Tiernan 1995

TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

MEMORANDUM

TO: Don Dycus, Paul Davis, Greg Denton, Jerry Strom, Dick Wilson, David Young, Mark Fagg, Natalie Harris - Jackson WPC, Phil Stewart - Chattanooga WPC, Joe Holland, Nashville WPC; Pat Patrick - Jackson WPC; John Leonard -Memphis WPC; Jim Widlak -USFWS; Dick Neves

FROM: David McKinney ADM

DATE: June 29, 1995

SUBJECT: Wright State University 1993 Analytical Results

Here are the 1993 sample year statewide analytical results as reported by Wright State University. The QA/QC data for these analyses are on file should you wish to have them. If you have questions or comments, please contact me at 615/781-6643.

ADM/bjs
Enclosure

1993 SAMPLE YEAR

WRIGHT STATE UNIVERSITY

Wright State University

Dayton, Ohio 45435

April 10, 1995

Dr. Aubrey D. McKinney, Chief
Environmental Services Division
Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 40747
Nashville, TN 37204

Dear Dave:

Enclosed at long last is our report on the analyses accomplished during the third year of our project with TWRA. All of the data are included in the report except for data on four metals, arsenic, antimony, selenium and silver. These final analyses are in progress, although we've had difficulties with determination of some of these metals. We expect to have these few remaining data to you in about 2-3 weeks. I'll send you the data sheets for these remaining metal analyses as soon as they are completed and you can just insert them into Attachment C.8 of the report. I apologize sincerely for the delay in the report. This has been due to a combination of instrumentation problems and the fact that one of our analysts moved out of the area to a new job while he was in the middle of these analyses. We therefore had to resurrect and reprocess some of the data files. If you have any questions regarding the report, don't hesitate to contact me.

We are already analyzing the samples submitted for the current year nd expect to report results on these much more promptly.

Sincerely,

Thomas O. Tiernan, Ph.D.
Professor of Chemistry and Director,
Toxic Contaminant Research Program

pat

Wright State University

Dayton, Ohio 45435

April 10, 1995

Dr. Aubrey D. McKinney, Chief
Environmental Services Division
Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 40747
Nashville, TN 37204

Dear Dr. McKinney:

Enclosed is a report on our work accomplished during the third year of our second project with the Tennessee Wildlife Resources Agency which entails the application of previously developed analytical methodology to determine selected nonpoint source pollutants (pesticides and related chemicals) in mussel and fish samples. In the course of this year's project, selected metals were also determined in some of the mussel samples. This work was funded under Tennessee Wildlife Resources Agency Contract Number FA-2-10013-2-00. If, after reviewing the report, you have questions or wish to discuss the results obtained, please don't hesitate to call me.

Sincerely,

Thomas O. Tiernan, Ph.D.
Professor of Chemistry and Director,
Toxic Contaminant Research Program

pat

Enclosure

ANNUAL REPORT FOR THE THIRD YEAR OF THE PROJECT: DETERMINATION OF NONPOINT-SOURCE PESTICIDES AND RELATED BIOACCUMULATIVE POLLUTANTS IN FISH AND MUSSEL TISSUE

WORK ACCOMPLISHED BY WRIGHT STATE UNIVERSITY
UNDER TENNESSEE WILDLIFE RESOURCES AGENCY
CONTRACT NO. FA-2-10013-2-00

Prepared By

Thomas O. Tiernan, Daniel J. Wagel, Garrett F. VanNess,
Joseph G. Solch, John H. Garrett, and Mark S. Hanes
Department of Chemistry and Toxic Contaminant Research Program
175 Brehm Laboratory
Wright State University
Dayton, Ohio 45435

Submitted To

Aubrey D. McKinney, Chief
Environmental Services Division
Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 40747
Nashville, Tennessee 37204

April 10, 1995

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I. INTRODUCTION

Under an earlier contract with the Tennessee Wildlife Resources Agency (TWRA), Contract No. GU-0-01830-0-00, Professor Thomas O. Tiernan's laboratory at Wright State University developed and demonstrated a complex analytical scheme for quantitatively measuring seventy-one (71) pesticides and related bioaccumulative pollutants in fish and mussel tissue. During the first year of the present contract between Wright State University and the Tennessee Wildlife Resources Agency (TWRA), Contract No. FA-2-10013-2-00, the previously developed analytical methodology, with minor improvements, was applied to survey forty (40) aquatic samples, including mussels, fish, and fish eggs, for the seventy-one (71) compounds of interest. During the second year of the present contract, forty-one (41) additional mussel and fish composite samples were analyzed for the seventy-one target analytes. during the third year of the present contract, the period for which this report is submitted, thirty-two (32) additional mussel and fish composite samples and one sediment sample were analyzed for the seventy-one target analytes. Also during the present reporting period, ten (10) composite mussel samples were analyzed for a selected group of metals. The results of these analyses are presented herein.

II. SAMPLES RECEIVED FOR ANALYSES

The thirty-three (33) samples received for characterization during the third year of the present contract included whole fish, mussels in shells, and sediment. The fish and mussels were ground and composited by our laboratory, as instructed by TWRA, using procedures which were described in detail in our earlier report to TWRA. The fish samples received from TWRA included Redbreast Sunfish, Channel Catfish, Carp, and Small Mouth Bass. Several different species of mussels were included in these samples, as indicated by the Sample Receipt Documentation, which describes in detail all of the samples provided by TWRA to Wright State University during the third year of this project, and is shown in Attachment A to this report. The sediment sample received for analysis was mixed thoroughly and an aliquot was removed for analyses.

III. ANALYTICAL METHODOLOGY UTILIZED

The analytical scheme utilized to determine the seventy-one (71) target analytes of interest in the aquatic samples which were characterized in this phase of the project is the same as that which was described in earlier reports submitted to TWRA. This scheme is illustrated by the flow chart shown in Figure 1 in Attachment B to this report. As can be seen from Figure 1, seven sets of target analytes are separately analyzed in this scheme (Sets A,B,C,D,E,F and G), and the analytical results shown in this report are identified by the corresponding set designation. The analytical procedures applied in the present study to determine these analytes are exactly the same as those which were described in detail in our previous reports to TWRA.

The sediment sample submitted by TWRA in the present set was analyzed as received, that is, wet. However, a separate aliquot of the sample was dried in an oven at 105°C until

constant weight was achieved. The analytical results obtained were then adjusted for the percent moisture in the sediment and are reported herein on a dry weight basis.

Analyses of the mussel samples for metals were accomplished using the procedures described in the U.S. Environmental Protection Agency's compendium, "Test Methods for Evaluating Solid Waste," SW-846. For all of the metal determinations except mercury, the samples were digested using U.S. EPA Method 3550, an acid digestion procedure. The digested samples were analyzed by Atomic Absorption Spectrometry (AAS), using a Perkin-Elmer Model 3300 instrument. The specific U.S. EPA methods used in these analyses are listed below.

Metal Analyte	Digestion Method	Analysis Method
Antimony	Modified Method 3550	Method 7062
Arsenic	Modified Method 3550	Method 7062
Beryllium	Method 3550	Method 7090
Cadmium	Method 3550	Method 7130
Chromium	Method 3550	Method 7190
Copper	Method 3550	Method 7210
Lead	Method 3550	Method 7420
Mercury	Method 7471A	Method 7471A
Nickel	Method 3550	Method 7520
Selenium	Method 3550	Method 7742
Silver	Method 3550	Method 7760A
Thallium	Method 3550	Method 7840
Zinc	Method 3550	Method 7950

One of the fish samples and the sediment sample received from TWRA during this period were suspected by TWRA to contain 2,4-dichlorophenoxyacetic acid (2,4-D). Consequently, a separate specific analysis of these samples for 2,4-D; 2,4,5-T; and Silvex was accomplished using a modified U.S. EPA Method 8151. A modified derivatization procedure using methanol and sulfuric acid was employed to convert all of these compounds (if present) to the methyl esters. Analyses of the derivatized sample extracts were accomplished using GC-MS, with Selected Ion Monitoring (SIM).

Additional details of the analytical methods applied here are provided in the Intralaboratory Sample Tracking Forms which are included in the supporting data presented for each target analyte set in the later attachments to this report. These forms show the weights of the sample analytes which were analyzed, the analytical operations performed, the quantities of internal and surrogate standards which were added to the samples prior to analyses, the percent

lipid found in the samples, the dates of sample preparation and analyses, and the identities of the analysts. Also shown on the Batch Report, which is the first page of each set of tracking forms, are the assigned Wright State sample numbers for all of the samples analyzed, and the corresponding TWRA sample designation.

IV. ANALYTICAL RESULTS

The results of the analyses reported herein are summarized in the tables which are presented in Attachment C to this report. Data for each of the seven sets of target analytes, Sets A,B,C,D,E, F, and G, as identified in the flow chart shown in Figure 1 in Attachment B, are provided in separate sections of Attachment C. In addition, the last section of Attachment C, Section C8, shows the data obtained in the analyses for metals. The tables of data presented in some of these sections show only the Wright State sample numbers (some of the TWRA sample identifiers are quite lengthy), and one must refer to the sample correspondence listing which is shown on the first page of each of these sections in order to determine to which TWRA samples the data refer. In cases where a target analyte was not detected in the analysis, the designation "ND" appears, and beside this notation, the detection limit is given in parentheses. Data for added surrogates and internal standards which are presented in the tables in Attachment C are shown with a shaded background. Also, data presented for matrix spikes, that is, samples to which known quantities of native target analytes were added prior to analyses are also shown with shaded backgrounds in the summary tables. Following the reported measured concentrations of the target analytes in these spiked samples in the summary tables, the calculated percent recoveries of the added spikes which were achieved in the analyses are given in brackets.

The format of data presented for 2,3,7,8-TCDD and 2,3,7,8-TCDF in Attachment G is somewhat different than that just described. For data in this section, native-spiked samples are identified by the suffix "Spike" and "Spike Duplicate" following the sample number, and the data for these spiked samples are not shown with a shaded background. Recoveries of surrogates, internal standards and native spikes achieved in this set of analyses are shown in separate tables, along with the supporting data presented in Attachment J. Detection limits achieved in the analyses reported in Attachment G appear below the N.D. notation.

Spiked samples analyzed as a QA/QC measure in the metals determinations are indicated by the suffixes "MS" and "MSD" following the sample numbers. Duplicate metals analyses are indicated by the suffix "B" following the sample numbers.

Additional supporting analytical data, including Intralaboratory Sample Tracking Forms, Total Ion Chromatograms, Quantitation Reports, HPLC Chromatograms, and Selected Ion Mass Chromatograms, as appropriate for a given set, are shown for target analyte sets A through G in Attachments D through J to this report. Calibration plots and related data are shown in Attachments K through Q. The mass chromatograms and other raw data obtained from the analyses of the present samples for PCBs are quite voluminous and have, therefore, not been included in this report. These have been retained on file in hard-copy form for examination if TWRA wishes to review these results.

V. DISCUSSION OF RESULTS

In the present study, eleven (11) composite fish samples, twenty-one (21) composite mussel samples and one (1) sediment sample received from TWRA were analyzed for the seventy-one (71) target analytes. Several of these chemical pollutants were detected in one or more of these aquatic samples, as indicated below.

A. Fish Composites: p,p'-DDE, trans-Nonachlor, Oxychlordane, Hexazinone, Di-n-Butyl Phthalate, Carbofuran, 2,3,7,8-TCDD, and 2,3,7,8-TCDF.

B. Mussels Composites: Metolachlor, Hexazinone, trans-Nonachlor, Di-n-Butyl Phthalate, Diethylphthalate, Oxychlordane, 2,3,7,8-TCDD and 2,3,7,8-TCDF.

C. Sediment: 2,4-D, Carbofuran, Perthane, and Di-n-Butyl Phthalate.

Two of the samples which were submitted by TWRA for analysis during this period were collected in connection with a known pollution episode. One of these samples was a whole fish, identified as coming from "Bull Creek & Mouth of Channel at Mouth of Station Camp Creek." The second of these samples was a sediment collected at the "Bull Creek Boat Ramp." These samples were suspected by TWRA to contain 2,4-D, as already mentioned. And indeed, the sediment was found to contain a substantial concentration of 2,4-D. The screening analysis (Set E) showed 1,194 ppb of 2,4-D in the sediment, whereas the specific analysis using the derivatization procedure indicated a 2,4-D concentration of 33,000 ppb in the sediment sample. The difference here probably reflects a combination of variations in the two sample aliquots, owing to sample inhomogeneity, and the higher recovery of the more specific analytical method. The fish sample associated with this episode did not exhibit a measurable level of 2,4-D. However, it should be noted that both the sediment and the fish from this episode were found to contain quite high concentrations of Carbofuran (121,000 ppb and 2,670 ppb in the fish and sediment samples, respectively).

Metals detected in some of the mussels samples analyzed in this set included chromium, copper, mercury, and zinc. Zinc was found in all of the mussels samples analyzed for metals in this study.

The QA/QC results obtained in the course of these analyses were generally acceptable. Recoveries of surrogates and most of the target analytes from spiked samples were generally quite good, although occasionally a very low or a very high recovery was observed for some of the analytes. These discrepancies were due to interfering compounds in the sample extracts which contributed to the mass chromatographic peaks for these analytes.

The Laboratory Blanks analyzed along with each batch of samples were generally quite clean, exhibiting, except in a few instances, non-detectable concentrations of most of the target analytes.

ATTACHMENT A

TO

WRIGHT STATE UNIVERSITY REPORT
TO THE TENNESSEE WILDLIFE RESOURCES AGENCY
ON WORK ACCOMPLISHED DURING THE THIRD YEAR OF THE PROJECT
CONDUCTED UNDER TENNESSEE WILDLIFE RESOURCES AGENCY
CONTRACT NO. FA-2-10013-2-00

SAMPLE RECEIPT DOCUMENTATION
FOR FISH AND MUSSEL SAMPLES
RECEIVED FROM TENNESSEE WILDLIFE RESOURCES AGENCY
FOR ANALYSES DURING THIRD YEAR OF THE CONTRACT

Wright State University

Campus Communication

Date: 12/7/93

To: Dr. T.O. Tiernan

From: Garrett VanNess

Subject: Receipt of Samples

PROJECT: TENNESSEE WILDLIFE RESOURCES AGENCY
Received from: David McKinney
P.O. Box 40747
Nashville, TN 37204

Purchase Order No.:
Project No.: 2640
Date Received: 12/1/93
Date Shipped: 11/30/93
Shipped by: U.P.S.

WSU I.D.: TDM3
Location: Shipping & Rec.
Airbill No.: 0367 3511 139
0367 3511 120

WSU Sample No.	Customer I.D.	Matrix	Approx. Quantity	Sample Condition	Location
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH	556 g	GOOD-FROZEN	PIGEON RIVER @ TANNERY ISLAND
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH	379 g	GOOD-FROZEN	PIGEON RIVER @ TANNERY ISLAND
TDM3-3	TWRA #15-93	2 CARP	270 g	GOOD-FROZEN	LITTLE RIVER @ COULTER BRIDGE
TDM3-4	TWRA #14-93	4 CARP	1789 g	GOOD-FROZEN	PIGEON RIVER @ DENTON
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS	971 g	GOOD-FROZEN	PIGEON RIVER @ TANNERY ISLAND
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH	460 g	GOOD-FROZEN	LITTLE RIVER @ COULTER BRIDGE
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH	448 g	GOOD-FROZEN	PIGEON RIVER @ DENTON
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH	900 g	GOOD-FROZEN	PIGEON RIVER @ DENTON
TDM3-9	TWRA #13-93	5 CARP	407 g	GOOD-FROZEN	PIGEON RIVER @ TANNERY ISLAND
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS	414 g	GOOD-FROZEN	KY LAKE @ HARMON CREEK
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS	243 g	GOOD-FROZEN	POWELL RIVER @ MULBERRY CR/HWY 63
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS	298 g	GOOD-FROZEN	CLINCH RIVER KYLES FORD
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH	407 g	GOOD-FROZEN	PHOSPHATE POND MAURY CO.

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TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS	153 g	GOOD-FROZEN	CLINCH RIVER KYLES FORD
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS	327 g	GOOD-FROZEN	POWELL R. @MULBERRY CR. @HWY.63
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS	371 g	GOOD-FROZEN	WEST PRONG, LITTLE PIGEON RIVER
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS	365 g	GOOD-FROZEN	PICKWICK TW, TRM 197.7
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS	238 g	GOOD-FROZEN	KY LAKE, BIG SANDY EMBAYMENT
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS	201 g	GOOD-FROZEN	DUCK RIVER
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS	270 g	GOOD-FROZEN	KY LAKE @ HARMON CREEK
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS	226 g	GOOD-FROZEN	PICKWICK TW, TRM 197.7

Chain of Custody Records Signed By: N/A
Sample Log Notebook No.: #16
No. of Samples and Matrix: 10 FISH SAMPLES
11 MUSSEL SAMPLES

Shipping Container Description: 2 ICE CHESTS
Condition of container: GOOD
Type of packing Material: ICE WATER

Type of Sample Vessel: AL FOIL
Cond. of Sample Vessel: GOOD, FROZEN
Is custody seal on sample vessel? N/A
Condition of seal: N/A

Type of Sample Identification: SAMPLE LABELS
Overall Condition of Samples: GOOD
Miscellaneous Comments:

Approved By: [signature] Date: 12/1/94

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TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

MEMORANDUM

TO: Habitat Protection Biologists

FROM: David McKinney

DATE: December 3, 1993

SUBJECT: Contaminant analysis
Fish and mussel flesh
Wright State University

Gentlemen: Please find attached a summary list of samples sent to Wright State University on November 30, 1993, representing the 93-94 sample year. This sample set represents year three of a five year project.

Thank you.

ADM/bjs
Enclosure
cc: Dr. Thomas O. Tiernan

CONTAMINANTS IN FISH AND MUSSELS

1993 - 1994

Wright State University

TWRA#	Date	River Mile	Location	Sample Type	Sample
1-93	9/26/93	TRM 197.7	Pickwick TW	Mussel	20 monkey face
2-93	9/26/93	TRM 197.7R	Pickwick TW	Mussel	20 ebonyshell
3-93	10/4/93	TRM 188.6R	KY Lake, Harmon Ck	Mussel	20 maple leaf
4-93	10/4/93	TRM 188.6	Ky Lake, Harmon Ck	Mussel	20 ebony shell
5-93	11/8/93	BSM 5R	Ky Lake, Big Sandy R.	Mussel	20 maple leaf
6-93	11/15/93	DRM 33.1	Duck River	Mussel	3 pink heal splitter
7-93	10/15/93	W. Prong, Little Pigeon River	Mile 3.0	Mussel	6 pink heal splitter
8-93	11/1/93	Powell River	@Mulberry Ck/Hwy 63	Mussel	9 pink heel slitter
9-93	11/1/93	Powell River	@Mulberry Ck/Hwy 63	Mussel	9 three ridge
10-93	11/1/93	Clinch River	@ Kyles Ford	Mussel	3 pink heelsplitter
11-93	11/1/93	Clinch River	@ Kyles Ford	Mussel	5 three ridge
12-93	11/4/93		Phosphate Ponds/ Maury Co.	Fish	3 channel catfish
13-93	7/6/93	Pigeon River	@ Tannery Island	Fish	5 carp
14-93	7/7/93	Pigeon River	@ Denton	Fish	4 carp
15-93	7/8/93	Little River	@ Coulter Bridge	Fish	2 carp
16-93	7/6/93	Pigeon River	@ Tannery Island	Fish	10 redbreast sunfish
17-93	7/7/93	Pigeon River	@ Denton	Fish	10 redbreast sunfish
18-93	7/8/93	Little River	@ Coulter Bridge	Fish	10 redbreast sunfish
19-93	7/6/93	Pigeon River	@ Tannery Island	Fish	3 channel catfish
20-93	7/7/93	Pigeon River	@ Denton	Fish	5 channel catfish
21-93	7/6/93	Pigeon River	@ Tannery Island	Fish	5 smallmouth bass

Wright State University

Campus Communication

Date:
6/7/94

To:
Dr. T.O. Tiernan

From:
Garrett VanNess

Subject:
Receipt of Samples

PROJECT:TENNESSEE WILDLIFE RESOURCES AGENCY
Received from: Aubrey McKinney
P.O. Box 40747
Nashville, TN 37204

Purchase Order No.:
Project No.:2659 WSU I.D.: TDP4
Date Received:6/7/94 Location: Shipping & Rec.
Date Shipped:6/6/94
Shipped by: U.P.S. Airbill No.:0423 7556 791

WSU Sample No.	Customer I.D.	Matrix	Approx. Quantity	Sample Condition
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS	260 g	GOOD
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL	100 g	GOOD
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS	170 g	GOOD
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL	215 g	GOOD
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL	80 g	GOOD
TDP4-27	GIANT FLOATER CRM 15.7	1 MUSSEL	260 g	GOOD
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS	760 g	GOOD
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL	270 g	GOOD
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS	220 g	GOOD
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS	160 g	GOOD

Chain of Custody Records Signed By: N/A
Sample Log Notebook No.: #16
No. of Samples and Matrix: 10 COMPOSITE MUSCLE SAMPLES

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Shipping Container Description:	1 ICE CHEST
Condition of container:	GOOD
Type of packing Material:	NONE, EXCEPT FOR ICE WATER
Type of Sample Vessel:	PLASTIC BAGS
Cond. of Sample Vessel:	
Is custody seal on sample vessel?	N/A
Condition of seal:	N/A
Type of Sample Identification:	SAMPLE LABELS, NOTE
Overall Condition of Samples:	GOOD
Miscellaneous Comments:	N/A

Approved By: Daniel T. Allen Date: 6/7/94

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GRIPPER ZIPPER

METALS LIST

Chromium	Copper
Lead	Mercury
Nickel	Silver
Zinc	Cadmium
Arsenic	Selenium
Beryllium	Antimony/ Thallium

Please Return All shells with correct Sample Tags

Single shell as individual sample
Mult. shell samples as composites

Lipid content on All samples
Contract List of organics

Thank You –
Please Call David McKinney
615 781 6643
if you have questions

Wright State University

Campus Communication

Date: 6/15/94

To: Dr. P.O. Tiernan

From: Garrett VanNess

Subject: Receipt of Samples

PROJECT:TENNESSEE WILDLIFE RESOURCES AGENCY
Received from: Aubrey McKinney
P.O. Box 40747
Nashville, TN 37204
Purchase Order No.:
Project No.:2661 WSU I.D.: TDO4
Date Received:6/13/94 Location: Dr. Tiernan's House
Date Shipped:6/10/94
Shipped by: U.P.S. Airbill No.:0423 7556 059

WSU Sample No.	Customer I.D.	Matrix	Approx. Quantity	Sample Condition
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH	150 g	GOOD
TDO4-2	SED. - BULL CREEK BOAT RAMP	SEDIMENT	250 g	FAIR

Chain of Custody Records Signed By: N/A
Sample Log Notebook No.: #16
No. of Samples and Matrix: 5 FISH SAMPLES TO BE COMPOSITED INTO 1 SAMPLE
2 SEDIMENT SAMPLE BOTTLES, 1 BOTTLE BROKEN

Shipping Container Description: 1 ICE CHEST
Condition of container: GOOD
Type of packing Material: NONE, EXCEPT FOR ICE WATER

Type of Sample Vessel: PLASTIC BAG, GLASS JARS
Cond. of Sample Vessel: POOR
Is custody seal on sample vessel? N/A
Condition of seal: N/A

Type of Sample Identification: SAMPLE LABELS, NOTE
Overall Condition of Samples: POOR, FISH TOTALLY THAWED
Miscellaneous Comments: 1 SEDIMENT BOTTLE WAS BROKEN

Approved By: [signature] Date: 10/20/94

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ATTACHMENT B

TO

WRIGHT STATE UNIVERSITY REPORT
TO THE TENNESSEE WILDLIFE RESOURCES AGENCY
ON WORK ACCOMPLISHED DURING THE THIRD YEAR OF THE PROJECT
CONDUCTED UNDER TENNESSEE WILDLIFE RESOURCES AGENCY
CONTRACT NO. FA-2-10013-2-00

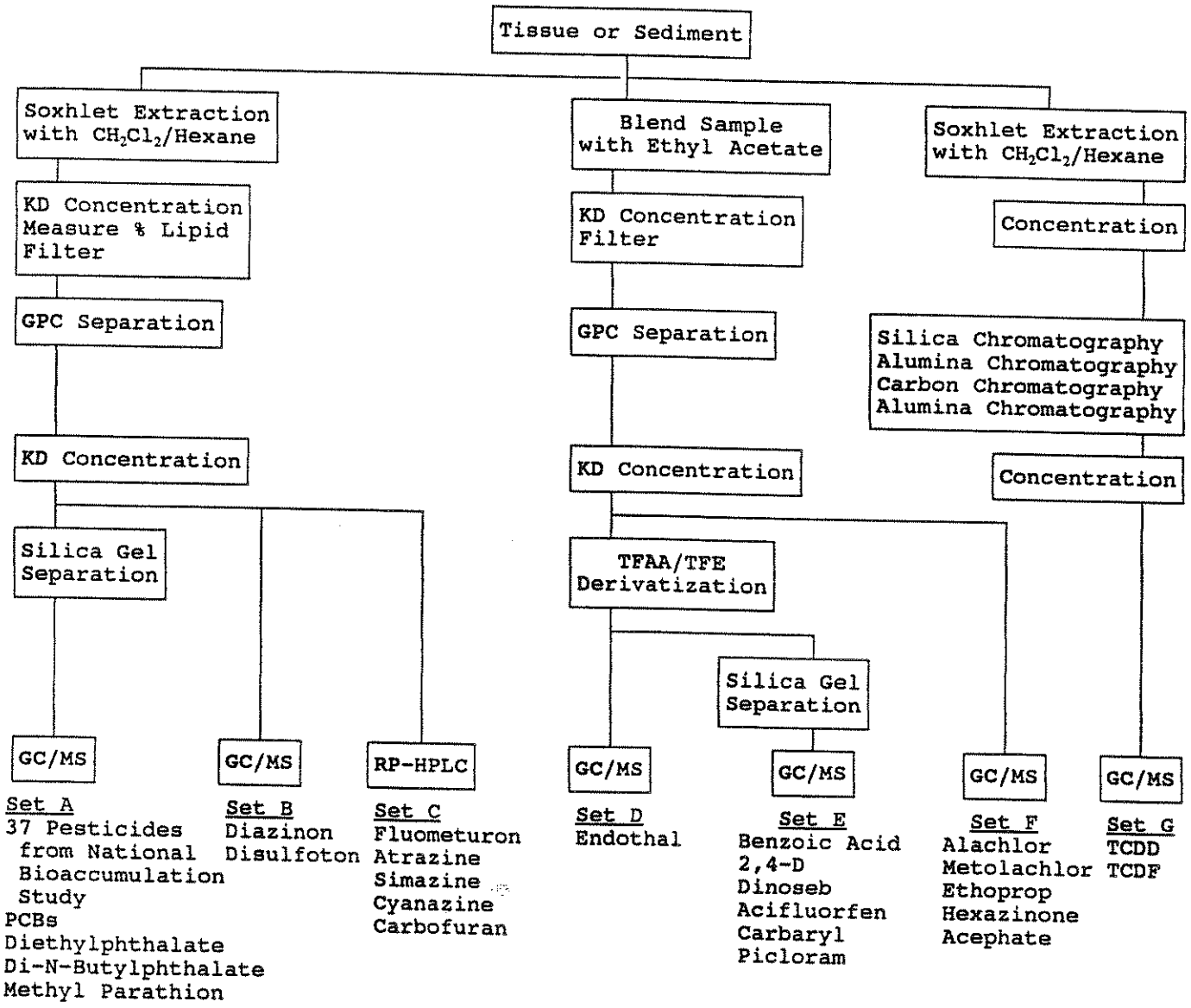
FLOW CHART - ANALYTICAL SCHEME FOR DETERMINATION OF PESTICIDES AND RELATED BIOACCUMULATIVES IN AQUATIC BIOLOGICAL TISSUES

FIGURE 1

WRIGHT STATE UNIVERSITY

ANALYTICAL SCHEME FOR THE DETERMINATION OF BIOACCUMULATING PESTICIDES IN AQUATIC BIOLOGICAL TISSUES AND RELATED SAMPLES

DEVELOPED FOR THE TENNESSEE WILDLIFE RESOURCES AGENCY



ATTACHMENT C

TO

WRIGHT STATE UNIVERSITY REPORT
TO THE TENNESSEE WILDLIFE RESOURCES AGENCY
ON WORK ACCOMPLISHED DURING THE THIRD YEAR OF THE PROJECT
CONDUCTED UNDER TENNESSEE WILDLIFE RESOURCES AGENCY
CONTRACT NO. FA-2-10013-2-00

TABLES OF DATA SHOWING RESULTS OF ANALYSES
OF FISH AND MUSSEL SAMPLES

ATTACHMENT C1

SUMMARY DATA TABLES FOR SET A ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

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Concentrations Found (nanograms per gram) or parts per billion (ppb)

	TDM3-1DA		TDM3-1EA-S		TDM3-1FA-S		TDM3-1GA-S		TDM3-1HA-S	
		%Rec		%Rec		%Rec		%Rec		%Rec
Iodobenzene	49.5	31.7	31.0	19.8	34.6	22.1	36.5	23.4	41.1	26.2
Iodonaphthalene	81.5	52.2	63.6	40.6	71.7	45.8	80.1	51.2	94.2	60.2
4,4'-Diiodobiphenyl	82.0	52.5	63.6	40.6	74.2	47.4	74.6	47.7	69.2	44.2
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		16.0	32.0	18.5	37.0
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		21.5	43.0	ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)		22.0	44.0	26.1	52.2
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)		31.0	62.0	37.1	74.2
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		20.5	41.0	ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)		30.5	61.0	36.6	73.2
Endrin	ND (2.5)		ND (2.5)		ND (2.5)		23.5	47.0	24.6	49.2
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)		30.5	61.0	37.1	74.2
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		32.5	65.0	ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)		22.0	44.0	ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)		34.5	69.0	30.6	61.2
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		31.0	62.0	33.6	67.2
Perthane	ND (2.5)		ND (2.5)		ND (2.5)		19.5	39.0	20.6	41.2
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		16.5	33.0	19.5	39.0
1,2,3,4-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		18.0	36.0	21.6	43.2
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)		35.0	70.0	38.1	76.2
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)		20.5	41.0	21.1	42.2
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		32.5	65.0	45.1	90.2
p,p'-DDE	ND (2.5)		ND (2.5)		4.0		28.0	56.0	27.1	54.2
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)		16.5	33.0	15.0	30.0
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)		34.0	68.0	38.6	77.2
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.5)		30.5	61.0	39.6	79.2
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)		32.5	65.0	38.1	76.2
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)		13.0	26.0	ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)		15.5	31.0	21.1	42.2
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		14.5	29.0	17.5	35.0
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)		21.5	43.0	20.6	41.2
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)		32.5	65.0	37.6	75.2
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)		22.0	44.0	21.1	42.2
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)		34.0	68.0	40.6	81.2
trans-Nonachlor	ND (2.5)		10.0		7.0		32.0	64.0	33.6	67.2
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)		16.5	33.0	15.0	30.0
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		4.0	8.0
Di-N-Butylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		2.0	4.0	2.5	5.0
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)		26.0	52.0	31.6	63.2

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
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Concentrations Found (nanograms per gram) or parts per billion (ppb)

	TDM3-2BA		TDM3-3BA		TDM3-4BA		TDM3-5BA		TDM3-6BA	
		%Rec		%Rec		%Rec		%Rec		%Rec
Iodobenzene	46.0	29.4	55.8	35.8	30.5	19.5	40.0	25.6	27.4	17.5
Iodonaphthalene	65.1	41.6	64.3	41.3	68.1	43.9	47.5	30.4	45.9	29.4
4,4'-Diiodobiphenyl	96.6	61.8	81.8	52.5	80.1	51.2	64.0	41.0	73.3	47.0
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Endrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Perthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,4-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
p,p'-DDE	28.0		5.5		53.1		5.5		ND (2.5)	
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		3.0		ND (2.5)		ND (2.5)	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Nonachlor	29.5		6.5		58.6		ND (2.5)		ND (2.5)	
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Di-N-Butylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

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Concentrations Found (nanograms per gram) or parts per billion (ppb)

	TDM3-7BA		TDM3-8BA		TDM3-9BA		TDM3-13BA		LB12133-1CA	
		%Rec		%Rec		%Rec		%Rec		%Rec
Iodobenzene	39.3	25.3	31.5	20.2	28.0	17.9	ND (2.5)		25.9	16.6
Iodonaphthalene	55.8	35.8	57.6	36.8	39.0	25.0	46.0	29.4	38.8	25.0
4,4'-Diiodobiphenyl	82.7	53.1	102.7	65.8	66.6	42.6	80.0	51.2	76.2	49.0
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Endrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Perthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,4-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
p,p'-DDE	11.0		5.5		14.5		2.5		2.5	
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Nonachlor	13.9		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Di-N-Butylphthalate	4.0		3.0		ND (2.5)		ND (2.5)		ND (2.5)	
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

C1-9

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Tennessee Wildlife Resources Agency
Analysis for Analytical Scheme Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

	TDM3-10DA		TDM3-10EA-S		TDM3-10FA-S		TDM3-10GA-S		TDM3-10HA-S	
		%Rec		%Rec		%Rec		%Rec		%Rec
Iodobenzene	26.1	16.6	38.0	24.3	34.8	22.7	43.1	27.5	28.2	18.2
Iodonaphthalene	57.6	36.8	76.5	49.0	66.6	43.5	78.2	49.9	81.8	52.8
4,4'-Diiodobiphenyl	78.7	50.2	93.5	59.8	82.8	54.1	88.7	56.6	102.6	66.2
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		18.5	37.0	17.3	35.0
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		36.1	72.0	ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.4)		25.1	50.0	25.3	51.0
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.4)		33.6	67.0	34.2	68.0
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.4)		18.0	36.0	ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.4)		49.6	99.0	42.6	85.0
Endrin	ND (2.5)		ND (2.5)		ND (2.4)		ND (2.5)		25.3	51.0
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.4)		34.6	69.0	37.2	75.0
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		18.5	37.0	15.4	31.0
Mirex	ND (2.5)		ND (2.5)		ND (2.4)		12.0	24.0	15.9	32.0
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.4)		17.5	35.0	31.7	64.0
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		35.6	71.0	64.9	131.0
Perthane	ND (2.5)		ND (2.5)		ND (2.4)		19.5	39.0	23.3	47.0
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		18.5	37.0	16.8	34.0
1,2,3,4-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		23.6	47.0	21.8	44.0
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.4)		41.6	83.0	39.6	80.0
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.4)		23.1	46.0	24.3	49.0
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.4)		32.1	64.0	ND (2.5)	
p,p'-DDE	ND (2.5)		ND (2.5)		ND (2.4)		24.1	48.0	28.2	57.0
Nitrofen	ND (2.5)		ND (2.5)		ND (2.4)		14.5	29.0	18.3	37.0
Heptachlor	ND (2.5)		ND (2.5)		ND (2.4)		26.6	53.0	31.2	63.0
Isopropalin	ND (2.5)		ND (2.5)		ND (2.4)		ND (2.5)		10.4	21.0
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.4)		25.1	50.0	ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.4)		44.6	89.0	42.6	86.0
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.4)		41.1	82.0	42.6	86.0
Trifluralin	ND (2.5)		ND (2.5)		ND (2.4)		ND (2.5)		17.3	35.0
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.4)		5.5	11.0	9.9	20.0
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.4)		18.0	36.0	15.4	31.0
Butachlor	ND (2.5)		ND (2.5)		ND (2.4)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.4)		23.6	47.0	26.3	53.0
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.4)		41.6	83.0	43.6	88.0
Dieldrin	ND (2.5)		ND (2.5)		ND (2.4)		21.1	42.0	24.8	50.0
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.4)		48.6	97.0	48.6	98.0
trans-Nonachlor	ND (2.5)		7.5		ND (2.4)		29.1	58.0	45.1	91.0
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.4)		14.5	29.0	18.3	37.0
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.4)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.4)		ND (2.5)		ND (2.5)	
Di-N-Butylphthalate	ND (2.5)		ND (2.5)		ND (2.4)		4.0	8.0	2.0	4.0
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.4)		43.1	86.0	42.6	86.0

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

C1-5

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Analytical Scheme Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

	TDM3-11BA		TDM3-12BA		TDM3-14BA		TDM3-15BA		TDM3-16BA	
		%Rec		%Rec		%Rec		%Rec		%Rec
Iodobenzene	33.5	21.4	39.1	25.0	ND (2.5)		37.4	24.0	ND (2.5)	
Iodonaphthalene	71.5	45.8	74.1	47.4	69.2	44.5	67.4	43.2	66.6	42.6
4,4'-Diiodobiphenyl	ND (2.5)		ND (2.5)		54.8	35.2	ND (2.5)		ND (2.5)	
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Endrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Perthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,4-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
p,p'-DDE	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Di-N-Butylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

C1-6

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Analytical Scheme Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

	TDM3-17BA		TDM3-18BA		TDM3-19BA		TDM3-20BA		TDM3-21BA		LB12143-1DA	
		%Rec		%Rec		%Rec		%Rec		%Rec		%Rec
Iodobenzene	33.0	21.1	22.5	14.4	25.0	16.0	22.1	14.1	21.1	13.5	25.5	16.3
Iodonaphthalene	68.9	44.2	54.0	34.6	ND (2.5)		42.6	27.2	49.5	32.3	51.4	33.0
4,4'-Diiodobiphenyl	ND (2.5)		ND (2.5)		70.5	45.1	39.1	25.0	ND (2.4)		ND (2.4)	
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Endrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Perthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
1,2,3,4-Tetrachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
p,p'-DDE	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
trans-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Di-N-Butylphthalate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.4)		ND (2.4)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

C1-

Wright State University Dayton, Ohio 45435

Tennessee Wildlife ces Agency
Analysis for Analytical S...e Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	TDP4-22BA		TDP4-23BA		TDP4-24BA		TDP4-25BA		TDP4-26BA		TDP4-27BA		TDP4-28DA		TDP4-29BA		TDP4-30BA		TDP4-31BA	
Matrix	2 Mussels		1 Mussels		5 Mussels		1 Mussels		1 Mussels		1 Mussels		3 Mussels		1 Mussels		6 Mussels		6 Mussels	
Customer ID	Three Ridge CRM 15.7		Three Ridge CRM 10		White Pimpleback CRM 10		Whitewell Spitter CRM 21.4		Three Ridge CRM 21.4		Giant Floater CRM 15.7		Whitewell Spitter CRM 15.7		Giant Floater CRM 21.4		White Pimpleback CRM 21.4		White Pimpleback CRM 15	
	%Rec		%Rec		%Rec		%Rec		%Rec		%Rec		%Rec		%Rec		%Rec		%Rec	
Iodobenzene	19.4	12.5	57.2	36.8	25.0	16.0	42.0	26.9	ND (2.5)		2.0	1.3	42.0	26.9	58.9	37.8	45.8	29.4	48.4	31.0
Iodonaphthalene	66.3	42.5	93.0	59.8	39.0	25.0	69.5	44.5	3.0	1.9	4.5	2.8	69.0	44.2	76.8	49.3	81.1	52.2	79.8	51.2
4,4'-Dibromobiphenyl	60.8	39.0	38.8	25.0	23.0	14.7	78.0	49.9	ND (2.5)		2.0	1.3	114.0	73.0	91.8	58.9	45.8	29.4	75.3	48.3
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,5- & 1,2,4,5-TCB	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Endrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		62.3	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Perthene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,4-TCB	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
p,p'-DDE	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		6.0	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
trans-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		3.0		ND (2.5)		ND (2.5)		ND (2.5)		3.0		ND (2.5)		ND (2.5)		4.0		ND (2.5)	
Di-N-Butylphthalate	8.0		33.8		11.5		6.0		ND (2.5)		27.0		5.5		6.0		40.3		9.0	
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	

ND means that the analyte was not "Not Detected" in the sample and the number in parenthesis following it is the Detection Limit for that analyte

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Analytical Scheme Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

QA/QC Samples

WSU ID	TDP4-28EA-S		TDP4-28FA-S		TDP4-28GA-S		TDP4-28HA-S	
Matrix	3 Mussels		3 Mussels		3 Mussels		3 Mussels	
Customer ID	Whiteheel Splitter CRM 15.7		Whiteheel Splitter CRM 15.7		Whiteheel Splitter CRM 15.7		Whiteheel Splitter CRM 15.7	
		%Rec		%Rec		%Rec		%Rec
Iodobenzene	23.0	14.7	29.9	19.2	39.0	25.0	41.6	26.6
Iodonaphthalene	34.5	22.1	54.9	35.2	70.6	45.1	82.7	52.8
4,4'-Diiodobiphenyl	91.0	58.2	118.3	75.8	118.1	75.5	53.6	34.2
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		16.5	33.0	17.0	34.0
1,2,3,5- & 1,2,4,5-TCB	ND (2.5)		ND (2.5)		14.5	29.0	19.0	38.0
Biphenyl	ND (2.5)		ND (2.5)		19.5	39.0	24.0	48.0
Alpha-BHC	ND (2.5)		ND (2.5)		22.0	44.0	21.5	43.0
cis-Chlordane	ND (2.5)		ND (2.5)		12.5	25.0	16.5	33.0
Dicofol or Kelthane	ND (2.5)		ND (2.5)		15.5	31.0	16.5	33.0
Endrin	ND (2.5)		ND (2.5)		35.0	70.0	ND (2.5)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		25.5	51.0	19.5	39.0
Hexachlorobenzene	ND (2.5)		ND (2.5)		27.5	55.0	ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		18.5	37.0	14.0	28.0
Octachlorostyrene	ND (2.5)		ND (2.5)		22.0	44.0	9.5	19.0
Pentachlorobenzene	ND (2.5)		ND (2.5)		14.5	29.0	29.1	58.0
Perthane	ND (2.5)		ND (2.5)		14.5	29.0	18.0	36.0
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		16.5	33.0	18.5	37.0
,4-TCB	ND (2.5)		ND (2.5)		12.5	25.0	20.5	41.0
.ma-BHC or Lindane	ND (2.5)		ND (2.5)		24.5	49.0	20.5	41.0
Chlorbenzilate	ND (2.5)		ND (2.5)		15.0	30.0	15.0	30.0
trans-Chlordane	ND (2.5)		ND (2.5)		14.0	28.0	12.5	25.0
p,p'-DDE	ND (2.5)		ND (2.5)		18.0	36.0	21.0	42.0
Nitrofen	ND (2.5)		ND (2.5)		16.5	33.0	ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)		21.0	42.0	14.0	28.0
Isopropalin	ND (2.5)		ND (2.5)		12.5	25.0	4.0	8.0
cis-Nonachlor	ND (2.5)		ND (2.5)		10.0	20.0	15.5	31.0
Oxychlordane	ND (2.5)		ND (2.5)		24.5	49.0	13.5	27.0
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		14.0	28.0	12.5	25.0
Trifluralin	ND (2.5)		ND (2.5)		6.0	12.0	ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		15.5	31.0	15.5	31.0
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		15.0	30.0	17.0	34.0
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		17.5	35.0	15.5	31.0
Chlorpyrifos	ND (2.5)		ND (2.5)		34.0	68.0	21.0	42.0
Dieldrin	ND (2.5)		ND (2.5)		17.5	35.0	17.5	35.0
Heptachlor Epoxide	ND (2.5)		ND (2.5)		11.0	22.0	11.5	23.0
trans-Nonachlor	ND (2.5)		ND (2.5)		41.5	83.0	23.5	47.0
Pentachloroanisole	ND (2.5)		ND (2.5)		21.5	43.0	ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)		3.5	7.0
Diethylphthalate	ND (2.5)		ND (2.5)		2.0	4.0	17.0	34.0
Di-N-Butylphthalate	ND (2.5)		9.0		9.0	18.0	12.5	25.0
Methyl Parathion	ND (2.5)		ND (2.5)		19.0	38.0	28.6	57.0

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Analytical Scheme Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	TDO4-1CA		TDO4-2CA	
Matrix	Whole Fish		Sediment	
Customer ID	Fish-Bull Cr. & Mouth of Channel		Sed.-Bull Creek Boat Ramp	
		%Rec		%Rec
Iodobenzene	38.5	24.6	26.5	17.0
Iodonaphthalene	68.4	43.8	47.9	30.7
4,4'-Diiodobiphenyl	142.4	91.2	ND (2.5)	
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)	
1,2,3,5- & 1,2,4,5-TCB	ND (2.5)		ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)	
Alpha-BHC	ND (2.5)		ND (2.5)	
cis-Chlordane	ND (2.5)		ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)	
Endrin	ND (2.5)		ND (2.5)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)	
Hexachlorobenzene	ND (2.5)		ND (2.5)	
Mirex	ND (2.5)		ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)	
Pentachlorobenzene	ND (2.5)		ND (2.5)	
Perthane	ND (2.5)		3.5	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)	
1,2,3,4-TCB	ND (2.5)		ND (2.5)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)	
Chlorbenzilate	ND (2.5)		ND (2.5)	
trans-Chlordane	ND (2.5)		ND (2.5)	
p,p'-DDE	5.0		ND (2.5)	
Nitrofen	ND (2.5)		ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)	
Isopropalin	ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)	
Oxychlordane	8.0		ND (2.5)	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)	
Trifluralin	ND (2.5)		ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)	
Butachlor	ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)	
Chlorpyrifos	ND (2.5)		ND (2.5)	
Dieldrin	ND (2.5)		ND (2.5)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)	
trans-Nonachlor	ND (2.5)		ND (2.5)	
Pentachloroanisole	ND (2.5)		ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)	
Di-N-Butylphthalate	11.0		6.5	
Methyl Parathion	ND (2.5)		ND (2.5)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Analytical Scheme Set A Analytes
Concentrations Found (nanograms per gram) or parts per billion (ppb)

Lab Blanks

WSU ID	LB06234-1BA		LB06244-1A		LB06244-2A	
Matrix	Lab Blank		Lab Blank		Lab Blank	
Customer ID	n/a		n/a		n/a	
		%Rec		%Rec		%Rec
Iodobenzene	54.2	34.9	10.5	6.7	49.4	31.7
Iodonaphthalene	58.7	37.8	12.0	7.7	56.9	36.5
4,4'-Diiodobiphenyl	96.0	61.8	19.0	12.2	111.8	71.7
1,2,3-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,5- & 1,2,4,5-TCB	ND (2.5)		ND (2.5)		ND (2.5)	
Biphenyl	ND (2.5)		ND (2.5)		ND (2.5)	
Alpha-BHC	ND (2.5)		ND (2.5)		ND (2.5)	
cis-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)	
Dicofol or Kelthane	ND (2.5)		ND (2.5)		ND (2.5)	
Endrin	ND (2.5)		ND (2.5)		ND (2.5)	
Diphenyl Disulfide	ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)	
Mirex	ND (2.5)		ND (2.5)		ND (2.5)	
Octachlorostyrene	ND (2.5)		ND (2.5)		ND (2.5)	
Pentachlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)	
Perthane	ND (2.5)		ND (2.5)		ND (2.5)	
1,2,4-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)	
1,2,3,4-TCB	ND (2.5)		ND (2.5)		ND (2.5)	
Gamma-BHC or Lindane	ND (2.5)		ND (2.5)		ND (2.5)	
Chlorbenzilate	ND (2.5)		ND (2.5)		ND (2.5)	
trans-Chlordane	ND (2.5)		ND (2.5)		ND (2.5)	
p,p'-DDE	ND (2.5)		ND (2.5)		ND (2.5)	
Nitrofen	ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor	ND (2.5)		ND (2.5)		ND (2.5)	
Isopropalin	ND (2.5)		ND (2.5)		ND (2.5)	
cis-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)	
Oxychlordane	ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloronitrobenzene	ND (2.5)		ND (2.5)		ND (2.5)	
Trifluralin	ND (2.5)		ND (2.5)		ND (2.5)	
Hexachlorobutadiene	ND (2.5)		ND (2.5)		ND (2.5)	
1,3,5-Trichlorobenzene	ND (2.5)		ND (2.5)		ND (2.5)	
Butachlor	ND (2.5)		ND (2.5)		ND (2.5)	
Methoxychlor	ND (2.5)		ND (2.5)		ND (2.5)	
Chlorpyrifos	ND (2.5)		ND (2.5)		ND (2.5)	
Dieldrin	ND (2.5)		ND (2.5)		ND (2.5)	
Heptachlor Epoxide	ND (2.5)		ND (2.5)		ND (2.5)	
trans-Nonachlor	ND (2.5)		ND (2.5)		ND (2.5)	
Pentachloroanisole	ND (2.5)		ND (2.5)		ND (2.5)	
Triphenyl phosphate	ND (2.5)		ND (2.5)		ND (2.5)	
Diethylphthalate	ND (2.5)		ND (2.5)		ND (2.5)	
Di-N-Butylphthalate	ND (2.5)		ND (2.5)		ND (2.5)	
Methyl Parathion	ND (2.5)		ND (2.5)		ND (2.5)	

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Wright Sta ersity Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Total Polychlorinated Biphenyls (PCB's)
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	Customer ID	Sample Matrix	Total Mono PCB's	Total Di PCB's	Total Tri PCB's	Total Tetra PCB's	% REC	Total Penta PCB's	% REC	Total Hexa PCB's	% REC	Total Hepta PCB's	% REC	Total Octa PCB's	Total Deca PCB's
TDM3-1DA	TWRA #16-93	10 Redbreast Sunfish	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-1EA-S	TWRA #16-93	10 Redbreast Sunfish	ND (112.7)	ND (117.1)	ND (83.0)	1957.4	48.8	2771.2	69.3	733.2	48.8	61.7	12.3	ND (3.7)	ND (0.3)
TDM3-1FA-S	TWRA #16-93	10 Redbreast Sunfish	ND (112.5)	ND (117.0)	ND (82.9)	3037.7	75.9	3759.8	94.0	1124.4	75.0	69.7	13.9	ND (3.7)	ND (0.3)
TDM3-1GA-S	TWRA #16-93	10 Redbreast Sunfish	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-1HA-S	TWRA #16-93	10 Redbreast Sunfish	ND (112.6)	ND (117.0)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-2BA	TWRA #19-93	3 Channel Catfish	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-3BA	TWRA #15-93	2 Carp	ND (113.2)	ND (117.6)	ND (83.3)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-4BA	TWRA #14-93	4 Carp	ND (112.7)	ND (117.1)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-5BA	TWRA #21-93	5 Smallmouth Bass	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-6BA	TWRA #18-93	10 Redbreast Sunfish	ND (113.2)	ND (117.6)	ND (83.3)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-7BA	TWRA #20-93	5 Channel Catfish	ND (113.3)	ND (117.8)	ND (83.4)	ND (35.9)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-8BA	TWRA #17-93	10 Redbreast Sunfish	ND (112.7)	ND (117.1)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-9BA	TWRA #13-93	5 Carp	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-13BA	TWRA #12-93	3 Channel Catfish	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
LB12133-1DA	n/a	Lab Blank	ND (113.3)	ND (117.8)	ND (83.4)	ND (35.9)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)

Average Percent Recovery
Standard Deviation

TDM3-10DA	TWRA #4-93	20 Ebony Shell Mussels	ND (112.6)	ND (117.1)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-10EA-S	TWRA #4-93	20 Ebony Shell Mussels	ND (112.8)	ND (117.2)	ND (83.0)	1459.4	36.5	1889.8	47.2	497.2	33.1	ND (7.3)		ND (3.7)	ND (0.3)
TDM3-10FA-S	TWRA #4-93	20 Ebony Shell Mussels	ND (115.2)	ND (119.7)	ND (84.8)	1156.5	28.9	1598.9	40.0	376.0	25.1	ND (7.4)		ND (3.8)	ND (0.3)
TDM3-10GA-S	TWRA #4-93	20 Ebony Shell Mussels	ND (112.6)	ND (117.0)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-10HA-S	TWRA #4-93	20 Ebony Shell Mussels	ND (113.9)	ND (118.3)	ND (83.8)	ND (36.0)		ND (9.7)		ND (8.8)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-11BA	TWRA #8-93	9 Pink Heel Splitter Mussels	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-12BA	TWRA #11-93	5 Three Ridge Mussels	ND (112.6)	ND (117.1)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-14BA	TWRA #10-93	3 Pink Heel Splitter Mussels	ND (113.3)	ND (117.8)	ND (83.4)	ND (35.9)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-15BA	TWRA #9-93	9 Three Ridge Mussels	ND (113.1)	ND (117.5)	ND (83.2)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-16BA	TWRA #7-93	6 Pink Heel Splitter Mussels	ND (112.7)	ND (117.1)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-17BA	TWRA #2-93	20 Ebony Shell Mussels	ND (113.0)	ND (117.4)	ND (83.2)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-18BA	TWRA #5-93	20 Maple Leaf Mussels	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-19BA	TWRA #6-93	3 Pink Heel Splitter Mussels	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-20BA	TWRA #3-93	20 Maple Leaf Mussels	ND (112.6)	ND (117.0)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDM3-21BA	TWRA #1-93	20 Monkey Face Mussels	ND (115.2)	ND (119.7)	ND (84.8)	ND (36.4)		ND (9.8)		ND (8.9)		ND (7.4)		ND (3.8)	ND (0.3)
LB12143-1DA	n/a	Lab Blank	ND (115.2)	ND (119.7)	ND (84.8)	ND (36.4)		ND (9.8)		ND (8.9)		ND (7.4)		ND (3.8)	ND (0.3)

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

The Spike solution for the Native PCB's was an Arochlor 1254 which consists of tetra through hepta congener groups

Wright State Uni[illegible] Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Total Polychlorinated Biphenyls (PCB's)
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	Customer ID	Sample Matrix	Total Mono PCB's	Total Di PCB's	Total Tri PCB's	Total Tetra PCB's	% REC	Total Penta PCB's	% REC	Total Hexa PCB's	% REC	Total Hepta PCB's	% REC	Total Octa PCB's	Total Deca PCB's
TDP4-22BA	Three Ridge CRM 15.7	2 Mussels	ND (113.2)	ND (117.6)	ND (83.3)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-23BA	Three Ridge CRM 10	1 Mussels	ND (113.4)	ND (117.9)	ND (83.5)	ND (35.9)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-24BA	White Pimpleback CRM 10	5 Mussels	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-25BA	Whitehee! Splitter CRM 21.4	1 Mussels	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-26BA	Three Ridge CRM 21.4	1 Mussels	ND (113.0)	ND (117.5)	ND (83.2)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-27BA	Giant Floater CRM 15.7	1 Mussels	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-28DA	Whitehee! Splitter CRM 15.7	3 Mussels	ND (112.9)	ND (117.3)	ND (83.1)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-28EA-S	Whitehee! Splitter CRM 15.7	3 Mussels	ND (112.8)	ND (117.2)	ND (83.0)	963.3	24.1	1124.4	28.1	455.3	30.4	19.2	3.8	ND (3.7)	ND (0.3)
TDP4-28FA-S	Whitehee! Splitter CRM 15.7	3 Mussels	ND (113.1)	ND (117.5)	ND (83.2)	1198.8	30.0	1809.9	45.2	630.5	42.0	31.7	6.3	ND (3.7)	ND (0.3)
TDP4-28GA-S	Whitehee! Splitter CRM 15.7	3 Mussels	ND (112.8)	ND (117.2)	ND (83.0)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-28HA-S	Whitehee! Splitter CRM 15.7	3 Mussels	ND (112.6)	ND (117.1)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-29BA	Giant Floater CRM 21.4	1 Mussels	ND (113.2)	ND (117.6)	ND (83.3)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-30BA	White Pimpleback CRM 21.4	6 Mussels	ND (112.6)	ND (117.0)	ND (82.9)	ND (35.6)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDP4-31BA	White Pimpleback CRM 15.7	6 Mussels	ND (113.2)	ND (117.6)	ND (83.3)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
LB06234-1BA	n/a	Lab Blank	ND (113.4)	ND (117.9)	ND (83.5)	ND (35.9)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDO4-1CA	Fish-Bull Cr. & Mouth of Channel	Whole Fish	ND (113.0)	ND (115.2)	ND (83.2)	ND (35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
LB06244-1A	n/a	Lab Blank	ND (113.0)	ND (115.2)	ND (83.2)	ND-(35.7)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
TDO4-2CA	Sed.-Bull Creek Boat Ramp	Sediment	ND (113.0)	ND (115.2)	ND (83.2)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)
LB06244-2A	n/a	Lab Blank	ND (113.0)	ND (115.2)	ND (83.2)	ND (35.8)		ND (9.6)		ND (8.7)		ND (7.3)		ND (3.7)	ND (0.3)

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte
The Spike solution for the Native PCB's was an Arochlor 1254 which consists of tetra through hepta congener groups

ATTACHMENT C2

SUMMARY DATA TABLES FOR SET B ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Diazinon and Disulfoton
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	Customer ID	Sample Matrix	Iodonaphthalene	% REC	Diazinon	% REC	Disulfoton	% REC
TDM3-1DB	TWRA #16-93	10 Redbreast Sunfish	54.6	35.0	ND (2.5)		ND (2.5)	
TDM3-1IB-S	TWRA #16-93	10 Redbreast Sunfish	66.7	42.5	6.8	13.6	28.7	57.3
TDM3-1JB-S	TWRA #16-93	10 Redbreast Sunfish	60.9	39.0	6.7	13.5	27.6	55.1
TDM3-2BB	TWRA #19-93	3 Channel Catfish	196.5	125.5	ND (2.5)		ND (2.5)	
TDM3-3BB	TWRA #15-93	2 Carp	227.9	146.2	ND (2.5)		ND (2.5)	
TDM3-4BB	TWRA #14-93	4 Carp	199.7	127.5	ND (2.5)		ND (2.5)	
TDM3-5BB	TWRA #21-93	5 Smallmouth Bass	199.0	127.2	ND (2.5)		ND (2.5)	
TDM3-6BB	TWRA #18-93	10 Redbreast Sunfish	199.8	128.1	ND (2.5)		ND (2.5)	
TDM3-7BB	TWRA #20-93	5 Channel Catfish	224.9	144.3	ND (2.5)		ND (2.5)	
TDM3-8BB	TWRA #17-93	10 Redbreast Sunfish	262.6	167.6	ND (2.5)		ND (2.5)	
TDM3-9BB	TWRA #13-93	5 Carp	224.4	143.3	ND (2.5)		ND (2.5)	
TDM3-13BB	TWRA #12-93	3 Channel Catfish	272.8	174.4	ND (2.5)		ND (2.5)	
LB12143-1DB	n/a	Lab Blank	159.3	102.3	ND (2.5)		ND (2.5)	
TDM3-10DB	TWRA #4-93	20 Ebony Shell Mussels	62.6	39.9	ND (2.5)		ND (2.5)	
TDM3-10IB-S	TWRA #4-93	20 Ebony Shell Mussels	79.4	50.8	2.9	5.8	5.2	10.5
TDM3-10JB-S	TWRA #4-93	20 Ebony Shell Mussels	72.0	45.9	2.7	5.3	2.0	3.9
TDM3-11BB	TWRA #8-93	9 Pink Heel Splitter Mussels	214.4	137.0	ND (2.5)		ND (2.5)	
TDM3-12BB	TWRA #11-93	5 Three Ridge Mussels	234.7	149.8	ND (2.5)		ND (2.5)	
TDM3-14BB	TWRA #10-93	3 Pink Heel Splitter Mussels	231.4	148.5	ND (2.5)		ND (2.5)	
TDM3-15BB	TWRA #9-93	9 Three Ridge Mussels	161.5	103.5	ND (2.5)		ND (2.5)	
TDM3-16BB	TWRA #7-93	6 Pink Heel Splitter Mussels	268.1	171.1	ND (2.5)		ND (2.5)	
TDM3-17BB	TWRA #2-93	20 Ebony Shell Mussels	282.8	181.0	ND (2.5)		ND (2.5)	
TDM3-18BB	TWRA #5-93	20 Maple Leaf Mussels	234.1	149.7	ND (2.5)		ND (2.5)	
TDM3-19BB	TWRA #6-93	3 Pink Heel Splitter Mussels	246.5	157.7	ND (2.5)		ND (2.5)	
TDM3-20BB	TWRA #3-93	20 Maple Leaf Mussels	152.3	97.2	ND (2.5)		ND (2.5)	
TDM3-21BB	TWRA #1-93	20 Monkey Face Mussels	198.3	129.4	ND (2.4)		ND (2.4)	
LB12143-1DB	n/a	Lab Blank	237.3	154.8	ND (2.4)		ND (2.4)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Diazinon and Disulfoton
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	Customer ID	Sample Matrix	Iodonaphthalene	% REC	Diazinon	% REC	Disulfoton	% REC
TDP4-22BB	Three Ridge CRM 15.7	2 Mussels	50.2	32.2	ND (2.5)		ND (2.5)	
TDP4-23BB	Three Ridge CRM 10	1 Mussels	56.3	36.2	ND (2.5)		ND (2.5)	
TDP4-24BB	White Pimpleback CRM 10	5 Mussels	49.5	31.6	ND (2.5)		ND (2.5)	
TDP4-25BB	Whiteheel Splitter CRM 21.4	1 Mussels	100.5	64.3	1.4		ND (2.5)	
TDP4-26BB	Three Ridge CRM 21.4	1 Mussels	84.9	54.4	ND (2.5)		ND (2.5)	
TDP4-27BB	Giant Floater CRM 15.7	1 Mussels	109.4	69.8	ND (2.5)		ND (2.5)	
TDP4-28DB	Whiteheel Splitter CRM 15.7	3 Mussels	81.2	51.9	8.1		ND (2.5)	
TDP4-28IB-S	Whiteheel Splitter CRM 15.7	3 Mussels	101.2	64.8	5.9	11.8	2.3	4.5
TDP4-28JB-S	Whiteheel Splitter CRM 15.7	3 Mussels	67.4	43.0	7.0	13.9	2.0	4.0
TDP4-29BB	Giant Floater CRM 21.4	1 Mussels	118.4	75.9	ND (2.5)		ND (2.5)	
TDP4-30BB	White Pimpleback CRM 21.4	6 Mussels	150.1	96.7	ND (2.5)		ND (2.5)	
TDP4-31BB	White Pimpleback CRM 15.7	6 Mussels	142.2	91.2	5.3		ND (2.5)	
LB06234-1BB	n/a	Lab Blank	99.3	63.8	ND (2.5)		ND (2.5)	
TDO4-1CB	Fish-Bull Cr. & Mouth of Channel	Whole Fish	128.6	82.3	ND (2.5)		ND (2.5)	
LB06244-1B	n/a	Lab Blank	17.6	11.2	ND (2.5)		ND (2.5)	
TDO4-2CB	Sed.-Bull Creek Boat Ramp	Sediment	47.0	30.1	ND (2.5)		ND (2.5)	
LB06244-2B	n/a	Lab Blank	83.8	53.7	ND (2.5)		ND (2.5)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

ATTACHMENT C3

SUMMARY DATA TABLES FOR SET C ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Tennessee Wildlife Resources Agency							
Project Number : 2640CC				Set C (HPLC)			
Analyte Concentrations in ppb (ng/g)							
Sample	Cyanazine	Simazine	Carbofuran	Atrazine	Fluometuron	Carbazole (Sur)	Naphthalene (Int)
TDM3-1DC	ND (8.34)	ND (20.5)	ND (63.1)	ND (11.0)	ND (37.4)	[67.0%]	[72.9%]
TDM3-1IC-S	139 [69.7%]	113 [56.2%]	1310 [130%]	--	--	[81.2%]	[70.1%]
	--	--	--	860 [85.8%]	232 [116%]	[109%]	[91.0]
TDM3-1JC-S	162 [81.0%]	138 [68.9%]	1660 [166%]	--	--	[98.3%]	[75.7%]
	--	--	--	848 [84.8%]	222 [111%]	[104%]	[79.5%]
TDM3-2BC	ND (11.8)	ND (36.2)	ND (77.0)	ND (5.72)	ND (19.4)	[89.9%]	[63.6%]
TDM3-3BC	ND (5.21)	ND (11.4)	ND (93.5)	ND (9.41)	ND (32.0)	[80.2%]	[71.7%]
TDM3-4BC	ND (7.44)	ND (19.5)	ND (76.0)	ND (9.10)	ND (31.0)	[89.5%]	[61.7%]
TDM3-5BC	ND (6.53)	ND (13.5)	ND (110)	ND (8.61)	ND (29.3)	[91.0%]	[73.8%]
TDM3-6BC	ND (9.19)	ND (5.64)	ND (38.5)	ND (12.8)	ND (43.5)	[88.4%]	[76.8%]
TDM3-7BC	ND (7.84)	ND (15.3)	ND (71.9)	ND (14.5)	ND (49.3)	[89.9%]	[78.5%]
TDM3-8BC	ND (12.4)	ND (6.40)	ND (94.6)	ND (5.76)	ND (19.6)	[95.9%]	[71.5%]
TDM3-9BC	ND (3.96)	ND (7.13)	ND (113)	ND (19.1)	ND (65.1)	[89.7%]	[62.3%]
TDM3-13BC	ND (9.57)	ND (9.18)	ND (40.2)	ND (19.3)	ND (65.7)	[101%]	[61.5%]
LB12133-1CC	ND (1.78)	ND (8.21)	ND (162)	ND (14.5)	ND (49.3)	[97.6%]	[80.5%]
	--	--	--	ND (53.4)	ND (15.0)	[106%]	[84.4%]

Tennessee Wildlife Resources Agency							
Project Number : 2640DC				Set C (HPLC)			
Analyte Concentrations in ppb (ng/g)							
Sample	Cyanazine	Simazine	Carbofuran	Atrazine	Fluometuron	Carbazole (Sur)	Naphthalene (Int)
TDM3-10DC	ND (4.60)	ND (9.02)	ND (45.6)	ND (6.50)	ND (22.1)	[81.5%]	[71.6%]
TDM3-10IC-S	155 [77.6%]	135 [67.6%]	1490 [149%]	--	--	[94.2%]	[59.8%]
	--	--	--	936 [93.6%]	248 [124%]	[118%]	[89.9%]
TDM3-10JC-S	144 [72.1%]	124 [62.1%]	1290 [129%]	--	--	[91.6%]	[58.3%]
	--	--	--	838 [83.7%]	209 [104%]	[107%]	[79.4%]
TDM3-11BC	ND (5.89)	ND (6.02)	ND (90.1)	ND (14.4)	ND (49.0)	[105%]	[67.0%]
TDM3-12BC	ND (11.8)	ND (13.2)	ND (34.3)	ND (8.62)	ND (29.3)	[80.1%]	[72.2%]
TDM3-14BC	ND (3.43)	ND (13.0)	ND (31.5)	ND (14.2)	ND (48.3)	[96.6%]	[75.0%]
TDM3-15BC	ND (3.71)	ND (10.3)	ND (43.5)	ND (9.22)	ND (31.4)	[95.0%]	[84.9%]
TDM3-16BC	ND (4.91)	ND (20.8)	ND (79.2)	ND (14.9)	ND (50.7)	[98.0%]	[67.6%]
TDM3-17BC	ND (2.77)	ND (14.5)	ND (51.2)	ND (14.5)	ND (49.3)	[98.6%]	[59.9%]
TDM3-18BC	ND (11.8)	ND (8.70)	ND (25.9)	ND (15.7)	ND (53.3)	[107%]	[67.3%]
TDM3-19BC	ND (6.05)	ND (12.7)	ND (55.5)	ND (10.7)	ND (36.3)	[82.8%]	[64.9%]
TDM3-20BC	ND (6.54)	ND (11.9)	ND (90.0)	ND (8.38)	ND (28.5)	[53.9%]	[64.3%]
TDM3-21BC	ND (4.30)	ND (4.65)	ND (43.3)	ND (13.9)	ND (47.4)	[87.8%]	[67.5%]
LB12143-1DC	ND (3.16)	ND (8.45)	ND (18.3)	ND (4.03)	ND (13.7)	[65.2%]	[60.8%]
	--	--	--	ND (19.5)	ND (2.29)	[117%]	[74.6%]

Tennessee Wildlife Resources Agency

Project Number : 2659BC			Set C (HPLC)				
Analyte Concentrations in ppb (ng/g)							
Sample	Cyanazine	Simazine	Carbofuran	Atrazine	Fluometuron	Carbazole (Sur)	Naphthalene (Int)
TDP4-22BC	ND (4.57)	ND (3.09)	ND (96.1)	ND (13.1)	ND (24.2)	[74.7%]	[67.9%]
TDP4-23BC	ND (8.38)	ND (14.8)	ND (75.8)	ND (8.80)	ND (12.3)	[86.9%]	[62.5%]
TDP4-24BC	ND (12.2)	ND (15.5)	ND (29.3)	ND (16.7)	ND (22.1)	[78.2%]	[58.4%]
TDP4-25BC	ND (25.4)	ND (24.6)	ND (79.1)	ND (7.62)	ND (41.6)	[89.2%]	[56.3%]
TDP4-26BC	ND (2.01)	ND (10.4)	ND (25.6)	ND (4.12)	ND (51.1)	[79.3%]	[53.3%]
TDP4-27BC	ND (7.64)	ND (49.4)	ND (105)	ND (5.41)	ND (30.0)	[74.7%]	[56.6%]
TDP4-28DC	ND (22.5)	ND (6.51)	ND (357)	ND (26.5)	ND (38.5)	[72.9%]	[61.0%]
TDP4-28IC-S	106 [53.1%]	61.2 [30.7%]	882 [44.2%]	199 [99.5%]	381 [38.2%]	[75.7%]	[87.6%]
TDP4-28JC-S	216 [108%]	155 [77.5%]	1850 [92.2%]	241 [121%]	686 [68.5%]	[90.8%]	[56.2%]
TDP4-29BC	ND (31.0)	ND (25.2)	ND (72.3)	ND (15.0)	ND (87.4)	[86.8%]	[59.5%]
TDP4-30BC	ND (7.10)	ND (21.0)	ND (64.3)	ND (11.5)	ND (39.2)	[94.0%]	[68.9%]
TDP4-31BC	ND (32.0)	ND (24.6)	ND (98.8)	ND (26.5)	ND (36.0)	[97.5%]	[60.8%]
LB06234-1BC	ND (6.60)	ND (23.7)	ND (175)	ND (12.3)	ND (135)	[44.7%]	[41.2%]

C3-5

Tennessee Wildlife Resources Agency							
Project Number : 2661CC				Set C (HPLC)			
Analyte Concentrations in ppb (ng/g)							
Sample	Cyanazine	Simazine	Carbofuran	Atrazine	Fluometuron	Carbazole (Sur)	Naphthalene (Int)
TDO4-1CC	ND (38.3)	ND (50.3)	121000	ND (30.3)	ND (144)	[72.2%]	[50.8%]
LB06244-1C	ND (19.9)	ND (22.2)	ND (110)	ND (21.4)	ND (68.6)	[26.7%]	[57.6%]
TDO4-2CC	ND (14.6)	ND (25.9)	2670	ND (14.0)	ND (23.7)	[31.1%]	[64.2%]
LB06244-2C	ND (10.0)	ND (15.8)	ND (169)	ND (16.8)	ND (61.9)	[64.1%]	[62.0%]

ATTACHMENT C4

SUMMARY DATA TABLES FOR SET D ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Endothal
Concentrations Found (nanograms per gram) or parts per billion (ppb)

Customer ID	Sample Matrix	Iodonaphthalene	% REC	Endothal	% REC
TWRA #16-93	10 Redbreast Sunfish	390.0	124.4	ND (10.0)	
TWRA #16-93	10 Redbreast Sunfish	232.0	74.5	124.3	49.9
TWRA #16-93	10 Redbreast Sunfish	381.8	122.2	390.7	156.3
TWRA #19-93	3 Channel Catfish	411.0	106.2	ND (12.4)	
TWRA #15-93	2 Carp	214.6	68.6	ND (10.0)	
TWRA #14-93	4 Carp	364.6	86.0	ND (13.6)	
TWRA #21-93	5 Smallmouth Bass	251.5	81.0	ND (9.9)	
TWRA #18-93	10 Redbreast Sunfish	139.2	44.6	ND (10.0)	
TWRA #20-93	5 Channel Catfish	302.7	97.1	ND (10.0)	
TWRA #17-93	10 Redbreast Sunfish	228.7	73.2	ND (10.0)	
TWRA #13-93	5 Carp	383.2	99.8	ND (12.3)	
n/a	Lab Blank	217.2	70.0	ND (9.9)	
TWRA #4-93	20 Ebony Shell Mussels	221.2	72.6	ND (9.7)	
TWRA #4-93	20 Ebony Shell Mussels	305.2	101.6	262.1	109.0
TWRA #4-93	20 Ebony Shell Mussels	300.0	95.9	287.4	114.8
TWRA #8-93	9 Pink Heel Splitter Mussels	332.0	107.3	ND (9.9)	
TWRA #11-93	5 Three Ridge Mussels	234.4	76.4	ND (9.8)	
TWRA #12-92	3 Channel Catfish	218.4	69.7	ND (10.0)	
TWRA #10-93	3 Pink Heel Splitter Mussels	270.7	86.5	ND (10.0)	
TWRA #9-93	9 Three Ridge Mussels	289.1	92.6	ND (10.0)	
TWRA #7-93	6 Pink Heel Splitter Mussels	302.8	97.0	ND (10.0)	
TWRA #2-93	20 Ebony Shell Mussels	307.4	98.0	ND (10.0)	
TWRA #5-93	20 Maple Leaf Mussels	316.2	101.4	ND (10.0)	
TWRA #6-93	3 Pink Heel Splitter Mussels	224.2	71.7	ND (10.0)	
TWRA #3-93	20 Maple Leaf Mussels	256.0	82.1	ND (10.0)	
TWRA #1-93	20 Monkey Face Mussels	281.2	90.7	ND (9.9)	
n/a	Lab Blank	282.8	94.1	ND (9.6)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Endothal
Concentrations Found (nanograms per gram) or parts per billion (ppb)

WSU ID	Sample Matrix	Iodonaphthalene	% REC	Endothal	% REC
TDP4-22	2 Mussels	320.0	80.0	ND(4.0)	
TDP4-23	1 Mussel	186.0	47.0	ND(6.0)	
TDP4-24	5 Mussels	294.0	73.0	ND(5.0)	
TDP4-25	1 Mussel	112.0	28.0	ND(10.0)	
TDP4-26	1 Mussel	460.0	115.0	ND(4.0)	
TDP4-27	1 Mussel	592.0	148.0	ND(4.0)	
TDP4-28	3 Mussels	276.0	69.0	ND(5.0)	
TDP4-28 SPK	3 mussels	332.0	83.0	65.0	25.0
TDP4-28 SPK	3 Mussels	276.0	69.0	370.0	149.0
TDP4-29	1 Mussel	268.0	57.0	ND(6.0)	
TDP4-30	6 Mussels	308.0	77.0	ND(4.0)	
TDP4-31	6 Mussels	380.0	95.0	ND(5.0)	
n/a	Lab Blank	280.0	70.0	ND(6.0)	
TDO4-1	Whole Fish	500.0	125.0	ND(5.0)	
TDO4-2	Sediment	512.0	128.0	ND(4.0)	
n/a	Lab Blank	340.0	85.0	ND(4.0)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

ATTACHMENT C5

SUMMARY DATA TABLES FOR SET E ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for 2,4-D, Aciluoren, Benzoic Acid, Carbaryl, Dinoseb and Picloram
Concentrations Found (nanograms per gram) or parts per billion (ppb)

Customer ID	Sample Matrix	Iodobenzene	% REC	Iodonaphthalene	% REC	Benzoic Acid	% REC	2,4-D	% REC	Dinoseb	% REC	Picloram	% REC	Carbaryl	% REC	Acifluoren	% REC
TWRA #16-93	10 Redbreast Sunfish	0.6	0.2	137.9	44.0	13.9		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #16-93	10 Redbreast Sunfish	0.3	0.1	118.0	37.9	39.1	15.7	112.5	45.1	112.3	45.1	185.5	74.4	250.2	100.4	1.7	0.7
TWRA #16-93	10 Redbreast Sunfish	1.5	0.5	132.5	42.4	31.7	12.7	159.7	63.9	148.4	59.3	260.2	104.1	314.0	125.6	2.2	0.9
TWRA #19-93	3 Channel Catfish	3.7	0.9	155.3	40.1	102.6		ND (12.4)		ND (12.4)		ND (12.4)		ND (12.4)		ND (12.4)	
TWRA #15-93	2 Carp	0.7	0.2	133.4	42.7	117.0		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #14-93	4 Carp	1.1	0.3	210.0	49.6	318.4		ND (13.6)		ND (13.6)		ND (13.6)		ND (13.6)		ND (13.6)	
TWRA #21-93	5 Smallmouth Bass	0.4	0.1	127.1	41.0	14.6		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)	
TWRA #18-93	10 Redbreast Sunfish	0.9	0.3	100.3	32.1	15.2		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #20-93	5 Channel Catfish	1.6	0.5	228.3	73.2	31.0		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #17-93	10 Redbreast Sunfish	3.6	1.2	136.6	43.7	16.6		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #13-93	5 Carp	1.0	0.2	191.8	50.0	146.7		ND (12.3)		ND (12.3)		ND (12.3)		ND (12.3)		ND (12.3)	
n/a	Lab Blank	3.0	1.0	105.3	33.9	861.8		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)	
TWRA #4-93	20 Ebony Shell Mussels	17.2	5.7	127.3	41.6	1081.6		ND (9.7)		ND (9.7)		ND (9.7)		ND (9.7)		ND (9.7)	
TWRA #4-93	20 Ebony Shell Mussels	8.2	2.7	188.3	62.7	1332.4	554.3	180.2	75.0	214.2	89.1	44.9	18.7	121.5	50.5	2.4	1.0
TWRA #4-93	20 Ebony Shell Mussels	12.9	4.1	149.4	47.8	1017.0	406.4	112.4	44.9	204.9	81.9	76.0	30.4	4.5	1.8	1.7	0.7
TWRA #8-93	9 Pink Heel Splitter Mussels	16.7	5.4	164.2	53.1	2074.2		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)	
TWRA #11-93	5 Three Ridge Mussels	6.3	2.1	120.0	39.1	518.1		ND (9.8)		ND (9.8)		ND (9.8)		ND (9.8)		ND (9.8)	
TWRA #12-92	3 Channel Catfish	17.1	5.5	176.5	58.4	21.6		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #10-93	3 Pink Heel Splitter Mussels	23.3	7.5	140.6	45.0	3050.1		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #9-93	9 Three Ridge Mussels	4.8	1.6	138.2	44.3	399.7		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #7-93	6 Pink Heel Splitter Mussels	4.3	1.4	149.7	48.0	949.0		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #2-93	20 Ebony Shell Mussels	17.9	5.7	155.7	49.6	1699.1		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #5-93	20 Maple Leaf Mussels	2.7	0.9	147.0	47.1	1912.0		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #6-93	3 Pink Heel Splitter Mussels	12.6	4.0	152.0	48.6	1289.9		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #3-93	20 Maple Leaf Mussels	6.1	1.9	63.7	20.4	170.2		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
TWRA #1-93	20 Monkey Face Mussels	10.2	3.3	154.6	49.9	360.5		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)	
n/a	Lab Blank	4.5	1.5	88.9	29.6	334.0		ND (9.6)		ND (9.6)		ND (9.6)		ND (9.6)		ND (9.6)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

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Wright State University Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for 2,4-D, Aciluoren, Benzoic Acid, Carbaryl, Dinoseb and Picloram
Concentrations Found (nanograms per gram) or parts per billion (ppb)

Customer ID	Sample Matrix	Iodobenzene	% REC	Iodonaphthalene	% REC	Benzoic Acid	% REC	2,4-D	% REC	Dinoseb	% REC	Picloram	% REC	Carbaryl	% REC	Acifluoren	% REC
Three Ridge CRM 15.7	2 Mussels	586.8	187.2	74.8	23.9	ND (13.9)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Three Ridge CRM 10	1 Mussels	261.3	87.7	92.5	31.0	ND (13.2)		ND (9.5)		ND (9.5)		ND (9.5)		ND (9.5)		ND (9.5)	
White Pimpleback CRM 10	5 Mussels	354.9	114.4	66.4	21.4	ND (13.7)		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)		ND (9.9)	
Whiteheel Splitter CRM 21.4	1 Mussels	330.1	105.6	82.8	26.5	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Three Ridge CRM 21.4	1 Mussels	506.2	162.0	177.9	56.9	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Giant Floater CRM 15.7	1 Mussels	54.3	17.3	112.9	36.1	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Whiteheel Splitter CRM 15.7	3 Mussels	204.2	65.4	88.9	28.5	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Whiteheel Splitter CRM 15.7	3 Mussels	376.7	120.7	141.0	45.2	640.5	256.5	153.0	61.2	638.3	255.6	51.9	20.8	160.7	64.3	71.3	28.6
Whiteheel Splitter CRM 15.7	3 Mussels	200.6	64.0	50.8	16.2	458.2	182.7	148.1	59.1	362.1	144.4	69.5	27.7	17.6	7.0	11.1	4.4
Giant Floater CRM 21.4	1 Mussels	110.8	35.5	41.8	13.4	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
White Pimpleback CRM 21.4	6 Mussels	349.1	111.6	80.5	25.7	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
White Pimpleback CRM 15.7	6 Mussels	193.6	62.2	76.4	24.5	ND (13.8)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Fish-Bull Cr. & Mouth of Channel	Whole Fish	101.9	32.6	50.2	16.0	ND (13.8)		ND (12.4)		ND (10.0)		ND (10.0)		ND (10.0)		ND (10.0)	
Sed.-Bull Creek Boat Ramp	6 Mussels	361.5	115.3	36.6	11.7	677.0		1194.3		ND (10.0)		ND (10.0)		5.2		ND (10.0)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

25-3

Tennessee Wildlife Resources Agency

Method 8270

Sample	Values ng/g of sample 2,4 D	2,4,5 T	Silvex	Internal Recovery C13 2,4 D
1. FISH-BULL CR.&MOUTH OF CHAN.	ND (0.2)	ND (0.1)	ND (0.1)	141%
LAB BLANK - FISH	ND (0.4)	ND (0.1)	ND (0.1)	103%
2. SED.-BULL CREEK BOAT RAMP	33000	6.0	4.6	131%
LAB BLANK - SEDIMENT	ND (0.6)	ND (0.2)	ND (0.2)	128%

ATTACHMENT C6

SUMMARY DATA TABLES FOR SET F ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Wright State Univer. Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Alachlor, Metolachlor, Ethroprop, Hexazinone and Acephate
Concentrations Found (nanograms per gram) or parts per billion (ppb)

Customer ID	Sample Matrix	Iodonaphthalene	% REC	4,4'-Diiodobiphenyl	% REC	Alachlor	% REC	Metolachlor	% REC	Ethroprop	% REC	Hexazinone	% REC	Acephate	% REC
TWRA #16-93	10 Redbreast Sunfish	270.6	88.3	367.9	117.4	ND(5)		ND(5)		ND(5)		2.3		ND (50.1)	
TWRA #16-93	10 Redbreast Sunfish	223.5	71.7	325.2	104.4	143.1	57.4	62.1	24.9	71.6	28.7	5.4	2.2	ND (49.8)	-20.0
TWRA #16-93	10 Redbreast Sunfish	241.8	77.4	315.0	100.8	132.1	52.8	59.4	23.8	72.1	28.8	6.6	2.6	ND (50.0)	-20.0
TWRA #19-93	3 Channel Catfish	423.0	109.3	316.9	81.9	ND(6)		ND(6)		ND(6)		14.0		ND (61.9)	
TWRA #15-93	2 Carp	326.3	104.3	248.3	79.4	ND(5)		ND(5)		ND(5)		2.4		ND (50.0)	
TWRA #14-93	4 Carp	485.5	114.5	360.0	84.9	ND(7)		ND(7)		ND(7)		ND(1)		ND (67.8)	
TWRA #21-93	5 Smallmouth Bass	299.2	96.4	233.9	75.4	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.6)	
TWRA #18-93	10 Redbreast Sunfish	290.6	93.1	231.7	74.2	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.9)	
TWRA #20-93	5 Channel Catfish	367.1	117.7	249.3	79.9	ND(5)		ND(5)		ND(5)		10.0		ND (49.9)	
TWRA #17-93	10 Redbreast Sunfish	414.1	132.5	300.8	96.3	ND(5)		ND(5)		ND(5)		2.7		ND (50.0)	
TWRA #13-93	5 Carp	486.9	126.9	307.6	80.1	ND(6)		ND(7)		ND(6)		ND(1)		ND (61.3)	
n/a	Lab Blank	315.8	101.8	605.2	195.0	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.6)	
TWRA #4-93	20 Ebony Shell Mussels	249.2	81.8	204.9	67.3	ND(5)		ND(5)		ND(5)		ND(1)		ND (48.7)	
TWRA #4-93	20 Ebony Shell Mussels	285.1	94.9	602.7	200.6	211.8	88.1	69.5	28.9	71.9	29.8	14.6	6.1	140.3	58.4
TWRA #4-93	20 Ebony Shell Mussels	228.6	73.1	796.9	254.8	251.4	100.4	116.0	46.3	96.8	38.7	26.4	10.5	169.1	67.6
TWRA #8-93	9 Pink Heel Splitter Mussels	232.9	75.3	661.2	213.7	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.5)	
TWRA #11-93	5 Three Ridge Mussels	209.6	68.3	532.6	173.7	ND(5)		1.3		ND(5)		3.2		ND (49.0)	
TWRA #12-92	3 Channel Catfish	296.9	94.8	661.4	211.2	ND(5)		ND(5)		ND(5)		ND(1)		ND (50.1)	
TWRA #10-93	3 Pink Heel Splitter Mussels	233.5	74.6	596.2	190.6	ND(5)		ND(5)		ND(5)		ND(1)		ND (50.0)	
TWRA #9-93	9 Three Ridge Mussels	261.8	83.9	734.3	235.2	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.9)	
TWRA #7-93	6 Pink Heel Splitter Mussels	220.9	70.7	656.6	210.3	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.9)	
TWRA #2-93	20 Ebony Shell Mussels	298.2	95.0	816.1	260.1	ND(5)		ND(5)		ND(5)		ND(1)		ND (50.2)	
TWRA #5-93	20 Maple Leaf Mussels	250.8	80.4	970.2	311.1	ND(5)		ND(5)		ND(5)		2.4		ND (49.9)	
TWRA #6-93	3 Pink Heel Splitter Mussels	241.9	77.4	749.6	239.9	ND(5)		ND(5)		ND(5)		ND(1)		ND (50.0)	
TWRA #3-93	20 Maple Leaf Mussels	317.7	101.9	877.9	281.5	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.9)	
TWRA #1-93	20 Monkey Face Mussels	260.7	84.1	755.9	243.8	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.6)	
n/a	Lab Blank	277.5	92.3	618.1	205.7	ND(5)		ND(4)		ND(5)		ND(1)		ND (48.0)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

Wright State Univers., Dayton, Ohio 45435

Tennessee Wildlife Resources Agency
Analysis for Alachlor, Metolachlor, Ethroprop, Hexazinone and Acephate
Concentrations Found (nanograms per gram) or parts per billion (ppb)

Customer ID	Sample Matrix	Iodonaphthalene	% REC	4,4'-Diiodobiphenyl	% REC	Alachlor	% REC	Metolachlor	% REC	Ethroprop	% REC	Hexazinone	% REC	Acephate	% REC
TDP4-22	2 Mussels	195.0	59.0	181.0	55.0	ND(5)		ND(5)		ND(5)		1.2		ND (50.1)	
TDP4-23	1 Mussel	175.0	53.0	169.0	51.0	ND(4)		ND(5)		ND(4)		3.1		ND (49.8)	
TDP4-24	5 Mussels	175.0	53.0	175.0	53.0	ND(5)		ND(4)		ND(5)		2.9		ND (50.0)	
TDP4-25	1 Mussel	406.0	123.0	248.0	76.0	ND(6)		ND(6)		ND(6)		14.1		ND (61.9)	
TDP4-26	1 Mussel	320.0	97.0	439.0	133.0	ND(5)		ND(5)		ND(5)		ND(1)		ND (50.0)	
TDP4-27	1 Mussel	297.0	87.0	297.0	87.0	ND(7)		ND(7)		ND(7)		ND(1)		ND (67.8)	
TDP4-28	3 Mussels	145.0	44.0	208.0	63.0	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.6)	
TDP4-28 SPK	3 Mussels	155.0	47.0	89.0	27.0	51.0	20.0	8.0	3.2	6.0	2.4	44.0	18.0	ND (49.9)	-20.0
TDP4-28 SPK	3 MUssels	142.0	43.0	198.0	60.0	106.0	42.0	15.0	6.0	8.0	3.2	42.0	17.0	ND (49.9)	-20.0
TDP4-29	1 Mussel	129.0	39.0	139.0	42.0	ND(5)		ND(5)		ND(5)		1.8		ND (50.0)	
TDP4-30	6 MUssels	399.0	121.0	270.0	82.0	ND(6)		ND(7)		ND(6)		ND(1)		ND (61.3)	
TDP4-31	6 Mussels	241.0	73.0	162.0	49.0	ND(5)		ND(5)		ND(5)		ND(1)		ND (49.6)	
n/a	Lab Blank	201.0	61.0	162.0	49.0	ND(5)		ND(4)		ND(5)		ND(1)		ND(48.0)	
TDO4-1	Fish-Bull Cr.&mouth of Chan.	281.0	82.0	261.0	79.0	ND(5)		ND(5)		ND(5)		ND(1)		ND(49.0)	
TDO4-2	Sed.-Bull Creek Boat Ramp	209.0	63.0	157.0	47.0	ND(5)		ND(5)		ND(5)		ND(1)		ND(50.0)	

ND means that the analyte was not "Not Detected" in the sample and the number in paranthesis following it is the Detection Limit for that analyte

ATTACHMENT C7

SUMMARY DATA TABLES FOR SET G ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Wright State University, Dayton, Ohio 45435

Analysis for Substituted 2378 Dioxins and Furans

2378 TCDD,F C13 Int TCDD,F Ext TCDD,F

Column - DB-DIOXIN 60M , 0.25u

Concentrations Found (picograms per gram of sample or parts-per-trillion)a.

TENNESSEE WRA 2640A Sample Number	2378 TCDF	2378 TCDD
1A. TWRA #16-93	0.954	1.18
1B. TWRA #16-93 SPIKE	11.4	11.9
1C. TWRA #16-93 SPIKE DUP	9.31	12.9
2A. TWRA #19-93	ND 0.428	ND 0.960
. TWRA #15-93	ND 0.592	ND 0.714
4A. TWRA #14-93	3.12	6.72
5A. TWRA #21-93	1.03	ND 0.597
6A. TWRA #18-93	ND 0.362	ND 0.644
7A. TWRA #20-93	ND 0.424	1.36
8A. TWRA #17-93	1.00	1.14
9A. TWRA #13-93	2.88	2.26
13A. TWRA #12-93	ND 0.479	ND 0.580
LAB BLANK (A)	ND 0.376	ND 0.461

a. The designation ND indicates "None Detected" in excess of the minimum detectable

Wright State University, Dayton, Ohio 45435

Analysis for Substituted 2378 Dioxins and Furans

2378 TCDD,F C13 Int TCDD,F Ext TCDD,F

Column - DB-DIOXIN 60M , 0.25u

Concentrations Found (picograms per gram of sample or parts-per-trillion)a.

TENNESSEE WRA 2640B

Sample Number	2378 TCDF	2378 TCDD
10A. TWRA #4-93	1.14	ND 0.648
10B. TWRA #4-93 (SPIKE)	9.95	11.2
10C. TWRA #4-93 (SPIKE DUP)	11.2	11.7
11A. TWRA #8-93	ND 0.370	ND 0.604
A. TWRA #11-93	ND 0.627	ND 0.373
14A. TWRA #10-93	ND 0.330	ND 0.357
15A. TWRA #9-93	ND 0.505	ND 0.668
16A. TWRA #7-93	ND 0.746	ND 0.778
17A. TWRA #2-93	1.49	ND 0.299
18A. TWRA #5-93	ND 0.286	ND 0.440
19A. TWRA #6-93	ND 0.614	ND 0.850
20A. TWRA #3-93	1.18	ND 0.343
21A. TWRA #1-93	1.13	ND 0.355
LAB BLANK (B)	ND 0.352	ND 0.359

Wright State University, Dayton, Ohio 45435

Analysis for Substituted 2378 Dioxins and Furans

2378 TCDD,F C13 Int TCDD,F Ext TCDD,F

Column - DB-DIOXIN 60M , 0.25u

Concentrations Found (picograms per gram of sample or parts-per-trillion)a.

TENNESSEE WRA 2659A

Sample Number	2378 TCDF	2378 TCDD
22A. THREE RIDGE CRM 15.7	ND 0.537	ND 0.536
23A. THREE RIDGE CRM 10	ND 0.803	ND 0.953
24A. WHITE PIMPLEBACK CRM	ND 0.583	ND 0.763
25A. WHITE HEEL SPLITTER CR	ND 0.380	ND 0.640
.. THREE RIDGE CRM 21.4	ND 0.649	ND 0.553
27A. GIANT FLOATER CRM 15.	ND 0.738	ND 0.648
28A. WHITEHEEL SPLITTER CR	ND 0.992	ND 0.968
28B. WHITEHEEL SPLITTER CR	8.47	9.22
28C. WHITEHEEL SPLITTER CR	10.1	11.7
29A. GIANT FLOATER CRM 21.	ND 0.569	ND 0.434
30A. WHITE PIMPLEBACK CRM	ND 0.349	ND 0.509
31A. WHITE PIMPLEBACK CRM	ND 0.397	ND 0.630
LAB BLANK (MUSSELS)	ND 0.815	ND 0.460

a. The designation ND indicates "None Detected" in excess of the minimum detectable

Wright State University, Dayton, Ohio 45435

Analysis for Substituted 2378 Dioxins and Furans

2378 TCDD,F C13 Int TCDD,F Ext TCDD,F

Column - DB-DIOXIN 60M , 0.25u

Concentrations Found (picograms per gram of sample or parts-per-trillion)a.

TENNESSEE WRA 2661A

Sample Number	2378 TCDF	2378 TCDD
1B. FISH-BULL CR.&MOUTHofCHAN	ND	ND
	0.743	0.891
LAB BLANK (FISH)	ND	ND
	0.610	0.750
2B. SED.-BULL CREEK BOAT RAMP	ND	ND
	0.970	0.877
LAB BLANK (SED.)	ND	ND
	0.863	0.824

a. The designation ND indicates "None Detected" in excess of the minimum detectable

ATTACHMENT C8

SUMMARY DATA TABLES FOR METAL ANALYTES

WRIGHT STATE I.D.	TENNESSEE WILDLIFE RESOURCES AGENCY I.D.	SAMPLE MATRIX
TDM3-1	TWRA #16-93	10 REDBREAST SUNFISH
TDM3-2	TWRA #19-93	3 CHANNEL CATFISH
TDM3-3	TWRA #15-93	2 CARP
TDM3-4	TWRA #14-93	4 CARP
TDM3-5	TWRA #21-93	5 SM. MOUTH BASS
TDM3-6	TWRA #18-93	10 REDBREAST SUNFISH
TDM3-7	TWRA #20-93	5 CHANNEL CATFISH
TDM3-8	TWRA #17-93	10 REDBREAST SUNFISH
TDM3-9	TWRA #13-93	5 CARP
TDM3-10	TWRA #4-93	20 EBONY SHELL MUSSELS
TDM3-11	TWRA #8-93	9 PINK HEEL SPLITTER MUSSELS
TDM3-12	TWRA #11-93	5 THREE RIDGE MUSSELS
TDM3-13	TWRA #12-93	3 CHANNEL CATFISH
TDM3-14	TWRA #10-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-15	TWRA #9-93	9 THREE RIDGE MUSSELS
TDM3-16	TWRA #7-93	6 PINK HEEL SPLITTER MUSSELS
TDM3-17	TWRA #2-93	20 EBONY SHELL MUSSELS
TDM3-18	TWRA #5-93	20 MAPLE LEAF MUSSELS
TDM3-19	TWRA #6-93	3 PINK HEEL SPLITTER MUSSELS
TDM3-20	TWRA #3-93	20 MAPLE LEAF MUSSELS
TDM3-21	TWRA #1-93	20 MONKEY FACE MUSSELS
TDP4-22	THREE RIDGE CRM 15.7	2 MUSSELS
TDP4-23	THREE RIDGE CRM 10	1 MUSSEL
TDP4-24	WHITE PIMPLEBACK CRM 10	5 MUSSELS
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1 MUSSEL
TDP4-26	THREE RIDGE CRM 21.4	1 MUSSEL
TDP4-27	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	3 MUSSELS
TDP4-29	GIANT FLOATER CRM 21.4	1 MUSSEL
TDP4-30	WHITE PIMPLEBACK CRM 21.4	6 MUSSELS
TDP4-31	WHITE PIMPLEBACK CRM 15.7	6 MUSSELS
TDO4-1	BULL CREEK & MOUTH OF CHANNEL AT MOUTH OF STATION CAMP CREEK	WHOLE FISH
TDO4-2	SEDIMENT - BULL CREEK BOAT RAMP	SEDIMENT

Wright State University Dayton, Ohio 45435

Tennessee
Analysis for Beryllium - 02/20/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(3.8)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	nd(2.1)	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(2.3)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	498.8	110
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	565.1	118
TDP4-23	THREE RIDGE CRM 10	1.500	nd(2.4)	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	nd(2.1)	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(2.0)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(1.8)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(2.0)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(1.9)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	nd(2.4)	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(1.9)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(1.9)	

Wright State University Dayton, Ohio 45435

Tennessee
Cadmium Analyses - 01/19/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(1.4)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	nd(0.7)	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(0.8)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	471.2	103.67
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	550.5	114.50
TDP4-23	THREE RIDGE CRM 10	1.500	nd(0.9)	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	nd(0.8)	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(0.7)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(0.6)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(0.7)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(0.7)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	nd(0.8)	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(0.7)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(0.7)	

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Tennesee
Analysis for Chromium - 01/31/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(4.44)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	3.37	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(2.72)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	490.95	108.01
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	568.28	118.20
TDP4-23	THREE RIDGE CRM 10	1.500	4.97	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	13.82	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(2.29)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(2.08)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(2.37)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(2.18)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	nd(2.75)	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(2.16)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(2.26)	
SRM-1	Standard Reference Material	0.990	103.34	77
SRM-2	Standard Reference Material	0.960	113.88	84

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Tennessee
Analysis for Copper - 01/25/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(5.4)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	nd(3.0)	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(3.3)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	468.4	103.06
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	536.0	111.49
TDP4-23	THREE RIDGE CRM 10	1.500	nd(3.4)	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	nd(3.0)	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(2.8)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(2.5)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(2.9)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(2.6)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	7.8	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(2.6)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(2.7)	
SRM-1	Standard Reference Material	0.990	98.4	100
SRM-2	Standard Reference Material	0.960	101.5	103

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Tennessee
Analysis for Lead - 01/20/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(18.2)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	nd(10.0)	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(11.1)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	570.6	126
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	640.6	133
TDP4-23	THREE RIDGE CRM 10	1.500	nd(11.5)	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	nd(10.2)	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(9.4)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(8.5)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(9.7)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(8.9)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	nd(11.3)	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(8.8)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(9.2)	
SRM-1	Standard Reference Material	0.990	245.6	153
SRM-2	Standard Reference Material	0.960	268.2	167

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Tennesee
Analysis for Mercury - 11/15/94

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB11144-1	Lab Blank	1.000	nd(0.040)	
TDP4-22B	THREE RIDGE CRM 15.7	1.020	nd(0.038)	
TDP4-22C	THREE RIDGE CRM 15.7	1.010	nd(0.038)	
TDP4-22D	THREE RIDGE CRM 15.7	1.040	nd(0.037)	
TDP4-23B	THREE RIDGE CRM 10	1.000	0.217	
TDP4-23C	THREE RIDGE CRM 10	1.060	0.193	
TDP4-23D	THREE RIDGE CRM 10	1.030	0.289	
TDP4-24B	WHITE PIMPLEBACK CRM 10	1.020	0.148	
TDP4-24C	WHITE PIMPLEBACK CRM 10	1.020	0.208	
TDP4-24D	WHITE PIMPLEBACK CRM 10	1.040	0.214	
TDP4-25B	WHITEHEEL SPLITTER CRM 21.4	1.020	nd(0.038)	
TDP4-25C	WHITEHEEL SPLITTER CRM 21.4	1.030	nd(0.038)	
TDP4-25D	WHITEHEEL SPLITTER CRM 21.4	1.020	nd(0.038)	
TDP4-26B	THREE RIDGE CRM 21.4	1.020	nd(0.039)	
TDP4-26C	THREE RIDGE CRM 21.4	1.030	nd(0.038)	
TDP4-26D	THREE RIDGE CRM 21.4	0.590	nd(0.068)	
TDP4-27B	GIANT FLOATER CRM 15.7	0.610	nd(0.066)	
TDP4-27C	GIANT FLOATER CRM 15.7	0.660	nd(0.060)	
TDP4-27D	GIANT FLOATER CRM 15.7	0.650	nd(0.060)	
TDP4-28B	WHITEHEEL SPLITTER CRM 15.7	1.110	nd(0.036)	
TDP4-28C	WHITEHEEL SPLITTER CRM 15.7	1.020	nd(0.039)	
TDP4-28D	WHITEHEEL SPLITTER CRM 15.7	1.000	nd(0.039)	
TDP4-29B	GIANT FLOATER CRM 21.4	0.590	nd(0.066)	
TDP4-29C	GIANT FLOATER CRM 21.4	0.580	nd(0.068)	
TDP4-29D	GIANT FLOATER CRM 21.4	0.630	nd(0.064)	
TDP4-30B	WHITE PIMPLEBACK CRM 21.4	0.530	nd(0.066)	
TDP4-30C	WHITE PIMPLEBACK CRM 21.4	0.670	nd(0.068)	
TDP4-30D	WHITE PIMPLEBACK CRM 21.4	0.520	nd(0.064)	
TDP4-31B	WHITE PIMPLEBACK CRM 15.7	0.580	nd(0.068)	
TDP4-31C	WHITE PIMPLEBACK CRM 15.7	0.560	nd(0.069)	
TDP4-31D	WHITE PIMPLEBACK CRM 15.7	0.620	nd(0.065)	
SRM2F	Standard Reference Material	1.090	0.048	80
SRM2G	Standard Reference Material	1.170	0.077	129
SRM2H	Standard Reference Material	0.950	0.047	78

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Tennessee
Analysis for Nickel - 01/19/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(5.0)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	nd(2.8)	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(3.1)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	458.3	100.82
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	470.7	97.91
TDP4-23	THREE RIDGE CRM 10	1.500	nd(3.2)	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	nd(2.8)	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(2.6)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(2.4)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(2.7)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(2.5)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	nd(3.1)	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(2.4)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(2.5)	
SRM-1	Standard Reference Material	0.990	40.8	92
SRM-2	Standard Reference Material	0.960	48.6	110

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Tennessee
Analysis for Thallium - 01/20/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(2.7)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	nd(1.5)	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	nd(1.7)	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	488.3	107
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	554.3	115
TDP4-23	THREE RIDGE CRM 10	1.500	nd(1.7)	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	nd(1.5)	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	nd(1.4)	
TDP4-26	THREE RIDGE CRM 21.4	2.030	nd(1.3)	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	nd(1.5)	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	nd(1.3)	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	nd(1.7)	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	nd(1.3)	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	nd(1.4)	

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Tennessee
Analysis for Zinc - 01/19/95

WSU ID	Customer ID	Sample Weight (g)	Sample Concentration (mg/kg)	Percent Recovery
LB10264-1A	Lab Blank	1.000	nd(12.7)	
TDP4-22	THREE RIDGE CRM 15.7	1.730	31.9	
TDP4-22B	THREE RIDGE CRM 15.7 Duplicate	2.040	42.7	
TDP4-22C-MS	THREE RIDGE CRM 15.7 Spike	1.100	474.0	104
TDP4-22D-MSD	THREE RIDGE CRM 15.7 Spike	1.040	561.5	117
TDP4-23	THREE RIDGE CRM 10	1.500	16.6	
TDP4-24	WHITE PIMPLEBACK CRM 10	1.700	52.3	
TDP4-25	WHITEHEEL SPLITTER CRM 21.4	1.850	56.6	
TDP4-26	THREE RIDGE CRM 21.4	2.030	24.2	
TDP4-27	GIANT FLOATER CRM 15.7	1.790	52.2	
TDP4-28	WHITEHEEL SPLITTER CRM 15.7	1.940	19.5	
TDP4-29	GIANT FLOATER CRM 21.4	1.590	121.1	
TDP4-30	WHITE PIMPLEBACK CRM 21.4	1.980	27.3	
TDP4-31	WHITE PIMPLEBACK CRM 15.7	1.920	33.6	
SRM-1	Standard Reference Material	0.990	476.8	109
SRM-2	Standard Reference Material	0.960	540.5	123