICIENT SAMPLE

CADMIUM

CANCELLED; INSUFFICIENT SAMPLE

LEAD

CANCELLED; INSUFFICIENT SAMPLE

MERCURY

CANCELLED; INSUFFICIENT SAMPLE

NICKEL

CANCELLED; INSUFFICIENT SAMPLE

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

CANCELLED; INSUFFICIENT SAMPLE

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

DRINATED INSECTICIDE, PCB

PPM  
0.025  
LESS THAN 0.005  
LESS THAN 0.006\*

COMPOUND  
DDE  
DDD  
DDT



SAMPLE NUMBER: 51207443

PAGE 2

FISH TISSUE (WHOLE): 1A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.006*	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
0.018	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.12	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207443

PAGE 3

FISH TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1107-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2>J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207443

PAGE 4

FISH TISSUE (WHOLE): 1A-5

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLYD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207444

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-M

ASSAY  
ANTIMONY

ANALYSIS      UNITS

CANCELLED; INSUFFICIENT SAMPLE

ARSENIC

CANCELLED; INSUFFICIENT SAMPLE

CADMIUM

CANCELLED; INSUFFICIENT SAMPLE

LEAD

CANCELLED; INSUFFICIENT SAMPLE

MERCURY

CANCELLED; INSUFFICIENT SAMPLE

NICKEL

CANCELLED; INSUFFICIENT SAMPLE

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

CANCELLED; INSUFFICIENT SAMPLE

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

ORINATED INSECTICIDE, PCB

PPM  
0.040  
LESS THAN 0.005  
LESS THAN 0.010\*

COMPOUND  
DDE  
DDD  
DDT





SAMPLE NUMBER: 51207444

PAGE 2

FISH TISSUE (WHOLE): 1A-M

CHLDRINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.29	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.8

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207444

PAGE 3

FISH TISSUE (WHOLE): 1A-M

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207444

PAGE 4

FISH TISSUE (WHOLE): 1A-M

METHOD REFERENCES (CONTINUED)

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207446

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 2A-S

ASSAY  
ANTIMONY

ANALYSIS      UNITS

CANCELLED; INSUFFICIENT SAMPLE

ARSENIC

CANCELLED; INSUFFICIENT SAMPLE

CADMIUM

LESS THAN 0.10 PPM

LEAD

.52      PPM

MERCURY

.12      PPM

NICKEL

.77      PPM

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

CANCELLED; INSUFFICIENT SAMPLE

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.040	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.006*	DDT
0.180	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC



SAMPLE NUMBER: 51207446

PAGE 2

FISH TISSUE (WHOLE): 2A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENDLS

5.3

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



SAMPLE NUMBER: 51207446

PAGE 3

FISH TISSUE (WHOLE): 2A-S

METHOD REFERENCES (CONTINUED)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## .CURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 51207446

PAGE 4

FISH TISSUE (WHOLE): 2A-5

METHOD REFERENCES (CONTINUED)

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296,  
ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD  
3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207449

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 4-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	.10	PPM
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

PPM  
0.065  
LESS THAN 0.02\*  
LESS THAN 0.08\*  
0.099

COMPOUND  
ODE  
DDD  
DDT  
DIELDRIN





SAMPLE NUMBER: 51207449

PAGE 2

FISH TISSUE (WHOLE): 4-S

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.89	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

## PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



SAMPLE NUMBER: 51207449

PAGE 3

FISH TISSUE (WHOLE): 4-5

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2>J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



SAMPLE NUMBER: 51207449

PAGE 4

FISH TISSUE (WHOLE): 4-5

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

REPORT OF ANALYSIS

*Hazelton*

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 51207443

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-S

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	

CHLORINATED INSECTICIDE, PCB

<u>PPM</u>	<u>COMPOUND</u>
0.025	DDE
LESS THAN 0.005	DDD
LESS THAN 0.006*	DDT

SAMPLE NUMBER: 51207443

PAGE 2

FI TISSUE (WHOLE): 1A-5

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.006*	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
0.018	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.12	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENDLS

CANCELLED; INSUFFICIENT SAMPLE

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



AMF NUMBER: 51207443

PAGE 3

ISH TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2>J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SAMPLE NUMBER: 51207443

PAGE 4

FIS. TISSUE (WHOLE): 1A-S

METHOD REFERENCES (CONTINUED)

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLORINATED INSECTICIDE, PCB

FOH PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

REPORT OF ANALYSIS

JRS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 51207444  
 DATE ENTERED: 12/18/85  
 REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 1A-M

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

<u>PPM</u>	<u>COMPOUND</u>
0.040	DDE
LESS THAN 0.005	DDO
LESS THAN 0.010*	DDT



SAMPLE NUMBER: 51207444

PAGE 2

F: TISSUE (WHOLE): 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.29	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.B

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

AMF NUMBER: 51207444

PAGE 3

ISH TISSUE (WHOLE): 1A-M

ETHOD REFERENCES (CONTINUED)

## ARSENIC

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SAMPLE NUMBER: 51207444

PAGE 4

FILE (ISSUE (WHOLE)): 1A-M

METHOD REFERENCES (CONTINUED)

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 5120/445

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/27/86

FISH TISSUE (WHOLE): 1A-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.08 PPM

LEAD

.22 PPM

M. MURRY

.15 PPM

NICKEL

.39 PPM

SELENIUM

.51 PPM

SILVER

LESS THAN 0.10 PPM

THALLIUM

LESS THAN 0.75 PPM

## ICP EMISSION SPECTROMETRY

ASSAYSPPM

CALCIUM	9160.0
PHOSPHORUS	6070.0
MAGNESIUM	379.0
SODIUM	1200.0
ALUMINUM	23.4
IRON	56.7
STRONTIUM	8.28
BARIUM	LESS THAN 1.0
COPPER	3.22
ZINC	25.7
MANGANESE	7.35

SAMPLE NUMBER: 91207445

PAGE

FISH TISSUE (WHOLE): 1A-L

ICP EMISSION SPECTROMETRY

(CONTINUED)

CHROMIUM

LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.035	DDE
LESS THAN 0.005	DDD
LESS THAN 0.02*	DDT
LESS THAN 0.005	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TDXAPHENE
LESS THAN 0.10	TECHNICAL CHLORUANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25

MG/KG

SAMPLE NUMBER: 51207445

PAGE 3

FISH TISSUE (WHOLE): 1A-L

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIED, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 51207445

PAGE 4

FISH TISSUE (WHOLE): 1A-L

METHOD REFERENCES (CONTINUED)

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**ICP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

**CHLORINATED INSECTICIDE, PCB**

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

**PHENOLS**

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).



REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207446

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 2A-5

ASSAY	ANALYSIS	UNITS
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	LESS THAN 0.10 PPM	
LEAD	.52	PPM
MERCURY	.12	PPM
NICKEL	.77	PPM
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

PPM	COMPOUND
0.040	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.006*	DDT
0.180	DIELDRIH
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC



LABORATORY NUMBER: 91207446

PAGE 2

FISH TISSUE (WHOLE): 2A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TDXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.20	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

• ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

5.3

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED. (DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)



AMI NUMBER: 51207446

PAGE 3

ISH TISSUE (WHOLE): 2A-5

METHOD REFERENCES (CONTINUED)CAESIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

- DISTILLATION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.N. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH



AMF NUMBER: 51207446

PAGE 4

FISH TISSUE (WHOLE): 2A-S

METHOD REFERENCES (CONTINUED)

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHOSPHORUS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 5120/447

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/27/86

FISH TISSUE (WHOLE): 2A-M

ANTIMONY	LESS THAN 0.25 PPM
ARSENIC	LESS THAN 0.10 PPM
CAESIUM	LESS THAN 0.09 PPM
LEAD	.30 PPM
MERCURY	.23 PPM
NICKEL	.38 PPM
SELENIUM	.33 PPM
SILVER	1.60 PPM
THALLIUM	LESS THAN 1.5 PPM

ICP EMISSION SPECTROMETRY

CANCELLED; INSUFFICIENT SAMPLE

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.08	DDT
LESS THAN 0.02*	DDT
LESS THAN 0.006*	DDT
0.049	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN

SAMPLE NUMBER: 51207447

PAGE 2

ISSUE (WHOLE): 2A-M

UNLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PLB 1016
LESS THAN 0.01	PLB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.14	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

SAMPLE NUMBER: 51207447

PAGE 3

15 ISSUE (WHOLE): 2A-M

METHOD REFERENCES (CONTINUED)

## CALCIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## MANGANESE

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2-J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 51207447

PAGE 4

F1 TISSUE (WHOLE): 2A-M

METHOD REFERENCES (CONTINUED)

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296,  
ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD  
3.A01-3.A04, ARLINGTON, VA.

CHLDRINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

## REPORT OF ANALYSIS

URS-DALTON  
 NEIL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 51207448  
 DATE ENTERED: 12/18/85  
 REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 2A-L

## ANTIMONY

LESS THAN 0.125 PPM

ARSENIC	.086	PPM
CADMIUM	.15	PPM
LEAD	.70	PPM
MERCURY	.22	PPM
KEL	.46	PPM
SELENIUM	.58	PPM
SILVER	.35	PPM
THALLIUM		

LESS THAN 0.75 PPM

## ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	9940.0
PHOSPHORUS	5930.0
MAGNESIUM	380.0
SODIUM	1260.0
ALUMINUM	84.0
IRON	103.0
STRONTIUM	7.70
BARIUM	LESS THAN 1.0
COPPER	3.68
ZINC	27.9
MANGANESE	14.2
CHROMIUM	27.9



SAMPLE NUMBER: 51207448

PAGE 2

FISH TISSUE (WHOLE): 2A-L

## CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.04	DDE
LESS THAN 0.006*	DDD
LESS THAN 0.005	DDT
0.025	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.04	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

## PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

SAMPLE NUMBER: 51207448

PAGE 3

ISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)**ARSENIC**

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- 2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- 3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- 4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

**CADMIUM**

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

**LEAD**

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- 2-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

- 1-DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- 2-DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

- 1-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 2-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- 2>J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SAMPLE NUMBER: 51207448

PAGE 4

FILE TISSUE (WHOLE): 2A-L

METHOD REFERENCES (CONTINUED)

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

CHLORINATED INSECTICIDE, PCB

F. PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

**REPORT OF ANALYSIS**

RS-DALTON  
 EIL CHASE  
 605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 5120/449

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/15/86

FISH TISSUE (WHOLE): 4-5

<u>ASSAY</u>	<u>ANALYSIS</u>	<u>UNITS</u>
ANTIMONY	CANCELLED; INSUFFICIENT SAMPLE	
ARSENIC	CANCELLED; INSUFFICIENT SAMPLE	
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	.10	PPM
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	CANCELLED; INSUFFICIENT SAMPLE	
ICP EMISSION SPECTROMETRY	CANCELLED; INSUFFICIENT SAMPLE	
CHLORINATED INSECTICIDE, PCB		

<u>PPM</u>	<u>COMPOUND</u>
0.065	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.08*	DDT
0.099	DIELDORIN

SAMPLE NUMBER: 51207449

PAGE 2

ISS. (ISSUE (WHOLE)): 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.89	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

• ELEVATED LOD DUE TO INTERFERENCES.

PHENDLS

LESS THAN 0.25

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

MP# NUMBER: 51207449

PAGE 3

SM TISSUE (WHOLE): 4-5

THOD REFERENCES (CONTINUED)

## ZINC

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND 200-213.1, U. S. EPA, CINCINNATI, OH

## LEAD

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2185 (1968).

## NICKEL

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND 200-213.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

MPI NUMBER: 51207449

PAGE 4

SH 7 ISSUE (WHOLE): 4-S

METHOD REFERENCES (CONTINUED)

**ALUMINUM**  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
ORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND  
METHOD 272.1, U. S. EPA, CINCINNATI, OH

**HALLIUM**  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY,  
ORWALK, CT, JANUARY 1982

**INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY**  
INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL  
MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED  
SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296,  
ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD  
3.1.A01-3.A04, ARLINGTON, VA.

**DICHLORODIPHENYL METHANE-DERIVED INSECTICIDE, PCB**  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

**PHENOLS**  
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

## REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207450

DATE ENTERED: 12/18/85

REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 4-M

ANTIMONY	LESS THAN 0.125 PPM
ARSENIC	LESS THAN 0.05 PPM
CADMIUM	LESS THAN 0.04 PPM
LEAD	.06 PPM
MERCURY	.10 PPM
NICKEL	LESS THAN 0.10 PPM
SELENIUM	.53 PPM
SILVER	LESS THAN 0.10 PPM
THALLIUM	LESS THAN 0.75 PPM

## ICP EMISSION SPECTROMETRY

<u>ASSAYS</u>	<u>PPM</u>
CALCIUM	8410.0
PHOSPHORUS	5470.0
MAGNESIUM	345.0
SODIUM	978.0
ALUMINUM	6.94
IRON	24.8
STRONTIUM	7.79
BORON	LESS THAN 1.0
COPPER	1.83



SAMPLE NUMBER: 51207450

PAGE 2

F1 TISSUE (WHOLE): 4-M

ICP EMISSION SPECTROMETRY

(CONTINUED)

ZINC	21.7
MANGANESE	5.02
CHROMIUM	LESS THAN 1.0

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.13	DDE
LESS THAN 0.02*	DDD
LESS THAN 0.12*	DDT
0.039	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCB 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCB 1248
0.37	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

SAMPLE NUMBER: 51207450

PAGE 3

FILE ISSUE (WHOLE): 4-M

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-JEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.

DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SAMPLE NUMBER: 51207450

PAGE 4

ISS. (ISSUE (WHOLE)): 4-M

METHOD REFERENCES (CONTINUED)

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.

J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

## REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 51207451  
DATE ENTERED: 12/18/85  
REPORT PRINTED: 01/24/86

FISH TISSUE (WHOLE): 4-L

ANTIMONY

LESS THAN 0.125 PPM

ARSENIC

LESS THAN 0.05 PPM

CADMIUM

.05 PPM

LEAD

.09 PPM

MERCURY

.11 PPM

NICKEL

.13 PPM

SELENIUM

.36 PPM

SILVER

.26 PPM

THALLIUM

LESS THAN 0.75 PPM

## ICP EMISSION SPECTROMETRY

ASSAYSPPM

CALCIUM	7700.0
PHOSPHORUS	5200.0
MAGNESIUM	340.0
SODIUM	1070.0
ALUMINUM	7.68
IRON	28.0
STRONTIUM	6.89
BORON	LESS THAN 1.0
COPPER	1.58
ZINC	19.2
MANGANESE	3.70
CHROMIUM	LESS THAN 1.0



SAMPLE NUMBER: 51207451

PAGE 2

F. TISSUE (WHOLE): 4-L

CHLORINATED INSECTICIDE, PCB

PPM	COMPOUND
0.093	DOE
LESS THAN 0.008*	DOD
LESS THAN 0.11*	DDT
0.02	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	ENDRIN
LESS THAN 0.01	ENDRIN ALDEHYDE
LESS THAN 0.005	H.E.
LESS THAN 0.10	TOXAPHENE
LESS THAN 0.01	TECHNICAL CHLORDANE
LESS THAN 0.005	HEPTACHLOR
LESS THAN 0.005	ENDOSULFANE I
LESS THAN 0.005	ENDOSULFANE II
LESS THAN 0.005	ENDOSULFANE SULFATE
LESS THAN 0.01	PCB 1221
LESS THAN 0.01	PCS 1016
LESS THAN 0.01	PCB 1232
LESS THAN 0.01	PCB 1242
LESS THAN 0.01	PCS 1248
LESS THAN 0.01	PCB 1254
LESS THAN 0.01	PCB 1260
LESS THAN 0.01	MIREX
LESS THAN 0.01	METHOXYCHLOR

\* ELEVATED LOD DUE TO INTERFERENCES.

PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)



MP NUMBER: 51207451

PAGE 3

ISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)**ARSENIC**

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.
- DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)
- FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)
- UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

**CADMIUM**

- 1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.
- 2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- 3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)
- 4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH

**LEAD**

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)
- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

- DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.
- DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

- PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982
- METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

- OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.
- J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966



LAB NUMBER: 51207451

PAGE 4

FISH TISSUE (WHOLE): 4-L

METHOD REFERENCES (CONTINUED)

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.

## CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311, (1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION, PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NAIL CHASE  
 3615 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 60602425  
 DATE ENTERED: 06/11/86  
 REPORT PRINTED: 07/15/86

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.070	PPM
CAESIUM	.07	PPM
COBALT	.1	PPM
MERCURY	.200	PPM
NICKEL	.24	PPM
STRONTIUM	1.41	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM FAT BASIS</u>	<u>COMPOUND</u>
LESS THAN 0.01	DDP
LESS THAN 0.01	DDD
LESS THAN 0.01	DDT
LESS THAN 0.10	PCB
LESS THAN 0.01	DIFLORIN
LESS THAN 0.01	ALPHA-BHC
LESS THAN 0.01	BETA-BHC
LESS THAN 0.01	DELTA-BHC
LESS THAN 0.01	GAMMA-BHC (LINDANE)
LESS THAN 0.01	HCB





SAMPLE NUMBER: 60602425

PAGE 2

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.01	ENDRIN
LESS THAN 0.01	H.E.
LESS THAN 0.05	MIREX
LESS THAN 0.05	METHOXYCHLOR
LESS THAN 1.0	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.01	ALDRIN
LESS THAN 0.01	HEPTACHLOR

PHENOLS

LESS THAN 0.2% MG/KG

METHOD REFERENCES

## ZINC

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602425

PAGE 3

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

METHOD REFERENCES (CONTINUED)

**LEAD**  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**  
DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 7085 (1968).

**NICKEL**  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**  
PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**TLP EMISSION SPECTROMETRY**  
INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60402425

PAGE 4

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCH  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1985).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

## PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703958 HAZRAL MDS UD

REPORT OF ANALYSIS

MRS-DALTON  
NFIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602426

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.094	PPM
CADMIUM	.05	PPM
AD	.09	PPM
MERCURY	.177	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	1.16	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.123	DDE
0.024	DDD
LESS THAN 0.010*	DDT
0.14	PCB 1260
0.192	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)



SAMPLE NUMBER: 60602426

PAGE 2

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	HCH
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE

3.32%	LIPID
-------	-------

\*100 RAISED DUE TO INTERFERENCE PEAK.

PHENOLS	3.3	MG/KG
---------	-----	-------

METHOD REFERENCES

## TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602426

PAGE 3

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES T-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602426

PAGE 4

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (800) 241-4471 • TLX 703856 HAZRAL MOS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602427

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	LESS THAN 0.05	PPM
CADMIUM	.04	PPM
LEAD	.32	PPM
MERCURY	.134	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	1.05	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.166	DDE
0.037	DDD
LESS THAN 0.016*	DDT
0.23	PCB 1260
0.100	DIFENDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC





SAMPLE NUMBER: 60602427

PAGE 2

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
3.74%	LIPID

\*LOD RAISED DUE TO INTERFERENCE PEAK.

PHENOLS

LESS THAN 0.2% MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CAESIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, (CINCINNATI), OH



SAMPLE NUMBER: 60602427

PAGE 3

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).

OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.

OFFICIAL METHODS OF ANALYSIS, 15<sup>TH</sup> SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

SAMPLE NUMBER: 60602427

PAGE 4

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703858 HAZRAL MD5 UD

REPORT OF ANALYSIS

URS-DALTON  
NFIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602428

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.051	PPM
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	LESS THAN 0.25	PPM
ICP EMISSION SPECTROMETRY	SEE ATTACHED	

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.103	DOE
0.031	DDO
LESS THAN 0.005	DOT
0.27	PCB 1260
0.028	DIELDRIN



SAMPLE NUMBER: 6060242B

PAGE 2

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
4.06%	LIPID

PHENOLS

.85

MG/KG

METHOD REFERENCES

ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 6060242H

PAGE 3

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

METHOD REFERENCES (CONTINUED)**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 222.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**ICP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602428

PAGE 4

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

REPORT OF ANALYSIS

LIR5-DALTON  
NF II CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602429

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (SMALL FISH) WHOLE: 4-S

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.064	PPM
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	LESS THAN 0.25	PPM
ICP EMISSION SPECTROMETRY	SEE ATTACHED	

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.080	DDF
0.016	DDD
0.006	DDT
0.85	PCB 1254
0.042	DIFLDRIN





SAMPLE NUMBER: 60602429

PAGE 2

FISH TISSUE (SMALL FISH) WHOLE: 4-5

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
2.51%	LIPID

PHENOLS

.47

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYSIS, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602429

PAGE 3

FISH TISSUE (SMALL FISH) WHOLE: 4-5

METHOD REFERENCES (CONTINUED)

LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.102, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WALKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602429

PAGE 4

FISH TISSUE (SMALL FISH) WHOLE: 4-5

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1987).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7645 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

LIRS-DALTON  
NETL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602430

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

ANTIMONY

LESS THAN 0.13 PPM

ARSENIC

.073 PPM

CADMIUM

CANCELLED; INSUFFICIENT SAMPLE

LEAD

CANCELLED; INSUFFICIENT SAMPLE

MERCURY

CANCELLED; INSUFFICIENT SAMPLE

NICKEL

CANCELLED; INSUFFICIENT SAMPLE

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

(PPM) WET BASIS  
0.221  
0.023  
LESS THAN 0.005  
2.2  
0.030

COMPOUND  
DDP  
DDD  
DDT  
PCB 1254  
DIFLDRIN



SAMPLE NUMBER: 40602430

PAGE 2

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCH
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
3.04%	LIPID

PHENOLS

1.9

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, O., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602430

PAGE 3

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602430

PAGE 4

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS  
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (808) 241-4471 • TLX 703958 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3615 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602431

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (LARGE FISH) WHOLE: 4-L

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	LESS THAN 0.05	PPM
CADMIUM	.05	PPM
LEAD	.1	PPM
MERCURY	.219	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	1.13	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.130	DDE
0.016	DDD
LESS THAN 0.014*	DDT
0.40	PCB 1254
0.075	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC





SAMPLE NUMBER: 60602431

PAGE 2

FISH TISSUE (LARGE FISH) WHOLE: 4-L

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
1.39%	LIPID

\*LOD RAISED DUE TO INTERFERENCE PEAK.

PHENOLS .42 MG/KG

METHOD REFERENCESANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.

(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



MPI E NUMBER: 60602431

PAGE 3

FISH TISSUE (LARGE FISH) WHOLE: 4-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602431

PAGE 4

FISH TISSUE (LARGE FISH) WHOLE: 4-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

REPORT: ELEMENTAL ANALYSIS BY ICP SPECTROSCOPY

HAZLETON FILE: 61711

RECEIVED 11-JUN-86 ANALYZED 20-JUN-86

URS COMPANY

PARTS PER MILLION

SAMPLE ID	CA	P	MG	NA	AL	BA	FE	SR	H	DU	ZN	HM	UR
60602425	6708	5109	329.	1004	12.3	1.96	34.1	5.66	< 0.50	1.77	19.6	6.34	< 0.50
60602426	7437	5512	358.	977	15.3	2.84	32.4	6.21	< 0.50	1.64	26.8	7.20	< 0.50
60602427	7758	5710	358.	918	29.3	3.00	72.4	6.69	< 0.50	1.51	29.9	9.75	< 0.50
60602428	6893	5413	358.	923	67.3	2.63	130.	6.35	< 0.50	1.82	28.4	18.4	< 0.50
60602429	7047	5209	352.	687	22.3	2.20	53.7	6.54	< 0.50	1.55	22.6	17.2	< 0.50
60602430	7899	5347	356.	1024	15.1	2.17	48.1	7.54	< 0.50	2.32	22.2	14.8	< 0.50
60602431	7840	5429	352.	1121	15.3	2.02	55.0	6.66	< 0.50	1.92	20.8	12.8	< 0.50



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703958 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NFIL CHASE  
3405 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602425  
DATE ENTERED: 06/11/86  
REPORT PRINTED: 07/15/86

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.070	PPM
CADMIUM	.07	PPM
COBALT	.1	PPM
MERCURY	.200	PPM
NICKEL	.24	PPM
SELENIUM	1.41	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

TOP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>PPM FAT BASIS</u>	<u>COMPOUND</u>
LESS THAN 0.01	DDP
LESS THAN 0.01	DDO
LESS THAN 0.01	DDT
LESS THAN 0.10	PCB
LESS THAN 0.01	DIELDORIN
LESS THAN 0.01	ALPHA-BHC
LESS THAN 0.01	BETA-BHC
LESS THAN 0.01	DELTA-BHC
LESS THAN 0.01	GAMMA-BHC (LINDANE)
LESS THAN 0.01	HCH



SAMPLE NUMBER: 60602425

PAGE 2

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.01	ENDRIN
LESS THAN 0.01	H.F.
LESS THAN 0.05	MIREX
LESS THAN 0.05	METHOXYCHLOR
LESS THAN 1.0	TOXAPHENE
LESS THAN 0.10	TECHNICAL CHLORDANE
LESS THAN 0.01	ALDRIN
LESS THAN 0.01	HEPTACHLOR

## PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ZINC

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602429

PAGE 3

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUORIMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703868 HAZRAL MDS UD

SAMPLE NUMBER: 60A02425

PAGE 4

FISH TISSUE (LARGE FISH) WHOLE: 2A-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCH

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1985).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).





**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINGMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703856 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NEIL CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602426

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.094	PPM
CADMIUM	.05	PPM
COBALT	.09	PPM
MERCURY	.172	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	1.16	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.123	DDE
0.024	DDD
LESS THAN 0.010*	DDT
0.14	PCB 1260
0.192	DIFENDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)



SAMPLE NUMBER: 60602426

PAGE 2

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	HCH
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
3.32%	LIPID

\*LTD RAISED DUE TO INTERFERENCE PEAK.

PHENOLS

3.3

MG/KG

METHOD REFERENCES

TIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.04B-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602426

PAGE 3

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

METHOD REFERENCES (CONTINUED)**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**IDP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 15<sup>TH</sup> SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (808) 241-4471 • TLX 703956 HAZRAL MDS UD

SAMPLE NUMBER: 60602426

PAGE 4

FISH TISSUE (MEDIUM FISH) WHOLE: 2A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1985).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NF TL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 60602427

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	LESS THAN 0.05	PPM
CADMIUM	.04	PPM
LEAD	.32	PPM
MERCURY	.134	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	1.05	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.166	DDX
0.037	DDD
LESS THAN 0.016*	DDT
0.23	PCB 1260
0.100	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC



SAMPLE NUMBER: 60602427

PAGE 2

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
3.74%	LIPID

\*LTD RAISED DUE TO INTERFERENCE PEAK.

## PHENOLS

LESS THAN 0.25 MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIED, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602427

PAGE 3

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2185 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



**HAZLETON**

LABORATORIES AMERICA, INC.

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703958 HAZRAL MDS UD

SAMPLE NUMBER: 60602427

PAGE 4

FISH TISSUE (SMALL FISH) WHOLE: 2A-S

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).  
JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).  
JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS  
STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).





**HAZLETON**

LABORATORIES AMERICA, INC

Chemical & BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (808) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

URS-DALTON  
NF11, CHASE  
3605 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60607420

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

ANTIMONY

LESS THAN 0.13 PPM

ARSENIC

.051 PPM

CADMIUM

CANCELLED; INSUFFICIENT SAMPLE

LEAD

CANCELLED; INSUFFICIENT SAMPLE

MERCURY

CANCELLED; INSUFFICIENT SAMPLE

NICKEL

CANCELLED; INSUFFICIENT SAMPLE

SELENIUM

CANCELLED; INSUFFICIENT SAMPLE

SILVER

CANCELLED; INSUFFICIENT SAMPLE

THALLIUM

LESS THAN 0.25 PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

(PPM) WET BASIS

0.103

0.031

LESS THAN 0.005

0.27

0.028

COMPOUND

DDE

DDD

DDT

PCB 1260

DIELDRIN



SAMPLE NUMBER: 60602428

PAGE 2

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCN
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
4.06%	LIPID

PHENOLS

.85

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 6060242R

PAGE 3

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

METHOD REFERENCES (CONTINUED)

**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2485 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**IDP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 6060242R

PAGE 4

FISH TISSUE (MEDIUM FISH) WHOLE: 1A-M

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

PDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT OF ANALYSIS

MRS-DALTON  
NEIL CHASE  
3405 WARRENSVILLE CENTER ROAD  
CLEVELAND, OH 44122

SAMPLE NUMBER: 60602429

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/10/86

FISH TISSUE (SMALL FISH) WHOLE: 4-S

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.064	PPM
CAESIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	LESS THAN 0.25	PPM
ICP EMISSION SPECTROMETRY	SEE ATTACHED	

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.080	DDP
0.016	DDD
0.006	DDT
0.85	PCB 1254
0.042	DTLDRTN



SAMPLE NUMBER: 60602429

PAGE 2

FISH TISSUE (SMALL FISH) WHOLE: 4-S

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCH
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE

2.51%

LIPID

PHENOLS

.47

MG/KG

METHOD REFERENCES

## ANTIMONY

1-ANALYST, VOLUME 99, PAGE 595, (1975)

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602429

PAGE 3

FISH TISSUE (SMALL FISH) WHOLE: 4-S

METHOD REFERENCES (CONTINUED)**LEAD**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.1194, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

**MERCURY**

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

**NICKEL**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

**SELENIUM**

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

**SILVER**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

**THALLIUM**

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

**ICP EMISSION SPECTROMETRY**

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602429

PAGE 4

FISH TISSUE (SMALL FISH) WHOLE: 4-S

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. D. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. D. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



**HAZLETON**

LABORATORIES AMERICA, INC

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

## REPORT OF ANALYSIS

URS-DALTON  
 NETH CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 60602430

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	.073	PPM
CADMIUM	CANCELLED; INSUFFICIENT SAMPLE	
LEAD	CANCELLED; INSUFFICIENT SAMPLE	
MERCURY	CANCELLED; INSUFFICIENT SAMPLE	
NICKEL	CANCELLED; INSUFFICIENT SAMPLE	
SELENIUM	CANCELLED; INSUFFICIENT SAMPLE	
SILVER	CANCELLED; INSUFFICIENT SAMPLE	
THALLIUM	LESS THAN 0.25	PPM
ICP EMISSION SPECTROMETRY	SEE ATTACHED	
CHLORINATED INSECTICIDE, PCB		

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.221	DDE
0.023	DDD
LESS THAN 0.005	DDT
2.2	PCB 1254
0.030	DIELDRIN



SAMPLE NUMBER: 60602430

PAGE 2

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC
LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCH
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	B.F.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE

3.04%

LIPID

PHENOLS

1.9

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602430

PAGE 3

FISH TISSUE (MEDIUM FISH) WHOLE: 4-M

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.102-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602430

PAGE 4

FISH TISSUE (MEDIUM FISH) WHOLE: 4-m

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB  
FDA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENOLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).

**HAZLETON**

LABORATORIES AMERICA, INC

Chemical &amp; BioMedical Sciences Division

3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

## REPORT OF ANALYSIS

MRS-DALTON  
 NF TL CHASE  
 3605 WARRENSVILLE CENTER ROAD  
 CLEVELAND, OH 44122

SAMPLE NUMBER: 60602431

DATE ENTERED: 06/11/86

REPORT PRINTED: 07/18/86

FISH TISSUE (LARGE FISH) WHOLE: 4-L

ANTIMONY	LESS THAN 0.13	PPM
ARSENIC	LESS THAN 0.05	PPM
CADMIUM	.05	PPM
LEAD	.1	PPM
MERCURY	.219	PPM
NICKEL	LESS THAN 0.20	PPM
SELENIUM	1.13	PPM
SILVER	LESS THAN 0.1	PPM
THALLIUM	LESS THAN 0.25	PPM

ICP EMISSION SPECTROMETRY

SEE ATTACHED

CHLORINATED INSECTICIDE, PCB

<u>(PPM) WET BASIS</u>	<u>COMPOUND</u>
0.130	DDX
0.016	DDD
LESS THAN 0.014*	DDT
0.40	PCB 1254
0.075	DIELDRIN
LESS THAN 0.005	ALPHA-BHC
LESS THAN 0.005	BETA-BHC
LESS THAN 0.005	DELTA-BHC



SAMPLE NUMBER: 60602431

PAGE 2

FISH TISSUE (LARGE FISH) WHOLE: 4-L

## CHLORINATED INSECTICIDE, PCB

(CONTINUED)

LESS THAN 0.005	GAMMA-BHC (LINDANE)
LESS THAN 0.005	HCB
LESS THAN 0.005	ENDRIN
LESS THAN 0.005	H.E.
LESS THAN 0.01	MIREX
LESS THAN 0.10	TOXAPHENE
1.39%	LIPID

\*LUD RAISED DUE TO INTERFERENCE PEAK.

PHENOLS

.42

MG/KG

METHOD REFERENCES

## ANTIMONY

ANALYST, VOLUME 99, PAGE 595, (1975)

DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

## ARSENIC

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.048-25.049, AOAC, WASHINGTON, D. C.

2-DIGESTION: ANALYTICAL METHODS COMMITTEE, THE ANALYST, VOLUME 85, PAGES 643-656 (1960)

3-FOOD CHEMICAL CODEX III (1981) PAGES 464-466, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)4-UNITED STATES PHARMACOPEIA XXI (1985) PAGES 1187-1188, MODIFIED.  
(DIGESTION PROCEDURE MODIFIED AS PER REFERENCE #2)

## CADMIUM

1-OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.061-25.065, 33.089-33.094, AOAC, ARLINGTON, VA.

2-BERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

3-FRIEND, M. T., SMITH, C. A., AND WISHART, D., ATOMIC ABSORPTION NEWSLETTER, VOLUME 16, NUMBER 2, PAGES 46-49 (1979) (MODIFIED)

4-METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 213.1, U. S. EPA, CINCINNATI, OH



SAMPLE NUMBER: 60602431

PAGE 3

FISH TISSUE (LARGE FISH) WHOLE: 4-L

METHOD REFERENCES (CONTINUED)

## LEAD

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.089-25.094, 33.089-33.094, AOAC, ARLINGTON, VA. (SAMPLES WITH LESS THAN 4.00 PPM LEAD)  
OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHODS 25.104-25.109, AOAC, ARLINGTON, VA. (SAMPLES WITH GREATER THAN 4.00 PPM LEAD)

## MERCURY

DIGESTION: ANALYST, VOLUME 86, PAGE 608 (1961) WITH MODIFICATIONS.  
DETERMINATION: ANALYTICAL CHEMISTRY, VOLUME 40, PAGE 2085 (1968).

## NICKEL

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 249.1, U. S. EPA, CINCINNATI, OH

## SELENIUM

OFFICIAL METHODS OF ANALYSIS (1984) 14TH EDITION, METHOD 3.107-3.107, 25.154-25.157, AOAC, ARLINGTON, VA.  
J.H. WATKINSON, "FLUOROMETRIC DETERMINATION OF SELENIUM IN BIOLOGICAL MATERIAL WITH 2,3-DIAMINONAPHTHALENE," ANALYTICAL CHEMISTRY, VOLUME 38, NUMBER 1, JANUARY 1966

## SILVER

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982  
METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (1979), METALS 1-19 AND METHOD 272.1, U. S. EPA, CINCINNATI, OH

## THALLIUM

PERKIN-ELMER, ANALYTICAL METHODS FOR ATOMIC ABSORPTION SPECTROPHOTOMETRY, NORWALK, CT, JANUARY 1982

## ICP EMISSION SPECTROMETRY

INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY ANALYSIS OF BIOLOGICAL MATERIALS AND SOILS FOR MAJOR TRACE AND ULTRA-TRACE ELEMENTS, APPLIED SPECTROSCOPY, VOLUME 32, PAGES 1-29 (1978).  
OFFICIAL METHODS OF ANALYSIS, 14TH EDITION, (1984) METHOD 43.292-43.296, ARLINGTON, VA.  
OFFICIAL METHODS OF ANALYSIS, 1ST SUPPLEMENT, 14TH EDITION (1985) METHOD 3.A01-3.A04, ARLINGTON, VA.



SAMPLE NUMBER: 60602431

PAGE 4

FISH TISSUE (LARGE FISH) WHOLE: 4-L

METHOD REFERENCES (CONTINUED)

CHLORINATED INSECTICIDE, PCB

FOA PESTICIDE ANALYTICAL MANUAL, VOLUME 1, 2ND EDITION, SECTIONS 211, 311,  
(1968, REVISED 1969-1983).

JOURNAL OF A. O. A. C., VOLUME 57, PAGES 168-172 (1974).

JOURNAL OF A. O. A. C., VOLUME 59, PAGES 174-187 (1976).

PHENDLS

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 14TH EDITION,  
PAGE 574 (1974).



REPORT: ELEMENTAL ANALYSIS BY ICP SPECTROSCOPY

HAZLETON FILE: 61711

RECEIVED 11-JUN-86 ANALYZED 20-JUN-86

URS COMPANY

PARTS PER MILLION

SAMPLE ID	CA	P	MB	MA	AL	BA	FE	SR	B	CU	ZN	MN	CR
60602425 2A-L	6708	5109	329.	1004	12.3	1.96	34.1	5.66	< 0.50	1.37	19.6	6.34	< 0.50
60602426 3A W	7431	5512	355.	997	15.3	2.06	32.4	6.21	< 0.50	1.64	26.8	7.20	< 0.50
60602427 3A S	7758	5710	356.	918	29.3	3.60	72.4	6.69	< 0.50	1.51	29.9	9.75	< 0.50
60602428 1A M	6893	5413	358.	923	67.3	2.83	130.	6.35	< 0.50	1.82	28.4	16.4	< 0.50
60602429 4 S	7067	5205	352.	887	22.3	2.20	53.7	6.56	< 0.50	1.55	22.6	17.2	< 0.50
60602430 4 M	7699	5347	356.	1024	15.1	2.17	48.1	7.54	< 0.50	2.32	22.2	16.8	< 0.50
60602431 4 L	7860	5429	352.	1121	15.3	2.02	59.0	6.64	< 0.50	1.92	20.8	12.4	< 0.50