

T-7485:
A REPRODUCTION STUDY WITH THE
NORTHERN BOBWHITE

FINAL REPORT

WILDLIFE INTERNATIONAL, LTD. PROJECT NUMBER 454-116
3M ENVIRONMENTAL LAB PROJECT NO. E03-0583

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OECD Guideline 206

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GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT

SPONSOR: 3M Corporation

TITLE: T-7485: A Reproduction Study with the Northern Bobwhite

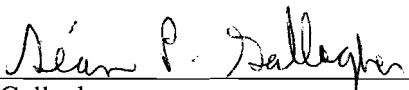
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The study was conducted in compliance with Good Laboratory Practice Standards as published by the U.S. Environmental Protection Agency, 40 CFR Part 792, 17 August 1989; OECD Principles of Good Laboratory Practice (ENV/MC/CHEM (98) 17); and Japan MAFF, 11 NohSan Notification No. 6283, Agricultural Production Bureau, 1 October 1999, with the following exceptions:

Periodic analysis of avian feed and water for potential contaminants were performed using a certified laboratory and standard U.S. EPA analytical methods.

STUDY DIRECTOR:

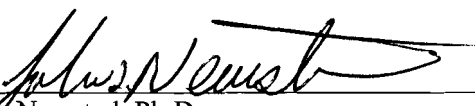


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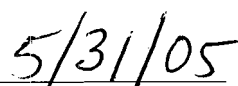


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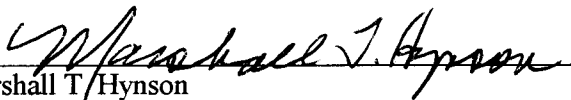
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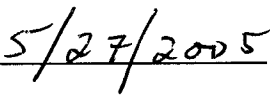
QUALITY ASSURANCE STATEMENT

This study was examined for compliance with Good Laboratory Practice Standards as published by the U.S. Environmental Protection Agency, 40 CFR Part 792, 17 August 1989; OECD Principles of Good Laboratory Practice (ENV/MC/CHEM (98) 17); and Japan MAFF, 11 NohSan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999. The dates of all audits and inspections and the dates any findings were reported to the Study Director and Laboratory Management were as follows:

ACTIVITY	DATE CONDUCTED	DATE REPORTED TO:	
		STUDY DIRECTOR	MANAGEMENT
Test Substance Preparation	September 16, 2003	September 17, 2003	September 17, 2003
Matrix Fortification	September 25, 2003	September 25, 2003	September 30, 2003
Body Weight	October 1, 2003	October 1, 2003	October 2, 2003
Diet Preparation, Analytical Sampling	October 8, 2003	October 8, 2003	October 9, 2003
Feed Consumption	October 8, 2003	October 8, 2003	October 9, 2003
Observations	January 6, 2004	January 6, 2004	January 6, 2004
Candling	January 29, 2004	January 29, 2004	January 29, 2004
Data Entry	March 10, 2004	March 10, 2004	March 10, 2004
Data Entry	March 15, 2004	March 15, 2004	March 15, 2004
Analytical Data and Draft Report	March 29-31 and April 1, 2004	April 1, 2004	April 2, 2004
Data Entry	April 12 and 13, 2004	April 13, 2004	April 13, 2004
Protocol	April 26, 2004	April 26, 2004	April 27, 2004
Biological Data and Draft Report	April 26-30, 2004	April 30, 2004	May 5, 2004
Final Report	May 25-26, 2005	May 26, 2005	May 27, 2005

All inspections were study based unless otherwise noted.


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Quality Assurance Program Supervisor


DATE 5/27/2005

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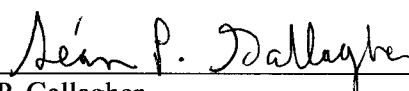
REPORT APPROVAL

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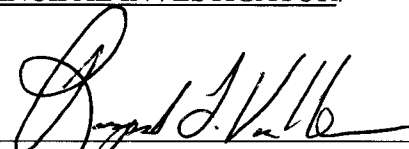
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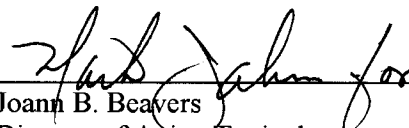
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SUMMARY

STUDY: T-7485: A Reproduction Study with the Northern Bobwhite

SPONSOR: 3M Corporation

WILDLIFE INTERNATIONAL, LTD. PROJECT NUMBER 454-116

TEST DATES: Study Initiation – September 5, 2003
Experimental Start (OECD) – September 16, 2003
Experimental Start (EPA) – September 17, 2003
Photostimulation – November 5, 2003
First Eggs Set – December 11, 2003
Adult Termination – February 12, 2004
Biological Termination – April 6, 2004
Analytical Termination – December 15, 2004
Experimental Termination – December 15, 2004

TEST ANIMALS: Northern bobwhite (*Colinus virginianus*)

AGE TEST ANIMALS: Approximately 18 weeks of age at the initiation of the test

SOURCE TEST ANIMALS: K & L Quail
26 Thompson Flat Road
Oroville, CA 95965
U.S.A.

NOMINAL TEST CONCENTRATIONS: 0, 100, 300, and 900 ppm a.i.

RESULTS: There were no treatment-related mortalities, overt signs of toxicity or treatment-related effects upon body weight or feed consumption at any of the concentrations tested. Additionally, there were no treatment-related effects upon any of the reproductive parameters measured at the 100, 300 or 900 ppm a.i. test concentrations. The no-observed-effect concentration for northern bobwhite exposed to T-7485 in the diet during the study was 900 ppm a.i., the highest concentration tested.

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INTRODUCTION

This study was conducted by Wildlife International, Ltd. for 3M Corporation at the Wildlife International, Ltd. avian toxicology facility in Easton, Maryland 21601. The biological portion of the test was conducted from September 17, 2003 until April 6, 2004. Raw data generated at Wildlife International, Ltd. and a copy of the final report are filed under Project Number 454-116 in archives located on the Wildlife International, Ltd. site.

OBJECTIVES

The objective of this study was to evaluate the effects upon the adult northern bobwhite (*Colinus virginianus*) of dietary exposure to T-7485 over a period of approximately 21 weeks. Effects on adult health, body weight, and feed consumption were evaluated. In addition, the effects of adult exposure to T-7485 on the number of eggs laid, fertility, embryo viability, hatchability, offspring survival, and egg shell thickness were evaluated.

EXPERIMENTAL DESIGN

Northern bobwhite (64 males and 64 females) were randomly distributed into one control group and three treatment groups. The test concentrations were selected in consultation with the Sponsor, based upon the results of a pilot reproduction study (Wildlife International, Ltd. Project Number 454-115).

T-7485 Treatment Groups

Group	Nominal Concentration (ppm a.i.)	Pens per Group	<u>Birds per Pen</u>	
			Males	Females
1	(Control) 0	16	1	1
2	100	16	1	1
3	300	16	1	1
4	900	16	1	1

Each treatment and control group contained 16 pairs of birds with one male and one female per pen. Three treatment groups were fed diets containing either 100, 300 or 900 ppm a.i. of T-7485 for approximately 21 weeks. The control group was fed diet comparable to the treatment groups, but without the addition of the test substance.

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All adult birds were observed daily throughout the test for signs of toxicity or abnormal behavior. Adult body weights were measured at test initiation, on Weeks 2, 4, 6, 8, and at adult termination and feed consumption was measured weekly throughout the test. At the beginning of Week 8, the photoperiod was increased to induce egg production. Following the start of egg production, eggs were set weekly for incubation. Weekly, eggs were selected by indiscriminate draw for egg shell thickness measurement and all remaining eggs were candled prior to incubation to detect egg shell cracks or abnormal eggs. Eggs were also candled twice during incubation to detect infertile eggs or embryo mortality. On Day 21 of incubation, the eggs were placed in a hatcher and allowed to hatch. Once hatching was completed, hatchlings were removed from the hatcher and the group body weight of the hatchlings by pen was determined. At 14 days of age, the average body weight by parental pen of all surviving offspring was determined. Upon completion of the test, statistical analyses were performed to determine statistically significant differences between groups.

Egg contents from those eggs selected for eggshell thickness measurements were also collected for potential analysis. Samples of sera and liver were collected from all adults surviving until test termination and from selected offspring for potential analysis. Additionally, samples of liver, kidney and gonad were also collected from adults and selected offspring for histopathological examination.

MATERIALS AND METHODS

The study was conducted according to the procedures outlined in the protocol, "T-7485 A Reproduction Study with the Northern Bobwhite". The protocol was based on procedures outlined in the Environmental Protection Agency's Registration Guidelines *Pesticide Assessment Guidelines, FIFRA Subdivision E, Hazard Evaluation: Wildlife and Aquatic Organisms*, Subsection 71-4; OECD Guideline 206; and the ASTM "Standard Practice for Conducting Reproductive Studies with Avian Species" (1,2,3).

Test Substance

The test substance, T-7485, was received from 3M Corporation on July 18, 2003 and was assigned Wildlife International, Ltd. identification number 6407 upon receipt. The test substance was a white crystalline solid and was identified as: PFBS; T-7485; L-7038; Lot # 5; CAS # 29420-49-3. The test material had a reported purity of 98.2% and an expiration date of August 31, 2008 (Appendix XV). The test substance was held under frozen conditions in locked storage at the Wildlife International, Ltd.

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facilities in Easton, Maryland. Concentrations of the test substance in the diet were adjusted to 100% active ingredient. Therefore, dietary concentrations are expressed as parts per million active ingredient (ppm a.i.) in the diet.

Test Organisms

Seventy-eight pairs of pen-reared northern bobwhite were purchased from K & L Quail, 26 Thompson Flat Road, Oroville, CA 95965, U.S.A. At the start of acclimation, the bobwhite were apparently healthy and phenotypically indistinguishable from wild type. The birds were from the same hatch, approaching their first breeding season and had not been used in any previous testing. At the start of acclimation, a random number generating function in a spreadsheet program was used to randomize pen assignment for each bird. Immediately prior to test initiation, all potential study birds were examined for physical injuries and general health. Birds that did not appear healthy, either due to injury or inability to acclimate to laboratory conditions, or were outside the weight range for the test, were excluded from the study. All birds were approximately 18 weeks of age at test initiation (first day of exposure to test diet) and ranged in weight from 171 to 220 grams at test initiation. Sex of the birds was determined by a visual examination of the plumage.

Identification

Adult birds were identified by individual leg bands, each pen was identified with a unique number, and groups of pens were identified by project number and concentration. All eggs laid during the study were marked with the pen number using a permanent ink marking pen for identification. Hatchlings were identified by leg bands so that they could be traced to their parental pen of origin.

Avian Feed and Water

All adult birds and their offspring were given feed and water *ad libitum* during acclimation and testing. The basal diet fed to both adults and offspring was formulated to Wildlife International, Ltd. specifications by Agway Inc. (Appendix I, Table 1). The basal ration contained at least 27% protein and 2.5% fat, and no more than 3.8% fiber.

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The basal diet contained approximately 1.1% calcium, derived from feedstuffs and the 0.9% limestone used in the formulation of the basal diet by Agway. While this level of calcium is sufficient for growth and maintenance rations, additional calcium is required in the ration of breeding birds for egg shell formation. Therefore, an additional 5% (w/w) of limestone (approximately 38.5% Ca) was added to the basal diet for the adults. This raised the calcium level in the diet for the breeding birds to approximately 3%, slightly above the minimum recommended for quail (2.3%) (4). Offspring received basal diet without test substance and without the addition of 5% supplemental limestone.

Water was supplied by the town of Easton public water supply. All offspring received a water-soluble vitamin and electrolyte mix in their water (Appendix I, Table 2). Neither the adults nor offspring received any form of medication in their feed during the test. Feed and water were analyzed periodically in accordance with Wildlife International, Ltd. Standard Operating Procedures.

Diet Preparation

Test diets were prepared by mixing T-7485 into a premix that was used for weekly preparation of the final diet. Control diet and each of the three treated diets were prepared weekly beginning on September 17, 2003 and presented to the birds on Wednesday of each week. Dietary concentrations were adjusted for purity of the test substance and are presented as parts per million active ingredient (ppm a.i.). Details of the weekly preparation of test and control diets are shown in Appendix II.

Diet Sampling

Homogeneity of the test substance in the diet was evaluated by collecting six samples from each of the treated diets and one sample from the control diet on Day 0 of Week 1. Samples were collected from the top, middle and bottom of the left and right sections of the mixing vessel. Control and treatment group diet samples were also collected from the feed troughs on Day 7 of Week 1 to assess stability of the test substance under actual test conditions. Additionally, a single sample was collected from the control and two samples were collected from each treatment group diet during Weeks 4, 8, 12, 16 and 20 of the test to measure/verify test concentrations. The diet samples were transferred immediately to the Wildlife International, Ltd. analytical chemistry facility, where they were stored frozen prior to analysis.

Analytical Method for Diets

A liquid chromatography mass spectrometry (LC/MS/MS) based method was developed and verified at Wildlife International, Ltd. for the analysis of the T-7485 in avian diet (5). The verified analytical method consisted of sample weighing, extraction with methanol, vacuum filtration, micro filtration, and dilution into the calibration range of the LC/MS/MS methodology. The method was slightly modified in the present test to expedite sample processing and to reduce solvent volume. The change was centrifugation of an aliquot of each sample extract instead of vacuum filtration of the entire extract volume. Dilutions into the calibration range of the LC/MS/MS methodology were performed with methanol (intermediate dilutions, if necessary) and/or a solution of 50% methanol and 50% NANOpure[®] or HPLC-grade reagent water (v/v). Samples were then analyzed by direct injection. A method flowchart is provided in Appendix XVI, Figure 1.

Concentrations of T-7485 in extracts of the samples were determined by reverse-phase high performance liquid chromatography using a Hewlett-Packard Model 1100 High Performance Liquid Chromatograph (HPLC) with a Perkin-Elmer SCIEX API 3000LC Mass Spectrometer equipped with a Perkin-Elmer SCIEX TurboIonSpray ion source. Chromatographic separations were achieved using a Keystone PRISM RP column (50 mm × 2.0 mm, 3-μm particle size) fitted with a Keystone Javelin C₁₈ guard column (20 mm x 2.0 mm I.D.). The instrument parameters are summarized in Appendix XVI, Table 1.

All primary and secondary stock preparations were adjusted for the purity of the test substance (98.2%). A 1.00-mg a.i./mL primary stock solution of T-7485 in methanol was prepared by weighing 0.1018 g of the test substance and bringing to a final volume of 100 milliliters with methanol. Secondary stock solutions of T-7485 in methanol (100- and 10.0-mg a.i./L) were prepared by serial volumetric dilution of the primary stock.

Calibration standards were prepared in a solution of 50% methanol and 50% HPLC-grade reagent water (v/v) by appropriate dilutions of the 100- or 10.0-mg a.i./L stock solutions of T-7485 in methanol. Two sets of calibration standards of T-7485 were prepared. The first set, ranging in concentration from 0.0500 to 0.500 mg a.i./L, was analyzed with the Week 1, Days 0 and 7 sample sets. The second set, ranging in concentration from 0.00500 to 0.0250 mg a.i./L, was analyzed with all subsequent sample sets. The second set of lower-level calibration standards was selected for use in the remainder of the

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study to allow for greater sample dilution. The larger dilution minimized matrix loading into the LC/MS/MS system. A calibration standard series was injected at the beginning and at the end of each analytical sequence, and one standard was injected, at a minimum, after every five samples. Linear regression equations were generated using peak area responses versus the respective concentrations of the calibration standards. A representative calibration curve is presented in Appendix XVI, Figure 2. The concentration of T-7485 in the samples was determined by substituting the peak area responses of the samples into the applicable linear regression equation. Representative ion chromatograms of low and high-level calibration standards from the 0.00500 to 0.0250 mg a.i./L calibration standard set are presented in Appendix XVI, Figures 3 and 4, respectively. Examples of equations used in calculations are presented in Appendix XVI, Table 2.

The instrument limit of detection (LOD) was set based upon the injection volume (5.00 or 10.0 μ L) and the lowest standard concentration (0.0500 or 0.00500 mg a.i./L) used in the study. The LOD was calculated as 0.250 ng on-column for Week 1, Days 0 and 7 sample analyses and was calculated as 0.0500 ng on-column for all subsequent sample sets. The method limit of quantitation (LOQ) for these analyses was set at 50 ppm a.i. based upon the lowest matrix fortification level analyzed concurrently with the samples. For Week 1, Days 0 and 7 analyses, the 0.0500 mg a.i./L low-level standard was equivalent to a calculated value of 20 ppm a.i. T-7485 in the matrix blank extract. For all subsequent sample intervals, the 0.00500 mg a.i./L low-level standard was equivalent to a calculated value of 25 ppm a.i. T-7485 in the matrix blank extract. Measured values greater than or equal to the ppm a.i. equivalent were reported.

Along with the sample analyses, seven matrix blanks were analyzed to determine possible interferences. No interferences were observed at or above the ppm a.i. equivalent of the lowest standard during the sample analyses (Appendix XVI, Table 3). A representative ion chromatogram of a matrix blank sample is presented in Appendix XVI, Figure 5.

Avian diet samples were fortified with T-7485 using the dry-mix technique at 50.0, 200, and 1000 ppm a.i. (seven fortifications at each level) and analyzed concurrently with the samples to determine mean procedural recoveries. The method yielded mean procedural recoveries of 95%, 91%, 112%, 109%, 105%, 106% and 103%. These values correspond to each sample set analyzed during the definitive study (Appendix XVI, Table 3). Sample measured concentrations were not corrected for the mean procedural

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recoveries. A representative ion chromatogram of a matrix fortification sample is presented in Appendix XVI, Figure 6.

Analytical Method for Serum, Liver and Eggs

Preparation and analysis of serum, liver and egg samples were conducted by the 3M Environmental Laboratory using methods validated by 3M Environmental Laboratory. In summary, the samples were weighed, homogenized in acetonitrile, extracted using a Zymark Rapid Trace Automated SPE System, and analyzed using liquid chromatography/mass spectrometry (LC/MS). The full description of the analytical method is presented in Appendix XVII.

Study Phases

The primary phases of the study and their approximate durations were:

1. Acclimation – Approximately 5 weeks.
2. Pre-photostimulation – 8 weeks.
3. Pre-egg laying (with photostimulation) – Approximately 3 weeks.
4. Egg laying - Approximately 10 weeks.
5. Post-adult termination (final incubation, hatching, and 14-day offspring rearing period) - 6 weeks.

Housing and Environmental Conditions

Housing and husbandry practices were conducted so as to adhere to the guidelines established by the National Research Council (6). The adult birds were housed indoors in batteries of pens manufactured by Georgia Quail Farm Manufacturing (GQFM Model No. 0330), measuring approximately 27 X 51 cm. The pens had sloping floors that resulted in ceiling height ranging from 20 to 25 cm. The pens were constructed of galvanized wire mesh and galvanized sheeting. A diagram of the test layout is presented in Appendix XVIII.

Each pen was equipped with feed and water troughs. Weekly, sufficient feed for the feeding period was placed in the trough for each pen and presented to the birds. During the feeding period additional feed was weighed and added to the troughs as needed. Water troughs were changed and water added as necessary to provide potable water (generally every 2-3 days).

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Only birds associated with this study were maintained in the study room in order to avoid excessive disturbances. The average temperature in the adult northern bobwhite study room during the course of the test was $23.2 \pm 1.0^{\circ}\text{C}$ (SD) with an average relative humidity of $34 \pm 17\%$ (SD). The air handling system in the study room was designed to vent up to 15 room air volumes every hour and replace them with fresh air.

The photoperiod in the adult northern bobwhite room was maintained by a time clock. The photoperiod during acclimation and the first seven weeks of the test was eight hours of light per day. The photoperiod was increased to 17 hours of light per day at the beginning of Week 8 to induce egg laying and was maintained at that length until the adult birds were euthanized. Throughout the test, the birds received a mean of approximately 203 lux (~ 19 ft. candles) of illumination provided by fluorescent lights that closely approximated noon-day sunlight.

Observations

The test birds were acclimated to the facilities and study pens for approximately five weeks prior to initiation of the test. During acclimation, all birds were observed daily. Birds exhibiting abnormal behavior or debilitating physical injuries were not used for the test. During the study, all adult birds were observed daily for signs of toxicity or abnormal behavior. Additionally, all offspring were observed daily from hatching until euthanasia. A record was maintained of all mortalities and clinical observations.

Necropsy and Tissue Collection

Adult birds that died or were euthanized during the course of the study were subjected to a gross necropsy. At the conclusion of the exposure period, all surviving adult birds were euthanized with carbon dioxide gas. Prior to euthanasia, blood samples were drawn from birds. The blood was separated and serum was collected for potential analysis. Livers were also weighed and collected. A portion of liver was collected for histopathological examination and the remaining liver was collected for potential analysis. Samples of kidney and gonad were also collected for histopathological examination. All histopathological samples were fixed in 10% buffered formalin and shipped to EPL in Sterling, Virginia for histopathology. Additionally, similar samples were collected from a single indiscriminately selected offspring from each pen (if available) at 16 days of age. Offspring were sampled from the last lot of offspring produced. Following sample collection, all carcasses were disposed of by incineration.

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Adult Body Weight and Feed Consumption

Adult body weights were measured at test initiation, on Weeks 2, 4, 6, 8, and at adult termination. Body weights were not measured during egg laying because of the possible adverse effects handling may have on egg production.

Feed consumption for each pen was measured weekly throughout the test. Feed consumption was determined by weighing the freshly filled feeder on Day 0, recording the amount of any additional diet added during the week, and weighing the feeder and remaining feed at the end of the feeding period (Day 7). An attempt was made to minimize feed wastage by the birds by using externally mounted feeders designed with a “feed-saver” lip. The amount of feed wasted by the birds was not quantified, since the wasted feed was normally scattered and mixed with water and excreta. Therefore, feed consumption is presented as an estimate of total feed consumption.

Egg Collection and Storage

Eggs were collected daily from all pens, when available. The eggs were stored in a cold room until incubation. The cold room was maintained at a mean temperature of $13 \pm 0^{\circ}\text{C}$ (SD) with a mean relative humidity of approximately $84 \pm 6\%$ (SD). Groups of eggs were identified by an alphabetic lot code. All eggs laid in a weekly interval were considered as one lot.

Candling and Incubation

At the end of the weekly interval, all eggs were removed from the cold room, counted and eggs selected by indiscriminate draw for egg shell thickness measurement. The remaining eggs were candled with a Speed King (Model No. 32) egg-candling lamp to detect egg shell cracks or abnormal eggs. Cracked or abnormal eggs were recorded and discarded. All eggs to be incubated were fumigated with formaldehyde gas in an airtight cabinet with a circulating fan for approximately two hours, to reduce the possibility of pathogen contamination prior to incubation. Formaldehyde gas was generated by combining 20 g of potassium permanganate and 19 ml of 37% commercial grade formalin in a porcelain bowl at the base of the airtight cabinet.

All eggs not discarded or used for egg shell thickness measurements were placed in a NatureForm Incubator (Model No. NMC 4000). In the incubator the temperature was maintained at an average $37.4 \pm 0.0^{\circ}\text{C}$ (SD) with an average relative humidity of $54 \pm 0\%$. The incubator was equipped with a pulsator

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fan and blades that produced a mild breathing air movement designed to eliminate intracabinet temperature and humidity variation during incubation. In order to prevent adhesion of the embryo to the shell membrane, the incubator was also equipped with an automatic egg rotation device, designed to rotate the eggs from 50° off of vertical in one direction to 50° off of vertical in the opposite direction (total arc of rotation was 100°) every two hours through Day 21 of incubation. Eggs were candled on Day 11 or 12 of incubation to determine embryo viability and on Day 21 to determine embryo survival.

Hatching and Brooding

On Day 21 of incubation, the eggs were placed in a Petersime Hatcher (Model No. S6H) and allowed to hatch. Pedigree baskets constructed of galvanized steel wire mesh were used to keep hatchlings separated by parental pen of origin. Eggs were not rotated in the hatcher. The average temperature in the hatching compartment was 37.2 ± 0.0 °C (SD), and the average wet bulb temperature was raised to 33.3 ± 0.0 °C (SD) (relative humidity of approximately 77%).

All hatchlings, unhatched eggs, and egg shells were removed from the hatcher on Day 25 or 26 of incubation. The group body weight of the surviving hatchlings by pen was determined. Hatchlings were leg banded for identification by pen of origin and then routinely housed according to the appropriate parental concentration grouping in brooding pens until 14 days of age. The hatchlings were fed untreated diet without the addition of 5% supplemental limestone. At 14 days of age, the average body weight by parental pen of all surviving chicks was determined. The chicks were euthanized with carbon dioxide and disposed of by incineration. While the final lot of offspring (Lot J) was weighed at 14 days of age, chicks from this lot were maintained alive until 16 days of age for tissue sampling. Lot J offspring were disposed of by incineration following sampling.

Hatchlings were housed in batteries of brooding pens manufactured by Beacon Steel Company (Model B735Q). Each pen measured approximately 72 X 90 X 23 cm high. The external walls and ceilings of each pen were constructed of galvanized wire mesh and galvanized sheeting. Floors were of galvanized wire mesh. Thermostats in the brooding compartment of each pen were set to maintain a temperature of approximately 38° C from the time of hatching until the birds were 14 days of age. The average ambient room temperature was 25.5 ± 1.1 °C (SD) with an average relative humidity of $15 \pm 6\%$ (SD). The photoperiod for the hatchlings was maintained by a time clock at 16 hours of light per day.

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Egg Shell Thickness Measurements and Egg Content Collection

Weekly throughout the egg laying period, one egg was collected, when available, from each of the odd numbered pens during odd numbered weeks (1,3,5, etc.) and from each of the even numbered pens during the even numbered weeks (2,4,6, etc.). Prior to being opened, eggs were rinsed with water to remove any excreta or feed adhering to the shell. The eggs were opened at the waist, the contents were removed and placed in a Whirl Pak and stored frozen for potential analysis. The empty shells were thoroughly rinsed with water, and allowed to air dry for at least one week at room temperature. The average thickness of the dried shell plus the membrane was determined by measuring five points around the waist of the egg using a micrometer. Measurements were made to the nearest 0.002 mm.

Statistical Analyses

Upon completion of the test, an analysis of variance (ANOVA) was performed to determine statistically significant differences between groups. Dunnett's multiple comparison procedure (7,8) was used to compare the three treatment means with the control group mean and assess the statistical significance of the observed differences. Sample units were the individual pens within each experimental group, except adult body weights where the sample unit was the individual bird. Percentage data were examined using Dunnett's method following arcsine square root transformation (see Appendix III for reproductive parameters). Each of the following parameters was analyzed statistically:

1. Adult Body Weight - Individual body weight was measured at test initiation, Weeks 2, 4, 6, 8 and at termination. Statistical comparisons were made between the control group and each treatment group at each weighing interval by sex.
2. Adult Feed Consumption - Feed consumption expressed as grams of feed per bird per day was examined by pen weekly during the test. Statistical comparisons were made between the control and each treatment group.
3. Eggs Laid of Maximum Laid - The number of eggs laid per female divided by the largest number of eggs laid by any one female. This transformation was used to convert the number of eggs laid to a percentile value less than or equal to 100.
4. Eggs Cracked of Eggs Laid - The number of eggs determined by candling to be cracked divided by the number of eggs laid, per pen.
5. Viable Embryos of Eggs Set - The number of viable embryos at the Day 10-12 candling was divided by the number of eggs set, per pen.

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6. Live 3-Week Embryos of Viable Embryos - The number of live embryos at the Day 21 candling was divided by the number of viable embryos, per pen.
7. Hatchlings of 3-Week Embryos - The number of hatchlings removed from the hatcher was divided by the number of live 3-week embryos, per pen.
8. 14-Day Old Survivors of Hatchlings - The number of 14-day old survivors was divided by the number of hatchlings, per pen.
9. Hatchlings of Eggs Set - The number of hatchlings was divided by the number of eggs set, per pen.
10. 14-Day Old Survivors of Eggs Set - The number of 14-day old survivors was divided by the number of eggs set, per pen.
11. Hatchlings of Maximum Set - The number of hatchlings per female divided by the largest number of eggs set from any one female. This transformation was used to convert the number of hatchlings to a percentile value equal to or less than 100.
12. 14-Day Old Survivors of Maximum Set - The number of 14-day old survivors per pen divided by the largest number of eggs set.
13. Egg Shell Thickness - The average egg shell thickness of indiscriminately selected eggs per pen was measured.
14. Offspring's Body Weight - The group body weights of surviving hatchlings and 14-day old survivors were measured by parental pen group.
15. Liver Weight – Liver weights were measured for adults and selected offspring. Statistical comparisons were made between the control group and each treatment group by age and sex.

RESULTS AND DISCUSSION

Mature northern bobwhite received T-7485 at nominal dietary concentrations of 100, 300 or 900 ppm a.i. for 21 weeks. A control group was maintained concurrently with the treatment groups.

Analytical Results for Diets

Diet samples were collected on Week 1, Day 0 of the test from the 100, 300 and 900 ppm a.i. test levels to evaluate the homogeneity of the test substance in the diet. The mean and standard deviation for the 100, 300 and 900 ppm a.i. test levels were 105 ± 5.13 ppm a.i., 299 ± 12.0 ppm a.i. and 880 ± 16.0 ppm a.i., respectively. The corresponding coefficients of variation were 4.91%, 4.00% and 1.82% (Appendix XVI, Table 4). The mean measured T-7485 concentrations from the 100, 300 and 900 ppm a.i. test levels were 105%, 100%, and 98%, respectively, of the nominal concentrations.

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Diet samples collected on Weeks 4, 8, 12, 16 and 20, Day 0 of the test from the 100, 300 and 900 ppm a.i. test levels were analyzed to verify the concentration of the test substance in the diet. The mean and standard deviation for the 100, 300 and 900 ppm a.i. test concentrations were 107 ± 7.74 ppm a.i., 314 ± 5.97 ppm a.i. and 961 ± 36.8 ppm a.i., respectively. The corresponding coefficients of variation were 7.21%, 1.90% and 3.83% (Appendix XVI, Table 5). The mean measured T-7485 concentrations from the 100, 300 and 900 ppm a.i. test levels were 107%, 105% and 107%, respectively, of the nominal concentrations. A typical ion chromatogram of a test sample is shown in Appendix XVI, Figure 7.

Analysis of diet samples collected from feeders after being held at ambient temperature for 7 days averaged 96%, 105%, and 112% of the Day 0 values for the 100, 300 and 900 ppm a.i. test concentrations, respectively (Appendix XVI, Table 6).

Mortalities

There were no treatment-related mortalities in the 100, 300 or 900 ppm a.i. treatment groups during the course of the test. There were three adult mortalities that were considered to be incidental to treatment that occurred during the test, one in the control group and one each in the 100 and 300 ppm a.i. treatment groups.

The female in Pen 1608 of the control group was found dead during Week 12 of the test. Gross necropsy revealed feather loss and an open lesion on the head and neck. The breast muscle, spleen, liver and kidneys were noted to be pale and the ovary was developing.

The male in Pen 1617 of the 100 ppm a.i. treatment group was found dead at the beginning of Week 6 of the test, having exhibited no prior signs of toxicity. Gross necropsy revealed bruising on the cranium and intracranial bleeding between the orbits.

The final mortality was the female in Pen 1639 of the 300 ppm a.i. treatment group that was euthanized at the end of Week 14 due to its moribund condition. Four days prior to being euthanized, this female had been noted with a neck lesion. Gross necropsy revealed a large head and neck lesion, exposing the cranium and neck muscle, with necrotic margins. The bird was emaciated, with a loss of muscle mass and prominent keel. The spleen was noted to be large and pale, the kidneys were pale, the cecal contents were firm and the ovary was regressing.

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No other mortalities occurred during the course of the study. Due to the nature of the lesions observed at necropsy, none of the mortalities that occurred were considered to be related to treatment.

Clinical Observations

No overt signs of toxicity were observed at any of the concentrations tested. Incidental clinical observations noted during the test included those that normally are associated with injuries and penwear, and were noted for the control group and all treatment groups. Such observations included foot, leg, and head lesions, feather loss and ventral head curl. In addition, lameness, loss of coordination, ruffled appearance, wing droop and lethargy also were observed and were generally associated with incidental injuries. While some incidental observations were persistent once noted (e.g. feather loss), most were transient in nature and subsided once an injury had healed.

In the control group, incidental clinical observations were noted for eight individuals during the course of the test. Three birds were noted with feather loss, four birds were noted with foot lesions and associated lameness, two birds were noted with either bruising or a lesion on the head and one bird was noted with a lesion and bruising on the upper back. Additionally, one bird was also noted with right wing droop, one bird was noted with a growth above the left eye, and one bird was noted with a transient loss of coordination. Except for incidental findings, all birds in the control group were normal in appearance and behavior throughout the study.

In the 100 ppm a.i. treatment group, incidental clinical observations were noted for five individuals during the course of the test. Two birds were noted with feather loss, one bird was noted with foot lesions and associated lameness and ruffled appearance, and two birds were noted with either bruising and/or a lesion on the head. Additionally, one bird was also noted with twisted primary feathers on the left wing, presumably due to a wing injury. Except for incidental findings, all birds in the 100 ppm a.i. treatment group were normal in appearance and behavior throughout the study.

In the 300 ppm a.i. treatment group, incidental clinical observations were noted for seven individuals during the course of the test. One bird was noted with feather loss and four birds were noted with foot lesions, one of which was also noted with associated lameness. One bird was noted with swelling on the head, as well as a head lesion. Additionally, one bird was noted with a ventral head curl, a condition that is thought to be caused by a neck injury. One female in the 300 ppm a.i. treatment group

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was noted with head and neck lesions that resulted in her being euthanized. Prior to her being euthanized in a moribund condition, this bird exhibited depression, a reduced reaction to external stimuli (sound and movement), a ruffled appearance and lethargy. Except for incidental findings, all birds in the 300 ppm a.i. treatment group were normal in appearance and behavior throughout the study.

In the 900 ppm a.i. treatment group, incidental clinical observations were noted for 11 individuals during the course of the test. Five birds were noted with feather loss and six birds were noted with foot lesions, three of which were also noted with associated lameness. One hen with foot lesions was also noted with a ruffled appearance and lethargy that were attributed to the injury. One bird was noted with bruising on the back and another bird was noted with bruising on the head and neck. Lesions were noted on the back of one bird and on the head of another bird. Two birds were noted with lesions around one eye, one of these birds was also noted with a ruffled appearance that was attributed to the eye lesion. Except for incidental findings, all birds in the 900 ppm a.i. treatment group were normal in appearance and behavior throughout the study.

Gross Necropsy

All surviving adults were subjected to gross necropsy following adult termination. All findings observed were considered unrelated to treatment. Necropsy findings are reported in Table 7 and Appendix IV.

Adult Body Weight

There were no apparent treatment-related effects upon adult body weight at any of the concentrations tested. No statistically significant differences between the control group and the 100, 300 or 900 ppm a.i. treatment groups were observed at any of the body weight intervals. Mean body weight measurements are presented in Table 1, and Figures 1 and 2. Individual body weight measurements are presented in Appendix V.

Adult Feed Consumption

There were no apparent treatment-related effects upon feed consumption at the 100, 300, and 900 ppm a.i. test concentrations. No statistically significant differences between the control group and the 100 and 900 ppm a.i. treatment groups were observed at any of the feed consumption intervals. When compared to the control group, there was a slight, but statistically significant ($p < 0.01$), increase in feed consumption at the 300 ppm a.i. test concentration during Week 16 of the test. However, this difference was slight and was neither consistent nor concentration responsive. Since the difference represented an increase in the consumption of the treated diet, it was not considered to be treatment related. Mean feed consumption measurements are shown in Table 2 and Figure 3. Feed consumption measurements by pen are presented in Appendix VI.

Estimated test substance intakes, daily dietary dose, for northern bobwhite were calculated by treatment group for the pre-egg production period, the egg production period and the overall adult period using the following formula:

$$\text{Daily Dietary Dose (mg a.i./kg body weight/day)} = \frac{\text{Test Concentration (mg a.i./kg)} \times \text{Daily Feed Consumption (g/bird/day)}}{\text{Body Weight (g/bird)}}$$

The mean body weight value is the mean of both male and female body weights. For the pre-egg production interval the body weights were averaged over Weeks 0, 2, 4, 6 and 8. For the egg-production interval body weights were averaged over Weeks 8 and 20 (adult termination). The accuracy of the estimated mean daily dietary dose may be impacted by differences in individual feed consumption, both within and between pens, and feed wastage. The estimated daily dietary doses are presented in the table below.

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Estimated Maximum Mean Daily Dietary Dose of T-7485 (mg a.i./kg body weight/day)

Test Interval (test weeks)	Test Concentration (ppm a.i.)	Mean Body Weight (g)	Mean Feed Consumption (g/bird/day)	Estimated Daily Dietary Dose (mg a.i./kg/day)
Pre-Egg Production (Weeks 1 - 10)	0	196	16	0.0
	100	196	17	8.5
	300	196	17	25.2
	900	197	17	76.4
Egg Production (Weeks 11 - 21)	0	212	22	0.0
	100	214	22	10.3
	300	216	23	32.0
	900	214	22	93.9
Over-all (Weeks 1 - 21)	0	200	19	0.0
	100	201	20	9.7
	300	201	20	29.7
	900	201	20	87.8

Reproductive Results

There were no treatment-related effects upon reproductive performance at any of the concentrations tested. When compared to the control group, there were no statistically significant differences in any of the reproductive parameters measured in the 100, 300, or 900 ppm a.i. treatment groups. While not statistically significant, there was a slight reduction in the total number of eggs laid at the 900 ppm a.i. test concentration. However, reduction was primarily attributable to a single hen (Pen 1662), that exhibited foot lesions and did not lay any eggs during the last five weeks of the study. If data from that pen is excluded, the number of eggs laid per hen at the 900 ppm a.i. test concentration is comparable to the control value. Summaries of the reproductive data are presented in Tables 3 and 4, and in Figures 4 and 5. Reproductive parameters by pen are presented in Appendix VII and VIII.

Egg Shell Thickness

There were no apparent treatment related effects upon egg shell thickness at any of the concentrations tested. When compared to the control group, there were no statistically significant differences in egg shell thickness in the 100, 300 or 900 ppm a.i. treatment groups. Egg shell thickness data are presented in Table 5 and Appendix IX.

Offspring Body Weights

There were no apparent treatment related effects upon offspring body weight at any of the concentrations tested. When compared to the control group, there were no statistically significant differences in the body weight of hatchlings or 14-day old survivors from the 100, 300 or 900 ppm a.i. treatment groups. Offspring body weight data are presented in Table 6, and Appendices X and XI.

Liver Weights

There were no apparent treatment related effects upon adult or offspring liver weights at any of the concentrations tested. When compared to the control group, there were no statistically significant differences in liver weights of adults or 14-day old offspring from the 100, 300 or 900 ppm a.i. treatment groups. Liver weight data are presented in Table 8 and Appendices XII and XIII.

Serum, Liver and Egg Analytical Results

At the conclusion of the exposure period, serum and liver samples were collected from all surviving adult birds. Serum and liver samples were also collected from indiscriminately selected offspring from each test pen from the last lot of offspring produced from the study (Lot J). Egg contents from those eggs selected for eggshell thickness measurements were collected for potential analysis. Following are summary tables of the results of serum, liver and egg content analyses for each test concentration. The full report for the analysis of serum, liver and egg contents is provided in Appendix XVII.

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Summary of Mean Concentrations of T-7485 in Serum and Liver

Test Concentration	Group	Mean (SD) Concentration of T-7485 (ppm a.i.) in Serum	Mean (SD) Concentration of T-7485 (ppm a.i.) in Liver
100 ppm a.i.	Adult Male	16.5 (10.3)	3.25 (2.26)
100 ppm a.i.	Adult Female	14.6 (8.4)	3.52 (2.31)
100 ppm a.i.	Offspring	0.0369 (0.0148)	0.0211 (0.0103)
300 ppm a.i.	Adult Male	27.9 (9.5)	7.78 (3.32)
300 ppm a.i.	Adult Female	37.8 (23.5)	11.1 (6.03)
300 ppm a.i.	Offspring	0.0567 (0.0324)	0.0515 (0.0620)
900 ppm a.i.	Adult Male	68.2 (21.3)	15.7 (4.78)
900 ppm a.i.	Adult Female	104 (84.6)	29.6 (19.7)
900 ppm a.i.	Offspring	0.133 (0.0743)	0.111(0.0792)

Summary of Mean Concentrations of T-7485 in Egg Contents

Treatment Group	Mean (SD) Concentration of T-7485 (ppm a.i.) in Egg Contents
100 ppm a.i., Lot B Eggs	7.65 (2.05)
100 ppm a.i., Lot G Eggs	14.0 (5.50)
300 ppm a.i., Lot B Eggs	23.6 (8.58)
300 ppm a.i., Lot G Eggs	31.4 (19.1)
900 ppm a.i., Lot B Eggs	50.5 (27.9)
900 ppm a.i., Lot G Eggs	92.6 (31.8)
Lot B = 2 nd week of eggs set	
Lot G = 7 th week of eggs set	

Histopathology

Samples of liver, kidney and gonad were collected from all adult birds for histopathological examination. Similar samples were also collected from indiscriminately selected offspring from each test pen, from the last lot of offspring produced from the study (Lot J). The spleen from one adult female in the 900 ppm a.i. test concentration was noted as slightly enlarged during gross necropsy, and was also

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collected for histopathological examination. All histopathological samples were fixed in 10% buffered formalin and shipped to EPL in Herndon, Virginia for histopathology.

No lesions considered related to exposure to T-7485 were noted in the liver, kidney, ovary and testes of the adults or their offspring. The few findings in various tissues of the adults and offspring from the control and treatment groups were considered to be incidental and unrelated to treatment. Testes of adult males for all treatment groups exhibited spermatogenesis that was characterized by the presence of numerous mature spermatozoa in the seminiferous tubules. While a few males in the treatment groups exhibited decreased testicular diameter and/or seminiferous tubule degeneration, this result was not dose-responsive and was most consistent with physiological regression. Additionally, similar findings were noted for several males in the control group. The pathology report provided by EPL is presented in Appendix XIV.

CONCLUSION

There were no treatment-related mortalities, overt signs of toxicity or treatment-related effects upon body weight or feed consumption at any of the concentrations tested. Additionally, there were no treatment-related effects upon any of the reproductive parameters measured at the 100, 300 or 900 ppm a.i. test concentrations. The no-observed-effect concentration for northern bobwhite exposed to T-7485 in the diet during the study was 900 ppm a.i., the highest concentration tested.

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- 7 **Dunnett, C.W.** 1955. A Multiple Comparison's Procedure for Comparing Several Treatments with a Control. *Jour. Amer. Statis. Assoc.* 50: 1096-1121.
- 8 **Dunnett, C.W.** 1964. New Tables for Multiple Comparisons with a Control. *Biometrics* 20: 482-491.

Table 1

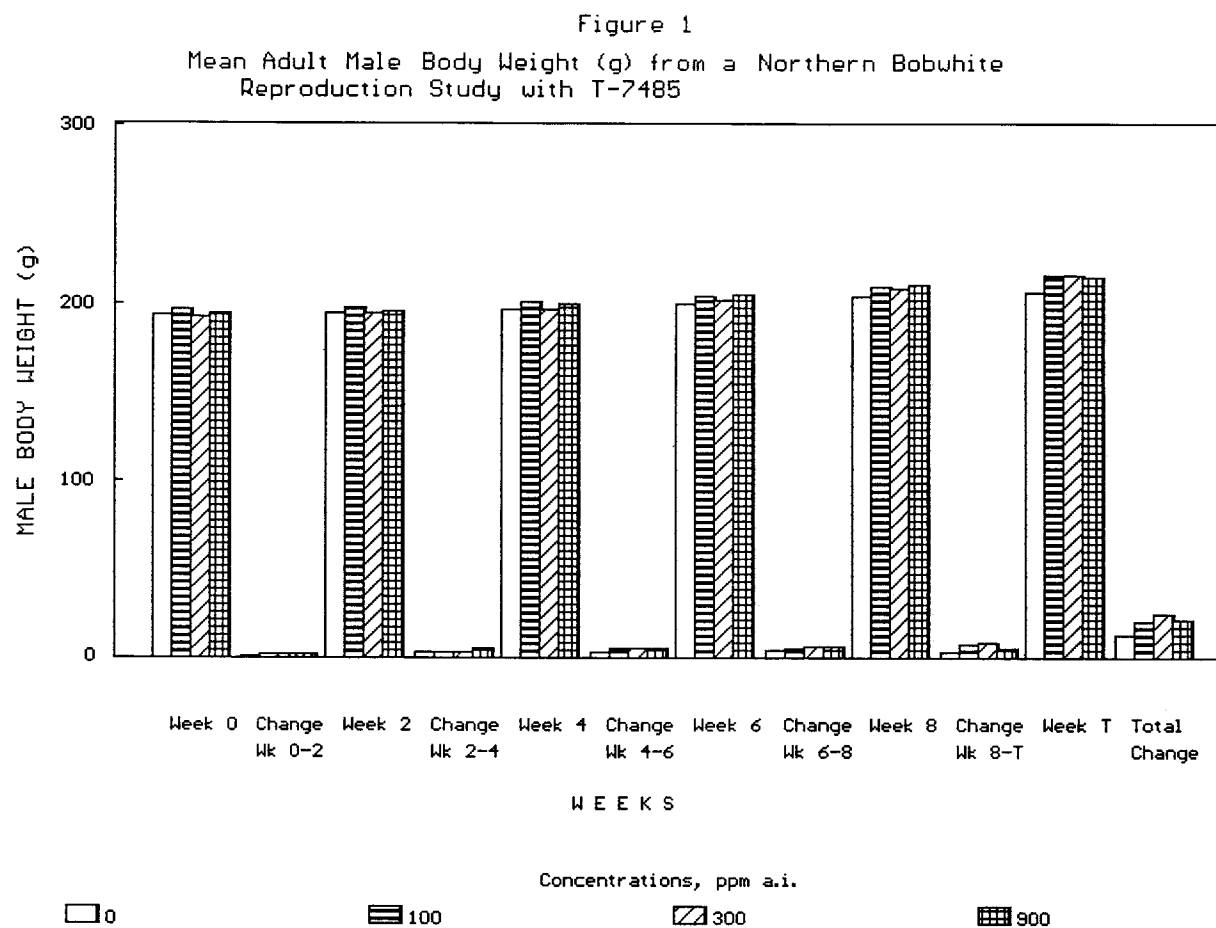
Mean Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485¹

Experimental Group (ppm a.i.)	Sex	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
Control	Male	193	1	193	3	196	3	199	4	203	2	205	13
	Female	190	1	191	4	195	4	199	3	201	37	238	48
100	Male	195	1	196	3	200	4	203	5	208	7	215	20
	Female	188	0	189	2	191	4	195	2	197	40	237	48
300	Male	192	2	194	3	196	5	201	6	208	8	215	24
	Female	189	2	191	3	193	5	198	4	201	36	238	49
900	Male	193	1	194	4	198	5	204	6	209	4	214	21
	Female	188	2	190	4	194	3	197	4	201	30	230	42

The means for body weights and body weight changes are calculated and rounded separately.

Differences between control and each treatment group were not significant ($p > 0.05$).

¹ Only surviving birds were included in the calculations for each body weight interval.



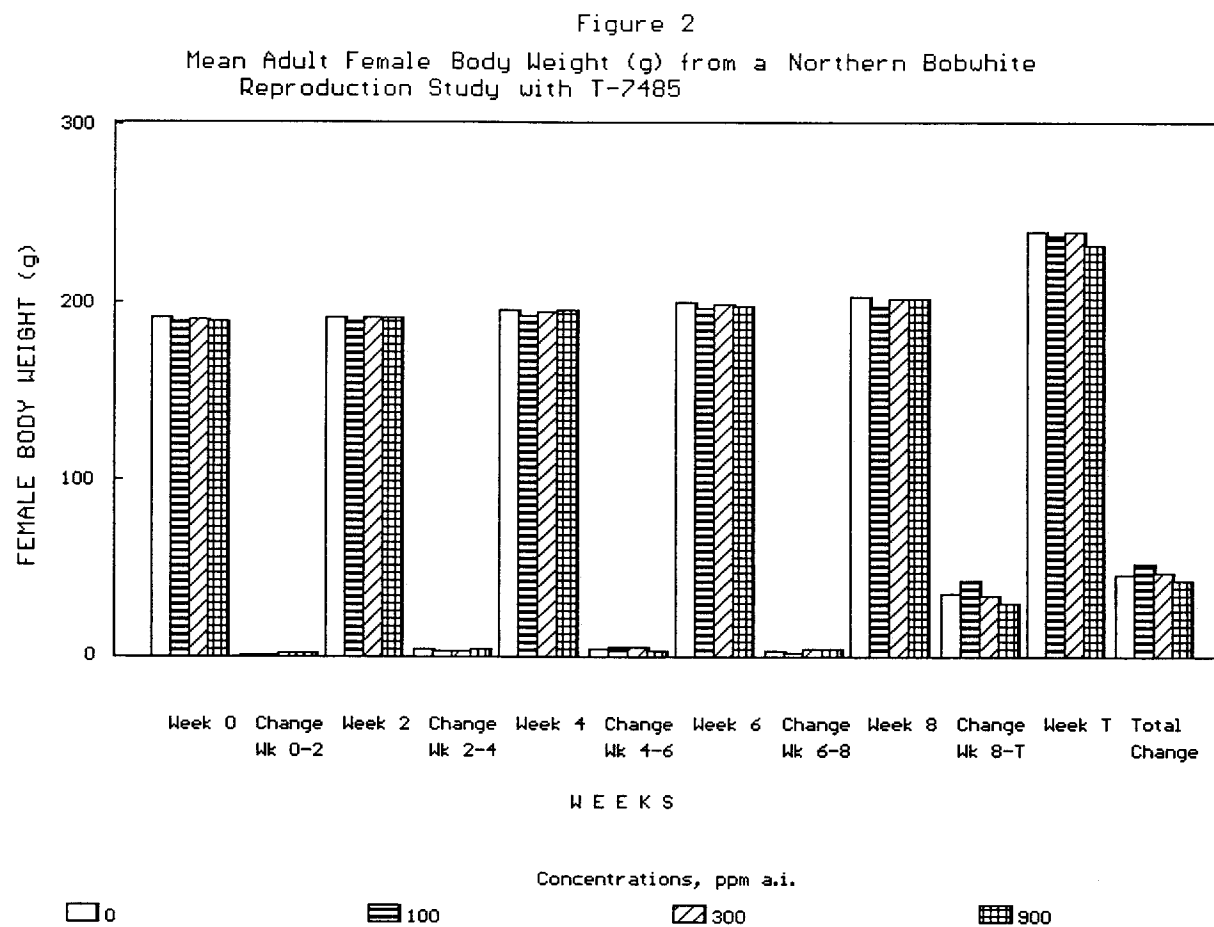


Table 2

Mean Feed Consumption (g/bird/day) from a Northern Bobwhite Reproduction Study with
T-7485

Experimental Group (ppm a.i.)	W E E K S																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Control	15	16	16	16	16	15	15	17	16	18	18	19	19	21	23	20	25	23	25	23	24
100	16	17	17	17	17	16	16	17	16	18	18	19	21	22	24	21	24	23	24	23	24
300	16	17	16	16	17	16	15	18	16	18	19	19	21	22	25	23**	26	25	26	23	24
900	16	17	17	17	17	16	16	18	16	17	18	19	20	22	24	22	25	24	25	22	24

** Significantly different from the control at $p < 0.01$

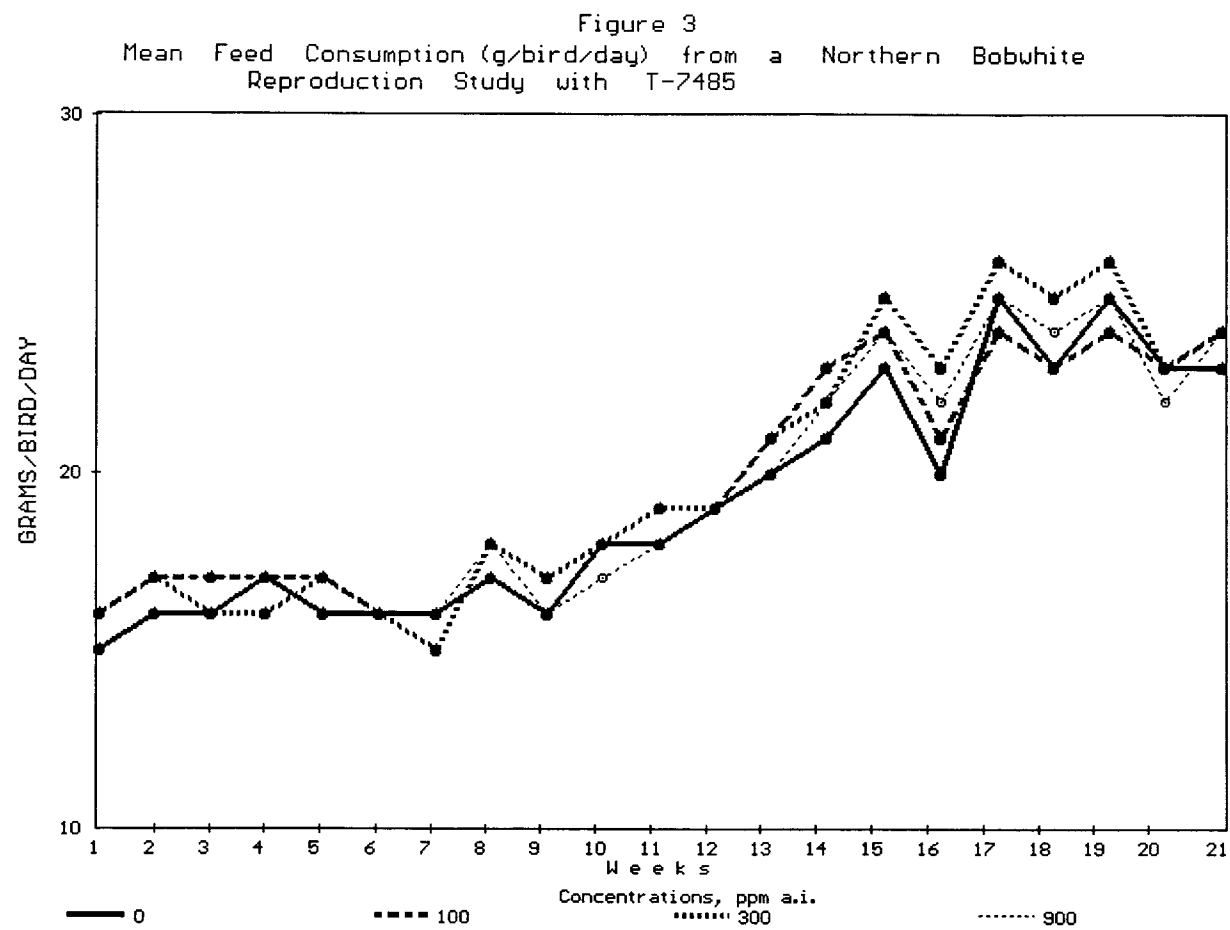


Table 3

Summary of Reproductive Performance from a Northern Bobwhite Reproduction Study with
T-7485

Reproductive Parameter	Experimental Group (ppm a.i.)				
	Control	100	300	900	900 *
Number of Replicates	15	15	15	16	15
Total Eggs Laid	866	840	897	815	801
Eggs Cracked	4	2	6	7	6
Eggs Set	787	763	814	736	725
Viable Embryos	692	714	753	697	688
Live 3-Week Embryos	689	710	746	693	684
Hatchlings	671	691	703	674	665
14-Day Old Survivors	648	646	674	633	625
Eggs Laid/Hen	58	56	60	51	53
Eggs Laid/Hen/Day ¹	0.58	0.57	0.60	0.51	0.54
14-Day Old Survivors/Hen	43	43	45	40	42

*Results for the 900 ppm a.i. group when Pen 1662 is excluded from calculations.

¹ Based on 99 days of eggs production.

Figure 4
Mean Reproductive Performance from a Northern Bobwhite
Reproduction Study with T-7485

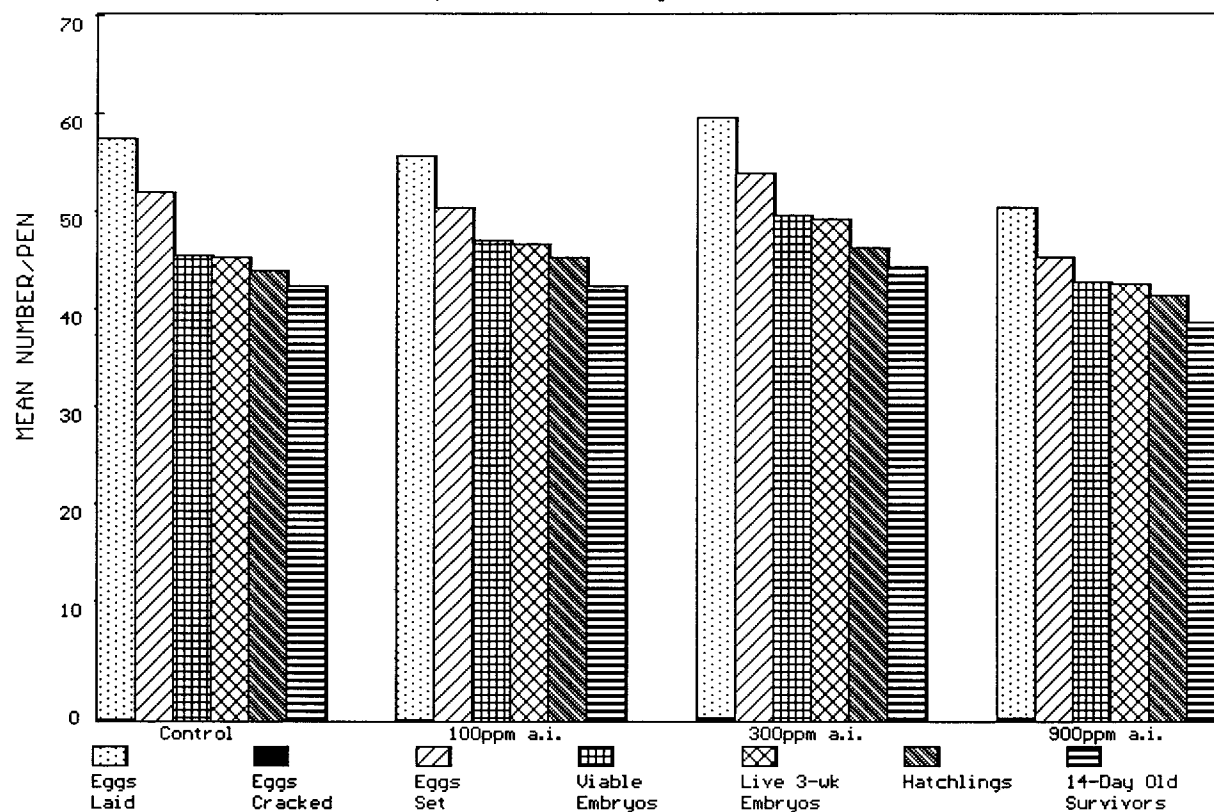


Table 4
Summary of Reproductive Performance, Normalized as Percentages (%)
from a Northern Bobwhite Reproduction Study with T-7485¹

Reproductive Parameter	Experimental Group (ppm a.i.)				
	Control	100	300	900	900 *
Number of Replicates	15	15	15	16	15
Total Eggs Laid ²	866	840	897	815	801
Eggs Laid/Maximum Laid (%)	84	81	87	74	77
Eggs Cracked/Eggs Laid (%)	1	0	1	1	1
Viable Embryos/Eggs Set (%)	89	93	92	94	95
Live 3-Week Embryos/Viable Embryos (%)	99	99	99	99	99
Hatchlings/Live 3-Week Embryos (%)	96	97	94	97	97
14-Day Old Survivors/Hatchlings (%)	96	93	96	94	94
Hatchlings/Eggs Set (%)	86	90	86	91	92
14-Day Old Survivors/Eggs Set (%)	83	84	83	86	87
Hatchlings/Maximum Set (%)	71	73	74	67	70
14-Day Old Survivors/Maximum Set (%)	69	68	71	63	66

Differences between the control and each treatment groups were not significant ($p > 0.05$).

¹ Values represent pen means for experimental group. Values for each pen are presented in Appendices VII and VIII.

² Represents the total number of eggs laid in each group.

*Results for the 900 ppm a.i. group when Pen 1662 is excluded from calculations.

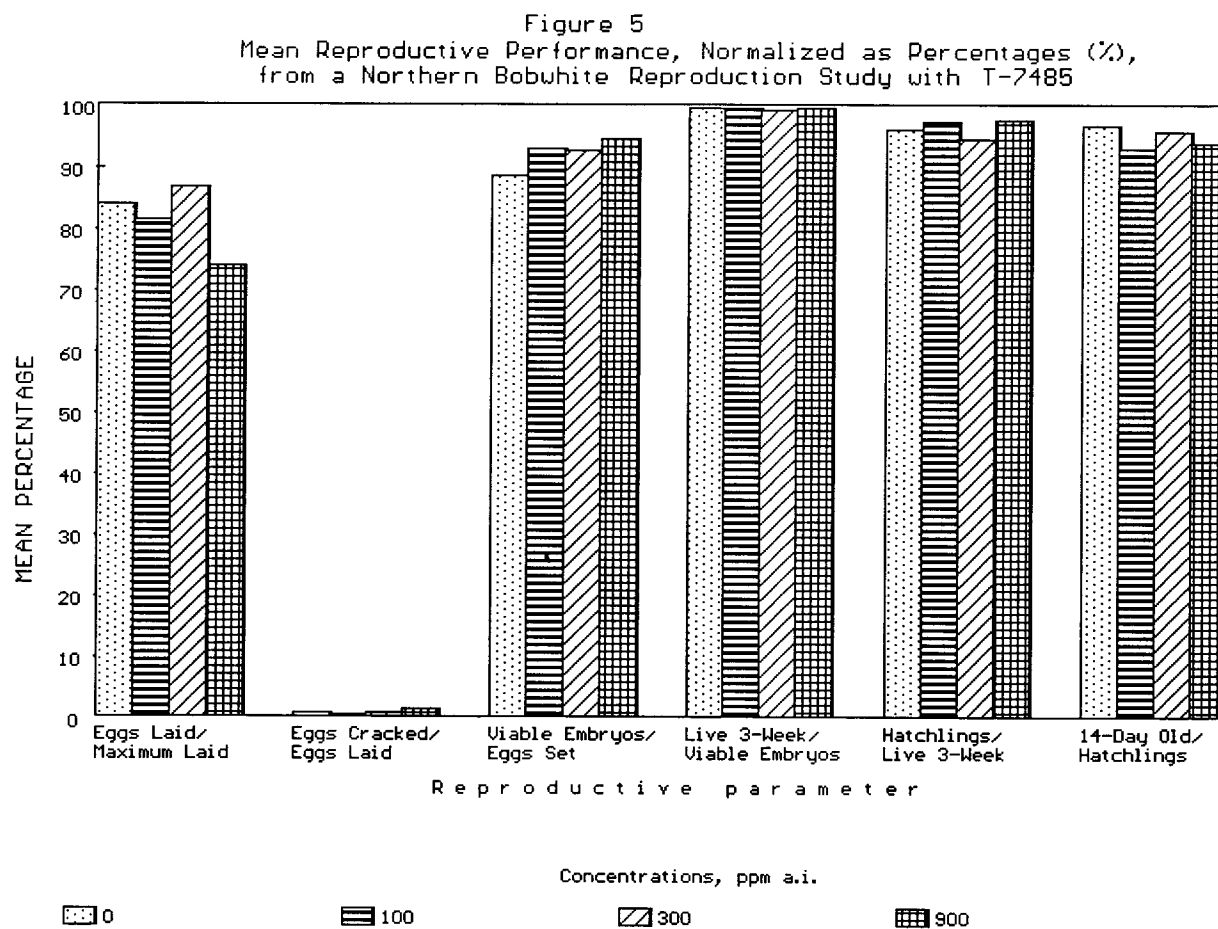


Table 5
Mean Eggshell Thickness Measurements (mm)
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	No. Eggs Measured	Shell Thickness Mean ($\pm$ SD)
Control	72	0.219 $\pm$ 0.013
100	72	0.227 $\pm$ 0.011
300	74	0.222 $\pm$ 0.015
900	71	0.224 $\pm$ 0.015

Differences between the control and each treatment groups were not significant ($p > 0.05$).

Table 6

*Mean Body Weight (g) of Hatchlings and 14-Day Old Survivors
from a Northern Bobwhite Reproduction Study with T-7485*

Experimental Group (PPM A.I.)	Hatchlings			14-Day Old Survivors		
	Number	Mean (± SD)		Number	Mean (± SD)	
Control	671	6	± 0	648	26	± 2
100	690	6	± 1	646	26	± 3
300	703	6	± 0	674	27	± 2
900	672	6	± 0	633	27	± 2

The number of hatchlings weighed may differ from the total number of hatchlings since those hatchlings found dead were not weighed.
Differences between the control and each treatment group were not significant ($p > 0.05$).

Table 7
Summary of Gross Pathological Observations
from a Northern Bobwhite Reproduction Study with T-7485
Adult Birds Euthanized at Termination of the Test

	Males - Treatment Group (ppm a.i.)				Females - Treatment Group (ppm a.i.)			
	Control	100	300	900	Control	100	300	900
Number of birds	16	15	16	16	15	16	15	16
External - feather loss	7	3	2	4	14	11	12	13
External - head lesion	0	0	0	1	1	2	0	0
External - foot/leg lesions	2	0	1	2	3	0	1	4
External - wart-like growth below beak	0	0	1	0	0	0	0	0
Spleen - slightly enlarged	0	0	0	0	0	0	0	1
Liver - slightly mottled	0	1	1	0	0	0	0	0
Liver - friable	0	0	0	0	0	0	0	1
Abdominal cavity - extensive fat	0	0	1	0	0	0	0	0
Abdominal cavity - egg yolk peritonitis	-	-	-	-	0	0	1	2
Ovary - hemorrhagic follicles	-	-	-	-	1	0	0	0
Testes - one testis small, ~1.0 - 1.25 cm	2	5	2	5	-	-	-	-
Testes - small, ~1.0 - 1.5 cm	1	0	1	2	-	-	-	-
Not remarkable	6	8	8	6	0	5	3	1

Table 8
Mean Liver Weights¹ (g)
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group	Adult Males		Adult Females		Offspring Males		Offspring Females	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Control 0 ppm a.i.	4.134 ± 1.446		7.228 ± 0.644		1.013 ± 0.111		1.082 ± 0.118	
100 ppm a.i.	4.068 ± 0.901		7.576 ± 1.575		1.113 ± 0.183		1.030 ± 0.129	
300 ppm a.i.	4.187 ± 1.692		7.202 ± 1.112		1.207 ± 0.122		1.292 ± 0.287	
900 ppm a.i.	3.926 ± 1.068		6.523 ± 1.403		1.107 ± 0.228		1.071 ± 0.169	

¹Mean ± standard deviation.

Differences between the control group and the treatment groups were not statistically significant (p>0.05, Dunnett's t-test).

#

Appendix I

DIET AND SUPPLEMENT FORMULATIONS
WILDLIFE INTERNATIONAL, LTD. GAME BIRD RATION¹

INGREDIENTS	PERCENT (%)	
Fine Corn Meal	42.86	
Soy Bean Meal, 47.5% Protein	33.39	
Wheat Midds	6.48	
Agway Special, 60% Protein	9.96	
Alfalfa Meal, 20% Protein	3.00	
Dried Whey	2.50	
Ground Limestone	0.62	
Eastman CalPhos	0.11	
GL Ferm (Fermatco) ²	0.25	
Salt Iodized	0.10	
CM T-Premix 561	0.05	
CM TM Premix 434	0.08	
CHO CHL 60% 55#	0.09	
Liquimeth 40%	0.25	
Lysine 75%	0.06	
DL Methionine 055	0.10	
Vit K 16 g/lb 50#	0.05	
Selenium	0.05	
Total	100.00	
VITAMIN AND MINERAL CONTENT	AMOUNT ADDED PER POUND	
Vitamin D ₃	0.600	kiu/lb
Vitamin A	2.000	kiu/lb
Riboflavin	2.1992	mg/lb
Niacin	21.6932	mg/lb
Pantothenic Acid	5.2241	mg/lb
Vitamin B ₁₂	6.0000	ug/lb
Folic Acid	0.5169	mg/lb
Biotin	65.9360	ug/lb
Pyridoxine	1.4639	mg/lb
Thiamine	0.9200	mg/lb
Vitamin E	5.0000	iu/lb
Vitamin K (Menadione Dimethylpyrimidinol Bisulfite)	3.2400	mg/lb
Manganese	115.0203	mg/kg
Zinc	194.6601	mg/kg
Copper	24.3007	mg/kg
Iodine	2.4410	mg/kg
Iron	150.4117	mg/kg
Selenium	0.4749	mg/kg
Beta-Carotene	1.1413	mg/lb
Calcium	0.9750	%
Chloride	0.2164	%
Choline	1882.4116	mg/kg
Cobalt	0.1139	mg/kg
Magnesium	0.2503	%
Phos 30	0.3908	%
Phos 50	0.4719	%
Potassium	1.1148	%
Sodium	0.1335	%
Sulfur	0.3478	%
Phosphorus	0.6800	%
Ca:PHOS	1.4338	ratio

¹ The guaranteed analysis is a minimum of 27% protein, a minimum of 2.5% crude fat and a maximum of 3.8% crude fiber.

² Fermentation By-Products (Source of Unidentified Growth Factors)

Appendix I
Diet and Supplement Formulations

Table 2
Vitamins and Electrolytes Concentrate

Water Soluble Powder		
GUARANTEED ANALYSIS	Per 4 oz.	Per lb.
Vitamin A	2,500,000	10,000,000 IU
Vitamin D	1,000,000	4,000,000 ICU
Vitamin E	1,000	4,000 IU
Riboflavin	750	3,000 Mg
d-Pantothenic Acid	1,250	5,000 Mg
Niacin	2,500	10,000 Mg
Vitamin B-12	2.5	10.0 Mg
MSBC	1,000	4,000 Mg
Folic Acid	65	260 Mg
Thiamine HC1	250	1,000 Mg
Pyridoxine Hydrochloride	250	1,000 Mg
Ascorbic Acid	3,750	15,000 Mg

INGREDIENTS:

Vitamin A Supplement, D-Activated Animal Sterol (source of Vitamin D₃), Alpha Tocopheryl Acetate (source of Vitamin E), Riboflavin Supplement, d-Calcium Pantothenate, Niacin Supplement, Vitamin B-12 Supplement, Menadione Sodium Bisulfite (source of Vitamin K), Folic Acid, Thiamine HC1, Pyridoxine Hydrochloride, Ascorbic Acid, Sodium Chloride, Calcium Chloride, Magnesium Sulfate, Ferric Ammonium Citrate, Potassium Chloride and Dextrose.

MIXING PROCEDURE:

The vitamin and electrolyte mix was prepared as a ration of approximately 2 grams of Durvet vitamins and electrolytes to approximately 1 gallon of water.

Appendix II
Diet Preparation

Premixes for T-7485 were prepared on September 16, October 14, November 11 and December 9, 2003, and on January 5 and February 3, 2004. Nominal preparation was as follows:

Control:	4018.0 g ration + 91 ml corn oil
100 ppm a.i.:	3.7576 g T-7485 + 4014.2 g ration + 91 ml corn oil
300 ppm a.i.:	11.2729 g T-7485 + 4006.7 g ration + 91 ml corn oil
900 ppm a.i.:	33.8187 g T-7485 + 3984.2 g ration + 91 ml corn oil

For each of the T-7485 premixes, the basal ration was weighed into a tared mixing bowl. The corn oil was measured and added to the basal ration in the bowl. The bowl was placed on a Hobart mixer and the contents were mixed approximately 5 minutes. A portion of the ration, sufficient to cover the blender mixing blades, was transferred to a Waring blender. The test substance was weighed into a tared plastic weigh boat and added to the ration in the Waring blender. The weigh boat was rinsed three times with ration from the mixing bowl, with the rinse being added to the blender contents. The ration and test substance in the Waring blender were blended approximately one minute. The blender contents were added to the ration in the Hobart mixing bowl. The blender was rinsed three times with uncontaminated ration from the mixing bowl, with the rinse being added to the contents of the bowl. The Hobart mixing bowl was placed on a Hobart mixer and the contents were mixed approximately 10 minutes. If not used immediately after mixing, 1000.0 g aliquots of the premix were weighed, placed in appropriately labeled plastic bags, reweighed, and stored frozen.

As needed, the appropriate premix was incorporated into the final diet as follows:

0 ppm a.i.:	1000 g Premix + 7.55 kg ration + 450 g limestone
100 ppm a.i.:	1000 g Premix + 7.55 kg ration + 450 g limestone
300 ppm a.i.:	1000 g Premix + 7.55 kg ration + 450 g limestone
900 ppm a.i.:	1000 g Premix + 7.55 kg ration + 450 g limestone

The diet was mixed for approximately 10 minutes in a Hobart mixer.

Appendix III

Reproductive Parameters

1. Eggs Laid

Definition - The number of eggs produced during the breeding season.

Sensitivity - This is a parameter that is frequently affected by chemicals that cause reproductive impairment. It is also highly sensitive to the general conditions under which the test is conducted, and may be adversely affected by improper diet, crowding, excessive disturbances, etc.

2. Eggs Cracked

Definition - Eggs determined to have cracked shells when inspected with a candling lamp. Fine cracks cannot be detected without utilizing a candling lamp, and if undetected, will bias the data by adversely affecting embryo development.

Sensitivity - This parameter is not frequently affected as cracking is directly related to shell thickness, and few chemicals have caused egg shell thinning. Improper pen design, overcrowding, and pecking by the birds can also increase egg cracking.

3. Eggs Set

Definition - All eggs placed under incubation, i.e., total eggs laid minus cracked eggs, mechanically damaged eggs, and those selected for egg shell thickness analysis. The reason for presenting this parameter is to establish a base of reference for the following parameter - viable embryos.

4. Viable Embryos

Definition - Eggs in which fertilization has occurred and embryonic development has begun. This is determined by candling the eggs 10-12 days after the initiation of incubation. It is difficult to distinguish between infertility and an early embryonic death.

Sensitivity - This is a frequently affected parameter with infertility or embryonic mortality caused by an unfavorable environment for fertilization in the oviduct, impotent males, or chemical residue in the egg.

Appendix III

Reproductive Parameters

Page 2

5. Live Three-Week Embryos

Definition - These are embryos that are developing normally after three weeks of incubation. This is determined by candling the eggs.

Sensitivity - This parameter is seldom affected.

6. Hatchlings

Definition - Embryos that mature, pip the shell, and liberate themselves from their eggs on Day 25 or 26 of incubation.

Sensitivity - This is a frequently affected parameter which is also highly sensitive to the conditions of incubation, such as rate and angle of rotation, humidity, and temperature.

- Humidity: If too dry, chicks will stick to their shells.
- Temperature: If too hot and humid, chicks will grow too fast and be too large for their shells; thereby not having the intra-egg mobility necessary to pip their shells.

7. Body Weight - Hatchlings

Definition - The average weight of hatchlings by parental pen of origin, taken immediately upon removal from the hatcher. Hatchlings from each weekly lot of eggs are weighed. Mean weight for each week and mean weight by pen are reported.

Sensitivity - This is an occasionally affected parameter and may reflect some residual or latent toxic effects from chemical residue in the egg.

8. 14-Day Old Survivors

Definition - Birds that survive brooding for two weeks following hatch.

Sensitivity - This is a seldom affected parameter and is probably more indicative of the conditions under which the birds were reared in battery brooders than the chemical to which the adults were exposed.

Appendix III

Reproductive Parameters

Page 3

9. Body Weight - 14-Day Old Survivors

Definition - The average body weight of the 14-day old survivors by parental pen of origin, taken upon removal from the brooder unit at 14 days of age. Fourteen-day old survivors from each weekly lot of eggs are weighed. Mean weight for each week and mean weight by pen are reported.

Sensitivity - This parameter is seldom affected, and more closely reflects the rearing practices utilized.

10. Egg Shell Thickness

Definition - The thickness of the shell and the membrane of the egg at its equator after having been opened, washed, and dried for at least one week at room temperature. Egg shell thickness measurements for each egg measured, and pen means are reported.

Sensitivity - This is a seldom affected parameter; however, measurements must be taken very carefully to ensure accuracy. Possible mechanical errors include membrane curling at the measurement surface, and calcium deposits on the measurement surface.

Appendix - IV - Table 1
Individual Gross Pathological Observations
from a Northern Bobwhite Reproduction Study with T-7485

Birds Euthanized at Test Termination
0 ppm a.i. - Control

Males	Pens															
	1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616
External - feather loss	-	-	-	X	-	X	-	X	X	X	X	-	-	X	-	-
External - foot lesions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X
Testes - small, ~1.0 cm	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Testes - right testis small, ~1.25 cm	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Testes - right testis small, ~1.0 cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
Not remarkable	X	-	X	-	X	-	X	-	-	-	-	X	X	-	-	-

Females	Pens															
	1601	1602	1603	1604	1605	1606	1607	1608 ^a	1609	1610	1611	1612	1613	1614	1615	1616
External - feather loss	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	-
External - head lesion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
External - old lesion on head	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
External - foot lesions	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
External - missing toe	-	-	-	-	X	-	X	-	-	-	-	-	-	-	-	-
Ovary - hemorrhagic follicles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
Not remarkable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^a Bird found dead during test.

Appendix - IV - Table 2
Individual Gross Pathological Observations
from a Northern Bobwhite Reproduction Study with T-7485

Birds Euthanized at Test Termination
100 ppm a.i.

Males	Pens															
	1617 ^a	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632
External - feather loss	-	-	-	-	-	-	-	-	X	-	-	-	-	X	-	X
Liver - slightly mottled	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
Testes - right testis small, ~1.25 cm	-	-	-	-	-	-	-	-	X	X	-	X	X	-	-	-
Testes - left testis small, ~1.0 cm	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
Not remarkable	-	X	X	X	-	X	X	X	-	-	X	-	-	-	X	-

Females	Pens															
	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632
External - feather loss	X	-	X	X	-	X	X	X	-	X	X	-	-	X	X	X
External - head lesion	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
External - bruising on head	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Not remarkable	-	X	-	-	X	-	-	-	X	-	-	X	X	-	-	-

^a Bird found dead during test.

Appendix - IV - Table 3
Individual Gross Pathological Observations
from a Northern Bobwhite Reproduction Study with T-7485

Birds Euthanized at Test Termination
300 ppm a.i.

Males	Pens															
	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648
External - feather loss	-	-	-	-	-	-	X	-	-	-	-	X	-	-	-	-
External - wart-like growth (~0.25 cm dia.) under beak	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
External - foot lesion	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Liver - slightly mottled	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Adominable cavity - extensive fat	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Testes - small, ~1.25 cm	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
Testes - right testis small, ~1.25 cm	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
Testes - left testis small, ~1.25 cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
Not remarkable	X	-	X	-	X	-	-	X	-	X	X	-	X	-	-	X

Females	Pens															
	1633	1634	1635	1636	1637	1638	1639 ^a	1640	1641	1642	1643	1644	1645	1646	1647	1648
External - feather loss	X	X	X	X	-	-	-	X	X	X	X	X	X	-	X	X
External - foot lesion	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abdominal cavity - egg yolk peritinitus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
Not remarkable	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-

^a Bird euthanized during test.

Appendix - IV - Table 4
Individual Gross Pathological Observations
from a Northern Bobwhite Reproduction Study with T-7485

Birds Euthanized at Test Termination
900 ppm a.i.

Males	Pens															
	1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664
External - feather loss	-	-	-	-	-	X	-	-	-	-	X	-	X	-	X	-
External - foot lesions	-	-	X	-	-	X	-	-	-	-	-	-	-	-	-	-
External - abcess (~0.05 cm dia.) above left eye	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
Testes - small, ~1.5 and ~1.25 cm	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Testes - small, ~1.25 cm	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
Testes - right testis small, ~1.5 cm	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Testes - right testis small, ~1.25 cm	-	-	X	-	-	X	-	-	X	-	-	-	-	-	-	-
Testes - right testis small, ~1.0 cm	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
Not remarkable	-	-	-	-	X	-	X	-	-	X	-	X	-	X	-	X

Females	Pens															
	1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664
External - feather loss	X	X	X	X	X	X	X	X	-	X	X	X	X	-	X	-
External - foot/leg lesions	X	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Spleen - slightly enlarged (~1.5 x 1.0 cm)	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Liver - friable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
Abdominal cavity - egg yolk peritonitis	-	-	X	-	-	-	-	-	-	-	-	-	-	-	X	-
Not remarkable	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-

Contains No CBI

Appendix V - Table 1

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485
(Control, Males)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1601	184	-4	180	-3	177	2	179	7	186	2	188	4
1602	199	0	199	-2	197	5	202	6	208	33	241	42
1603	182	5	187	5	192	3	195	1	196	13	209	27
1604	201	-1	200	3	203	2	205	3	208	-2	206	5
1605	211	7	218	6	224	4	228	-2	226	-7	219	8
1606	205	7	212	5	217	8	225	-4	221	15	236	31
1607	179	-3	176	1	177	5	182	5	187	-1	186	7
1608	203	-1	202	5	207	3	210	7	217	-11	206	3
1609	183	3	186	0	186	3	189	6	195	0	195	12
1610	195	2	197	3	200	1	201	1	202	13	215	20
1611	200	-1	199	0	199	1	200	3	203	-4	199	-1
1612	179	2	181	0	181	-3	178	7	185	13	198	19
1613	179	1	180	3	183	6	189	8	197	-1	196	17
1614	214	-4	210	4	214	2	216	5	221	13	234	20
1615	198	1	199	7	206	4	210	4	214	-28	186	-12
1616	173	-5	168	4	172	5	177	5	182	-9	173	0
Mean	193	1	193	3	196	3	199	4	203	2	205	13
SD	13	4	14	3	16	3	16	3	14	14	20	14

The means for body weights and body weight changes are calculated and rounded separately.

Appendix V - Table 2

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485

(Control, Females)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1601	196	1	197	4	201	4	205	-1	204	34	238	42
1602	191	0	191	0	191	6	197	3	200	49	249	58
1603	174	3	177	2	179	1	180	8	188	34	222	48
1604	179	-7	172	11	183	3	186	4	190	41	231	52
1605	182	11	193	8	201	8	209	-2	207	25	232	50
1606	211	5	216	3	219	7	226	9	235	22	257	46
1607	202	-2	200	5	205	0	205	1	206	22	228	26
1608	187	2	189	4	193	2	195	6	201	-	-	-
1609	191	0	191	-2	189	8	197	-7	190	64	254	63
1610	197	-1	196	3	199	6	205	4	209	31	240	43
1611	175	5	180	4	184	0	184	6	190	30	220	45
1612	192	2	194	3	197	3	200	2	202	45	247	55
1613	207	-4	203	7	210	5	215	8	223	42	265	58
1614	178	-2	176	1	177	3	180	2	182	33	215	37
1615	199	1	200	9	209	6	215	0	215	31	246	47
1616	177	-2	175	1	176	3	179	2	181	50	231	54
Mean	190	1	191	4	195	4	199	3	201	37	238	48
SD	12	4	12	3	13	3	14	4	15	12	15	9

The means for body weights and body weight changes are calculated and rounded separately.
- Data are not available due to adult mortality.

Appendix V - Table 3

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485

(100 PPM A.I., Males)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1617	197	7	204	4	208	-	-	-	-	-	-	-
1618	186	1	187	-1	186	4	190	4	194	2	196	10
1619	197	8	205	2	207	10	217	8	225	-3	222	25
1620	195	5	200	7	207	8	215	7	222	3	225	30
1621	203	2	205	1	206	4	210	5	215	8	223	20
1622	196	3	199	3	202	4	206	7	213	2	215	19
1623	207	-2	205	3	208	4	212	2	214	1	215	8
1624	197	-1	196	3	199	1	200	-1	199	11	210	13
1625	182	4	186	4	190	4	194	7	201	7	208	26
1626	204	-5	199	1	200	3	203	2	205	9	214	10
1627	210	1	211	2	213	7	220	-1	219	-6	213	3
1628	189	6	195	7	202	8	210	-1	209	1	210	21
1629	182	-3	179	3	182	4	186	9	195	12	207	25
1630	212	2	214	4	218	5	223	11	234	4	238	26
1631	193	-12	181	5	186	-1	185	5	190	28	218	25
1632	174	3	177	2	179	2	181	6	187	19	206	32
Mean	195	1	196	3	200	4	203	5	208	7	215	20
SD	11	5	11	2	12	3	14	4	14	9	10	9

The means for body weights and body weight changes are calculated and rounded separately.

- Data are not available due to adult mortality.

Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix V - Table 4

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485

(100 PPM A.I., Females)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1617	203	2	205	1	206	2	208	3	211	33	244	41
1618	196	-1	195	-18	177	22	199	-7	192	44	236	40
1619	188	-3	185	4	189	2	191	8	199	52	251	63
1620	176	-2	174	3	177	1	178	5	183	46	229	53
1621	187	3	190	4	194	3	197	2	199	36	235	48
1622	195	2	197	2	199	2	201	4	205	39	244	49
1623	197	-5	192	3	195	5	200	3	203	11	214	17
1624	182	2	184	0	184	-5	179	-16	163	52	215	33
1625	180	2	182	4	186	5	191	5	196	44	240	60
1626	196	1	197	6	203	1	204	2	206	40	246	50
1627	189	-3	186	5	191	3	194	0	194	43	237	48
1628	192	2	194	1	195	10	205	3	208	55	263	71
1629	175	-2	173	7	180	4	184	1	185	25	210	35
1630	184	2	186	0	186	3	189	6	195	39	234	50
1631	181	-1	180	3	183	2	185	4	189	41	230	49
1632	192	5	197	11	208	7	215	7	222	36	258	66
Mean	188	0	189	2	191	4	195	2	197	40	237	48
SD	8	3	9	6	10	6	11	6	13	11	15	13

The means for body weights and body weight changes are calculated and rounded separately.
Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix V - Table 5

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485
(300 PPM A.I., Males)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1633	190	5	195	1	196	5	201	6	207	22	229	39
1634	206	-1	205	-1	204	2	206	-1	205	7	212	6
1635	193	2	195	9	204	5	209	5	214	-4	210	17
1636	200	2	202	0	202	4	206	6	212	-1	211	11
1637	197	5	202	3	205	7	212	4	216	18	234	37
1638	201	-2	199	0	199	11	210	9	219	30	249	48
1639	193	3	196	2	198	5	203	9	212	-7	205	12
1640	190	3	193	5	198	8	206	16	222	-2	220	30
1641	177	1	178	3	181	6	187	4	191	-7	184	7
1642	206	1	207	-2	205	3	208	6	214	20	234	28
1643	183	2	185	8	193	7	200	4	204	4	208	25
1644	182	-1	181	3	184	5	189	5	194	4	198	16
1645	184	2	186	5	191	7	198	9	207	8	215	31
1646	186	2	188	1	189	3	192	9	201	9	210	24
1647	194	6	200	3	203	7	210	5	215	14	229	35
1648	182	2	184	1	185	0	185	4	189	8	197	15
Mean	192	2	194	3	196	5	201	6	208	8	215	24
SD	9	2	9	3	8	3	9	4	10	11	17	12

The means for body weights and body weight changes are calculated and rounded separately.
Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix V - Table 6

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485

(300 PPM A.I., Females)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1633	205	-4	201	-4	205	7	212	2	214	43	257	52
1634	186	-1	185	3	188	5	193	5	198	25	223	37
1635	197	2	199	4	203	2	205	-8	197	50	247	50
1636	184	8	192	0	192	4	196	6	202	26	228	44
1637	197	-10	187	6	193	5	198	7	205	58	263	66
1638	171	4	175	2	177	2	179	2	181	34	215	44
1639	185	9	194	-1	193	1	194	1	195	-	-	-
1640	199	2	201	4	205	6	211	-4	207	44	251	52
1641	171	2	173	0	173	3	176	7	183	38	221	50
1642	183	7	190	4	194	4	198	5	203	25	228	45
1643	200	1	201	1	202	2	204	11	215	33	248	48
1644	185	8	193	3	196	5	201	6	207	53	260	75
1645	174	2	176	-1	175	4	179	1	180	21	201	27
1646	191	-3	188	1	189	10	199	12	211	22	233	42
1647	185	2	187	12	199	7	206	1	207	29	236	51
1648	205	1	206	2	208	6	214	3	217	45	262	57
Mean	189	2	191	3	193	5	198	4	201	36	238	49
SD	11	5	10	3	11	2	12	5	12	12	19	11

The means for body weights and body weight changes are calculated and rounded separately.

- Data are not available due to adult mortality.

Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix V - Table 7

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485
(900 PPM A.I., Males)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1649	202	0	202	10	212	4	216	9	225	6	231	29
1650	197	2	199	2	201	6	207	8	215	33	248	51
1651	189	3	192	6	198	9	207	4	211	-5	206	17
1652	194	-3	191	8	199	6	205	8	213	8	221	27
1653	204	-4	200	2	202	1	203	11	214	22	236	32
1654	194	3	197	-2	195	8	203	6	209	-4	205	11
1655	191	2	193	4	197	5	202	9	211	-11	200	9
1656	204	4	208	0	208	6	214	7	221	-6	215	11
1657	189	4	193	4	197	3	200	7	207	9	216	27
1658	186	0	186	6	192	5	197	1	198	-3	195	9
1659	186	2	188	6	194	3	197	6	203	3	206	20
1660	208	-8	200	5	205	13	218	4	222	0	222	14
1661	188	2	190	11	201	5	206	2	208	-7	201	13
1662	193	6	199	2	201	5	206	5	211	15	226	33
1663	179	3	182	5	187	4	191	1	192	-2	190	11
1664	184	2	186	0	186	1	187	2	189	13	202	18
Mean	193	1	194	4	198	5	204	6	209	4	214	21
SD	8	4	7	4	7	3	8	3	10	12	16	12

The means for body weights and body weight changes are calculated and rounded separately.
Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix V - Table 8

Adult Body Weight (g) from a Northern Bobwhite Reproduction Study with T-7485

(900 PPM A.I., Females)

Pen	Week 0	Change Week 0-2	Week 2	Change Week 2-4	Week 4	Change Week 4-6	Week 6	Change Week 6-8	Week 8	Change Week 8-Term	Test Term	Total Change
1649	208	0	208	5	213	-1	212	4	216	27	243	35
1650	179	1	180	3	183	2	185	4	189	23	212	33
1651	180	0	180	4	184	0	184	3	187	40	227	47
1652	171	2	173	2	175	3	178	-2	176	29	205	34
1653	179	1	180	6	186	3	189	4	193	19	212	33
1654	176	7	183	5	188	6	194	7	201	45	246	70
1655	220	5	225	0	225	7	232	7	239	35	274	54
1656	190	3	193	2	195	0	195	5	200	49	249	59
1657	191	1	192	3	195	5	200	6	206	30	236	45
1658	193	2	195	4	199	3	202	7	209	23	232	39
1659	183	3	186	5	191	3	194	4	198	17	215	32
1660	196	1	197	5	202	4	206	5	211	45	256	60
1661	181	2	183	0	183	3	186	5	191	34	225	44
1662	184	2	186	2	188	2	190	1	191	21	212	28
1663	189	2	191	15	206	2	208	3	211	27	238	49
1664	190	1	191	-1	190	1	191	5	196	9	205	15
Mean	188	2	190	4	194	3	197	4	201	30	230	42
SD	12	2	13	4	13	2	13	2	15	11	20	14

The means for body weights and body weight changes are calculated and rounded separately.
Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix VI - Table 1
Feed Consumption (g/bird/day) from a Northern Bobwhite Reproduction Study with T-7485
(Control)

Pen	W E E K S																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1601	18	21	20	21	20	20	20	18	19	22	18	22	21	23	22	22	28	26	28	28	27
1602	17	17	17	15	16	17	15	18	17	20	20	23	22	22	28	21	27	25	29	24	24
1603	15	15	14	14	13	13	14	15	13	15	15	16	16	16	20	18	21	22	24	19	21
1604	13	13	15	15	15	14	13	15	15	16	18	17	19	19	21	19	29	23	23	23	25
1605	17	19	19	19	20	19	16	15	14	22	24	20	19	22	31	17	24	23	23	23	24
1606	15	16	15	18	16	16	14	15	13	15	18	20	20	21	23	21	24	23	25	23	23
1607	12	14	15	14	14	13	13	14	13	14	16	15	17	21	16	18	21	18	15	18	22
1608	17	17	16	18	17	18	22	23	15	19	20	-	-	-	-	-	-	-	-	-	-
1609	15	16	15	15	16	15	15	15	16	16	20	26	26	25	28	24	28	26	26	25	25
1610	16	16	16	15	16	15	16	20	18	19	20	21	20	23	23	21	#	23	27	23	#
1611	16	16	15	15	16	15	16	19	19	20	17	18	20	22	24	20	24	26	26	25	25
1612	14	14	14	13	14	12	13	15	14	16	15	14	13	17	20	17	23	21	22	21	23
1613	15	15	17	17	17	16	17	18	16	18	18	17	19	22	24	19	25	23	25	24	26
1614	17	17	18	25	20	17	17	20	21	22	22	24	26	25	27	23	27	25	29	25	25
1615	16	17	17	17	17	16	16	16	16	18	18	20	19	23	26	22	26	24	23	21	24
1616	13	13	13	14	13	13	12	15	13	16	16	17	16	14	19	20	22	22	23	20	23
Mean	15	16	16	16	16	15	15	17	16	18	18	19	19	21	23	20	25	23	25	23	24
SD	2	2	2	3	2	2	3	3	3	3	3	3	3	3	4	2	3	2	3	2	2
# Feed wet, data not used.																					
- Data are not available due to adult mortality.																					

Appendix VI - Table 2
Feed Consumption (g/bird/day) from a Northern Bobwhite Reproduction Study with T-7485
(100 PPM A.I.)

Pen	W E E K S																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1617	19	17	16	17	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1618	15	16	17	13	14	17	16	16	18	18	15	18	20	22	22	19	20	20	20	20	22
1619	15	18	19	16	23	27	20	20	18	17	18	24	23	25	29	21	25	23	24	23	23
1620	17	18	19	21	17	15	16	17	16	17	16	16	17	19	21	21	23	22	23	22	22
1621	16	16	16	15	17	15	16	16	13	17	18	18	22	22	25	24	25	26	26	24	26
1622	18	18	17	18	17	16	15	19	17	18	21	20	20	25	25	24	27	26	27	26	26
1623	15	15	16	17	17	14	14	16	15	15	15	16	18	16	19	19	22	23	26	23	22
1624	17	20	18	17	17	12	15	16	15	16	19	20	21	24	26	22	27	24	25	27	30
1625	15	16	17	16	17	16	16	16	17	18	18	22	23	24	25	21	24	22	25	22	23
1626	18	17	18	18	17	16	17	19	18	18	18	21	23	20	22	18	19	21	21	20	20
1627	16	15	17	16	16	15	15	14	14	16	18	18	19	24	26	22	25	24	26	24	26
1628	17	17	17	18	19	18	19	18	15	19	21	18	22	25	27	21	25	24	24	24	24
1629	15	15	16	18	17	17	15	16	14	20	20	19	25	22	22	18	22	21	21	20	23
1630	15	18	16	17	16	16	18	18	18	18	18	19	20	23	24	20	28	25	29	23	24
1631	14	15	16	15	14	13	14	15	16	19	20	25	21	23	24	21	26	24	24	21	23
1632	15	17	16	15	16	15	15	17	17	17	18	18	19	25	26	23	26	25	26	24	24
Mean	16	17	17	17	17	16	16	17	16	18	18	19	21	22	24	21	24	23	24	23	24
SD	1	2	1	2	2	3	2	2	2	1	2	2	2	3	2	2	3	2	3	2	2

- Data are not available due to adult mortality.

Differences between control and this treatment group were not significant ($p > 0.05$).

Appendix VI - Table 3
Feed Consumption (g/bird/day) from a Northern Bobwhite Reproduction Study with T-7485
(300 PPM A.I.)

Pen	W E E K S																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1633	15	16	15	15	16	19	16	20	18	21	21	23	20	22	29	24	28	27	29	26	26
1634	19	19	15	16	18	17	16	18	17	18	18	20	21	25	27	24	25	24	24	23	23
1635	18	18	17	18	18	16	15	19	18	25	24	23	29	25	30	24	30	30	28	25	27
1636	16	18	18	16	17	16	15	18	15	17	14	16	21	23	23	22	25	26	26	23	24
1637	17	14	19	16	21	15	15	18	22	17	19	20	23	27	28	27	28	24	27	24	25
1638	14	14	14	12	14	14	14	16	13	13	14	14	18	21	21	20	22	20	23	19	20
1639	18	20	18	18	20	19	18	22	18	20	22	22	22	-	-	-	-	-	-	-	-
1640	17	18	17	18	17	16	15	18	17	18	20	19	23	9	28	25	28	28	28	25	25
1641	16	15	15	15	16	15	16	18	18	16	18	17	23	22	25	20	30	29	31	29	28
1642	16	16	16	16	15	15	16	17	15	16	18	17	18	20	22	22	23	21	24	23	23
1643	15	16	16	16	16	16	16	18	18	20	20	24	20	24	26	26	27	25	28	25	24
1644	16	15	16	16	15	14	14	15	17	17	16	18	21	23	23	24	25	24	24	22	23
1645	15	15	14	13	14	13	12	18	14	19	19	19	20	20	22	18	21	25	21	20	20
1646	15	16	14	14	15	14	15	17	16	18	18	18	18	19	21	22	23	20	21	21	21
1647	17	18	18	17	20	17	16	16	16	18	17	17	20	25	28	22	26	24	27	24	25
1648	17	19	17	18	16	15	14	18	15	18	20	24	25	24	26	24	26	24	26	22	25
Mean	16	17	16	16	17	16	15	18	16	18	19	19	21	22	25	23**	26	25	26	23	24
SD	1	2	2	2	2	2	1	2	2	3	3	3	3	4	3	2	3	3	3	2	2

- Data are not available due to adult mortality.

** Significantly different from the control at $p < 0.01$

Appendix VI - Table 4
Feed Consumption (g/bird/day) from a Northern Bobwhite Reproduction Study with T-7485
(900 PPM A.I.)

Pen	W E E K S																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1649	16	19	18	17	17	16	19	20	16	17	18	19	22	22	27	23	25	22	25	22	22
1650	15	16	17	16	16	14	14	17	16	16	17	17	19	20	23	22	23	21	24	22	22
1651	17	23	21	20	24	15	16	20	17	19	17	18	18	22	26	24	26	24	25	22	24
1652	17	15	20	17	17	15	16	20	17	18	19	21	20	23	24	24	24	23	25	24	26
1653	16	16	17	17	18	16	17	17	17	19	18	22	23	22	26	21	27	26	26	24	23
1654	16	16	15	16	16	15	15	17	15	17	18	17	20	19	26	24	28	27	25	24	26
1655	16	16	16	14	14	16	14	16	15	14	16	17	20	21	23	22	23	22	24	22	22
1656	17	17	17	16	17	18	16	19	14	16	20	22	21	24	27	24	26	26	24	22	21
1657	17	17	19	16	17	16	15	18	16	16	15	19	17	23	26	23	28	24	26	23	24
1658	15	17	17	19	19	17	18	18	17	20	21	23	21	24	27	26	26	25	24	22	24
1659	17	17	15	14	16	15	15	16	17	17	18	18	22	24	24	19	25	25	26	22	24
1660	15	18	16	16	17	17	17	19	17	21	20	22	21	23	27	25	25	27	30	24	29
1661	20	19	16	19	16	19	16	20	18	19	14	21	21	25	29	25	31	27	34	29	30
1662	16	16	15	16	16	15	14	16	15	15	17	19	19	22	19	15	18	17	18	16	22
1663	16	20	18	19	19	17	17	17	17	16	17	17	18	13	12	18	25	23	26	23	22
1664	16	16	14	15	15	14	13	16	16	17	18	17	18	22	22	20	22	23	23	16	20
Mean	16	17	17	17	17	16	16	18	16	17	18	19	20	22	24	22	25	24	25	22	24
SD	1	2	2	2	2	1	2	2	1	2	2	2	2	3	4	3	3	2	3	3	3

Differences between control and this treatment group were not significant ($p > 0.05$).

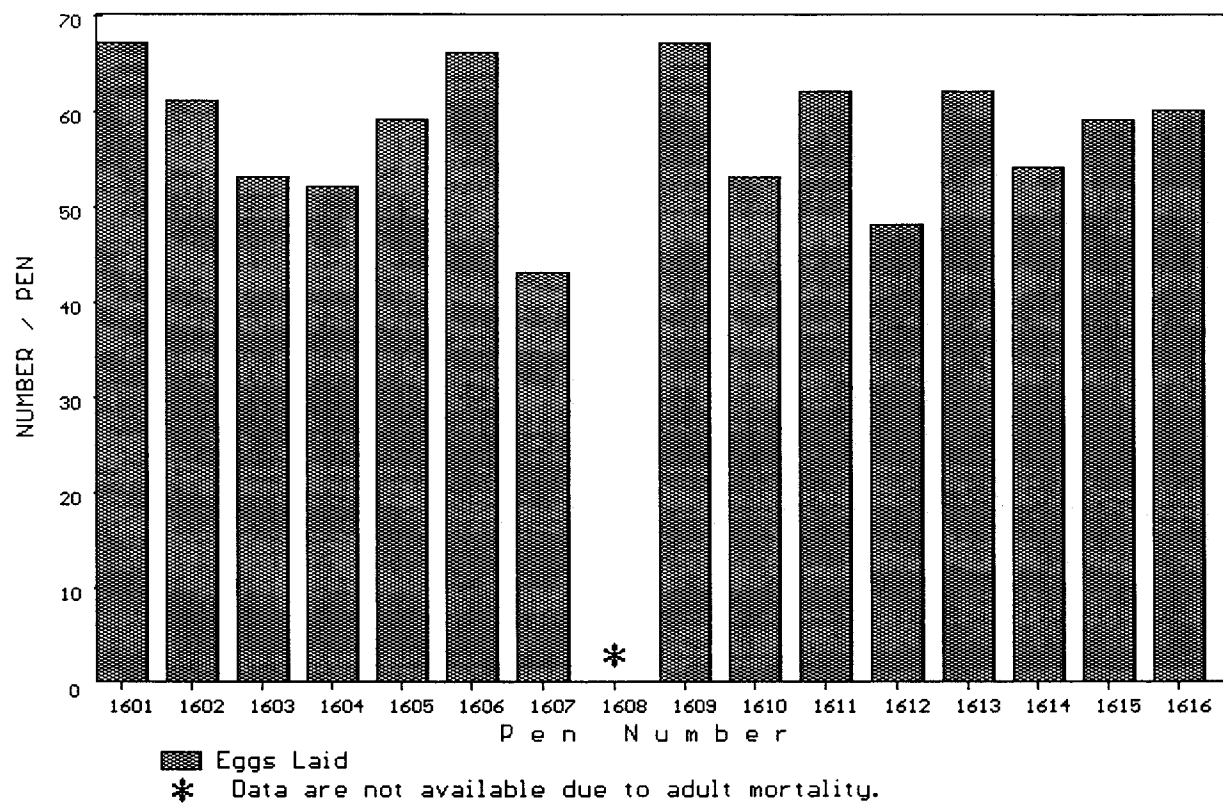
Reproductive Performance by Pen
Appendix VII - Table 1
Eggs Laid / Maximum Laid (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Eggs Laid	Max. Laid	%	Arcsin Trans.	Eggs Laid	Max. Laid	%	Arcsin Trans.	Eggs Laid	Max. Laid	%	Arcsin Trans.	Eggs Laid	Max. Laid	%	Arcsin Trans.
1	67	69	97	80.20	-	-	-	-	61	69	88	70.09	62	69	90	71.43
2	61	69	88	70.09	41	69	59	50.43	46	69	67	54.74	52	69	75	60.24
3	53	69	77	61.21	63	69	91	72.85	69	69	100	90.00	44	69	64	52.99
4	52	69	75	60.24	56	69	81	64.27	61	69	88	70.09	53	69	77	61.21
5	59	69	86	67.62	57	69	83	65.35	63	69	91	72.85	43	69	62	52.13
6	66	69	96	77.96	57	69	83	65.35	56	69	81	64.27	64	69	93	74.38
7	43	69	62	52.13	45	69	65	53.86	-	-	-	-	58	69	84	66.47
8	-	-	-	-	43	69	62	52.13	61	69	88	70.09	46	69	67	54.74
9	67	69	97	80.20	67	69	97	80.20	56	69	81	64.27	41	69	59	50.43
10	53	69	77	61.21	56	69	81	64.27	53	69	77	61.21	63	69	91	72.85
11	62	69	90	71.43	62	69	90	71.43	60	69	87	68.83	59	69	86	67.62
12	48	69	70	56.52	61	69	88	70.09	62	69	90	71.43	58	69	84	66.47
13	62	69	90	71.43	52	69	75	60.24	69	69	100	90.00	57	69	83	65.35
14	54	69	78	62.21	56	69	81	64.27	53	69	77	61.21	14	69	20	26.77
15	59	69	86	67.62	61	69	88	70.09	60	69	87	68.83	40	69	58	49.59
16	60	69	87	68.83	63	69	91	72.85	67	69	97	80.20	61	69	88	70.09
Total	866	1035			840	1035			897	1035			815	1104		
Mean	58	69	84	67.26	56	69	81	65.18	60	69	87	70.54	51	69	74	60.17
SD	7	0	10	8.40	8	0	11	8.34	6	0	9	9.88	13	0	19	12.16

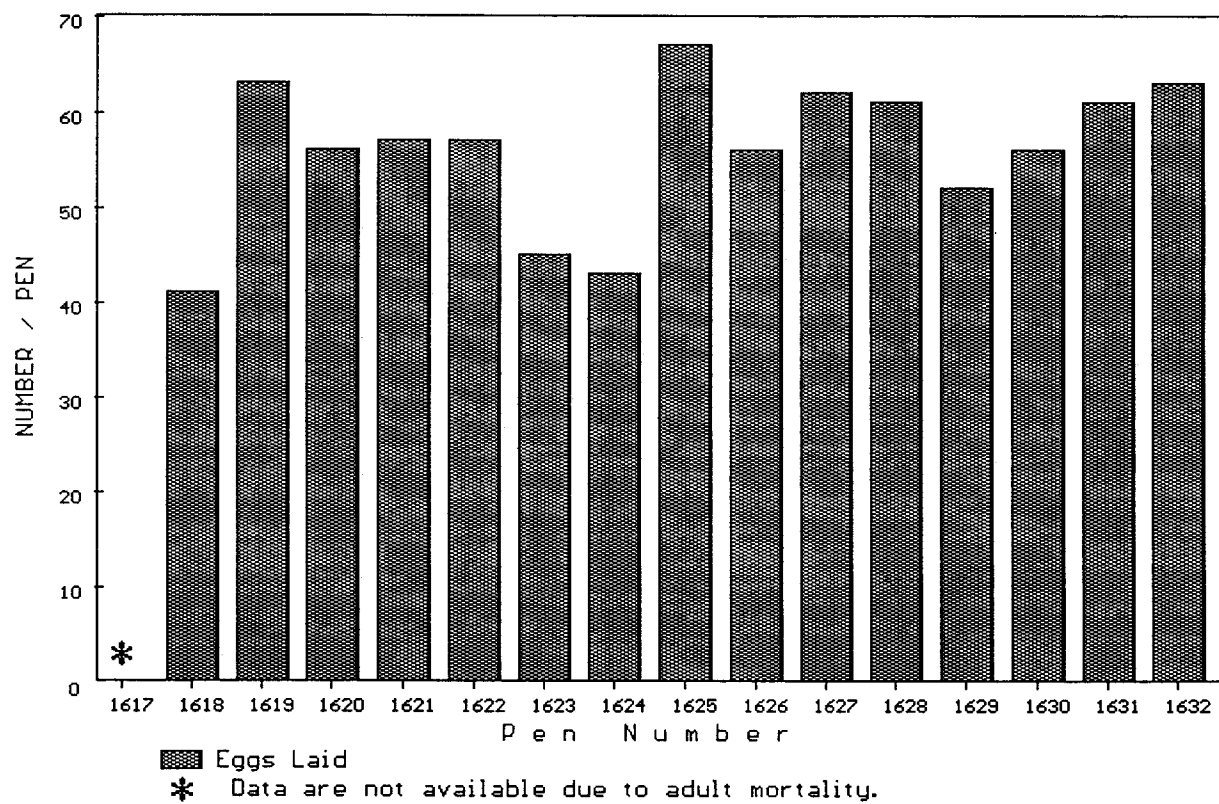
- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

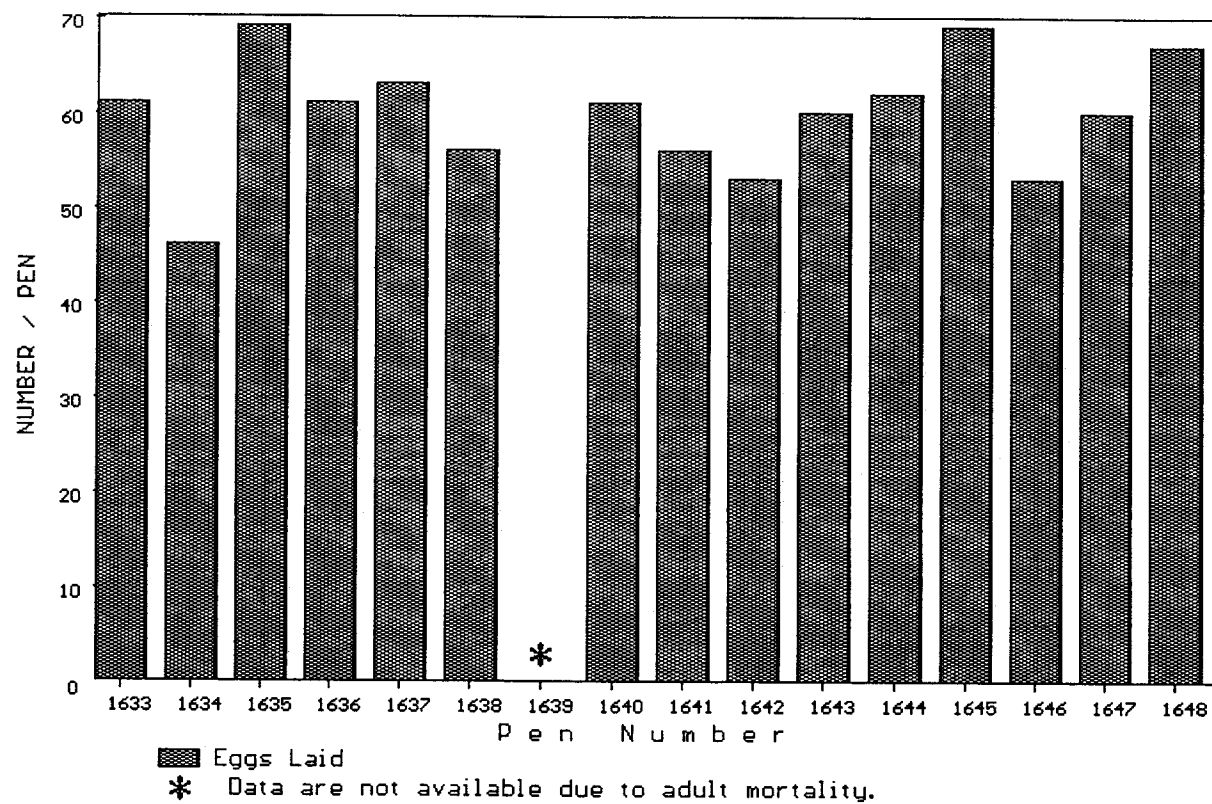
Appendix VII - Figure 1a
 Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - Control



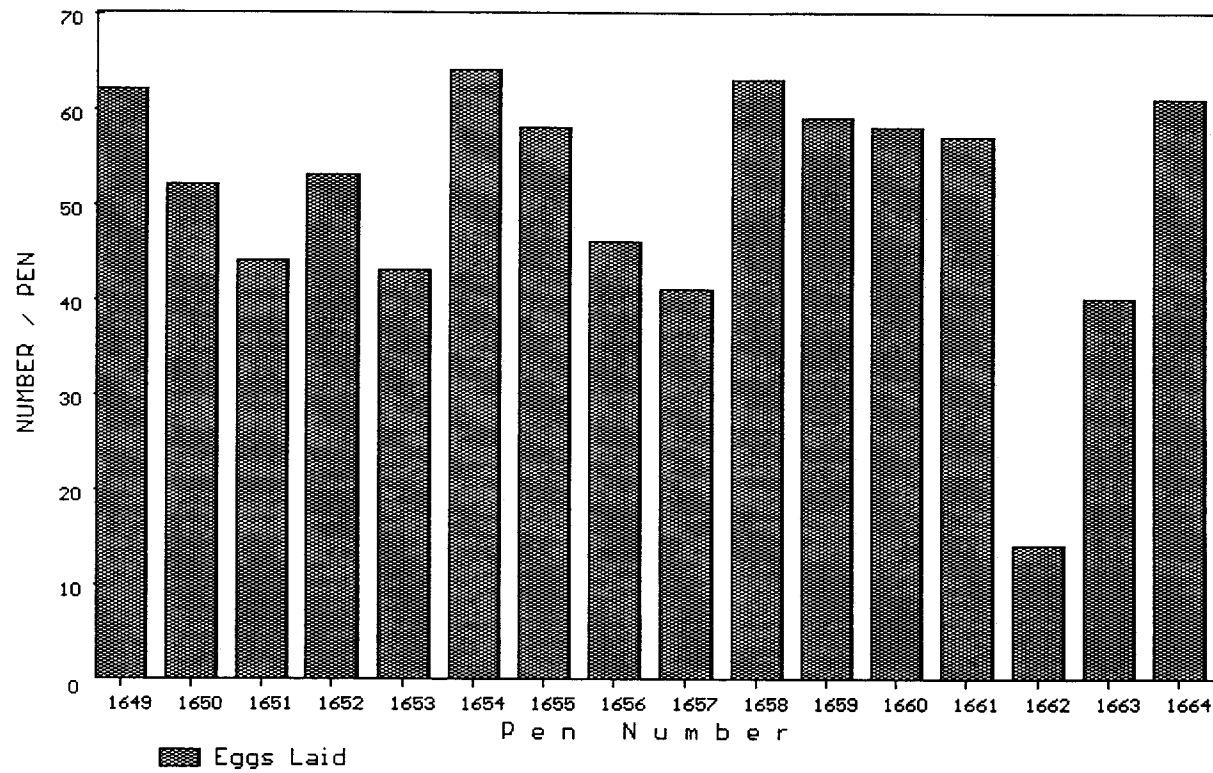
Appendix VII - Figure 1b
 Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - 100 PPM A.I.



Appendix VII - Figure 1c
 Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - 300 PPM A.I.



Appendix VII - Figure 1d
 Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - 900 PPM A.I.



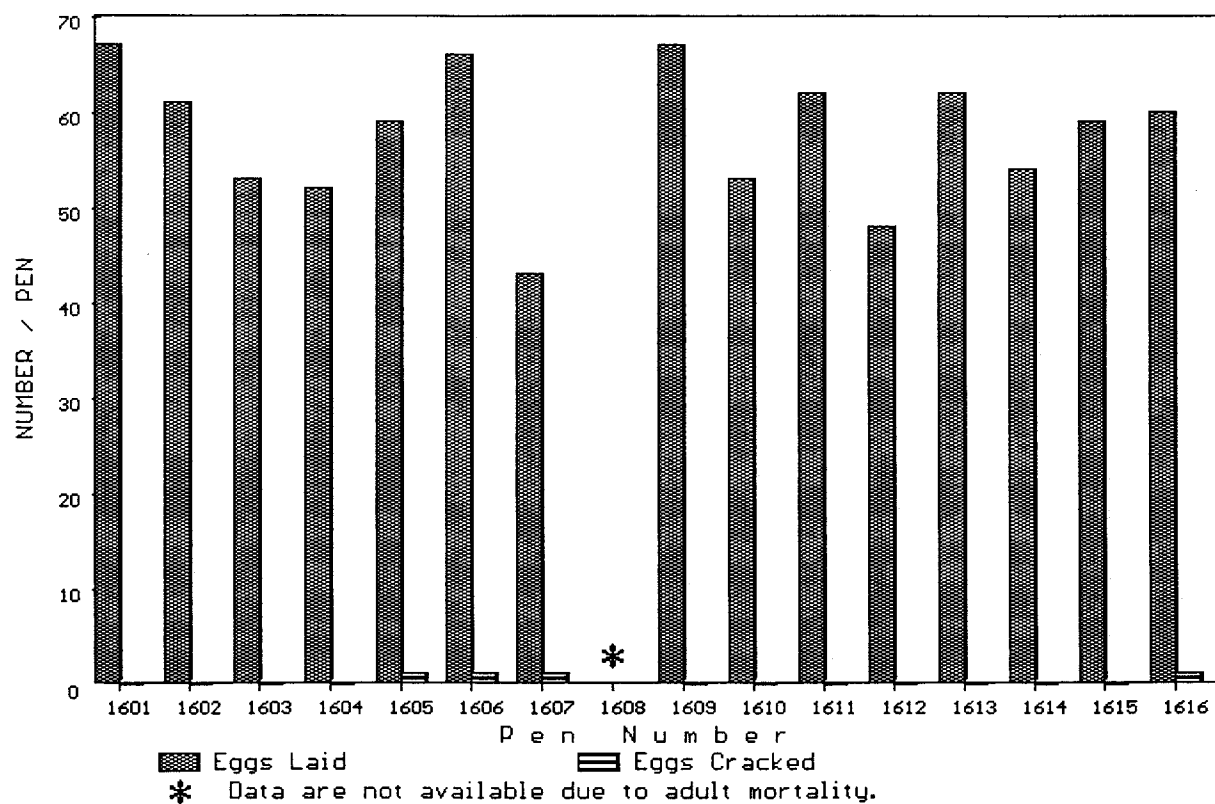
Reproductive Performance by Pen
Appendix VII - Table 2
Eggs Cracked / Eggs Laid (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Eggs Crack	Eggs Laid	%	Arcsin Trans.	Eggs Crack	Eggs Laid	%	Arcsin Trans.	Eggs Crack	Eggs Laid	%	Arcsin Trans.	Eggs Crack	Eggs Laid	%	Arcsin Trans.
1	0	67	0	0.00	-	-	-	-	1	61	2	7.36	1	62	2	7.30
2	0	61	0	0.00	0	41	0	0.00	0	46	0	0.00	1	52	2	7.97
3	0	53	0	0.00	0	63	0	0.00	1	69	1	6.91	0	44	0	0.00
4	0	52	0	0.00	0	56	0	0.00	0	61	0	0.00	0	53	0	0.00
5	1	59	2	7.48	0	57	0	0.00	0	63	0	0.00	0	43	0	0.00
6	1	66	2	7.07	0	57	0	0.00	0	56	0	0.00	0	64	0	0.00
7	1	43	2	8.77	1	45	2	8.57	-	-	-	-	1	58	2	7.55
8	-	-	-	-	0	43	0	0.00	0	61	0	0.00	0	46	0	0.00
9	0	67	0	0.00	0	67	0	0.00	1	56	2	7.68	0	41	0	0.00
10	0	53	0	0.00	0	56	0	0.00	0	53	0	0.00	0	63	0	0.00
11	0	62	0	0.00	0	62	0	0.00	0	60	0	0.00	0	59	0	0.00
12	0	48	0	0.00	0	61	0	0.00	1	62	2	7.30	0	58	0	0.00
13	0	62	0	0.00	0	52	0	0.00	0	69	0	0.00	2	57	4	10.80
14	0	54	0	0.00	0	56	0	0.00	0	53	0	0.00	1	14	7	15.50
15	0	59	0	0.00	0	61	0	0.00	0	60	0	0.00	0	40	0	0.00
16	1	60	2	7.42	1	63	2	7.24	2	67	3	9.95	1	61	2	7.36
Total	4	866			2	840			6	897			7	815		
Mean	0	58	1	2.05	0	56	0	1.05	0	60	1	2.61	0	51	1	3.53
SD	1	7	1	3.54	0	8	1	2.79	1	6	1	3.88	1	13	2	5.07

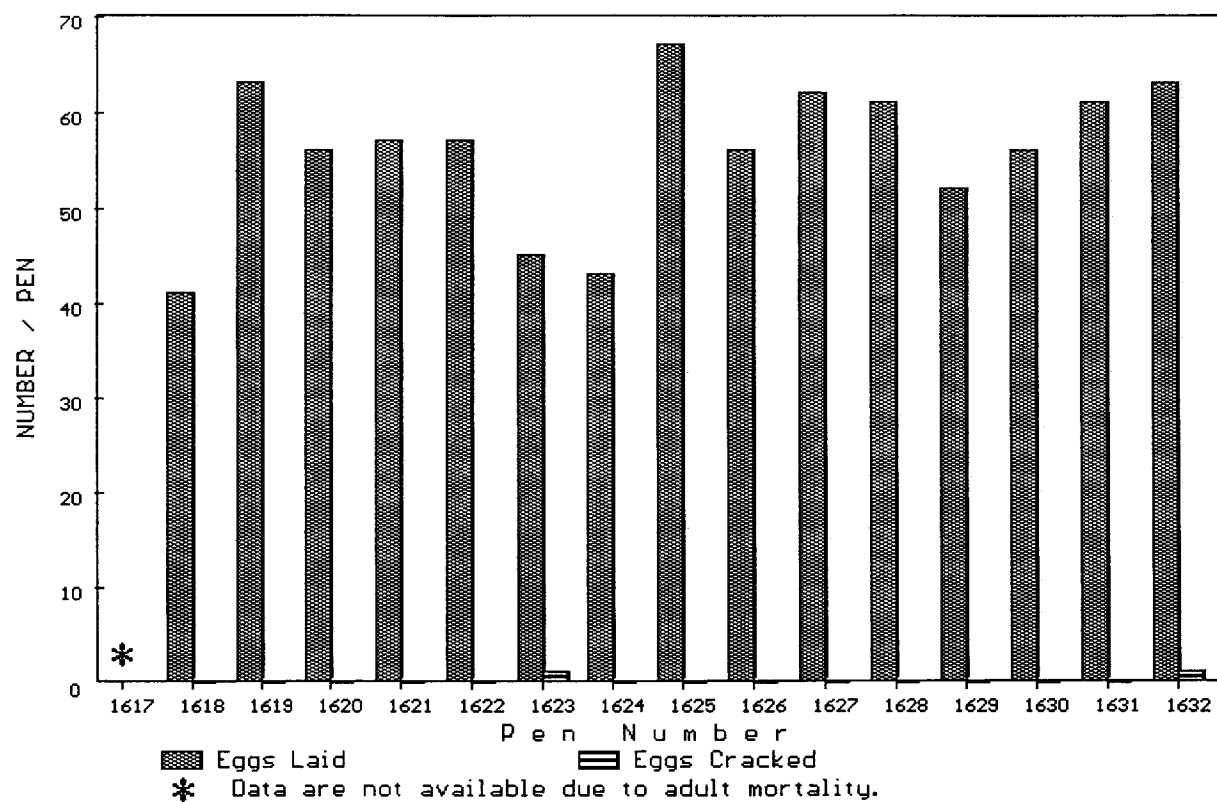
- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

Appendix VII - Figure 2a
 Eggs Cracked / Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - Control



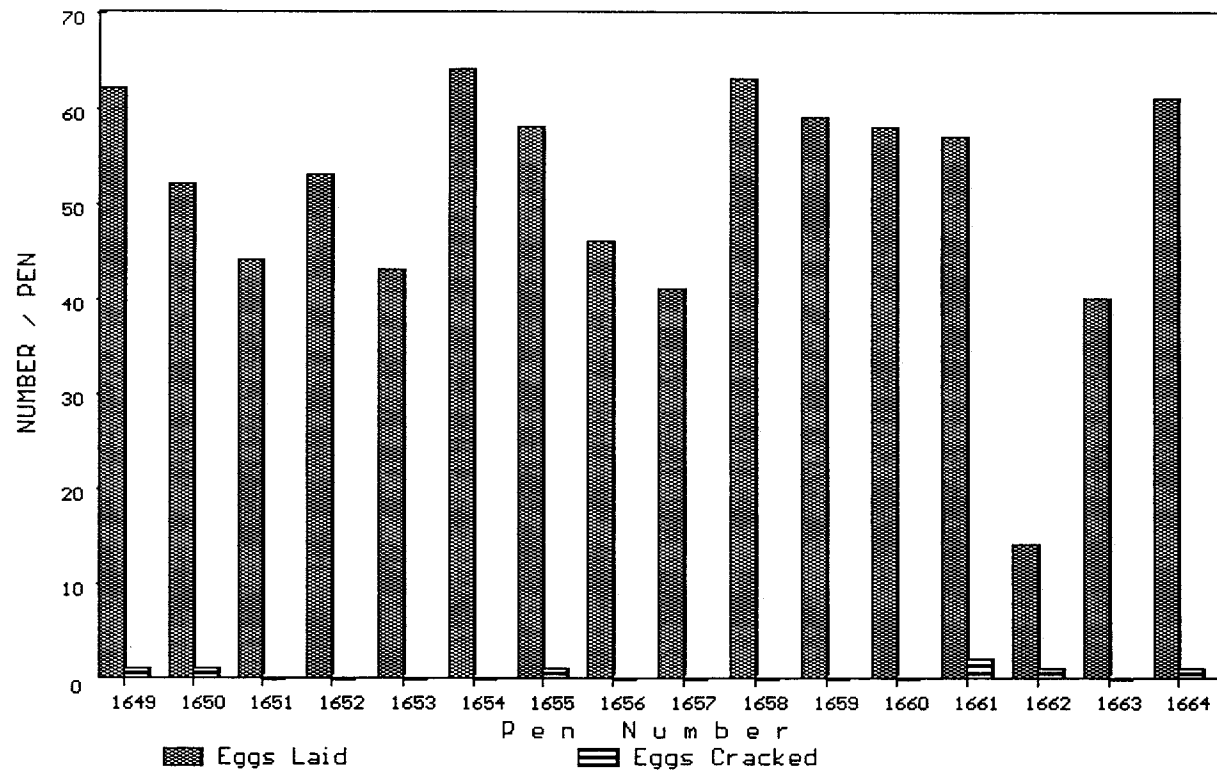
Appendix VII - Figure 2b
 Eggs Cracked / Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - 100 PPM A.I.



Appendix VII - Figure 2c
 Eggs Cracked / Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - 300 PPM A.I.



Appendix VII - Figure 2d
 Eggs Cracked / Eggs Laid from a Northern Bobwhite
 Reproduction Study with T-7485 - 900 PPM A.I.



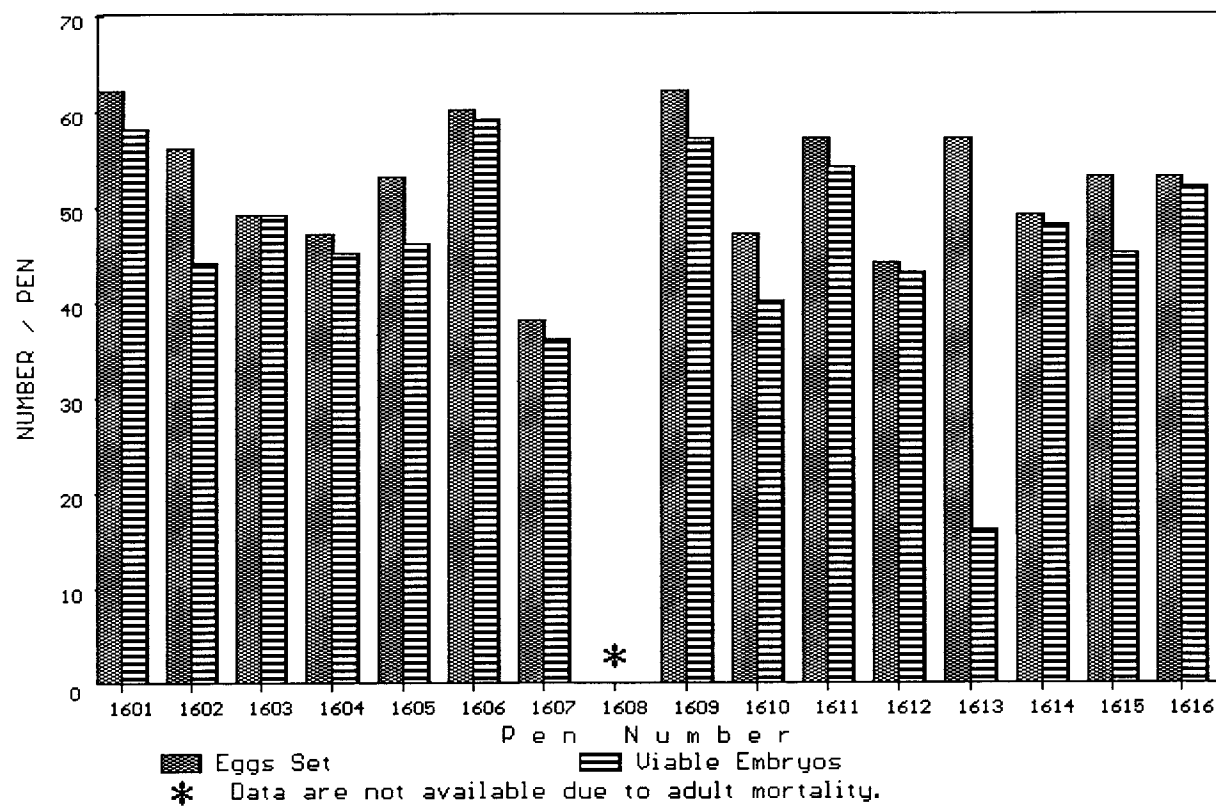
Reproductive Performance by Pen
Appendix VII - Table 3
Viable Embryos / Eggs Set (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Viab. Eggs	Embr. Set	%	Arcsin	Viab. Eggs	Embr. Set	%	Arcsin	Viab. Eggs	Embr. Set	%	Arcsin	Viab. Eggs	Embr. Set	%	Arcsin
				Trans.				Trans.				Trans.				Trans.
1	58	62	94	75.29	-	-	-	-	54	54	100	90.00	54	56	96	79.11
2	44	56	79	62.42	35	36	97	80.41	40	42	95	77.40	45	45	100	90.00
3	49	49	100	90.00	56	58	97	79.30	60	63	95	77.40	40	40	100	90.00
4	45	47	96	78.10	51	51	100	90.00	39	56	70	56.57	48	48	100	90.00
5	46	53	87	68.69	52	53	98	82.10	53	58	91	72.93	38	39	97	80.79
6	59	60	98	82.58	52	52	100	90.00	49	51	96	78.58	46	59	78	62.00
7	36	38	95	76.74	37	39	95	76.91	-	-	-	-	47	53	89	70.34
8	-	-	-	-	25	38	66	54.20	51	56	91	72.61	39	41	95	77.24
9	57	62	92	73.50	61	62	98	82.70	39	50	78	62.03	36	37	97	80.54
10	40	47	85	67.30	45	50	90	71.57	48	48	100	90.00	55	58	95	76.85
11	54	57	95	76.74	57	57	100	90.00	54	55	98	82.25	53	54	98	82.18
12	43	44	98	81.33	56	56	100	90.00	55	56	98	82.32	52	53	98	82.10
13	16	57	28	31.99	39	48	81	64.34	57	63	90	72.02	51	51	100	90.00
14	48	49	98	81.79	40	51	78	62.33	42	48	88	69.30	9	11	82	64.76
15	45	53	85	67.14	56	56	100	90.00	55	55	100	90.00	33	36	92	73.22
16	52	53	98	82.10	52	56	93	74.50	57	59	97	79.39	51	55	93	74.35
Total	692	787			714	763			753	814			697	736		
Mean	46	52	89	73.05	48	51	93	78.56	50	54	92	76.85	44	46	94	78.97
SD	11	7	18	13.49	10	8	10	11.39	7	6	9	9.76	11	12	6	8.71

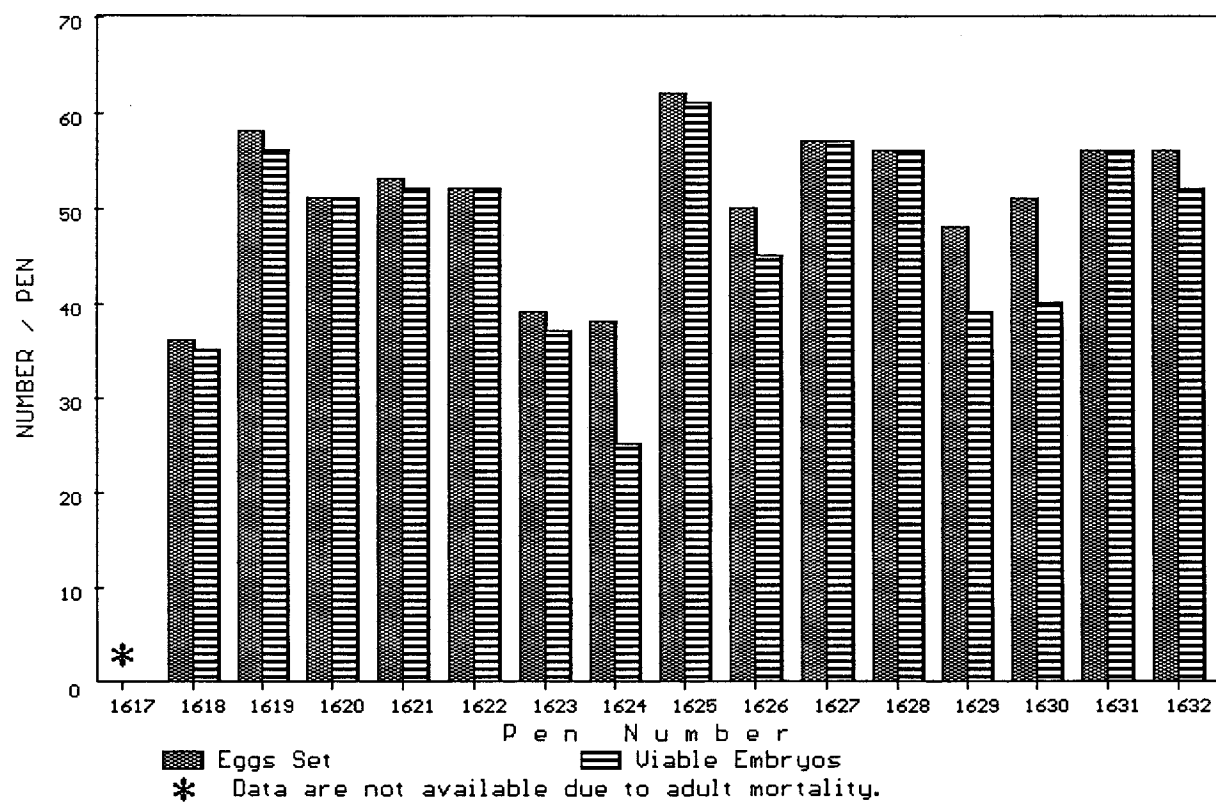
- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

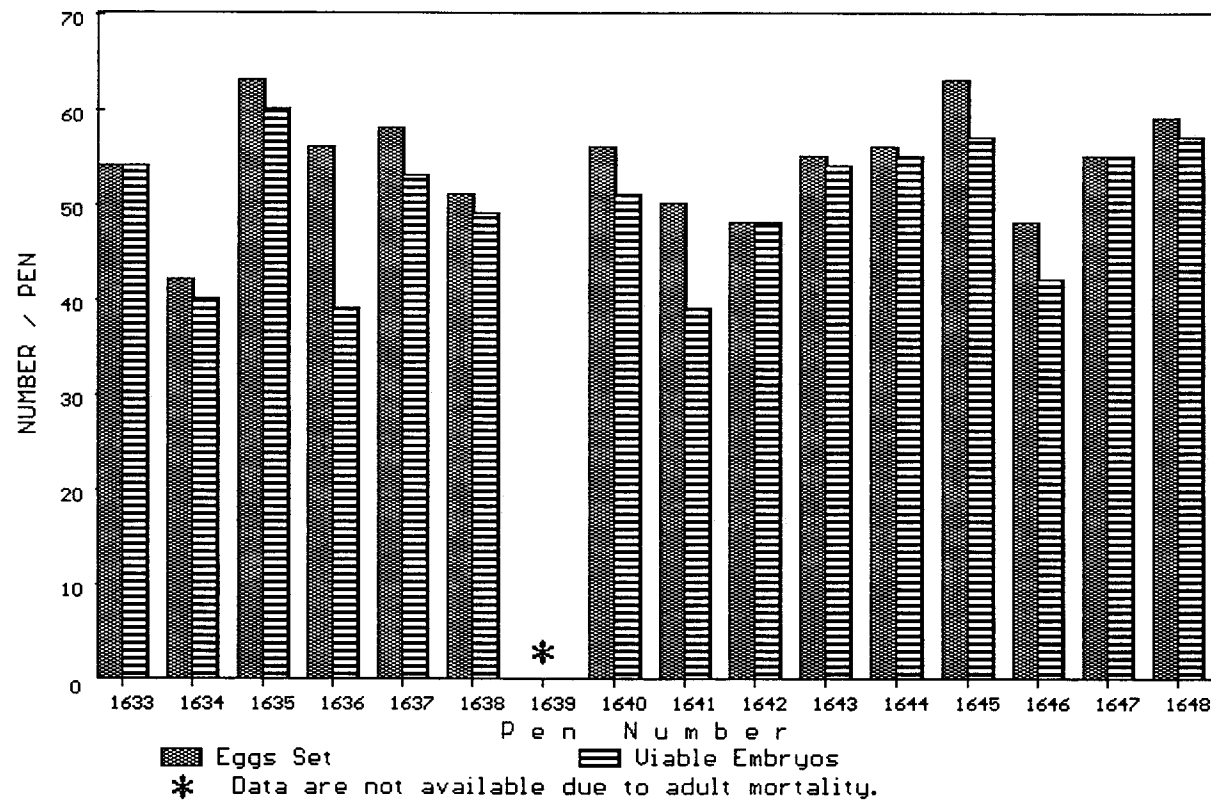
Appendix VII - Figure 3a
 Viable Embryos / Eggs Set from a Northern Bobwhite
 Reproduction Study with T-7485 - Control



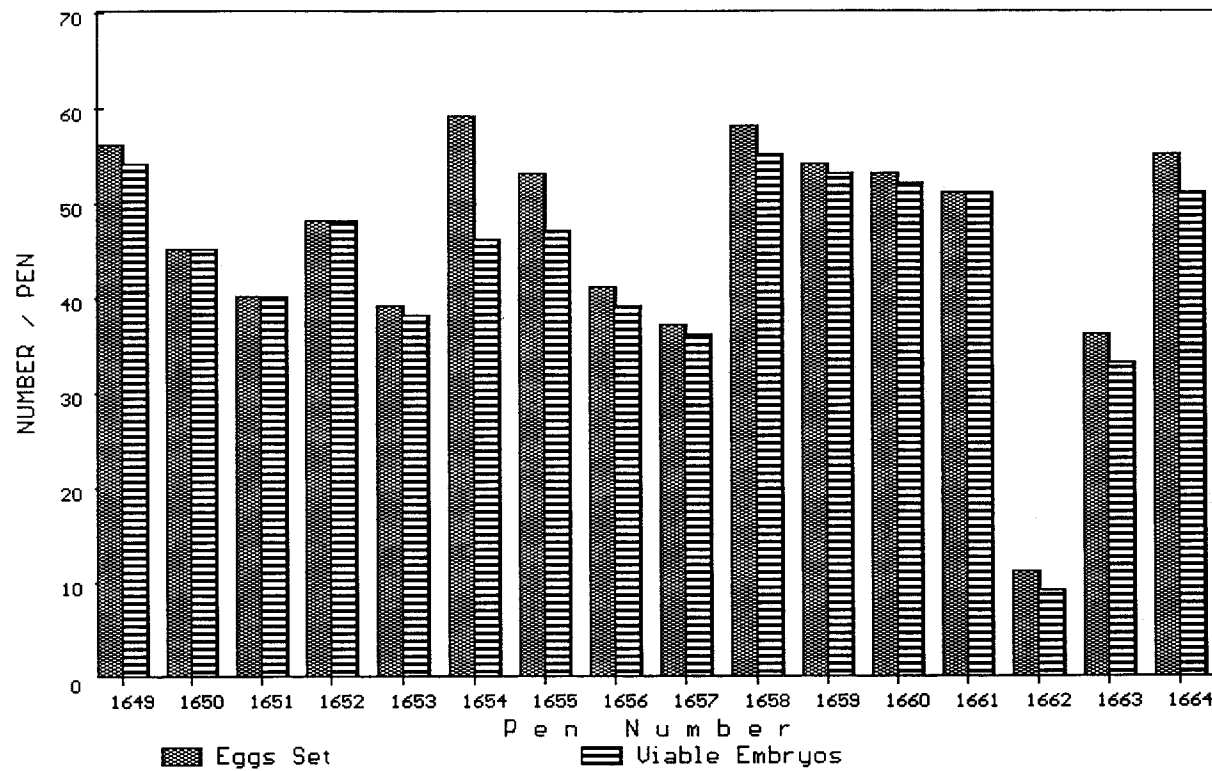
Appendix VII - Figure 3b
 Viable Embryos / Eggs Set from a Northern Bobwhite
 Reproduction Study with T-7485 - 100 PPM A.I.



Appendix VII - Figure 3c
 Viable Embryos / Eggs Set from a Northern Bobwhite
 Reproduction Study with T-7485 - 300 PPM A.I.



Appendix UII - Figure 3d
 Viable Embryos / Eggs Set from a Northern Bobwhite
 Reproduction Study with T-7485 - 900 PPM A.I.



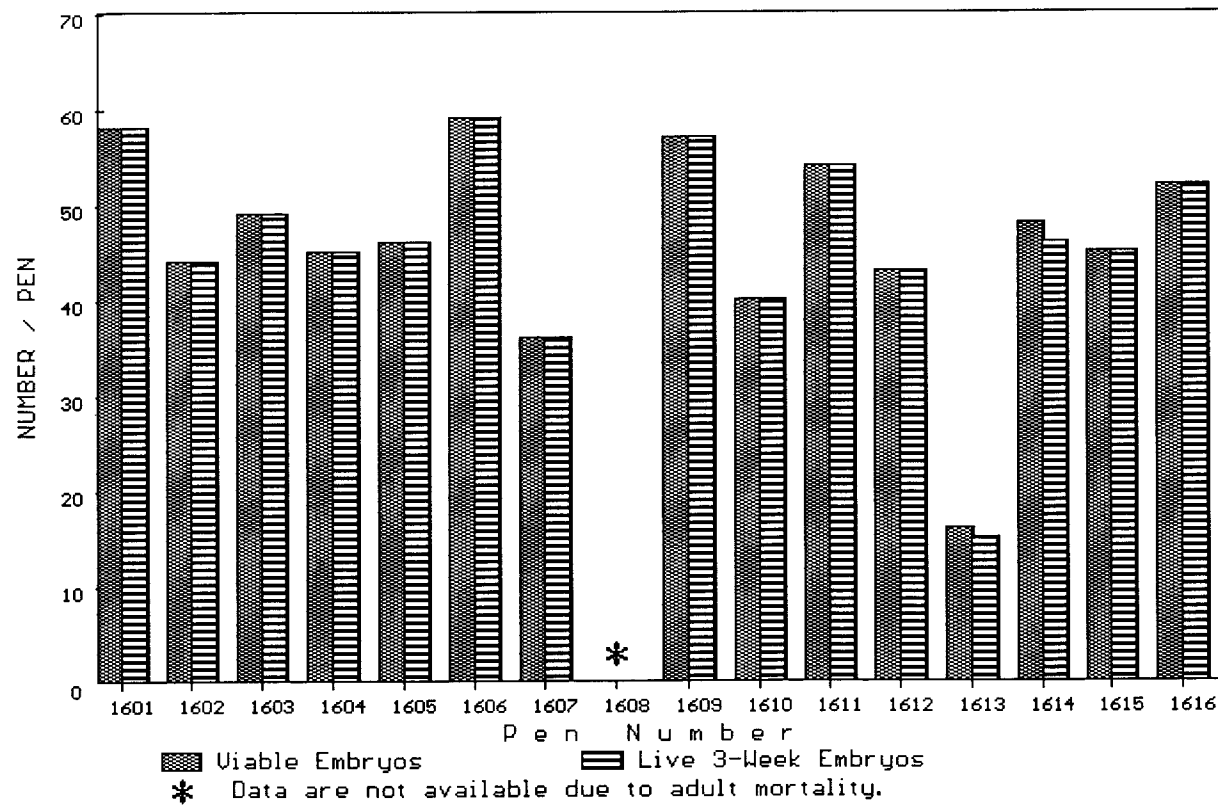
Reproductive Performance by Pen
Appendix VII - Table 4
Live 3-Week Embryos / Viable Embryos (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Live 3-Week	Viable Embr.	%	Arcsin Trans.	Live 3-Week	Viable Embr.	%	Arcsin Trans.	Live 3-Week	Viable Embr.	%	Arcsin Trans.	Live 3-Week	Viable Embr.	%	Arcsin Trans.
1	58	58	100	90.00	-	-	-	-	53	54	98	82.18	54	54	100	90.00
2	44	44	100	90.00	35	35	100	90.00	40	40	100	90.00	45	45	100	90.00
3	49	49	100	90.00	56	56	100	90.00	59	60	98	82.58	40	40	100	90.00
4	45	45	100	90.00	51	51	100	90.00	39	39	100	90.00	48	48	100	90.00
5	46	46	100	90.00	50	52	96	78.69	53	53	100	90.00	38	38	100	90.00
6	59	59	100	90.00	52	52	100	90.00	49	49	100	90.00	46	46	100	90.00
7	36	36	100	90.00	37	37	100	90.00	-	-	-	-	46	47	98	81.61
8	-	-	-	-	25	25	100	90.00	50	51	98	81.95	37	39	95	76.91
9	57	57	100	90.00	61	61	100	90.00	38	39	97	80.79	36	36	100	90.00
10	40	40	100	90.00	45	45	100	90.00	47	48	98	81.70	54	55	98	82.25
11	54	54	100	90.00	57	57	100	90.00	54	54	100	90.00	53	53	100	90.00
12	43	43	100	90.00	56	56	100	90.00	54	55	98	82.25	52	52	100	90.00
13	15	16	94	75.52	39	39	100	90.00	57	57	100	90.00	51	51	100	90.00
14	46	48	96	78.22	40	40	100	90.00	41	42	98	81.12	9	9	100	90.00
15	45	45	100	90.00	55	56	98	82.32	55	55	100	90.00	33	33	100	90.00
16	52	52	100	90.00	51	52	98	82.03	57	57	100	90.00	51	51	100	90.00
Total	689	692			710	714			746	753			693	697		
Mean	46	46	99	88.25	47	48	99	88.20	50	50	99	86.17	43	44	99	88.17
SD	11	11	2	4.65	10	10	1	3.80	7	7	1	4.26	11	11	1	4.07

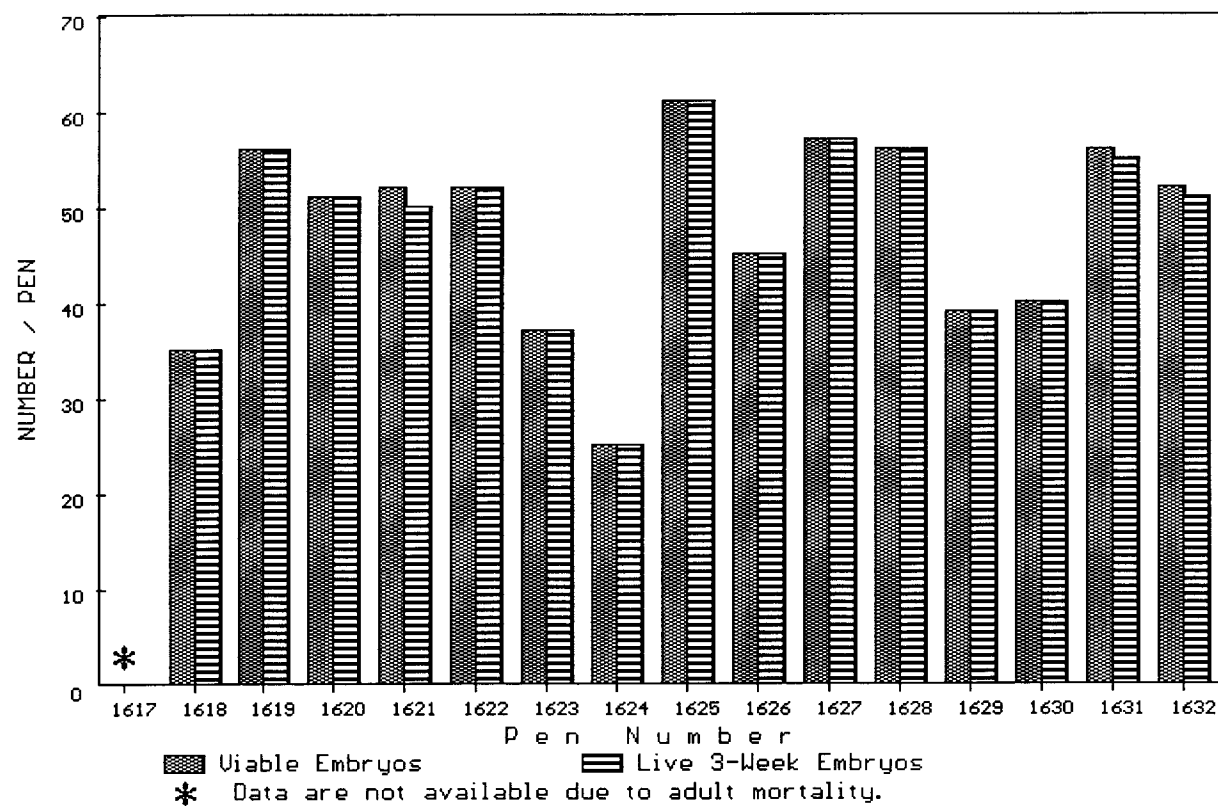
- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

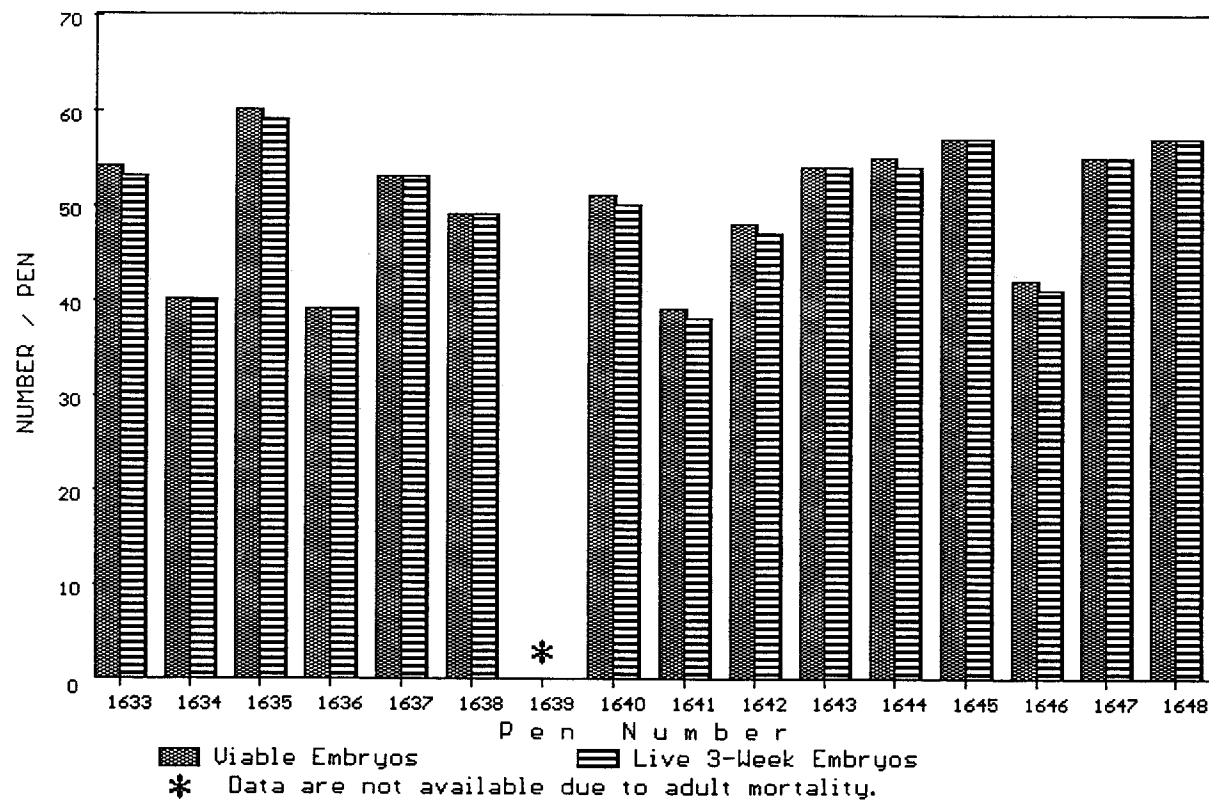
Appendix VII - Figure 4a
 Live 3-Week Embryos / Viable Embryos from a Northern Bobwhite
 Reproduction Study with T-7485 - Control



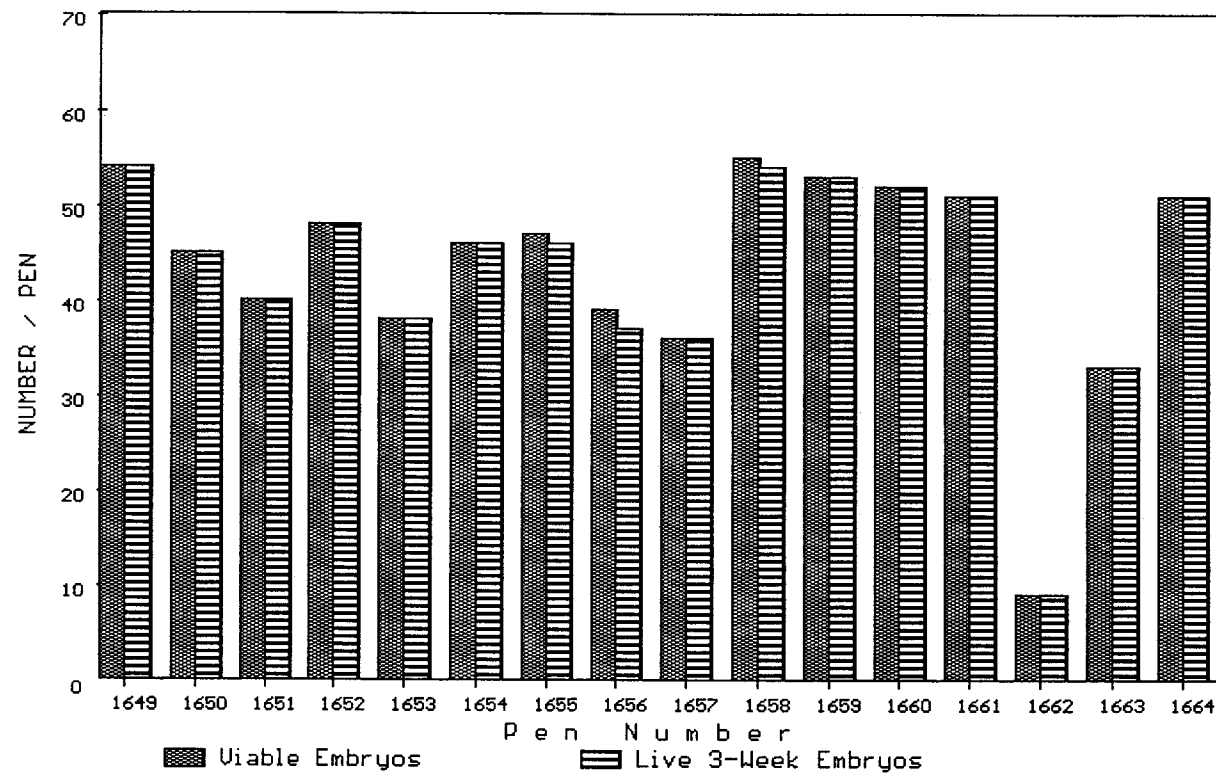
Appendix VII - Figure 4b
 Live 3-Week Embryos / Viable Embryos from a Northern Bobwhite
 Reproduction Study with T-7485 - 100 PPM A.I.



Appendix UII - Figure 4c
 Live 3-Week Embryos / Viable Embryos from a Northern Bobwhite
 Reproduction Study with T-7485 - 300 PPM A.I.



Appendix VII - Figure 4d
 Live 3-Week Embryos / Uiable Embryos from a Northern Bobwhite
 Reproduction Study with T-7485 - 900 PPM A.I.



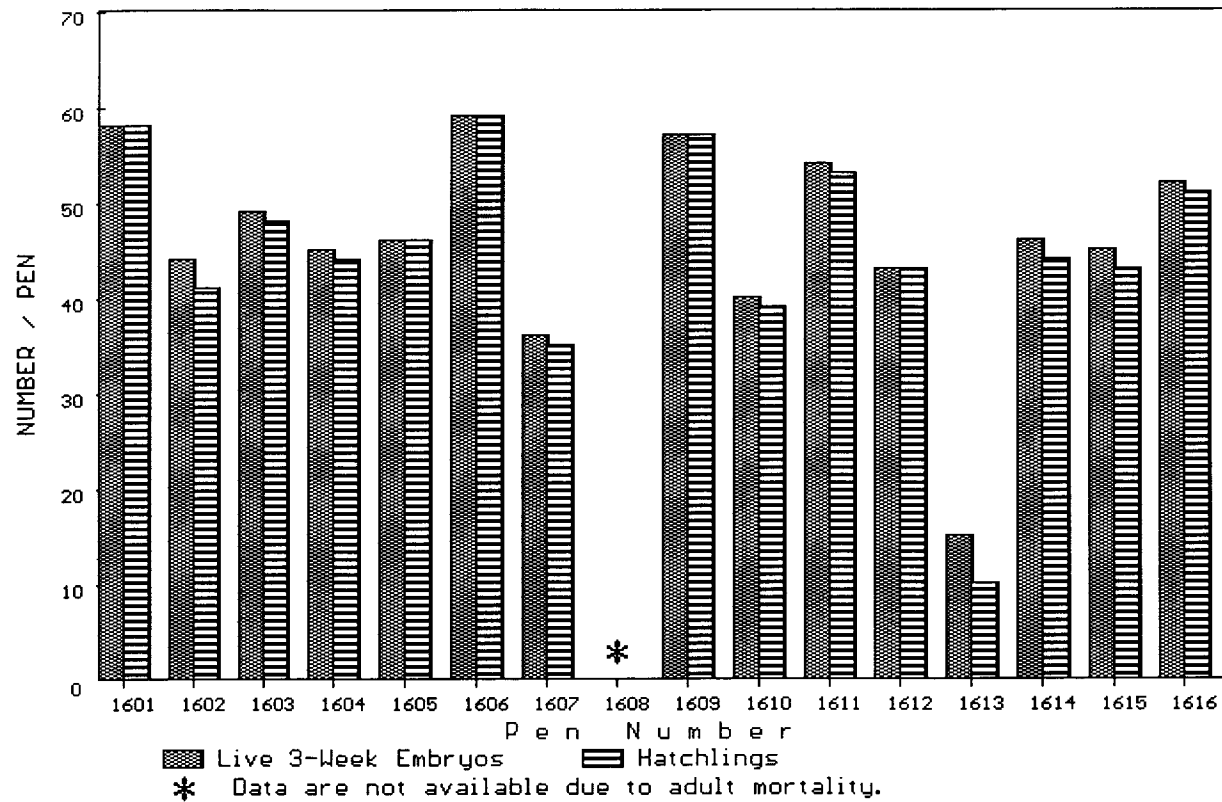
Reproductive Performance by Pen
Appendix VII - Table 5
Hatchlings / Live 3-Week Embryos (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Number Hatch.	Live 3-Week	%	Arcsin Trans.	Number Hatch.	Live 3-Week	%	Arcsin Trans.	Number Hatch.	Live 3-Week	%	Arcsin Trans.	Number Hatch.	Live 3-Week	%	Arcsin Trans.
1	58	58	100	90.00	-	-	-	-	46	53	87	68.69	53	54	98	82.18
2	41	44	93	74.86	35	35	100	90.00	40	40	100	90.00	45	45	100	90.00
3	48	49	98	81.79	55	56	98	82.32	57	59	97	79.39	40	40	100	90.00
4	44	45	98	81.43	51	51	100	90.00	37	39	95	76.91	47	48	98	81.70
5	46	46	100	90.00	48	50	96	78.46	49	53	92	74.05	38	38	100	90.00
6	59	59	100	90.00	52	52	100	90.00	47	49	96	78.34	46	46	100	90.00
7	35	36	97	80.41	37	37	100	90.00	-	-	-	-	42	46	91	72.85
8	-	-	-	-	22	25	88	69.73	48	50	96	78.46	35	37	95	76.56
9	57	57	100	90.00	61	61	100	90.00	36	38	95	76.74	35	36	97	80.41
10	39	40	97	80.90	44	45	98	81.43	46	47	98	81.61	53	54	98	82.18
11	53	54	98	82.18	56	57	98	82.39	53	54	98	82.18	50	53	94	76.24
12	43	43	100	90.00	54	56	96	79.11	49	54	91	72.28	49	52	94	76.10
13	10	15	67	54.74	39	39	100	90.00	51	57	89	71.07	50	51	98	81.95
14	44	46	96	77.96	39	40	97	80.90	39	41	95	77.24	9	9	100	90.00
15	43	45	96	77.83	50	55	91	72.45	55	55	100	90.00	32	33	97	79.98
16	51	52	98	82.03	48	51	94	75.96	50	57	88	69.49	50	51	98	81.95
Total	671	689			691	710			703	746			674	693		
Mean	45	46	96	81.61	46	47	97	82.85	47	50	94	77.76	42	43	97	82.63
SD	12	11	8	9.06	10	10	4	6.94	6	7	4	6.43	11	11	3	5.78

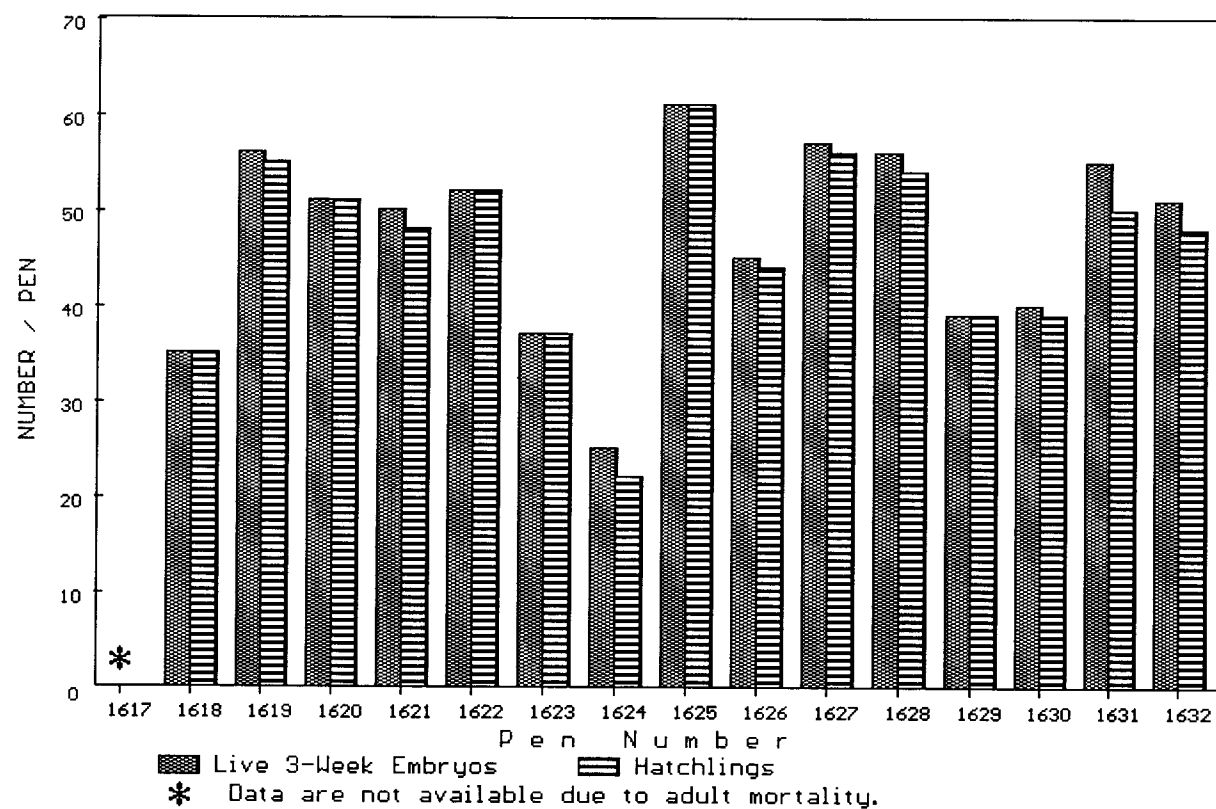
- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

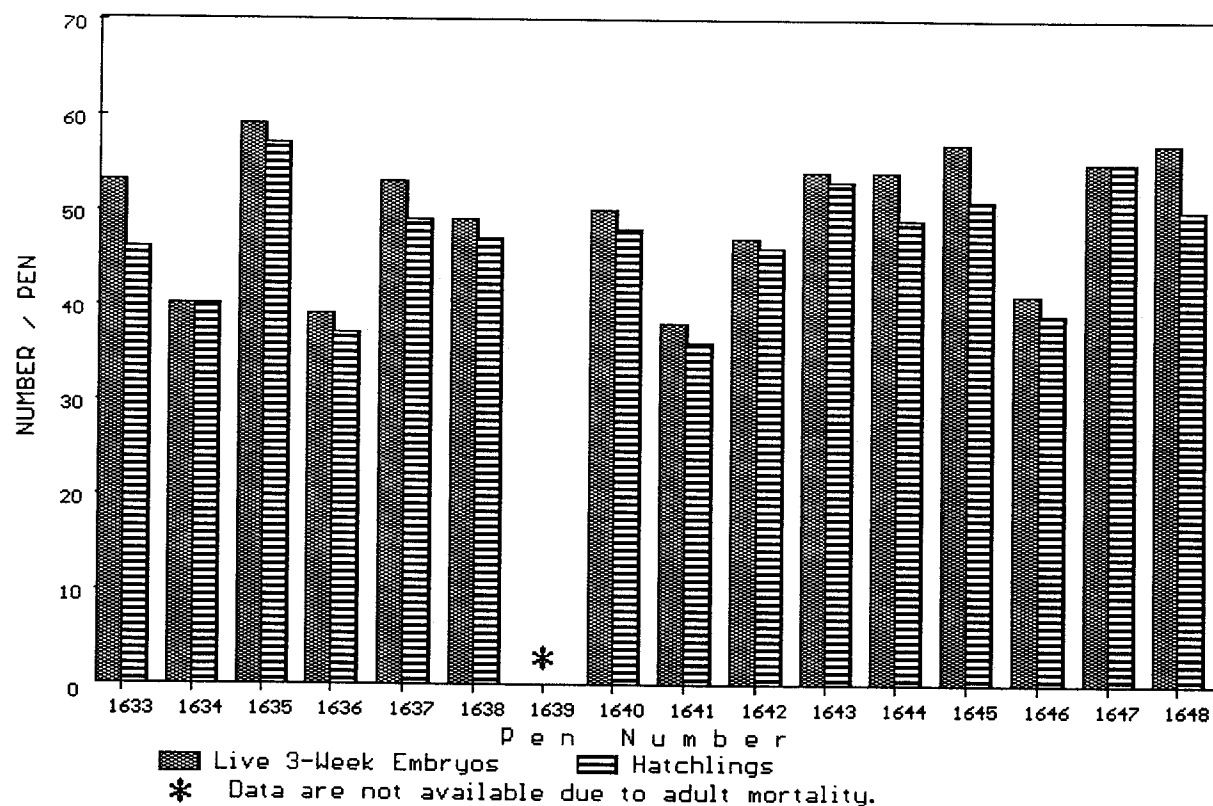
Appendix VII - Figure 5a
Hatchlings / Live 3-Week Embryos from a Northern Bobwhite
Reproduction Study with T-7485 - Control



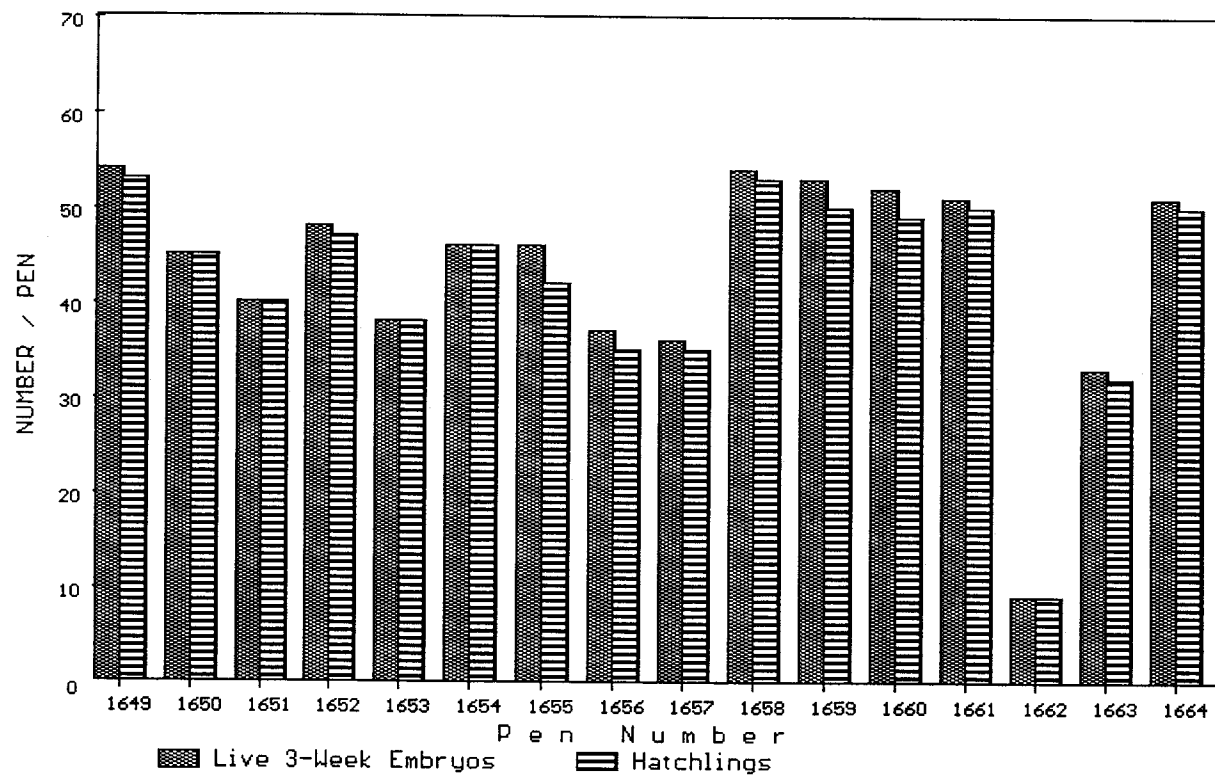
Appendix VII - Figure 5b
Hatchlings / Live 3-Week Embryos from a Northern Bobwhite
Reproduction Study with T-7485 - 100 PPM A.I.



Appendix VII - Figure 5c
Hatchlings / Live 3-Week Embryos from a Northern Bobwhite
Reproduction Study with T-7485 - 300 PPM A.I.



Appendix VII - Figure 5d
Hatchlings / Live 3-Week Embryos from a Northern Bobwhite
Reproduction Study with T-7485 - 900 PPM A.I.



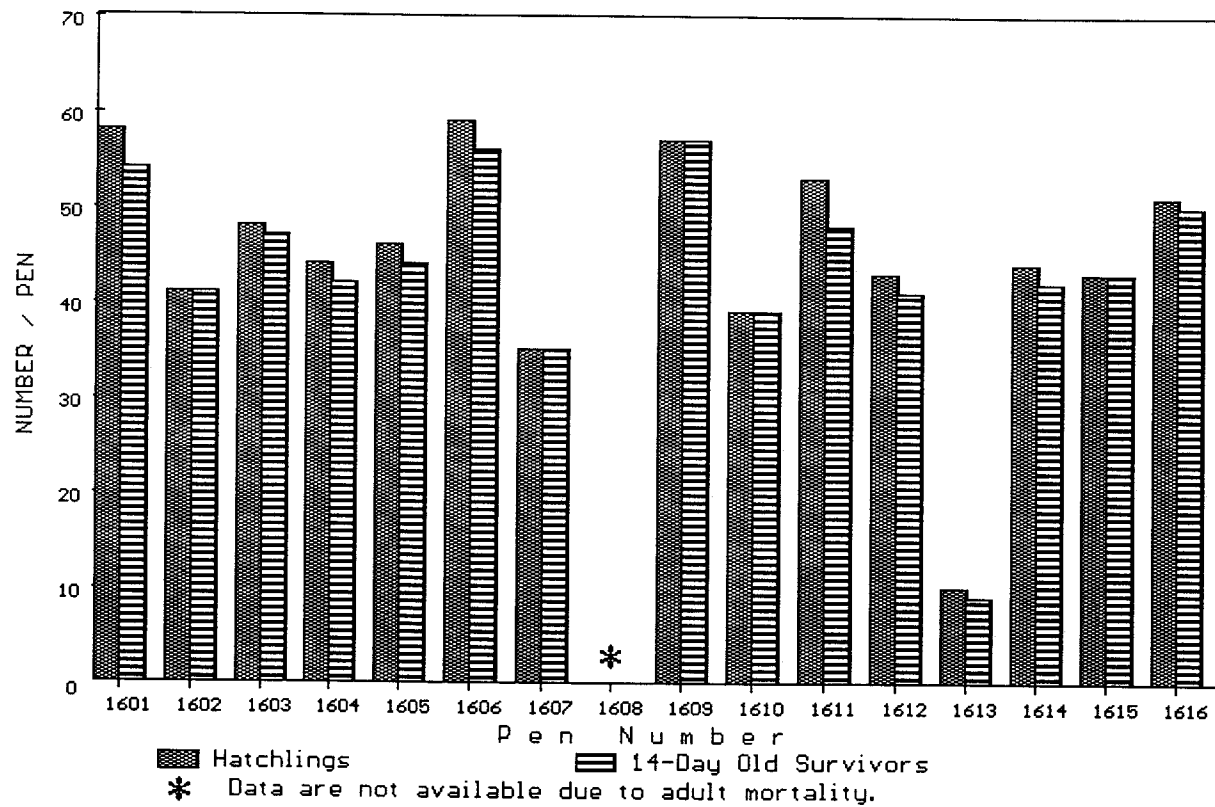
Reproductive Performance by Pen
Appendix VII - Table 6
14-Day Old Survivors / Hatchlings (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	14-Day Old	Number Hatch.	%	Arcsin Trans.	14-Day Old	Number Hatch.	%	Arcsin Trans.	14-Day Old	Number Hatch.	%	Arcsin Trans.	14-Day Old	Number Hatch.	%	Arcsin Trans.
1	54	58	93	74.77	-	-	-	-	43	46	93	75.20	53	53	100	90.00
2	41	41	100	90.00	34	35	97	80.27	40	40	100	90.00	43	45	96	77.83
3	47	48	98	81.70	45	55	82	64.76	56	57	98	82.39	40	40	100	90.00
4	42	44	95	77.69	47	51	92	73.74	35	37	95	76.56	45	47	96	78.10
5	44	46	96	77.96	39	48	81	64.34	48	49	98	81.79	35	38	92	73.68
6	56	59	95	76.97	49	52	94	76.10	43	47	91	73.04	43	46	93	75.20
7	35	35	100	90.00	36	37	97	80.54	-	-	-	-	35	42	83	65.91
8	-	-	-	-	15	22	68	55.66	46	48	96	78.22	32	35	91	72.98
9	57	57	100	90.00	61	61	100	90.00	35	36	97	80.41	33	35	94	76.17
10	39	39	100	90.00	41	44	93	74.86	46	46	100	90.00	52	53	98	82.10
11	48	53	91	72.11	55	56	98	82.32	53	53	100	90.00	44	50	88	69.73
12	41	43	95	77.55	52	54	96	78.90	46	49	94	75.67	48	49	98	81.79
13	9	10	90	71.57	39	39	100	90.00	49	51	96	78.58	47	50	94	75.82
14	42	44	95	77.69	38	39	97	80.79	33	39	85	66.91	8	9	89	70.53
15	43	43	100	90.00	48	50	96	78.46	54	55	98	82.25	31	32	97	79.82
16	50	51	98	81.95	47	48	98	81.70	47	50	94	75.82	44	50	88	69.73
Total	648	671			646	691			674	703			633	674		
Mean	43	45	96	81.33	43	46	93	76.83	45	47	96	79.79	40	42	94	76.84
SD	11	12	3	6.92	11	10	9	9.31	7	6	4	6.60	11	11	5	6.83

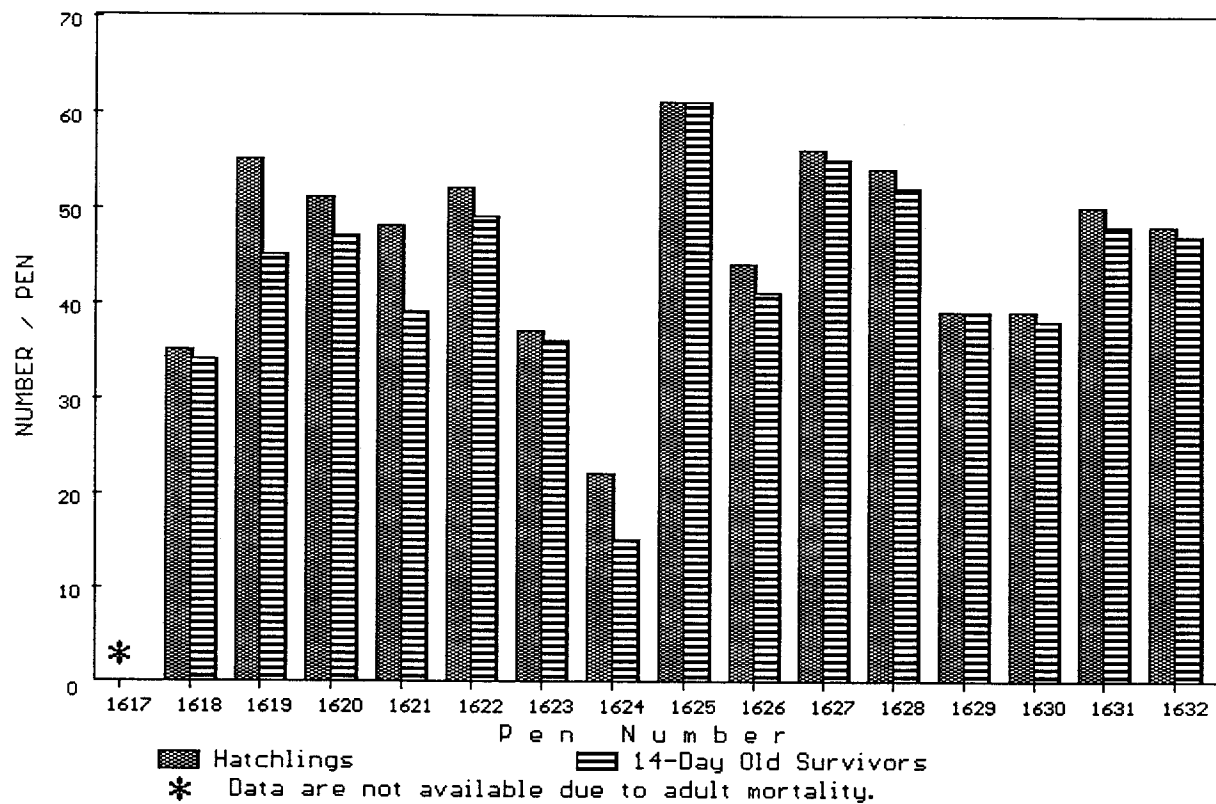
- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

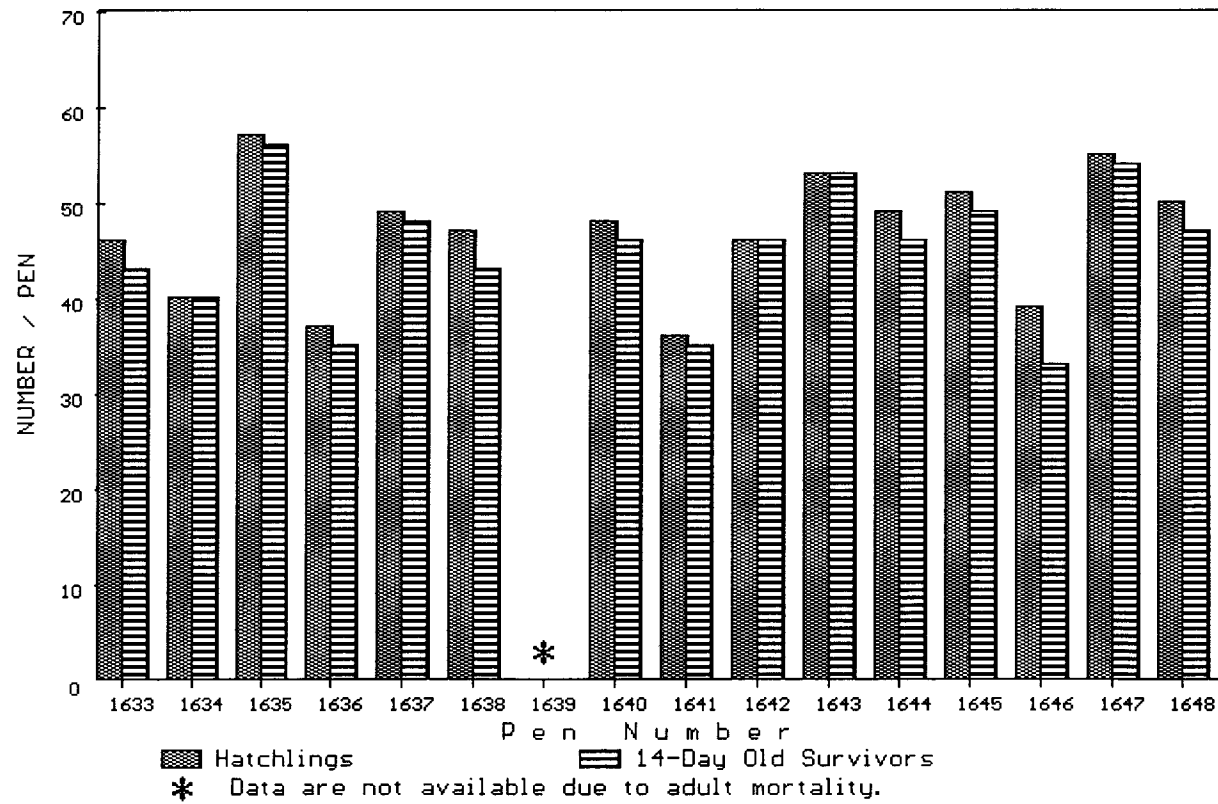
Appendix VII - Figure 6a
 14-Day Old Survivors / Hatchlings from a Northern Bobwhite
 Reproduction Study with T-7485 - Control



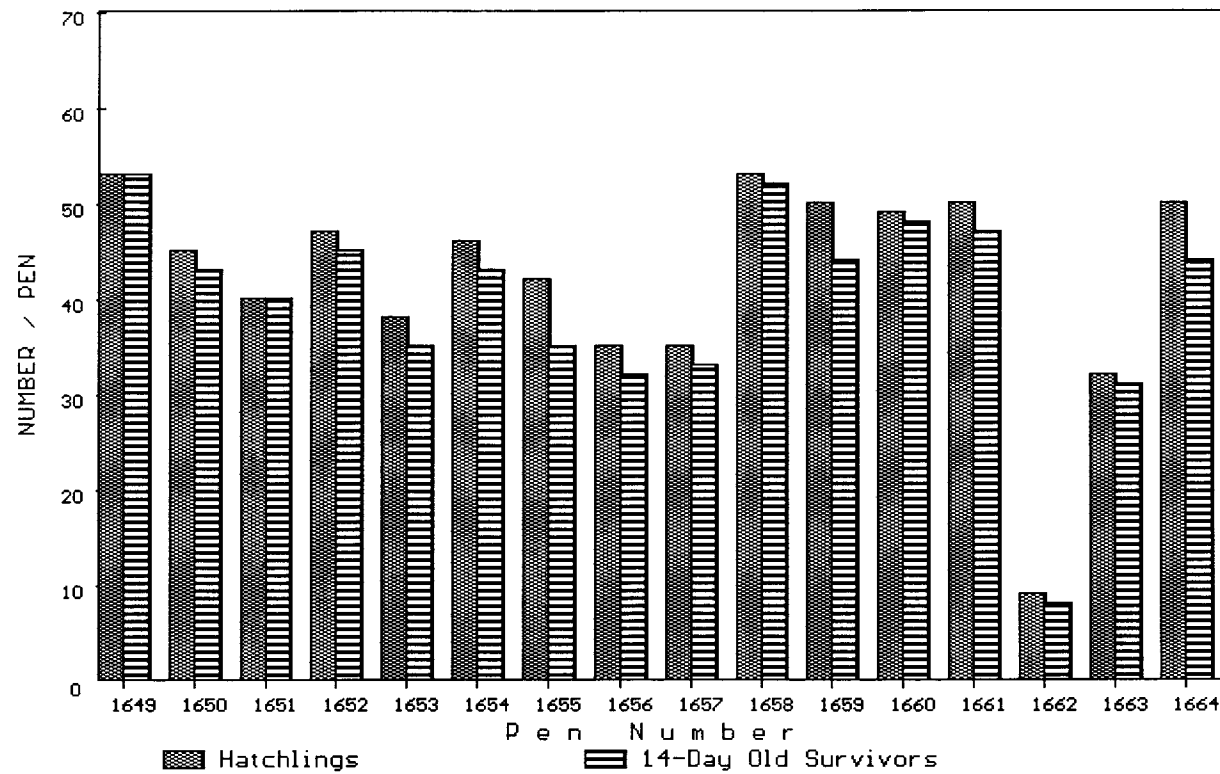
Appendix VII - Figure 6b
 14-Day Old Survivors / Hatchlings from a Northern Bobwhite
 Reproduction Study with T-7485 - 100 PPM A.I.



Appendix VII - Figure 6c
 14-Day Old Survivors / Hatchlings from a Northern Bobwhite
 Reproduction Study with T-7485 - 300 PPM A.I.



Appendix VII - Figure 6d
 14-Day Old Survivors / Hatchlings from a Northern Bobwhite
 Reproduction Study with T-7485 - 900 PPM A.I.



Reproductive Performance by Pen
Appendix VII - Table 7
Hatchlings / Eggs Set (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Number Hatch.	Eggs Set	%	Arcsin Trans.	Number Hatch.	Eggs Set	%	Arcsin Trans.	Number Hatch.	Eggs Set	%	Arcsin Trans.	Number Hatch.	Eggs Set	%	Arcsin Trans.
1	58	62	94	75.29	-	-	-	-	46	54	85	67.36	53	56	95	76.62
2	41	56	73	58.83	35	36	97	80.41	40	42	95	77.40	45	45	100	90.00
3	48	49	98	81.79	55	58	95	76.85	57	63	90	72.02	40	40	100	90.00
4	44	47	94	75.37	51	51	100	90.00	37	56	66	54.37	47	48	98	81.70
5	46	53	87	68.69	48	53	91	72.11	49	58	84	66.80	38	39	97	80.79
6	59	60	98	82.58	52	52	100	90.00	47	51	92	73.74	46	59	78	62.00
7	35	38	92	73.68	37	39	95	76.91	-	-	-	-	42	53	79	62.90
8	-	-	-	-	22	38	58	49.54	48	56	86	67.79	35	41	85	67.51
9	57	62	92	73.50	61	62	98	82.70	36	50	72	58.05	35	37	95	76.56
10	39	47	83	65.63	44	50	88	69.73	46	48	96	78.22	53	58	91	72.93
11	53	57	93	74.64	56	57	98	82.39	53	55	96	79.01	50	54	93	74.21
12	43	44	98	81.33	54	56	96	79.11	49	56	88	69.30	49	53	92	74.05
13	10	57	18	24.76	39	48	81	64.34	51	63	81	64.12	50	51	98	81.95
14	44	49	90	71.37	39	51	76	60.98	39	48	81	64.34	9	11	82	64.76
15	43	53	81	64.25	50	56	89	70.89	55	55	100	90.00	32	36	89	70.53
16	51	53	96	78.80	48	56	86	67.79	50	59	85	67.01	50	55	91	72.45
Total	671	787			691	763			703	814			674	736		
Mean	45	52	86	70.03	46	51	90	74.25	47	54	86	69.97	42	46	91	74.93
SD	12	7	20	14.23	10	8	11	10.93	6	6	9	8.89	11	12	7	8.53

- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

Reproductive Performance by Pen
Appendix VII - Table 8
14-Day Old Survivors / Eggs Set (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	14-Day Old	Eggs Set	%	Arcsin Trans.	14-Day Old	Eggs Set	%	Arcsin Trans.	14-Day Old	Eggs Set	%	Arcsin Trans.	14-Day Old	Eggs Set	%	Arcsin Trans.
1	54	62	87	68.95	-	-	-	-	43	54	80	63.17	53	56	95	76.62
2	41	56	73	58.83	34	36	94	76.37	40	42	95	77.40	43	45	96	77.83
3	47	49	96	78.34	45	58	78	61.74	56	63	89	70.53	40	40	100	90.00
4	42	47	89	70.96	47	51	92	73.74	35	56	63	52.24	45	48	94	75.52
5	44	53	83	65.66	39	53	74	59.07	48	58	83	65.47	35	39	90	71.32
6	56	60	93	75.04	49	52	94	76.10	43	51	84	66.67	43	59	73	58.62
7	35	38	92	73.68	36	39	92	73.90	-	-	-	-	35	53	66	54.35
8	-	-	-	-	15	38	39	38.92	46	56	82	65.00	32	41	78	62.06
9	57	62	92	73.50	61	62	98	82.70	35	50	70	56.79	33	37	89	70.80
10	39	47	83	65.63	41	50	82	64.90	46	48	96	78.22	52	58	90	71.24
11	48	57	84	66.59	55	57	96	79.20	53	55	96	79.01	44	54	81	64.51
12	41	44	93	74.86	52	56	93	74.50	46	56	82	65.00	48	53	91	72.11
13	9	57	16	23.41	39	48	81	64.34	49	63	78	61.87	47	51	92	73.74
14	42	49	86	67.79	38	51	75	59.68	33	48	69	56.01	8	11	73	58.52
15	43	53	81	64.25	48	56	86	67.79	54	55	98	82.25	31	36	86	68.12
16	50	53	94	76.24	47	56	84	66.37	47	59	80	63.19	44	55	80	63.43
Total	648	787			646	763			674	814			633	736		
Mean	43	52	83	66.92	43	51	84	67.96	45	54	83	66.86	40	46	86	69.30
SD	11	7	19	13.16	11	8	15	10.85	7	6	11	8.99	11	12	10	8.93

- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

Reproductive Performance by Pen
Appendix VII - Table 9
Hatchlings / Maximum Set (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	Number Hatch.	Max. Set	%	Arcsin Trans.	Number Hatch.	Max. Set	%	Arcsin Trans.	Number Hatch.	Max. Set	%	Arcsin Trans.	Number Hatch.	Max. Set	%	Arcsin Trans.
1	58	63	92	73.64	-	-	-	-	46	63	73	58.70	53	63	84	66.52
2	41	63	65	53.78	35	63	56	48.19	40	63	63	52.83	45	63	71	57.69
3	48	63	76	60.79	55	63	87	69.12	57	63	90	72.02	40	63	63	52.83
4	44	63	70	56.69	51	63	81	64.12	37	63	59	50.03	47	63	75	59.74
5	46	63	73	58.70	48	63	76	60.79	49	63	78	61.87	38	63	60	50.95
6	59	63	94	75.41	52	63	83	65.30	47	63	75	59.74	46	63	73	58.70
7	35	63	56	48.19	37	63	59	50.03	-	-	-	-	42	63	67	54.74
8	-	-	-	-	22	63	35	36.22	48	63	76	60.79	35	63	56	48.19
9	57	63	90	72.02	61	63	97	79.74	36	63	57	49.11	35	63	56	48.19
10	39	63	62	51.89	44	63	70	56.69	46	63	73	58.70	53	63	84	66.52
11	53	63	84	66.52	56	63	89	70.53	53	63	84	66.52	50	63	79	62.98
12	43	63	68	55.71	54	63	86	67.79	49	63	78	61.87	49	63	78	61.87
13	10	63	16	23.48	39	63	62	51.89	51	63	81	64.12	50	63	79	62.98
14	44	63	70	56.69	39	63	62	51.89	39	63	62	51.89	9	63	14	22.21
15	43	63	68	55.71	50	63	79	62.98	55	63	87	69.12	32	63	51	45.45
16	51	63	81	64.12	48	63	76	60.79	50	63	79	62.98	50	63	79	62.98
Total	671	945			691	945			703	945			674	1008		
Mean	45	63	71	58.22	46	63	73	59.74	47	63	74	60.02	42	63	67	55.16
SD	12	0	19	12.59	10	0	16	10.84	6	0	10	6.78	11	0	18	11.04

- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

Reproductive Performance by Pen
Appendix VII - Table 10
14-Day Old Survivors / Maximum Set (%)
from a Northern Bobwhite Reproduction Study with T-7485

Replicate	0 PPM A.I.				100 PPM A.I.				300 PPM A.I.				900 PPM A.I.			
	14-Day Old	Max. Set	%	Arcsin Trans.	14-Day Old	Max. Set	%	Arcsin Trans.	14-Day Old	Max. Set	%	Arcsin Trans.	14-Day Old	Max. Set	%	Arcsin Trans.
1	54	63	86	67.79	-	-	-	-	43	63	68	55.71	53	63	84	66.52
2	41	63	65	53.78	34	63	54	47.28	40	63	63	52.83	43	63	68	55.71
3	47	63	75	59.74	45	63	71	57.69	56	63	89	70.53	40	63	63	52.83
4	42	63	67	54.74	47	63	75	59.74	35	63	56	48.19	45	63	71	57.69
5	44	63	70	56.69	39	63	62	51.89	48	63	76	60.79	35	63	56	48.19
6	56	63	89	70.53	49	63	78	61.87	43	63	68	55.71	43	63	68	55.71
7	35	63	56	48.19	36	63	57	49.11	-	-	-	-	35	63	56	48.19
8	-	-	-	-	15	63	24	29.21	46	63	73	58.70	32	63	51	45.45
9	57	63	90	72.02	61	63	97	79.74	35	63	56	48.19	33	63	52	46.36
10	39	63	62	51.89	41	63	65	53.78	46	63	73	58.70	52	63	83	65.30
11	48	63	76	60.79	55	63	87	69.12	53	63	84	66.52	44	63	70	56.69
12	41	63	65	53.78	52	63	83	65.30	46	63	73	58.70	48	63	76	60.79
13	9	63	14	22.21	39	63	62	51.89	49	63	78	61.87	47	63	75	59.74
14	42	63	67	54.74	38	63	60	50.95	33	63	52	46.36	8	63	13	20.88
15	43	63	68	55.71	48	63	76	60.79	54	63	86	67.79	31	63	49	44.55
16	50	63	79	62.98	47	63	75	59.74	47	63	75	59.74	44	63	70	56.69
Total	648	945			646	945			674	945			633	1008		
Mean	43	63	69	56.37	43	63	68	56.54	45	63	71	58.02	40	63	63	52.58
SD	11	0	18	11.72	11	0	17	11.38	7	0	11	7.16	11	0	17	10.81

- Data are not available due to adult mortality.

Differences between the control and each treatment group were not significant ($p > 0.05$).

Reproductive Performance by Week and Pen
Appendix VIII - Table 1a
Eggs Laid by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	Totals
Control	LOT ¹																	
	A	5	3	0	2	5	6	3	-	4	4	3	0	2	3	1	3	44
	B	7	3	4	4	5	6	5	-	7	3	6	0	6	4	4	4	68
	C	6	6	5	5	5	6	6	-	7	4	6	2	6	4	5	5	78
	D	7	7	6	5	6	6	6	-	7	5	7	4	6	6	7	6	91
	E	7	7	6	5	5	7	4	-	7	6	7	7	7	7	7	7	96
	F	7	7	5	6	6	7	6	-	7	6	6	7	7	6	7	7	97
	G	7	7	7	6	7	7	7	-	7	5	7	7	7	6	7	7	101
	H	7	7	6	6	6	7	1	-	7	6	6	7	7	6	7	7	93
	I	7	7	7	6	7	7	0	-	7	7	6	7	7	6	7	7	95
J	7	7	7	7	7	7	5	-	7	7	8	7	7	6	7	7	103	
Totals		67	61	53	52	59	66	43	-	67	53	62	48	62	54	59	60	866

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 1b
Eggs Laid by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	
LOT ¹																	
A	-	0	1	1	0	0	1	0	6	1	3	2	0	2	1	4	22
B	-	2	6	3	1	4	3	0	6	8	5	4	4	4	5	4	59
C	-	5	7	5	7	5	2	0	7	7	6	6	5	5	6	6	79
D	-	5	7	6	7	6	4	3	7	6	7	7	6	6	7	4	88
100 E	-	5	7	7	7	6	4	7	7	5	6	7	5	6	7	8	94
F	-	5	7	7	7	7	4	6	7	6	7	7	6	7	7	7	97
G	-	4	7	7	7	7	6	7	7	6	7	7	6	6	7	8	99
H	-	5	7	6	7	7	7	6	6	5	7	7	7	6	7	7	97
I	-	5	7	7	7	7	7	7	7	6	7	7	7	7	7	7	102
J	-	5	7	7	7	8	7	7	7	6	7	7	6	7	7	8	103
Totals	-	41	63	56	57	57	45	43	67	56	62	61	52	56	61	63	840

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 1c
Eggs Laid by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																Totals
		1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	
300	LOT ¹																	
	A	3	0	7	2	3	3	-	2	2	0	1	1	8	2	1	7	42
	B	4	0	7	6	6	4	-	4	3	3	5	6	6	4	4	5	67
	C	5	1	7	6	6	5	-	7	6	4	7	6	6	3	6	6	81
	D	7	4	7	7	7	7	-	6	5	6	6	7	7	6	7	7	96
	E	7	7	6	6	7	6	-	7	7	7	6	7	7	6	7	7	100
	F	7	7	7	7	7	6	-	7	6	7	7	7	6	7	7	7	102
	G	7	7	7	7	7	6	-	7	6	7	7	7	8	5	7	7	102
	H	7	5	7	6	6	6	-	7	7	5	7	6	7	6	7	6	95
	I	7	7	7	7	7	7	-	7	7	7	7	7	6	7	7	7	104
J	7	8	7	7	7	6	-	7	7	7	7	8	8	7	7	8	108	
Totals		61	46	69	61	63	56	-	61	56	53	60	62	69	53	60	67	897

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

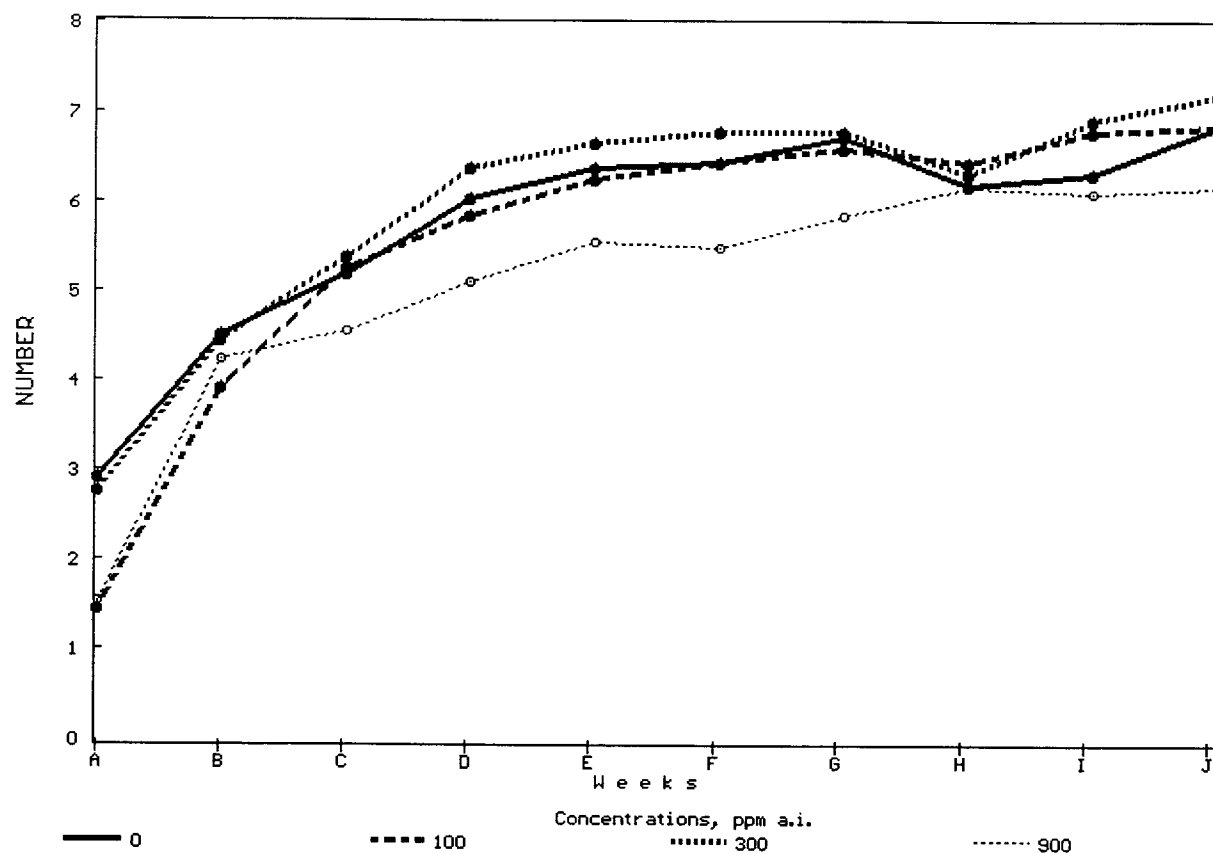
Reproductive Performance by Week and Pen
Appendix VIII - Table 1d
Eggs Laid by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662 ²	1663	1664	Totals
900	LOT ¹																	
	A	5	0	0	1	0	2	0	0	0	6	3	3	0	0	2	3	25
	B	5	4	1	3	2	7	7	3	0	5	6	5	5	3	5	7	68
	C	5	4	4	4	4	7	4	4	2	5	6	4	4	5	4	7	73
	D	6	5	6	6	3	6	7	5	4	5	6	6	6	4	0	7	82
	E	7	6	5	5	6	7	7	6	5	7	5	7	7	2	0	7	89
	F	7	7	5	6	5	7	5	5	5	7	6	7	7	0	2	7	88
	G	6	6	5	7	5	7	7	6	5	7	7	6	7	0	6	7	94
	H	7	6	6	7	6	7	7	6	6	7	7	6	7	0	7	7	99
	I	7	7	6	7	6	7	7	5	8	7	7	7	7	0	6	4	98
J	7	7	6	7	6	7	7	6	6	7	6	7	7	0	8	5	99	
Totals		62	52	44	53	43	64	58	46	41	63	59	58	57	14	40	61	815

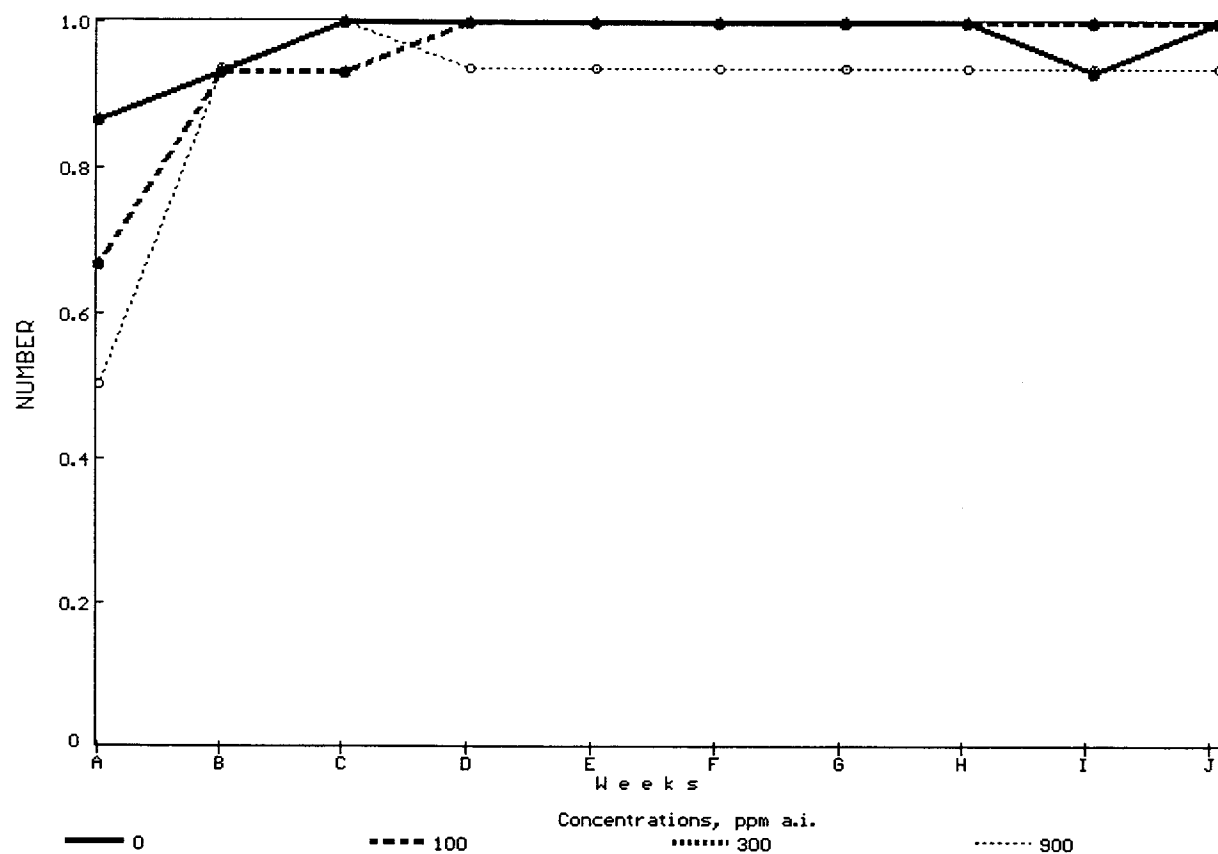
¹ LOT A - Eggs Set During Week 13; LOT B - Eggs Set During Week 14; etc.

²Female noted with foot lesions beginning during Week 16 of the test, and did not lay eggs after Week 16.

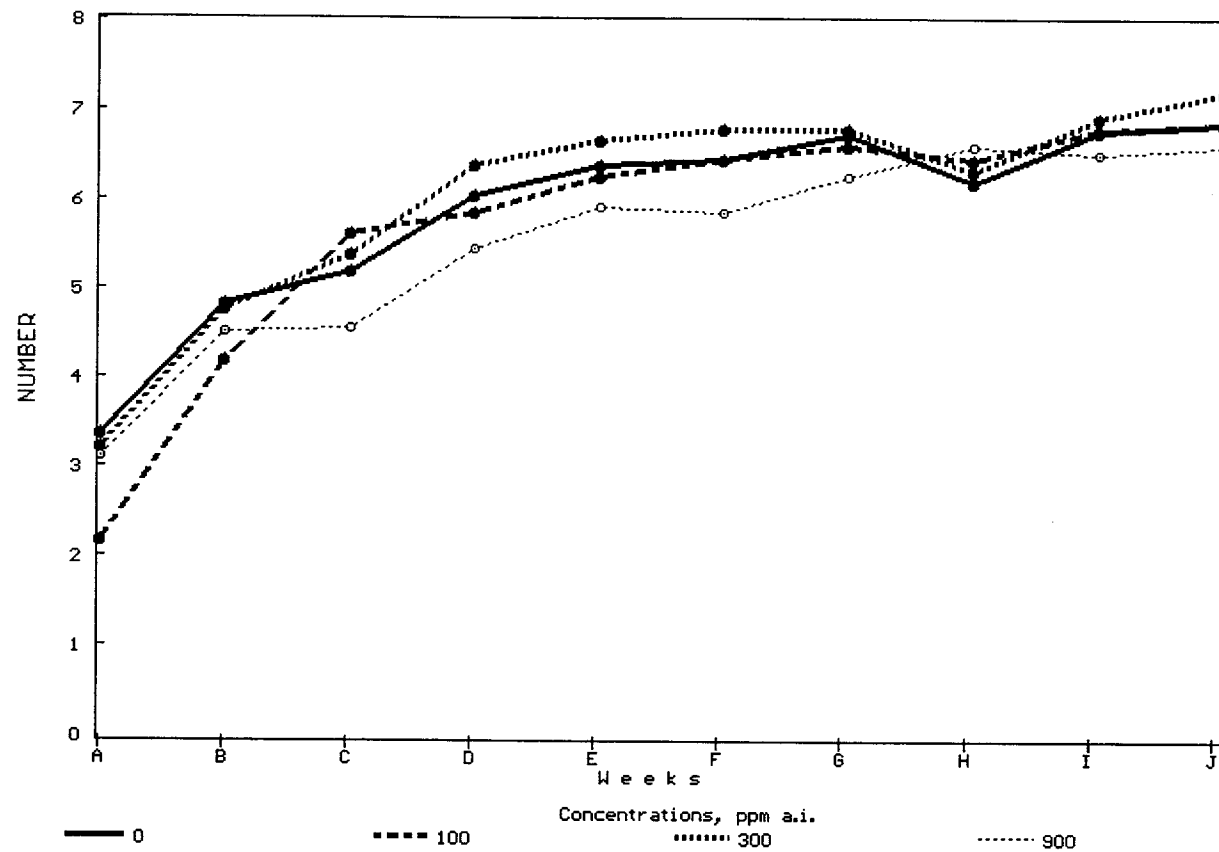
Appendix VIII - Figure 1
 Eggs Laid per Hen from a Northern Bobwhite Reproduction Study with T-7485



Appendix VIII - Figure 2
Hens Laying per Pen from a Northern Bobwhite Reproduction Study with T-7485



Appendix VIII - Figure 3
 Eggs per Laying Hen from a Northern Bobwhite Reproduction Study with T-7485



Reproductive Performance by Week and Pen
Appendix VIII - Table 2a
Eggs Cracked by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	
Control	LOT ¹																
	A	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	B	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	C	0	0	0	0	0	0	1	-	0	0	0	0	0	0	0	1
	D	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	G	0	0	0	0	1	0	-	0	0	0	0	0	0	0	0	1
	H	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	I	0	0	0	0	0	0	-	0	0	0	0	0	0	0	1	1
	J	0	0	0	0	0	1	-	0	0	0	0	0	0	0	0	1
Totals		0	0	0	0	1	1	1	-	0	0	0	0	0	0	1	4

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 2b
Eggs Cracked by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S															Totals
		1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	
100	LOT ¹																
	A	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	D	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	-	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	F	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	-	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	H	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	I	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		-	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 2c
Eggs Cracked by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	
300	LOT ¹																
	A	0	0	0	0	0	-	0	1	0	0	1	0	0	0	0	2
	B	0	0	1	0	0	-	0	0	0	0	0	0	0	0	1	2
	C	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	D	1	0	0	0	0	-	0	0	0	0	0	0	0	0	0	1
	E	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	G	0	0	0	0	0	-	0	0	0	0	0	0	0	0	1	1
	H	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	I	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	J	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
Totals		1	0	1	0	0	-	0	1	0	0	1	0	0	0	2	6

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 2d
Eggs Cracked by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																Totals
		1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	
900	LOT ¹																	
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	D	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
	E	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	
Totals		1	1	0	0	0	0	1	0	0	0	0	0	2	1	0	1	7

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 3a
Eggs Set by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	Totals
Control	LOT ¹																	
	A	4	3	0	2	4	6	2	-	3	3	2	0	1	3	0	3	36
	B	7	2	4	3	5	5	5	-	7	2	6	0	6	3	4	3	62
	C	5	6	4	5	4	6	4	-	6	4	5	2	5	4	4	5	69
	D	7	6	6	4	6	5	6	-	7	4	7	3	6	5	6	5	83
	E	6	7	5	5	4	7	3	-	6	6	6	7	6	7	6	7	88
	F	7	6	5	5	6	6	6	-	7	5	6	6	7	5	7	6	90
	G	6	7	6	6	5	7	6	-	6	5	6	7	6	6	6	7	92
	H	7	6	6	5	6	6	1	-	7	5	6	6	7	5	7	6	86
	I	6	7	6	6	6	7	0	-	6	7	5	7	6	6	6	5	86
J	7	6	7	6	7	5	5	-	7	6	8	6	7	5	7	6	95	
Totals		62	56	49	47	53	60	38	-	62	47	57	44	57	49	53	53	787

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 3b
Eggs Set by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	
LOT ¹																	
A	-	0	0	1	0	0	0	0	5	1	2	2	0	2	0	4	17
B	-	1	6	2	1	3	3	0	6	7	5	3	4	3	5	3	52
C	-	5	6	5	6	5	1	0	6	6	5	6	4	5	5	6	71
D	-	4	7	5	7	5	4	1	7	5	7	6	6	5	7	3	79
100 E	-	5	6	7	6	6	3	7	6	5	5	7	4	6	6	6	85
F	-	4	7	6	7	6	4	5	7	5	7	6	6	6	7	6	89
G	-	4	6	7	6	7	4	7	6	6	6	7	5	6	6	8	91
H	-	4	7	5	7	6	7	5	6	4	7	6	7	5	7	6	89
I	-	5	6	7	6	7	6	7	6	6	6	7	6	7	6	7	95
J	-	4	7	6	7	7	7	6	7	5	7	6	6	6	7	7	95
Totals	-	36	58	51	53	52	39	38	62	50	57	56	48	51	56	56	763

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 3c
Eggs Set by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	Totals
300	LOT ¹																	
	A	2	0	6	2	2	3	-	2	0	0	0	0	7	2	0	7	33
	B	4	0	6	5	6	3	-	3	3	2	5	5	6	3	4	3	58
	C	4	1	6	6	5	5	-	7	5	4	6	6	5	3	5	6	74
	D	6	3	7	6	7	6	-	5	5	5	6	6	7	5	7	6	87
	E	6	7	5	6	6	6	-	7	6	7	5	7	6	6	6	7	93
	F	7	6	7	6	7	5	-	6	6	6	7	6	6	6	7	6	94
	G	5	7	6	7	6	6	-	7	5	7	6	7	7	5	6	6	93
	H	7	4	7	5	6	5	-	6	7	4	7	5	7	5	7	5	87
	I	6	7	6	7	6	7	-	7	6	7	6	7	5	7	6	7	97
J	7	7	7	6	7	5	-	6	7	6	7	7	7	6	7	6	98	
Totals		54	42	63	56	58	51	-	56	50	48	55	56	63	48	55	59	814

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 3d
Eggs Set by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	
LOT ¹																	
A	4	0	0	1	0	2	0	0	0	6	2	3	0	0	1	3	22
B	5	3	1	2	2	6	7	2	0	4	6	4	5	2	5	6	60
C	4	3	3	4	3	7	3	4	1	5	5	4	3	4	3	7	63
D	5	4	6	5	3	5	7	4	4	4	6	5	6	3	0	5	72
900 E	6	6	4	5	5	7	6	6	4	7	4	7	5	2	0	7	81
F	7	6	5	5	5	6	5	4	5	6	6	6	7	0	2	6	81
G	5	5	4	7	4	7	6	6	4	7	6	6	6	0	5	7	85
H	7	5	6	6	6	6	7	5	6	6	7	5	7	0	7	6	92
I	6	7	5	7	5	7	6	5	7	7	6	7	6	0	5	4	90
J	7	6	6	6	6	6	6	5	6	6	6	6	6	0	8	4	90
Totals	56	45	40	48	39	59	53	41	37	58	54	53	51	11	36	55	736

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 4a
Viable Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	
LOT ¹																	
A	2	0	0	1	2	5	0	-	0	0	1	0	1	3	0	2	17
B	7	0	4	3	5	5	5	-	5	0	6	0	4	3	4	3	54
C	5	0	4	5	4	6	4	-	6	4	5	1	2	4	4	5	59
D	7	5	6	4	6	5	6	-	7	4	7	3	3	5	6	5	79
Control E	6	7	5	5	4	7	3	-	6	6	6	7	3	7	6	7	85
F	7	6	5	5	6	6	6	-	7	5	6	6	2	5	7	6	85
G	6	7	6	6	5	7	6	-	6	5	4	7	1	6	6	7	85
H	6	6	6	5	6	6	1	-	7	5	6	6	0	5	6	6	77
I	6	7	6	6	5	7	0	-	6	5	5	7	0	6	1	5	72
J	6	6	7	5	3	5	5	-	7	6	8	6	0	4	5	6	79
Totals	58	44	49	45	46	59	36	-	57	40	54	43	16	48	45	52	692

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 4b
Viable Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	
LOT ¹																	
A	-	0	0	1	0	0	0	0	4	0	2	2	0	1	0	3	13
B	-	1	6	2	1	3	3	0	6	7	5	3	0	3	5	2	47
C	-	5	5	5	6	5	1	0	6	6	5	6	0	3	5	5	63
D	-	4	7	5	7	5	4	0	7	4	7	6	6	5	7	3	77
100 E	-	5	6	7	6	6	3	1	6	5	5	7	4	4	6	5	76
F	-	4	7	6	7	6	4	4	7	5	7	6	6	6	7	6	88
G	-	4	6	7	6	7	4	7	6	6	6	7	5	5	6	8	90
H	-	3	6	5	7	6	6	3	6	2	7	6	6	5	7	6	81
I	-	5	6	7	6	7	6	5	6	6	6	7	6	4	6	7	90
J	-	4	7	6	6	7	6	5	7	4	7	6	6	4	7	7	89
Totals	-	35	56	51	52	52	37	25	61	45	57	56	39	40	56	52	714

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 4c
Viable Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																
	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	Totals
LOT ¹																	
A	2	0	4	2	0	2	-	0	0	0	0	0	2	0	0	6	18
B	4	0	6	3	4	3	-	3	0	2	4	4	6	3	4	2	48
C	4	0	6	0	5	5	-	6	0	4	6	6	5	3	5	6	61
D	6	2	7	0	7	6	-	5	4	5	6	6	7	5	7	6	79
300 E	6	7	5	3	6	6	-	7	6	7	5	7	6	6	6	7	90
F	7	6	7	6	6	5	-	6	5	6	7	6	6	6	7	6	92
G	5	7	6	7	6	6	-	6	5	7	6	7	7	5	6	6	92
H	7	4	7	5	6	4	-	5	6	4	7	5	6	3	7	5	81
I	6	7	6	7	6	7	-	7	6	7	6	7	5	7	6	7	97
J	7	7	6	6	7	5	-	6	7	6	7	7	7	4	7	6	95
Totals	54	40	60	39	53	49	-	51	39	48	54	55	57	42	55	57	753

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 4d
Viable Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	
LOT ¹																	
A	4	0	0	1	0	0	0	0	0	3	2	3	0	0	1	3	17
B	5	3	1	2	2	0	5	0	0	4	6	4	5	0	4	3	44
C	4	3	3	4	3	4	3	4	1	5	4	3	3	4	2	7	57
D	5	4	6	5	3	5	5	4	4	4	6	5	6	3	0	5	70
900 E	6	6	4	5	5	6	5	6	4	7	4	7	5	2	0	7	79
F	6	6	5	5	4	5	4	4	5	6	6	6	7	0	2	6	77
G	4	5	4	7	4	7	6	6	4	7	6	6	6	0	5	6	83
H	7	5	6	6	6	6	7	5	6	6	7	5	7	0	7	6	92
I	6	7	5	7	5	7	6	5	7	7	6	7	6	0	4	4	89
J	7	6	6	6	6	6	6	5	5	6	6	6	6	0	8	4	89
Totals	54	45	40	48	38	46	47	39	36	55	53	52	51	9	33	51	697

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 5a
Live Three-Week Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	Totals
Control	LOT ¹																	
	A	2	0	0	1	2	5	0	-	0	0	1	0	0	2	0	2	15
	B	7	0	4	3	5	5	5	-	5	0	6	0	4	3	4	3	54
	C	5	0	4	5	4	6	4	-	6	4	5	1	2	4	4	5	59
	D	7	5	6	4	6	5	6	-	7	4	7	3	3	5	6	5	79
	E	6	7	5	5	4	7	3	-	6	6	6	7	3	7	6	7	85
	F	7	6	5	5	6	6	6	-	7	5	6	6	2	4	7	6	84
	G	6	7	6	6	5	7	6	-	6	5	4	7	1	6	6	7	85
	H	6	6	6	5	6	6	1	-	7	5	6	6	0	5	6	6	77
	I	6	7	6	6	5	7	0	-	6	5	5	7	0	6	1	5	72
J	6	6	7	5	3	5	5	-	7	6	8	6	0	4	5	6	79	
Totals		58	44	49	45	46	59	36	-	57	40	54	43	15	46	45	52	689

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 5b
Live Three-Week Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	
LOT ¹																	
A	-	0	0	1	0	0	0	0	4	0	2	2	0	1	0	3	13
B	-	1	6	2	1	3	3	0	6	7	5	3	0	3	5	2	47
C	-	5	5	5	5	5	1	0	6	6	5	6	0	3	5	5	62
D	-	4	7	5	6	5	4	0	7	4	7	6	6	5	7	3	76
100 E	-	5	6	7	6	6	3	1	6	5	5	7	4	4	6	5	76
F	-	4	7	6	7	6	4	4	7	5	7	6	6	6	7	6	88
G	-	4	6	7	6	7	4	7	6	6	6	7	5	5	6	7	89
H	-	3	6	5	7	6	6	3	6	2	7	6	6	5	6	6	80
I	-	5	6	7	6	7	6	5	6	6	6	7	6	4	6	7	90
J	-	4	7	6	6	7	6	5	7	4	7	6	6	4	7	7	89
Totals	-	35	56	51	50	52	37	25	61	45	57	56	39	40	55	51	710

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 5c
Live Three-Week Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																Totals
		1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	
300	LOT ¹																	
	A	2	0	4	2	0	2	-	0	0	0	0	0	2	0	0	6	18
	B	4	0	6	3	4	3	-	3	0	2	4	4	6	3	4	2	48
	C	4	0	5	0	5	5	-	6	0	4	6	6	5	3	5	6	60
	D	6	2	7	0	7	6	-	5	4	5	6	6	7	5	7	6	79
	E	6	7	5	3	6	6	-	7	6	7	5	7	6	6	6	7	90
	F	7	6	7	6	6	5	-	6	5	6	7	6	6	6	7	6	92
	G	5	7	6	7	6	6	-	6	5	7	6	6	7	5	6	6	91
	H	7	4	7	5	6	4	-	4	6	4	7	5	6	3	7	5	80
	I	5	7	6	7	6	7	-	7	5	6	6	7	5	7	6	7	94
J	7	7	6	6	7	5	-	6	7	6	7	7	7	3	7	6	94	
Totals		53	40	59	39	53	49	-	50	38	47	54	54	57	41	55	57	746

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 5d
Live Three-Week Embryos by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	Totals
900	LOT ¹																	
	A	4	0	0	1	0	0	0	0	0	3	2	3	0	0	1	3	17
	B	5	3	1	2	2	0	4	0	0	4	6	4	5	0	4	3	43
	C	4	3	3	4	3	4	3	4	1	5	4	3	3	4	2	7	57
	D	5	4	6	5	3	5	5	4	4	4	6	5	6	3	0	5	70
	E	6	6	4	5	5	6	5	6	4	7	4	7	5	2	0	7	79
	F	6	6	5	5	4	5	4	3	5	6	6	6	7	0	2	6	76
	G	4	5	4	7	4	7	6	6	4	6	6	6	6	0	5	6	82
	H	7	5	6	6	6	6	7	5	6	6	7	5	7	0	7	6	92
	I	6	7	5	7	5	7	6	5	7	7	6	7	6	0	4	4	89
J	7	6	6	6	6	6	6	4	5	6	6	6	6	0	8	4	88	
Totals		54	45	40	48	38	46	46	37	36	54	53	52	51	9	33	51	693

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 6a
Hatchlings by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	Totals
Control	LOT ¹																	
	A	2	0	0	1	2	5	0	-	0	0	1	0	0	2	0	2	15
	B	7	0	4	3	5	5	5	-	5	0	6	0	1	3	4	3	51
	C	5	0	4	5	4	6	4	-	6	4	4	1	1	4	4	5	57
	D	7	4	6	4	6	5	6	-	7	4	7	3	2	5	6	5	77
	E	6	7	5	5	4	7	3	-	6	6	6	7	3	7	6	7	85
	F	7	6	5	5	6	6	6	-	7	5	6	6	2	4	6	6	83
	G	6	6	6	6	5	7	6	-	6	5	4	7	1	6	5	7	83
	H	6	5	6	4	6	6	1	-	7	5	6	6	0	4	6	5	73
	I	6	7	6	6	5	7	0	-	6	4	5	7	0	5	1	5	70
J	6	6	6	5	3	5	4	-	7	6	8	6	0	4	5	6	77	
Totals		58	41	48	44	46	59	35	-	57	39	53	43	10	44	43	51	671

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 6b
Hatchlings by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	
LOT ¹																	
A	-	0	0	1	0	0	0	0	4	0	2	2	0	1	0	3	13
B	-	1	6	2	1	3	3	0	6	7	5	3	0	3	4	2	46
C	-	5	5	5	5	5	1	0	6	6	5	5	0	3	5	4	60
D	-	4	7	5	6	5	4	0	7	4	7	6	6	5	7	3	76
100 E	-	5	6	7	6	6	3	1	6	5	5	6	4	4	5	5	74
F	-	4	7	6	7	6	4	2	7	4	7	6	6	6	5	4	81
G	-	4	6	7	5	7	4	6	6	6	5	7	5	5	5	7	85
H	-	3	6	5	6	6	6	3	6	2	7	6	6	4	6	6	78
I	-	5	6	7	6	7	6	5	6	6	6	7	6	4	6	7	90
J	-	4	6	6	6	7	6	5	7	4	7	6	6	4	7	7	88
Totals	-	35	55	51	48	52	37	22	61	44	56	54	39	39	50	48	691

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 6c
Hatchlings by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	
LOT ¹																	
A	2	0	3	1	0	2	-	0	0	0	0	0	2	0	0	5	15
B	4	0	6	2	4	3	-	3	0	2	4	4	4	3	4	1	44
C	2	0	5	0	4	4	-	5	0	3	5	5	4	3	5	6	51
D	5	2	7	0	4	5	-	5	4	5	6	6	6	4	7	6	72
300 E	5	7	5	3	6	6	-	7	5	7	5	7	5	6	6	5	85
F	7	6	7	6	6	5	-	6	5	6	7	6	6	6	7	5	91
G	4	7	6	7	6	6	-	5	4	7	6	5	7	5	6	5	86
H	5	4	7	5	6	4	-	4	6	4	7	5	6	2	7	5	77
I	5	7	5	7	6	7	-	7	5	6	6	4	4	7	6	6	88
J	7	7	6	6	7	5	-	6	7	6	7	7	7	3	7	6	94
Totals	46	40	57	37	49	47	-	48	36	46	53	49	51	39	55	50	703

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 6d
Hatchlings by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	Totals
900	LOT ¹																	
	A	4	0	0	0	0	0	0	0	0	3	1	3	0	0	0	3	14
	B	5	3	1	2	2	0	3	0	0	3	6	4	5	0	4	3	41
	C	4	3	3	4	3	4	3	3	1	5	4	3	3	4	2	7	56
	D	4	4	6	5	3	5	4	4	4	4	6	5	6	3	0	5	68
	E	6	6	4	5	5	6	4	6	4	7	4	6	5	2	0	7	77
	F	6	6	5	5	4	5	4	3	4	6	6	6	7	0	2	5	74
	G	4	5	4	7	4	7	6	5	4	6	4	6	6	0	5	6	79
	H	7	5	6	6	6	6	7	5	6	6	7	4	6	0	7	6	90
	I	6	7	5	7	5	7	6	5	7	7	6	6	6	0	4	4	88
J	7	6	6	6	6	6	5	4	5	6	6	6	6	0	8	4	87	
Totals		53	45	40	47	38	46	42	35	35	53	50	49	50	9	32	50	674

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 7a
14-Day Old Survivors by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	Totals
Control	LOT ¹																	
	A	1	0	0	1	2	4	0	-	0	0	0	0	0	1	0	2	11
	B	6	0	3	2	5	4	5	-	5	0	5	0	1	3	4	3	46
	C	4	0	4	5	4	6	4	-	6	4	4	1	1	4	4	5	56
	D	7	4	6	4	6	4	6	-	7	4	7	2	2	5	6	5	75
	E	6	7	5	5	4	7	3	-	6	6	5	7	2	7	6	7	83
	F	7	6	5	5	6	6	6	-	7	5	6	6	2	4	6	6	83
	G	6	6	6	6	3	7	6	-	6	5	3	6	1	5	5	7	78
	H	5	5	6	3	6	6	1	-	7	5	6	6	0	4	6	4	70
	I	6	7	6	6	5	7	0	-	6	4	5	7	0	5	1	5	70
J	6	6	6	5	3	5	4	-	7	6	7	6	0	4	5	6	76	
Totals		54	41	47	42	44	56	35	-	57	39	48	41	9	42	43	50	648

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 7b
14-Day Old Survivors by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	Totals
100	LOT ¹																	
	A	-	0	0	0	0	0	0	0	4	0	1	2	0	1	0	3	11
	B	-	0	3	2	0	3	2	0	6	7	5	2	0	2	4	2	38
	C	-	5	3	5	4	5	1	0	6	5	5	5	0	3	5	4	56
	D	-	4	4	4	3	4	4	0	7	4	7	5	6	5	5	3	65
	E	-	5	5	6	4	6	3	0	6	5	5	6	4	4	5	5	69
	F	-	4	7	5	6	6	4	0	7	3	7	6	6	6	5	4	76
	G	-	4	6	7	4	6	4	4	6	5	5	7	5	5	5	7	80
	H	-	3	5	5	6	5	6	3	6	2	7	6	6	4	6	6	76
	I	-	5	6	7	6	7	6	3	6	6	6	7	6	4	6	6	87
	J	-	4	6	6	6	7	6	5	7	4	7	6	6	4	7	7	88
Totals		-	34	45	47	39	49	36	15	61	41	55	52	39	38	48	47	646

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 7c
14-Day Old Survivors by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)	P E N S																Totals
	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	
300	LOT ¹																
	A	2	0	3	0	0	-	0	0	0	0	0	2	0	0	4	11
	B	4	0	6	1	4	-	3	0	2	4	4	4	2	4	1	41
	C	1	0	5	0	4	-	5	0	3	5	5	4	2	5	6	49
	D	5	2	6	0	4	-	5	4	5	6	5	5	4	7	6	69
	E	5	7	5	3	6	-	7	4	7	5	6	5	4	6	5	81
	F	6	6	7	6	6	-	5	5	6	7	6	6	5	7	5	87
	G	3	7	6	7	6	-	5	4	7	6	5	6	5	5	4	82
	H	5	4	7	5	6	-	4	6	4	7	4	6	1	7	4	74
	I	5	7	5	7	6	-	6	5	6	6	4	4	7	6	6	87
	J	7	7	6	6	6	-	6	7	6	7	7	7	3	7	6	93
Totals		43	40	56	35	48	-	46	35	46	53	46	49	33	54	47	674

- Data are not available due to adult mortality

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Reproductive Performance by Week and Pen
Appendix VIII - Table 7d
14-Day Old Survivors by Week and Pen
from a Northern Bobwhite Reproduction Study with T-7485

Experimental Group (ppm a.i.)		P E N S																
		1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	Totals
900	LOT ¹																	
	A	4	0	0	0	0	0	0	0	0	3	1	3	0	0	0	2	13
	B	5	3	1	1	2	0	2	0	0	3	6	4	4	0	4	3	38
	C	4	3	3	4	2	4	3	3	1	5	4	3	3	3	2	6	53
	D	4	4	6	5	2	5	3	4	4	4	3	5	6	3	0	4	62
	E	6	6	4	5	5	5	4	5	4	7	4	5	5	2	0	5	72
	F	6	6	5	5	4	5	4	2	4	6	6	6	7	0	2	5	73
	G	4	5	4	7	3	6	4	4	4	5	3	6	6	0	4	5	70
	H	7	5	6	5	6	5	4	5	5	6	6	4	5	0	7	6	82
	I	6	5	5	7	5	7	6	5	7	7	5	6	6	0	4	4	85
J	7	6	6	6	6	6	5	4	4	6	6	6	5	0	8	4	85	
Totals		53	43	40	45	35	43	35	32	33	52	44	48	47	8	31	44	633

¹ LOT A - Eggs Set During Week 12; LOT B - Eggs Set During Week 13; etc.

Appendix IX - Table 1
Eggshell Thickness (mm) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(Control)

Pen	Weeks										Mean	SD	[n]
	A	B	C	D	E	F	G	H	I	J			
1601	0.211		0.216		0.227		0.204		0.208		0.213	0.009	5
1602		0.200		0.213		0.221		0.210		0.208	0.211	0.007	5
1603	-		0.221		0.241		0.226		0.232		0.230	0.009	4
1604		0.227		0.222		0.227		0.230		0.214	0.224	0.006	5
1605	0.218		0.200		0.187		0.201		0.206		0.202	0.011	5
1606		0.216		0.235		0.226		0.226		0.226	0.226	0.007	5
1607	0.211		0.236		0.250		0.242		-		0.235	0.017	4
1608		-		-		-		-		-			
1609	0.221		0.192		0.199		0.204		0.209		0.205	0.011	5
1610		0.204		0.209		0.204		0.206		0.209	0.206	0.003	5
1611	0.251		0.231		0.231		0.246		0.241		0.240	0.009	5
1612		-		0.218		0.213		0.226		0.217	0.219	0.006	4
1613	0.227		0.227		0.236		0.226		0.231		0.230	0.004	5
1614		0.188		0.209		0.203		0.193		0.192	0.197	0.009	5
1615	0.202		0.214		0.224		0.227		0.221		0.218	0.010	5
1616		0.222		0.233		0.226		0.212		0.219	0.222	0.008	5
Mean and standard deviation of pen means:											Mean	SD	
											0.219	0.013	72
- No eggs available.													

Appendix IX - Table 2
 Eggshell Thickness (mm) per Pen by Week
 from a Northern Bobwhite Reproduction Study with T-7485
 (100 PPM A.I.)

Pen	Weeks										Mean	SD	[n]
	A	B	C	D	E	F	G	H	I	J			
1617	-		-		-		-		-				
1618		0.242		0.229		0.220		0.226		0.231	0.230	0.008	5
1619	0.265		0.246		0.241		0.246		0.248		0.249	0.009	5
1620		0.189		0.230		0.230		0.250		0.244	0.229	0.024	5
1621	-		0.211		0.225		0.222		0.221		0.220	0.006	4
1622		0.226		0.230		0.226		0.237		0.242	0.232	0.007	5
1623	0.203		0.217		0.222		0.226		0.227		0.219	0.010	5
1624		-		0.211		0.226		0.227		0.221	0.221	0.007	4
1625	0.219		0.236		0.240		0.243		0.246		0.237	0.011	5
1626		0.221		0.229		0.231		0.227		0.237	0.229	0.006	5
1627	0.227		0.221		0.229		0.230		0.232		0.228	0.004	5
1628		0.229		0.232		0.228		0.237		0.230	0.231	0.004	5
1629	-		0.200		0.211		0.209		0.213		0.208	0.006	4
1630		0.226		0.226		0.225		0.227		0.222	0.225	0.002	5
1631	0.192		0.219		0.205		0.213		0.213		0.208	0.010	5
1632		0.224		0.247		0.250		0.228		0.244	0.239	0.012	5
Mean and standard deviation of pen means:											Mean	SD	
											0.227	0.011	72

- No eggs available.

Differences between the control and this treatment group were not significant ($p > 0.05$).

Appendix IX - Table 3
Eggshell Thickness (mm) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(300 PPM A.I.)

Pen	Weeks										Mean	SD	[n]
	A	B	C	D	E	F	G	H	I	J			
1633	0.231		0.227		0.226		0.227		0.228		0.228	0.002	5
1634		-		0.236		0.236		0.258		0.246	0.244	0.010	4
1635	0.214		0.226		0.236		0.226		0.229		0.226	0.008	5
1636		0.221		0.226		0.231		0.241		0.238	0.231	0.008	5
1637	0.191		0.182		0.204		0.204		0.203		0.197	0.010	5
1638		0.199		0.209		0.216		0.222		0.203	0.210	0.009	5
1639	-		-		-		-		-				
1640		0.269		0.249		0.241		0.246		0.212	0.243	0.020	5
1641	0.247		0.213		0.220		0.214		0.221		0.223	0.014	5
1642		0.191		0.226		0.227		0.226		0.222	0.218	0.016	5
1643	0.215		0.216		0.231		0.228		0.228		0.224	0.008	5
1644		0.229		0.241		0.247		0.255		0.241	0.243	0.009	5
1645	0.180		0.221		0.219		0.226		0.226		0.214	0.020	5
1646		0.188		0.182		0.200		0.192		0.209	0.194	0.010	5
1647	0.180		0.206		0.219		0.221		0.220		0.209	0.018	5
1648		0.213		0.221		0.226		0.226		0.226	0.222	0.006	5
Mean and standard deviation of pen means:											Mean	SD	
											0.222	0.015	74

- No eggs available.

Differences between the control and this treatment group were not significant ($p > 0.05$).

Appendix IX - Table 4
Eggshell Thickness (mm) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(900 PPM A.I.)

Pen	W e e k s										Mean	SD	[n]
	A	B	C	D	E	F	G	H	I	J			
1649	0.220		0.242		0.226		0.229		0.229		0.229	0.008	5
1650		0.175		0.184		0.199		0.184		0.204	0.189	0.012	5
1651	-		0.237		0.231		0.246		0.222		0.234	0.010	4
1652		0.241		0.247		0.258		0.256		0.266	0.253	0.010	5
1653	-		0.191		0.227		0.222		0.222		0.215	0.016	4
1654		0.237		0.257		0.239		0.246		0.242	0.244	0.008	5
1655	-		0.236		0.246		0.226		0.231		0.235	0.008	4
1656		0.211		0.226		0.211		0.213		0.227	0.218	0.008	5
1657	-		0.207		0.211		0.215		0.211		0.211	0.003	4
1658		0.222		0.222		0.229		0.232		0.227	0.226	0.004	5
1659	0.230		0.219		0.221		0.221		0.222		0.223	0.004	5
1660		0.231		0.229		0.226		0.229		0.227	0.229	0.002	5
1661	-		0.208		0.220		0.232		0.212		0.218	0.010	4
1662		0.206		0.239		-		-		-	0.222	0.024	2
1663	0.213		0.208		-		0.219		0.210		0.213	0.005	4
1664		0.219		0.210		0.231		0.229		0.226	0.223	0.009	5
Mean and standard deviation of pen means:											Mean	SD	
											0.224	0.015	71

- No eggs available.

Differences between the control and this treatment group were not significant ($p > 0.05$).

Appendix X - Table 1
Mean Hatchling Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(Control)

Pen	Weeks [No. of Hatchlings]										Mean	SD	Total Hatch
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]			
1601	5[2]	5[7]	5[5]	5[7]	6[6]	6[7]	6[6]	6[6]	6[6]	6[6]	6	0	58
1602	[0]	[0]	[0]	6[4]	6[7]	6[6]	6[6]	6[5]	7[7]	6[6]	6	0	41
1603	[0]	5[4]	6[4]	5[6]	5[5]	6[5]	5[6]	6[6]	5[6]	5[6]	5	0	48
1604	5[1]	5[3]	5[5]	6[4]	5[5]	5[5]	6[6]	6[4]	6[6]	6[5]	6	0	44
1605	5[2]	6[5]	6[4]	6[6]	6[4]	6[6]	6[5]	6[6]	6[5]	6[3]	6	0	46
1606	5[5]	5[5]	6[6]	6[5]	6[7]	6[6]	6[7]	6[6]	6[7]	6[5]	6	0	59
1607	[0]	5[5]	6[4]	5[6]	6[3]	6[6]	6[6]	6[1]	[0]	6[4]	6	0	35
1608	-	-	-	-	-	-	-	-	-	-			
1609	[0]	6[5]	6[6]	6[7]	6[6]	6[7]	7[6]	6[7]	7[6]	7[7]	6	0	57
1610	[0]	[0]	5[4]	6[4]	6[6]	6[5]	6[5]	6[5]	6[4]	6[6]	6	0	39
1611	5[1]	6[6]	5[4]	5[7]	5[6]	5[6]	6[4]	6[6]	6[5]	6[8]	6	0	53
1612	[0]	[0]	5[1]	6[3]	6[7]	6[6]	7[7]	7[6]	6[7]	7[6]	6	0	43
1613	[0]	5[1]	5[1]	6[2]	5[3]	5[2]	6[1]	[0]	[0]	[0]	5	0	10
1614	5[2]	6[3]	6[4]	6[5]	5[7]	5[4]	5[6]	6[4]	6[5]	6[4]	5	0	44
1615	[0]	6[4]	6[4]	6[6]	6[6]	6[6]	6[5]	7[6]	7[1]	7[5]	6	0	43
1616	5[2]	5[3]	5[5]	5[5]	5[7]	5[6]	6[7]	6[5]	6[5]	6[6]	6	0	51
											Mean	SD	
											6	0	671

The number of hatchlings weighed may differ from the total number of hatchlings since those hatchlings found dead were not weighed.
- Data are not available due to adult mortality.
SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix X - Table 2
Mean Hatchling Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(100 PPM A.I.)

Pen	Weeks [No. of Hatchlings]										Mean	SD	Total Hatch
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]			
1617	-	-	-	-	-	-	-	-	-	-			
1618	[0]	5[1]	6[5]	6[4]	7[5]	7[4]	7[4]	7[3]	7[5]	7[4]	6	0	35
1619	[0]	5[6]	6[5]	5[7]	6[6]	6[7]	6[6]	6[6]	6[6]	7[6]	6	0	55
1620	4[1]	5[2]	5[5]	5[5]	5[7]	5[6]	5[7]	5[5]	6[7]	6[6]	5	0	51
1621	[0]	4[1]	5[5]	5[6]	5[6]	6[7]	6[5]	6[6]	6[6]	6[6]	5	0	48
1622	[0]	6[3]	6[5]	6[5]	6[6]	6[6]	6[7]	6[6]	6[7]	6[7]	6	0	52
1623	[0]	6[3]	6[1]	6[4]	6[3]	7[4]	7[4]	6[6]	6[6]	7[6]	6	0	37
1624	[0]	[0]	[0]	[0]	5[1]	4[2]	5[6]	5[3]	5[5]	5[5]	5	0	22
1625	6[4]	6[6]	6[6]	6[7]	6[6]	6[7]	7[6]	7[6]	7[6]	7[7]	7	0	61
1626	[0]	5[7]	6[6]	5[4]	5[5]	5[3]	5[6]	5[2]	5[6]	5[4]	5	0	43
1627	6[2]	6[5]	6[5]	6[7]	6[5]	7[7]	7[5]	6[7]	7[6]	7[7]	7	0	56
1628	6[2]	6[3]	6[5]	6[6]	6[6]	6[6]	6[7]	6[6]	6[7]	7[6]	6	0	54
1629	[0]	[0]	[0]	5[6]	6[4]	5[6]	5[5]	6[6]	5[6]	6[6]	5	0	39
1630	5[1]	6[3]	6[3]	6[5]	6[4]	6[6]	6[5]	6[4]	7[4]	6[4]	6	0	39
1631	[0]	5[4]	5[5]	5[7]	6[5]	6[5]	6[5]	6[6]	6[6]	7[7]	6	1	50
1632	5[3]	6[2]	6[4]	6[3]	6[5]	6[4]	6[7]	6[6]	6[7]	7[7]	6	0	48
											Mean	SD	
											6	1	690

The number of hatchlings weighed may differ from the total number of hatchlings since those hatchlings found dead were not weighed.

- Data are not available due to adult mortality.

Differences between the control and this treatment group were not significant ($p > 0.05$).

SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix X - Table 3
Mean Hatchling Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(300 PPM A.I.)

Pen	Weeks [No. of Hatchlings]										Mean	SD	Total Hatch
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]			
1633	5[2]	5[4]	5[2]	5[5]	6[5]	6[7]	5[4]	6[5]	6[5]	6[7]	6	0	46
1634	[0]	[0]	[0]	5[2]	6[7]	6[6]	6[7]	6[4]	6[7]	6[7]	6	0	40
1635	5[3]	5[6]	5[5]	6[7]	6[5]	6[7]	6[6]	6[7]	6[5]	7[6]	6	0	57
1636	5[1]	5[2]	[0]	[0]	6[3]	6[6]	5[7]	6[5]	6[7]	7[6]	6	1	37
1637	[0]	6[4]	6[4]	6[4]	6[6]	6[6]	6[6]	7[6]	7[6]	6[7]	6	0	49
1638	5[2]	5[3]	5[4]	5[5]	5[6]	5[5]	5[6]	6[4]	6[7]	6[5]	5	0	47
1639	-	-	-	-	-	-	-	-	-	-			
1640	[0]	5[3]	6[5]	6[5]	6[7]	6[6]	6[5]	6[4]	6[7]	6[6]	6	0	48
1641	[0]	[0]	[0]	6[4]	6[5]	6[5]	6[4]	6[6]	6[5]	6[7]	6	0	36
1642	[0]	6[2]	6[3]	6[5]	6[7]	6[6]	5[7]	6[4]	6[6]	6[6]	6	0	46
1643	[0]	5[4]	5[5]	6[6]	6[5]	6[7]	6[6]	6[7]	6[6]	7[7]	6	0	53
1644	[0]	5[4]	5[5]	6[6]	6[7]	6[6]	6[5]	6[5]	6[4]	7[7]	6	0	49
1645	5[2]	5[4]	5[4]	5[6]	6[5]	5[6]	5[7]	5[6]	6[4]	6[7]	5	0	51
1646	[0]	5[3]	5[3]	5[4]	6[6]	6[6]	6[5]	6[2]	6[7]	5[3]	5	0	39
1647	[0]	5[4]	5[5]	5[7]	5[6]	5[7]	5[6]	5[7]	5[6]	6[7]	5	0	55
1648	5[5]	6[1]	5[6]	5[6]	6[5]	6[5]	5[5]	6[5]	6[6]	7[6]	6	1	50
											Mean	SD	
											6	0	703

The number of hatchlings weighed may differ from the total number of hatchlings since those hatchlings found dead were not weighed.

- Data are not available due to adult mortality.

Differences between the control and this treatment group were not significant ($p > 0.05$).

SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix X - Table 4
Mean Hatchling Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(900 PPM A.I.)

Pen	Weeks [No. of Hatchlings]										Mean	SD	Total Hatch
	A [n]	B [n]	C [n]	D [n]	E [n]	F [n]	G [n]	H [n]	I [n]	J [n]			
1649	6 [4]	6 [5]	6 [4]	6 [4]	7 [6]	7 [6]	7 [4]	7 [7]	7 [6]	7 [7]	6	0	53
1650	[0]	6 [3]	6 [3]	6 [4]	6 [6]	6 [6]	6 [5]	6 [5]	6 [6]	6 [6]	6	0	44
1651	[0]	5 [1]	5 [3]	5 [6]	6 [4]	6 [5]	6 [4]	6 [6]	6 [5]	6 [6]	6	0	40
1652	[0]	5 [2]	6 [4]	5 [5]	6 [5]	6 [5]	6 [7]	6 [6]	6 [7]	6 [6]	6	0	47
1653	[0]	6 [2]	5 [3]	5 [3]	6 [5]	6 [4]	6 [4]	6 [6]	6 [5]	7 [6]	6	0	38
1654	[0]	[0]	5 [4]	5 [5]	5 [6]	6 [5]	6 [7]	6 [6]	6 [7]	6 [6]	5	0	46
1655	[0]	5 [3]	5 [3]	5 [4]	5 [4]	6 [4]	6 [6]	5 [7]	6 [6]	6 [5]	6	0	42
1656	[0]	[0]	5 [3]	6 [4]	6 [6]	6 [2]	6 [5]	6 [5]	6 [5]	6 [4]	6	0	34
1657	[0]	[0]	5 [1]	5 [4]	5 [4]	6 [4]	6 [4]	5 [6]	6 [7]	6 [5]	6	1	35
1658	6 [3]	6 [3]	6 [5]	6 [4]	6 [7]	6 [6]	6 [6]	6 [6]	7 [7]	7 [6]	6	0	53
1659	5 [1]	5 [6]	5 [4]	5 [6]	5 [4]	5 [6]	5 [4]	5 [7]	5 [6]	5 [6]	5	0	50
1660	6 [3]	6 [4]	6 [3]	6 [5]	6 [6]	6 [6]	6 [6]	6 [4]	7 [6]	6 [6]	6	0	49
1661	[0]	5 [5]	5 [3]	5 [6]	5 [5]	5 [7]	5 [6]	5 [6]	6 [6]	6 [6]	5	0	50
1662	[0]	[0]	5 [4]	6 [3]	7 [2]	[0]	[0]	[0]	[0]	[0]	6	1	9
1663	[0]	6 [4]	6 [2]	[0]	[0]	6 [2]	6 [5]	6 [7]	7 [4]	7 [8]	6	1	32
1664	5 [3]	5 [3]	5 [7]	5 [5]	6 [7]	5 [5]	6 [6]	6 [6]	6 [4]	6 [4]	5	0	50
											Mean	SD	
											6	0	672

The number of hatchlings weighed may differ from the total number of hatchlings since those hatchlings found dead were not weighed.
Differences between the control and this treatment group were not significant ($p > 0.05$).
SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix XI - Table 1
Mean 14-Day Old Survivors Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(Control)

Pen	Weeks [No. of 14-Day Old Survivors]										Mean	SD	14-Day Total
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]			
1601	22[1]	26[6]	28[4]	23[7]	22[6]	22[7]	26[6]	27[5]	29[6]	32[6]	26	3	54
1602	[0]	[0]	[0]	23[4]	22[7]	22[6]	23[6]	26[5]	29[7]	31[6]	25	4	41
1603	[0]	26[3]	26[4]	27[6]	28[5]	30[5]	29[6]	27[6]	26[6]	27[6]	27	1	47
1604	20[1]	25[2]	25[5]	25[4]	23[5]	24[5]	26[6]	30[3]	30[6]	31[5]	26	3	42
1605	26[2]	28[5]	27[4]	26[6]	24[4]	22[6]	24[3]	29[6]	26[5]	28[3]	26	2	44
1606	26[4]	27[4]	28[6]	28[4]	28[7]	26[6]	27[7]	27[6]	30[7]	31[5]	28	2	56
1607	[0]	29[5]	29[4]	23[6]	26[3]	25[6]	25[6]	28[1]	[0]	29[4]	26	2	35
1608	-	-	-	-	-	-	-	-	-	-			
1609	[0]	27[5]	25[6]	30[7]	26[6]	28[7]	31[6]	29[7]	31[6]	35[7]	29	3	57
1610	[0]	[0]	22[4]	27[4]	26[6]	26[5]	23[5]	26[5]	25[4]	30[6]	26	2	39
1611	[0]	24[5]	24[4]	21[7]	25[5]	21[6]	19[3]	23[6]	25[5]	27[7]	24	2	48
1612	[0]	[0]	23[1]	26[2]	28[7]	28[6]	30[6]	28[6]	30[7]	33[6]	29	2	41
1613	[0]	24[1]	19[1]	20[2]	22[2]	23[2]	21[1]	[0]	[0]	[0]	21	2	9
1614	21[1]	22[3]	26[4]	24[5]	22[7]	26[4]	22[5]	26[4]	25[5]	24[4]	24	2	42
1615	[0]	26[4]	23[4]	26[6]	24[6]	24[6]	26[5]	27[6]	23[1]	34[5]	26	3	43
1616	23[2]	21[3]	26[5]	25[5]	25[7]	23[6]	25[7]	27[4]	26[5]	30[6]	25	2	50
											Mean	SD	
											26	2	648

- Data are not available due to adult mortality.

SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix XI - Table 2
Mean 14-Day Old Survivors Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(100 PPM A.I.)

Pen	Weeks [No. of 14-Day Old Survivors]										14-Day	
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]	Mean	SD Total
1617	-	-	-	-	-	-	-	-	-	-		
1618	[0]	[0]	26[5]	24[4]	28[5]	25[4]	29[4]	29[3]	29[5]	27[4]	27	2 34
1619	[0]	24[3]	25[3]	23[4]	26[5]	25[7]	25[6]	25[5]	25[6]	24[6]	25	1 45
1620	[0]	26[2]	24[5]	18[4]	22[6]	22[5]	21[7]	25[5]	28[7]	27[6]	24	3 47
1621	[0]	[0]	26[4]	20[3]	25[4]	27[6]	24[4]	25[6]	25[6]	26[6]	25	2 39
1622	[0]	29[3]	28[5]	21[4]	25[6]	30[6]	28[6]	31[5]	27[7]	30[7]	28	3 49
1623	[0]	25[2]	27[1]	23[4]	23[3]	27[4]	27[4]	26[6]	25[6]	28[6]	26	2 36
1624	[0]	[0]	[0]	[0]	[0]	[0]	22[4]	22[3]	23[3]	21[5]	22	1 15
1625	26[4]	27[6]	28[6]	29[7]	27[6]	29[7]	26[6]	30[6]	30[6]	30[7]	28	1 61
1626	[0]	22[7]	24[5]	23[4]	22[5]	22[3]	19[5]	14[2]	22[6]	26[4]	22	3 41
1627	23[1]	26[5]	26[5]	25[7]	27[5]	28[7]	26[5]	25[7]	29[6]	31[7]	27	2 55
1628	23[2]	30[2]	29[5]	22[5]	27[6]	28[6]	26[7]	24[6]	25[7]	30[6]	26	2 52
1629	[0]	[0]	[0]	22[6]	23[4]	20[6]	23[5]	24[6]	22[6]	22[6]	22	1 39
1630	29[1]	25[2]	29[3]	25[5]	27[4]	28[6]	31[5]	32[4]	32[4]	35[4]	29	3 38
1631	[0]	23[4]	26[5]	21[5]	25[5]	25[5]	24[5]	27[6]	31[6]	30[7]	26	3 48
1632	26[3]	31[2]	25[4]	29[3]	29[5]	24[4]	30[7]	32[6]	32[6]	37[7]	30	4 47
											Mean	SD
											26	3 646

- Data are not available due to adult mortality.

Differences between the control and this treatment group were not significant ($p > 0.05$).

SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix XI - Table 3
Mean 14-Day Old Survivors Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(300 PPM A.I.)

Pen	Weeks [No. of 14-Day Old Survivors]										14-Day	
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]	Mean	SD Total
1633	23[2]	27[4]	24[1]	20[5]	23[5]	24[6]	29[3]	27[5]	28[5]	30[7]	26	3 43
1634	[0]	[0]	[0]	25[2]	26[7]	26[6]	26[7]	27[4]	29[7]	27[7]	27	1 40
1635	23[3]	29[6]	29[5]	28[6]	31[5]	30[7]	28[6]	29[7]	29[5]	38[6]	30	3 56
1636	[0]	26[1]	[0]	[0]	30[3]	27[6]	26[7]	24[5]	25[7]	33[6]	27	3 35
1637	[0]	27[4]	28[4]	28[4]	28[6]	29[6]	30[6]	31[6]	31[6]	38[6]	30	3 48
1638	[0]	27[2]	25[4]	22[5]	27[6]	27[4]	25[6]	28[4]	27[7]	33[5]	27	3 43
1639	-	-	-	-	-	-	-	-	-	-		
1640	[0]	23[3]	27[5]	26[5]	28[7]	30[5]	27[5]	29[4]	33[6]	33[6]	29	3 46
1641	[0]	[0]	[0]	25[4]	28[4]	24[5]	28[4]	29[6]	25[5]	27[7]	27	2 35
1642	[0]	25[2]	25[3]	26[5]	24[7]	26[6]	26[7]	26[4]	27[6]	30[6]	26	2 46
1643	[0]	27[4]	26[5]	27[6]	28[5]	27[7]	28[6]	31[7]	28[6]	36[7]	29	3 53
1644	[0]	24[4]	25[5]	24[5]	29[6]	27[6]	23[5]	26[4]	27[4]	32[7]	27	3 46
1645	21[2]	24[4]	25[4]	22[5]	21[5]	24[6]	23[6]	23[6]	25[4]	24[7]	23	1 49
1646	[0]	24[2]	22[2]	25[4]	27[4]	30[5]	29[5]	28[1]	29[7]	31[3]	28	3 33
1647	[0]	23[4]	24[5]	27[7]	26[6]	27[7]	26[5]	31[7]	27[6]	34[7]	28	3 54
1648	22[4]	27[1]	24[6]	21[6]	28[5]	28[5]	25[4]	29[4]	28[6]	30[6]	26	3 47
											Mean	SD
											27	2 674

- Data are not available due to adult mortality.

Differences between the control and this treatment group were not significant ($p > 0.05$).

SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix XI - Table 4
Mean 14-Day Old Survivors Body Weight (g) per Pen by Week
from a Northern Bobwhite Reproduction Study with T-7485
(900 PPM A.I.)

Pen	Weeks [No. of 14-Day Old Survivors]										14-Day	
	A[n]	B[n]	C[n]	D[n]	E[n]	F[n]	G[n]	H[n]	I[n]	J[n]	Mean	SD Total
1649	24[4]	32[5]	24[4]	26[4]	27[6]	27[6]	25[4]	28[7]	33[6]	31[7]	28	3 53
1650	[0]	26[3]	27[3]	24[4]	25[6]	26[6]	25[5]	27[5]	28[5]	26[6]	26	1 43
1651	[0]	19[1]	25[3]	22[6]	27[4]	26[5]	29[4]	26[6]	30[5]	29[6]	26	3 40
1652	[0]	19[1]	20[4]	23[5]	24[5]	22[5]	22[7]	26[5]	24[7]	24[6]	23	2 45
1653	[0]	32[2]	29[2]	30[2]	29[5]	28[4]	27[3]	32[6]	30[5]	32[6]	30	2 35
1654	[0]	[0]	24[4]	28[5]	24[5]	25[5]	25[6]	24[5]	26[7]	26[6]	25	1 43
1655	[0]	28[2]	25[3]	26[3]	27[4]	30[4]	29[4]	31[4]	30[6]	32[5]	29	2 35
1656	[0]	[0]	22[3]	21[4]	22[5]	25[2]	23[4]	27[5]	23[5]	27[4]	24	2 32
1657	[0]	[0]	18[1]	23[4]	21[4]	28[4]	24[4]	23[5]	28[7]	31[4]	25	4 33
1658	29[3]	27[3]	27[5]	28[4]	27[7]	27[6]	25[5]	28[6]	29[7]	27[6]	28	1 52
1659	26[1]	27[6]	22[4]	27[3]	25[4]	26[6]	25[3]	27[6]	27[5]	25[6]	26	1 44
1660	26[3]	31[4]	30[3]	27[5]	26[5]	27[6]	26[6]	31[4]	30[6]	34[6]	29	3 48
1661	[0]	25[4]	22[3]	25[6]	25[5]	26[7]	24[6]	24[5]	27[6]	30[5]	26	2 47
1662	[0]	[0]	24[3]	27[3]	26[2]	[0]	[0]	[0]	[0]	[0]	26	1 8
1663	[0]	25[4]	28[2]	[0]	[0]	20[2]	26[4]	27[7]	27[4]	31[8]	27	3 31
1664	22[2]	27[3]	26[6]	23[4]	26[5]	24[5]	25[5]	29[6]	29[4]	30[4]	26	2 44
											Mean	SD
											27	2 633

Differences between the control and this treatment group were not significant ($p > 0.05$).
SD = Standard deviation of mean body weight, by parental pen, by week.

Appendix XII - Table 1
 Adult Liver Weights (g)
 from a Northern Bobwhite Reproduction Study with T-7485
 Control (0 ppm a.i.)

Pen	Male	Female
	Liver	Liver
1601	3.893	7.981
1602	8.937	7.912
1603	5.079	7.231
1604	4.930	6.756
1605	3.184	8.459
1606	3.622	7.057
1607	2.296	6.240
1608	3.808	-
1609	4.253	7.411
1610	3.709	6.329
1611	4.208	6.879
1612	3.357	6.556
1613	3.087	7.750
1614	4.031	7.572
1615	3.825	7.464
1616	3.922	6.818
Mean	4.134	7.228
SD	1.446	0.644
- Data not reported due to mortality.		

Appendix XII - Table 2
 Adult Liver Weights (g)
 from a Northern Bobwhite Reproduction Study with T-7485
 100 ppm a.i.

Pen	Male	Female
	Liver	Liver
1617	-	8.091
1618	3.064	7.866
1619	4.088	6.812
1620	4.624	7.065
1621	5.039	7.595
1622	4.796	7.099
1623	3.486	5.060
1624	3.819	8.996
1625	3.014	6.967
1626	3.553	9.093
1627	3.673	7.284
1628	3.906	6.855
1629	3.401	12.255
1630	3.882	6.930
1631	4.134	6.715
1632	6.545	6.529
Mean	4.068	7.576
SD	0.901	1.575

- Data not reported due to mortality.

Differences from the control group were not statistically significant ($p > 0.05$, Dunnett's t-test).

Appendix XII - Table 3
 Adult Liver Weights (g)
 from a Northern Bobwhite Reproduction Study with T-7485
 300 ppm a.i.

Pen	Male	Female
	Liver	Liver
1633	3.381	6.926
1634	3.577	6.082
1635	3.525	8.607
1636	3.870	6.401
1637	3.697	8.139
1638	9.874	5.154
1639	3.756	-
1640	4.226	6.792
1641	2.901	8.035
1642	4.451	7.000
1643	4.008	9.105
1644	2.960	8.546
1645	6.127	7.576
1646	3.484	6.446
1647	4.006	6.085
1648	3.147	7.141
Mean	4.187	7.202
SD	1.692	1.112

- Data not reported due to mortality.

Differences from the control group were not statistically significant ($p > 0.05$, Dunnett's t-test).

Appendix XII - Table 4
 Adult Liver Weights (g)
 from a Northern Bobwhite Reproduction Study with T-7485
 900 ppm a.i.

Pen	Male	Female
	Liver	Liver
1649	5.790	5.963
1650	6.179	5.975
1651	3.183	7.119
1652	4.908	6.007
1653	4.679	6.000
1654	#	7.811
1655	3.334	6.457
1656	3.464	6.807
1657	3.112	9.105
1658	3.022	7.627
1659	3.598	8.379
1660	3.906	6.894
1661	3.024	6.782
1662	4.708	3.270
1663	3.050	5.238
1664	2.928	4.938
Mean	3.926	6.523
SD	1.068	1.403

Data not available due to recording error.

Differences from the control group were not statistically significant ($p > 0.05$, Dunnett's t-test).

Appendix XIII
Offspring Liver Weights (g)
from a Northern Bobwhite Reproduction Study with T-7485

Control (0 ppm a.i.)

Parental Pen #	Male Liver	Parental Pen #	Female Liver		
1601	1.247	1604	1.076		
1602	1.016	1606	1.209		
1603	1.024	1607	0.989		
1605	0.957	1609	1.183		
1611	0.948	1610	0.870		
1612	0.991	1615	1.125		
1614	0.908	1616	1.122		
Mean	1.013	Mean	1.082	Group	Mean 1.048
SD	0.111	SD	0.118		SD 0.116

100 ppm a.i.

Parental Pen #	Male Liver	Parental Pen #	Female Liver		
1621	1.163	1618	1.225		
1625	0.916	1619	1.087		
1627	1.113	1620	0.876		
1630	1.019	1622	0.837		
1631	1.025	1623	0.971		
1632	1.443	1624	1.023		
		1626	1.196		
		1628	1.024		
		1629	1.034		
Mean	1.113	Mean	1.030	Group	Mean 1.063
SD	0.183	SD	0.129		SD 0.152

Differences from the control group were not statistically significant ($p > 0.05$, Dunnett's t-test).

Appendix XIII
Offspring Liver Weights (g)
from a Northern Bobwhite Reproduction Study with T-7485

300 ppm a.i.

Parental Pen #	Male Liver	Parental Pen #	Female Liver		
1633	1.004	1634	1.079		
1635	1.356	1636	0.914		
1640	1.171	1637	1.664		
1641	1.158	1638	1.163		
1642	1.199	1644	1.550		
1643	1.355	1645	0.993		
1646	1.208	1647	1.513		
		1648	1.461		
Mean	1.207	Mean	1.292	Group Mean	1.253
SD	0.122	SD	0.287	SD	0.222

900 ppm a.i.

Parental Pen #	Male Liver	Parental Pen #	Female Liver		
1652	0.838	1649	1.294		
1654	0.933	1650	0.926		
1655	1.494	1651	0.777		
1656	0.988	1653	1.002		
1657	1.309	1658	1.096		
1660	1.042	1659	1.248		
1661	1.147	1663	1.147		
		1664	1.080		
Mean	1.107	Mean	1.071	Group Mean	1.088
SD	0.228	SD	0.169	SD	0.192

Differences from the control group were not statistically significant ($p > 0.05$, Dunnett's t-test).

Appendix XIV

Histology Report



EXPERIMENTAL PATHOLOGY LABORATORIES, INC.

WILDLIFE INTERNATIONAL, LTD.
STUDY NUMBER 454-116
EPL PROJECT NUMBER 212-030

T-7485: A REPRODUCTION STUDY WITH THE
NORTHERN BOBWHITE

PATHOLOGY REPORT

Submitted by:

Experimental Pathology Laboratories, Inc.
P.O. Box 474
Herndon, VA 20172-0474
(703) 471-7060

Submitted to:

Wildlife International, Ltd.
Easton, MD 21601

May 14, 2004

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PATHOLOGY SUMMARY

WILDLIFE INTERNATIONAL, LTD.
STUDY NUMBER 454-116
EPL PROJECT NUMBER 212-030

T-7485: A REPRODUCTION STUDY WITH THE
NORTHERN BOBWHITE

PATHOLOGY SUMMARY

Light microscopic examination was performed on sections of selected tissues from adult male and female northern bobwhite (*Colinus virginianus*) which were untreated or received various concentrations of the test article (T-7485) in the feed for an approximate five-month period. Selected tissues from 16-day-old offspring of the adult bobwhite were also examined by light microscopy. The objective of this study was to evaluate the effects of dietary exposure to T-7485 upon adult bobwhite (*Colinus virginianus*) over an approximate five-month period. The experimental design for selection of adults and offspring for histopathological evaluation was as follows:

Experimental Group	Adults		Offspring ^a	
	Males	Females	Male	Female
Control (0 ppm a.i.)	16	16	6	8
100 ppm a.i.	16	16	6	9
300 ppm a.i.	16	16	7	8
900 ppm a.i.	16	16	7	8

^a Offspring did not receive the test substance in the diet. All offspring were euthanized on Day 16 post-hatching.

MATERIALS AND METHODS

At the completion of the approximate five-month study interval, all surviving adult bobwhite were euthanized. Necropsies were performed by Wildlife International, Ltd., and tissue samples were collected for histopathological evaluation. Selected offspring were euthanized at Day 16 post-hatching, and samples were collected for histopathological evaluation by Wildlife International,

Wildlife International, Ltd. Study Number 454-116

Ltd. Selected tissues from adults and offspring were fixed in 10% neutral buffered formalin and sent to Experimental Pathology Laboratories, Inc. (EPL, Inc.), where they were embedded in paraffin and made into hematoxylin and eosin-stained sections on glass microscope slides. The following tissues from adults and offspring were examined by light microscopy as available: liver, kidney, and gonad (ovary or testis). Because of a gross observation, the spleen from 900 ppm a.i. adult male 462 was also submitted, processed, and evaluated.

All tissues required by protocol are presented in the Histopathology Incidence Tables. Microscopic findings for each tissue examined from each bobwhite are listed in the Histopathology Incidence Tables. Microscopic changes were graded one to five depending on severity. Nongradable findings are listed as present (P). All findings for all animals are summarized by sex, age group, and treatment group in the Summary Incidence Tables, together with the total number of animals in each group for which the tissues were examined. During histopathological evaluation, one offspring (0 ppm a.i. B829) which had been submitted as a male was discovered to be a female, and was therefore included in the female tables.

A tabulation of gross observations noted at necropsy with the corresponding microscopic change, if appropriate, is presented in the Correlation of Gross and Microscopic Findings tables. The entries in these tables were transcribed from records provided by the sponsor. Additional gross observations noted at trimming are indicated as gross lesions found at trimming in the Correlation of Gross and Microscopic Findings tables.

RESULTS

All adults and offspring survived to the end of their respective study intervals, with the exception of the following adults: 100 ppm a.i. male 385 found dead approximately 16 weeks before scheduled euthanasia, 0 ppm a.i. female 368 found dead approximately 10 weeks before scheduled euthanasia, and 300 ppm a.i. female 430 euthanized approximately seven weeks before scheduled



EXPERIMENTAL PATHOLOGY LABORATORIES, INC.

Wildlife International, Ltd. Study Number 454-116

euthanasia due to her moribund condition. This low, sporadic, early mortality was considered incidental and unrelated to treatment. Although the exact cause(s) of moribundity and/or mortality in these birds was not determined, they did exhibit gross necropsy observations of “intracranial bleeding,” head and neck lesions with “necrotic margins,” and/or emaciation which may have contributed to the birds’ early demise.

No effects considered related to test article administration were noted in liver, kidney, testis, and ovary of male and female adult bobwhite or their offspring.

Testes of most adult males exhibited spermatogenesis characterized by the presence of numerous mature spermatozoa in the seminiferous tubules. A few males exhibited decreased testicular diameter and/or seminiferous tubule degeneration most consistent with physiological regression. In addition, testes of 100 ppm a.i. male 385 (which died about 16 weeks before scheduled euthanasia) had morphology consistent with physiological sexual immaturity.

Offspring testes were listed as immature because they lacked all evidence of spermatogenesis, had small seminiferous tubules with absent or narrow lumens, and had germinal epithelium with decreased cell layers (compared to adult testes). This morphology was consistent with normal physiological immaturity in young (16-day old) birds rather than a pathological effect.

Ovaries of several control and treated adult females exhibited serosal eosinophilic material (amorphous sheets and globules of deep magenta material adhered to the serosal surfaces and consistent with extra follicular egg yolk). In one adult bird (0 ppm a.i. female 376), the material was associated with serosal infiltrates of macrophages and heterophils (chronic active inflammation). Ovarian serosal eosinophilic material corresponded to grossly observed “egg yolk peritonitis” in one case (300 ppm a.i. female 448). Similar eosinophilic material was adhered to the kidney serosal surfaces of a few adult females.

Ovaries of all offspring females were characterized by numerous oocytes and very small, nonpedunculated follicles completely embedded in a prominent

Wildlife International, Ltd. Study Number 454-116

ovarian cortex. This morphology is consistent with normal physiological immaturity in young (16-day old) birds rather than a pathological effect.

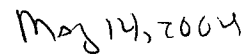
A few other findings were noted in various tissues of adult and offspring bobwhite. These generally minimal to mild changes had similar incidences and mean severity in control and treated groups. Some findings had low, sporadic incidences or even occurred only in a single individual bird. All were considered incidental and unrelated to treatment.

CONCLUSIONS AND SUMMARY

All adult and offspring bobwhite survived to their respective scheduled euthanasias except for three adults (one 100 ppm a.i. male, one 0 ppm a.i. female, and one 300 ppm a.i. female) which were found dead or euthanized due to moribundity approximately 7-16 weeks before scheduled euthanasia. This low, sporadic early mortality was considered incidental and unrelated to treatment. No lesions considered related to test article administration were noted in liver, kidney, ovary, and testis of adult male and female bobwhite or their offspring. The few findings in various tissues of adult and offspring bobwhite from control and treated groups were considered incidental and unrelated to test article administration.



MARGARITA M. GRUEBBEL, DVM, PhD, Diplomate, ACVP
Veterinary Pathologist



Date

MMG/cb

EPL[®]

EXPERIMENTAL PATHOLOGY LABORATORIES, INC.

COMPLIANCE STATEMENT

Client Name Wildlife International, Ltd. EPL Project Coordinator Dr. Margarita M. Gruebbel

Client Study 454-116 EPL Pathologist Dr. Margarita M. Gruebbel

Species Northern Bobwhite EPL Project Number 212-030

Study Title T-7485: A Reproduction Study with the Northern Bobwhite

Test Article T-7485

The Histopathology portions of the above-referenced study were conducted in compliance with the Good Laboratory Practice regulations of the Environmental Protection Agency as stipulated by 40 CFR 160; OECD Principles of Good Laboratory Practice [ENV/MC/CHEM(98)17]; and Japan MAFF (11 NohSan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999).


EPL Project Coordinator

May 14, 2004
Date



EXPERIMENTAL PATHOLOGY LABORATORIES, INC.

QUALITY ASSURANCE FINAL CERTIFICATION

Study Title: T-7485: A Reproduction Study with the Northern Bobwhite

Client Study: 454-116

EPL Project Coordinator: Dr. Margarita M. Gruebbel

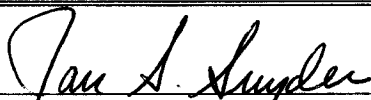
EPL Project Number: 212-030

EPL Pathologist: Dr. Margarita M. Gruebbel

The following aspects of this study were inspected by the Quality Assurance Unit of Experimental Pathology Laboratories, Inc. Dates inspections were performed and findings reported to the EPL Project Coordinator and Management are indicated below.

Area Inspected	Dates	
	Inspection	Reporting
EPL Project Sheets	3/2/04; 4/5/04; 4/26/04	3/2/04; 4/5/04; 4/26/04
Project Setup	3/4/04; 4/5/04	3/4/04; 4/5/04
Histology Setup	3/8/04; 4/5/04	3/8/04; 4/5/04
Data Review	4/12/04; 4/13/04	4/12/04; 4/13/04
Draft Report	4/29,30/04	4/30/04
Final Report	5/14/04	5/14/04

Date reported to Study Director/Management 5/14/04Date of last quarterly facility inspection 5/04


 EPL Quality Assurance Unit

5/14/04
 Date

SUMMARY INCIDENCE TABLES

ADULT EUTHANASIA

SUMMARY INCIDENCE TABLE

454-116
Adult Euthanasia
Male Bobwhite

[illegible]

SUMMARY INCIDENCE TABLE

454-116
Adult Euthanasia
Female Bobwhite

[illegible]

HISTOPATHOLOGY INCIDENCE TABLES
ADULT EUTHANASIA

HISTOPATHOLOGY INCIDENCE TABLE

[illegible]

EPL

Experimental Pathology Laboratories, Inc.

11-1

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

GROUP
100PPM

ANIMAL

[illegible]

11-2

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

HISTOPATHOLOGY INCIDENCE TABLE

[illegible]

EPL

11-3

Experimental Pathology Laboratories, Inc.

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

GROUP
900PPM

ANIMAL

[illegible]

11-4

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

HISTOPATHOLOGY INCIDENCE TABLE

[illegible]

EPL

11-5

Experimental Pathology Laboratories, Inc.

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

HISTOPATHOLOGY INCIDENCE TABLE

	A N I M A L	GROUP 100PPM															
		3 8 6	3 8 8	3 9 0	3 9 2	3 9 4	3 9 6	3 9 8	4 0 0	4 0 2	4 0 4	4 0 6	4 0 8	4 1 0	4 1 2	4 1 4	4 1 6
KIDNEY			X	X		X					X	X	X			X	
Cortex, Interstitium, Mineralization								2	1				1				
Cortex, Tubules, Dilatation																	
Cortex, Tubules, Regeneration																	
Glomerulus, Mineralization		1						2	1								
Infiltrate, Mononuclear Cell					1				1								
Serosa, Eosinophilic Material						P	P							P		P	
LIVER																	
Bile Ducts, Hyperplasia									2		2						
Hepatocytes, Atrophy, Diffuse																	
Hepatocytes, Dissociation, Diffuse																	
Hepatocytes, Fatty Change, Diffuse		2	1	1	2	3	1	1		2	3	1	1	3		1	
Hepatocytes, Necrosis, Centrilobular																	
Hepatocytes, Necrosis, Focal											1						
Inflammation, Chronic		1			1	1			2		1	1		1	1		1
Periportal Infiltrate, Mononuclear Cell									1	1							
Periportal Inflammation, Granulomatous																	
OVARY		X	X		X		X		X	X	X		X	X		X	X
Hemorrhage																	
Infiltrate, Mononuclear Cell				2													
Serosa, Eosinophilic Material						P	P				P			P			
Serosa, Inflammation, Chronic Active																	

EPL

Experimental Pathology Laboratories, Inc.

II-6

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

GROUP
300PPM

ANIMAL

[illegible]

11-7

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac/death

Contains No CBI

GROUP
900PPM

ANIMAL

[illegible]

11-8

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

ADULT EUTHANASIA

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Males

Group Identification: CONTROL - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
355	TESTIS	Right ~1.25 cm	No Correlating Lesion
371	TESTES	~1.0 cm	Decreased Diameter (TESTIS)
381	TESTIS	Right ~1.0 cm	Decreased Diameter

EPL

Experimental Pathology Laboratories, Inc.

III-1

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Males

Group Identification: 100PPM - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
393	TESTIS	Left ~1 cm	No Correlating Lesion
401	TESTIS	Right ~1.2 cm	No Correlating Lesion
403	TESTIS	Right ~1.25 cm	No Correlating Lesion
407	TESTIS	Right ~1.25 cm	No Correlating Lesion
409	TESTIS	Right ~1.25 cm	No Correlating Lesion
415	LIVER	Slightly mottled	Hepatocytes, Fatty Change, Diffuse

EPL

Experimental Pathology Laboratories, Inc.

III-2

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Males

Group Identification: 100PPM - Unscheduled Sac./Death

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
385	TESTIS	Bilateral - 0.2 x 0.4 - 0.5 cm, black (noted at gross trimming)	Immature

EPL

Experimental Pathology Laboratories, Inc.

III-3

- 174 -

Project Number 454-116

Contains No CBI

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Males

Group Identification: 300PPM - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
427	LIVER	Slightly mottled	Hepatocytes, Fatty Change, Diffuse
433	TESTES	~1.25	No Correlating Lesion (TESTIS)
443	TESTIS	Right ~1.25 cm	No Correlating Lesion
445	TESTIS	Left ~1.25 cm	No Correlating Lesion

EPL

Experimental Pathology Laboratories, Inc.

III-4

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Males

Group Identification: 900PPM - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
449	TESTIS	Right ~1.25 cm	No Correlating Lesion
	TESTIS	Left ~1.5 cm	No Correlating Lesion
451	TESTIS	Right ~1.5 cm	No Correlating Lesion
453	TESTIS	Right is ~1.25 cm	No Correlating Lesion
459	TESTIS	Right ~1.25 cm	Decreased Diameter
463	TESTIS	Right ~1.0 cm	No Correlating Lesion
465	TESTIS	Right ~1.25 cm	No Correlating Lesion
469	TESTES	~1.25 cm	No Correlating Lesion (TESTIS)

EPL

Experimental Pathology Laboratories, Inc.

III-5

- 176 -

Project Number 454-116

Contains No CBI

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Females

Group Identification: CONTROL - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
384	REPRODUCTIVE	Hemorrhagic follicles	Hemorrhage (OVARY)

EPL

Experimental Pathology Laboratories, Inc.

III-6

- 177 -

Project Number 454-116

Contains No CBI

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Females

Group Identification: CONTROL - Unscheduled Sac./Death

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
368	LIVER KIDNEYS	Pale Pale	Hepatocytes, Fatty Change, Diffuse No Correlating Lesion (KIDNEY)

EPL

Experimental Pathology Laboratories, Inc.

III-7

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Females

Group Identification: 300PPM - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
448	REPRODUCTIVE	Egg yolk peritonitis	Serosa, Eosinophilic Material (OVARY)

EPL

Experimental Pathology Laboratories, Inc.

111-8

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Females

Group Identification: 300PPM - Unscheduled Sac./Death

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
430	KIDNEYS OVARY	Pale Regressing	Cortex, Tubules, Dilatation (KIDNEY) No Correlating Lesion

EPL

Experimental Pathology Laboratories, Inc.

III-9

CORRELATION OF GROSS AND MICROSCOPIC FINDINGS

454-116
Adult Euthanasia

Species: Bobwhite

Sex: Females

Group Identification: 900PPM - Sacrificed

Animal Number	Client Topography / Site	Client Gross Observations	Microscopic Observations
454	REPRODUCTIVE	Egg yolk peritonitis	No Correlating Lesion (OVARY)
462	SPLEEN	Slightly enlarged spleen ~1.5 cm x 1.0 cm	Congestion
478	LIVER	Friable	Hepatocytes, Dissociation, Diffuse
	REPRODUCTIVE	Egg yolk peritonitis	No Correlating Lesion (OVARY)

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Experimental Pathology Laboratories, Inc.

III-10

SUMMARY INCIDENCE TABLES

OFFSPRING EUTHANASIA

454-116
Offspring Euthanasia
Male Bobwhite

EPL
Experimental Pathology Laboratories, Inc.

454-116
Offspring Euthanasia
Female Bobwhite

EPL	
	Experimental Pathology Laboratories, Inc.

Contains No CBI

HISTOPATHOLOGY INCIDENCE TABLES
OFFSPRING EUTHANASIA

[illegible]

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

HISTOPATHOLOGY INCIDENCE TABLE

454-116 Offspring Euthanasia Male Bobwhite	A N I M A L	GROUP 300PPM								GROUP 900PPM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		P 1 3 2	P 1 4 8	P 1 7 2	P 1 7 7	P 1 8 3	P 1 8 8	P 2 1 0		W 6 1 7	W 6 2 8	W 6 3 5	W 6 4 1	W 6 4 5	W 6 5 9	W 6 6 9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

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Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

HISTOPATHOLOGY INCIDENCE TABLE

[illegible]

EPL | Experimental Pathology Laboratories, Inc.

V-4

Key: X=Not Remarkable N=No Section I=Incomplete A=Autolysis
1=minimal 2=slight/mild 3=moderate 4=moderately severe 5=severe/high
P=Present B=Benign M=Malignant
m=missing one paired organ u=unscheduled sac./death

Contains No CBI

Appendix XV

Certificate of Analysis

**CERTIFICATE OF ANALYSIS**

Revision #1 (15-September-03)

Exygen Research COA Reference #: 023-067

3M Product: PFBS, Lot #5

Purity: 98.2%

Test Name	Specifications	Result
Purity ¹		98.2 %
Appearance	White, crystalline solid	Conforms
Identification NMR		Positive
Metals (ICP/MS)		
1. Calcium		1. 0.002 wt./wt. %
2. Magnesium		2. <0.001 wt./wt. %
3. Sodium ²		3. 1.142 wt./wt. %
4. Potassium ²		4. 8.442 wt./wt. %
5. Nickel		5. <0.001 wt./wt. %
6. Iron		6. 0.002 wt./wt. %
7. Manganese		7. <0.001 wt./wt. %
Total % Impurity (NMR)		0.9 wt./wt. %
Total % Impurity (LC/MS)		0.774 wt./wt. %
Total % Impurity (GC/MS)		None Quantified
Residual Solvents TGA		0.02 wt./wt. %
Purity by DSC		99.69%
Inorganic Anions (IC)		
1. Chloride		1. <0.015 wt./wt. %
2. Fluoride		2. 0.101 wt./wt. %
3. Bromide		3. <0.040 wt./wt. %
4. Nitrate		4. <0.009 wt./wt. %
5. Nitrite		5. <0.006 wt./wt. %
6. Phosphate		6. <0.006 wt./wt. %
7. Sulfate		7. <0.078 wt./wt. %
Organic Acids ³ (IC)		
1. TFA		1. <0.1 wt./wt. %
2. PFPA		2. <0.1 wt./wt. %
3. HFBA		3. <0.1 wt./wt. %
4. NFPA		4. <0.25 wt./wt. %
Elemental Analysis ⁴		
1. Carbon	Theoretical Value = 14.2%	1. 10.4 wt./wt. %
2. Hydrogen	Theoretical Value = 0.0%	2. 0.311 wt./wt. %
3. Nitrogen	Theoretical Value = 0%	3. 3.94 wt./wt. %
4. Sulfur	Theoretical Value = 9.5%	4. 9.46 wt./wt. %
5. Fluorine	Theoretical Value = 50.6%	5. 38.1 wt./wt. %

**CERTIFICATE OF ANALYSIS**

Revision #1 (15-September-03)

Exygen Research COA Reference #: 023-067

Date of Last Analysis: 08/31/01

Expiration Date: 08/31/08

Storage Conditions: Frozen $\leq -10^{\circ}\text{C}$

Re-assessment Date: 08/31/08

¹Purity = 100% - (Total NMR impurities, 0.90% + Total LC/MS impurities, 0.774% + Total Metal impurities, 0.004% + Total Anion Impurities, 0.101 + Residual Solvents TGA, 0.02%)

Total impurity from all tests = 1.799%

Purity = 100% - 1.799% = 98.2%

²Potassium and Sodium are present as counterions and thus are excluded from the purity calculation.

³ TFA	Trifluoroacetic acid
HFBA	Heptafluorobutyric acid
NFFA	Nonafluoropentanoic acid
PFPA	Pentafluoropropanoic acid

⁴Theoretical value calculations based on the empirical formula, $\text{C}_4\text{F}_9\text{SO}_3\text{K}^+$ (MW=338.2)

Prepared By:

Charles Simons
Scientist, Exygen Research

Date

9/15/03

Reviewed By:

John Flaherty
Vice-President - Operations, Exygen Research

Date

9/16/03

COA023-067

Page 2 of 2

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Appendix XVI

The Analysis of T-7485 in Avian Diet

Appendix XVI

Table 1

Typical LC/MS/MS Operational Parameters

INSTRUMENT:	Hewlett-Packard Model 1100 High Performance Liquid Chromatograph with a Perkin-Elmer SCIEX API 3000LC Mass Spectrometer equipped with a Perkin-Elmer SCIEX TurboIonSpray ion source. Operated in multiple ion reaction monitoring (MRM) mode.
ANALYTICAL COLUMN:	Keystone PRISM RP column (50 mm × 2.0 mm I.D., 3-µm particle size)
GUARD COLUMN:	Keystone Javelin C ₁₈ column (20 mm × 2.0 mm I.D.)
OVEN TEMPERATURE:	40°C
STOP TIME:	3.00 minutes
FLOW RATE:	200 µL/minute
MOBILE PHASE:	10% HPLC-Grade Reagent Water with 0.02M Ammonium Formate: 90% Methanol
INJECTION VOLUME:	5.0 µL
T-7485 RETENTION TIME:	Approximately 2.1 minutes
T-7485 MONITORED MASS:	299.0 amu → 98.9 amu

Appendix XVI

Table 2**Example Calculations**

Sample number 454-116-28, nominal concentration of 100 ppm a.i. in avian feed

Peak Area = 285711

Y-intercept = 45978.2266

Slope = 22645852

Primary Dilution:

Initial Weight (W_i) = 10.0 g

Original Final Volume (V_i) = 100 mL

Secondary Dilution:

Initial Volume (V_i) = 0.0500 mL

Final Volume (V_f) = 50.0 mL

Overall Dilution Factor ($V_i/W_i \times V_f/V_i$) = 10000 mL/g = 10000 L/Kg

$$\text{T-7485 at instrument (mg a.i./L)} = \frac{(\text{peak area} - \text{y-intercept})}{\text{slope}}$$

$$= \frac{(285711 - 45978.2266)}{22645852}$$

$$= 0.01059 \text{ mg a.i./L}$$

T-7485 in sample (mg a.i./Kg) = T-7485 at instrument (mg a.i./L) $\times$ overall dilution factor (L/Kg)

$$\text{T-7485 in sample (mg a.i./Kg)} = \frac{0.01059 \text{ mg a.i.}}{\text{L}} \times \frac{10000 \text{ L}}{\text{Kg}}$$

$$= 105.9 \text{ mg a.i./Kg}$$

$$= 105.9 \text{ ppm a.i.}$$

$$\text{Percent of Nominal Concentration} = \frac{\text{T-7485 (ppm a.i.) in sample}}{\text{T-7485 (ppm a.i.) nominal}} \times 100$$

$$= \frac{105.9}{100} \times 100 = 106\%$$

Instrument Software: MacQuan, version 1.6.

Appendix XVI

Table 3

Matrix Blank and Fortifications Analyzed Concurrently with the Samples

Number (454-116-)	Sample		Concentration of T-7485 (ppm a.i.)		Percent Recovery ²	Mean Recovery (%)
	Type	Interval	Fortified	Measured ^{1,2}		
MAB-1	Matrix Blank	Week 1, Day 0	0.00	< 20.0	-	95
MAS-1	Matrix Fortification	Week 1, Day 0	50.0	43.3	86.7	
MAS-2	Matrix Fortification	Week 1, Day 0	200	198	99.1	
MAS-3	Matrix Fortification	Week 1, Day 0	1000	993	99.3	
MAB-2	Matrix Blank	Week 1, Day 7	0.00	< 20.0	-	91
MAS-4	Matrix Fortification	Week 1, Day 7	50.0	41.0	81.9	
MAS-5	Matrix Fortification	Week 1, Day 7	200	182	91.1	
MAS-6	Matrix Fortification	Week 1, Day 7	1000	992	99.2	
MAB-3	Matrix Blank	Week 4, Day 0	0.00	< 25.0	-	112
MAS-7	Matrix Fortification	Week 4, Day 0	50.0	57.1	114	
MAS-8	Matrix Fortification	Week 4, Day 0	200	234	117	
MAS-9	Matrix Fortification	Week 4, Day 0	1000	1050	105	
MAB-4	Matrix Blank	Week 8, Day 0	0.00	< 25.0	-	109
MAS-10	Matrix Fortification	Week 8, Day 0	50.0	55.9	112	
MAS-11	Matrix Fortification	Week 8, Day 0	200	222	111	
MAS-12	Matrix Fortification	Week 8, Day 0	1000	1042	104	

¹ Less than values correspond to the ppm a.i. equivalent concentration of the low-level calibration standard in the matrix blank extract.

² Results were generated using MacQuan version 1.6 software. Manual calculations may differ slightly.

Appendix XVI

Table 3 (Continued)

Matrix Blanks and Fortifications Analyzed Concurrently with the Samples

Number (454-116-)	Sample		Concentration of T-7485 (ppm a.i.)		Percent Recovery	Mean Recovery ($\bar{x}$)
	Type	Interval	Fortified ¹	Measured ^{1,2}		
MAB-5	Matrix Blank	Week 12, Day 0	0.00	< 25.0	-	105
MAS-13	Matrix Fortification	Week 12, Day 0	50.0	52.3	105	
MAS-14	Matrix Fortification	Week 12, Day 0	200	209	105	
MAS-15	Matrix Fortification	Week 12, Day 0	1000	1055	106	
MAB-6	Matrix Blank	Week 16, Day 0	0.00	< 25.0	-	106
MAS-16	Matrix Fortification	Week 16, Day 0	50.0	54.1	108	
MAS-17	Matrix Fortification	Week 16, Day 0	200	210	105	
MAS-18	Matrix Fortification	Week 16, Day 0	1000	1042	104	
MAB-7	Matrix Blank	Week 20, Day 0	0.00	< 25.0	-	103
MAS-19	Matrix Fortification	Week 20, Day 0	50.0	51.3	103	
MAS-20	Matrix Fortification	Week 20, Day 0	200	204	102	
MAS-21	Matrix Fortification	Week 20, Day 0	1000	1045	105	

¹Less than values correspond to the ppm a.i. equivalent concentration of the low-level calibration standard in the matrix blank extract.²Results were generated using MacQuan version 1.6 software. Manual calculations may differ slightly.

Appendix XVI

Table 4

Homogeneity of T-7485 in Avian Diet

Nominal Concentration (ppm a.i.)	Sample I.D. Number (454-116-)	Location Sampled in Mixing Vessel	Measured T-7485 Concentration (ppm a.i.)	Mean (ξ) Standard Deviation (SD) Coefficient of Variation (CV)	Mean Percent of Nominal
100	2	Top Left	104	$\xi = 105$ ppm a.i. SD = 5.13 ppm a.i. CV = 4.91%	105
	3	Top Right	104		
	4	Middle Left	102		
	5	Middle Right	97.0		
	6	Bottom Left	112		
	7	Bottom Right	108		
300	8	Top Left	299	$\xi = 299$ ppm a.i. SD = 12.0 ppm a.i. CV = 4.00%	100
	9	Top Right	312		
	10	Middle Left	303		
	11	Middle Right	282		
	12	Bottom Left	311		
	13	Bottom Right	289		
900	14	Top Left	870	$\xi = 880$ ppm a.i. SD = 16.0 ppm a.i. CV = 1.82%	98
	15	Top Right	880		
	16	Middle Left	876		
	17	Middle Right	859		
	18	Bottom Left	903		
	19	Bottom Right	894		

Appendix XVI

Table 5

Verification of T-7485 Concentrations in Avian Diet

Nominal Concentration (ppm a.i.)	Sample I.D. Number (454-116-)	Interval (Day 0 of Week -)	Measured T-7485 Concentration ¹ (ppm a.i.)	Mean (ξ) Standard Deviation (SD) Coefficient of Variation (CV)	Percent of Nominal	Mean Percent of Nominal
0	27	4	< 25.0	ξ = < 25.0 ppm a.i.	--	--
	34	8	< 25.0		--	
	41	12	< 25.0		--	
	48	16	< 25.0		--	
	55	20	< 25.0		--	
100	28	4	106	ξ = 107 ppm a.i. SD = 7.74 ppm a.i. CV = 7.21%	106	107
	29	4	119		119	
	35	8	103		103	
	36	8	107		107	
	42	12	102		102	
	43	12	121		121	
	49	16	110		110	
	50	16	109		109	
	56	20	99.8		99.8	
	57	20	97.3		97.3	

¹ Less than values correspond to the ppm a.i. equivalent concentration of the low-level calibration standard in the matrix blank extract.

Appendix XVI

Table 5 (Continued)

Verification of T-7485 Concentrations in Avian Diet

Nominal Concentration (ppm a.i.)	Sample I.D. Number (454-116-)	Interval (Day 0 of Week -)	Measured T-7485 Concentration ¹ (ppm a.i.)	Mean (ξ) Standard Deviation (SD) Coefficient of Variation (CV)	Percent of Nominal	Mean Percent of Nominal
300	30	4	323	$\xi = 314$ ppm a.i. SD = 5.97 ppm a.i. CV = 1.90%	108	105
	31	4	312		104	
	37	8	310		103	
	38	8	320		107	
	44	12	311		104	
	45	12	323		108	
	51	16	315		105	
	52	16	309		103	
	58	20	312		104	
	59	20	306		102	
900	32	4	983	$\xi = 961$ ppm a.i. SD = 36.8 ppm a.i. CV = 3.83%	109	107
	33	4	949		105	
	39	8	938		104	
	40	8	929		103	
	46	12	1013		113	
	47	12	990		110	
	53	16	991 ¹		110 ¹	
	54	16	989		110	
	60	20	900		100	
	61	20	928		103	

¹ Result corresponds to the mean of duplicate re-injections of the original sample extract.

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Table 6

Ambient Stability of T-7485 in Avian Diet During the Northern Bobwhite Reproduction Study

Nominal Concentration (ppm a.i.)	T-7485 Concentration						
	Week 1, Day 0 ¹			Week 1, Day 7			
	Sample Number (454-116-)	Mean Measured (ppm a.i.)	Mean Percent of Nominal	Sample Number (454-116-)	Measured ² (ppm a.i.)	Mean Measured (ppm a.i.)	Mean Percent of Day 0
0	1	<20.0	-	20	< 20.0	<20.0	-
100	2-7	105	105	21 22	95.2 106	101	96
300	8-13	299	100	23 24	300 326	313	105
900	14-19	880	98	25 26	989 975	982	112

¹Day 0 values are from homogeneity samples presented in Table 4.²Less than values correspond to the ppm a.i. equivalent concentration of the low-level calibration standard in the matrix blank extract.

Appendix XVI

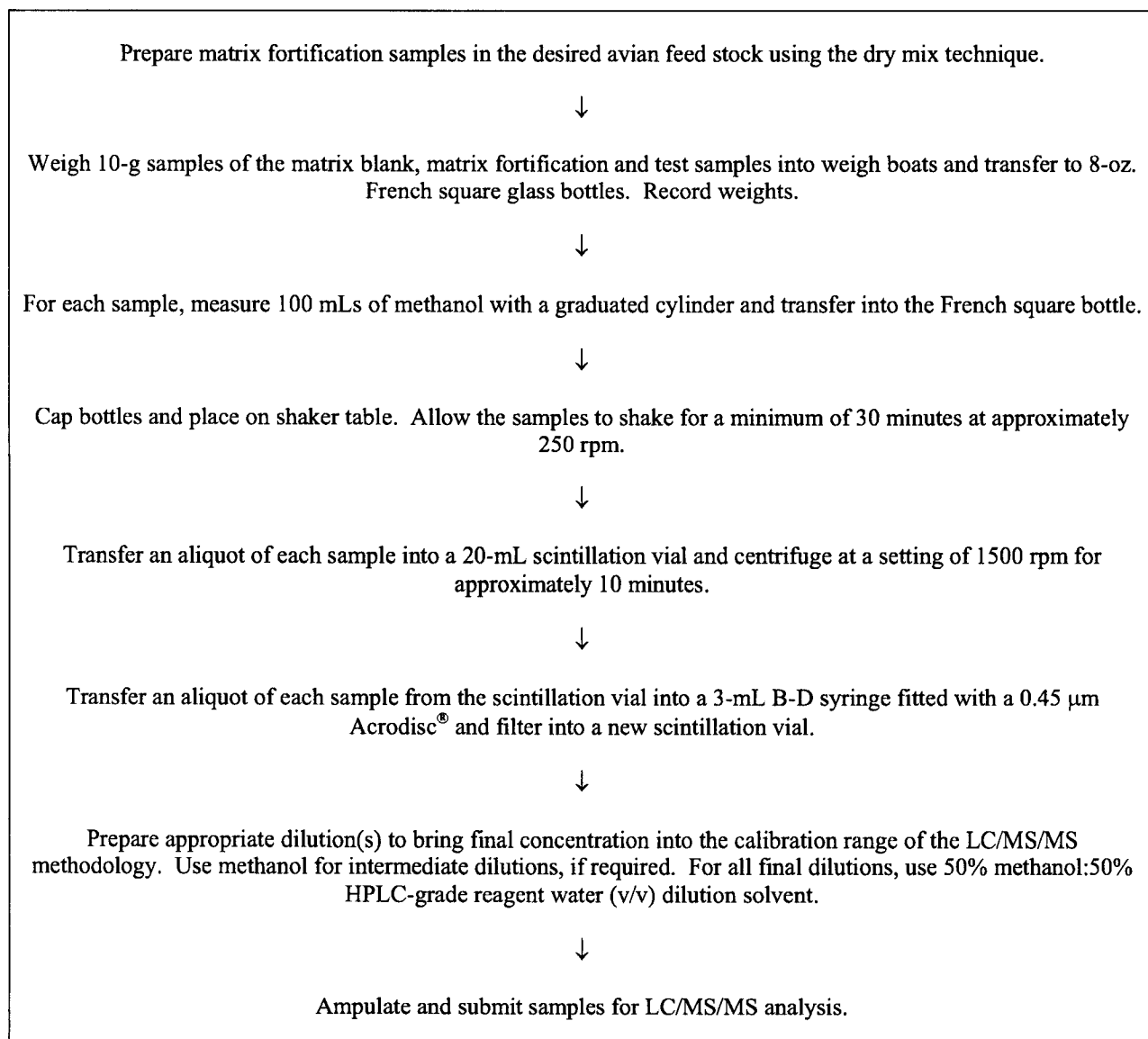
Analytical Method Flowchart for the Analysis of T-7485 in Avian Diet

Figure 1. Analytical method flowchart for the analysis of T-7485 in avian diet.

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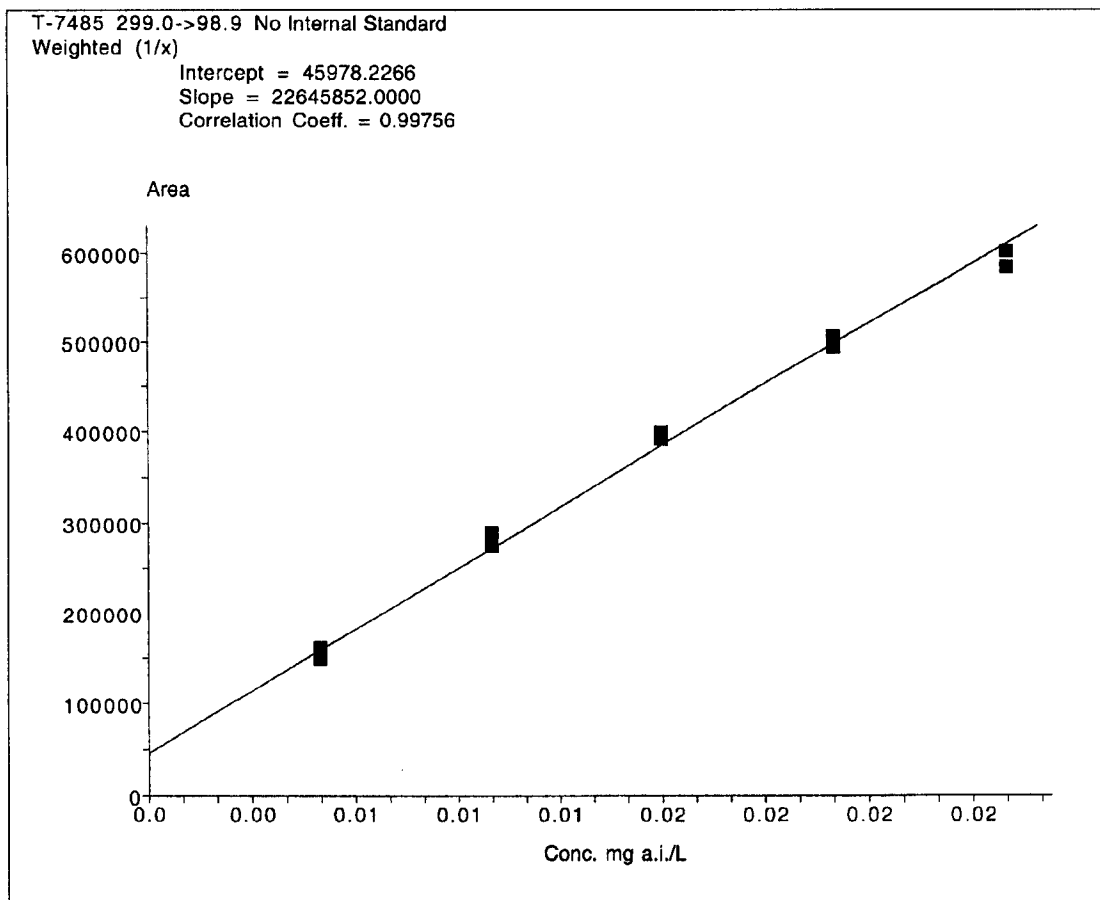


Figure 2. Representative calibration curve for T-7485.

Appendix XVI

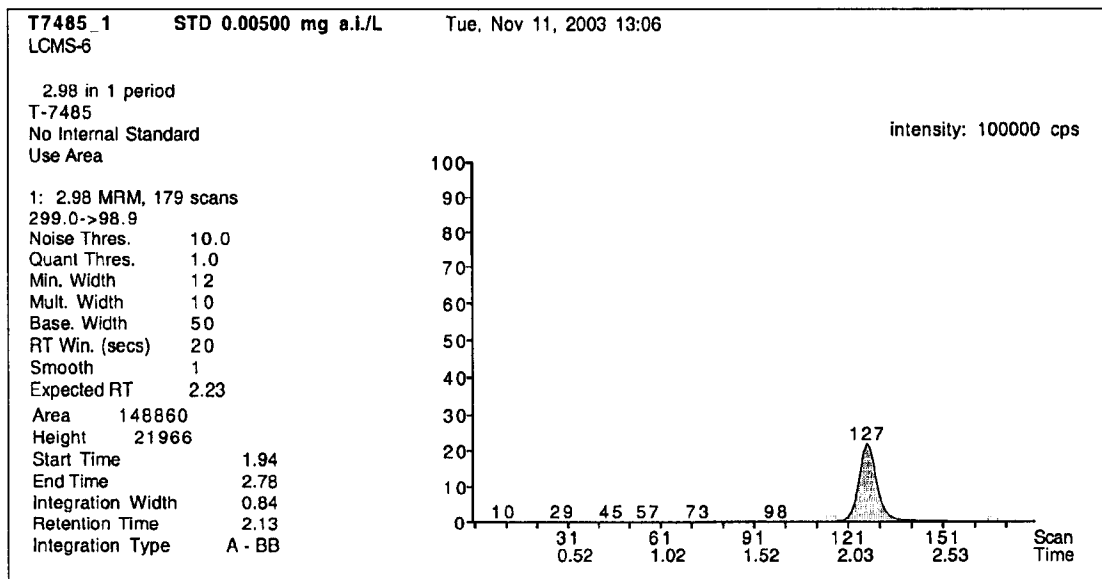


Figure 3. Representative ion chromatogram of a low-level T-7485 standard, 0.00500 mg a.i./L.

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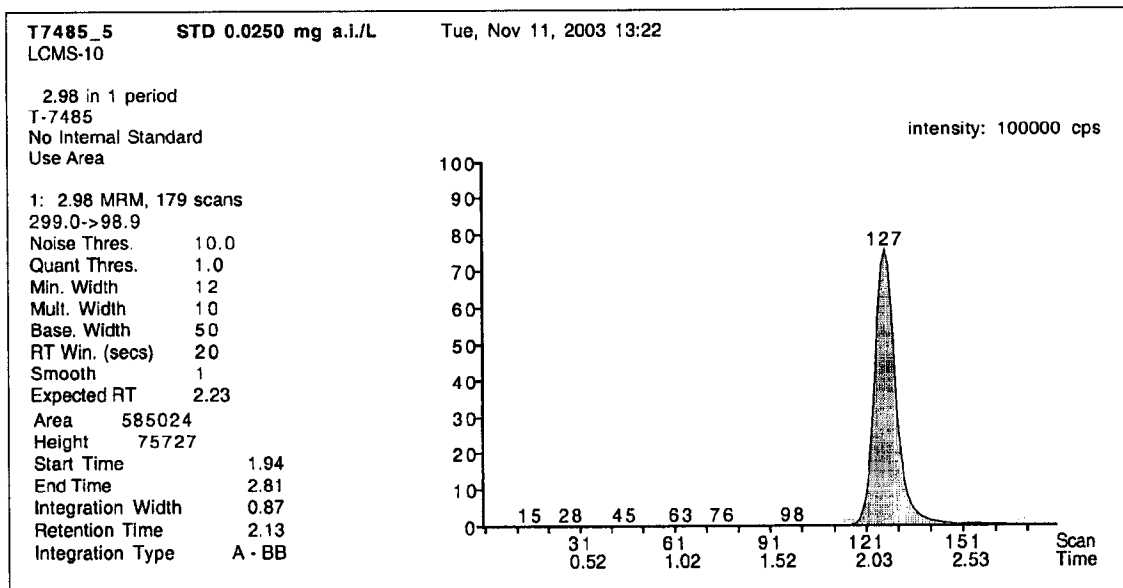


Figure 4. Representative ion chromatogram of a high-level T-7485 standard, 0.0250 mg a.i./L.

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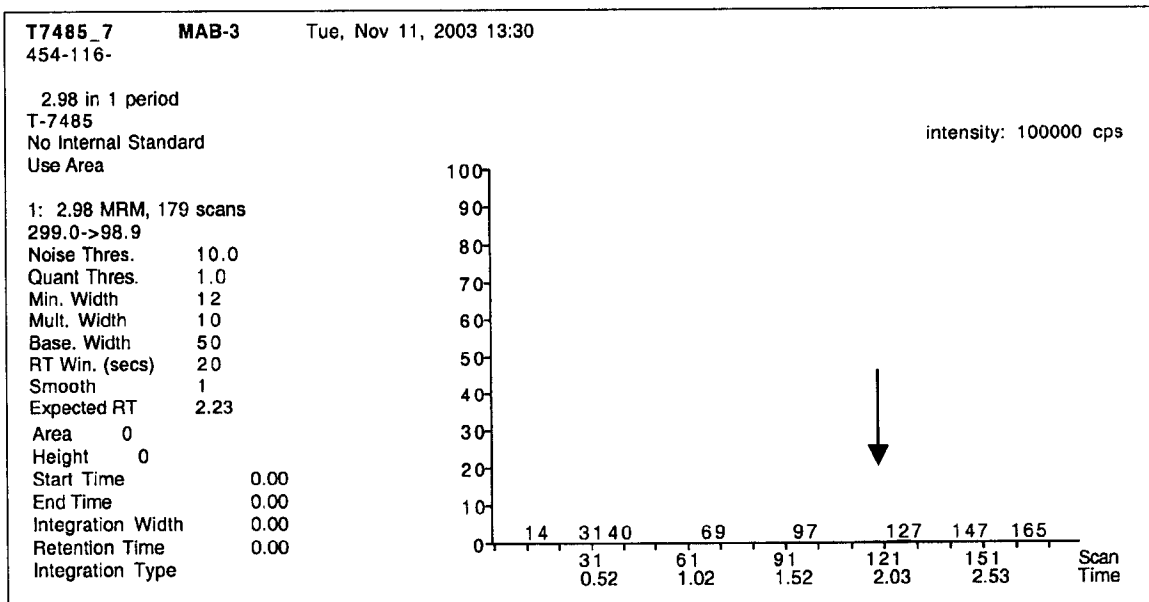


Figure 5. Representative ion chromatogram of a matrix blank sample, (454-116-MAB-3).
The arrow indicates the approximate retention time of T-7485.
10-g sample, Overall dilution = 5000X.

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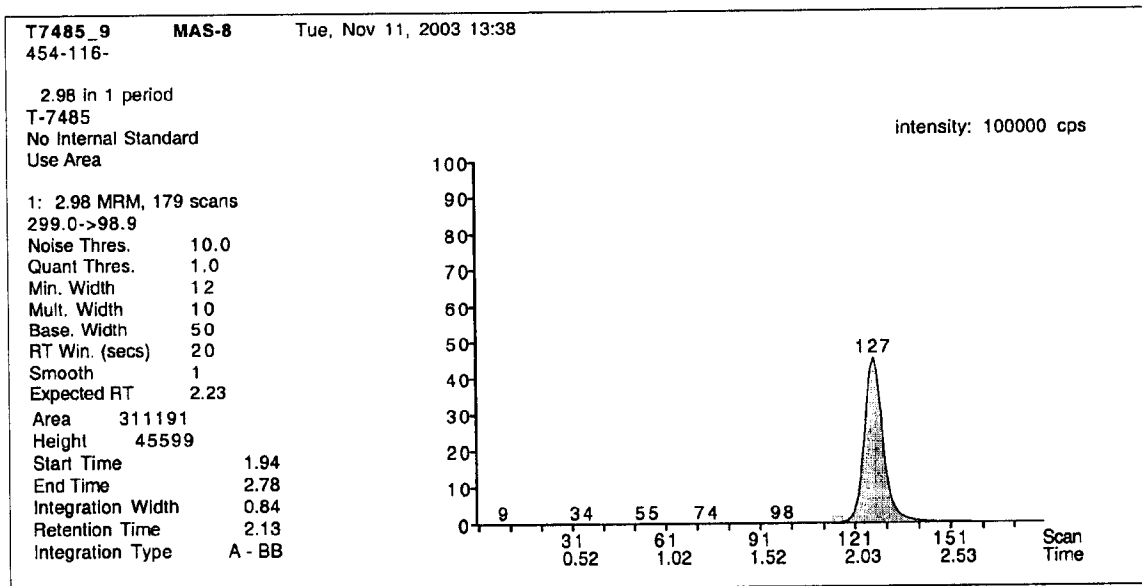


Figure 6. Representative ion chromatogram of a matrix fortification (454-116-MAS-8).
Nominal concentration 200 ppm a.i., 10-g sample, Overall dilution = 20000X.

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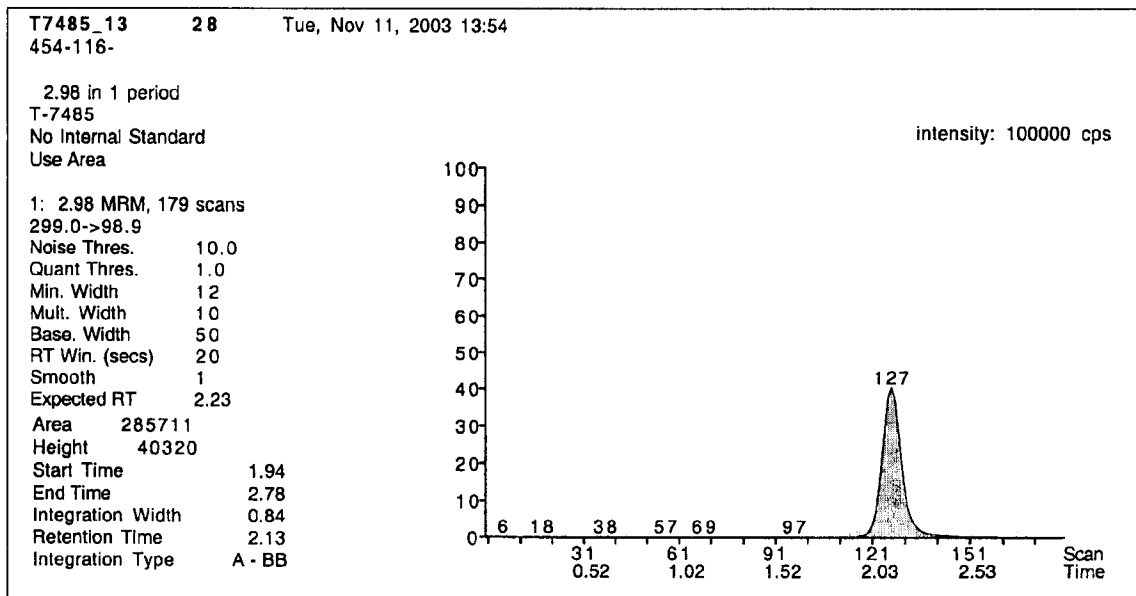


Figure 7. Representative ion chromatogram of an avian diet sample from Week 4, Day 0, (454-115-28).

Nominal concentration 100 ppm a.i., 10-g sample, Overall dilution = 10000X.

Appendix XVII

Analytical Determination of T-7485 in Northern Bobwhite Tissues



Study Title

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

DATA REQUIREMENT

40 CFR Part 792

AUTHOR

Mark E. Ellefson

PHASE INITIATION DATE

August 20, 2004

PHASE COMPLETION DATE

Upon Signing

PERFORMING LABORATORY

3M Environmental Laboratory

Building 2-3E-09

935 Bush Avenue

St. Paul, MN 55106

PROJECT IDENTIFICATION

3M Environmental Laboratory Study # E03-0583

Wildlife International Ltd: 454-116

Total Number of Pages

227

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

This page has been reserved for specific country requirements.

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

GLP COMPLIANCE STATEMENT

Study Title: T-7485: A Reproduction Study with The Northern Bobwhite

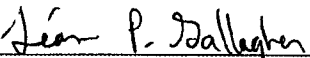
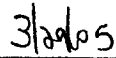
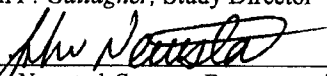
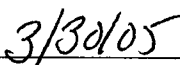
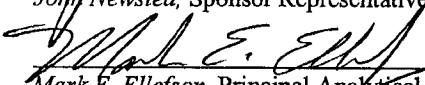
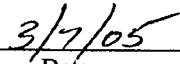
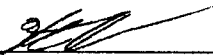
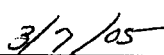
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Study Identification Number: E03-0583

This analytical phase was conducted in compliance with Toxic Substances Control Act (TSCA)
Good Laboratory Practice (GLP) Standards with the exceptions listed below:

Exceptions to GLP compliance:

- 40 CFR 792.105 (b): The stability of the test substance in the test system (quail tissues), in the sample homogenate, and in the sample extract is not known.
- 40 CFR 792.105 (e): The stability of the test (and reference) substance under the storage conditions at the test site is not known.

 Sean P. Gallagher, Study Director	 Date
 John Newsted, Sponsor Representative	 Date
 Mark E. Ellefson, Principal Analytical Investigator	 Date
 William K. Reagan, 3M Environmental Laboratory Management	 Date

Report E03-0583

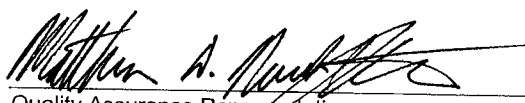
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quality Assurance Statement

Study Title: T-7485: A Reproduction Study with The Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues
Study Identification Number: E03-0583

The analytical phase was audited by the 3M Environmental Laboratory Quality Assurance Unit (QAU), as indicated in the following table. The findings were reported to the study director and laboratory management.

INSPECTION DATES	PHASE	DATE REPORTED TO	
		MANAGEMENT	STUDY DIRECTOR
08/05/2004 – 08/06/2004	Protocol Amendment	2/23/2005	2/23/2005
09/03/2004, 09/16/2004, 09/21/2004, 09/27/2004	In-phase (Liver)	2/23/2005	2/23/2005
10/14/2004, 10/18/2004 -10/21/2004	Serum Data	2/23/2005	2/23/2005
11/01/2004 – 11/05/2004, 11/10/2004 – 11/12/2004, 11/15/2004 – 11/16/2004	Liver Data	2/23/2005	2/23/2005
12/20/2004 – 12/22/2004	Egg Data	2/23/2005	2/23/2005
1/5/2005 – 1/7/2005, 1/10/2005	Final Report	2/23/2005	2/23/2005


Quality Assurance Representative

03/02/05
Date

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

STUDY INFORMATION**Sponsor**

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Mark L. Anderson, Analytical Chemist

Study Dates

Study Initiation: 10 September 2003
Experimental Initiation: 30 January 2003
Experimental Completion: 01 April 2003
Analytical Phase Completion: Date of signing

Location of Archives

All original raw data, protocol, and analytical report have been archived at the 3M Environmental Laboratory according to 40 CFR Part 792. The test substance and analytical reference standard reserve samples are archived at the 3M Environmental Laboratory according to 40 CFR Part 792.

SUMMARY

The concentration of the $C_4F_9SO_3^-$ anion of perfluorobutane sulfonate, potassium salt (PFBS, $C_4F_9SO_3^-K^+$) was determined in the liver, serum, and eggs of adult bobwhite quail and their offspring in a control group and three dose groups consisting of 100, 300 and 900 μg PFBS/gram feed. Extracted matrix standards were used to establish a calibration curve. Concentrations of $C_4F_9SO_3^-$ are reported after correction for the purity and the potassium contribution to the mass of the PFBS reference substance used.

Table 1 summarizes data from the serum samples. Table 2 summarizes data from the liver samples. Table 3 summarizes data from the egg samples.

Table 1. Summary Table, $C_4F_9SO_3^-$ Concentration in Serum[†]

Dose Group and Gender	Number of Serum Samples	Mean Concentration μg PFBS/g Serum	Median Concentration μg PFBS/g Serum	Range of Results
100 ppm, Male	13	16.5	12.3	5.81 – 37.7
100 ppm, Female	15	14.6	13.1	2.49 – 33.1
100 ppm Offspring	15	0.0369*	0.0334*	< 0.0278 – 0.0552
300 ppm, Male	16	27.9	26.3	14.2 – 42.9
300 ppm, Female	15	37.8	27.8	12.2 – 102
300 ppm Offspring	15	0.0567	0.0433	0.0245 – 0.119
900 ppm, Male	16	68.2	63.4	34.3 – 98.8
900 ppm, Female	16	104	82.2	30.5 – 370
900 ppm Offspring	15	0.133	0.117	0.0413 – 0.320

[†]The uncertainty for the serum sample values is +/- 15% as calculated in the validation.

*Mean and Median reported for samples in which analyte was detected. For more specific information see tables in Attachment A

The control serum samples that showed measurable levels of target analyte are listed individually in Table 14

For individual sample values see Attachment A

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues**Table 2. Summary Table, C₄F₉SO₃⁻ Concentration in Liver[†]**

Dose Group and Gender	Number of Liver Samples	Mean Concentration, ug PFBS/g Liver	Median Concentration, ug PFBS/g Liver	Range of Results
100 ppm, Male	17	3.25	2.71	0.808 – 8.89
100 ppm, Female	16	3.52	3.91	0.396 – 8.19
100 ppm Offspring	15	0.0211*	0.0233*	< 0.0137 – 0.0301
300 ppm, Male	15	7.78	7.52	1.42 – 14.2
300 ppm, Female	16	11.1	9.08	3.57 – 23.5
300 ppm Offspring	15	0.0515*	0.0288*	< 0.0138 – 0.200
900 ppm, Male	16	15.7	15.1	6.73 – 23.7
900 ppm, Female	16	29.6	23.5	9.73 – 77.4
900 ppm Offspring	15	0.111	0.0935	0.0340 – 0.313

[†]The uncertainty for the liver sample values is +/- 46% as calculated in the validation.

*Mean and Median reported for samples in which analyte was detected. For more specific information see tables in Attachment A

The control liver samples showing measurable levels of target analyte are listed individually in Table 15.

Table 3. Summary Table, C₄F₉SO₃⁻ Concentration in Egg[†]

Dose Group	Number of Egg Samples	Mean Concentration, ug PFBS/g Egg	Median Concentration, ug PFBS/g Egg	Range of Results
100 ppm, Lot B	7	7.65	7.14	4.92 – 10.8
300 ppm, Lot B	7	23.6	25.2	13.3 – 36.5
900 ppm, Lot B	8	50.5	39.7	33.8 – 118
100 ppm, Lot G	8	14.0	12.4	8.44 – 26.2
300 ppm, Lot G	7	31.4	27.6	16.1 – 73.1
900 ppm, Lot G	8	92.6	92.4	52.6 – 137

[†]The uncertainty of the egg sample values is +/- 15% as calculated in the validation.

None of the egg samples from the control group demonstrated measurable levels of target analyte at a level greater than 50% of the LLOQ.

PURPOSE

The purpose of this analytical phase of the study was to quantify $C_4F_9SO_3^-$ in the liver, serum, and eggs of both control and dosed Northern Bobwhite Quail and their offspring.

REFERENCE SUBSTANCE

Table 4. Reference Substance

Reference Substance	Acronym and Structure	Identification Number	Source	Solubility in Water	Purity	Storage Conditions	Expiration Date
Potassium Perfluorobutane sulfonate**	PFBS $C_4F_9SO_3^-K^+$	TCR-282	3M Specialty Chemicals	56.6 mg/mL	97.3%	Frozen	1/17/2007

* According to E00-1877, "Determination of the Solubility of Potassium Perfluorobutanesulfonate (PFBS) in Water"

**The vapor pressure and octanol/water partition coefficient are not available.

SPECIMEN RECEIPT AND STORAGE

During the "In-Life" phase of the study, Northern Bobwhite serum, liver, and egg samples were collected by Wildlife International, Ltd. and sent to the 3M Environmental Laboratory for analysis. The specimens were received at the 3M Environmental Laboratory, assigned a laboratory tracking (LIMS) number (E03-0583) and were stored at $-20^{\circ}C \pm 10^{\circ}C$ until extraction and analysis.

Table 5. Specimen Receipt and Storage

Sample Group	Receipt Date	Receipt Condition
Adult Serum	2/19/2004	Frozen
Offspring Serum	4/01/2004	Frozen
Adult Liver	2/19/2004	Frozen
Offspring Liver	4/01/2004	Frozen
Eggs	2/24/2004	Frozen

METHOD SUMMARY

Preparatory Method

Preparation and analysis was conducted using the 3M Environmental Laboratory analytical method ETS-8-231, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry" with several modifications (noted specifically in the protocol amendment). In summary, the samples were weighed, homogenized in acetonitrile, extracted using a Zymark Rapid Trace automated SPE system, and analyzed using liquid chromatography/mass spectrometry (LC/MS). All sample calculations were based on sample weight rather than volume.

Analytical Method

Samples were analyzed via ETS-8-231, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry." Specific parameters used are listed below.

Analytical Equipment

Liquid Chromatograph: Hewlett-Packard® Series 1100 Liquid Chromatograph system

Analytical column: Keystone® Betasil™ C₁₈ 2x50mm, 5µm particle size

Column temperature: 30 °C

Stop Time: 9.00 minutes

Flow rate: 300 µL/min

Injection volume: Variable between 2 and 20 µL

Mobile phase components:

Solvent A: 2.0 mM ammonium acetate in ASTM Type I water

Solvent B: HPLC Grade Methanol

Solvent Gradient:

<u>Time</u>	<u>%B</u>
0.00	10%
0.50	10%
0.80	60%
3.50	100%
5.50	100%
6.00	10%
9.00	10%

Mass Spectrometer: Hewlett-Packard® Series 1100 API/Mass Spectrometer Detector

Software: Agilent ChemStation™ A.08.03

Capillary Voltage: 3000 V

Gain = 1.0 EMV

Mode: Electrospray Negative

Gas Temperature: 350 °C

Drying Gas: 10 L /min.

Nebulizer Pressure: 30 psig

Analysis Type: Selected Ion Monitoring (SIM)

<u>Compound</u>	<u>Ion (m/z)</u>	<u>Fragmentor (volts)</u>
PFBS	299	100

Method Validation

The analytical method used in this study has been validated for PFOS (Perfluorooctane sulfonate, $C_8F_{17}SO_3$) in rat liver and serum and is described in the 3M analytical report E02-1042, "Method and Validation Report for 'Solid Phase Extraction and Analysis of Fluorochemical Compounds from Biological Matrices Method Number: ETS-8-231.1.'" It has also been cross-validated for PFOS in quail and mallard liver and serum, as reported in the 3M analytical report E01-1245, "Analytical Phase Report for PFOS: A Reproduction Study with the Northern Bobwhite."

Additional validation elements were performed during the course of these analyses, as detailed below, to extend the validation to PFBS in quail serum, liver and eggs.

Specificity

Specificity was achieved via chromatographic resolution of the analyte in conjunction with mass spectral detection of an ion with a mass to charge ratio (m/z) which is characteristic and specific to the target analyte. Matrix spike recoveries in each matrix (see tables 16 through 18) and example chromatograms of matrix spike samples are included in attachment C of this report to demonstrate method specificity. No other peaks were present with the mass and retention time of the analyte

Selectivity

The presence of interfering substances was investigated in each matrix by analysis of the control group samples. Instances where the amount of target analyte present was greater than 50% of the LLOQ are documented in tables 14 and 15

Calibration

Extracted calibration curves were generated using control matrix during the course of the study. Curve points that did not meet the acceptance requirements of the analytical method were deactivated and the curve was recalculated.

Calibration points were also evaluated for stability using successive injections spanning several days. The following acceptance criteria were applied (accuracy within $\pm 15\%$ or $\pm 20\%$ for the LLOQ, quadratic curve, not weighted, zero not included or forced). The relative standard deviation of the recovery at each concentration was determined and is presented below:

Table 6. Extracted Serum Calibration

Serum Curve	Number of Observations	Recovery, % RSD
EC-040901-5ng/mL	4	9.0%
EC-040901-10ng/mL	4	3.1%
EC-040901-25ng/mL	8	8.8%
EC-040901-50ng/mL	9	4.7%
EC-040901-75ng/mL	9	1.4%
EC-040901-100ng/mL	9	1.4%
EC-040901-250ng/mL	9	2.7%
EC-040901-500ng/mL	9	1.1%
EC-040901-750ng/mL	5	2.1%
EC040901-1000ng/mL	2	0.0%*

*Relative Percent Difference (RPD)

Table 7. Extracted Liver Calibration

Liver Curve	Number of Observations	Recovery, % RSD
EC-041004-5ppb	3	1.5%
EC-041004-10ppb	3	0.8%
EC-041004-25ppb	4	2.7%
EC-041004-50ppb	4	1.5%
EC-041004-75ppb	4	4.0%
EC-041004-100ppb	4	3.7%
EC-041012d-25	3	8.9%
EC-041012d-50	4	6.1%
EC-041012d-75	4	2.2%
EC-041012d-100	4	0.5%
EC-041012d-175	4	1.5%
EC-041012d-250	4	0.9%
EC-041012d-375	4	0.9%
EC-041012d-500	4	1.2%
EC-041012d-750	2	0.2%*
EC041012d-1000	2	0.3%*

*Relative Percent Difference (RPD)

Table 8. Extracted Egg Calibration

Egg Curve	Number of Observations	Recovery, % RSD
EC-041202-50	6	7.9%
EC-041202-75	6	1.8%
EC-041202-100	6	1.0%
EC-041202-175	6	1.9%
EC-041202-250	6	1.1%
EC-041202-375	6	0.5%
EC-041202-500	6	0.5%
EC-041202-750	6	1.4%
EC041202-1000	5	0.7%

Lower Limit of Detection (LLOD) and Lower Limit of Quantitation (LLOQ)

For each matrix, six matrix spikes were prepared ranging in concentration from 0.25 ng/mL to 5.0 ng/mL. The instrument response was evaluated against the theoretical concentration using a linear regression tool in Excel. The LLOD and LLOQ were calculated using the resulting standard error and slope. There are no acceptance limits defined for this phase of the validation. The results are listed below:

Table 9. Lower Limits of Detection and Quantitation

Matrix	LLOD, ng/mL	LLOQ, ng/mL
Serum	0.732	2.20
Liver	0.620	1.86
Egg	1.92	5.76

Method Precision and Accuracy

Quality control samples were prepared according to the requirements of the method and the results are presented in tables 16 through 18. The calculated %RSD values represent data collected and averaged over more than one day for serum and liver. The egg data was all collected on the same day. The data passed within acceptance limits.

Absolute Recovery and Matrix Effect

Blank matrix was spiked at three levels and evaluated against a solvent curve. There are no acceptance limits for this phase of the validation. The results are presented below.

Table 10. Absolute Recovery of Sample Extraction

	Theoretical Concentration (ng/mL)	Measured Concentration (ng/mL)	Recovery, %
Serum Spike-1	25.11	29.43	117%
Serum Spike-2	176.7	203.4	115%
Serum Spike-3	401.8	> ULOQ (255.8)	NA
Liver Spike-1	25.11	16.72	67%
Liver Spike-2	176.7	103.4	59%
Liver Spike-3	401.8	233.7	58%
Egg Spike-1	25.11	13.23	53%
Egg Spike-2	176.7	83.06	47%
Egg Spike-3	401.8	161.2	40%

The absolute recovery data demonstrates the need to use an extracted calibration curve when quantifying results. Tables 16, 17, and 18 display matrix spike (QC sample) recoveries ranging from 88.6 – 109% in Northern Bobwhite serum, liver, and eggs. The QC samples were quantified using the appropriate extracted calibration curves.

Ruggedness

The sample data presented in this study represents the work of four analysts and at least two different sets of equipment (the exception being the Rapid Trace solid phase extraction apparatus). The intra-day accuracy and precision data passed within acceptance limits.

Carry-over

Instrument carryover was evaluated throughout the entire course of this study. There were no instances of instrument carry-over following a high concentration standard or sample (area counts after a high standard were less than 50% of the LLOQ area counts). The data passed within acceptable limits.

Range of Quantitation

This method may be used for any samples whose values fall within the range of the calibration curve (between the LLOQ and approximately 1 ppm). The LOQ and LOD were discussed above.

System Suitability

The system suitability parameters discussed in ETS-8-231.2 (triplicate injections of one standard with retention time %RSD less than 2% and area count %RSD less than 5% at the opening and close of each analytical sequence) were applied during the course of this study and are sufficient for the additional techniques and matrices used in this study. The data passed within acceptable limits.

Dilution Scheme

The dilution scheme used in this study was limited to the variation of injection volumes on the analytical instrumentation. No samples were actually physically diluted with solvent or blank matrix. Quality control samples were evaluated using this technique and passed within the acceptable limits. It is expected that the serum and egg extracts will be representative of the liver dilution recovery.

Table 11. Dilution Verification

Sample Info	Theoretical Concentration, ng/mL	On-Column Concentration, ng/mL	Sample Injection Volume, uL	Curve Injection Volume, uL	Recovery, %
Extracted Serum Curve Point	102	85.3	4	5	104%
Extracted Serum Curve Point	102	38.9	2	5	95.1%
Egg Matrix Spike	25.6	84.4	6	2	110%
Egg Matrix Spike	25.6	83.9	6	2	109%
Egg Matrix Spike	25.6	82.6	6	2	108%

Stability

The stability of the test substance in the test system (tissues) and in the homogenate is not known and was not investigated during the course of this study. Target analyte stability in the serum extracts stored in autovials was investigated by analyzing the following matrix spikes (prepared on 12/22/2004) against a newly extracted curve:

Table 12. Extract Stability

Spike ID	Recovery on 01/20/2005, %	Recovery on 12/23/2004, %
LS-041222-1	83%	103%
LS-041222-2	96%	110%
LS-041222-3	85%	102%
MS-041222-1	105%	109%
MS-041222-2	103%	104%
MS-041222-3	105%	107%
HS-041222-1	100%	104%
HS-041222-2	107%	109%
HS-041222-3	102%	104%

It is expected that the serum extract will be representative of the liver and egg extract stability. The data passed within acceptable limits.

Uncertainty

The expanded uncertainty was calculated using the model provided in Attachment A of ETS-8-231.2. The results are as follows:

Table 13. Uncertainty Calculation

	Quail Serum	Quail Liver	Quail Egg
Standard Deviation of all QC Samples	0.0751	0.110	0.0750
Square of the Standard Deviation	0.00565	0.0121	0.00563
Homogeneity Standard Deviation		0.200	
Square of the Homogeneity Standard Deviation		0.0400	
Uncertainty	7.5%	23%	7.5%
Expanded Uncertainty	15%	46%	15%

ANALYTICAL RESULTS

For a detailed listing of analytical results, refer to Attachment A: Data Tables.

- **Regressions.** Quadratic curve fits were applied to calibration standards and sample data to facilitate quantitation over the concentration range appropriate to the data. All calibration curves had least-square fits of 0.990 or greater.
- **Calibration Standards.** Extracted matrix standards ranging in concentration from approximately 2.5 (or 5.0) to 1000 ng analyte per mL MeOH were used for the calibration curves. High/low calibration standards that were not within the $\pm 15\%$ ($\pm 20\%$ for the lower limit of quantitation) criteria were deactivated. Where appropriate, high calibration standards were deactivated to improve quantitation over the range appropriate to the data.
- **System Suitability Samples.** Three system suitability standards were analyzed before the initial calibration curve and after the last CCV. These samples had area counts with an RSD of $\leq 5\%$ and a retention time RSD of $\leq 2\%$ when evaluated independently.
- **Continuing Calibration Verification (CCV).** A minimum of one calibration check was analyzed at least every ten samples to monitor instrumental drift. All continuing calibration verification checks were within $\pm 15\%$.
- **Limit of Quantitation (LOQ).** The lower limit of quantitation (LLOQ) was equal to the lowest standard in the calibration curve, with a level of accuracy within $\pm 20\%$. The upper limit of quantitation (ULOQ) was equal to the concentration of the highest curve point with an accuracy of $\pm 15\%$.
- **Solvent Blanks.** All of the solvent blanks in this study had area counts $< 50\%$ of the LLOQ.
- **Matrix Blanks.** The control group of samples was used to evaluate endogenous levels of analyte in the samples. The following samples had analyte present in quantities above the LLOQ:

Table 14. Matrix Blanks: PFBS in Control Serum

Sample Number	Sample Description	Concentration of PFBS in Serum Sample, ug/g
E03-0583-72849	454-116 - 63 Band # 354	2.80* [†]
E03-0583-72850	454-116 - 64 Band # 355	0.0440*
E03-0583-72854	454-116 - 68 Band # 359	0.124*
E03-0583-72858	454-116 - 72 Band # 363	0.0653*
E03-0583-72859	454-116 - 73 Band # 364	0.0280*
E03-0583-72861	454-116 - 75 Band # 366	0.441*
E03-0583-72862	454-116 - 76 Band # 367	0.0334*
E03-0583-72866	454-116 - 79 Band # 371	0.0234*
E03-0583-72869	454-116 - 82 Band # 374	0.0238*
E03-0583-72870	454-116 - 83 Band # 375	0.0209*
E03-0583-72871	454-116 - 84 Band # 376	0.0272*
E03-0583-72872	454-116 - 85 Band # 377	0.0427*
E03-0583-72876	454-116 - 89 Band # 381	0.0288*
E03-0583-72877	454-116 - 90 Band # 382	0.0379
E03-0583-72878	454-116 - 91 Band # 383	0.0751
E03-0583-73110	454-116 - 449 B844 Lot J offspring	0.145*
E03-0583-73116	454-116 - 455 B882 Lot J offspring	0.0906*

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* At least one replicate was < LLOQ; a value equal to 1/2 LLOQ was assigned for calculation purposes.
† One replicate was > ULOQ; a value equal to the ULOQ was assigned for calculation purposes

Table 15. Matrix Blanks: PFBS in Control Liver

Sample Number	Sample Description	Concentration of PFBS in Liver Sample, ug/g
E03-0583-72976	454-116 - 187 Band # 353	0.0207*
E03-0583-72977	454-116 - 188 Band # 354	0.0382
E03-0583-72978	454-116 - 189 Band # 355	0.0128*
E03-0583-72979	454-116 - 190 Band # 356	0.00958*
E03-0583-72980	454-116 - 191 Band # 357	0.0136
E03-0583-72981	454-116 - 192 Band # 358	0.0123*
E03-0583-72983	454-116 - 194 Band # 360	0.0123*
E03-0583-72984	454-116 - 195 Band # 361	0.0145*
E03-0583-72986	454-116 - 197 Band # 363	0.0118*
E03-0583-72987	454-116 - 198 Band # 364	0.00945*
E03-0583-73164	454-116 - 503 B823	0.0629*
E03-0583-73164**	454-116 - 503 B823	0.0843*
E03-0583-73165	454-116 - 504 B829	0.129
E03-0583-73165**	454-116 - 504 B829	0.0843*
E03-0583-73169	454-116 - 508 B844	0.0131*

* At least one replicate was < LLOQ; a value equal to 1/2 LLOQ was assigned for calculation purposes.

**The sample was analyzed twice.

The LLOQ for each serum and liver replicate is presented in Appendix B.

- **Method Blanks.** All of the method blanks in this study had area counts < 50% of the LLOQ.
- **Quality Control (QC) Samples.** Blank matrix was spiked and extracted with the samples according to the SOP. Results are as follows:

Table 16. Serum QC Sample Recovery

Theoretical Concentration in Extract	Number of Extracts Analyzed	Mean Recovery of Replicates	Relative Standard Deviation
25.58 ng/mL	11*	100%	5.29%
102.3 ng/mL	13	100%	6.73%
255.8 ng/mL	11	93.6%	9.18%

*Two of the 25.58 ng/g QC samples were spiked at the wrong concentration. Those samples were excluded from the above calculations (the average represents nine values).

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues**Table 17. Liver QC Sample Recovery**

Theoretical Concentration in Extract	Number of Extracts Analyzed	Mean Recovery of Replicates	Relative Standard Deviation
25.58 ng/mL	6	90.2%	3.44%
255.8 ng/mL	6	95.7%	8.08%
767.3 ng/mL	6	88.6%	7.63%

Table 18. Egg QC Sample Recovery

Theoretical Concentration in Extract	Number of Extracts Analyzed	Mean Recovery of Replicates	Relative Standard Deviation
25.58 ng/mL	6	109%	1.13%
102.3 ng/mL	6	103%	4.89%
511.5 ng/mL	6	95%	7.60%

DATA SUMMARY

Tables 19 through 38 summarize individual sample data and represent the average of triplicate analysis except where noted. Representative chromatograms are presented in Attachment F. The data has been corrected for purity of the PFBS reference substance used for the calibration curve.

Table 19. C₄F₉SO₃⁻ Data Summary, 100 ppm Dose Group, Adult Female Quail Serum[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 105 Band # 398	E03-0583-72893	2.49
454-116 - 101 Band # 394	E03-0583-72889	4.85
454-116 - 115 Band # 408	E03-0583-72903	6.43
454-116 - 103 Band # 396	E03-0583-72891	8.53
454-116 - 117 Band # 410	E03-0583-72905	8.96
454-116 - 107 Band # 400	E03-0583-72895	12.5
454-116 - 109 Band # 402	E03-0583-72897	12.6
454-116 - 113 Band # 406	E03-0583-72901	13.1
454-116 - 111 Band # 404	E03-0583-72899	14.0
454-116 - 121 Band # 414	E03-0583-72909	14.3
454-116 - 93 Band # 386	E03-0583-72881	17.2
454-116 - 99 Band # 392	E03-0583-72887	22.4
454-116 - 97 Band # 390	E03-0583-72885	23.1
454-116 - 123 Band # 416	E03-0583-72911	25.8
454-116 - 95 Band # 388	E03-0583-72883	33.1

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues**Table 20. C₄F₉SO₃⁻ Data Summary, 100 ppm Dose Group, Adult Male Quail Serum[†]**

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 104 Band # 397	E03-0583-72892	5.81
454-116 - 106 Band # 399	E03-0583-72894	6.77
454-116 - 120 Band # 413	E03-0583-72908	9.84*
454-116 - 98 Band # 391	E03-0583-72886	10.6
454-116 - 108 Band # 401	E03-0583-72896	11.1
454-116 - 100 Band # 393	E03-0583-72888	11.4
454-116 - 118 Band # 411	E03-0583-72906	12.3
454-116 - 112 Band # 405	E03-0583-72900	13.2
454-116 - 96 Band # 389	E03-0583-72884	13.9
454-116 - 122 Band # 415	E03-0583-72910	20.3
454-116 - 110 Band # 403	E03-0583-72898	30.4
454-116 - 102 Band # 395	E03-0583-72890	31.7
454-116 - 94 Band # 387	E03-0583-72882	37.7

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

*This value represents the average of duplicates as there was insufficient sample for triplicate analysis.

Table 21. C₄F₉SO₃⁻ Data Summary, 100 ppm Dose Group, Offspring Quail Serum[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 457 G229 Lot J	E03-0583-73118	0.0552
454-116 - 458 G233 Lot J	E03-0583-73119	0.0334
454-116 - 459 G242 Lot J	E03-0583-73120	0.0450
454-116 - 460 G245 Lot J	E03-0583-73121	0.0241
454-116 - 461 G253 Lot J	E03-0583-73122	0.0246
454-116 - 462 G260 Lot J	E03-0583-73123	< 0.0701*
454-116 - 463 G265 Lot J	E03-0583-73124	< 0.0293
454-116 - 464 G274 Lot J	E03-0583-73125	0.0209
454-116 - 465 G276 Lot J	E03-0583-73126	< 0.0311
454-116 - 466 G281 Lot J	E03-0583-73127	< 0.0278
454-116 - 467 G289 Lot J	E03-0583-73128	< 0.0318
454-116 - 468 G294 Lot J	E03-0583-73129	< 0.0286*
454-116 - 469 G302 Lot J	E03-0583-73130	0.0550
454-116 - 470 G309 Lot J	E03-0583-73131	< 0.0301
454-116 - 471 G313 Lot J	E03-0583-73132	< 0.0389

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

*This value represents the average of duplicates as there was insufficient sample for triplicate analysis.

Table 22. $C_4F_9SO_3^-$ Data Summary, 300 ppm Dose Group, Adult Female Quail Serum[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 154 Band # 448	E03-0583-72943	12.2
454-116 - 146 Band # 440	E03-0583-72935	17.7
454-116 - 127 Band # 420	E03-0583-72915	20.7
454-116 - 150 Band # 444	E03-0583-72939	21.8
454-116 - 152 Band # 446	E03-0583-72941	23.8
454-116 - 133 Band # 426	E03-0583-72921	23.8*
454-116 - 144 Band # 438	E03-0583-72933	24.7
454-116 - 125 Band # 418	E03-0583-72913	27.8
454-116 - 140 Band # 434	E03-0583-72929	38.5
454-116 - 129 Band # 422	E03-0583-72917	40.5
454-116 - 131 Band # 424	E03-0583-72919	42.9
454-116 - 142 Band # 436	E03-0583-72931	45.7
454-116 - 135 Band # 428	E03-0583-72923	57.7
454-116 - 148 Band # 442	E03-0583-72937	67.3
454-116 - 138 Band # 432	E03-0583-72927	102

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

*This value represents the average of duplicates as one of the samples was lost during extraction.

Table 23. $C_4F_9SO_3^-$ Data Summary, 300 ppm Dose Group, Adult Male Quail Serum[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 134 Band # 427	E03-0583-72922	14.2
454-116 - 147 Band # 441	E03-0583-72936	14.4
454-116 - 126 Band # 419	E03-0583-72914	16.7
454-116 - 143 Band # 437	E03-0583-72932	19.4
454-116 - 132 Band # 425	E03-0583-72920	20.9
454-116 - 124 Band # 417	E03-0583-72912	24.0
454-116 - 130 Band # 423	E03-0583-72918	25.8
454-116 - 151 Band # 445	E03-0583-72940	25.9
454-116 - 145 Band # 439	E03-0583-72934	26.6
454-116 - 153 Band # 447	E03-0583-72942	31.1
454-116 - 139 Band # 433	E03-0583-72928	31.7
454-116 - 137 Band # 431	E03-0583-72926	36.9
454-116 - 128 Band # 421	E03-0583-72916	36.9
454-116 - 149 Band # 443	E03-0583-72938	37.1
454-116 - 141 Band # 435	E03-0583-72930	42.7
454-116 - 136 Band # 429	E03-0583-72924	42.9

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

Table 24. C₄F₉SO₃⁻ Data Summary, 300 ppm Dose Group, Offspring Quail Serum[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 481 P188 Lot J	E03-0583-73142	0.0245
454-116 - 478 P172 Lot J	E03-0583-73139	0.0252
454-116 - 486 P220 Lot J	E03-0583-73147	0.0269
454-116 - 476 P161 Lot J	E03-0583-73137	0.0315
454-116 - 484 P210 Lot J	E03-0583-73145	0.0329
454-116 - 483 P205 Lot J	E03-0583-73144	0.0395*
454-116 - 477 P165 Lot J	E03-0583-73138	0.0421
454-116 - 482 P199 Lot J	E03-0583-73143	0.0433
454-116 - 485 P215 Lot J	E03-0583-73146	0.0472
454-116 - 479 P177 Lot J	E03-0583-73140	0.0489
454-116 - 475 P155 Lot J	E03-0583-73136	0.0690
454-116 - 472 P132 Lot J	E03-0583-73133	0.0956
454-116 - 474 P148 Lot J	E03-0583-73135	0.0996
454-116 - 480 P183 Lot J	E03-0583-73141	0.105*
454-116 - 473 P139 Lot J	E03-0583-73134	0.119

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

*This value represents the average of duplicates as there was insufficient sample for triplicate analysis.

Table 25. C₄F₉SO₃⁻ Data Summary, 900 ppm Dose Group, Adult Female Quail Serum[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 184 Band # 478	E03-0583-72973	30.5
454-116 - 186 Band # 480	E03-0583-72975	39.1
454-116 - 174 Band # 468	E03-0583-72963	43.8
454-116 - 178 Band # 472	E03-0583-72967	48.6
454-116 - 180 Band # 474	E03-0583-72969	49.7
454-116 - 170 Band # 464	E03-0583-72959	57.3
454-116 - 182 Band # 476	E03-0583-72971	70.8
454-116 - 156 Band # 450	E03-0583-72945	77.4
454-116 - 176 Band # 470	E03-0583-72965	87.0
454-116 - 166 Band # 460	E03-0583-72955	90.4
454-116 - 168 Band # 462	E03-0583-72957	93.1
454-116 - 160 Band # 454	E03-0583-72949	97.7
454-116 - 158 Band # 452	E03-0583-72947	162
454-116 - 172 Band # 466	E03-0583-72961	167
454-116 - 162 Band # 456	E03-0583-72951	178
454-116 - 164 Band # 458	E03-0583-72953	370

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

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Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 155 Band # 449	E03-0583-72944	34.3
454-116 - 161 Band # 455	E03-0583-72950	43.1
454-116 - 183 Band # 477	E03-0583-72972	44.3
454-116 - 171 Band # 465	E03-0583-72960	47.1
454-116 - 177 Band # 471	E03-0583-72966	58.8
454-116 - 185 Band # 479	E03-0583-72974	59.3
454-116 - 175 Band # 469	E03-0583-72964	60.3
454-116 - 165 Band # 459	E03-0583-72954	61.3
454-116 - 167 Band # 461	E03-0583-72956	65.6
454-116 - 169 Band # 463	E03-0583-72958	67.0
454-116 - 157 Band # 451	E03-0583-72946	74.9
454-116 - 173 Band # 467	E03-0583-72962	86.5
454-116 - 181 Band # 475	E03-0583-72970	94.9
454-116 - 159 Band # 453	E03-0583-72948	95.7
454-116 - 163 Band # 457	E03-0583-72952	98.8
454-116 - 179 Band # 473	E03-0583-72968	98.8

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.**Table 27. $C_4F_9SO_3^-$ Data Summary, 900 ppm Dose Group, Offspring Quail Serum[†]**

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Serum, ug/g
454-116 - 496 W649 Lot J	E03-0583-73157	0.0413*
454-116 - 501 W681 Lot J	E03-0583-73162	0.0604
454-116 - 491 W621 Lot J	E03-0583-73152	0.0686
454-116 - 495 W645 Lot J	E03-0583-73156	0.0754
454-116 - 494 W641 Lot J	E03-0583-73155	0.0833
454-116 - 497 W652 Lot J	E03-0583-73158	0.0836
454-116 - 498 W659 Lot J	E03-0583-73159	0.105*
454-116 - 499 W669 Lot J	E03-0583-73160	0.117*
454-116 - 490 W617 Lot J	E03-0583-73151	0.138
454-116 - 500 W675 Lot J	E03-0583-73161	0.147**
454-116 - 488 W603 Lot J	E03-0583-73149	0.168**
454-116 - 493 W635 Lot J	E03-0583-73154	0.170
454-116 - 487 W597 Lot J	E03-0583-73148	0.187
454-116 - 492 W628 Lot J	E03-0583-73153	0.230
454-116 - 489 W610 Lot J	E03-0583-73150	0.320

[†] The uncertainty for the serum samples is +/- 15% as calculated in the validation.

*This value represents the average of duplicates as there was insufficient sample for triplicate analysis.

**This value represents only one replicate as there was insufficient sample for duplicate analysis.

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Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 228 Band # 394	E03-0583-73017	0.396
454-116 - 232 Band # 398	E03-0583-73021	0.622
454-116 - 242 Band # 408	E03-0583-73031	0.920
454-116 - 244 Band # 410	E03-0583-73033	1.28
454-116 - 230 Band # 396	E03-0583-73019	1.95
454-116 - 248 Band # 414	E03-0583-73037	2.19
454-116 - 238 Band # 404	E03-0583-73027	2.29
454-116 - 240 Band # 406	E03-0583-73029	3.83
454-116 - 250 Band # 416	E03-0583-73039	3.99
454-116 - 236 Band # 402	E03-0583-73025	4.09
454-116 - 246 Band # 412	E03-0583-73035	4.29
454-116 - 234 Band # 400	E03-0583-73023	4.51
454-116 - 220 Band # 386	E03-0583-73009	5.06
454-116 - 224 Band # 390	E03-0583-73013	5.30
454-116 - 226 Band # 392	E03-0583-73015	7.37
454-116 - 222 Band # 388	E03-0583-73011	8.19

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.**Table 29. C₄F₉SO₃⁻ Data Summary, 100 ppm Dose Group, Adult Male Quail Liver[†]**

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 241 Band # 407	E03-0583-73030	0.808
454-116 - 231 Band # 397	E03-0583-73020	0.878
454-116 - 235 Band # 401	E03-0583-73024	1.24
454-116 - 225 Band # 391	E03-0583-73014	1.41
454-116 - 249 Band # 415	E03-0583-73038	1.73
454-116 - 233 Band # 399	E03-0583-73022	1.76
454-116 - 247 Band # 413	E03-0583-73036	1.77
454-116 - 227 Band # 393	E03-0583-73016	2.09
454-116 - 245 Band # 411	E03-0583-73034	2.71
454-116 - 239 Band # 405	E03-0583-73028	2.76
454-116 - 243 Band # 409	E03-0583-73032	3.71
454-116 - 251 Band # 417	E03-0583-73040	3.95
454-116 - 223 Band # 389	E03-0583-73012	4.09
454-116 - 219 Band # 385	E03-0583-73008	5.22
454-116 - 237 Band # 403	E03-0583-73026	5.74
454-116 - 221 Band # 387	E03-0583-73010	6.53
454-116 - 229 Band # 395	E03-0583-73018	8.89

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

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Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 523 G274	E03-0583-73184	0.00985*
454-116 - 519 G245	E03-0583-73180	0.0233*
454-116 - 530 G313	E03-0583-73191	0.0301
454-116 - 522 G265	E03-0583-73183	< 0.0137
454-116 - 525 G281	E03-0583-73186	< 0.0138
454-116 - 516 G229	E03-0583-73177	< 0.0139
454-116 - 517 G233	E03-0583-73178	< 0.0139
454-116 - 518 G242	E03-0583-73179	< 0.0139
454-116 - 529 G309	E03-0583-73190	< 0.0139
454-116 - 521 G260	E03-0583-73182	< 0.0140
454-116 - 524 G276	E03-0583-73185	< 0.0140
454-116 - 527 G294	E03-0583-73188	< 0.0141
454-116 - 526 G289	E03-0583-73187	< 0.0143
454-116 - 528 G302	E03-0583-73189	< 0.0148
454-116 - 520 G253	E03-0583-73181	< 0.0152

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

*Used 1/2 LLOQ for at least one of the replicate calculations

Table 31. C₄F₉SO₃⁻ Data Summary, 300 ppm Dose Group, Adult Female Quail Liver[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 264 Band # 430	E03-0583-73053	3.57
454-116 - 282 Band # 448	E03-0583-73071	4.32
454-116 - 274 Band # 440	E03-0583-73063	5.94
454-116 - 254 Band # 420	E03-0583-73043	6.18
454-116 - 278 Band # 444	E03-0583-73067	6.92
454-116 - 280 Band # 446	E03-0583-73069	7.85*
454-116 - 260 Band # 426	E03-0583-73049	8.47
454-116 - 272 Band # 438	E03-0583-73061	8.54
454-116 - 252 Band # 418	E03-0583-73041	9.63
454-116 - 258 Band # 424	E03-0583-73047	12.4
454-116 - 268 Band # 434	E03-0583-73057	12.7
454-116 - 270 Band # 436	E03-0583-73059	12.7
454-116 - 256 Band # 422	E03-0583-73045	15.4
454-116 - 276 Band # 442	E03-0583-73065	17.7
454-116 - 262 Band # 428	E03-0583-73051	22.3
454-116 - 266 Band # 432	E03-0583-73055	23.5

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

*Value represents the average of duplicate samples as the triplicate was lost during extraction.

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Table 32. $C_4F_9SO_3^-$ Data Summary, 300 ppm Dose Group, Adult Male Quail Liver[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 261 Band # 427	E03-0583-73050	1.42
454-116 - 275 Band # 441	E03-0583-73064	3.77
454-116 - 271 Band # 437	E03-0583-73060	3.80
454-116 - 253 Band # 419	E03-0583-73042	5.51
454-116 - 259 Band # 425	E03-0583-73048	6.99
454-116 - 279 Band # 445	E03-0583-73068	7.31
454-116 - 267 Band # 433	E03-0583-73056	7.48
454-116 - 277 Band # 443	E03-0583-73066	7.52
454-116 - 273 Band # 439	E03-0583-73062	8.18
454-116 - 257 Band # 423	E03-0583-73046	8.42
454-116 - 281 Band # 447	E03-0583-73070	9.43
454-116 - 265 Band # 431	E03-0583-73054	9.67
454-116 - 255 Band # 421	E03-0583-73044	11.3
454-116 - 269 Band # 435	E03-0583-73058	11.7
454-116 - 263 Band # 429	E03-0583-73052	14.2

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

Table 33. $C_4F_9SO_3^-$ Data Summary, 300 ppm Dose Group, Offspring Quail Liver[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 538 P177	E03-0583-73199	0.00965*
454-116 - 539 P183	E03-0583-73200	0.0115*
454-116 - 536 P165	E03-0583-73197	0.0161
454-116 - 544 P215	E03-0583-73205	0.0240
454-116 - 532 P139	E03-0583-73193	0.0272
454-116 - 534 P155	E03-0583-73195	0.0288
454-116 - 543 P210	E03-0583-73204	0.0305
454-116 - 533 P148	E03-0583-73194	0.0346
454-116 - 531 P132	E03-0583-73192	0.0369
454-116 - 542 P205	E03-0583-73203	0.146
454-116 - 545 P220	E03-0583-73206	0.200*
454-116 - 541 P199	E03-0583-73202	< 0.0138
454-116 - 535 P161	E03-0583-73196	< 0.0141
454-116 - 540 P188	E03-0583-73201	< 0.0141
454-116 - 537 P172	E03-0583-73198	< 0.0144

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

*Used 1/2 LLOQ for at least one of the replicate calculations

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Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 310 Band # 476	E03-0583-73099	9.73
454-116 - 314 Band # 480	E03-0583-73103	12.1
454-116 - 306 Band # 472	E03-0583-73095	14.1*
454-116 - 302 Band # 468	E03-0583-73091	14.7*
454-116 - 308 Band # 474	E03-0583-73097	14.7
454-116 - 298 Band # 464	E03-0583-73087	17.2
454-116 - 312 Band # 478	E03-0583-73101	17.5**
454-116 - 304 Band # 470	E03-0583-73093	22.8
454-116 - 294 Band # 460	E03-0583-73083	24.3
454-116 - 284 Band # 450	E03-0583-73073	25.3
454-116 - 288 Band # 454	E03-0583-73077	28.9
454-116 - 296 Band # 462	E03-0583-73085	35.2
454-116 - 290 Band # 456	E03-0583-73079	46.1
454-116 - 300 Band # 466	E03-0583-73089	53.4
454-116 - 286 Band # 452	E03-0583-73075	59.6
454-116 - 292 Band # 458	E03-0583-73081	77.4*

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

*This value represents the average of duplicates, as one replicate was lost during extraction.

**This value represents only one replicate, as two replicates were lost during extraction.

Table 35. C₄F₉SO₃⁻ Data Summary, 900 ppm Dose Group, Adult Male Quail Liver[†]

Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 311 Band # 477	E03-0583-73100	6.73
454-116 - 283 Band # 449	E03-0583-73072	10.4
454-116 - 285 Band # 451	E03-0583-73074	10.9
454-116 - 289 Band # 455	E03-0583-73078	12.0
454-116 - 299 Band # 465	E03-0583-73088	12.7*
454-116 - 313 Band # 479	E03-0583-73102	13.5
454-116 - 301 Band # 467	E03-0583-73090	13.9
454-116 - 305 Band # 471	E03-0583-73094	14.7*
454-116 - 297 Band # 463	E03-0583-73086	15.5
454-116 - 303 Band # 469	E03-0583-73092	16.8
454-116 - 291 Band # 457	E03-0583-73080	17.3
454-116 - 293 Band # 459	E03-0583-73082	18.7
454-116 - 287 Band # 453	E03-0583-73076	19.2
454-116 - 295 Band # 461	E03-0583-73084	21.1
454-116 - 307 Band # 473	E03-0583-73096	23.5
454-116 - 309 Band # 475	E03-0583-73098	23.7**

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

*This value represents the average of duplicates, as one replicate was lost during extraction.

**This value represents only one replicate, as two replicates were lost during extraction.

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Wildlife Sample Identification	LIMS Identification	Average Concentration of PFBS in Liver, ug/g
454-116 - 549 W617	E03-0583-73210	0.0340
454-116 - 552 W635	E03-0583-73213	0.0484
454-116 - 555 W649	E03-0583-73216	0.0492
454-116 - 556 W652	E03-0583-73217	0.0499
454-116 - 559 W675	E03-0583-73220	0.0509
454-116 - 550 W621	E03-0583-73211	0.0548
454-116 - 553 W641	E03-0583-73214	0.0617
454-116 - 560 W681	E03-0583-73221	0.0935
454-116 - 557 W659	E03-0583-73218	0.107
454-116 - 548 W610	E03-0583-73209	0.109
454-116 - 547 W603	E03-0583-73208	0.134*
454-116 - 554 W645	E03-0583-73215	0.162
454-116 - 546 W597	E03-0583-73207	0.199*
454-116 - 558 W669	E03-0583-73219	0.207
454-116 - 551 W628	E03-0583-73212	0.313

[†] The uncertainty for the liver samples is +/- 46% as calculated in the validation.

*This value represents the average of duplicates, as one replicate was lost during extraction.

Table 37. C₄F₉SO₃⁻ Data Summary, Quail Egg Lot B[†]

Wildlife Sample Identification	Dose Group	LIMS Identification	Average Concentration of PFBS in Egg, ug/g
Band #388 Egg Contents Lot B	100 ppm a.i.	E03-0583-72583	8.17
Band #392 Egg Contents Lot B	100 ppm a.i.	E03-0583-72584	7.14
Band #396 Egg Contents Lot B	100 ppm a.i.	E03-0583-72585	10.8
Band #404 Egg Contents Lot B	100 ppm a.i.	E03-0583-72586	7.04
Band #408 Egg Contents Lot B	100 ppm a.i.	E03-0583-72587	4.92
Band #412 Egg Contents Lot B	100 ppm a.i.	E03-0583-72588	5.89
Band #416 Egg Contents Lot B	100 ppm a.i.	E03-0583-72589	9.59
Band #424 Egg Contents Lot B	300 ppm a.i.	E03-0583-72590	16.9
Band #428 Egg Contents Lot B	300 ppm a.i.	E03-0583-72591	36.5
Band #432 Egg Contents Lot B	300 ppm a.i.	E03-0583-72592	15.6
Band #436 Egg Contents Lot B	300 ppm a.i.	E03-0583-72593	28.6
Band #440 Egg Contents Lot B	300 ppm a.i.	E03-0583-72594	13.3
Band #444 Egg Contents Lot B	300 ppm a.i.	E03-0583-72595	25.2
Band #448 Egg Contents Lot B	300 ppm a.i.	E03-0583-72596	29.3
Band #452 Egg Contents Lot B	900 ppm a.i.	E03-0583-72597	47.2
Band #456 Egg Contents Lot B	900 ppm a.i.	E03-0583-72598	40.6
Band #460 Egg Contents Lot B	900 ppm a.i.	E03-0583-72599	51.6
Band #464 Egg Contents Lot B	900 ppm a.i.	E03-0583-72600	36.5
Band #468 Egg Contents Lot B	900 ppm a.i.	E03-0583-72601	37.2
Band #472 Egg Contents Lot B	900 ppm a.i.	E03-0583-72602	118
Band #476 Egg Contents Lot B	900 ppm a.i.	E03-0583-72603	38.9
Band #480 Egg Contents Lot B	900 ppm a.i.	E03-0583-72604	33.8

[†] The uncertainty for the egg samples is +/- 15% as calculated in the validation.

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Table 38. C₄F₉SO₃⁻ Data Summary, Quail Egg Lot G[†]

Wildlife Sample Identification	Dose Group	LIMS Identification	Average Concentration of PFBS in Egg, ug/g
Band #386 Egg Contents Lot G	100 ppm a.i.	E03-0583-72735	12.3
Band #390 Egg Contents Lot G	100 ppm a.i.	E03-0583-72736	12.5
Band #394 Egg Contents Lot G	100 ppm a.i.	E03-0583-72737	13.1
Band #398 Egg Contents Lot G	100 ppm a.i.	E03-0583-72738	12.1
Band #402 Egg Contents Lot G	100 ppm a.i.	E03-0583-72739	26.2
Band #406 Egg Contents Lot G	100 ppm a.i.	E03-0583-72740	10.2
Band #410 Egg Contents Lot G	100 ppm a.i.	E03-0583-72741	8.44
Band #414 Egg Contents Lot G	100 ppm a.i.	E03-0583-72742	16.8
Band #418 Egg Contents Lot G	300 ppm a.i.	E03-0583-72743	21.9
Band #422 Egg Contents Lot G	300 ppm a.i.	E03-0583-72744	73.1
Band #426 Egg Contents Lot G	300 ppm a.i.	E03-0583-72745	16.1
Band #434 Egg Contents Lot G	300 ppm a.i.	E03-0583-72746	27.6
Band #438 Egg Contents Lot G	300 ppm a.i.	E03-0583-72747	29.0
Band #442 Egg Contents Lot G	300 ppm a.i.	E03-0583-72748	31.1
Band #446 Egg Contents Lot G	300 ppm a.i.	E03-0583-72749	21.1
Band #450 Egg Contents Lot G	900 ppm a.i.	E03-0583-72750	62.7
Band #454 Egg Contents Lot G	900 ppm a.i.	E03-0583-72751	137
Band #458 Egg Contents Lot G	900 ppm a.i.	E03-0583-72752	123
Band #462 Egg Contents Lot G	900 ppm a.i.	E03-0583-72753	119
Band #466 Egg Contents Lot G	900 ppm a.i.	E03-0583-72754	52.6
Band #470 Egg Contents Lot G	900 ppm a.i.	E03-0583-72755	89.6
Band #474 Egg Contents Lot G	900 ppm a.i.	E03-0583-72756	61.4
Band #478 Egg Contents Lot G	900 ppm a.i.	E03-0583-72757	95.1

[†] The uncertainty for the egg samples is +/- 15% as calculated in the validation.

Attachment A contains data tables detailing individual sample data, and presents the LLOQ for each replicate analyzed.

STATEMENT OF CONCLUSION

In both serum and liver the adult females generally showed higher levels of analyte than the adult males within the same dose group. Concentration of PFBS in serum, liver, and eggs increased with dose level. Low levels of target analyte measured in the control group samples are not expected to significantly affect the interpretation of results for the other dose groups. The LLOQs for individual replicates are presented in Appendix B for reference.

The method used for extraction and analysis of the samples in this study has been validated for PFBS in quail serum, liver and eggs.

See tables 39, 40, and 41 for additional summary information.

Table 39. Summary of Results: $C_4F_9SO_3^-$ Concentration in Serum[†]

Dose Group and Gender	Number of Serum Samples	Mean Concentration, ug PFBS/g Serum	Median Concentration, ug PFBS/g Serum	Range of Results
100 ppm, Male	13	16.5	12.3	5.81 – 37.7
100 ppm, Female	15	14.6	13.1	2.49 – 33.1
100 ppm Offspring	15	0.0369*	0.0334*	< 0.0278 – 0.0552
300 ppm, Male	16	27.9	26.3	14.2 – 42.9
300 ppm, Female	15	37.8	27.8	12.2 – 102
300 ppm Offspring	15	0.0567	0.0433	0.0245 – 0.119
900 ppm, Male	16	68.2	63.4	34.3 – 98.8
900 ppm, Female	16	104	82.2	30.5 – 370
900 ppm Offspring	15	0.133	0.117	0.0413 – 0.320

[†] The uncertainty for the serum samples is 15% as calculated in the validation.

*Mean and Median reported for samples in which analyte was detected. For more specific information see tables in Attachment A

Table 40. Summary of Results: $C_4F_9SO_3^-$ Concentration in Liver[†]

Dose Group and Gender	Number of Liver Samples	Mean Concentration, ug PFBS/g Liver	Median Concentration, ug PFBS/g Liver	Range of Results
100 ppm, Male	17	3.25	2.71	0.808 – 8.89
100 ppm, Female	16	3.52	3.91	0.396 – 8.19
100 ppm Offspring	15	0.0211*	0.0233*	< 0.0137 – 0.0301
300 ppm, Male	15	7.78	7.52	1.42 – 14.2
300 ppm, Female	16	11.1	9.08	3.57 – 23.5
300 ppm Offspring	15	0.0515*	0.0288*	< 0.0138 – 0.200
900 ppm, Male	16	15.7	15.1	6.73 – 23.7
900 ppm, Female	16	29.6	23.5	9.73 – 77.4
900 ppm Offspring	15	0.111	0.0935	0.0340 – 0.313

[†] The uncertainty for the liver samples is 46% as calculated in the validation.

*Mean and Median reported for samples in which analyte was detected. For more specific information see tables in Attachment A

Table 41. Summary Table, C₄F₉SO₃⁻ Concentration in Egg[†]

Dose Group	Number of Egg Samples	Mean Concentration, ug PFBS/g Egg	Median Concentration, ug PFBS/g Egg	Range of Results
100 ppm, Lot B	7	7.65	7.14	4.92 – 10.8
300 ppm, Lot B	7	23.6	25.2	13.3 – 36.5
900 ppm, Lot B	8	50.5	39.7	33.8 – 118
100 ppm, Lot G	8	14.0	12.4	8.44 – 26.2
300 ppm, Lot G	7	31.4	27.6	16.1 – 73.1
900 ppm, Lot G	8	92.6	92.4	52.6 – 137

[†] The uncertainty for the egg samples is +/- 15% as calculated in the validation.

STATISTICAL METHODS

Statistical methods were limited to calculating means, standard deviations, and % coefficient of variation.

REFERENCES

1. Wildlife International, Ltd. Protocol No. 454-116 "T-7485: A Reproduction Study with the Northern Bobwhite".
2. 3M Environmental Laboratory Standard Operating Procedure ETS-8-231.2, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry".

LIST OF ATTACHMENTS

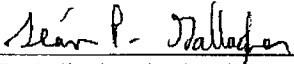
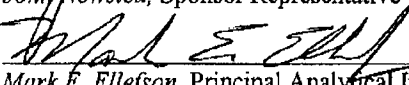
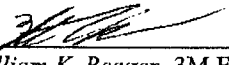
- Attachment A: Method ETS-8-231.2
- Attachment B: Data Tables
- Attachment C: Example Chromatograms
- Attachment D: Protocol and Amendments

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SIGNATURE PAGE

We certify that this report is a true and complete representation of the data for this study:

 Sean P. Gallagher, Study Director	 John Newsted, Sponsor Representative
 Mark E. Ellefson, Principal Analytical Investigator	 William K. Reagen, 3M Environmental Laboratory Management
3/24/05 Date	3/30/05 Date
3/27/05 Date	03/07/05 Date

Report E03-0583

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**ATTACHMENT A: EXTRACTION AND ANALYTICAL METHOD, ETS-8-231.2,
“SOLID PHASE EXTRACTION AND ANALYSIS OF FLUOROCHEMICAL
COMPOUNDS FROM BIOLOGICAL MATRICES”**

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Method

***Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides,
Sulfonates and other Fluorinated Compounds by High Performance Liquid
Chromatography/Mass Spectrometry***

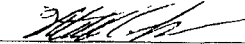
Method Number: ETS-8-231.2

Adoption Date: 13 November 2001

Revision Date: Upon Signing

Effective Date: Upon Signing

Approved By:


William K. Reagen
Laboratory Manager

01/22/03
Date

ETS-8-231.2
Solid Phase Extraction and Analysis of Fluorochemical
Compounds from Various Matrices

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Contains No CBI

1 Scope and Application

This method describes the extraction of target analytes from various biological matrices using solid phase extraction (SPE) followed by separation, identification, and quantitation using high-performance liquid chromatography mass spectrometry (HPLC/MS) or tandem mass spectrometry (HPLC/MS/MS). This method has been validated for perfluorooctane sulfonate (PFOS) in mouse and rat liver and sera using HPLC/MS/MS based on the FDA guidance document, "Guidance for Industry – Bioanalytical Method Validation, May 2001". Additionally, the performance-based validations in quail and mallard matrices confirmed that the method can be used in matrices other than the rat and mice matrices already validated, provided the concurrent quality control samples document the acceptability of each data set as shown in 3M Studies E01-1256 titled "Analytical Phase Report for PFOS: A Reproduction Study with the Mallard" and E01-1245 titled "Analytical Phase Report for PFOS: A Reproduction Study with the Northern Bobwhite." 3M Report E02-1042 titled "Method and Validation Report for 'Solid Phase Extraction and Analysis of Fluorochemical Compounds from Biological Matrices Method Number: ETS-8-231.1'" is a compilation of the results of these studies.

These procedures are appropriate for perfluorinated acids, alcohols, amides, sulfonates and other fluorinated compounds in any biological matrix provided that quality control sample results meet the precision and accuracy requirements of the study.

2 Method Summary

This method easily accommodates a significant range of initial sample weights and volumes, which is essential when preparing samples of limited quantities or when large sample sizes are required to provide low detection limits. When using a 1 gram SPE cartridge, sample amounts typically ranging from 0.02 to 1.0 mL or g are prepared (fluids diluted, tissues homogenized, etc.) at a 1/6, 1/10, or 1/20 dilution using reagent water. An aliquot of the dilution/homogenate is spiked with the appropriate surrogate or analyte mixture. Acetonitrile (ACN) is added as an extraction solvent and also serves to precipitate the proteins. The sample is capped, mixed, and put on the centrifuge to clarify the supernatant. The supernatant is transferred to a clean tube, diluted with water, and passed through a pre-conditioned C₁₈ SPE cartridge. Finally, the analytes of interest are eluted from the SPE cartridge and analyzed by HPLC/MS or HPLC/MS/MS.

Depending on sample availability and detection limits required, the use of SPE cartridges of different sizes provides flexibility for varying initial sample sizes and final elution volumes. Sufficient quality control samples are incorporated into each study to ensure that precision and accuracy of the study are understood. The required quality control elements of this performance based method meet the cross validation requirements based on the FDA guidance documents.

3 Definitions

3.1 Dilution

A dilution expressed as 1:5 or 1/6 is defined as: 1 mL of sample + 5 mLs of diluent for a total of 6 mLs combined, unless otherwise noted.

3.2 SPE cartridge

A column containing an open solvent reservoir, retaining frit, sorbent bed, retaining frit, and luer tip. The sorbent bed is bonded silica which is designed to selectively retain or elute the compounds of interest depending on the solvent conditions. The compounds of interest can then be separated from difficult matrices and introduced into an appropriate solvent for analysis. SPE cartridges are available with a wide range of sorbent beds in a variety of sizes, allowing the analyst to process a wide array of sample types and volumes.

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3.3 Reagent grade water

Water with no detectable concentration(s) of the target analyte(s) or less than 1/2 the limit of quantitation (LOQ).

3.4 Quality control sample

Sample used to determine extraction precision and accuracy and to estimate the uncertainty of results generated.

4 Warnings and Cautions

4.1 Health and Safety Warnings

Always wear appropriate personal protective equipments such as protective gloves, eye protection, and appropriate clothing when working with biological matrices, solvents, chemicals and instrumentation. For potential hazard information refer to material safety data sheets, packing material, the 3M Environmental Laboratory's Chemical Hazard Review, the 3M Guide to Laboratory Practices or other information as appropriate.

4.2 Cautions

The analyst must be familiar with the laboratory equipment and potential hazards including, but not limited to, the use of biological materials, solvents, high temperatures, pressurized gas and solvent lines, high voltage, and vacuum systems. Refer to the appropriate equipment procedure or operator manual for additional information and cautions.

5 Interferences

To minimize interferences, Teflon should not be used for sample storage or any part of instrumentation that comes in contact with the sample or extract.

Co-extracted matrix components may enhance or suppress the measured analyte signal in the mass spectrometer. These effects are minimized using this SPE technique, but the precision and accuracy of spike results must be evaluated for possible effects of co-extracted matrix interferences that may be present.

6 Instrumentation, Supplies, and Materials

The following instrumentation, supplies, and materials are used while performing this method. Equivalent instrumentation, supplies, and materials may be used in place of those listed.

6.1 Instrumentation and Equipment

Vortex mixer, VWR, Vortex Genie 2, or equivalent

Ultra-Turrax T25 tissue homogenizer with various size blades, or equivalent

Vacuum Pump

SPE Extraction Manifold

Centrifuge, Mistral 1000, IEC, or equivalent

Shaker, Eberbach, VWR, or equivalent

Balance (+/- 0.1000 g)

Micromass, Quattro II or Ultima triple quadrupole Mass Spectrometer equipped with an electrospray ionization source, or equivalent

HP1100 or Agilent low pulse solvent pumping system, solvent degasser, column compartment, and autosampler, or equivalent

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6.2 Supplies and Materials

Eppendorf or disposable pipettes, plastic or glass
 Dissecting scalpels
 Polypropylene bottles, (Nalgene or equivalent), various sizes
 Volumetric flasks, glass, type A, various sizes
 40 mL glass vials (ICHEM or equivalent)
 Plastic sample vials, (Wheaton or equivalent), 6 mL (or other appropriate size)
 Centrifuge tubes, polypropylene, various sizes
 Labels, various sizes
 Graduated pipettes, glass
 Syringes, capable of measuring 5 µL to 1000 µL
 Bottle-Top Dispenser (capable of dispensing 5mL of solvent)
 SPE extraction cartridges, for example 1 g, Sep-Pak 6 cc tri-functional C₁₈ (Waters), or other sizes and adsorbents
 75 mL sample reservoir (or other appropriate size)
 Crimp cap glass autovials and caps, crimpers
 HPLC analytical column: Keystone Betasil C18, 2 X 50 mm, 5 µm, or equivalent

7 Reagents and Standards

Reagent grade water, ASTM Type I Milli-Q™, Kandiyohi purchased drinking water, or equivalent
 Acetonitrile, HPLC grade or equivalent
 Methanol, HPLC grade or equivalent
 Ammonium acetate, reagent grade or equivalent
 Various biological fluids or tissues from supplier or study sponsor for use as control matrix

7.1 Control Matrix Tissue/Fluid Preparation

This method requires that a control matrix be used for the preparation of matrix-extracted calibration standards, control spikes, and method blanks. Therefore, an amount of control matrix should be prepared to provide a sufficient amount throughout a study. Typically an aliquot of 40mL is mixed with 200 mL of reagent water or 40g of matrix is homogenized with 200 g reagent water and used as control matrix. Other amounts may be used to maintain the same dilution ratio as the samples or additional control matrix may be prepared during a study as needed.

Control matrix is prepared from one of three sources: 1) a study control matrix from a study control received with a sample set; 2) a commercially obtained sample of the same matrix as the study matrix; or 3) a surrogate matrix, also obtained commercially, but of a different type than the study matrix. (eg. if rat is used to generate calibration curves and QCs for a mouse study).

7.2 Reagents Preparation

Prepare a 2.0 mM ammonium acetate solution for use as a mobile phase for the liquid chromatograph: Weigh approximately 0.300 g ammonium acetate. Pour into a 2000 mL volumetric container containing reagent grade water, mix until all solids are dissolved, and bring to volume using reagent grade water. Store at room temperature.

Note: When preparing different volumes or concentrations than those listed for reagents and target analyte standard preparation adjust accordingly.

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7.3 Target analyte standard preparation

Prepare target analyte standard(s) for the matrix-extracted calibration curve. Multi-component analyte standards are acceptable. The following is an example only and may or may not be appropriate for all standard preparations.

Weigh approximately 100 mg of target analyte into a 100 mL volumetric flask and record the actual weight in the standard logbook or other appropriate location. Bring to volume with methanol, or other appropriate solvent, for a stock standard of approximately 1000 ppm ($\mu\text{g/mL}$). The calculated concentration of this stock standard should be corrected for purity and should reflect the fluorochemical anion concentration that is measured.

Dilute the stock solution with methanol for a working standard solution of approximately 50 ppm. Example calculation: $1000\mu\text{g/mL} \times 5\text{ mL}/100\text{ mL} = 50\mu\text{g/mL}$. Additional dilutions or serial dilutions are made as appropriate.

If surrogate standards or internal standards are part of the study, these stock solutions are prepared using the same procedures outlined above. Additional information regarding the appropriate use of surrogates or internal standards is found in section 9 of this method. Surrogates and internal standards are not required by this method, but may be used for individual studies.

8 Sample Handling

It is expected that samples are received at the appropriate conditions and must be kept at the appropriate conditions until the extraction is performed, (i.e. frozen for biological samples). The condition of samples upon receipt and storage conditions throughout the study should be appropriately documented.

Allow liquid samples and homogenized tissue samples to thaw/warm to room temperature prior to extraction.

Matrix-extracted standards used to calibrate the instrument response for each target analyte are prepared at least once during a study. With each extraction batch, matrix extracted quality control standards must be prepared to verify the extraction efficiency. Alternately, an entire matrix-extracted curve may be prepared with each extraction set. Extracted standards and samples are stored in capped autovials until analysis.

Extracted standards and samples may be stored at room temperature or refrigerated at approximately 4°C until analysis can be performed. If required by the study protocol, 3 post-extraction matrix spikes (i.e. a known amount of the target analyte spiked into an extracted matrix blank) may be stored with the extracted standards and samples for evaluation to demonstrate extract stability. Alternately the precision and accuracy of matrix-extracted quality control samples may be used to document analyte stability during the time frame of analysis. Results will be documented in the report.

9 Quality Control

9.1 Blanks

9.1.1 Solvent Blank

An aliquot of methanol or other appropriate solvent is analyzed periodically throughout each analytical sequence as a solvent blank to serve as a check for background concentrations of analyte or cross over contamination between injections. Solvent blanks are not extracted.

9.1.2 Method Blank

An aliquot of 1.0 mL of reagent water, or other amount as appropriate, is used as a method blank. Method blanks are extracted and analyzed with each extraction set following this procedure and may or may not be spiked with surrogate depending on study requirements. Method blanks may serve as a measure of analyte background concentrations not attributable to endogenous levels in the control matrix.

9.1.3 Matrix Blank

An aliquot of 1.0 mL or 1.0 g of matrix (diluted or homogenized) is used as a matrix blank. Other amounts are used, as appropriate, in keeping with the amount of sample available for extraction. Matrix blanks are prepared from one of three sources: 1) a study control matrix from a study control received with a sample set; 2) a commercially obtained sample of the same matrix as the study matrix; or 3) a surrogate matrix, also obtained

commercially, but of a different type than the study matrix. (eg. if rat is used to generate calibration curves and QCs for a mouse study). The matrix to use is the same as the matrix used for the curve. If limited matrix is available, the number of method and matrix blanks may be adjusted, as well as the initial volumes/weights, and will be noted in the study protocol or in the raw data.

9.1.3.1 Study control matrix curve - if the study control matrix is used for the curve, prepare four (4) matrix blanks using the study control matrix (two spiked with surrogate and two not spiked). If surrogates are not part of a study, duplicates are acceptable.

9.1.3.2 Commercially obtained matrix curve - if a commercially obtained matrix is used for the curve, prepare four (4) matrix blanks using the same commercially available matrix (two spiked with surrogate and two not spiked). If surrogates are not part of a study, duplicates are acceptable.

9.1.3.3 Surrogate matrix curve - if a surrogate matrix is used for the curve, prepare four (4) matrix blanks using the same surrogate matrix and prepare four (4) matrix blanks using the study control matrix, if available. If study control matrix is not available, prepare four (4) matrix blanks using a commercially available matrix of the same type as the study matrix (two spiked with surrogate and two not spiked). If surrogates are not part of a study, duplicates are acceptable.

9.2 Sample Replicate

Samples replicates are prepared according to each study protocol, project outline, or as determined by the analyst.

9.3 Surrogate standard

If surrogate standard is a component of the study, all samples are spiked with surrogate standard prior to extraction to obtain an appropriate concentration within the target calibration curve, with the exception of blank samples as described in section 9.1.

Typically surrogate standard is spiked into the 1.0 mL or 1.0 g, or other appropriate volume, diluted/homogenized sample removed for extraction.

9.4 Initial Calibration

A minimum of one set of matrix-extracted standards is prepared and analyzed to establish the relationship of analyte concentration to instrument response for the target fluorochemical analytes. Details are provided in Section 10 of this method.

9.5 Quality Control (QC) Sample

Quality control (QC) samples are used to determine extraction precision and accuracy and to estimate the uncertainty of results generated. Typically 1.0 mL of the same matrix used to prepare the initial calibration curve is used for each QC sample, and the target analyte standard is spiked into the 1.0 mL or 1.0 g diluted/homogenized sample removed for extraction. All spiking should be performed at the same step in the extraction. (i.e. If the curve is spiked into the 1.0 mL or 1.0 g diluted/homogenized sample removed for extraction then QC samples, surrogate spike, etc. should also be spiked at that time.)

A minimum of nine (9) quality control samples (QC) will be prepared for each matrix during the course of a study to allow the needed statistical calculations to be made. When study samples are extracted in three or fewer extraction batches, a minimum of three QC samples must be prepared (one at each level) on each day of sample extraction, and should total nine or more. When 3 or more extraction batches are prepared, fewer than three QC samples may be prepared with each batch provided the method or protocol QC frequency requirements are met.

The total number of QC samples within a study should be at least 5% of the number of unknown samples or nine total QCs, whichever is greater.

The levels listed below are target guidelines to be used when spiking QC samples and may represent sample concentrations diluted into the range of the calibration curve:

Low level: 3X to 5X the lower limit of quantitation (LLOQ),

Mid-level: equivalent to a point near the middle of the calibration curve,

High level: 80% of the upper limit of quantitation (ULOQ)

QC samples extracted with a particular sample are initially analyzed in the same analytical run to demonstrate acceptable quality control for the batch. After the QC samples have been successfully analyzed, the QC samples do not need to be re-injected when a subset of samples from a batch are analyzed since the acceptance criteria for the batch have already been met. The extracted calibration curve and continuing calibration verification samples will document the acceptable performance of the instrumentation.

Each QC is expected to show an accuracy 85-115% of expected and a precision of 15%. A minimum of 2/3 of all QC samples analyzed within an analytical run must meet these criteria. If not, the set must either be re-analyzed or re-extracted.

9.6 Continuing Calibration Verification Sample (CCV)

One or more initial calibration curve points are re-injected after not more than 10 sample injections to verify the continued accuracy of the initial calibration curve.

Typically, two CCV sample levels are analyzed after every tenth sample injection. Solvent blanks are not considered samples and are not included as such for determining when QC samples will be analyzed. Each CCV is expected to show an accuracy of 85-115% of expected. If not, the set should either be re-analyzed or re-extracted.

9.7 Matrix Spike (MS) Sample

Matrix spike samples are not a required component of this method, but may be required by protocol or project plan.

If the matrices for the curve are not the same as the sample matrix to be analyzed, or the protocol/project outline requires matrix spike samples; the specific criteria regarding matrix spikes will be documented in the protocol/project outline and/or in a note to file.

9.8 Control Charts

The percent recovery for each QC sample for each analyte and matrix will be control charted as per SOP ETS-4-26, "Control Charts for Laboratory Analyses".

9.9 Sample Dilution

Any sample with an analyte area greater than that of the highest acceptable standard will need to be diluted into the range of the calibration curve. If samples are diluted into the range of the curve during analyses and enough sample remains, a post-run dilution validation may be performed to verify sample values.

To perform the dilution validation, one sample will be separated into two representative samples (i.e. two 1.0 mL aliquots for fluid samples or two 1.0 gram amounts for tissue samples, or other amount as determined by the analyst and documented in a note to file) then diluted using two procedures. The first procedure consists of diluting the sample with additional blank matrix prior to extraction (fluid adding fluid), while the second procedure consists of diluting the extract with solvent post-extraction (methanol extract adding additional methanol solvent).

If the relative percent difference is not within 15% for these two samples, additional testing may be performed to determine which value is a correct representation of the sample concentration as determined by the analyst and documented in a note to file.

10 Calibration and Standardization

10.1 Instrument Calibration

At least one calibration curve will be prepared from extracted matrix standards, in the same matrix as the samples if available, per study. It will consist of a minimum of nine concentration levels. Additional calibration curves may be extracted on separate sample extraction dates, as determined by the analyst.

Transfer 1.0 mL of diluted control fluid or 1.0 g of homogenized control tissue to a 15 mL centrifuge tube using a disposable plastic pipette. This will be repeated while preparing aliquots for the calibration curve. Be sure to vortex mix or shake by hand the control matrix container for approximately 5 seconds between aliquots to ensure a homogenous sample is removed.

Record each standard weight or volume on the weight/volumes sheet or extraction worksheet, as appropriate.

Four 1.0 mL or 1.0 g aliquots, or other appropriate amount as described in 9.1.2, of control matrix serve as matrix blanks.

A total of 9 standards, four matrix blanks, and four method blanks are prepared in addition to the QC samples and test samples. The number of standards and blanks may be adjusted as per section 9.1, or as determined by the analyst.

Use Attachment C, or other appropriate form, as an aid in calculating the concentrations of the working standards. Refer to section 12 to calculate the actual concentration of analyte in each calibration standard and QC sample.

Typically the target analyte standard is spiked into the 1.0 mL diluted fluid or 1.0 g homogenized tissue sample removed for extraction. All spiking should be performed at the same step in the extraction. (i.e. If the curve is spiked into the 1.0 mL or 1.0 g diluted/homogenized sample removed for extraction then QC samples, surrogate spike, etc. should also be spiked at that time.)

Analyze the extracted matrix calibration curve prior to each set of extracts. The curve equation may be determined by quadratic regression analysis, weighted 1/x, and external standard using the peak areas of the target analyte(s) using MassLynx or other suitable software. Other suitable regressions may be used as appropriate.

Any level outside 85% - 115% of nominal must be deactivated, and regression re-calculated, except the LLOQ which must be within 20% of nominal. All levels must show a response greater than twice that of the blank. A minimum of six (6) levels may be used to plot the curve in any one set, or the set will be re-analyzed.

11 Procedures

11.1 Tissue/Solid Sample Preparation

Obtain tissue/solid samples.

Cut approximately 1.000 g of tissue (+/- 0.100 g), or other appropriate amount, using a dissecting scalpel. This part of the procedure is best performed quickly, not allowing the tissue to thaw.

Weigh approximately 1.000 g of solid sample (+/-0.100 g).

Weigh the sample directly into a tared plastic sample vial.

Record the weight on the weight/volume sheet, extraction worksheet, or other appropriate location.

Return unused tissue/solid to the appropriate storage conditions after extraction amounts have been removed.

Weigh 5 mL (or 10 mL) of reagent water into the tared sample vial containing the tissue/solid sample then record the weight on the weight/volume sheet. (For solid samples that don't require homogenization, skip the remaining steps in this section.)

Homogenize the sample. Put the Ultra-Turrax grinder probe in the sample and grind for approximately 2 minutes, or until the sample is homogeneous.

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Take the grinder apart and clean it with methanol after each sample. Refer to ETS-9-52 for more information.

If an amount other than 1.000 g (not within ± 0.100 g) is removed for an initial weight, adjust the water volume accordingly to maintain a 1/6 dilution. (e.g. if 0.5 g is removed for extraction, add a total of 2.5 mL of water.), or other ratio as documented in the protocol, the project outline, or a note to file.

11.2 Fluid/Liquid Sample Preparation

Obtain fluid/liquid sample and allow it to thaw/warm at room temperature or in lukewarm water.

Label a 15 mL polypropylene centrifuge tube with the study number, sample ID, extraction date and analyst initials. See attached worksheet (Attachment A or similar worksheet) for documenting the remaining steps.

Vortex mix the sample for approximately 15 seconds, then transfer 1.0 mL of fluid/liquid, or other available amount, to a plastic sample vial, or other appropriate plastic container.

Return unused fluid/liquid to the appropriate storage conditions after extraction amounts have been removed.

Add 5.0 mL of reagent water to the 1.0 mL of fluid/liquid for a 1/6 dilution, or 19 mL of reagent water to the 1.0 mL for a 1/20 dilution.

If a volume other than 1.0 mL is removed for an initial volume, adjust the water volume accordingly to maintain the same dilutions as above.

11.3 Tissue and Fluid Sample Extraction

After tissue/solid or fluid/liquid samples have been prepared according to sections 11.1 and 11.2, vortex mix or shake by hand the diluted/homogenized sample for approximately 15 seconds then transfer 1.0 mL, or other appropriate volume, to a clean 15 mL polypropylene centrifuge tube.

Return unused diluted/homogenized portions to the appropriate storage condition after extraction amounts have been removed.

Record the volume of diluted fluid/liquid removed on the extraction worksheet, (Attachment A or similar worksheet).

Record the weight of the homogenized tissue/solid (removed as a 1.0 mL volume or other volume) on the weight/volume sheet, the extraction worksheet, or other appropriate location.

Spike blanks, samples, and standards, ready for extraction with surrogate standard as described in this method.

Spike each calibration standard matrix with the appropriate amount of standard as described in this method for the calibration curve standards and each QC sample.

Vortex mix the calibration curve samples and QC samples for approximately 5 seconds.

To each sample and standard, add 5.0 mL of acetonitrile, cap, and vortex mix or shake by hand approximately 15 seconds.

Place all samples on the shaker at an appropriate speed for 20 minutes to adequately mix (a setting of approximately 300 rpm on the models listed in section 6.1).

Remove from the shaker and centrifuge at an appropriate speed for 10 minutes to adequately pellet the precipitate (a setting of approximately 2000 rpm on the models listed in section 6.1).

Add 40.0 mL of reagent grade water to a clean 50 mL centrifuge tube. Remove samples from the centrifuge and decant the supernatant into the water in the 50 mL tube, taking care not to introduce any of the matrix solids into the solution. Cap and mix by inverting several times. In this step the order of addition may be changed (i.e. the sample may be put into the centrifuge tube and then the water added).

Attach the reservoir to the SPE cartridge and attach this reservoir/cartridge unit to a vacuum manifold.

NOTE: When running the vacuum, set the vacuum chamber at approximately 20 kPa - to give an approximate elution flow of 5-7 mL/min. Flows may vary through cartridges and the kPa may be raised for slow tubes and drying after most have been drawn down.

Prepare the SPE cartridge by washing twice with approximately 5.0 mL of methanol, followed by approximately two 5.0 mL aliquots of water, taking care not to allow the column to run to dryness after each wash.

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After washing is complete, pour the sample into the reservoir/cartridge unit and **allow all of the liquid to pass through the column to dryness.**

Run the vacuum on high for approximately 5 minutes to adequately dry each SPE cartridge.

Place a collection 15 mL polypropylene centrifuge tube under each cartridge and elute with 2.0 mL of methanol.

Spike extracted blanks, samples, and standards with internal standard as described in this method.

Label each glass autovial, as appropriate, with the study number, vial file archive number, identification number/gender/timepoint (if applicable) or LIMS number, matrix, final solvent, analyte components (if needed), extraction type, extraction date, and analyst(s) performing the extraction.

Transfer each eluant to a glass autovial and cap.

11.4 Extract Analysis

11.4.1 Software set-up

Prior to analysis, a sample list must be created using the following parameters and naming conventions: instrument designator letter, last 2 digits of test year-month-day, and a letter that will increase through the alphabet with each additional list for that day. Other unique sample list names may be used.

Example Sample List: IYYMMDDa or A020204a

I = Initial of the instrument name (A = "Amelia")

YY = Test year (02)

MM = Test month (02)

DD = Test day (04)

a = First sample list (run) of the day (the next sample list will end with 'b', the next 'c', and so on.)

Filenames are created by using the instrument designator letter, the last 2 digits of the test year-month-day, and a 3-digit sequential file number that starts with 1 and increases by one for each filename. Other unique filenames may be used.

Example filename: IYYMMDD### or A020204001

I = Initial of instrument name

YY = Test year

MM = Test month

DD = Test day

= 3-digit sequential file number starting with 1 through 999 (001)

Also, as part of the sample list, assign a mass spectrometer acquisition method for acquiring data, an inlet file to designate HPLC analytical parameters, a bottle number, an injection volume, and individual sample descriptions.

Typically, analytical batch run sequences begin with a minimum of three system suitability injections, several solvent blanks, and a calibration curve. The end of the analytical sequence should be marked by a closing CCV.

Typically, two CCV samples should be injected after every tenth sample, and all sample extracts must be bracketed by the opening calibration curve and a closing CCV. Solvent blanks should be analyzed periodically to monitor possible analyte carryover and are not considered sample extracts but may be included as such.

11.4.2 HPLC set-up

Load the autosampler tray according to the sample list prepared above.

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Download the HPLC inlet file created in section 12.4.1. Record actual conditions in the instrument logbook, or other appropriate location. The following instrument conditions are provided as an example:

Sample injection volume = 10 μ L

Injections/sample = 1

Cycle time = 10.0 minutes

Flow rate = 300 μ L/min.

Column: Keystone Betasil C₁₈, 2 x 50mm, 5 μ m particle size, or equivalent

Mobile phase: Solvent A = 2 mM Ammonium Acetate in ASTM Type I water

Solvent B = Methanol (HPLC grade)

Solvent gradient:

Time	% B
0.00	10%
1.00	10%
5.50	95%
7.50	95%
8.00	10%

11.4.3 Instrument set-up

The following instrument conditions are provided as an example:

Drying gas 250–400 liters/hour

ES nebulizing gas 10–15 liters/hour

Source block temperature = 150°C

Desolvation temperature = 250°C

These settings may change in order to optimize the response. Please refer to the instrument tune page and ETS-9-24, "Operation and Maintenance of Micromass® Triple Quadrupole Mass Spectrometers Fitted With Atmospheric Pressure Ionization Sources," for additional details.

12 Data Analysis and Calculations

12.1 Calculations

If alternative calculations are used, they will be documented in the raw data.

Calculate the matrix amount contained in the initial dilution using the following equations:

$$\text{Weight of Tissue Extracted (g)} = \left| \frac{\text{Initial Sample Weight (g)}}{\text{Homogenate Sample Weight (g)}} \right| \times \text{Weight of Homogenate Aliquot (g)}$$

$$\text{Volume of Fluid Extracted (mL)} = \left| \frac{\text{Initial Sample Volume (mL)}}{\text{Diluted Sample Volume (mL)}} \right| \times \text{Volume of Fluid Aliquot (mL)}$$

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Calculate actual concentrations of analyte in calibration standards using the following equation:

$$\text{Concentration (ng/mL) in Final SPE Eluent} = \frac{\text{Spike Concentration (ug/mL)} \times \text{Spiked Amount (mL)}}{(\text{mL}) \text{ Final SPE Eluent}} \times \frac{1000 \text{ ng}}{1 \text{ ug}}$$

Calculate actual concentration of analyte in fluid (µg/mL):

$$(\text{AR (ng/mL eluent)} \times \text{DF}) \times \frac{\text{Final Eluent Volume (mL)}}{\text{Volume of Fluid Extracted (mL)}} \times \frac{1.0 \text{ } \mu\text{g}}{1000 \text{ ng}} = (\text{µg/mL})$$

Calculate actual concentration of analyte in tissue (µg/g):

$$(\text{AR (ng/mL eluent)} \times \text{DF}) \times \frac{\text{Final Eluent Volume (mL)}}{\text{Weight of tissue Extracted (g)}} \times \frac{1.0 \text{ } \mu\text{g}}{1000 \text{ ng}} = (\text{µg/g})$$

AR = Analytical result from MassLynx summary

DF = Dilution factor introduced when sample extract is diluted to fall within the calibration curve range.

Calculate spike percent recoveries using the following equation:

$$\% \text{ Recovery} = \frac{\text{Observed Result} - \text{Unspike Sample Result}}{\text{Spiking Level}} \times 100$$

Calculate relative standard deviation using the following equation:

$$\text{Relative Standard Deviation} = \frac{\text{Standard Deviation}}{\text{Mean}} \times 100$$

Calculate percent deviation using the following equation:

$$\% \text{ Deviation} = \frac{\text{Calculated Conc.} - \text{Expected Conc.}}{\text{Expected Conc.}} \times 100$$

13 Method Performance

13.1 System Suitability

System suitability will be determined prior to the start and at the completion of each analytical run. Prior to the calibration curve and after the last sample of the run three (3) mid-level unextracted calibration standards will be analyzed. The peak area precision and retention time precision will be monitored at the beginning and the end of the run separately. The peak area precision must be equal to or less than 5.0% RSD, the precision of the retention time must be equal to or less than 2.5% RSD.

If any item of the system suitability fails, system maintenance must be completed prior to running a second set of system suitability samples. The system suitability must pass before starting the calibration. If system suitability fails at the completion of a run, the sample set must be reanalyzed.

13.2 Uncertainty Estimation

The combined uncertainty associated with this method, as determined by the validation results, is as follows: 29% for tissue analyses and 9% for fluid analyses. Refer to SOP ETS-12-12, "Estimation of Uncertainty Measurements" and

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the attached uncertainty estimation report (Attachment E) for additional information on calculating uncertainty for methods.

The uncertainty estimation may change per matrix as data are collected and added to control charts, or as control charts are updated according to ETS-8-26, "Control Charts for Laboratory Analyses".

13.3 Quantitation

The coefficient of determination value for the calibration curve, plotted by regression using the peak areas of the analyte(s), must be 0.990 or better.

During the validation it was determined that four curve models adequately describe the concentration-response relationship for this method: linear-null weighted; linear-1/x weighted; quadratic-null weighted, and quadratic-1/x weighted. However, it has been determined that quadratic-1/x weighted, external standard will most often be used for sample quantitation.

All active calibration curve points must be within 15% of the theoretical value with the exception of the LOQ point, which may deviate up to 20%.

Calibration standards with peak areas less than two times the curve matrix blank will be deactivated to disqualify a data range that may be affected by background levels of the analyte.

A valid calibration curve must contain at least 6 active points above and including the LOQ.

If the curve cannot meet these criteria, the sample set must be reanalyzed or reextracted.

13.4 Accuracy and Precision

Two thirds of all quality control and continuing calibration verification samples are expected to show an accuracy of 85-115%.

Quality control samples are expected to show a precision of 15%.

14 Pollution Prevention and Waste Management

Sample waste is disposed of in noninfectious biohazard waste containers.

Flammable solvent waste is disposed of in high BTU containers.

Glass pipette waste is disposed of in broken glass containers located in the laboratory.

15 Records

Complete the extraction worksheet attached to this method, or other applicable worksheet, and store with the study raw data.

Each page generated for a study must contain the following information (if applicable): study/project or instrument number, acquisition method, integration method, sample name, extraction date, dilution factor (if applicable), and analyst. Other information may be added if applicable to the study.

Print the tune page, sample list, and acquisition method from MassLynx to include with the study raw data. Copy these pages and tape into the instrument runlog, if applicable.

Plot the calibration curve by the appropriate regression. Print these graphs and store with the study raw data.

Print data integration summary, integration method, and chromatograms from MassLynx, and store with the study raw data.

Summarize data using suitable software (Excel 7.0 or LIMS) and store in the study folder.

Back up electronic data to appropriate medium. Record in study notebook the file name and location of backup electronic data.

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16 Attachments

- Attachment A: Extraction Worksheet Examples
- Attachment B: Sample Weight/Volume Worksheet
- Attachment C: Calibration Standard Concentration Worksheet
- Attachment D: Dilutions Summary Worksheet
- Attachment E: Uncertainty Estimation Report

17 References

- 3M report - E01-1277, "Method Validation for ETS-8-231"
- 3M Method - ETS-4-26, "Control Charts for Laboratory Analyses"
- 3M SOP - ETS-12-12, "Estimation of Uncertainty Measurements"
- 3M Equipment Procedure - ETS-9-24, "Operation and Maintenance of Micromass® Triple Quadrupole Mass Spectrometers Fitted With Atmospheric Pressure Ionization Sources"
- 3M Equipment Procedure - ETS-9-52, "Operation and Maintenance of a Tissue Grinder"
- FDA guidance document, "Guidance for Industry – Bioanalytical Method Validation, May 2001"
- 3M report - E01-1256, "Analytical Phase Report for PFOS: A Reproduction Study with the Mallard"
- 3M report - E01-1245, "Analytical Phase Report for PFOS: A Reproduction Study with the Northern Bobwhite"
- 3M report - E02-1042, "Method and Validation Report for 'Solid Phase Extraction and Analysis of Fluorochemical Compounds from Biological Matrices Method Number: ETS-8-231.1'"
- 3M Standard Operating Procedure - ETS-12-1, "Analytical Definitions, Abbreviations, Acronyms, and Symbols"

18 Affected Documents

None.

19 Revisions

<u>Revision Number</u>	<u>Revision Description</u>	<u>Revision Date</u>
1	Minor formatting changes. Added detailed information to all sections concerning the extraction procedure, analytical procedure, and calculations. Added attachments and references.	02/18/02
2	The minor changes in this revision will not affect the method validation results: Section 1 added reference to validated method, added clarification to the scope of the method, and removed fish matrix. Section 9.6, 10.1 added text for consistency in spiking calibration curves and quality control samples. Section 9.8 added control chart section. Section 12 updated calculations and corrected serum final concentration units. Section 13.2 added uncertainty estimation. Section 13.3 added text describing which curve model to use during sample analysis. Section 16 added additional extraction sheets and uncertainty estimation report. Section 17 added additional references. Added clarification to text throughout method.	10/04/02

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Attachment A – Extraction Worksheet Example 2

[illegible]

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Attachment A – Extraction Worksheet Example 3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Col 1 Data Entry Sample ID Approximate Conc Col 2 Data Entry Sample ID Approximate Conc Col 3 Data Entry Sample ID Approximate Conc Col 4 Data Entry Sample ID Approximate Conc Col 5 Data Entry Sample ID Approximate Conc Col 6 Data Entry Sample ID Approximate Conc Col 7 Data Entry Sample ID Approximate Conc Col 8 Data Entry Sample ID Approximate Conc Col 9 Data Entry Sample ID Approximate Conc Col 10 Data Entry Sample ID Approximate Conc Col 11 Data Entry Sample ID Approximate Conc Col 12 Data Entry Sample ID Approximate Conc Col 13 Data Entry Sample ID Approximate Conc Col 14 Data Entry Sample ID Approximate Conc Col 15 Data Entry Sample ID Approximate Conc Col 16 Data Entry Sample ID Approximate Conc Col 17 Data Entry Sample ID Approximate Conc Col 18 Data Entry Sample ID Approximate Conc Col 19 Data Entry Sample ID Approximate Conc Col 20 Data Entry Sample ID Approximate Conc Col 21 Data Entry Sample ID Approximate Conc Col 22 Data Entry Sample ID Approximate Conc Col 23 Data Entry Sample ID Approximate Conc Col 24 Data Entry Sample ID Approximate Conc Col 25 Data Entry Sample ID Approximate Conc Col 26 Data Entry Sample ID Approximate Conc Col 27 Data Entry Sample ID Approximate Conc Col 28 Data Entry Sample ID Approximate Conc Col 29 Data Entry Sample ID Approximate Conc Col 30 Data Entry Sample ID Approximate Conc Col 31 Data Entry Sample ID Approximate Conc Col 32 Data Entry Sample ID Approximate Conc Col 33 Data Entry Sample ID Approximate Conc Col 34 Data Entry Sample ID Approximate Conc Col 35 Data Entry Sample ID Approximate Conc Col 36 Data Entry Sample ID Approximate Conc Col 37 Data Entry Sample ID Approximate Conc Col 38 Data Entry Sample ID Approximate Conc Col 39 Data Entry Sample ID Approximate Conc Col 40 Data Entry Sample ID Approximate Conc Col 41 Data Entry Sample ID Approximate Conc Col 42 Data Entry Sample ID Approximate Conc Col 43 Data Entry Sample ID Approximate Conc Col 44 Data Entry Sample ID Approximate Conc Col 45 Data Entry Sample ID Approximate Conc Col 46 Data Entry Sample ID Approximate Conc Col 47 Data Entry Sample ID Approximate Conc Col 48 Data Entry Sample ID Approximate Conc Col 49 Data Entry Sample ID Approximate Conc Col 50 Data Entry Sample ID Approximate Conc Col 51 Data Entry Sample ID Approximate Conc Col 52 Data Entry Sample ID Approximate Conc Col 53 Data Entry Sample ID Approximate Conc Col 54 Data Entry Sample ID Approximate Conc Col 55 Data Entry Sample ID Approximate Conc Col 56 Data Entry Sample ID Approximate Conc Col 57 Data Entry Sample ID Approximate Conc Col 58 Data Entry Sample ID Approximate Conc Col 59 Data Entry Sample ID Approximate Conc Col 60 Data Entry Sample ID Approximate Conc Col 61 Data Entry Sample ID Approximate Conc Col 62 Data Entry Sample ID Approximate Conc Col 63 Data Entry Sample ID Approximate Conc Col 64 Data Entry Sample ID Approximate Conc Col 65 Data Entry Sample ID Approximate Conc Col 66 Data Entry Sample ID Approximate Conc Col 67 Data Entry Sample ID Approximate Conc Col 68 Data Entry Sample ID Approximate Conc Col 69 Data Entry Sample ID Approximate Conc Col 70 Data Entry Sample ID Approximate Conc Col 71 Data Entry Sample ID Approximate Conc Col 72 Data Entry Sample ID Approximate Conc Col 73 Data Entry Sample ID Approximate Conc Col 74 Data Entry Sample ID Approximate Conc Col 75 Data Entry Sample ID Approximate Conc Col 76 Data Entry Sample ID Approximate Conc Col 77 Data Entry Sample ID Approximate Conc Col 78 Data Entry Sample ID Approximate Conc Col 79 Data Entry Sample ID Approximate Conc Col 80 Data Entry Sample ID Approximate Conc Col 81 Data Entry Sample ID Approximate Conc Col 82 Data Entry Sample ID Approximate Conc Col 83 Data Entry Sample ID Approximate Conc Col 84 Data Entry Sample ID Approximate Conc Col 85 Data Entry Sample ID Approximate Conc Col 86 Data Entry Sample ID Approximate Conc Col 87 Data Entry Sample ID Approximate Conc Col 88 Data Entry Sample ID Approximate Conc Col 89 Data Entry Sample ID Approximate Conc Col 90 Data Entry Sample ID Approximate Conc Col 91 Data Entry Sample ID Approximate Conc Col 92 Data Entry Sample ID Approximate Conc Col 93 Data Entry Sample ID Approximate Conc Col 94 Data Entry Sample ID Approximate Conc Col 95 Data Entry Sample ID Approximate Conc Col 96 Data Entry Sample ID Approximate Conc Col 97 Data Entry Sample ID Approximate Conc Col 98 Data Entry Sample ID Approximate Conc Col 99 Data Entry Sample ID Approximate Conc Col 100 Data Entry Sample ID Approximate Conc																																																																																																			

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Attachment B - Sample Weight/Volume Worksheet

Prep Date(s):

Study Number:

Analyst(s):

Equipment Number:

Sample Matrix:

Final Solvent & TN Number:

Method/Revision:

[illegible]

Form Completion Verified By: _____

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Attachment C: Calibration Standard Concentration Worksheet

Prep date(s):

Standard number:

Analyte(s):

Equipment number:

Sample matrix:

Final solvent and TN#:

Method/revision:

Blank Tissue or Fluid/identifier:

Analyte mix std approx. 0.500 ug/mL:

Analyte mix std approx. 5.00 ug/mL:

Analyte mix std approx. 50.0 ug/mL:

Surrogate std approx. 100 ug/mL:

Actual concentrations of standards in the analyte mix

Analyte Std conc ug/mL	All Amount spiked mL	All Final Volume: mL
0.500	0.0015	2.00
0.500	0.0030	2.00
0.500	0.0080	2.00
0.500	0.0160	2.00
0.500	0.0320	2.00
5.00	0.0056	2.00
5.00	0.0080	2.00
5.00	0.0160	2.00
5.00	0.0240	2.00
5.00	0.0320	2.00
5.00	0.0400	2.00
50.0	0.005	2.00
50.0	0.006	2.00

Calculated concentrations of standards in relation to the final 2.0 mL solvent

2.0 mL Final Volume	
Analyte Final conc. ng/mL	Surrogate Std conc ng/mL
0.375	100
0.750	
2.00	
4.00	
8.00	
14.0	
20.0	
40.0	
60.0	
80.0	
100	
125	
150	

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Solvent/TN Number:
Extraction Date/Analyst:
Matrix/Timepoint:

[illegible]

1/10 dilution = 1 mL of sample + 9 mL of solvent

Form Completion Verified By: _____

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Attachment E: Uncertainty Estimation Report

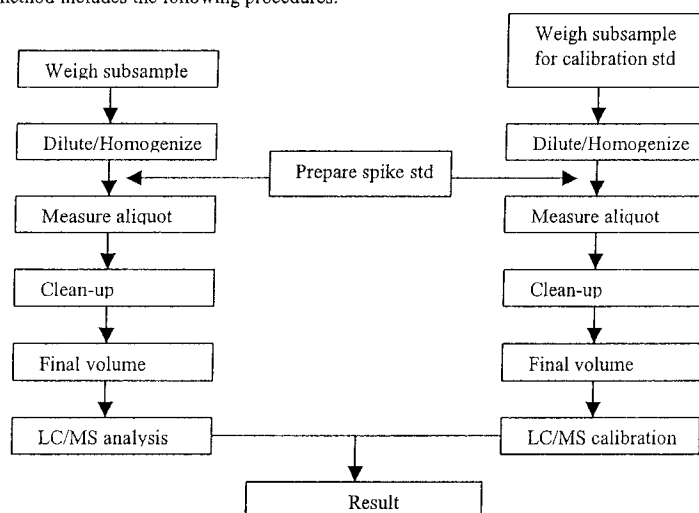
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Uncertainty Estimation

A full validation for the use of this method for the determination of PFOS has been performed on rat liver and serum; a partial validation has been performed with PFOS on mouse liver and serum. A method validation report has been issued for these validations, as well as a performance-based validation for the analysis of PFOS in mallard and quail liver and serum. This report presents precision and bias evaluations through this method; the results of these evaluations will help in estimating the uncertainty for the use of this method.

1. Method summary

The method includes the following procedures:

**2. Major sources of uncertainty**

The following describes each of several major sources of uncertainty in laboratory determinations, the nature of the uncertainty associated with each, and an estimation of the extent of the error.

Mass – Balances are used for

- measuring the weight of the sample aliquot for analysis (using an analytical balance), only for solid matrices (e.g., liver.)
- measuring the weight of analytical standard used for the preparation of a stock standard solution (using an analytical balance.)

As discussed in SOP ETS-12-012, the uncertainty associated with the standard weights can be ignored. Random uncertainties associated with balance measurements were estimated using calibration data from one analytical balance:

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Balance ID	118453734
Logbook pages	00062-7 - 00062-9
Standard deviation	9.58E-04
Square of standard deviation	9.17E-07
n	118

However, the uncertainty associated by the sample and neat standard weighing process is included in the validation studies using QC samples. No additional factor is needed.

Volume – Volumetric flasks are used for:

- measuring the final volume of spiking solutions.
- measuring the final volume of calibrating solutions.

Pipettors are used for:

- measuring the volume of the sample aliquot, only for liquid matrices (e.g., serum.)
- measuring the volume of water added before homogenizing.
- measuring the aliquot taken for clean-up.
- measuring the final volume of extract.
- measuring volume aliquots of standard solutions in the preparation of spiking solutions.
- measuring volume aliquots of standard solutions in the preparation of calibrating solutions.

As discussed in SOP ETS-12-012, random uncertainties associated with volume determinations were estimated using calibration data from several pipettors:

Equipment type	Pipettors
Logbook	01054
Dates	4/5/02 - 7/28/02
Standard deviation	1.33E-02
Square of standard deviation	1.76E-04
n	69

However, the uncertainty associated by the volume measurements of aliquots and extracts as well as of standard solutions is included in the validation studies using QC samples. No additional factor is needed.

Calibration Standards – Uncertainties associated with the neat standards are not supplied with fluorochemical compounds. Since they are solid compounds, the random uncertainties associated with their purity is considered negligible. No additional factor is needed.

Standardization Process – The standardization (or calibration) process for most instrumental analyses introduces uncertainty because of the inexact nature of the process. With a correlation coefficient of 0.990, the minimum required by the method, the standard error of estimate may be 10-20%. However, the uncertainty associated by the standardization process is included in the validation studies using QC samples. No additional factor is needed.

Extraction and Analysis Process – With recoveries typically being acceptable with an accuracy of 70% to 130%, and with a precision of 15%, it is expected that the greatest contribution to the uncertainties will be associated with the extraction and analysis process. The full validation data generated with PFOS in rat liver and serum were used to estimate this uncertainty, using all the % recoveries obtained during validation, including all sets, whether they met the target recoveries or not. It is assumed to follow a normal distribution.

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Method validation of	ETS-8-231	
Matrix	Rat liver	Rat serum
Standard deviation	2.06E-01	8.75E-02
Square of standard deviation	4.24E-02	7.66E-03
n	116	52

Homogeneity – Not a parameter in the method diagram above, sample homogeneity appears to be a significant effect in the analytical procedure for solid samples (e.g., liver). For liquid samples, it is expected that this parameter will not be significant. The homogeneity of the liver sub-sample is not taken into account by the recoveries of the QC samples during validation, since spiking occurs after the 1-g subsample has been taken. However, as discussed in the EURACHEM/CITAC Guide QUAM:2000.P1, it is not practical to measure homogeneity directly. Following the same rationale presented in that document, an uncertainty factor of 0.20 is selected for this parameter. It is assumed to follow a normal distribution.

3. An analysis of the effect of contributing sources on combined uncertainty

A summary table of the combined uncertainties and expanded uncertainties ($k = 2$) in typical analyses at the 3M Laboratory are therefore:

SUMMARY OF SOURCES OF UNCERTAINTY

	rat liver	rat serum
Neat standard	negligible	negligible
Homogeneity standard deviation	2.00E-01	-
Validation data standard deviation	2.06E-01	8.75E-02
Homogeneity square of standard deviation	4.00E-02	-
Validation data square of standard deviation	4.24E-02	7.66E-03
Combined uncertainty	29%	9%
Expanded uncertainty	57%	18%

With combined uncertainty, u_c a function of the individual uncertainties u_i :

$$u_c = \sqrt{u_i^2}$$

And the expanded uncertainty, U :

$$U = k \times u_c$$

with $k = 2$ for 95% confidence interval.

As an example, for rat liver:

$$u_c = \sqrt{(2.00E-01)^2 + (2.06E-01)^2} = \sqrt{(4.00E-02 + 4.24E-02)} = 0.287 = 29\%$$

$$U = 2 \times 0.287 = 0.574 = 57\%$$

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ATTACHMENT B: DATA SUMMARY TABLES

Quail Serum Matrix Spikes

File	Sample Name	Sample Info	RT	Area	Concentration of PFBS in Extract, On- column, ng/mL	Recovery, %	Average Recovery, %	%RSD
D0902040.D	72848-4	Control Serum Low Spike, 8/30/04 CMC/MLA/MEE	1.904	3046284	117.1	458%	Spiking Error Spiking Error	
D0902044.D	72848-6	Control Serum Low Spike, 8/30/04 CMC/MLA/MEE	1.922	3109410	124.1	473%		
D0917152.D	LS-040907-1	Low Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	303978	24.74	96.7%		
D0917155.D	LS-040907-2	Low Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	305582	24.87	97.2%		
D0917156.D	LS-040907-3	Low Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	320574	26.13	102%		
D0921120.D	LS-040909-1	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	220379	24.62	96.2%		
D0921121.D	LS-040909-2	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	229699	25.88	101%		
D0921122.D	LS-040909-3	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	211781	23.46	91.7%		
D1223045.D	LS-041222-1	Low Spike; Ext 12/22/04 CMC/MLA/VJT	3.468	437884	26.42	103%		
D1223046.D	LS-041222-2	Low Spike; Ext 12/22/04 CMC/MLA/VJT	3.467	465674	28.16	110%		
D1223047.D	LS-041222-3	Low Spike; Ext 12/22/04 CMC/MLA/VJT	3.468	433404	26.13	102%	100%	5.29%
D0902076.D	72857-4	Control Serum-Med Spike, 8/30/04 CMC/MLA/MEE	1.908	2524596	96.72	94.5%		
D0902077.D	72857-5	Control Serum-Med Spike, 8/30/04 CMC/MLA/MEE	1.901	2526086	96.78	94.6%		
D0907032.D	72873-4med spike	Control Serum, 8/30/2004 MLA/CMC/MEE	3.28	4136012	114.2	112%		
D0907033.D	72873-5med spike	Control Serum, 8/30/2004 MLA/CMC/MEE	3.28	3823096	104.8	102%		
D0917157.D	MS-040907-1	Med Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	1100348	94.15	92.0%		
D0917158.D	MS-040907-2	Med Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	1094469	93.62	91.5%		
D0917159.D	MS-040907-3	Med Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	1100342	94.15	92.0%		
D0921123.D	MS-040909-1	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.259	790455	104.0	102%		
D0921127.D	MS-040909-2	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	774172	101.7	99.4%		
D0921128.D	MS-040909-3	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	777920	102.2	99.9%		
D1222044.D	MS-041222-1	Med Spike; Ext 12/22/04 CMC/MLA/VJT	3.475	4835384	111.4	109%		
D1222045.D	MS-041222-2	Med Spike; Ext 12/22/04 CMC/MLA/VJT	3.475	4686940	106.3	104%		
D1222046.D	MS-041222-3	Med Spike; Ext 12/22/04 CMC/MLA/VJT	3.474	4774809	109.3	107%	100%	6.73%
D0902111.D	72865-4	Control Serum-High Spike, 8/30/04 CMC/MLA/MEE	1.866	5350750	222.5	87%		
D0902112.D	72865-5	Control Serum-High Spike, 8/30/04 CMC/MLA/MEE	1.845	5422888	226.0	88%		
D0917163.D	HS-040907-1	High Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	2318987	213.4	83%		
D0917164.D	HS-040907-2	High Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	2377903	219.7	86%		
D0917165.D	HS-040907-3	High Matrix Spike; Serum; 07 Sept 04; MLA/CMC/MEE	3.265	2410907	223.3	87%		
D0921129.D	HS-040909-1	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	1659451	236.6	92%		
D0921130.D	HS-040909-2	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	1662421	237.1	93%		
D0921131.D	HS-040909-3	900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE	3.258	1707702	244.5	96%		
D1222047.D	HS-041222-1	High Spike; Ext 12/22/04 CMC/MLA/VJT	3.475	9066961	266.9	104%		
D1222051.D	HS-041222-2	High Spike; Ext 12/22/04 CMC/MLA/VJT	3.475	9380430	279.2	109%		
D1222052.D	HS-041222-3	High Spike; Ext 12/22/04 CMC/MLA/VJT	3.482	9026117	265.3	104%	93.6%	9.18%

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Quail Serum, Control Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1025032.D	72848-1	0	0	< LLOQ	0.1	< LLOQ	0.3363	6.744	0.7338	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0294	0.0279
D1025033.D	72848-2	3.482	5879	< LLOQ	0.1	< LLOQ	0.3363	6.744	0.7887	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0273	
D1025036.D	72848-3	3.482	13771	< LLOQ	0.1	< LLOQ	0.3363	6.744	0.7996	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0269	
D1025039.D	72849-1	3.475	6607	2.558	0.1	0.2558	0.1189	2.532	0.7518	0.0	*	5.115	0.1	0.5115	0.0303	
D1025040.D	72849-2	3.475	1648417	662.0	0.1	66.20	0.1189	2.532	0.7104	4.16	2.80	5.115	0.1	0.5115	0.0321	0.0302
D1025044.D	72849-3	3.475	22122177	787.3	0.1	78.73	0.1189	2.532	0.8092	4.23	***	5.115	0.1	0.5115	0.0282	
D1025045.D	72850-1	3.482	46551	12.31	0.1	1.231	0.2353	4.810	0.7610	0.0694	*	5.115	0.1	0.5115	0.0288	
D1025046.D	72850-2	3.482	33837	8.369	0.1	0.8369	0.2353	4.810	0.7409	0.0484	*	5.115	0.1	0.5115	0.0296	0.0290
D1025047.D	72850-3	3.482	12819	2.558	0.1	0.2558	0.2353	4.810	0.7661	0.0143	0.0440	5.115	0.1	0.5115	0.0286	
D1025048.D	72851-1	3.482	8838	< LLOQ	0.1	< LLOQ	0.3921	7.780	0.7602	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0280	
D1025051.D	72851-2	3.482	5617	< LLOQ	0.1	< LLOQ	0.3921	7.780	0.7459	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0286	0.0280
D1025052.D	72851-3	3.482	12652	< LLOQ	0.1	< LLOQ	0.3921	7.780	0.7822	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0273	
D1025053.D	72853-1	3.482	14625	< LLOQ	0.1	< LLOQ	0.3886	7.779	0.7567	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0284	
D1025054.D	72853-2	3.482	14193	< LLOQ	0.1	< LLOQ	0.3886	7.779	0.7599	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0283	0.0285
D1025055.D	72853-3	3.482	21237	< LLOQ	0.1	< LLOQ	0.3886	7.779	0.7453	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0288	
D1025059.D	72854-1	3.482	207984	63.32	0.1	6.332	0.1413	2.732	0.7439	0.346	**	5.115	0.1	0.5115	0.0280	
D1025060.D	72854-2	3.482	10094	2.558	0.1	0.2558	0.1413	2.732	0.7869	0.0132	0.124	5.115	0.1	0.5115	0.0284	0.0272
D1025061.D	72854-3	3.481	12157	2.558	0.1	0.2558	0.1413	2.732	0.7644	0.0136		5.115	0.1	0.5115	0.0285	
D1025062.D	72855-1	3.489	14643	< LLOQ	0.1	< LLOQ	0.3968	8.056	0.7490	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0291	
D1025063.D	72855-2	3.489	13986	< LLOQ	0.1	< LLOQ	0.3968	8.056	0.7655	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0285	0.0286
D1025066.D	72855-3	3.482	16135	< LLOQ	0.1	< LLOQ	0.3968	8.056	0.7702	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0283	
D1025067.D	72857-1	3.482	14274	< LLOQ	0.1	< LLOQ	0.3778	7.620	0.7601	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0285	
D1025068.D	72857-2	3.482	14017	< LLOQ	0.1	< LLOQ	0.3778	7.620	0.7596	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0285	0.0284
D1025069.D	72857-3	3.482	15460	< LLOQ	0.1	< LLOQ	0.3778	7.620	0.7697	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0281	
D1025075.D	72858-1	3.489	21603	2.558	0.1	0.2558	0.3795	7.609	0.7542	0.0143	**	5.115	0.1	0.5115	0.0286	
D1025076.D	72858-2	3.489	23246	2.558	0.1	0.2558	0.3795	7.609	0.7847	0.0137	0.0653	5.115	0.1	0.5115	0.0274	0.0278
D1025077.D	72858-3	3.489	107301	31.28	0.1	3.128	0.3795	7.609	0.7848	0.168		5.115	0.1	0.5115	0.0274	
D1025078.D	72859-1	3.489	38604	9.844	0.1	0.9844	0.3909	7.752	0.7335	0.0559	**	5.115	0.1	0.5115	0.0291	
D1025081.D	72859-2	3.488	13222	2.558	0.1	0.2558	0.3909	7.752	0.7582	0.0141	0.0280	5.115	0.1	0.5115	0.0281	0.0283
D1025082.D	72859-3	3.489	13443	2.558	0.1	0.2558	0.3909	7.752	0.7668	0.0139		5.115	0.1	0.5115	0.0278	
D1025083.D	72860-1	3.489	8270	< LLOQ	0.1	< LLOQ	0.3985	7.985	0.7642	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0274	
D1025084.D	72860-2	3.489	8275	< LLOQ	0.1	< LLOQ	0.3985	7.985	0.7610	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0283	0.0277
D1025085.D	72860-3	3.489	14749	< LLOQ	0.1	< LLOQ	0.3985	7.985	0.7852	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0274	
D1025089.D	72861-1	3.489	8684	2.558	0.1	0.2558	0.3834	7.710	0.7419	0.0146	**	5.115	0.1	0.5115	0.0291	
D1025090.D	72861-2	3.489	3710	2.558	0.1	0.2558	0.3834	7.710	0.7723	0.0140	0.441	5.115	0.1	0.5115	0.0280	0.0284
D1025091.D	72861-3	3.489	709330	236.0	0.1	23.60	0.3834	7.710	0.7690	1.30		5.115	0.1	0.5115	0.0281	
D1025092.D	72862-1	3.489	45405	11.35	0.1	1.135	0.3973	8.097	0.7199	0.0710	**	5.115	0.1	0.5115	0.0304	
D1025093.D	72862-2	3.489	13277	2.558	0.1	0.2558	0.3973	8.097	0.7472	0.0146	0.0334	5.115	0.1	0.5115	0.0293	0.0297
D1025096.D	72862-3	3.489	16030	2.559	0.1	0.2559	0.3973	8.097	0.7433	0.0147		5.115	0.1	0.5115	0.0294	
D1025097.D	72864-1	3.489	9199	< LLOQ	0.1	< LLOQ	0.1356	2.830	0.7690	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0291	
D1025098.D	72864-2	3.489	9376	< LLOQ	0.1	< LLOQ	0.1356	2.830	0.7610	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0294	0.0295
D1025099.D	72864-3	3.489	9905	< LLOQ	0.1	< LLOQ	0.1356	2.830	0.7447	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0300	
D1025100.D	72865-1	3.489	14512	< LLOQ	0.1	< LLOQ	0.2845	5.655	0.7670	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0278	
D1025104.D	72865-2	3.489	14109	< LLOQ	0.1	< LLOQ	0.2845	5.655	0.7698	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0277	0.0284
D1025105.D	72865-3	3.489	13446	< LLOQ	0.1	< LLOQ	0.2845	5.655	0.7223	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0296	

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Serum, Control Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1025108.D	72866-1	3.489	4800	2.558	0.1	0.2558	0.4004	8.055	0.7533	0.0143	**	5.115	0.1	0.5115	0.0287	0.0287
D1025111.D	72866-2	3.482	7303	2.558	0.1	0.2558	0.4004	8.055	0.7504	0.0144	0.0234	5.115	0.1	0.5115	0.0288	0.0287
D1025112.D	72866-3	3.482	30648	7.383	0.1	0.7383	0.4004	8.055	0.7538	0.0414		5.115	0.1	0.5115	0.0287	0.0287
D1026030.D	72868-1	3.489	10263	< LLOQ	0.1	< LLOQ	0.0218	0.462	0.4618	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0492	
Not enough sample for triplicate analysis																
D1026031.D	72869-1	3.489	11691	2.558	0.1	0.2558	0.3336	6.835	0.7278	0.0151	**	5.115	0.1	0.5115	0.0302	0.0291
D1026032.D	72869-2	3.489	12562	2.558	0.1	0.2558	0.3336	6.835	0.7457	0.0147	0.0238	5.115	0.1	0.5115	0.0295	0.0291
D1026033.D	72869-3	3.489	28525	7.673	0.1	0.7673	0.3336	6.835	0.7953	0.0415		5.115	0.1	0.5115	0.0276	0.0291
D1026034.D	72870-1	3.489	22526	5.810	0.1	0.5810	0.1744	3.522	0.7365	0.0334	**	5.115	0.1	0.5115	0.0294	0.0294
D1026037.D	72870-2	3.489	12304	2.558	0.1	0.2558	0.1744	3.522	0.7430	0.0146	0.0209	5.115	0.1	0.5115	0.0292	0.0294
D1026038.D	72870-3	3.482	13555	2.558	0.1	0.2558	0.1744	3.522	0.7344	0.0148		5.115	0.1	0.5115	0.0295	0.0294
D1026039.D	72871-1	3.489	36401	10.12	0.1	1.012	0.3997	8.114	0.7843	0.0550	**	5.115	0.1	0.5115	0.0278	0.0269
D1026040.D	72871-2	3.489	17565	2.558	0.1	0.2558	0.3997	8.114	0.8715	0.0125	0.0272	5.115	0.1	0.5115	0.0250	0.0269
D1026041.D	72871-3	3.489	17701	2.558	0.1	0.2558	0.3997	8.114	0.7782	0.0140		5.115	0.1	0.5115	0.0280	0.0269
D1026045.D	72872-1	3.482	9704	2.558	0.1	0.2558	0.3787	7.554	0.7619	0.0141	**	5.115	0.1	0.5115	0.0281	0.0281
D1026046.D	72872-2	3.489	9970	2.558	0.1	0.2558	0.3787	7.554	0.7654	0.0140	0.0427	5.115	0.1	0.5115	0.0280	0.0281
D1026047.D	72872-3	3.489	62187	18.16	0.1	1.816	0.3787	7.554	0.7608	0.100		5.115	0.1	0.5115	0.0282	0.0281
D1026048.D	72873-1	3.489	4428	< LLOQ	0.1	< LLOQ	0.3900	7.949	0.7842	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0279	0.0279
D1026049.D	72873-2	3.489	4136	< LLOQ	0.1	< LLOQ	0.3900	7.949	0.7887	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0277	0.0279
D1026052.D	72873-3	3.489	5735	< LLOQ	0.1	< LLOQ	0.3900	7.949	0.7751	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0277	0.0279
D1026055.D	72874-1	3.489	3459	< LLOQ	0.1	< LLOQ	0.3921	7.852	0.7800	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0276	0.0277
D1026056.D	72874-2	3.489	3891	< LLOQ	0.1	< LLOQ	0.3921	7.852	0.7618	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0282	0.0277
D1026060.D	72874-3	3.489	17173	< LLOQ	0.1	< LLOQ	0.3921	7.852	0.7840	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0274	0.0277
D1026061.D	72875-1	3.489	6765	< LLOQ	0.1	< LLOQ	0.3819	7.745	0.7575	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0287	0.0286
D1026062.D	72875-2	3.489	7621	< LLOQ	0.1	< LLOQ	0.3819	7.745	0.7495	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0290	0.0286
D1026063.D	72875-3	3.489	6525	< LLOQ	0.1	< LLOQ	0.3819	7.745	0.7748	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0281	0.0286
D1026064.D	72876-1	3.489	18584	2.558	0.1	0.2558	0.2441	4.833	0.7226	0.0147	*	5.115	0.1	0.5115	0.0294	0.0283
D1026067.D	72876-2	3.489	20269	5.110	0.1	0.5110	0.2441	4.833	0.7986	0.0270	0.0288	5.115	0.1	0.5115	0.0270	0.0283
D1026068.D	72876-3	3.489	29623	8.014	0.1	0.8014	0.2441	4.833	0.7438	0.0448		5.115	0.1	0.5115	0.0286	0.0283
D1026069.D	72877-1	3.489	27158	7.248	0.1	0.7248	0.3965	8.065	0.7554	0.0410		5.115	0.1	0.5115	0.0289	0.0291
D1026070.D	72877-2	3.489	25583	6.753	0.1	0.6753	0.3965	8.065	0.7530	0.0383	0.0379	5.115	0.1	0.5115	0.0290	0.0291
D1026071.D	72877-3	3.489	23150	6.004	0.1	0.6004	0.3965	8.065	0.7413	0.0346		5.115	0.1	0.5115	0.0295	0.0291
D1026075.D	72878-1	3.489	50090	14.38	0.1	1.438	0.2708	5.505	0.7464	0.0822		5.115	0.1	0.5115	0.0292	0.0282
D1026076.D	72878-2	3.489	42626	12.06	0.1	1.206	0.2708	5.505	0.7901	0.0651	0.0751	5.115	0.1	0.5115	0.0276	0.0282
D1026077.D	72878-3	3.489	49827	14.30	0.1	1.430	0.2708	5.505	0.7832	0.0779		5.115	0.1	0.5115	0.0279	0.0282
D1026078.D	72879-1	3.496	7209	< LLOQ	0.1	< LLOQ	0.0431	1.046	0.7594	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0340	0.0643
D1026079.D	72879-2	0	0	< LLOQ	0.1	< LLOQ	0.0431	1.046	0.2736	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0945	0.0643
Not enough sample for triplicate analysis																

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Serum, Control Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1027030.D	73104-1	0	0	< LLOQ	0.1	< LLOQ	0.2033	4.180	0.7311	< LLOQ		5.115	0.1	0.5115	0.0302	
D1027031.D	73104-2	3.489	3477	< LLOQ	0.1	< LLOQ	0.2033	4.180	0.7611	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0290	0.0293
D1027032.D	73104-3	3.489	3865	< LLOQ	0.1	< LLOQ	0.2033	4.180	0.7655	< LLOQ		5.115	0.1	0.5115	0.0288	
D1027033.D	73105-1	3.489	3047	< LLOQ	0.1	< LLOQ	0.3147	6.344	0.7715	< LLOQ		5.115	0.1	0.5115	0.0281	
D1027034.D	73105-2	0	0	< LLOQ	0.1	< LLOQ	0.3147	6.344	0.7877	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0275	0.0284
D1027037.D	73105-3	0	0	< LLOQ	0.1	< LLOQ	0.3147	6.344	0.7320	< LLOQ		5.115	0.1	0.5115	0.0296	
D1027038.D	73106-1	0	0	< LLOQ	0.1	< LLOQ	0.0714	1.483	0.7378	< LLOQ		5.115	0.1	0.5115	0.0302	
D1027039.D	73106-2	3.489	7898	< LLOQ	0.1	< LLOQ	0.0714	1.483	0.7420	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0300	0.0301
Not enough sample for triplicate analysis																
D1027041.D	73107-1	3.489	4804	< LLOQ	0.1	< LLOQ	0.1846	3.741	0.7607	< LLOQ		5.115	0.1	0.5115	0.0286	
D1027045.D	73107-2	3.489	2018	< LLOQ	0.1	< LLOQ	0.1846	3.741	0.7645	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0285	0.0285
D1027046.D	73107-3	0	0	< LLOQ	0.1	< LLOQ	0.1846	3.741	0.7643	< LLOQ		5.115	0.1	0.5115	0.0285	
D1027047.D	73108-1	0	0	< LLOQ	0.1	< LLOQ	0.3132	6.286	0.7136	< LLOQ		5.115	0.1	0.5115	0.0302	
D1027048.D	73108-2	0	0	< LLOQ	0.1	< LLOQ	0.3132	6.286	0.7048	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0306	0.0306
D1027049.D	73108-3	0	0	< LLOQ	0.1	< LLOQ	0.3132	6.286	0.6962	< LLOQ		5.115	0.1	0.5115	0.0310	
D1027052.D	73109-1	0	0	< LLOQ	0.1	< LLOQ	0.1903	3.904	0.6972	< LLOQ		5.115	0.1	0.5115	0.0316	
D1027053.D	73109-2	0	0	< LLOQ	0.1	< LLOQ	0.1903	3.904	0.6688	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0329	0.0318
D1027054.D	73109-3	3.489	8149	< LLOQ	0.1	< LLOQ	0.1903	3.904	0.7100	< LLOQ		5.115	0.1	0.5115	0.0310	
D1027055.D	73110-1	0	0	2.558	0.1	0.2558	0.2736	5.551	0.7310	0.0149		5.115	0.1	0.5115	0.0298	
D1027056.D	73110-2	3.489	197925	60.18	0.1	6.0181	0.2736	5.551	0.6941	0.389		5.115	0.1	0.5115	0.0314	0.0299
D1027060.D	73110-3	3.489	34771	9.327	0.1	0.9327	0.2736	5.551	0.7640	0.0520	0.1453	5.115	0.1	0.5115	0.0285	
D1027063.D	73111-1	0	0	< LLOQ	0.1	< LLOQ	0.3435	6.952	0.7669	< LLOQ		5.115	0.1	0.5115	0.0283	
D1027064.D	73111-2	0	0	< LLOQ	0.1	< LLOQ	0.3435	6.952	0.7549	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0288	0.0286
D1027067.D	73111-3	0	0	< LLOQ	0.1	< LLOQ	0.3435	6.952	0.7606	< LLOQ		5.115	0.1	0.5115	0.0286	
D1027068.D	73112-1	0	0	< LLOQ	0.1	< LLOQ	0.2799	5.668	0.7184	< LLOQ		5.115	0.1	0.5115	0.0303	
D1027069.D	73112-2	3.489	2813	< LLOQ	0.1	< LLOQ	0.2799	5.668	0.7020	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0310	0.0306
D1027070.D	73112-3	3.496	20016	< LLOQ	0.1	< LLOQ	0.2799	5.668	0.7091	< LLOQ		5.115	0.1	0.5115	0.0307	
D1027071.D	73113-1	0	0	< LLOQ	0.1	< LLOQ	0.2189	4.558	0.7655	< LLOQ		5.115	0.1	0.5115	0.0292	
D1027075.D	73113-2	3.489	3445	< LLOQ	0.1	< LLOQ	0.2189	4.558	0.7631	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0293	0.0293
D1027076.D	73113-3	0	0	< LLOQ	0.1	< LLOQ	0.2189	4.558	0.7551	< LLOQ		5.115	0.1	0.5115	0.0296	
D1027077.D	73114-1	0	0	< LLOQ	0.1	< LLOQ	0.1338	2.552	0.7757	< LLOQ		5.115	0.1	0.5115	0.0265	
D1027078.D	73114-2	0	0	< LLOQ	0.1	< LLOQ	0.1338	2.552	0.7497	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0274	0.0271
D1027079.D	73114-3	0	0	< LLOQ	0.1	< LLOQ	0.1338	2.552	0.7467	< LLOQ		5.115	0.1	0.5115	0.0275	
D1027082.D	73115-1	3.496	4118	< LLOQ	0.1	< LLOQ	0.3293	6.553	0.7392	< LLOQ		5.115	0.1	0.5115	0.0289	
D1027083.D	73115-2	3.496	2144	< LLOQ	0.1	< LLOQ	0.3293	6.553	0.7498	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0286	0.0283
D1027084.D	73115-3	0	0	< LLOQ	0.1	< LLOQ	0.3293	6.553	0.7763	< LLOQ		5.115	0.1	0.5115	0.0275	
D1027085.D	73116-1	3.496	13505	2.558	0.1	0.2558	0.2725	5.462	0.6652	0.0162		5.115	0.1	0.5115	0.0324	
D1027086.D	73116-2	3.489	108432	32.14	0.1	3.214	0.2725	5.462	0.7090	0.191	0.0906	5.115	0.1	0.5115	0.0304	0.0303
D1027090.D	73116-3	3.489	42757	11.79	0.1	1.179	0.2725	5.462	0.7668	0.0647		5.115	0.1	0.5115	0.0281	
D1027091.D	73117-1	0	0	< LLOQ	0.1	< LLOQ	0.0342	0.660	0.6700	< LLOQ	< LLOQ	5.115	0.1	0.5115	0.0310	
Not enough sample for triplicate analysis																
Not enough sample for triplicate analysis																
*Used 1/2 LLOQ for one of the replicate calculations																
**Used 1/2 LLOQ for two of the replicate calculations																
***Used ULOQ for one of the replicate calculations																

Quail Serum, 100 ppm Dose Group

3M Environmental Laboratory

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File	Sample Name	RT	Area	Concentration of PFBS in Extract, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On-Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0808053.D	72881-1	3.28	8296892	316.1	1.0	316.1	0.3948	7.902	0.7595	17.5		5.115	1	5.115	0.283	
D0808054.D	72881-2	3.279	8162688	309.5	1.0	309.5	0.3948	7.902	0.7519	17.3		5.115	1	5.115	0.286	0.286
D0808055.D	72881-3	3.279	7924529	298.0	1.0	298.0	0.3948	7.902	0.7434	16.9		5.115	1	5.115	0.289	
D0810029.D	72882-1	3.272	9525142	672.9	1.0	672.9	0.3956	7.969	0.7521	37.8		10.23	1	10.23	0.575	
D0810030.D	72882-2	3.266	9170581	633.0	1.0	633.0	0.3956	7.969	0.7208	37.1		10.23	1	10.23	0.600	0.598
D0810031.D	72882-3	3.266	9164089	632.3	1.0	632.3	0.3956	7.969	0.7009	36.1		10.23	1	10.23	0.617	
D0910032.D	72883-1	3.266	8782325	592.3	1.0	592.3	0.3949	7.947	0.7574	33.0		10.23	1	10.23	0.571	
D0910033.D	72883-2	3.266	8861720	600.4	1.0	600.4	0.3949	7.947	0.7769	32.6		10.23	1	10.23	0.556	0.562
D0910036.D	72883-3	3.272	8986146	613.3	1.0	613.3	0.3949	7.947	0.7743	33.5		10.23	1	10.23	0.558	
D0910037.D	72884-1	3.266	4600701	258.8	1.0	258.8	0.3982	7.975	0.7737	14.1		10.23	1	10.23	0.556	
D0910038.D	72884-2	3.272	4527289	254.0	1.0	254.0	0.3982	7.975	0.7776	13.7		10.23	1	10.23	0.553	0.558
D0910039.D	72884-3	3.272	4516713	253.3	1.0	253.3	0.3982	7.975	0.7613	14.0		10.23	1	10.23	0.565	
D0910040.D	72885-1	3.265	7053721	436.7	1.0	436.7	0.2013	4.052	0.7895	23.4		10.23	1	10.23	0.548	
D0910044.D	72885-2	3.272	7021562	434.1	1.0	434.1	0.2013	4.052	0.7878	23.3		10.23	1	10.23	0.549	0.557
D0910045.D	72885-3	3.272	6648543	404.6	1.0	404.6	0.2013	4.052	0.7530	22.7		10.23	1	10.23	0.574	
D0910046.D	72886-1	3.272	3483168	186.8	1.0	186.8	0.3950	7.969	0.7231	10.9		10.23	1	10.23	0.599	
D0910047.D	72886-2	3.272	3548112	192.0	1.0	192.0	0.3950	7.969	0.7555	10.5		10.23	1	10.23	0.559	0.570
D0910048.D	72886-3	3.272	3522544	190.4	1.0	190.4	0.3950	7.969	0.7838	10.3		10.23	1	10.23	0.553	
D0910051.D	72887-1	3.272	6423067	387.3	1.0	387.3	0.3988	8.014	0.7388	22.6		10.23	1	10.23	0.597	
D0910052.D	72887-2	3.272	6373201	383.5	1.0	383.5	0.3988	8.014	0.7439	22.2		10.23	1	10.23	0.593	0.581
D0910053.D	72887-3	3.272	6759732	413.3	1.0	413.3	0.3988	8.014	0.7992	22.3		10.23	1	10.23	0.552	
D0910054.D	72888-1	3.273	3682363	212.7	1.0	212.7	0.3988	8.016	0.7652	11.7		10.23	1	10.23	0.563	
D0910055.D	72888-2	3.273	3907722	214.3	1.0	214.3	0.3988	8.016	0.7894	11.5		10.23	1	10.23	0.547	0.556
D0910059.D	72888-3	3.272	3718004	202.5	1.0	202.5	0.3988	8.016	0.7721	11.1		10.23	1	10.23	0.559	
D0910060.D	72889-1	3.272	1680359	83.15	1.0	83.15	0.3933	7.942	0.7582	4.65		10.23	1	10.23	0.572	
D0910061.D	72889-2	3.272	1784050	88.92	1.0	88.92	0.3933	7.942	0.7538	5.00		10.23	1	10.23	0.575	0.566
D0910062.D	72889-3	3.273	1818995	90.86	1.0	90.86	0.3933	7.942	0.7857	4.90		10.23	1	10.23	0.552	
D0910063.D	72890-1	3.272	8435291	558.0	1.0	558.0	0.3972	8.088	0.7399	32.2		10.23	1	10.23	0.591	
D0910066.D	72890-2	3.272	8524162	547.5	1.0	547.5	0.3972	8.088	0.7232	32.3		10.23	1	10.23	0.604	0.591
D0910067.D	72890-3	3.272	8280730	543.4	1.0	543.4	0.3972	8.088	0.7575	30.8		10.23	1	10.23	0.577	
D0910068.D	72891-1	3.272	2478556	128.3	1.0	128.3	0.1012	2.105	0.8598	8.48		10.23	1	10.23	0.676	
D0910069.D	72891-2	3.272	2876276	151.5	1.0	151.5	0.1012	2.105	0.7712	8.57		10.23	1	10.23	0.578	0.638
D0910070.D	72891-3	3.272	2556513	132.8	1.0	132.8	0.1012	2.105	0.8798	8.58		10.23	1	10.23	0.659	
D0910074.D	72892-1	3.272	2115892	107.6	1.0	107.6	0.3976	8.035	0.7838	5.82		10.23	1	10.23	0.554	
D0910075.D	72892-2	3.272	2099980	108.7	1.0	108.7	0.3976	8.035	0.7872	5.75		10.23	1	10.23	0.551	0.553
D0910076.D	72892-3	3.272	2127534	108.2	1.0	108.2	0.3976	8.035	0.7829	5.88		10.23	1	10.23	0.554	
D0910077.D	72893-1	3.272	952975	43.53	1.0	43.53	0.1298	2.609	0.7542	2.44		10.23	1	10.23	0.572	
D0910078.D	72893-2	3.272	974819	44.88	1.0	44.88	0.1298	2.609	0.7688	2.45		10.23	1	10.23	0.561	0.588
D0910081.D	72893-3	3.272	918719	41.70	1.0	41.70	0.1298	2.609	0.8844	2.57		10.23	1	10.23	0.631	
D0910082.D	72894-1	3.272	2109988	107.2	1.0	107.2	0.2048	4.064	0.6523	6.85		10.23	1	10.23	0.654	
D0910083.D	72894-2	3.273	2403441	124.0	1.0	124.0	0.2048	4.064	0.7640	8.77		10.23	1	10.23	0.558	0.584
D0910084.D	72894-3	3.272	2445360	126.4	1.0	126.4	0.2048	4.064	0.7976	6.89		10.23	1	10.23	0.541	
D0910086.D	72895-1	3.272	4345954	242.2	1.0	242.2	0.3388	6.874	0.8356	12.3		10.23	1	10.23	0.521	
D0910089.D	72895-2	3.273	3579160	193.9	1.0	193.9	0.3388	6.874	0.8505	12.7		10.23	1	10.23	0.670	0.582
D0910090.D	72895-3	3.273	4169663	230.6	1.0	230.6	0.3388	6.874	0.7854	12.5		10.23	1	10.23	0.555	
D0910091.D	72896-1	3.272	3462033	188.5	1.0	188.5	0.3888	7.970	0.7256	11.2		10.23	1	10.23	0.606	
D0910092.D	72896-2	3.272	3820884	196.4	1.0	196.4	0.3888	7.970	0.7795	10.8		10.23	1	10.23	0.564	0.580
D0910093.D	72896-3	3.272	3692091	200.8	1.0	200.8	0.3888	7.970	0.7714	11.2		10.23	1	10.23	0.570	
D0910096.D	72897-1	3.273	4125883	228.1	1.0	228.1	0.3894	7.778	0.7447	12.8		10.23	1	10.23	0.576	
D0910097.D	72897-2	3.272	3935952	216.1	1.0	216.1	0.3894	7.778	0.7429	12.2		10.23	1	10.23	0.578	0.570
D0910098.D	72897-3	3.272	4231429	234.8	1.0	234.8	0.3894	7.778	0.7725	12.8		10.23	1	10.23	0.556	
D0910099.D	72898-1	3.272	8199005	535.5	1.0	535.5	0.3943	7.987	0.7545	30.2		10.23	1	10.23	0.576	
D0910100.D	72898-2	3.272	8079359	524.7	1.0	524.7	0.3943	7.987	0.7188	31.0		10.23	1	10.23	0.605	0.578
D0910104.D	72898-3	3.272	8402024	555.0	1.0	555.0	0.3943	7.987	0.7872	30.0		10.23	1	10.23	0.552	
D0910105.D	72899-1	3.273	4262530	236.6	1.0	236.6	0.3964	8.303	0.7288	14.3		10.23	1	10.23	0.616	
D0910106.D	72899-2	3.273	4259234	236.6	1.0	236.6	0.3964	8.303	0.7794	13.3		10.23	1	10.23	0.576	0.603
D0910107.D	72899-3	3.272	4259744	236.6	1.0	236.6	0.3964	8.303	0.7263	14.3		10.23	1	10.23	0.618	
D0910108.D	72900-1	3.273	4276801	237.7	1.0	237.7	0.3974	8.140	0.7737	13.2		10.23	1	10.23	0.569	
D0910111.D	72900-2	3.273	4179026	231.5	1.0	231.5	0.3974	8.140	0.7434	13.4		10.23	1	10.23	0.591	0.590
D0910112.D	72900-3	3.272	3970440	218.2	1.0	218.2	0.3974	8.140	0.7217	13.0		10.23	1	10.23	0.655	
D0910113.D	72901-1	3.273	3714586	202.2	1.0	202.2	0.3911	7.942	0.6551	13.0		10.23	1	10.23	0.585	0.596
D0910114.D	72901-2	3.272	4227306	234.6	1.0	234.6	0.3911	7.942	0.7716	13.0		10.23	1	10.23	0.585	
D0910115.D	72901-3	3.272	4338263	241.7	1.0	241.7	0.3911	7.942	0.7701	13.4		10.23	1	10.23	0.566	
D0910119.D	72903-1	3.272	2252749	115.3	1.0	115.3	0.3917	7.814	0.7352	6.57		10.23	1	10.23	0.583	
D0910120.D	72903-2	3.272	2149948	109.5	1.0	109.5	0.3917	7.814	0.7239	6.34		10.23	1	10.23	0.582	0.581
D0910121.D	72903-3	3.272	2241825	114.7	1.0	114.7	0.3917	7.814	0.7535	6.38		10.23	1	10.23	0.569	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Serum, 100 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On-Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0910122.D	72905-1	3.272	2898967	152.3	1.0	152.9	0.3978	8.064	0.7162	9.08		10.23	1	10.23	0.608	
D0910123.D	72905-2	3.272	2947117	155.7	1.0	155.7	0.3978	8.064	0.7269	9.11	8.96	10.23	1	10.23	0.599	0.592
D0910126.D	72905-3	3.273	2854450	156.2	1.0	156.2	0.3978	8.064	0.7846	8.69		10.23	1	10.23	0.569	
D0910127.D	72906-1	3.272	3889819	213.2	1.0	213.2	0.3942	7.814	0.7332	12.1		10.23	1	10.23	0.581	
D0910128.D	72906-2	3.273	3872378	212.1	1.0	212.1	0.3942	7.814	0.7395	12.0	12.3	10.23	1	10.23	0.578	0.628
D0910129.D	72906-3	3.272	3345987	179.6	1.0	179.6	0.3942	7.814	0.5899	12.7		10.23	1	10.23	0.726	
D0914029.D	72908-1	3.259	2738246	178.3	1.0	178.3	0.0755	1.528	0.7531	10.1		25.58	1	25.58	1.44	
D0914030.D	72908-2	3.258	2600451	168.1	1.0	168.1	0.0755	1.528	0.7414	9.63	9.84	25.58	1	25.58	1.47	1.45
D0914032.D	72909-1	3.258	3845786	247.6	1.0	247.6	0.3938	7.958	0.7258	14.5		25.58	1	25.58	1.49	
D0914033.D	72909-2	3.258	3870570	249.6	1.0	249.6	0.3938	7.958	0.7386	14.3	14.3	25.58	1	25.58	1.47	1.48
D0914036.D	72909-3	3.258	3605386	244.4	1.0	244.4	0.3938	7.958	0.7387	14.0		25.58	1	25.58	1.47	
D0914037.D	72910-1	3.259	4821047	345.5	1.0	345.5	0.1013	2.098	0.7458	20.1		25.58	1	25.58	1.49	
D0914038.D	72910-2	3.258	4909652	353.2	1.0	353.2	0.1013	2.098	0.7844	20.1	20.3	25.58	1	25.58	1.45	1.57
D0914039.D	72910-3	3.258	4289332	299.9	1.0	299.9	0.1013	2.098	0.6328	20.6		25.58	1	25.58	1.76	
D0914040.D	72911-1	3.259	5885908	442.7	1.0	442.7	0.2928	5.810	0.7140	28.1		25.58	1	25.58	1.49	
D0914044.D	72911-2	3.258	6012241	463.3	1.0	463.3	0.2928	5.810	0.7413	25.8		25.58	1	25.58	1.44	1.44
D0914045.D	72911-3	3.259	6112057	467.4	1.0	467.4	0.2928	5.810	0.7554	25.5		25.58	1	25.58	1.39	
D0927029.D	73118-1	3.266	17956	5.225	0.1	0.522	0.2820	5.530	0.7114	0.0325		5.115	0.1	0.5115	0.0318	0.0317
D0927030.D	73118-2	3.266	38554	12.60	0.1	0.881	0.2820	5.530	0.6983	0.0600	0.0552	5.115	0.1	0.5115	0.0325	0.0309
D0927031.D	73118-3	3.265	27033	8.814	0.1	0.252	0.2820	5.530	0.7347	0.0530		5.115	0.1	0.5115	0.0283	
D0927032.D	73119-1	3.266	17804	5.184	0.1	0.5164	0.3066	6.137	0.7803	0.0285		5.115	0.1	0.5115	0.0282	0.0286
D0927033.D	73119-2	3.265	20493	6.227	0.1	0.6227	0.3066	6.137	0.7811	0.0344	0.0334	5.115	0.1	0.5115	0.0292	
D0927036.D	73119-3	3.266	21181	6.499	0.1	0.8499	0.3066	6.137	0.7356	0.0371		5.115	0.1	0.5115	0.0292	
D0927037.D	73120-1	3.266	22853	7.081	0.1	0.7081	0.0863	1.752	0.7414	0.0407		5.115	0.1	0.5115	0.0294	0.0433
D0927038.D	73120-2	3.265	30507	10.22	0.1	1.022	0.0863	1.752	0.7420	0.0587	0.0450	5.115	0.1	0.5115	0.0294	
D0927039.D	73120-3	3.265	7375	2.558	0.1	0.2558	0.0863	1.752	0.3060	0.0356		5.115	0.1	0.5115	0.0294	0.0433
D0927040.D	73121-1	3.265	24400	7.772	0.1	0.7772	0.3385	6.714	0.7572	0.0428		5.115	0.1	0.5115	0.0281	
D0927044.D	73121-2	3.272	6094	2.558	0.1	0.2558	0.3385	6.714	0.6861	0.0155	0.0241	5.115	0.1	0.5115	0.0281	0.0291
D0927045.D	73121-3	3.265	12196	2.558	0.1	0.2558	0.3385	6.714	0.7582	0.0141		5.115	0.1	0.5115	0.0281	
D0927046.D	73122-1	3.266	24016	7.620	0.1	0.7620	0.3522	7.072	0.7498	0.0429		5.115	0.1	0.5115	0.0288	
D0927047.D	73122-2	3.265	10543	2.558	0.1	0.2558	0.3522	7.072	0.8679	0.0161	0.0246	5.115	0.1	0.5115	0.0311	
D0927048.D	73122-3	3.272	9299	2.558	0.1	0.2558	0.3522	7.072	0.7220	0.0149		5.115	0.1	0.5115	0.0323	0.0303
D0927051.D	73123-1	3.272	17285	< 5.115	0.1	< 0.5115	0.0493	0.930	0.7529	< 0.0270		5.115	0.1	0.5115	0.0289	
D0927052.D	73123-2	0	0	< 5.115	0.1	< 0.5115	0.0493	0.930	0.1764	< 0.113	< 0.0701	5.115	0.1	0.5115	0.0270	0.0701
D0927054.D	73124-1	3.272	10531	< 5.115	0.1	< 0.5115	0.2841	5.587	0.7476	< 0.0288		5.115	0.1	0.5115	0.0288	
D0927055.D	73124-2	3.273	13159	< 5.115	0.1	< 0.5115	0.2841	5.587	0.7036	< 0.0306	< 0.0293	5.115	0.1	0.5115	0.0288	0.0293
D0927059.D	73124-3	3.272	8847	< 5.115	0.1	< 0.5115	0.2841	5.587	0.7485	< 0.0287		5.115	0.1	0.5115	0.0287	
D0927060.D	73125-1	3.272	18676	5.509	0.1	0.5509	0.3176	6.330	0.7052	0.0327		5.115	0.1	0.5115	0.0304	
D0927061.D	73125-2	3.273	14925	2.558	0.1	0.2558	0.3176	6.330	0.7042	0.0152	0.0209	5.115	0.1	0.5115	0.0304	0.0301
D0927062.D	73125-3	3.273	15349	2.558	0.1	0.2558	0.3176	6.330	0.7250	0.0148		5.115	0.1	0.5115	0.0295	
D0927063.D	73126-1	3.272	5836	< 5.115	0.1	< 0.5115	0.2557	5.203	0.6428	< 0.0340		5.115	0.1	0.5115	0.0340	
D0927066.D	73126-2	3.272	7789	< 5.115	0.1	< 0.5115	0.2557	5.203	0.7453	< 0.0293	< 0.0311	5.115	0.1	0.5115	0.0293	0.0311
D0927067.D	73126-3	3.273	9733	< 5.115	0.1	< 0.5115	0.2557	5.203	0.7283	< 0.0301		5.115	0.1	0.5115	0.0301	
D0927068.D	73127-1	3.272	14411	< 5.115	0.1	< 0.5115	0.3590	7.104	0.7714	< 0.0276		5.115	0.1	0.5115	0.0276	
D0927069.D	73127-2	3.279	13363	< 5.115	0.1	< 0.5115	0.3590	7.104	0.7828	< 0.0272	< 0.0278	5.115	0.1	0.5115	0.0272	0.0278
D0927070.D	73127-3	3.279	13356	< 5.115	0.1	< 0.5115	0.3590	7.104	0.7446	< 0.0296		5.115	0.1	0.5115	0.0286	
D0927074.D	73128-1	3.279	4036	< 5.115	0.1	< 0.5115	0.2222	4.981	0.7512	< 0.0319		5.115	0.1	0.5115	0.0319	
D0927075.D	73128-2	3.279	5791	< 5.115	0.1	< 0.5115	0.2222	4.981	0.7820	< 0.0306	< 0.0318	5.115	0.1	0.5115	0.0306	0.0318
D0927076.D	73128-3	3.279	9178	< 5.115	0.1	< 0.5115	0.2222	4.981	0.7284	< 0.0329		5.115	0.1	0.5115	0.0329	
D0927077.D	73129-1	3.279	10103	< 5.115	0.1	< 0.5115	0.0789	1.559	0.7474	< 0.0284		5.115	0.1	0.5115	0.0284	
D0927078.D	73129-2	3.28	7636	< 5.115	0.1	< 0.5115	0.0789	1.559	0.7361	< 0.0289	< 0.0286	5.115	0.1	0.5115	0.0289	0.0286
D0927082.D	73130-1	3.279	30740	10.28	0.1	1.028	0.1931	3.887	0.7572	0.0574		5.115	0.1	0.5115	0.0285	
D0927083.D	73130-2	3.279	26839	8.737	0.1	0.8737	0.1931	3.887	0.6953	0.0531	0.0550	5.115	0.1	0.5115	0.0311	0.0255
D0927084.D	73130-3	3.279	29085	9.625	0.1	0.9625	0.1931	3.887	0.7460	0.0545		5.115	0.1	0.5115	0.0290	
D0927085.D	73131-1	0	0	< 5.115	0.1	< 0.5115	0.1809	3.628	0.6527	< 0.0330		5.115	0.1	0.5115	0.0330	
D0927089.D	73131-2	3.287	4796	< 5.115	0.1	< 0.5115	0.1809	3.629	0.7511	< 0.0267	< 0.0301	5.115	0.1	0.5115	0.0287	0.0301
D0927090.D	73131-3	3.286	5639	< 5.115	0.1	< 0.5115	0.1809	3.629	0.7503	< 0.0267		5.115	0.1	0.5115	0.0287	
D0927091.D	73132-1	3.286	7448	< 5.115	0.1	< 0.5115	0.0882	1.800	0.7591	< 0.0289		5.115	0.1	0.5115	0.0289	
D0927092.D	73132-2	3.286	7160	< 5.115	0.1	< 0.5115	0.0882	1.800	0.5758	< 0.0380	< 0.0389	5.115	0.1	0.5115	0.0380	0.0389
D0927093.D	73132-3	3.287	4713	< 5.115	0.1	< 0.5115	0.0882	1.800	0.4397	< 0.0498		5.115	0.1	0.5115	0.0498	

*Used 1/2 LLOQ for one of the replicate calculations

**Used 1/2 LLOQ for two of the replicate calculations

Quail Serum, 300 ppm Dose Group

3M Environmental Laboratory

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File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0922029.D	72912-1	3.258	1656511	217.8	2.0	435.7	0.3886	8.114	0.7781	24.5	24.0	25.58	2	51.16	2.88	2.98
D0922030.D	72912-2	3.258	1453367	187.7	2.0	375.4	0.3886	8.114	0.7039	23.3		25.58	2	51.16	3.18	
D0922031.D	72912-3	3.259	1631613	214.1	2.0	428.2	0.3886	8.114	0.7780	24.1		25.58	2	51.16	2.88	
D0922032.D	72913-1	3.258	1811217	241.3	2.0	482.5	0.1403	2.841	0.7582	27.0	27.8	25.58	2	51.16	2.87	2.82
D0922033.D	72913-2	3.258	1881530	252.1	2.0	504.1	0.1403	2.841	0.7679	27.9		25.58	2	51.16	2.83	
D0922035.D	72913-3	3.258	1955651	263.5	2.0	527.1	0.1403	2.841	0.7904	28.3		25.58	2	51.16	2.75	
D0922036.D	72914-1	3.258	1205864	151.9	2.0	303.8	0.2200	4.511	0.7792	16.8	16.7	25.58	2	51.16	2.82	2.85
D0922037.D	72914-2	3.258	1176837	147.7	2.0	295.5	0.2200	4.511	0.7714	16.5		25.58	2	51.16	2.85	
D0922038.D	72914-3	3.259	1199138	150.9	2.0	301.8	0.2200	4.511	0.7681	16.9		25.58	2	51.16	2.86	
D0922039.D	72915-1	3.258	1355183	173.4	2.0	346.8	0.1837	3.891	0.7577	20.3	20.7	25.58	2	51.16	3.00	2.92
D0922043.D	72915-2	3.265	1452583	187.6	2.0	375.2	0.1837	3.891	0.7798	21.3		25.58	2	51.16	2.91	
D0922044.D	72915-3	3.265	1415026	182.1	2.0	364.2	0.1837	3.891	0.7938	20.4		25.58	2	51.16	2.86	
D0922045.D	72916-1	3.266	4067076	651.3	2.0	1303	0.4000	4.078	0.7903	36.9	36.9	25.58	2	51.16	1.45	1.44
D0922046.D	72916-2	3.265	4156847	671.7	2.0	1343	0.4000	4.078	0.8162	36.8		25.58	2	51.16	1.40	
D0922047.D	72916-3	3.266	4041199	645.5	2.0	1291	0.4000	4.078	0.7813	37.0		25.58	2	51.16	1.47	
D0922049.D	72917-1	3.266	2641417	375.1	2.0	750.2	0.3956	7.903	0.7563	41.6	40.5	25.58	2	51.16	2.84	2.82
D0922050.D	72917-2	3.265	2548305	359.3	2.0	718.6	0.3956	7.903	0.7527	40.1		25.58	2	51.16	2.85	
D0922051.D	72917-3	3.266	2585007	365.5	2.0	731.0	0.3956	7.903	0.7711	39.8		25.58	2	51.16	2.78	
D0922052.D	72918-1	3.265	1847234	246.8	2.0	493.6	0.3404	6.804	0.7937	26.1	25.8	25.58	2	51.16	2.71	2.74
D0922053.D	72918-2	3.265	1746677	231.4	2.0	462.9	0.3404	6.804	0.7856	24.7		25.58	2	51.16	2.73	
D0922057.D	72918-3	3.266	1843061	246.1	2.0	492.3	0.3404	6.804	0.7762	26.6		25.58	2	51.16	2.77	
D0922058.D	72919-1	3.265	2699960	385.1	2.0	770.2	0.3971	8.143	0.7642	43.4	42.9	25.58	2	51.16	2.88	2.82
D0922059.D	72919-2	3.266	2734453	391.1	2.0	782.1	0.3971	8.143	0.7908	42.5		25.58	2	51.16	2.78	
D0922060.D	72919-3	3.265	2725370	389.5	2.0	779.0	0.3971	8.143	0.7824	42.8		25.58	2	51.16	2.81	
D0922061.D	72920-1	3.265	1505033	195.3	2.0	390.6	0.2458	4.915	0.7733	21.2	20.9	25.58	2	51.16	2.78	2.80
D0922063.D	72920-2	3.265	1491272	193.3	2.0	386.6	0.2458	4.915	0.7855	20.7		25.58	2	51.16	2.73	
D0922064.D	72920-3	3.265	1443872	186.3	2.0	372.6	0.2458	4.915	0.7469	20.9		25.58	2	51.16	2.88	
D0922065.D	72921-1	3.265	1609508	210.8	2.0	421.6	0.3831	7.751	0.7793	23.0	23.8	25.58	2	51.16	2.79	2.77
D0922066.D	72921-2	3.265	1701631	224.6	2.0	449.3	0.3831	7.751	0.7893	24.2		25.58	2	51.16	2.75	
D0922067.D	72921-3	3.265	1704806	225.1	2.0	450.2	0.3831	7.751	0.7861	24.3		25.58	2	51.16	2.76	
D0922071.D	72922-1	3.265	1066947	132.2	2.0	264.3	0.2536	4.973	0.7739	14.1	14.2	25.58	2	51.16	2.72	2.81
D0922072.D	72922-2	3.265	1056274	130.7	2.0	261.3	0.2536	4.973	0.7729	13.9		25.58	2	51.16	2.73	
D0922073.D	72922-3	3.266	1019646	125.5	2.0	251.0	0.2536	4.973	0.7111	14.6		25.58	2	51.16	2.97	
D0922074.D	72923-1	3.265	3421955	516.9	2.0	1034	0.3995	8.418	0.7722	59.1	57.7	25.58	2	51.16	2.92	2.91
D0922075.D	72923-2	3.265	3281011	489.9	2.0	979.7	0.3995	8.418	0.7724	56.0		25.58	2	51.16	2.92	
D0922077.D	72923-3	3.265	3413938	515.4	2.0	1031	0.3995	8.418	0.7847	58.0		25.58	2	51.16	2.88	
D0922078.D	72924-1	3.265	2780526	399.1	2.0	798.1	0.3941	7.919	0.7877	42.7	42.9	25.58	2	51.16	2.74	2.80
D0922079.D	72924-2	3.265	2654689	377.3	2.0	754.7	0.3941	7.919	0.7536	42.2		25.58	2	51.16	2.86	
D0922080.D	72924-3	3.265	2777323	398.5	2.0	797.0	0.3941	7.919	0.7706	43.6		25.58	2	51.16	2.80	
D0922081.D	72926-1	3.266	2456058	343.9	2.0	687.8	0.3777	7.719	0.7834	37.6	36.9	25.58	2	51.16	2.80	2.82
D0922085.D	72926-2	3.265	2388451	332.7	2.0	665.4	0.3777	7.719	0.7766	36.7		25.58	2	51.16	2.82	
D0922086.D	72926-3	3.265	2343218	325.3	2.0	650.6	0.3777	7.719	0.7704	36.2		25.58	2	51.16	2.85	
D0923029.D	72927-1	3.259	5131081	985.6	2.0	1971	0.2529	5.065	0.7788	106	102	25.58	2	51.16	2.76	2.77
D0923030.D	72927-2	3.258	5014034	946.1	2.0	1892	0.2529	5.065	0.7825	102		25.58	2	51.16	2.75	
D0923031.D	72927-3	3.258	4859066	897.2	2.0	1794	0.2529	5.065	0.7694	98.1		25.58	2	51.16	2.80	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Serum, 300 ppm Dose Group

3M Environmental Laboratory

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On-Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0923032.D	72928-1	3.258	2073734	297.7	2.0	595.3	0.3124	6.243	0.7811	32.0	31.7	25.58	2	51.16	2.75	2.80
D0923033.D	72928-2	3.259	2003215	286.0	2.0	572.0	0.3124	6.243	0.7366	32.6		25.58	2	51.16	2.91	
D0923035.D	72928-3	3.258	2002428	285.9	2.0	571.7	0.3124	6.243	0.7828	30.7		25.58	2	51.16	2.74	
D0923036.D	72929-1	3.258	2410975	355.0	2.0	710.1	0.3914	7.905	0.7816	38.5	38.5	25.58	2	51.16	2.77	2.81
D0923037.D	72929-2	3.258	2383659	350.3	2.0	700.6	0.3914	7.905	0.7694	38.6		25.58	2	51.16	2.82	
D0923038.D	72929-3	3.259	2366620	347.3	2.0	694.7	0.3914	7.905	0.7681	38.3		25.58	2	51.16	2.82	
D0923039.D	72930-1	3.259	2613209	390.7	2.0	781.4	0.3976	7.931	0.7832	41.8	42.7	25.58	2	51.16	2.74	2.83
D0923043.D	72930-2	3.252	2678027	402.4	2.0	804.7	0.3976	7.931	0.7856	42.9		25.58	2	51.16	2.73	
D0923044.D	72930-3	3.252	2485912	368.1	2.0	736.3	0.3976	7.931	0.7109	43.4		25.58	2	51.16	3.01	
D0923045.D	72931-1	3.258	2785062	421.9	2.0	843.7	0.3867	7.732	0.7593	46.7	45.7	25.58	2	51.16	2.83	2.76
D0923046.D	72931-2	3.259	2842951	432.5	2.0	865.1	0.3867	7.732	0.7876	46.1		25.58	2	51.16	2.73	
D0923047.D	72931-3	3.259	2759885	417.3	2.0	834.5	0.3867	7.732	0.7880	44.5		25.58	2	51.16	2.73	
D0923049.D	72932-1	3.258	1217182	162.1	2.0	324.2	0.2241	4.826	0.7801	18.7	19.4	25.58	2	51.16	2.96	2.98
D0923050.D	72932-2	3.258	1261710	168.8	2.0	337.7	0.2241	4.826	0.7789	19.5		25.58	2	51.16	2.96	
D0923051.D	72932-3	3.258	1254555	167.8	2.0	335.5	0.2241	4.826	0.7639	19.8		25.58	2	51.16	3.02	
D0923052.D	72933-1	3.258	1604946	221.8	2.0	443.7	0.3708	7.479	0.7495	25.1	24.7	25.58	2	51.16	2.89	2.83
D0923053.D	72933-2	3.259	1618975	224.1	2.0	448.1	0.3708	7.479	0.7848	24.2		25.58	2	51.16	2.76	
D0923057.D	72933-3	3.258	1618851	224.0	2.0	448.1	0.3708	7.479	0.7645	24.8		25.58	2	51.16	2.83	
D0923058.D	72934-1	3.258	1643019	227.8	2.0	455.7	0.2009	4.086	0.7653	25.4	26.6	25.58	2	51.16	2.85	2.83
D0923059.D	72934-2	3.258	1758609	246.2	2.0	492.5	0.2009	4.086	0.7713	27.2		25.58	2	51.16	2.83	
D0923060.D	72934-3	3.259	1763346	247.0	2.0	494.0	0.2009	4.086	0.7792	27.1		25.58	2	51.16	2.80	
D0923061.D	72935-1	3.258	1189013	157.9	2.0	315.7	0.3886	7.817	0.7798	17.1	17.7	25.58	2	51.16	2.77	2.79
D0923063.D	72935-2	3.258	1215428	161.8	2.0	323.7	0.3886	7.817	0.7652	17.9		25.58	2	51.16	2.82	
D0923064.D	72935-3	3.258	1257222	168.2	2.0	336.3	0.3886	7.817	0.7789	18.2		25.58	2	51.16	2.77	
D0923065.D	72936-1	3.259	937348	120.5	2.0	240.9	0.3981	7.904	0.6895	14.6	14.4	25.58	2	51.16	3.09	2.87
D0923066.D	72936-2	3.258	1018120	132.4	2.0	264.7	0.3981	7.904	0.7687	14.4		25.58	2	51.16	2.78	
D0923067.D	72936-3	3.258	1015994	132.1	2.0	264.1	0.3981	7.904	0.7789	14.1		25.58	2	51.16	2.74	
D0924097.D	72937-1	3.273	4505185	626.3	2.0	1253	0.3799	7.512	0.7845	66.3	67.3	51.15	2	102.3	5.42	5.63
D0924098.D	72937-2	3.272	4442993	614.5	2.0	1229	0.3799	7.512	0.7493	68.1		51.15	2	102.3	5.67	
D0924099.D	72937-3	3.273	4325491	592.4	2.0	1185	0.3799	7.512	0.7315	67.3		51.15	2	102.3	5.81	
D0917032.D	72938-1	3.258	5334315	561.5	1.0	561.5	0.3956	8.029	0.7815	30.6	37.1	51.15	1	51.15	2.79	2.81
D0917033.D	72938-2	3.258	7657976	936.5	1.0	936.5	0.3956	8.029	0.7797	51.2		51.15	1	51.15	2.79	
D0917036.D	72938-3	3.258	5094578	529.5	1.0	529.5	0.3956	8.029	0.7635	29.5		51.15	1	51.15	2.85	
D0917037.D	72939-1	3.258	3922065	383.8	1.0	383.8	0.3958	8.028	0.7478	21.8	21.8	51.15	1	51.15	2.91	2.86
D0917038.D	72939-2	3.258	4074881	401.9	1.0	401.9	0.3958	8.028	0.7758	22.1		51.15	1	51.15	2.81	
D0917039.D	72939-3	3.258	3907006	382.1	1.0	382.1	0.3958	8.028	0.7579	21.5		51.15	1	51.15	2.87	
D0917040.D	72940-1	3.258	4598288	465.8	1.0	465.8	0.4513	8.963	0.7724	25.2	25.9	51.15	1	51.15	2.76	2.75
D0917044.D	72940-2	3.259	4774496	488.0	1.0	488.0	0.4513	8.963	0.7709	26.4		51.15	1	51.15	2.77	
D0917045.D	72940-3	3.259	4805480	492.0	1.0	492.0	0.4513	8.963	0.7821	26.2		51.15	1	51.15	2.73	
72941-1 Spilled Sample																
D0917047.D	72941-2	3.265	4530691	457.3	1.0	457.3	0.4008	8.048	0.7875	24.5	23.8	51.15	1	51.15	2.74	2.73
D0917048.D	72941-3	3.265	4338195	433.6	1.0	433.6	0.4008	8.048	0.7898	23.1		51.15	1	51.15	2.73	
D0917051.D	72942-1	3.265	5398570	570.2	1.0	570.2	0.1351	2.706	0.7816	30.7	31.1	51.15	1	51.15	2.75	2.81
D0917052.D	72942-2	3.265	5407729	571.5	1.0	571.5	0.1351	2.706	0.7744	31.0		51.15	1	51.15	2.78	
D0917053.D	72942-3	3.265	5295335	556.2	1.0	556.2	0.1351	2.706	0.7441	31.4		51.15	1	51.15	2.89	
D0917054.D	72943-1	3.286	2453734	221.2	1.0	221.2	0.3852	7.678	0.7651	12.1	12.2	51.15	1	51.15	2.80	2.82
D0917055.D	72943-2	3.265	2474355	223.4	1.0	223.4	0.3852	7.678	0.7853	11.9		51.15	1	51.15	2.73	
D0917059.D	72943-3	3.265	2406857	216.3	1.0	216.3	0.3852	7.678	0.7266	12.5		51.15	1	51.15	2.95	

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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Serum, 300 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0928029.D	73133-1	3.259	54344	18.78	0.1	1.878	0.2151	4.503	0.7767	0.106		5.115	0.1	0.5115	0.0289	
D0928030.D	73133-2	3.258	37666	12.47	0.1	1.247	0.2151	4.503	0.7791	0.0702	0.0956	5.115	0.1	0.5115	0.0288	
D0928031.D	73133-3	3.258	56369	19.54	0.1	1.954	0.2151	4.503	0.7749	0.111		5.115	0.1	0.5115	0.0290	0.0289
D0928032.D	73134-1	3.258	55715	19.29	0.1	1.929	0.3241	6.509	0.7739	0.105		5.115	0.1	0.5115	0.0279	
D0928033.D	73134-2	3.258	83943	29.97	0.1	2.997	0.3241	6.509	0.7800	0.162	0.119	5.115	0.1	0.5115	0.0277	
D0928036.D	73134-3	3.258	48280	16.48	0.1	1.648	0.3241	6.509	0.7635	0.0910		5.115	0.1	0.5115	0.0282	0.0279
D0928037.D	73135-1	3.265	67225	23.65	0.1	2.365	0.3158	6.318	0.7815	0.127		5.115	0.1	0.5115	0.0275	
D0928038.D	73135-2	3.258	43171	14.55	0.1	1.455	0.3158	6.318	0.7603	0.0804	0.0996	5.115	0.1	0.5115	0.0283	
D0928039.D	73135-3	3.258	48428	16.54	0.1	1.654	0.3158	6.318	0.7605	0.0914		5.115	0.1	0.5115	0.0283	0.0280
D0928040.D	73136-1	3.258	49295	16.87	0.1	1.687	0.0938	1.914	0.7183	0.101		5.115	0.1	0.5115	0.0305	
D0928044.D	73136-2	3.258	30200	9.647	0.1	0.965	0.0938	1.914	0.7214	0.0572	0.0690	5.115	0.1	0.5115	0.0304	
D0928045.D	73136-3	3.259	25750	7.965	0.1	0.7965	0.0938	1.914	0.6916	0.0493		5.115	0.1	0.5115	0.0317	0.0308
D0928046.D	73137-1	3.265	16957	4.642	0.1	0.4642	0.2937	5.933	0.7521	0.0262		5.115	0.1	0.5115	0.0288	
D0928047.D	73137-2	3.265	18187	5.107	0.1	0.5107	0.2937	5.933	0.7802	0.0278	0.0315	5.115	0.1	0.5115	0.0278	
D0928048.D	73137-3	3.266	23421	7.085	0.1	0.7085	0.2937	5.933	0.7388	0.0407		5.115	0.1	0.5115	0.0294	0.0287
D0928051.D	73138-1	3.265	29267	9.294	0.1	0.9294	0.2409	4.838	0.7796	0.0503		5.115	0.1	0.5115	0.0277	
D0928052.D	73138-2	3.265	25713	7.951	0.1	0.7951	0.2409	4.838	0.7829	0.0428	0.0421	5.115	0.1	0.5115	0.0275	
D0928053.D	73138-3	3.266	20796	6.093	0.1	0.6093	0.2409	4.838	0.7765	0.0331		5.115	0.1	0.5115	0.0278	0.0277
D0928054.D	73139-1	3.265	20308	5.908	0.1	0.5908	0.3390	6.813	0.7744	0.0322		5.115	0.1	0.5115	0.0279	
D0928055.D	73139-2	3.265	18927	5.387	0.1	0.5387	0.3390	6.813	0.7738	0.0294	0.0252	5.115	0.1	0.5115	0.0279	
D0928059.D	73139-3	3.273	14579	2.558	0.1	0.2558	0.3390	6.813	0.7668	0.0141		5.115	0.1	0.5115	0.0281	0.0280
D0928060.D	73140-1	3.272	38222	12.68	0.1	1.268	0.2797	5.949	0.7764	0.0727		5.115	0.1	0.5115	0.0293	
D0928061.D	73140-2	3.272	24645	7.547	0.1	0.7547	0.2797	5.949	0.7768	0.0433	0.0489	5.115	0.1	0.5115	0.0293	
D0928062.D	73140-3	3.272	18283	5.143	0.1	0.5143	0.2797	5.949	0.7435	0.0308		5.115	0.1	0.5115	0.0306	0.0298
D0928063.D	73141-1	3.272	46632	15.86	0.1	1.586	0.0680	1.465	0.7330	0.0975		5.115	0.1	0.5115	0.0315	
D0928066.D	73141-2	3.272	55241	19.11	0.1	1.911	0.0680	1.465	0.7614	0.113	0.105	5.115	0.1	0.5115	0.0303	
Not enough sample for triplicates																
D0928067.D	73142-1	3.272	21655	6.417	0.1	0.6417	0.0962	1.918	0.7817	0.0344		5.115	0.1	0.5115	0.0274	
D0928068.D	73142-2	3.273	17788	2.558	0.1	0.2558	0.0962	1.918	0.7701	0.0139	0.0245	5.115	0.1	0.5115	0.0278	
D0928069.D	73142-3	3.273	9422	2.558	0.1	0.2558	0.0962	1.918	0.4225	0.0253		5.115	0.1	0.5115	0.0507	0.0353
D0928070.D	73143-1	3.273	23400	7.077	0.1	0.7077	0.1626	3.216	0.7791	0.0377		5.115	0.1	0.5115	0.0273	
D0928074.D	73143-2	3.272	26062	8.083	0.1	0.8083	0.1626	3.216	0.7794	0.0431	0.0433	5.115	0.1	0.5115	0.0273	
D0928075.D	73143-3	3.279	28843	9.134	0.1	0.9134	0.1626	3.216	0.7715	0.0492		5.115	0.1	0.5115	0.0276	0.0274
D0928076.D	73144-1	3.28	20740	6.072	0.1	0.6072	0.0466	1.033	0.7605	0.0370		5.115	0.1	0.5115	0.0312	
D0928077.D	73144-2	3.279	6300	2.558	0.1	0.2558	0.0466	1.033	0.2827	0.0419	0.0395	5.115	0.1	0.5115	0.0338	
Not enough sample for triplicates																
D0928078.D	73145-1	3.279	22833	6.863	0.1	0.6863	0.1742	3.436	0.7770	0.0366		5.115	0.1	0.5115	0.0273	
D0928081.D	73145-2	3.279	21410	6.325	0.1	0.6325	0.1742	3.436	0.7786	0.0337	0.0329	5.115	0.1	0.5115	0.0272	
D0928082.D	73145-3	3.279	18716	5.307	0.1	0.5307	0.1742	3.436	0.7742	0.0284		5.115	0.1	0.5115	0.0274	0.0273
D0928083.D	73146-1	3.279	19033	5.427	0.1	0.5427	0.0732	1.651	0.7700	0.0332		5.115	0.1	0.5115	0.0313	
D0928084.D	73146-2	3.279	19087	5.447	0.1	0.5447	0.0732	1.651	0.7534	0.0341	0.0472	5.115	0.1	0.5115	0.0320	
D0928085.D	73146-3	0	0	2.558	0.1	0.2558	0.0732	1.651	0.1621	0.0743		5.115	0.1	0.5115	0.149	0.0707
D0928089.D	73147-1	3.28	15993	2.558	0.1	0.2558	0.3121	6.361	0.7731	0.0141		5.115	0.1	0.5115	0.0283	
D0928090.D	73147-2	3.28	20299	5.905	0.1	0.5905	0.3121	6.361	0.7574	0.0333	0.0269	5.115	0.1	0.5115	0.0289	
D0928091.D	73147-3	3.286	20623	6.028	0.1	0.6028	0.3121	6.361	0.7755	0.0332		5.115	0.1	0.5115	0.0282	0.0285

*Used 1/2 LLOQ for one of the replicate calculations

**Used 1/2 LLOQ for two of the replicate calculations

Quail Serum, 900 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected	LLOQ in Matrix, ug/g	Average, ug/g
D0924029.D	72944-1	3.259	1602357	175.2	4	700.8	0.3903	7.747	0.7809	37.4		51.15	4			
D0924030.D	72944-2	3.258	1419324	151.5	4	606.0	0.3903	7.747	0.7838	32.2	34.3	51.15	4	204.6	10.9	
D0924031.D	72944-3	3.258	1438635	154.0	4	615.9	0.3903	7.747	0.7741	33.2		51.15	4	204.6	10.9	10.9
D0924032.D	72945-1	3.259	2909643	357.71	4	1431	0.3982	7.901	0.7664	75.8		51.15	4	204.6	11.0	
D0924033.D	72945-2	3.259	2923649	359.8	4	1439	0.3982	7.901	0.7642	76.5	77.4	51.15	4	204.6	10.8	
D0924035.D	72945-3	3.259	2928154	360.5	4	1442	0.3982	7.901	0.7723	77.8		51.15	4	204.6	11.2	11.0
D0924036.D	72946-1	3.258	2787985	339.6	4	1358	0.4005	8.266	0.7889	74.5		51.15	4	204.6	11.0	
D0924037.D	72946-2	3.258	2788662	339.7	4	1359	0.4005	8.266	0.7827	75.1	74.9	51.15	4	204.6	11.2	
D0924038.D	72946-3	3.258	2782108	338.7	4	1355	0.4005	8.266	0.7809	75.1		51.15	4	204.6	11.3	11.3
D0924039.D	72947-1	3.258	4968241	719.7	4	2879	0.4420	8.488	0.7639	152		51.15	4	204.6	11.3	
D0924043.D	72947-2	3.265	5408646	819.0	4	3276	0.4420	8.488	0.7794	170	162	51.15	4	204.6	11.3	
D0924044.D	72947-3	3.265	5330822	800.6	4	3202	0.4420	8.488	0.7938	163		51.15	4	204.6	10.8	
D0924045.D	72948-1	3.258	3440470	440.1	4	1760	0.3999	8.009	0.7788	95.1		51.15	4	204.6	10.6	10.6
D0924046.D	72948-2	3.266	3191726	400.8	4	1603	0.3999	8.009	0.7067	95.4		51.15	4	204.6	11.0	
D0924047.D	72948-3	3.265	3513823	451.9	4	1808	0.3999	8.009	0.7854	96.8	95.7	51.15	4	204.6	12.2	11.4
D0924049.D	72949-1	3.266	3621885	469.6	4	1878	0.3996	8.002	0.7953	99.3		51.15	4	204.6	11.0	
D0924050.D	72949-2	3.266	3513346	451.85	4	1807	0.3996	8.002	0.7747	98.1	97.7	51.15	4	204.6	10.8	
D0924051.D	72949-3	3.265	3523565	453.51	4	1814	0.3996	8.002	0.7968	95.7		51.15	4	204.6	11.1	10.9
D0924052.D	72950-1	3.266	1750464	194.7	4	778.7	0.3599	7.190	0.7856	41.6		51.15	4	204.6	10.9	
D0924053.D	72950-2	3.259	1775165	199.0	4	791.8	0.3599	7.190	0.7833	42.4	43.1	51.15	4	204.6	11.0	10.9
D0924057.D	72950-3	3.265	1877647	211.6	4	846.5	0.3599	7.190	0.7856	45.2		51.15	4	204.6	10.9	
D0924058.D	72951-1	3.265	5457187	830.8	4	3323	0.3885	7.767	0.7799	179		51.15	4	204.6	11.0	
D0924059.D	72951-2	3.265	5437716	826.0	4	3304	0.3885	7.767	0.7905	175	178	51.15	4	204.6	10.9	10.9
D0924060.D	72951-3	3.265	5546292	852.8	4	3411	0.3885	7.767	0.7970	180		51.15	4	204.6	10.8	
D0924061.D	72952-1	3.265	3479545	446.37	4	1785	0.3953	8.096	0.7756	98.9		51.15	4	204.6	11.3	
D0924063.D	72952-2	3.265	3503380	450.23	4	1801	0.3953	8.096	0.7674	101	98.8	51.15	4	204.6	11.5	11.4
D0924064.D	72952-3	3.266	3433740	439.0	4	1758	0.3953	8.096	0.7800	96.7		51.15	4	204.6	11.3	
D1222029.D	72953-1	3.475	20645221	885.2	8	7082	0.3999	8.142	0.7919	382		51.15	8	409.2	22.1	
D1223022.D	72953-2	3.46	19113316	536.4	10	6364	0.3999	8.142	0.7959	342	370	51.15	10	511.5	27.5	23.9
D1222031.D	72953-3	3.468	20726022	892.0	8	7136	0.3999	8.142	0.7915	385		51.15	8	409.2	22.1	
D0924071.D	72954-1	3.265	2404197	284.1	4	1136	0.3090	6.321	0.7863	62.0		51.15	4	204.6	11.2	
D0924072.D	72954-2	3.265	2330898	273.8	4	1095	0.3090	6.321	0.7708	61.0	61.3	51.15	4	204.6	11.4	11.4
D0924073.D	72954-3	3.266	2269594	265.2	4	1061	0.3090	6.321	0.7483	60.8		51.15	4	204.6	11.7	
D0924074.D	72955-1	3.272	3231635	407.0	4	1628	0.3966	8.000	0.7949	86.7		51.15	4	204.6	10.9	
D0924075.D	72955-2	3.265	3375064	429.6	4	1718	0.3966	8.000	0.7944	91.6	90.4	51.15	4	204.6	10.9	10.9
D0924077.D	72955-3	3.265	3376561	429.8	4	1719	0.3966	8.000	0.7849	92.8		51.15	4	204.6	11.0	
D0924078.D	72956-1	3.265	2493600	296.8	4	1187	0.3927	7.961	0.7646	66.1		51.15	4	204.6	11.4	
D0924079.D	72956-2	3.265	2564598	305.6	4	1222	0.3927	7.961	0.7860	66.2	65.6	51.15	4	204.6	11.1	11.2
D0924080.D	72956-3	3.266	2492977	296.7	4	1187	0.3927	7.961	0.7818	64.6		51.15	4	204.6	11.1	
D0924081.D	72957-1	3.265	3335220	423.3	4	1693	0.4010	7.976	0.7750	91.3		51.15	4	204.6	11.0	11.0
D0924085.D	72957-2	3.265	3416650	436.3	4	1745	0.4010	7.976	0.7804	93.4	93.1	51.15	4	204.6	11.0	
D0924086.D	72957-3	3.265	3430552	438.5	4	1754	0.4010	7.976	0.7753	94.5		51.15	4	204.6	11.1	
D0924087.D	72958-1	3.265	2595185	311.4	4	1246	0.2078	4.142	0.7709	67.6		51.15	4	204.6	11.1	
D0924088.D	72958-2	3.265	2575420	308.6	4	1234	0.2078	4.142	0.7749	66.7	67.0	51.15	4	204.6	11.1	11.1
D0924089.D	72958-3	3.266	2577442	308.9	4	1235	0.2078	4.142	0.7755	66.7		51.15	4	204.6	11.0	
D0924091.D	72959-1	3.266	2286228	267.5	4	1070	0.2620	5.264	0.7898	57.2		51.15	4	204.6	10.9	
D0924092.D	72959-2	3.266	2241302	261.3	4	1045	0.2620	5.264	0.7580	58.2	57.3	51.15	4	204.6	11.4	11.1
D0924093.D	72959-3	3.266	2239848	261.1	4	1044	0.2620	5.264	0.7772	56.7		51.15	4	204.6	11.1	
D0925029.D	72960-1	3.258	1809409	218.2	4	872.7	0.3976	8.000	0.7768	47.5		51.15	4	204.6	11.1	11.1
D0925030.D	72960-2	3.258	1775659	213.3	4	853.4	0.3976	8.000	0.7871	45.8	47.1	51.15	4	204.6	11.0	11.2
D0925031.D	72960-3	3.258	1782262	214.3	4	857.2	0.3976	8.000	0.7515	48.2		51.15	4	204.6	11.5	

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Serum, 900 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0925032.D	72961-1	3.258	4763101	749.7	4	2999	0.4020	8.073	0.7555	167		51.15	4	204.6	11.4	
D0925033.D	72961-2	3.259	5005943	810.7	4	3243	0.4020	8.073	0.7979	171		51.15	4	204.6	10.8	
D0925035.D	72961-3	3.259	4781735	754.2	4	3017	0.4020	8.073	0.7868	162	167	51.15	4	204.6	11.0	11.1
D1222032.D	72962-1	3.468	9003142	264.4	8	2115	0.3742	7.434	0.7666	115		51.15	8	409.2	22.3	
D0925037.D	72962-2	3.258	2443057	312.4	4	1250	0.3742	7.434	0.7189	72.5		51.15	4	204.6	11.9	
D0925038.D	72962-3	3.258	2493757	320.3	4	1281	0.3742	7.434	0.7460	71.7	86.5	51.15	4	204.6	11.4	15.2
D0925039.D	72963-1	3.258	1559446	182.8	4	731.2	0.3421	6.870	0.6710	45.9		51.15	4	204.6	12.9	
D0925043.D	72963-2	3.259	1598741	188.3	4	753.2	0.3421	6.870	0.7535	42.1		51.15	4	204.6	11.4	
D0925044.D	72963-3	3.259	1696181	202.0	4	808.2	0.3421	6.870	0.7855	43.4	43.8	51.15	4	204.6	11.0	11.8
D0925045.D	72964-1	3.258	2154764	268.7	4	1075	0.5518	11.029	0.7581	59.5		51.15	4	204.6	11.3	
D0925046.D	72964-2	3.258	2202225	275.8	4	1103	0.5518	11.029	0.7638	60.6		51.15	4	204.6	11.2	
D0925047.D	72964-3	3.258	2189563	273.9	4	1096	0.5518	11.029	0.7584	60.6	60.3	51.15	4	204.6	11.3	11.3
D0925048.D	72965-1	3.258	3016763	404.6	4	1618	0.3995	7.987	0.7903	86.0		51.15	4	204.6	10.9	
D0925050.D	72965-2	3.258	3099473	418.5	4	1674	0.3995	7.987	0.7903	88.9		51.15	4	204.6	10.9	
D0925051.D	72965-3	3.259	2975379	397.7	4	1591	0.3995	7.987	0.7758	86.1	87.0	51.15	4	204.6	11.1	10.9
D0925052.D	72966-1	3.258	2158020	269.2	4	1077	0.2338	4.703	0.7731	58.8		51.15	4	204.6	11.2	
D0925053.D	72966-2	3.258	2139563	265.4	4	1066	0.2338	4.703	0.7774	57.9		51.15	4	204.6	11.1	
D0925057.D	72966-3	3.258	2110616	262.1	4	1048	0.2338	4.703	0.7432	59.6	58.8	51.15	4	204.6	11.6	11.3
D0925058.D	72967-1	3.258	1812440	218.6	4	874.4	0.3762	7.669	0.7709	48.5		51.15	4	204.6	11.4	
D0925059.D	72967-2	3.259	1848636	223.8	4	895.3	0.3762	7.669	0.7895	48.5		51.15	4	204.6	11.1	
D0925060.D	72967-3	3.266	1857202	225.0	4	900.2	0.3762	7.669	0.7890	48.8	48.6	51.15	4	204.6	11.1	11.2
D0925061.D	72968-1	3.259	3393265	469.4	4	1878	0.3776	7.517	0.7817	100		51.15	4	204.6	10.9	
D0925063.D	72968-2	3.258	3224631	438.9	4	1760	0.3776	7.517	0.7538	97.6		51.15	4	204.6	11.3	
D0925064.D	72968-3	3.259	3315190	455.7	4	1823	0.3776	7.517	0.7739	98.5	98.8	51.15	4	204.6	11.1	11.1
D0925065.D	72969-1	3.259	1840845	222.7	4	890.8	0.2212	4.455	0.7467	50.4		51.15	4	204.6	11.6	
D0925066.D	72969-2	3.265	1910380	232.7	4	930.9	0.2212	4.455	0.7829	50.3		51.15	4	204.6	11.0	
D0925067.D	72969-3	3.259	1860663	225.5	4	902.2	0.2212	4.455	0.7892	48.3	49.7	51.15	4	204.6	11.0	11.2
D0925071.D	72970-1	3.265	3197761	435.3	4	1741	0.3884	7.877	0.7806	94.9		51.15	4	204.6	11.2	
D0925072.D	72970-2	3.259	3164546	429.6	4	1718	0.3884	7.877	0.7791	93.9		51.15	4	204.6	11.2	
D0925073.D	72970-3	3.265	3086252	416.3	4	1665	0.3884	7.877	0.7381	96.0	94.9	51.15	4	204.6	11.8	11.4
D0925074.D	72971-1	3.265	2485763	319.1	4	1276	0.2629	5.434	0.7761	71.3		51.15	4	204.6	11.4	
D0925075.D	72971-2	3.266	2518719	324.2	4	1297	0.2629	5.434	0.7815	71.9		51.15	4	204.6	11.3	
D0925077.D	72971-3	3.265	2437423	311.6	4	1246	0.2629	5.434	0.7806	69.2	70.8	51.15	4	204.6	11.4	11.4
D0925078.D	72972-1	3.265	1668301	198.1	4	792.4	0.3896	7.900	0.7558	44.6		51.15	4	204.6	11.5	
D0925079.D	72972-2	3.265	1680946	199.9	4	799.5	0.3896	7.900	0.7810	43.6		51.15	4	204.6	11.1	
D0925080.D	72972-3	3.265	1711185	204.2	4	816.7	0.3896	7.900	0.7795	44.6	44.3	51.15	4	204.6	11.2	11.3
D0925081.D	72973-1	3.266	1271917	143.2	4	573.0	0.3116	6.205	0.7849	30.5		51.15	4	204.6	10.9	
D0925085.D	72973-2	3.265	1286592	145.2	4	580.9	0.3116	6.205	0.7797	31.2		51.15	4	204.6	11.0	
D0925086.D	72973-3	3.265	1135970	124.9	4	499.7	0.3116	6.205	0.7013	29.8	30.5	51.15	4	204.6	12.2	11.4
D0925087.D	72974-1	3.265	2041922	252.0	4	1008	0.3968	7.909	0.7169	58.9		51.15	4	204.6	11.9	
D0925088.D	72974-2	3.265	2203172	275.9	4	1104	0.3968	7.909	0.7747	59.6		51.15	4	204.6	11.1	
D0925089.D	72974-3	3.265	2201375	275.6	4	1103	0.3968	7.909	0.7770	59.4	59.3	51.15	4	204.6	11.0	11.3
D0925091.D	72975-1	3.266	1625439	178.1	4	712.3	0.4775	9.553	0.7818	38.3		51.15	4	204.6	11.0	
D0925092.D	72975-2	3.265	1546939	181.1	4	724.3	0.4775	9.553	0.7720	39.4		51.15	4	204.6	11.1	
D0925093.D	72975-3	3.265	1525737	178.1	4	712.4	0.4775	9.553	0.7541	39.7	39.1	51.15	4	204.6	11.4	11.2
D0930027.D	73148-1	3.272	93522	32.43	0.1	3.243	0.3265	6.585	0.7691	0.179		5.115	0.1	0.5115	0.0282	
D0930028.D	73148-2	3.279	103382	36.00	0.1	3.600	0.3265	6.585	0.7484	0.204		5.115	0.1	0.5115	0.0289	
D0930029.D	73148-3	3.28	85970	29.70	0.1	2.970	0.3265	6.585	0.7013	0.179	0.187	5.115	0.1	0.5115	0.0309	0.0293
D0930030.D	73149-1	3.279	67034	22.85	0.1	2.285	0.0286	0.680	0.6530	0.168	0.168	5.115	0.1	0.5115	0.0377	
	73149-2	Not enough sample for triplicates														
	73149-3	Not enough sample for triplicates														

Quail Serum, 900 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of serum (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Serum Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D0930035.D	73150-1	3.279	191639	67.94	0.1	6.794	0.1181	2.464	0.7775	0.382		5.115	0.1	0.5115	0.0288	
D0930036.D	73150-2	3.279	149152	52.56	0.1	5.256	0.1181	2.464	0.7771	0.296	0.320	5.115	0.1	0.5115	0.0288	0.0287
D0930037.D	73150-3	3.279	143607	50.55	0.1	5.055	0.1181	2.464	0.7844	0.282		5.115	0.1	0.5115	0.0285	
D0930038.D	73151-1	3.286	111695	39.00	0.1	3.900	0.2370	5.101	0.7842	0.224		5.115	0.1	0.5115	0.0294	
D0930042.D	73151-2	3.286	46899	15.57	0.1	1.557	0.2370	5.101	0.7510	0.0934	0.138	5.115	0.1	0.5115	0.0307	0.0299
D0930043.D	73151-3	3.286	49668	16.57	0.1	1.657	0.2370	5.101	0.7807	0.0956		5.115	0.1	0.5115	0.0295	
D0930044.D	73152-1	3.286	35896	11.58	0.1	1.158	0.2249	4.650	0.7811	0.0643		5.115	0.1	0.5115	0.0284	
D0930045.D	73152-2	3.28	23418	7.077	0.1	0.7077	0.2249	4.650	0.7547	0.0407	0.0686	5.115	0.1	0.5115	0.0294	0.0289
D0930046.D	73152-3	3.279	52954	17.76	0.1	1.776	0.2249	4.650	0.7631	0.101		5.115	0.1	0.5115	0.0291	
D0930049.D	73153-1	3.286	158206	55.83	0.1	5.583	0.3524	7.085	0.7924	0.297		5.115	0.1	0.5115	0.0272	
D0930050.D	73153-2	3.286	106527	37.13	0.1	3.713	0.3524	7.085	0.7831	0.200	0.230	5.115	0.1	0.5115	0.0276	0.0276
D0930051.D	73153-3	3.287	98675	34.29	0.1	3.429	0.3524	7.085	0.7527	0.192		5.115	0.1	0.5115	0.0287	
D0930052.D	73154-1	3.286	97872	34.00	0.1	3.400	0.2821	5.659	0.7768	0.184		5.115	0.1	0.5115	0.0277	
D0930053.D	73154-2	3.286	102515	35.68	0.1	3.568	0.2821	5.659	0.7796	0.193	0.170	5.115	0.1	0.5115	0.0276	0.0279
D0930057.D	73154-3	3.286	69858	23.87	0.1	2.387	0.2821	5.659	0.7618	0.132		5.115	0.1	0.5115	0.0283	
D0930058.D	73155-1	3.286	48898	16.29	0.1	1.629	0.2769	5.620	0.7568	0.0917		5.115	0.1	0.5115	0.0288	
D0930059.D	73155-2	3.286	45587	15.09	0.1	1.509	0.2769	5.620	0.7659	0.0839	0.0833	5.115	0.1	0.5115	0.0284	0.0288
D0930060.D	73155-3	3.286	39806	13.00	0.1	1.300	0.2769	5.62	0.7456	0.0743		5.115	0.1	0.5115	0.0292	
D0930061.D	73156-1	3.286	17992	5.115	0.1	0.5115	0.2280	5.732	0.7776	0.0344		5.115	0.1	0.5115	0.0344	
D0930064.D	73156-2	3.286	46614	15.46	0.1	1.546	0.2280	5.732	0.7783	0.104	0.0754	5.115	0.1	0.5115	0.0347	0.0345
D0930065.D	73156-3	3.287	39707	12.97	0.1	1.297	0.2280	5.732	0.7702	0.0880		5.115	0.1	0.5115	0.0347	
D0930066.D	73157-1	3.286	28905	9.061	0.1	0.9061	0.0533	1.119	0.7804	0.0511		5.115	0.1	0.5115	0.0288	
D0930067.D	73157-2	3.293	8981	2.558	0.1	0.2558	0.0533	1.119	0.3564	0.0316	0.0413	5.115	0.1	0.5115	0.0631	0.0460
	73157-3	Not enough sample for triplicates														
D0930072.D	73158-1	3.286	52042	17.43	0.1	1.743	0.2664	5.447	0.7535	0.0992		5.115	0.1	0.5115	0.0291	
D0930073.D	73158-2	3.286	40859	13.31	0.1	1.331	0.2664	5.447	0.7773	0.0735	0.0836	5.115	0.1	0.5115	0.0282	0.0285
D0930074.D	73158-3	3.287	43071	14.18	0.1	1.418	0.2664	5.447	0.7784	0.0782		5.115	0.1	0.5115	0.0282	
D0930075.D	73159-1	3.286	67957	23.18	0.1	2.318	0.0583	1.125	0.7533	0.125		5.115	0.1	0.5115	0.0276	
D0930076.D	73159-2	3.286	26640	8.242	0.1	0.8242	0.0583	1.125	0.3949	0.0847	0.105	5.115	0.1	0.5115	0.0526	0.0401
	73159-3	Not enough sample for triplicates														
D0930080.D	73160-1	3.286	64956	22.10	0.1	2.210	0.0492	1.084	0.7708	0.132		5.115	0.1	0.5115	0.0306	
D0930081.D	73160-2	3.286	24167	7.347	0.1	0.7347	0.0492	1.084	0.3305	0.102	0.117	5.115	0.1	0.5115	0.0713	0.0509
	73160-3	Not enough sample for triplicates														
D0930083.D	73161-1	3.286	80470	27.71	0.1	2.771	0.0390	0.857	0.8669	0.147	0.147	5.115	0.1	0.5115	0.0271	
	73161-2	Not enough sample for triplicates														
	73161-3	Not enough sample for triplicates														
D0930089.D	73162-1	3.286	28992	9.092	0.1	0.9092	0.1385	2.759	0.7779	0.0489		5.115	0.1	0.5115	0.0275	
D0930090.D	73162-2	3.286	32824	10.48	0.1	1.048	0.1385	2.759	0.7741	0.0566	0.0604	5.115	0.1	0.5115	0.0276	0.0284
D0930091.D	73162-3	3.286	39321	12.83	0.1	1.283	0.1385	2.759	0.7099	0.0756		5.115	0.1	0.5115	0.0301	

*Used 1/2 LLOQ for one of the replicate calculations

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver Matrix Spikes

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File	Sample Name	Sample Info	RT	Area	Concentration of PFBS in Extract, On- column, ng/mL	Recovery, %	Average Recovery, %	RSD, %
D1018073.D	LS-041005-1	300 ppm Dose Group; Low Spike; Liver; 05 Oct 04; MLA/CMC/MEE*						
D1018074.D	LS-041005-2	300 ppm Dose Group; Low Spike; Liver; 05 Oct 04; MLA/CMC/MEE+	3.454	247534	24.5	96%		
D1018078.D	LS-041005-3	300 ppm Dose Group; Low Spike; Liver; 05 Oct 04; MLA/CMC/MEE	3.454	232831	22.5	88%		
D1022099.D	LS-041019-1	Low Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEEG	3.453	232994	22.5	88%		
D1022100.D	LS-041019-2	Low Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEEH	3.46	69996	23.3	91%		
D1022101.D	LS-041019-3	Low Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEEI	3.461	67506	22.4	88%		
			3.461	69231	23.1	90%	90.2%	3.44%
D1018079.D	MS-041005-1	300 ppm Dose Group; Med Spike; Liver; 05 Oct 04; MLA/CMC/MEE-						
D1018080.D	MS-041005-2	300 ppm Dose Group; Med Spike; Liver; 05 Oct 04; MLA/CMC/MEE.	3.454	1819530	262	102%		
D1018081.D	MS-041005-3	300 ppm Dose Group; Med Spike; Liver; 05 Oct 04; MLA/CMC/MEE/	3.454	1827919	263	103%		
D1021099.D	MS-041019-1	Med Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEEJ	3.454	1805066	259	101%		
D1021100.D	MS-041019-2	Med Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEEK	3.468	1378946	232	91%		
D1021101.D	MS-041019-3	Med Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEEI	3.461	1402599	237	93%		
			3.461	1290097	215	84%	95.7%	8.08%
D1103026.D	HS-041005-1	High Spike; 300ppm DG Liver; MLA/CMC/MEE; 05 Oct 04						
D1103027.D	HS-041005-2	High Spike; 300ppm DG Liver; MLA/CMC/MEE; 05 Oct 04	3.573	3615535	720	94%		
D1103028.D	HS-041005-3	High Spike; 300ppm DG Liver; MLA/CMC/MEE; 05 Oct 04	3.58	3577228	709	92%		
D1021102.D	HS-041019-1	High Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	3.58	3683641	738	96%		
D1021103.D	HS-041019-2	High Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	3.461	3038661	612	80%		
D1021107.D	HS-041019-3	High Spike; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	3.461	3265979	675	88%		
			3.461	3089768	626	82%	88.6%	7.63%
D1108032.D	EC-040927-10	Extracted Curve; 10ppb; Liver; 27 Sep 04						
D1108033.D	EC-040927-25	Extracted Curve; 25ppb; Liver; 27 Sep 04	3.44	185755	11.4	111%		
D1108034.D	EC-040927-50	Extracted Curve; 50ppb; Liver; 27 Sep 04	3.441	431713	28.2	110%		
D1108035.D	EC-040927-75	Extracted Curve; 75ppb; Liver; 27 Sep 04	3.44	718419	48.3	94%		
D1108038.D	EC-040927-250	Extracted Curve; 250ppb; Liver; 27 Sep 04	3.44	1010222	69.6	91%		
D1108040.D	EC-040930-10	Extracted Curve; 10ppb; Liver; 30 Sep 04	3.44	3206639	268	105%		
D1108041.D	EC-040930-25	Extracted Curve; 25ppb; Liver; 30 Sep 04	3.44	175251	10.7	104%		
D1108042.D	EC-040930-50	Extracted Curve; 50ppb; Liver; 30 Sep 04	3.44	442373	28.9	113%		
D1108043.D	EC-040930-75	Extracted Curve; 75ppb; Liver; 30 Sep 04	3.44	822165	55.8	109%		
D1108036.D	EC-040927-100	Extracted Curve; 100ppb; Liver; 27 Sep 04	3.44	967836	66.4	87%		
D1108047.D	EC-040930-100	Extracted Curve; 100ppb; Liver; 30 Sep 04	3.44	1028782	70.9	69%	Entire sample not extracted	
D1108048.D	EC-040930-250	Extracted Curve; 250ppb; Liver; 30 Sep 04	3.441	1093647	75.8	74%	Failed	
			3.44	2571915	201	79%	Failed	

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver Matrix Spikes

File	Sample Name	Sample Info	RT	Area	Concentration of PFBS in Extract, On- column, ng/mL	Recovery, %	Average Recovery, %	RSD, %
D1004089.D	MB-041004-1	Method Blank; 4 Oct 04; MLA/CMC/MEE	0	0	0			
D1004090.D	MB-041004-2	Method Blank; 4 Oct 04; MLA/CMC/MEE	0	0	0			
D1010096.D	MB-040930-1	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	0	0	0			
D1010097.D	MB-040930-2	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	0	0	0			
D1010098.D	MB-040930-3	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	0	0	0			
D1010099.D	MB-040930-4	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	0	0	0			
D1014096.D	MB-040930-1	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	0	0	0			
D1014097.D	MB-040930-2	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	0	0	0			
D1014098.D	MB-040930-3	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	3.468	2092	< LLOQ			
D1014099.D	MB-040930-4	100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE	3.467	4128	< LLOQ			
D1018087.D	MB-041005-1	300 ppm Dose Group; Method Blank; Liver; 05 Oct 04; MLA/CMC/MEE	0	0	0			
D1018088.D	MB-041005-2	300 ppm Dose Group; Method Blank; Liver; 05 Oct 04; MLA/CMC/MEE	0	0	0			
D1018089.D	MB-041005-3	300 ppm Dose Group; Method Blank; Liver; 05 Oct 04; MLA/CMC/MEE	0	0	0			
D1021108.D	MB-041019-1	Method Blank; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	0	0	0			
D1021109.D	MB-041019-2	Method Blank; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	0	0	0			
D1021110.D	MB-041019-3	Method Blank; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	0	0	0			
D1022028.D	MB-041012-2	Extracted Curve; Method Blank; Liver; 12 Oct 04	0	0	0			
D1022102.D	MB-041019-1	Method Blank; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	3.469	15465	< LLOQ			
D1022103.D	MB-041019-2	Method Blank; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	0	0	0			
D1022107.D	MB-041019-3	Method Blank; 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE	0	0	0			
D1023028.D	MB-041012-2	Method Blank; Liver; 12 Oct 04	0	0	0			
D1024098.D	MB-040930-1	100 ppm Dose Group; Method Blank; Liver; 30 Sep 04; MLA/CMC/MEE	3.478	8860	< LLOQ			
D1024099.D	MB-040930-2	100 ppm Dose Group; Method Blank; Liver; 30 Sep 04; MLA/CMC/MEE	0	0	0			
D1024100.D	MB-040930-3	100 ppm Dose Group; Method Blank; Liver; 30 Sep 04; MLA/CMC/MEE	0	0	0			
D1024101.D	MB-040930-4	100 ppm Dose Group; Method Blank; Liver; 30 Sep 04; MLA/CMC/MEE	0	0	0			
D1024095.D	MB-040927-1	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	0	0	0			
D1024096.D	MB-040927-2	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	3.468	8256	< LLOQ			
D1024097.D	MB-040927-3	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	3.469	6528	< LLOQ			
D1024100.D	MB-040927-4	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	3.468	4795	< LLOQ			
D1024028.D	EC-041012b-750	Method Blank; Liver; 12 Oct 04	3.468	11240	< LLOQ			
D1101094.D	MB-040927-1	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	3.468	6081	< LLOQ			
D1101095.D	MB-040927-2	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	0	0	0			
D1101096.D	MB-040927-3	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	0	0	0			
D1101099.D	MB-040927-4	Method Blank; 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE	0	0	0			

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

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Quail Liver, Control Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
I1023033.D	72976-1	3.489	23914	1.279	0.1	0.1279	1.0629	21.1653	0.7678	0.00697	*	2.558	0.1	0.2558	0.0139	
I1023034.D	72976-2	3.509	91983	7.643	0.1	0.7643	1.0629	21.1653	0.7742	0.0413	0.0207	2.558	0.1	0.2558	0.0138	
I1023035.D	72976-3	3.498	40237	2.596	0.1	0.2596	1.0629	21.1653	0.7811	0.0139		2.558	0.1	0.2558	0.0137	
I1023036.D	72977-1	3.499	54121	3.948	0.1	0.3948	1.1613	23.0000	0.7837	0.0210		2.558	0.1	0.2558	0.0136	
I1023037.D	72977-2	3.499	44472	3.008	0.1	0.3008	1.1613	23.0000	0.7869	0.0159	0.0382	2.558	0.1	0.2558	0.0135	
I1023040.D	72977-3	3.499	160075	14.31	0.1	1.431	1.1613	23.0000	0.7657	0.0778		2.558	0.1	0.2558	0.0139	
I1023041.D	72978-1	3.498	59815	4.503	0.1	0.4503	0.9087	17.9305	0.7705	0.0242	**	2.558	0.1	0.2558	0.0138	
I1023042.D	72978-2	3.499	36722	1.279	0.1	0.1279	0.9087	17.9305	0.7808	0.00679	0.0128	2.558	0.1	0.2558	0.0136	
I1023043.D	72978-3	0	0	1.279	0.1	0.1279	0.9087	17.9305	0.7131	0.00744		2.558	0.1	0.2558	0.0149	
I1023044.D	72979-1	3.498	27965	1.279	0.1	0.1279	0.9838	19.2484	0.7814	0.00673	**	2.558	0.1	0.2558	0.0135	
I1023048.D	72979-2	3.499	18207	1.279	0.1	0.1279	0.9838	19.2484	0.7923	0.00664	0.00958	2.558	0.1	0.2558	0.0133	
I1023049.D	72979-3	3.489	43623	2.925	0.1	0.2925	0.9838	19.2484	0.7834	0.0154		2.558	0.1	0.2558	0.0134	
I1023050.D	72980-1	3.498	26206	1.279	0.1	0.1279	1.0032	20.0704	0.7630	0.00704	**	2.558	0.1	0.2558	0.0141	
I1023051.D	72980-2	3.498	33385	1.279	0.1	0.1279	1.0032	20.0704	0.7642	0.00703	0.0136	2.558	0.1	0.2558	0.0141	
I1023052.D	72980-3	3.498	83566	4.869	0.1	0.4869	1.0032	20.0704	0.7629	0.0268		2.558	0.1	0.2558	0.0141	
I1023055.D	72981-1	3.498	57381	4.266	0.1	0.4266	1.0826	21.4246	0.7599	0.0233	**	2.558	0.1	0.2558	0.0140	
I1023056.D	72981-2	3.498	29163	1.279	0.1	0.1279	1.0826	21.4246	0.7766	0.00685	0.0123	2.558	0.1	0.2558	0.0137	
I1023057.D	72981-3	3.498	24211	1.279	0.1	0.1279	1.0826	21.4246	0.7870	0.00676		2.558	0.1	0.2558	0.0135	
I1023058.D	72982-1	Sample not completely aspirated by the Rapid Trace, No Data														
I1023059.D	72982-2	3.498	23910	< LLOQ	0.1	< LLOQ	1.0448	19.7518	0.7222	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0141	0.0135
I1023063.D	72982-3	3.488	32588	< LLOQ	0.1	< LLOQ	1.0448	19.7518	0.7901	< LLOQ		2.558	0.1	0.2558	0.0129	
I1023064.D	72983-1	3.489	58967	4.421	0.1	0.4421	1.0188	20.0127	0.7831	0.0233	**	2.558	0.1	0.2558	0.0135	
I1023065.D	72983-2	3.489	20899	1.279	0.1	0.1279	1.0188	20.0127	0.7843	0.00673	0.0123	2.558	0.1	0.2558	0.0135	
I1023066.D	72983-3	3.488	23277	1.279	0.1	0.1279	1.0188	20.0127	0.7790	0.00676		2.558	0.1	0.2558	0.0136	
I1023067.D	72984-1	3.488	47709	3.323	0.1	0.3323	0.9686	19.4546	0.7505	0.0187	*	2.558	0.1	0.2558	0.0144	
I1023070.D	72984-2	3.488	47396	3.293	0.1	0.3293	0.9686	19.4546	0.7764	0.0179	0.0145	2.558	0.1	0.2558	0.0139	
I1023071.D	72984-3	3.489	30156	1.279	0.1	0.1279	0.9686	19.4546	0.7799	0.00692		2.558	0.1	0.2558	0.0138	
I1023072.D	72985-1	3.488	18453	< LLOQ	0.1	< LLOQ	1.0108	19.7606	0.7709	< LLOQ		2.558	0.1	0.2558	0.0136	
I1023073.D	72985-2	Sample not completely aspirated by the Rapid Trace, No Data														
I1023074.D	72985-3	3.489	15975	< LLOQ	0.1	< LLOQ	1.0108	19.7606	0.7744	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0136	0.0136
I1023078.D	72986-1	3.488	23492	1.279	0.1	0.1279	1.0228	19.8665	0.7756	0.00674	*	2.558	0.1	0.2558	0.0135	
I1023079.D	72986-2	3.489	56274	4.158	0.1	0.4158	1.0228	19.8665	0.7780	0.0218	0.0118	2.558	0.1	0.2558	0.0134	
I1023080.D	72986-3	3.488	13731	1.279	0.1	0.1279	1.0228	19.8665	0.7494	0.0070		2.558	0.1	0.2558	0.0139	
I1023081.D	72987-1	3.488	37113	1.279	0.1	0.1279	1.0001	20.1062	0.7792	0.00693	**	2.558	0.1	0.2558	0.0139	
I1023082.D	72987-2	3.488	22931	1.279	0.1	0.1279	1.0001	20.1062	0.7901	0.00683	0.00945	2.558	0.1	0.2558	0.0137	
I1023085.D	72987-3	3.489	41409	2.710	0.1	0.2710	1.0001	20.1062	0.7840	0.0146		2.558	0.1	0.2558	0.0138	
I1023086.D	72988-1	3.488	21152	< LLOQ	0.1	< LLOQ	0.9930	19.4059	0.7855	< LLOQ		2.558	0.1	0.2558	0.0134	
I1023087.D	72988-2	3.489	20907	< LLOQ	0.1	< LLOQ	0.9930	19.4059	0.7793	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0135	0.0134
I1023088.D	72988-3	3.489	18168	< LLOQ	0.1	< LLOQ	0.9930	19.4059	0.7834	< LLOQ		2.558	0.1	0.2558	0.0134	
I1023089.D	72989-1	3.489	12338	< LLOQ	0.1	< LLOQ	0.9920	19.7244	0.7765	< LLOQ		2.558	0.1	0.2558	0.0138	
I1023093.D	72989-2	3.488	13716	< LLOQ	0.1	< LLOQ	0.9920	19.7244	0.7939	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0135	0.0136
I1023094.D	72989-3	3.489	26259	< LLOQ	0.1	< LLOQ	0.9920	19.7244	0.7886	< LLOQ		2.558	0.1	0.2558	0.0135	
I1023095.D	72990-1	3.488	19391	< LLOQ	0.1	< LLOQ	1.0194	20.3374	0.7798	< LLOQ		2.558	0.1	0.2558	0.0137	
I1023096.D	72990-2	3.488	28107	< LLOQ	0.1	< LLOQ	1.0194	20.3374	0.7999	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0134	0.0135
I1023097.D	72990-3	3.488	18856	< LLOQ	0.1	< LLOQ	1.0194	20.3374	0.8022	< LLOQ		2.558	0.1	0.2558	0.0134	
I1023100.D	72991-1	0	0	< LLOQ	0.1	< LLOQ	1.0208	20.4674	0.7818	< LLOQ		2.558	0.1	0.2558	0.0138	
I1023101.D	72991-2	3.489	29192	< LLOQ	0.1	< LLOQ	1.0208	20.4674	0.7779	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0138
I1023102.D	72991-3	3.488	26216	< LLOQ	0.1	< LLOQ	1.0208	20.4674	0.7897	< LLOQ		2.558	0.1	0.2558	0.0136	

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, Control Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
I1023103.D	72992-1	3.488	21749	< LLOQ	0.1	< LLOQ	1.0502	21.4038	0.7769	< LLOQ		2.558	0.1	0.2558	0.0141	
I1023104.D	72992-2	3.488	21161	< LLOQ	0.1	< LLOQ	1.0502	21.4038	0.7548	< LLOQ		2.558	0.1	0.2558	0.0145	
I1023108.D	72992-3	3.488	38480	< LLOQ	0.1	< LLOQ	1.0502	21.4038	0.7839	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0140	0.0142
I1023109.D	72993-1	3.489	37987	< LLOQ	0.1	< LLOQ	1.0863	21.6671	0.7829	< LLOQ		2.558	0.1	0.2558	0.0137	
I1023110.D	72993-2	3.488	28577	< LLOQ	0.1	< LLOQ	1.0863	21.6671	0.7430	< LLOQ		2.558	0.1	0.2558	0.0144	
I1023111.D	72993-3	3.488	25349	< LLOQ	0.1	< LLOQ	1.0863	21.6671	0.7748	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0140
I1022033.D	72994-1	0	0	< LLOQ	0.1	< LLOQ	1.0847	21.3220	0.7864	< LLOQ		2.558	0.1	0.2558	0.0134	
I1022034.D	72994-2	0	0	< LLOQ	0.1	< LLOQ	1.0847	21.3220	0.7903	< LLOQ		2.558	0.1	0.2558	0.0134	
I1022035.D	72994-3	0	0	< LLOQ	0.1	< LLOQ	1.0847	21.3220	0.7902	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0134	0.0134
I1022036.D	72995-1	0	0	< LLOQ	0.1	< LLOQ	1.0193	20.2168	0.7871	< LLOQ		2.558	0.1	0.2558	0.0135	
I1022037.D	72995-2	0	0	< LLOQ	0.1	< LLOQ	1.0193	20.2168	0.7951	< LLOQ		2.558	0.1	0.2558	0.0134	
I1022040.D	72995-3	0	0	< LLOQ	0.1	< LLOQ	1.0193	20.2168	0.7842	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0136	0.0135
I1022041.D	72996-1	0	0	< LLOQ	0.1	< LLOQ	0.9916	19.5261	0.7917	< LLOQ		2.558	0.1	0.2558	0.0134	
I1022042.D	72996-2	0	0	< LLOQ	0.1	< LLOQ	0.9916	19.5261	0.7982	< LLOQ		2.558	0.1	0.2558	0.0133	
I1022043.D	72996-3	0	0	< LLOQ	0.1	< LLOQ	0.9916	19.5261	0.7935	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0133	0.0133
I1022044.D	72997-1	0	0	< LLOQ	0.1	< LLOQ	0.9981	20.0549	0.7886	< LLOQ		2.558	0.1	0.2558	0.0137	
I1022048.D	72997-2	0	0	< LLOQ	0.1	< LLOQ	0.9981	20.0549	0.7797	< LLOQ		2.558	0.1	0.2558	0.0138	
I1022049.D	72997-3	0	0	< LLOQ	0.1	< LLOQ	0.9981	20.0549	0.7673	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0141	0.0139
I1022050.D	72998-1	0	0	< LLOQ	0.1	< LLOQ	1.0311	20.9015	0.7920	< LLOQ		2.558	0.1	0.2558	0.0137	
I1022051.D	72998-2	0	0	< LLOQ	0.1	< LLOQ	1.0311	20.9015	0.7855	< LLOQ		2.558	0.1	0.2558	0.0139	
I1022052.D	72998-3	0	0	< LLOQ	0.1	< LLOQ	1.0311	20.9015	0.7735	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0141	0.0139
I1022055.D	72999-1	0	0	< LLOQ	0.1	< LLOQ	0.9794	19.8365	0.7878	< LLOQ		2.558	0.1	0.2558	0.0138	
I1022056.D	72999-2	0	0	< LLOQ	0.1	< LLOQ	0.9794	19.8365	0.7848	< LLOQ		2.558	0.1	0.2558	0.0142	
I1022057.D	72999-3	0	0	< LLOQ	0.1	< LLOQ	0.9794	19.8365	0.7805	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0139	0.0140
I1022058.D	73000-1	0	0	< LLOQ	0.1	< LLOQ	1.0014	20.0331	0.7805	< LLOQ		2.558	0.1	0.2558	0.0138	
I1022059.D	73000-2	0	0	< LLOQ	0.1	< LLOQ	1.0014	20.0331	0.7676	< LLOQ		2.558	0.1	0.2558	0.0140	
I1022063.D	73000-3	0	0	< LLOQ	0.1	< LLOQ	1.0014	20.0331	0.7854	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0137	0.0138
I1022064.D	73001-1	0	0	< LLOQ	0.1	< LLOQ	1.0046	20.3044	0.7700	< LLOQ		2.558	0.1	0.2558	0.0141	
I1022065.D	73001-2	0	0	< LLOQ	0.1	< LLOQ	1.0046	20.3044	0.7579	< LLOQ		2.558	0.1	0.2558	0.0143	
I1022066.D	73001-3	0	0	< LLOQ	0.1	< LLOQ	1.0046	20.3044	0.7757	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0140	0.0141
I1022067.D	73002-1	0	0	< LLOQ	0.1	< LLOQ	1.0007	20.0842	0.7851	< LLOQ		2.558	0.1	0.2558	0.0137	
I1022070.D	73002-2	0	0	< LLOQ	0.1	< LLOQ	1.0007	20.0842	0.7672	< LLOQ		2.558	0.1	0.2558	0.0141	
I1022071.D	73002-3	0	0	< LLOQ	0.1	< LLOQ	1.0007	20.0842	0.7820	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0139
I1022072.D	73003-1	0	0	< LLOQ	0.1	< LLOQ	0.9778	19.7911	0.7860	< LLOQ		2.558	0.1	0.2558	0.0138	
I1022073.D	73003-2	0	0	< LLOQ	0.1	< LLOQ	0.9778	19.7911	0.7859	< LLOQ		2.558	0.1	0.2558	0.0138	
I1022074.D	73003-3	0	0	< LLOQ	0.1	< LLOQ	0.9778	19.7911	0.7769	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0140	0.0139
I1022078.D	73004-1	0	0	< LLOQ	0.1	< LLOQ	1.0095	19.4813	0.7213	< LLOQ		2.558	0.1	0.2558	0.0144	
I1022079.D	73004-2	0	0	< LLOQ	0.1	< LLOQ	1.0095	19.4813	0.7826	< LLOQ		2.558	0.1	0.2558	0.0133	
I1022080.D	73004-3	0	0	< LLOQ	0.1	< LLOQ	1.0095	19.4813	0.7774	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0134	0.0137
I1022081.D	73005-1	0	0	< LLOQ	0.1	< LLOQ	1.0917	21.0007	0.7889	< LLOQ		2.558	0.1	0.2558	0.0131	
I1022082.D	73005-2	0	0	< LLOQ	0.1	< LLOQ	1.0917	21.0007	0.7715	< LLOQ		2.558	0.1	0.2558	0.0134	
I1022085.D	73005-3	0	0	< LLOQ	0.1	< LLOQ	1.0917	21.0007	0.7899	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0131	0.0132
I1022086.D	73006-1	0	0	< LLOQ	0.1	< LLOQ	1.0028	21.2599	0.7856	< LLOQ		2.558	0.1	0.2558	0.0145	
I1022087.D	73006-2	0	0	< LLOQ	0.1	< LLOQ	1.0028	21.2599	0.7849	< LLOQ		2.558	0.1	0.2558	0.0145	
I1022088.D	73006-3	0	0	< LLOQ	0.1	< LLOQ	1.0028	21.2599	0.7798	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0146	0.0145
I1022089.D	73007-1	0	0	< LLOQ	0.1	< LLOQ	1.0058	20.0358	0.7837	< LLOQ		2.558	0.1	0.2558	0.0137	
I1022093.D	73007-2	0	0	< LLOQ	0.1	< LLOQ	1.0058	20.0358	0.7291	< LLOQ		2.558	0.1	0.2558	0.0147	
I1022094.D	73007-3	0	0	< LLOQ	0.1	< LLOQ	1.0058	20.0358	0.7884	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0136	0.0140

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, Control Group

3M Environmental Laboratory

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File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1101032.D	73163-1	0	0	< LLOQ	0.1	< LLOQ	0.9854	19.6739	0.7541	< LLOQ		2.558	0.1	0.2558	0.0142	
D1101033.D	73163-2	3.503	3394	< LLOQ	0.1	< LLOQ	0.9854	19.6739	0.7912	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0136	0.0138
D1101034.D	73163-3	3.503	6909	< LLOQ	0.1	< LLOQ	0.9854	19.6739	0.7956	< LLOQ		2.558	0.1	0.2558	0.0135	
I1024036.D	73164-1	3.479	282264	27.09	0.1	2.709	0.6963	14.3016	0.7275	0.160	**	5.115	0.1	0.5115	0.0303	
I1024037.D	73164-2	3.478	25703	2.558	0.1	0.2558	0.6963	14.3016	0.7693	0.0143	0.0629	5.115	0.1	0.5115	0.0286	0.0214
I1024040.D	73164-3	3.478	59930	2.558	0.1	0.2558	0.6963	14.3016	0.7815	0.0141		5.115	0.1	0.5115	0.0282	
D1101035.D	73164-1	3.503	149508	45.22	0.1	4.522	0.6963	14.3016	0.7275	0.268	-	2.558	0.1	0.2558	0.0151	
D1101036.D	73164-2	3.503	8352	1.279	0.1	0.1279	0.6963	14.3016	0.7693	0.00716	0.0843	2.558	0.1	0.2558	0.0143	0.0218
D1101039.D	73164-3	3.503	28925	7.588	0.1	0.7588	0.6963	14.3016	0.7815	0.0418		2.558	0.1	0.2558	0.0141	
I1024041.D	73165-1	3.479	411437	40.59	0.1	4.059	0.7594	15.3754	0.7660	0.225	**	5.115	0.1	0.5115	0.0284	
I1024042.D	73165-2	3.478	18170	2.558	0.1	0.2558	0.7594	15.3754	0.7910	0.0137	0.0843	5.115	0.1	0.5115	0.0275	0.0279
I1024043.D	73165-3	3.478	11236	2.558	0.1	0.2558	0.7594	15.3754	0.7789	0.0140		2.558	0.1	0.2558	0.0142	
D1101040.D	73165-1	3.503	219934	67.48	0.1	6.748	0.7594	15.3754	0.7660	0.374	**	2.558	0.1	0.2558	0.0137	0.0140
D1101041.D	73165-2	3.503	5893	1.279	0.1	0.1279	0.7594	15.3754	0.7910	0.00687	0.129	2.558	0.1	0.2558	0.0140	
D1101042.D	73165-3	3.503	1925	1.279	0.1	0.1279	0.7594	15.3754	0.7789	0.00698		2.558	0.1	0.2558	0.0140	
D1101043.D	73166-1	3.503	3810	< LLOQ	0.1	< LLOQ	0.5995	11.9290	0.7426	< LLOQ		2.558	0.1	0.2558	0.0144	
D1101047.D	73166-2	3.503	4470	< LLOQ	0.1	< LLOQ	0.5995	11.9290	0.7763	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0139
D1101048.D	73166-3	3.496	2867	< LLOQ	0.1	< LLOQ	0.5995	11.9290	0.7897	< LLOQ		2.558	0.1	0.2558	0.0135	
D1101049.D	73167-1	0	0	< LLOQ	0.1	< LLOQ	0.7069	14.0154	0.7846	< LLOQ		2.558	0.1	0.2558	0.0136	
D1101050.D	73167-2	3.503	3544	< LLOQ	0.1	< LLOQ	0.7069	14.0154	0.7850	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0136	0.0135
D1101051.D	73167-3	3.503	2804	< LLOQ	0.1	< LLOQ	0.7069	14.0154	0.7912	< LLOQ		2.558	0.1	0.2558	0.0137	0.0139
D1101054.D	73168-1	3.503	4017	< LLOQ	0.1	< LLOQ	0.9230	18.4346	0.7524	< LLOQ		2.558	0.1	0.2558	0.0143	
D1101055.D	73168-2	0	0	< LLOQ	0.1	< LLOQ	0.9230	18.4346	0.7858	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0137	0.0139
D1101056.D	73168-3	0	0	< LLOQ	0.1	< LLOQ	0.9230	18.4346	0.7850	< LLOQ		2.558	0.1	0.2558	0.0137	
D1101057.D	73169-1	3.503	3796	1.279	0.1	0.1279	0.8248	16.4307	0.7837	0.00683	**	2.558	0.1	0.2558	0.0137	
D1101058.D	73169-2	3.503	19987	4.823	0.1	0.4823	0.8248	16.4307	0.7851	0.0257	0.0131	2.558	0.1	0.2558	0.0136	0.0136
D1101062.D	73169-3	3.51	3861	1.279	0.1	0.1279	0.8248	16.4307	0.7849	0.00682		2.558	0.1	0.2558	0.0136	
D1101063.D	73170-1	3.503	5051	< LLOQ	0.1	< LLOQ	0.9366	18.6926	0.7649	< LLOQ		2.558	0.1	0.2558	0.0140	
D1101064.D	73170-2	3.503	10653	< LLOQ	0.1	< LLOQ	0.9366	18.6926	0.7799	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0137	0.0138
D1101065.D	73170-3	3.51	2090	< LLOQ	0.1	< LLOQ	0.9366	18.6926	0.7933	< LLOQ		2.558	0.1	0.2558	0.0135	
D1101066.D	73171-1	3.503	3231	< LLOQ	0.1	< LLOQ	0.7040	14.1404	0.7842	< LLOQ		2.558	0.1	0.2558	0.0138	
D1101069.D	73171-2	0	0	< LLOQ	0.1	< LLOQ	0.7040	14.1404	0.7836	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0138
D1101070.D	73171-3	3.51	3820	< LLOQ	0.1	< LLOQ	0.7040	14.1404	0.7697	< LLOQ		2.558	0.1	0.2558	0.0140	
D1101071.D	73172-1	3.503	3987	< LLOQ	0.1	< LLOQ	0.6488	14.1818	0.7869	< LLOQ		2.558	0.1	0.2558	0.0149	
D1101072.D	73172-2	3.51	1742	< LLOQ	0.1	< LLOQ	0.6488	14.1818	0.7856	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0149	0.0149
D1101073.D	73172-3	3.51	1932	< LLOQ	0.1	< LLOQ	0.6488	14.1818	0.7767	< LLOQ		2.558	0.1	0.2558	0.0151	
D1101077.D	73173-1	0	0	< LLOQ	0.1	< LLOQ	0.5965	11.8149	0.7839	< LLOQ		2.558	0.1	0.2558	0.0136	
D1101078.D	73173-2	3.51	4645	< LLOQ	0.1	< LLOQ	0.5965	11.8149	0.7895	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0135	0.0135
D1101079.D	73173-3	3.51	4564	< LLOQ	0.1	< LLOQ	0.5965	11.8149	0.7862	< LLOQ		2.558	0.1	0.2558	0.0135	
D1101080.D	73174-1	3.51	3308	< LLOQ	0.1	< LLOQ	0.5431	10.8355	0.7801	< LLOQ		2.558	0.1	0.2558	0.0137	
D1101081.D	73174-2	3.51	10712	< LLOQ	0.1	< LLOQ	0.5431	10.8355	0.7826	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0141	0.0141
D1101084.D	73174-3	3.51	2432	< LLOQ	0.1	< LLOQ	0.5431	10.8355	0.7352	< LLOQ		2.558	0.1	0.2558	0.0146	
D1101085.D	73175-1	3.51	7735	< LLOQ	0.1	< LLOQ	0.9380	17.8374	0.7896	< LLOQ		2.558	0.1	0.2558	0.0130	
D1101086.D	73175-2	0	0	< LLOQ	0.1	< LLOQ	0.9380	17.8374	0.7907	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0130	0.0129
D1101087.D	73175-3	0	0	< LLOQ	0.1	< LLOQ	0.9380	17.8374	0.7931	< LLOQ		2.558	0.1	0.2558	0.0129	
D1101088.D	73176-1	3.517	2641	< LLOQ	0.1	< LLOQ	0.7304	14.6274	0.7893	< LLOQ		2.558	0.1	0.2558	0.0136	
D1101092.D	73176-2	3.517	2738	< LLOQ	0.1	< LLOQ	0.7304	14.6274	0.7837	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0137	0.0137
D1101093.D	73176-3	0	0	< LLOQ	0.1	< LLOQ	0.7304	14.6274	0.7746	< LLOQ		2.558	0.1	0.2558	0.0139	

*Used 1/2 LLOQ for one of the replicate calculations
 **Used 1/2 LLOQ for two of the replicate calculations

Report E03-05083

T-7485: A Reproduction Study with the Northern Bobwhite
 Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 100 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1009029.D	73008-1	3.44	666726	49.57	2	99.13	1.0762	21.0955	0.7787	5.25	5.22	5.115	2	10.23	0.541	0.537
D1009030.D	73008-2	3.439	648877	48.02	2	96.05	1.0762	21.0955	0.7908	5.00		5.115	2	10.23	0.533	
D1009031.D	73008-3	3.439	689889	51.60	2	103.2	1.0762	21.0955	0.7844	5.42		5.115	2	10.23	0.537	
D1009032.D	73009-1	3.439	601802	44.05	2	88.10	1.0159	20.3928	0.7383	5.03	5.06	5.115	2	10.23	0.584	0.573
D1009033.D	73009-2	3.439	638884	47.17	2	94.34	1.0159	20.3928	0.7445	5.34		5.115	2	10.23	0.579	
D1009036.D	73009-3	3.44	604629	44.29	2	88.57	1.0159	20.3928	0.7777	4.80		5.115	2	10.23	0.554	
D1009037.D	73010-1	3.439	920409	74.24	2	148.5	1.0227	20.6157	0.7658	8.20	6.53	5.115	2	10.23	0.585	0.563
D1009038.D	73010-2	3.439	591132	43.17	2	86.34	1.0227	20.6157	0.7734	4.72		5.115	2	10.23	0.560	
D1009039.D	73010-3	3.439	786685	60.51	2	121.0	1.0227	20.6157	0.7692	6.66		5.115	2	10.23	0.563	
D1009040.D	73011-1	3.44	735236	55.68	2	111.4	1.0017	20.2763	0.7019	6.74	8.19	5.115	2	10.23	0.619	0.577
D1222088.D	73011-2	3.474	2238418	98.66	2	197.33	1.0017	20.2763	0.7801	10.75		5.115	2	10.23	0.557	
D1009045.D	73011-3	3.44	837635	65.52	2	131.0	1.0017	20.2763	0.7853	7.09		5.115	2	10.23	0.553	
D1009046.D	73012-1	3.439	551350	39.93	2	79.87	1.0054	20.0941	0.7805	4.29	4.09	5.115	2	10.23	0.550	0.550
D1009047.D	73012-2	3.439	514785	37.03	2	74.06	1.0054	20.0941	0.7794	3.99		5.115	2	10.23	0.551	
D1009048.D	73012-3	3.44	516539	37.17	2	74.34	1.0054	20.0941	0.7827	3.99		5.115	2	10.23	0.549	
D1009051.D	73013-1	3.44	625768	46.06	2	92.12	1.0205	20.5018	0.7610	5.11	5.30	5.115	2	10.23	0.567	0.561
D1009052.D	73013-2	3.439	804963	62.28	2	124.6	1.0205	20.5018	0.7697	6.83		5.115	2	10.23	0.561	
D1009053.D	73013-3	3.439	507315	36.44	2	72.89	1.0205	20.5018	0.7760	3.96		5.115	2	10.23	0.556	
D1009054.D	73014-1	3.446	269222	19.01	1	19.01	0.9442	19.0055	0.7033	1.14	1.41	5.115	1	5.115	0.307	0.288
D1009055.D	73014-2	3.446	250907	17.76	1	17.76	0.9442	19.0055	0.7759	0.967		5.115	1	5.115	0.279	
D1009059.D	73014-3	3.446	539758	39.01	1	39.01	0.9442	19.0055	0.7754	2.13		5.115	1	5.115	0.279	
D1009060.D	73015-1	3.446	826101	64.36	2	128.7	0.9542	19.3942	0.7618	7.21	7.37	5.115	2	10.23	0.573	0.570
D1009061.D	73015-2	3.439	1015412	85.40	2	170.8	0.9542	19.3942	0.7815	9.32		5.115	2	10.23	0.558	
D1009062.D	73015-3	3.439	664733	49.39	2	98.79	0.9542	19.3942	0.7537	5.59		5.115	2	10.23	0.579	
D1009063.D	73016-1	3.447	515293	37.07	1	37.07	1.0398	20.9973	0.7820	2.01	2.09	5.115	1	5.115	0.277	0.285
D1009066.D	73016-2	3.446	321120	22.63	1	22.63	1.0398	20.9973	0.7267	1.32		5.115	1	5.115	0.298	
D1009067.D	73016-3	3.446	715894	53.92	1	53.92	1.0398	20.9973	0.7796	2.93		5.115	1	5.115	0.278	
D1009068.D	73017-1	3.446	103524	8.011	1	8.011	1.0549	21.5598	0.7730	0.444	0.396	5.115	1	5.115	0.284	0.282
D1009069.D	73017-2	3.447	91778	7.260	1	7.260	1.0549	21.5598	0.7692	0.405		5.115	1	5.115	0.285	
D1009070.D	73017-3	3.446	75912	6.252	1	6.252	1.0549	21.5598	0.7879	0.340		5.115	1	5.115	0.278	
D1009074.D	73018-1	3.447	910299	73.13	2	146.3	1.0208	20.7196	0.7333	8.50	8.89	5.115	2	10.23	0.594	0.570
D1009075.D	73018-2	3.446	973108	80.25	2	160.5	1.0208	20.7196	0.7719	8.86		5.115	2	10.23	0.565	
D1009076.D	73018-3	3.446	1024135	86.50	2	173.0	1.0208	20.7196	0.7911	9.31		5.115	2	10.23	0.551	
D1009077.D	73019-1	3.446	577438	42.05	1	42.05	1.0335	20.6414	0.7814	2.26	1.95	5.115	1	5.115	0.275	0.274
D1009078.D	73019-2	3.446	594553	43.45	1	43.45	1.0335	20.6414	0.7829	2.33		5.115	1	5.115	0.274	
D1009081.D	73019-3	3.446	339699	23.95	1	23.95	1.0335	20.6414	0.7854	1.28		5.115	1	5.115	0.273	
D1009082.D	73020-1	3.447	366520	25.87	1	25.87	0.9962	20.3115	0.7820	1.42	0.878	5.115	1	5.115	0.280	0.280
D1009083.D	73020-2	3.446	159079	11.61	1	11.61	0.9962	20.3115	0.7807	0.836		5.115	1	5.115	0.280	
D1009084.D	73020-3	3.447	144213	10.64	1	10.64	0.9962	20.3115	0.7819	0.582		5.115	1	5.115	0.280	
D1009085.D	73021-1	3.447	118630	8.982	1	8.982	1.0291	20.5171	0.7725	0.487	0.622	5.115	1	5.115	0.277	0.275
D1009089.D	73021-2	3.446	190380	13.68	1	13.68	1.0291	20.5171	0.7840	0.731		5.115	1	5.115	0.273	
D1009090.D	73021-3	3.447	166462	12.10	1	12.10	1.0291	20.5171	0.7809	0.649		5.115	1	5.115	0.274	
D1009091.D	73022-1	3.447	465369	33.21	1	33.21	0.9889	19.4516	0.7462	1.84	1.76	5.115	1	5.115	0.283	0.276
D1009092.D	73022-2	3.447	435890	30.98	1	30.98	0.9889	19.4516	0.7681	1.67		5.115	1	5.115	0.275	
D1009093.D	73022-3	3.446	471721	33.59	1	33.59	0.9889	19.4516	0.7879	1.77		5.115	1	5.115	0.268	
D1009096.D	73023-1	3.446	572987	41.68	2	83.36	1.0050	20.2467	0.7804	4.52	4.51	5.115	2	10.23	0.554	0.556
D1009097.D	73023-2	3.447	581257	42.36	2	84.72	1.0050	20.2467	0.7849	4.56		5.115	2	10.23	0.551	
D1009098.D	73023-3	3.447	559034	40.55	2	81.10	1.0050	20.2467	0.7701	4.45		5.115	2	10.23	0.562	
D1008029.D	73024-1	3.446	360952	24.48	1	24.48	0.9906	20.3074	0.7705	1.37	1.24	5.115	1	5.115	0.285	0.283
D1008030.D	73024-2	3.447	259098	17.65	1	17.65	0.9906	20.3074	0.7893	0.962		5.115	1	5.115	0.279	
D1008031.D	73024-3	3.446	366929	24.90	1	24.90	0.9906	20.3074	0.7714	1.39		5.115	1	5.115	0.285	

Report E03-0563

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 100 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On-Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1008032.D	73025-1	3.44	557683	38.73	2	77.46	1.0172	20.4815	0.7876	4.16	4.09	5.115	2	10.23	0.549	0.552
D1008033.D	73025-2	3.44	568328	39.55	2	79.10	1.0172	20.4815	0.7859	4.25		5.115	2	10.23	0.550	
D1008036.D	73025-3	3.44	515009	35.51	2	71.02	1.0172	20.4815	0.7761	3.87		5.115	2	10.23	0.557	
D1008037.D	73026-1	3.439	759566	55.28	2	110.6	1.0519	21.6740	0.7848	6.09	5.74	5.115	2	10.23	0.563	0.562
D1008038.D	73026-2	3.439	556678	38.66	2	77.31	1.0519	21.6740	0.7851	4.25		5.115	2	10.23	0.563	
D1008039.D	73026-3	3.439	842882	62.89	2	125.8	1.0519	21.6740	0.7902	6.88		5.115	2	10.23	0.559	
D1008040.D	73027-1	3.44	618719	43.49	1	43.49	1.0279	20.4170	0.7690	2.36	2.29	5.115	1	5.115	0.278	0.279
D1008044.D	73027-2	3.44	595363	41.65	1	41.65	1.0279	20.4170	0.7776	2.23		5.115	1	5.115	0.274	
D1008045.D	73027-3	3.446	587983	41.07	1	41.07	1.0279	20.4170	0.7525	2.28		5.115	1	5.115	0.284	
D1008046.D	73028-1	3.446	663628	47.12	1	47.12	1.0280	20.2589	0.7556	2.58	2.76	5.115	1	5.115	0.280	0.273
D1008047.D	73028-2	3.446	661454	46.94	1	46.94	1.0280	20.2589	0.7872	2.47		5.115	1	5.115	0.269	
D1008048.D	73028-3	3.446	823646	61.08	1	61.08	1.0280	20.2589	0.7852	3.22		5.115	1	5.115	0.270	
D1008051.D	73029-1	3.44	596029	41.70	2	83.41	1.0628	21.3860	0.7785	4.53	3.83	5.115	2	10.23	0.555	0.570
D1008052.D	73029-2	3.439	515499	35.54	2	71.09	1.0628	21.3860	0.7730	3.88		5.115	2	10.23	0.559	
D1008053.D	73029-3	3.439	390664	26.54	2	53.08	1.0628	21.3860	0.7260	3.09		5.115	2	10.23	0.595	
D1008054.D	73030-1	3.44	245637	16.77	1	16.77	1.0822	21.8000	0.7891	0.899	0.808	5.115	1	5.115	0.274	0.280
D1008055.D	73030-2	3.446	199582	13.80	1	13.80	1.0822	21.8000	0.7410	0.788		5.115	1	5.115	0.292	
D1008059.D	73030-3	3.446	198292	13.72	1	13.72	1.0822	21.8000	0.7861	0.738		5.115	1	5.115	0.275	
D1008060.D	73031-1	3.446	208993	14.41	1	14.41	1.0512	21.1221	0.7645	0.795	0.920	5.115	1	5.115	0.282	0.278
D1008061.D	73031-2	3.446	263937	17.97	1	17.97	1.0512	21.1221	0.7792	0.973		5.115	1	5.115	0.277	
D1008062.D	73031-3	3.446	269955	18.37	1	18.37	1.0512	21.1221	0.7816	0.991		5.115	1	5.115	0.276	
D1008063.D	73032-1	3.446	979836	76.84	1	76.84	1.0468	21.0202	0.7502	4.32	3.71	5.115	1	5.115	0.287	0.290
D1008066.D	73032-2	3.446	801411	59.03	1	59.03	1.0468	21.0202	0.7732	3.22		5.115	1	5.115	0.279	
D1008067.D	73032-3	3.446	818649	60.62	1	60.62	1.0468	21.0202	0.7103	3.60		5.115	1	5.115	0.304	
D1008068.D	73033-1	3.447	296072	20.09	1	20.09	1.0186	20.4425	0.7386	1.15	1.28	5.115	1	5.115	0.292	0.281
D1008069.D	73033-2	3.446	403156	27.42	1	27.42	1.0186	20.4425	0.7839	1.47		5.115	1	5.115	0.275	
D1008070.D	73033-3	3.447	332248	22.53	1	22.53	1.0186	20.4425	0.7799	1.22		5.115	1	5.115	0.276	
D1008074.D	73034-1	3.447	543445	37.65	1	37.65	0.9914	19.9288	0.7901	2.01	2.71	5.115	1	5.115	0.273	0.273
D1008075.D	73034-2	3.446	543007	37.61	1	37.61	0.9914	19.9288	0.7928	2.00		5.115	1	5.115	0.272	
D1008076.D	73034-3	3.446	977498	76.59	1	76.59	0.9914	19.9288	0.7880	4.10		5.115	1	5.115	0.274	
D1008077.D	73035-1	3.446	531877	36.77	2	73.54	1.0651	21.6735	0.7965	3.99	4.29	5.115	2	10.23	0.555	0.557
D1008078.D	73035-2	3.439	598369	41.89	2	83.77	1.0651	21.6735	0.7819	4.57		5.115	2	10.23	0.559	
D1008081.D	73035-3	3.446	567198	39.46	2	78.93	1.0651	21.6735	0.7843	4.30		5.115	2	10.23	0.557	
D1008082.D	73036-1	3.447	522343	36.06	1	36.06	1.0028	20.0341	0.7671	1.97	1.77	5.115	1	5.115	0.280	0.275
D1008083.D	73036-2	3.446	378966	25.73	1	25.73	1.0028	20.0341	0.8002	1.35		5.115	1	5.115	0.268	
D1008084.D	73036-3	3.447	526389	36.36	1	36.36	1.0028	20.0341	0.7711	1.98		5.115	1	5.115	0.278	
D1008085.D	73037-1	3.446	598586	41.90	1	41.90	1.0478	20.7491	0.7877	2.21	2.19	5.115	1	5.115	0.270	0.269
D1008089.D	73037-2	3.447	593633	41.51	1	41.51	1.0478	20.7491	0.7902	2.19		5.115	1	5.115	0.269	
D1008090.D	73037-3	3.446	589140	41.16	1	41.16	1.0478	20.7491	0.7917	2.16		5.115	1	5.115	0.269	
D1008091.D	73038-1	3.447	433814	29.59	1	29.59	1.0182	20.4022	0.7622	1.63	1.73	5.115	1	5.115	0.282	0.276
D1008092.D	73038-2	3.446	474315	32.51	1	32.51	1.0182	20.4022	0.7839	1.74		5.115	1	5.115	0.275	
D1008093.D	73038-3	3.447	498093	34.25	1	34.25	1.0182	20.4022	0.7907	1.82		5.115	1	5.115	0.272	
D1008096.D	73039-1	3.446	1035620	83.22	1	83.22	0.9838	19.7285	0.7955	4.40	3.99	5.115	1	5.115	0.271	0.272
D1008097.D	73039-2	3.447	1052120	85.20	1	85.20	0.9838	19.7285	0.7819	4.59		5.115	1	5.115	0.275	
D1008098.D	73039-3	3.446	772489	56.42	1	56.42	0.9838	19.7285	0.7981	2.98		5.115	1	5.115	0.270	
D1008099.D	73040-1	3.446	1037784	83.47	1	83.47	0.9973	20.0126	0.7550	4.66	3.95	5.115	1	5.115	0.285	0.278
D1008100.D	73040-2	3.446	898580	68.32	1	68.32	0.9973	20.0126	0.7865	3.66		5.115	1	5.115	0.274	
D1008104.D	73040-3	3.447	876582	66.14	1	66.14	0.9973	20.0126	0.7874	3.54		5.115	1	5.115	0.274	
D1101100.D	73177-1	3.517	5767	< LLOQ	0.1	< LLOQ	0.9321	18.6613	0.7712	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0139	0.0139
D1024032.D	73177-2	3.482	8308	< LLOQ	0.1	< LLOQ	0.9321	18.6613	0.7883	< LLOQ		2.588	0.1	0.2588	0.0138	
D1024033.D	73177-3	3.475	10781	< LLOQ	0.1	< LLOQ	0.9321	18.6613	0.7859	< LLOQ		2.588	0.1	0.2588	0.0138	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 100 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1024034.D	73178-1	3.475	8342	< LLOQ	0.1	< LLOQ	0.8107	16.2837	0.7852	< LLOQ		2.588	0.1	0.2588	0.0139	
D1024035.D	73178-2	3.475	6807	< LLOQ	0.1	< LLOQ	0.8107	16.2837	0.791	< LLOQ		2.588	0.1	0.2588	0.0138	
D1024038.D	73178-3	3.475	9938	< LLOQ	0.1	< LLOQ	0.8107	16.2837	0.7757	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0141	0.0139
D1024039.D	73179-1	3.475	9289	< LLOQ	0.1	< LLOQ	0.5804	11.6587	0.7713	< LLOQ		2.588	0.1	0.2588	0.0142	
D1024040.D	73179-2	3.475	10282	< LLOQ	0.1	< LLOQ	0.5804	11.6587	0.7831	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0139	0.0139
D1024041.D	73179-3	3.475	9339	< LLOQ	0.1	< LLOQ	0.5804	11.6587	0.7947	< LLOQ		2.588	0.1	0.2588	0.0137	
D1024042.D	73180-1	3.475	6580	1.279	0.1	0.1279	0.8918	17.7711	0.7938	0.00674		2.588	0.1	0.2588	0.0136	
D1024046.D	73180-2	3.482	4703	1.279	0.1	0.1279	0.8918	17.7711	0.7845	0.00682		2.588	0.1	0.2588	0.0138	0.0137
D1024047.D	73180-3	3.475	34438	10.81	0.1	1.081	0.8918	17.7711	0.7905	0.0572		2.588	0.1	0.2588	0.0137	
D1014040.D	73180-1	3.454	8349	1.279	0.1	0.1279	0.8918	17.7711	0.7938	0.00674		2.588	0.1	0.2588	0.0136	
D1014044.D	73180-2	3.453	6347	1.279	0.1	0.1279	0.8918	17.7711	0.7845	0.00682	0.0233	2.588	0.1	0.2588	0.0138	0.0137
D1014045.D	73180-3	3.461	43286	10.47	0.1	1.047	0.8918	17.7711	0.7905	0.0555		2.588	0.1	0.2588	0.0137	
D1024048.D	73181-1	3.482	8576	< LLOQ	0.1	< LLOQ	0.6556	14.4844	0.7831	< LLOQ		2.588	0.1	0.2588	0.0153	
D1024049.D	73181-2	3.482	7146	< LLOQ	0.1	< LLOQ	0.6556	14.4844	0.7921	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0151	0.0152
D1024050.D	73181-3	3.482	5317	< LLOQ	0.1	< LLOQ	0.6556	14.4844	0.7900	< LLOQ		2.588	0.1	0.2588	0.0151	
D1024053.D	73182-1	3.475	9136	< LLOQ	0.1	< LLOQ	0.7327	14.5823	0.7817	< LLOQ		2.588	0.1	0.2588	0.0138	
D1024054.D	73182-2	3.475	6271	< LLOQ	0.1	< LLOQ	0.7327	14.5823	0.7906	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0137	0.0140
D1024055.D	73182-3	3.475	6541	< LLOQ	0.1	< LLOQ	0.7327	14.5823	0.7506	< LLOQ		2.588	0.1	0.2588	0.0144	
D1024056.D	73183-1	3.475	6540	< LLOQ	0.1	< LLOQ	0.6292	12.5301	0.7904	< LLOQ		2.588	0.1	0.2588	0.0137	
D1024057.D	73183-2	3.474	7886	< LLOQ	0.1	< LLOQ	0.6292	12.5301	0.7804	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0139	0.0137
D1024061.D	73183-3	3.482	6967	< LLOQ	0.1	< LLOQ	0.6292	12.5301	0.7935	< LLOQ		2.588	0.1	0.2588	0.0136	
D1024062.D	73184-1	3.482	12803	2.967	0.1	0.2967	0.6671	13.3495	0.7841	0.0159		2.588	0.1	0.2588	0.0139	
D1024063.D	73184-2	3.482	10479	1.279	0.1	0.1279	0.6671	13.3495	0.7818	0.00687	0.00985	2.588	0.1	0.2588	0.0139	0.0138
D1024064.D	73184-3	3.482	10766	1.279	0.1	0.1279	0.6671	13.3495	0.7942	0.00677		2.588	0.1	0.2588	0.0137	
D1024065.D	73185-1	3.482	6443	< LLOQ	0.1	< LLOQ	0.9437	18.8321	0.7823	< LLOQ		2.588	0.1	0.2588	0.0139	
D1024068.D	73185-2	3.482	4966	< LLOQ	0.1	< LLOQ	0.9437	18.8321	0.7881	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0138	0.0140
D1024069.D	73185-3	3.482	5117	< LLOQ	0.1	< LLOQ	0.9437	18.8321	0.7507	< LLOQ		2.588	0.1	0.2588	0.0144	
D1024070.D	73186-1	3.482	4603	< LLOQ	0.1	< LLOQ	0.8178	16.3612	0.793	< LLOQ		2.588	0.1	0.2588	0.0137	
D1024071.D	73186-2	3.482	4727	< LLOQ	0.1	< LLOQ	0.8178	16.3612	0.7807	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0139	0.0138
D1024072.D	73186-3	3.482	5588	< LLOQ	0.1	< LLOQ	0.8178	16.3612	0.7822	< LLOQ		2.588	0.1	0.2588	0.0139	
D1024076.D	73187-1	3.482	4318	< LLOQ	0.1	< LLOQ	0.6826	13.7128	0.7409	< LLOQ		2.588	0.1	0.2588	0.0147	
D1024077.D	73187-2	3.482	2208	< LLOQ	0.1	< LLOQ	0.6826	13.7128	0.7724	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0141	0.0143
D1024078.D	73187-3	3.482	3072	< LLOQ	0.1	< LLOQ	0.6826	13.7128	0.7753	< LLOQ		2.588	0.1	0.2588	0.0141	
D1024079.D	73188-1	0	0	< LLOQ	0.1	< LLOQ	0.8106	16.3642	0.7889	< LLOQ		2.588	0.1	0.2588	0.0139	
D1024080.D	73188-2	3.482	4563	< LLOQ	0.1	< LLOQ	0.8106	16.3642	0.7917	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0139	0.0141
D1024083.D	73188-3	3.482	3188	< LLOQ	0.1	< LLOQ	0.8106	16.3642	0.7468	< LLOQ		2.588	0.1	0.2588	0.0147	
D1024084.D	73189-1	3.482	8391	< LLOQ	0.1	< LLOQ	0.7743	15.4914	0.7193	< LLOQ		2.588	0.1	0.2588	0.0151	
D1024085.D	73189-2	3.482	7690	< LLOQ	0.1	< LLOQ	0.7743	15.4914	0.7152	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0152	0.0148
D1024086.D	73189-3	3.482	7538	< LLOQ	0.1	< LLOQ	0.7743	15.4914	0.7749	< LLOQ		2.588	0.1	0.2588	0.0140	
D1024087.D	73190-1	3.482	9834	< LLOQ	0.1	< LLOQ	0.8306	16.6526	0.7786	< LLOQ		2.588	0.1	0.2588	0.0140	
D1024091.D	73190-2	3.482	7249	< LLOQ	0.1	< LLOQ	0.8306	16.6526	0.7913	< LLOQ	< LLOQ	2.588	0.1	0.2588	0.0138	0.0139
D1024092.D	73190-3	3.482	8947	< LLOQ	0.1	< LLOQ	0.8306	16.6526	0.7776	< LLOQ		2.588	0.1	0.2588	0.0140	
D1014091.D	73191-1	3.468	24045	6.473	0.1	0.6473	1.1828	22.9655	0.7785	0.0340		2.588	0.1	0.2588	0.0136	
D1014092.D	73191-2	3.468	21206	5.890	0.1	0.5890	1.1828	22.9655	0.7833	0.0307		2.588	0.1	0.2588	0.0135	0.0135
D1014093.D	73191-3	3.468	24835	6.636	0.1	0.6636	1.1828	22.9655	0.7855	0.0345		2.588	0.1	0.2588	0.0135	
D1024093.D	73191-1	3.482	20460	5.742	0.1	0.5742	1.1828	22.9655	0.7785	0.0301		2.588	0.1	0.2588	0.0136	
D1024094.D	73191-2	3.482	16894	4.450	0.1	0.4450	1.1828	22.9655	0.7833	0.0232	0.0301	2.588	0.1	0.2588	0.0135	0.0135
D1024095.D	73191-3	3.482	19570	5.420	0.1	0.5420	1.1828	22.9655	0.7855	0.0282		2.588	0.1	0.2588	0.0135	

*Used 1/2 LLOQ for one of the replicate calculations

**Used 1/2 LLOQ for two of the replicate calculations

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

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Quail Liver, 300 ppm Dose Group

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File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1015032.D	73041-1	3.447	1353885	183.3	1	183.3	1.0668	21.4399	0.7873	9.82		25.11	1	25.11	1.35	
D1015033.D	73041-2	3.446	1306893	176.1	1	176.1	1.0668	21.4399	0.7882	9.43		25.11	1	25.11	1.34	
D1015034.D	73041-3	3.446	1332931	180.1	1	180.1	1.0668	21.4399	0.7890	9.63	9.63	25.11	1	25.11	1.34	1.34
D1015035.D	73042-1	3.446	794000	100.3	1	100.3	0.9979	19.9432	0.7448	5.65		25.11	1	25.11	1.41	
D1015036.D	73042-2	3.447	811247	102.7	1	102.7	0.9979	19.9432	0.7876	5.48		25.11	1	25.11	1.34	
D1015039.D	73042-3	3.446	799364	101.0	1	101.0	0.9979	19.9432	0.7857	5.40	5.51	25.11	1	25.11	1.34	1.36
D1015040.D	73043-1	3.446	1014721	132.3	1	132.3	1.0213	20.4160	0.7862	7.06		25.11	1	25.11	1.34	
D1015041.D	73043-2	3.446	856895	109.3	1	109.3	1.0213	20.4160	0.7962	5.78		25.11	1	25.11	1.32	
D1015042.D	73043-3	3.446	820375	104.1	1	104.1	1.0213	20.4160	0.7633	5.72	6.18	25.11	1	25.11	1.38	1.35
D1015043.D	73044-1	3.446	1495479	205.3	1	205.3	1.0022	20.0134	0.7923	10.9		25.11	1	25.11	1.33	
D1015047.D	73044-2	3.446	1643668	228.8	1	228.8	1.0022	20.0134	0.7881	12.2		25.11	1	25.11	1.34	
D1015048.D	73044-3	3.447	1452869	198.6	1	198.6	1.0022	20.0134	0.7764	10.7	11.3	25.11	1	25.11	1.36	1.34
D1015049.D	73045-1	3.446	1940492	277.5	1	277.5	1.0013	20.1890	0.7568	15.5		25.11	1	25.11	1.40	
D1015050.D	73045-2	3.446	1948718	278.9	1	278.9	1.0013	20.1890	0.7820	15.1		25.11	1	25.11	1.36	
D1015051.D	73045-3	3.446	1973144	283.1	1	283.1	1.0013	20.1890	0.7741	15.5	15.4	25.11	1	25.11	1.37	1.38
D1015054.D	73046-1	3.446	1226618	163.9	1	163.9	0.9966	20.0956	0.7788	8.91		25.11	1	25.11	1.36	
D1015055.D	73046-2	3.446	11178086	156.6	1	156.6	0.9966	20.0956	0.7880	8.41		25.11	1	25.11	1.35	
D1015056.D	73046-3	3.446	1117033	147.4	1	147.4	0.9966	20.0956	0.7849	7.95	8.42	25.11	1	25.11	1.35	1.36
D1015057.D	73047-1	3.447	1566478	216.5	1	216.5	1.0562	21.3913	0.7730	11.9		25.11	1	25.11	1.38	
D1015058.D	73047-2	3.453	1587265	219.8	1	219.8	1.0562	21.3913	0.7857	11.9		25.11	1	25.11	1.36	
D1015062.D	73047-3	3.454	1758639	247.4	1	247.4	1.0562	21.3913	0.7843	13.4	12.4	25.11	1	25.11	1.36	1.37
D1015063.D	73048-1	3.454	967039	125.3	1	125.3	0.9745	19.5102	0.7928	6.64		25.11	1	25.11	1.33	
D1015064.D	73048-2	3.453	1002214	130.4	1	130.4	0.9745	19.5102	0.7814	7.02		25.11	1	25.11	1.35	
D1015065.D	73048-3	3.454	1040659	136.1	1	136.1	0.9745	19.5102	0.7822	7.32	6.99	25.11	1	25.11	1.35	1.34
D1015066.D	73049-1	3.453	1199895	159.8	1	159.8	1.0247	20.5287	0.7679	8.76		25.11	1	25.11	1.38	
D1015069.D	73049-2	3.454	1128369	149.1	1	149.1	1.0247	20.5287	0.7737	8.11		25.11	1	25.11	1.37	
D1015070.D	73049-3	3.454	1132562	149.7	1	149.7	1.0247	20.5287	0.7365	8.55	8.47	25.11	1	25.11	1.43	1.39
D1018068.D	73050-1	3.461	481632	56.83	0.5	28.42	1.0097	20.0977	0.7721	1.54		2.558	0.5	1.279	0.0693	
D1018069.D	73050-2	3.461	424099	48.81	0.5	24.41	1.0097	20.0977	0.7730	1.32		2.558	0.5	1.279	0.0692	0.0688
D1018070.D	73050-3	3.461	408002	46.58	0.5	23.29	1.0097	20.0977	0.7873	1.24		2.558	0.5	1.279	0.0679	
D1101101.D	73050-1	3.503	198713	60.75	0.5	30.38	1.0097	20.0977	0.7721	1.64		2.558	0.5	1.279	0.0693	
D1101102.D	73050-2	3.503	171951	52.29	0.5	26.15	1.0097	20.0977	0.7730	1.41		2.558	0.5	1.279	0.0692	0.0688
D1101103.D	73050-3	3.503	168073	50.44	0.5	25.22	1.0097	20.0977	0.7873	1.34	1.42	2.558	0.5	1.279	0.0679	
D1015077.D	73051-1	3.454	2745515	423.5	1	423.5	0.9845	19.8891	0.7858	22.9		25.11	1	25.11	1.36	
D1015078.D	73051-2	3.454	2695473	413.7	1	413.7	0.9845	19.8891	0.7955	22.1		25.11	1	25.11	1.34	
D1015079.D	73051-3	3.453	2628884	400.9	1	400.9	0.9845	19.8891	0.7744	22.0	22.3	25.11	1	25.11	1.37	1.36
D1015080.D	73052-1	3.454	1848947	262.3	1	262.3	0.9980	19.9726	0.7866	14.0		25.11	1	25.11	1.34	
D1015081.D	73052-2	3.454	1929357	275.7	1	275.7	0.9980	19.9726	0.7769	14.9		25.11	1	25.11	1.36	
D1015084.D	73052-3	3.454	1796924	253.7	1	253.7	0.9980	19.9726	0.7871	13.5	14.2	25.11	1	25.11	1.34	1.35
D1015085.D	73053-1	3.454	563559	67.75	1	67.75	1.0696	21.5577	0.7724	3.71		25.11	1	25.11	1.38	
D1015086.D	73053-2	3.453	564224	67.84	1	67.84	1.0696	21.5577	0.7793	3.68		25.11	1	25.11	1.36	
D1015087.D	73053-3	3.453	504801	59.60	1	59.60	1.0696	21.5577	0.7593	3.32	3.57	25.11	1	25.11	1.40	1.38
D1015088.D	73054-1	3.453	1159675	153.8	1	153.8	1.0792	21.5161	0.7791	8.27		25.11	1	25.11	1.35	
D1015092.D	73054-2	3.453	1517681	208.8	1	208.8	1.0792	21.5161	0.7778	11.2		25.11	1	25.11	1.35	
D1015093.D	73054-3	3.454	1325612	178.9	1	178.9	1.0792	21.5161	0.7890	9.50	9.67	25.11	1	25.11	1.33	1.34

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T-7495: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 300 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1015094.D	73055-1	3.454	2820957	438.5	1	438.5	1.0659	21.3918	0.7853	23.5		25.11	1	25.11	1.35	
D1015095.D	73055-2	3.454	2624231	400.0	1	400.0	1.0659	21.3918	0.7635	22.1	23.5	25.11	1	25.11	1.39	
D1015096.D	73055-3	3.454	2873243	449.0	1	449.0	1.0659	21.3918	0.7558	25.0		25.11	1	25.11	1.40	1.38
D1015099.D	73056-1	3.453	1031456	134.7	1	134.7	1.0620	21.2292	0.7763	7.29		25.11	1	25.11	1.36	
D1015100.D	73056-2	3.453	1042448	136.4	1	136.4	1.0620	21.2292	0.7558	7.57	7.48	25.11	1	25.11	1.39	
D1015101.D	73056-3	3.453	1031898	134.8	1	134.8	1.0620	21.2292	0.7475	7.57		25.11	1	25.11	1.41	1.39
D1015102.D	73057-1	3.453	1669558	233.0	1	233.0	1.0783	21.8042	0.7591	13.0		25.11	1	25.11	1.40	
D1015103.D	73057-2	3.46	1638790	228.0	1	228.0	1.0783	21.8042	0.7944	12.2	12.7	25.11	1	25.11	1.34	
D1015107.D	73057-3	3.453	1709593	239.4	1	239.4	1.0783	21.8042	0.7851	12.8		25.11	1	25.11	1.34	1.36
D1015108.D	73058-1	3.454	1623632	225.6	1	225.6	1.0033	20.1370	0.7971	11.9		25.11	1	25.11	1.33	
D1015109.D	73058-2	3.454	1565730	216.4	1	216.4	1.0033	20.1370	0.7720	11.8	11.7	25.11	1	25.11	1.37	
D1015110.D	73058-3	3.454	1565862	216.4	1	216.4	1.0033	20.1370	0.7949	11.5		25.11	1	25.11	1.33	1.34
D1015111.D	73059-1	3.453	1684352	235.3	1	235.3	1.0959	21.8765	0.7459	13.2		25.11	1	25.11	1.41	
D1015114.D	73059-2	3.453	1615650	224.3	1	224.3	1.0959	21.8765	0.7560	12.4	12.7	25.11	1	25.11	1.39	
D1015115.D	73059-3	3.454	1627958	226.3	1	226.3	1.0959	21.8765	0.7566	12.5		25.11	1	25.11	1.39	1.40
D1015116.D	73060-1	3.454	504082	59.50	1	59.50	0.9996	20.6673	0.8017	3.22		25.11	1	25.11	1.36	
D1015117.D	73060-2	3.454	624954	76.33	1	76.33	0.9996	20.6673	0.7892	4.19	3.80	25.11	1	25.11	1.38	
D1015118.D	73060-3	3.46	606389	73.73	1	73.73	0.9996	20.6673	0.7993	4.00		25.11	1	25.11	1.36	1.37
D1015122.D	73061-1	3.454	1244443	166.6	1	166.6	0.9628	19.3156	0.8029	8.74		25.11	1	25.11	1.32	
D1015123.D	73061-2	3.454	1164835	154.6	1	154.6	0.9628	19.3156	0.7868	8.28	8.54	25.11	1	25.11	1.34	
D1015124.D	73061-3	3.453	1205962	160.8	1	160.8	0.9628	19.3156	0.7869	8.61		25.11	1	25.11	1.34	1.34
D1015125.D	73062-1	3.453	1113132	146.8	1	146.8	1.0214	20.4711	0.7792	7.93		25.11	1	25.11	1.36	
D1015126.D	73062-2	3.454	1180597	156.9	1	156.9	1.0214	20.4711	0.7889	8.37	8.16	25.11	1	25.11	1.34	
D1015129.D	73062-3	3.453	1185068	157.6	1	157.6	1.0214	20.4711	0.8053	8.24		25.11	1	25.11	1.31	1.34
D1015130.D	73063-1	3.46	846755	107.8	1	107.8	0.9248	18.4382	0.7797	5.78		25.11	1	25.11	1.35	
D1015131.D	73063-2	3.454	902039	115.8	1	115.8	0.9248	18.4382	0.7952	6.10	5.94	25.11	1	25.11	1.32	
D1015132.D	73063-3	3.454	872126	111.5	1	111.5	0.9248	18.4382	0.7870	5.93		25.11	1	25.11	1.34	1.34
D1018032.D	73064-1	3.447	540657	65.12	1	65.12	1.0551	21.1857	0.7476	3.67		25.11	1	25.11	1.42	
D1018033.D	73064-2	3.447	593808	72.63	1	72.63	1.0551	21.1857	0.7884	3.88	3.77	25.11	1	25.11	1.34	
D1018034.D	73064-3	3.454	570710	69.36	1	69.36	1.0551	21.1857	0.7777	3.76		25.11	1	25.11	1.36	1.37
D1018035.D	73065-1	3.447	2230507	334.1	1	334.1	0.9927	19.9459	0.7770	18.1		25.11	1	25.11	1.36	
D1018036.D	73065-2	3.447	2180537	325.0	1	325.0	0.9927	19.9459	0.7879	17.4	17.7	25.11	1	25.11	1.34	
D1018039.D	73065-3	3.454	2190632	326.9	1	326.9	0.9927	19.9459	0.7888	17.5		25.11	1	25.11	1.34	1.35
D1018040.D	73066-1	3.454	1037020	137.3	1	137.3	0.9507	19.5267	0.7538	7.85		25.11	1	25.11	1.43	
D1018041.D	73066-2	3.454	1033257	136.7	1	136.7	0.9507	19.5267	0.7888	7.47	7.52	25.11	1	25.11	1.37	
D1018042.D	73066-3	3.454	1005938	132.6	1	132.6	0.9507	19.5267	0.7877	7.25		25.11	1	25.11	1.37	1.39
D1018043.D	73067-1	3.454	967099	126.8	1	126.8	1.0807	21.6405	0.7528	7.08		25.11	1	25.11	1.40	
D1018047.D	73067-2	3.454	935078	122.1	1	122.1	1.0807	21.6405	0.7682	6.68	6.92	25.11	1	25.11	1.37	
D1018048.D	73067-3	3.454	966050	126.7	1	126.7	1.0807	21.6405	0.7615	6.99		25.11	1	25.11	1.39	1.39
D1018049.D	73068-1	3.454	1010153	133.3	1	133.3	0.9895	19.8414	0.7442	7.54		25.11	1	25.11	1.42	
D1018050.D	73068-2	3.454	1031002	136.4	1	136.4	0.9895	19.8414	0.7856	7.31	7.31	25.11	1	25.11	1.35	
D1018051.D	73068-3	3.454	1012157	133.6	1	133.6	0.9895	19.8414	0.7952	7.07		25.11	1	25.11	1.33	1.37
D1018054.D	73069-1	3.454	1092398	145.6	1	145.6	1.0112	20.3534	0.7919	7.87		25.11	1	25.11	1.36	
D1018055.D	73069-2	3.454	1071140	142.4	1	142.4	1.0112	20.3534	0.7694	7.82	7.85	25.11	1	25.11	1.38	
D1018056.D	73069-3	Sample not completely aspirated by the Rapid Trace, No Data														
D1018057.D	73070-1	3.454	1225509	166.0	1	166.0	1.0100	20.2035	0.7904	8.82		25.11	1	25.11	1.33	
D1018058.D	73070-2	3.454	1321833	180.9	1	180.9	1.0100	20.2035	0.7928	9.59	9.43	25.11	1	25.11	1.33	
D1018062.D	73070-3	3.454	1285166	175.2	1	175.2	1.0100	20.2035	0.7442	9.89		25.11	1	25.11	1.42	1.36
D1018063.D	73071-1	3.454	633174	78.23	1	78.23	1.0482	20.8266	0.7916	4.12		25.11	1	25.11	1.32	
D1018064.D	73071-2	3.454	668110	83.22	1	83.22	1.0482	20.8266	0.7878	4.41	4.32	25.11	1	25.11	1.33	
D1018065.D	73071-3	3.454	637801	78.89	1	78.89	1.0482	20.8266	0.7443	4.42		25.11	1	25.11	1.41	1.35

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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 300 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1018131.D	73192-1	3.461	34195	8.594	0.1	0.8594	0.7663	15.7395	0.7845	0.0472		2.558	0.1	0.2558	0.0140	
D1018132.D	73192-2	3.461	24105	5.627	0.1	0.5627	0.7663	15.7395	0.7604	0.0319	0.0369	2.558	0.1	0.2558	0.0145	
D1018133.D	73192-3	3.461	24763	5.620	0.1	0.5620	0.7663	15.7395	0.7916	0.0317		2.558	0.1	0.2558	0.0139	
D1018134.D	73193-1	3.461	18754	4.055	0.1	0.4055	0.7560	15.1584	0.7531	0.0227		2.558	0.1	0.2558	0.0143	
D1018135.D	73193-2	3.461	19967	4.411	0.1	0.4411	0.7560	15.1584	0.7709	0.0241		2.558	0.1	0.2558	0.0140	0.0140
D1018138.D	73193-3	3.461	27176	6.529	0.1	0.6529	0.7560	15.1584	0.7909	0.0348	0.0272	2.558	0.1	0.2558	0.0136	
D1018139.D	73194-1	3.461	37038	9.431	0.1	0.9431	1.1883	23.7018	0.7798	0.0507		2.558	0.1	0.2558	0.0137	
D1018140.D	73194-2	3.461	20627	4.605	0.1	0.4605	1.1883	23.7018	0.7829	0.0246		2.558	0.1	0.2558	0.0137	0.0137
D1018141.D	73194-3	3.461	23012	5.305	0.1	0.5305	1.1883	23.7018	0.7822	0.0284	0.0346	2.558	0.1	0.2558	0.0137	
D1018142.D	73195-1	3.461	29916	7.335	0.1	0.7335	0.6198	13.34	0.7795	0.0424		2.558	0.1	0.2558	0.0148	
D1018146.D	73195-2	3.461	20645	4.610	0.1	0.4610	0.6198	13.34	0.7808	0.0266	0.0288	2.558	0.1	0.2558	0.0148	
D1018147.D	73195-3	3.461	15161	3.000	0.1	0.3000	0.6198	13.34	0.7748	0.0174		2.558	0.1	0.2558	0.0149	0.0148
D1018148.D	73196-1	3.461	6988	< LLOQ	0.1	< LLOQ	1.1793	23.5919	0.7114	< LLOQ		2.558	0.1	0.2558	0.0151	
D1018149.D	73196-2	3.461	7206	< LLOQ	0.1	< LLOQ	1.1793	23.5919	0.7801	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0141
D1018150.D	73196-3	3.461	6679	< LLOQ	0.1	< LLOQ	1.1793	23.5919	0.7948	< LLOQ		2.558	0.1	0.2558	0.0135	
D1018153.D	73197-1	3.461	15863	3.206	0.1	0.3206	0.9090	19.4172	0.7582	0.0189		2.558	0.1	0.2558	0.0151	
D1018154.D	73197-2	3.461	13684	2.566	0.1	0.2566	0.9090	19.4172	0.7841	0.0146	0.0161	2.558	0.1	0.2558	0.0146	
D1018155.D	73197-3	3.461	13841	2.613	0.1	0.2613	0.9090	19.4172	0.7879	0.0148		2.558	0.1	0.2558	0.0145	0.0147
D1018156.D	73198-1	3.461	7601	< LLOQ	0.1	< LLOQ	1.0027	20.0548	0.7324	< LLOQ		2.558	0.1	0.2558	0.0147	
D1018157.D	73198-2	3.461	8833	< LLOQ	0.1	< LLOQ	1.0027	20.0548	0.7809	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0138	0.0144
D1018161.D	73198-3	3.461	8561	< LLOQ	0.1	< LLOQ	1.0027	20.0548	0.728	< LLOQ		2.558	0.1	0.2558	0.0148	
D1018162.D	73199-1	3.461	6698	1.279	0.1	0.1279	0.8798	17.5238	0.7707	0.00694		2.558	0.1	0.2558	0.0139	
D1018163.D	73199-2	3.461	14443	2.789	0.1	0.2789	0.8798	17.5238	0.7866	0.0148	0.00965	2.558	0.1	0.2558	0.0136	0.0139
D1018164.D	73199-3	3.461	7250	1.279	0.1	0.1279	0.8798	17.5238	0.7473	0.00716		2.558	0.1	0.2558	0.0143	
D1018165.D	73200-1	3.461	11948	1.279	0.1	0.1279	0.9467	22.398	0.825	0.00765		2.558	0.1	0.2558	0.0153	
D1018168.D	73200-2	3.461	11672	1.279	0.1	0.1279	0.9467	22.398	0.7811	0.00808	0.0115	2.558	0.1	0.2558	0.0162	
D1018169.D	73200-3	3.461	14950	2.938	0.1	0.2938	0.9467	22.398	0.7686	0.0189		2.558	0.1	0.2558	0.0164	0.0160
D1018170.D	73201-1	3.461	9173	< LLOQ	0.1	< LLOQ	1.1064	22.4925	0.7782	< LLOQ		2.558	0.1	0.2558	0.0140	
D1018171.D	73201-2	3.468	9166	< LLOQ	0.1	< LLOQ	1.1064	22.4925	0.7624	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0143	0.0141
D1018172.D	73201-3	3.461	11076	< LLOQ	0.1	< LLOQ	1.1064	22.4925	0.7869	< LLOQ		2.558	0.1	0.2558	0.0139	
D1018176.D	73202-1	3.461	11683	< LLOQ	0.1	< LLOQ	1.1679	23.2014	0.7707	< LLOQ		2.558	0.1	0.2558	0.0139	
D1018177.D	73202-2	3.461	8169	< LLOQ	0.1	< LLOQ	1.1679	23.2014	0.7556	< LLOQ	< LLOQ	2.558	0.1	0.2558	0.0141	0.0138
D1018178.D	73202-3	3.461	9548	< LLOQ	0.1	< LLOQ	1.1679	23.2014	0.7875	< LLOQ		2.558	0.1	0.2558	0.0136	
D1018179.D	73203-1	3.461	99593	27.94	0.1	2.794	0.7751	15.6588	0.859	0.138		2.558	0.1	0.2558	0.0126	
D1018180.D	73203-2	3.461	106181	29.90	0.1	2.990	0.7751	15.6588	0.8547	0.148	0.146	2.558	0.1	0.2558	0.0127	0.0128
D1018183.D	73203-3	3.461	106471	29.99	0.1	2.999	0.7751	15.6588	0.8305	0.153		2.558	0.1	0.2558	0.0131	
D1018184.D	73204-1	3.461	22235	5.077	0.1	0.5077	0.9533	19.0808	0.7474	0.0286		2.558	0.1	0.2558	0.0144	
D1018185.D	73204-2	3.461	23309	5.393	0.1	0.5393	0.9533	19.0808	0.774	0.0293	0.0305	2.558	0.1	0.2558	0.0139	0.0141
D1018186.D	73204-3	3.461	25823	6.132	0.1	0.6132	0.9533	19.0808	0.7693	0.0335		2.558	0.1	0.2558	0.0140	
D1018187.D	73205-1	3.461	21593	4.889	0.1	0.4889	0.9813	19.6369	0.7759	0.0265		2.558	0.1	0.2558	0.0139	
D1018191.D	73205-2	3.461	20814	4.680	0.1	0.4680	0.9813	19.6369	0.7805	0.0251	0.0240	2.558	0.1	0.2558	0.0138	0.0139
D1018192.D	73205-3	3.468	17726	3.753	0.1	0.3753	0.9813	19.6369	0.7702	0.0205		2.558	0.1	0.2558	0.0140	
D1018193.D	73206-1	3.468	7067	1.279	0.1	0.1279	1.1576	23.1342	0.7738	0.00694		2.558	0.1	0.2558	0.0139	
D1018194.D	73206-2	3.461	6979	1.279	0.1	0.1279	1.1576	23.1342	0.7505	0.00715	0.200	2.558	0.1	0.2558	0.0143	
D1018195.D	73206-3	3.461	368157	109.5	0.1	10.95	1.1576	23.1342	0.7833	0.587		2.558	0.1	0.2558	0.0137	

*Used 1/2 LLOQ for one of the replicate calculations

**Used 1/2 LLOQ for two of the replicate calculations

Quail Liver, 900 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1023032.D	73072-1	3.461	492162	46.98	4	187.9	0.9739	20.3185	0.7452	11.0		10.23	4	40.92	2.40	
D1023033.D	73072-2	3.461	440276	41.65	4	166.6	0.9739	20.3185	0.7531	9.67		10.23	4	40.92	2.38	2.38
D1023034.D	73072-3	3.461	481240	45.86	4	183.4	0.9739	20.3185	0.7540	10.6		10.23	4	40.92	2.37	
D1023035.D	73073-1	3.461	1120075	116.8	4	467.2	1.0826	21.5632	0.7633	25.6		10.23	4	40.92	2.24	
D1023036.D	73073-2	3.461	1120641	116.9	4	467.5	1.0826	21.5632	0.7668	25.5		10.23	4	40.92	2.23	2.24
D1023039.D	73073-3	3.461	1086897	113.1	4	452.3	1.0826	21.5632	0.7590	24.9		10.23	4	40.92	2.26	
D1023040.D	73074-1	3.461	493596	47.13	4	188.5	0.9945	20.3631	0.7524	10.8		10.23	4	40.92	2.34	
D1023041.D	73074-2	3.461	434812	41.09	4	164.4	0.9945	20.3631	0.7580	9.31		10.23	4	40.92	2.32	2.36
D1023042.D	73074-3	3.461	547404	52.73	4	210.9	0.9945	20.3631	0.7214	12.6		10.23	4	40.92	2.44	
D1023043.D	73075-1	3.461	2224594	281.1	4	1124	0.9685	19.7817	0.7635	63.1		10.23	4	40.92	2.30	
D1023047.D	73075-2	3.461	2289851	294.1	4	1176	0.9685	19.7817	0.7642	66.0		10.23	4	40.92	2.29	2.30
D1023048.D	73075-3	3.461	1877559	220.4	4	881.5	0.9685	19.7817	0.7592	49.8		10.23	4	40.92	2.31	
D1023049.D	73076-1	3.461	705200	69.52	4	278.1	1.0054	20.1221	0.7695	15.2		10.23	4	40.92	2.23	
D1023050.D	73076-2	3.461	966286	98.69	4	394.8	1.0054	20.1221	0.7731	21.5		10.23	4	40.92	2.22	2.22
D1023051.D	73076-3	3.461	946686	96.43	4	385.7	1.0054	20.1221	0.7790	20.8		10.23	4	40.92	2.21	
D1023054.D	73077-1	3.461	1325101	142.2	4	568.8	1.0341	20.4995	0.7665	30.9		10.23	4	40.92	2.22	
D1023055.D	73077-2	3.461	1203305	126.9	4	507.7	1.0341	20.4995	0.7653	27.6		10.23	4	40.92	2.23	2.23
D1023056.D	73077-3	3.461	1220545	129.1	4	516.2	1.0341	20.4995	0.7636	28.2		10.23	4	40.92	2.23	
D1023057.D	73078-1	3.461	495304	47.31	4	189.2	1.0186	20.1699	0.7627	10.3		10.23	4	40.92	2.23	
D1023058.D	73078-2	3.461	571533	55.26	4	221.0	1.0186	20.1699	0.7747	11.9		10.23	4	40.92	2.20	2.21
D1023062.D	73078-3	3.468	659573	64.61	4	258.4	1.0186	20.1699	0.7743	13.9		10.23	4	40.92	2.20	
D1023063.D	73079-1	3.468	1680803	190.6	4	762.2	1.0873	21.7807	0.7635	42.0		10.23	4	40.92	2.25	
D1023064.D	73079-2	3.468	1751223	200.9	4	803.7	1.0873	21.7807	0.7580	44.6		10.23	4	40.92	2.27	2.26
D1023065.D	73079-3	3.468	1961725	234.0	4	936.1	1.0873	21.7807	0.7607	51.8		10.23	4	40.92	2.26	
D1023066.D	73080-1	3.468	958946	97.84	4	391.4	1.0057	20.1040	0.7782	21.1		10.23	4	40.92	2.21	
D1023069.D	73080-2	3.461	712252	70.29	4	281.1	1.0057	20.1040	0.7567	15.6		10.23	4	40.92	2.27	2.24
D1023070.D	73080-3	3.468	700481	69.01	4	276.0	1.0057	20.1040	0.7630	15.2		10.23	4	40.92	2.25	
D1102029.D	73081-1	3.51	3027082	476.7	3	1430	1.0057	20.1040	0.7782	77.1		51.15	3	153.45	8.28	
D1102030.D	73081-2	3.51	2976244	467.0	3	1401	1.0057	20.1040	0.7567	77.7		51.15	3	153.45	8.51	8.40
D1102031.D	73081-3	Sample not completely aspirated by the Rapid Trace, No Data														
D1023077.D	73082-1	3.468	1025739	105.6	4	422.4	0.9947	19.6542	0.7856	22.3		10.23	4	40.92	2.16	
D1023078.D	73082-2	3.468	862298	86.85	4	347.4	0.9947	19.6542	0.7861	18.3		10.23	4	40.92	2.16	2.17
D1023079.D	73082-3	3.467	729362	72.14	4	288.6	0.9947	19.6542	0.7812	15.3		10.23	4	40.92	2.17	
D1023080.D	73083-1	3.468	1134866	118.6	4	474.3	0.9981	19.9393	0.7477	26.6		10.23	4	40.92	2.30	
D1023081.D	73083-2	3.468	1076289	111.6	4	446.3	0.9981	19.9393	0.7543	24.8		10.23	4	40.92	2.28	2.29
D1023084.D	73083-3	3.468	939403	95.60	4	382.4	0.9981	19.9393	0.7501	21.4		10.23	4	40.92	2.29	
D1023085.D	73084-1	3.467	921074	93.50	4	374.0	1.0305	20.796	0.7649	20.7		10.23	4	40.92	2.27	
D1023086.D	73084-2	3.468	946085	96.36	4	385.5	1.0305	20.796	0.7587	21.5		10.23	4	40.92	2.28	2.28
D1023087.D	73084-3	3.468	928333	94.44	4	377.8	1.0305	20.796	0.7599	21.1		10.23	4	40.92	2.28	
D1023088.D	73085-1	3.468	1497741	164.9	4	659.6	1.0834	21.7103	0.7701	36.0		10.23	4	40.92	2.24	
D1023092.D	73085-2	3.468	1590473	177.7	4	710.7	1.0834	21.7103	0.7686	38.9		10.23	4	40.92	2.24	2.23
D1023093.D	73085-3	3.467	1321973	141.8	4	567.2	1.0834	21.7103	0.7749	30.8		10.23	4	40.92	2.22	
D1023094.D	73086-1	3.468	649286	63.50	4	254.0	0.9816	19.6313	0.7282	14.7		10.23	4	40.92	2.36	
D1023095.D	73086-2	3.468	705690	69.57	4	278.3	0.9816	19.6313	0.7342	15.9		10.23	4	40.92	2.34	2.34
D1023096.D	73086-3	3.468	708740	69.90	4	279.6	0.9816	19.6313	0.7371	15.9		10.23	4	40.92	2.33	
D1023099.D	73087-1	3.468	721859	71.33	4	285.3	1.008	20.1478	0.7306	16.4		10.23	4	40.92	2.35	
D1023100.D	73087-2	3.468	758871	75.37	4	301.5	1.008	20.1478	0.7320	17.3		10.23	4	40.92	2.35	2.36
D1023101.D	73087-3	3.468	771907	76.80	4	307.2	1.008	20.1478	0.7251	17.8		10.23	4	40.92	2.37	
D1023102.D	73088-1	Sample not completely aspirated by the Rapid Trace, No Data														
D1023103.D	73088-2	3.468	577659	55.90	4	223.6	1.0336	20.6683	0.7664	12.3		10.23	4	40.92	2.24	2.24
D1023107.D	73088-3	3.468	614949	59.85	4	239.4	1.0336	20.6683	0.7693	13.1		10.23	4	40.92	2.23	

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 900 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1023108.D	73089-1	3.468	2016250	243.2	4	972.7	1.0929	21.4528	0.7676	52.3	53.4	10.23	4	40.92	2.20	
D1023109.D	73089-2	3.468	1982025	237.4	4	949.6	1.0929	21.4528	0.7740	50.6		10.23	4	40.92	2.18	2.19
D1023110.D	73089-3	3.468	2150156	266.9	4	1068	1.0929	21.4528	0.7697	57.2		10.23	4	40.92	2.19	
D1021032.D	73090-1	3.461	1521210	261.0	1	261.0	0.9748	19.9677	0.7607	14.7		51.15	1	51.15	2.89	
D1021033.D	73090-2	3.461	1388149	234.2	1	234.2	0.9748	19.9677	0.7671	13.1	13.9	51.15	1	51.15	2.87	2.88
D1021034.D	73090-3	3.461	1439516	244.5	1	244.5	0.9748	19.9677	0.7650	13.7		51.15	1	51.15	2.87	
D1021035.D	73091-1	3.461	1478214	252.3	1	252.3	0.9969	20.8440	0.7610	14.5		51.15	1	51.15	2.95	
D1021036.D	73091-2	Sample not completely aspirated by the Rapid Trace, No Data														
D1021039.D	73091-3	3.461	1501557	257.0	1	257.0	0.9969	20.8440	0.7585	14.8	14.7	51.15	1	51.15	2.95	2.95
D1021040.D	73092-1	3.461	1740153	306.1	1	306.1	0.9853	19.7607	0.7441	17.3		51.15	1	51.15	2.89	
D1021041.D	73092-2	3.461	1701971	298.2	1	298.2	0.9853	19.7607	0.7484	16.8	16.8	51.15	1	51.15	2.88	2.89
D1021042.D	73092-3	3.461	1662021	289.9	1	289.9	0.9853	19.7607	0.7460	16.4		51.15	1	51.15	2.89	
D1021043.D	73093-1	3.461	2297525	428.3	1	428.3	0.9759	19.4285	0.7710	23.2		51.15	1	51.15	2.77	
D1021047.D	73093-2	3.461	2397823	451.6	1	451.6	0.9759	19.4285	0.7744	24.4	22.8	51.15	1	51.15	2.76	2.76
D1021048.D	73093-3	3.461	2126545	389.6	1	389.6	0.9759	19.4285	0.7822	20.8		51.15	1	51.15	2.73	
D1021049.D	73094-1	3.461	1549475	266.7	1	266.7	0.9863	19.6777	0.7718	14.5		51.15	1	51.15	2.78	
D1021050.D	73094-2	3.461	1615122	280.2	1	280.2	0.9863	19.6777	0.7851	15.0	14.7	51.15	1	51.15	2.73	2.75
D1021051.D	73094-3	Sample not completely aspirated by the Rapid Trace, No Data														
D1021054.D	73095-1	Sample not completely aspirated by the Rapid Trace, No Data														
D1021055.D	73095-2	3.461	1547102	266.2	1	266.2	1.0959	21.7917	0.7494	14.8	14.1	51.15	1	51.15	2.85	2.84
D1021056.D	73095-3	3.461	1427555	242.1	1	242.1	1.0959	21.7917	0.7553	13.4		51.15	1	51.15	2.83	
D1021057.D	73096-1	3.461	2149084	394.6	1	394.6	0.9885	19.8832	0.7473	22.3		51.15	1	51.15	2.89	
D1021058.D	73096-2	3.461	2331622	436.2	1	436.2	0.9885	19.8832	0.7644	24.1	23.5	51.15	1	51.15	2.83	2.86
D1021062.D	73096-3	3.461	2307313	430.6	1	430.6	0.9885	19.8832	0.7531	24.1		51.15	1	51.15	2.87	
D1021063.D	73097-1	3.461	1513189	259.4	1	259.4	0.9963	20.0838	0.7388	14.9		51.15	1	51.15	2.93	
D1021064.D	73097-2	3.461	1476891	252.0	1	252.0	0.9963	20.0838	0.7356	14.5	14.7	51.15	1	51.15	2.94	2.93
D1021065.D	73097-3	3.461	1512863	259.3	1	259.3	0.9963	20.0838	0.7445	14.7		51.15	1	51.15	2.91	
D1021066.D	73098-1	Sample not completely aspirated by the Rapid Trace, No Data														
D1021069.D	73098-2	Sample not completely aspirated by the Rapid Trace, No Data														
D1021070.D	73098-3	3.461	2320063	433.5	1	433.5	0.9945	19.8518	0.7670	23.7	23.7	51.15	1	51.15	2.80	2.80
D1021071.D	73099-1	3.468	1026917	164.0	1	164.0	0.9912	19.9755	0.7250	9.57		51.15	1	51.15	2.98	
D1021072.D	73099-2	3.461	1064164	171.1	1	171.1	0.9912	19.9755	0.7417	9.76	9.73	51.15	1	51.15	2.92	2.93
D1021073.D	73099-3	3.461	1081142	174.3	1	174.3	0.9912	19.9755	0.7473	9.87		51.15	1	51.15	2.90	
D1021077.D	73100-1	3.461	805294	122.4	1	122.4	1.0388	23.2071	0.7506	7.81		51.15	1	51.15	3.18	
D1021078.D	73100-2	3.461	727806	108.1	1	108.1	1.0388	23.2071	0.7638	8.61	6.73	51.15	1	51.15	3.13	3.14
D1021079.D	73100-3	3.468	670934	97.73	1	97.73	1.0388	23.2071	0.7645	5.97		51.15	1	51.15	3.12	
D1021080.D	73101-1	3.468	1806219	320.0	1	320.0	1.0713	21.6787	0.7785	17.5		51.15	1	51.15	2.79	
D1021081.D	73101-2	Sample not completely aspirated by the Rapid Trace, No Data														
D1021084.D	73101-3	Sample not completely aspirated by the Rapid Trace, No Data														
D1021085.D	73102-1	3.468	1457719	248.2	1	248.2	1.0189	21.3543	0.7585	14.4		51.15	1	51.15	2.96	
D1021086.D	73102-2	3.461	1350945	226.8	1	226.8	1.0189	21.3543	0.7571	13.2	13.5	51.15	1	51.15	2.97	2.96
D1021087.D	73102-3	3.461	1330409	222.8	1	222.8	1.0189	21.3543	0.7589	12.9		51.15	1	51.15	2.96	
D1021088.D	73103-1	3.468	1245980	206.2	1	206.2	1.0050	21.5489	0.7674	12.1		51.15	1	51.15	2.99	
D1021092.D	73103-2	3.461	1285062	213.8	1	213.8	1.0050	21.5489	0.7710	12.4	12.1	51.15	1	51.15	2.98	2.99
D1021093.D	73103-3	3.461	1228795	202.8	1	202.8	1.0050	21.5489	0.7689	11.8		51.15	1	51.15	2.99	
D1022032.D	73207-1	3.468	96273	32.65	0.1	3.265	1.0556	21.1286	0.7781	0.176		2.558	0.1	0.2558	0.0138	
D1022033.D	73207-2	3.468	115065	39.32	0.1	3.932	1.0556	21.1286	0.7476	0.221	0.199	2.558	0.1	0.2558	0.0144	0.0141
D1022034.D	73207-3	Sample not completely aspirated by the Rapid Trace, No Data														
D1022035.D	73208-1	Sample not completely aspirated by the Rapid Trace, No Data														
D1022036.D	73208-2	3.468	64785	21.48	0.1	2.148	0.679	13.5593	0.7651	0.118	0.134	2.558	0.1	0.2558	0.0140	0.0140
D1022039.D	73208-3	3.468	81013	27.23	0.1	2.723	0.679	13.5593	0.7648	0.149		2.558	0.1	0.2558	0.0140	

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Liver, 900 ppm Dose Group

File	Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Liver (in homogenate), g	Weight of ACN (in homogenate), g	Weight of Aliquot, g	Concentration of PFBS in Original Liver Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On Column	LLOQ On-Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1022040.D	73209-1	3.468	49125	15.93	0.1	1.593	0.6675	13.3014	0.7262	0.0918		2.558	0.1	0.2558	0.0147	
D1022041.D	73209-2	3.468	68738	22.88	0.1	2.288	0.6675	13.3014	0.7725	0.124	0.109	2.558	0.1	0.2558	0.0139	0.0142
D1022042.D	73209-3	3.468	62300	20.60	0.1	2.060	0.6675	13.3014	0.7697	0.112		2.558	0.1	0.2558	0.0139	
D1022043.D	73210-1	3.468	26382	7.869	0.1	0.7869	0.6669	14.6848	0.7637	0.0474		2.558	0.1	0.2558	0.0154	
D1022047.D	73210-2	3.468	11870	2.732	0.1	0.2732	0.6669	14.6848	0.5967	0.0211	0.0340	2.558	0.1	0.2558	0.0197	0.0168
D1022048.D	73210-3	3.468	19928	5.584	0.1	0.5584	0.6669	14.6848	0.7662	0.0336		2.558	0.1	0.2558	0.0154	
D1022049.D	73211-1	3.468	32021	9.866	0.1	0.9866	0.7753	15.5411	0.7709	0.0539		2.558	0.1	0.2558	0.0140	
D1022050.D	73211-2	3.468	35498	11.10	0.1	1.110	0.7753	15.5411	0.774	0.0604	0.0548	2.558	0.1	0.2558	0.0139	0.0139
D1022051.D	73211-3	3.468	30217	9.227	0.1	0.9227	0.7753	15.5411	0.7753	0.0501		2.558	0.1	0.2558	0.0139	
D1022054.D	73212-1	3.468	168257	58.24	0.1	5.824	0.7186	14.2582	0.7759	0.313		2.558	0.1	0.2558	0.0137	
D1022055.D	73212-2	3.468	174380	60.42	0.1	6.042	0.7186	14.2582	0.78	0.323	0.313	2.558	0.1	0.2558	0.0137	0.0136
D1022056.D	73212-3	3.468	165763	57.35	0.1	5.735	0.7186	14.2582	0.7905	0.302		2.558	0.1	0.2558	0.0135	
D1022057.D	73213-1	3.468	23738	6.933	0.1	0.6933	1.1755	23.5564	0.7828	0.0373		2.558	0.1	0.2558	0.0138	
D1022058.D	73213-2	3.468	33621	10.43	0.1	1.043	1.1755	23.5564	0.7827	0.0561	0.0484	2.558	0.1	0.2558	0.0138	0.0137
D1022062.D	73213-3	3.468	31491	9.679	0.1	0.9679	1.1755	23.5564	0.7855	0.0518		2.558	0.1	0.2558	0.0137	
D1022063.D	73214-1	3.468	33320	10.33	0.1	1.033	0.8396	16.7557	0.7861	0.0565		2.558	0.1	0.2558	0.0140	
D1022064.D	73214-2	3.468	33213	10.29	0.1	1.029	0.8396	16.7557	0.7579	0.0569	0.0617	2.558	0.1	0.2558	0.0141	0.0150
D1022065.D	73214-3	3.468	35030	10.93	0.1	1.093	0.8396	16.7557	0.6398	0.0716		2.558	0.1	0.2558	0.0168	
D1022066.D	73215-1	3.468	90118	30.46	0.1	3.046	0.9961	19.1102	0.7639	0.161		2.558	0.1	0.2558	0.0135	
D1022069.D	73215-2	3.468	92890	31.45	0.1	3.145	0.9961	19.1102	0.7711	0.165	0.162	2.558	0.1	0.2558	0.0134	0.0135
D1022070.D	73215-3	3.468	88902	30.03	0.1	3.003	0.9961	19.1102	0.7585	0.160		2.558	0.1	0.2558	0.0136	
D1022071.D	73216-1	3.468	30034	9.163	0.1	0.9163	0.8449	17.0134	0.765	0.0506		2.558	0.1	0.2558	0.0141	
D1022072.D	73216-2	3.468	25641	7.607	0.1	0.7607	0.8449	17.0134	0.6963	0.0462	0.0492	2.558	0.1	0.2558	0.0155	0.0146
D1022073.D	73216-3	3.468	30048	9.168	0.1	0.9168	0.8449	17.0134	0.7632	0.0508		2.558	0.1	0.2558	0.0142	
D1022077.D	73217-1	3.468	27798	8.371	0.1	0.8371	0.8130	16.2905	0.7747	0.0455		2.558	0.1	0.2558	0.0139	
D1022078.D	73217-2	3.468	30097	9.185	0.1	0.9185	0.8130	16.2905	0.7734	0.0500	0.0499	2.558	0.1	0.2558	0.0139	0.0139
D1022079.D	73217-3	3.468	32198	9.929	0.1	0.9929	0.8130	16.2905	0.7700	0.0543		2.558	0.1	0.2558	0.0140	
D1022080.D	73218-1	3.468	61950	20.47	0.1	2.047	0.8599	17.2397	0.7126	0.121		2.558	0.1	0.2558	0.0151	
D1022081.D	73218-2	3.468	53003	17.30	0.1	1.730	0.8599	17.2397	0.7523	0.0968	0.107	2.558	0.1	0.2558	0.0143	0.0146
D1022084.D	73218-3	3.468	55574	18.21	0.1	1.821	0.8599	17.2397	0.7516	0.102		2.558	0.1	0.2558	0.0143	
D1022085.D	73219-1	3.475	106147	36.16	0.1	3.616	0.9651	19.4278	0.7627	0.200		2.558	0.1	0.2558	0.0142	
D1022086.D	73219-2	3.468	105015	35.75	0.1	3.575	0.9651	19.4278	0.7651	0.197	0.207	2.558	0.1	0.2558	0.0141	0.0141
D1022087.D	73219-3	3.468	118444	40.52	0.1	4.052	0.9651	19.4278	0.7722	0.222		2.558	0.1	0.2558	0.0140	
D1022088.D	73220-1	3.475	27853	8.390	0.1	0.8390	0.7836	15.7507	0.7854	0.0451		2.558	0.1	0.2558	0.0137	
D1022092.D	73220-2	3.475	32889	10.17	0.1	1.017	0.7836	15.7507	0.7875	0.0545	0.0509	2.558	0.1	0.2558	0.0137	0.0137
D1022093.D	73220-3	3.475	32060	9.880	0.1	0.9880	0.7836	15.7507	0.7831	0.0532		2.558	0.1	0.2558	0.0138	
D1022094.D	73221-1	3.475	46548	15.01	0.1	1.501	0.7175	14.4181	0.7728	0.0820		2.558	0.1	0.2558	0.0140	
D1022095.D	73221-2	3.468	53627	17.52	0.1	1.752	0.7175	14.4181	0.776	0.0953	0.0935	2.558	0.1	0.2558	0.0139	0.0139
D1022096.D	73221-3	3.475	57707	18.97	0.1	1.897	0.7175	14.4181	0.7741	0.103		2.558	0.1	0.2558	0.0139	

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Egg Matrix Spikes and Blanks

Sample Name	RT	Area	Concentration of PFBS in Extract, On-column, ng/mL	Injection Volume, μ L	Recovery, %	Average Recovery, %	%RSD	LLOQ on Column, ng/mL	Dilution Factor On Column
MB-041202-1	0	0	< LLOQ	20				25.58	0.2
MB-041202-2	0	0	< LLOQ	20				25.58	0.2
MB-041202-3	0	0	< LLOQ	20				25.58	0.2
MB-041202-4	0	0	< LLOQ	20				25.58	0.2
LS-041202-1	3.467	403810	84.39	6	110%			51.15	0.33
LS-041202-2	3.468	401475	83.88	6	109%			51.15	0.33
LS-041202-3	3.467	395378	82.56	6	108%	109%	1.13%	51.15	0.33
MS-041202-1	3.439	2209971	102.7	4	100%			25.58	1
MS-041202-2	3.439	2380481	111.6	4	109%			25.58	1
MS-041202-3	3.44	2207419	102.6	4	100%	103%	4.89%	25.58	1
HS-041202-1	3.439	8680863	513.1	4	98%			25.58	1
HS-041202-2	3.439	8541773	501.9	4				25.58	1
HS-041202-3	3.439	7794102	444.2	4	87%	95%	7.60%	25.58	1

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Eggs, Lots B and G

File	Sample Name	Sample Info	Concentration of PFBS in Extract, On-column, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Egg (in homogenate), g	Weight of Water (in homogenate), g	Weight of Egg Homogenate (in solvent), g	Weight of ACN (in solvent), g	Weight of Aliquot, g	Concentration of PFBS in Original Egg Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor On-Column	LLOQ on Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1207077.D	72577-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.0012	5.9543	0.9980	9.8838	0.8924	< LLOQ	< LLOQ	25.58	0.2	5.116	1.60	
D1207078.D	72577-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.0012	5.9543	0.9980	9.8838	0.7300	< LLOQ	< LLOQ	25.58	0.2	5.116	1.52	1.61
D1207079.D	72577-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.0012	5.9543	0.9980	9.8838	0.8480	< LLOQ	< LLOQ	25.58	0.2	5.116	1.71	
D1207082.D	72578-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5650	6.2879	0.8758	9.8846	0.6780	< LLOQ	< LLOQ	25.58	0.2	5.116	1.82	
D1207083.D	72578-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5650	6.2879	0.8758	9.8846	0.7114	< LLOQ	< LLOQ	25.58	0.2	5.116	1.73	1.98
D1207084.D	72578-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5650	6.2879	0.8758	9.8846	0.5110	< LLOQ	< LLOQ	25.58	0.2	5.116	2.41	
D1207085.D	72579-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5424	7.0978	0.9079	9.8874	0.7505	< LLOQ	< LLOQ	25.58	0.2	5.116	1.69	
D1207086.D	72579-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5424	7.0978	0.9079	9.8874	0.7425	< LLOQ	< LLOQ	25.58	0.2	5.116	1.71	1.65
D1207088.D	72579-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5424	7.0978	0.9079	9.8874	0.7929	< LLOQ	< LLOQ	25.58	0.2	5.116	1.56	
D1207093.D	72580-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.9951	5.8411	0.9713	10.7977	0.7086	< LLOQ	< LLOQ	25.58	0.2	5.116	1.77	
D1207090.D	72580-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.9951	5.8411	0.9713	10.7977	0.7268	< LLOQ	< LLOQ	25.58	0.2	5.116	1.73	1.69
D1207091.D	72580-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.9951	5.8411	0.9713	10.7977	0.7051	< LLOQ	< LLOQ	25.58	0.2	5.116	1.58	
D1207092.D	72581-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.7825	6.6303	0.9615	9.8743	0.7468	< LLOQ	< LLOQ	25.58	0.2	5.116	1.53	
D1207093.D	72581-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.7825	6.6303	0.9615	9.8743	0.7507	< LLOQ	< LLOQ	25.58	0.2	5.116	1.52	1.55
D1207096.D	72581-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.7825	6.6303	0.9615	9.8743	0.7051	< LLOQ	< LLOQ	25.58	0.2	5.116	1.62	
D1207097.D	72582-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5167	6.4766	0.8704	9.9441	0.7911	< LLOQ	< LLOQ	25.58	0.2	5.116	1.62	
D1207098.D	72582-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5167	6.4766	0.8704	9.9441	0.7960	< LLOQ	< LLOQ	25.58	0.2	5.116	1.61	1.76
D1207099.D	72582-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.5167	6.4766	0.8704	9.9441	0.6184	< LLOQ	< LLOQ	25.58	0.2	5.116	2.05	
D1208030.D	72583-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	105.6	1	105.6	5.8621	6.0183	0.7157	9.9449	0.7303	8.73	8.17	51.15	1	51.15	4.23	
D1208031.D	72583-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	99.99	1	100.0	5.8621	6.0183	0.7157	9.9449	0.7405	8.15		51.15	1	51.15	4.17	4.07
D1208032.D	72583-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	101.8	1	101.8	5.8621	6.0183	0.7157	9.9449	0.8072	7.61		51.15	1	51.15	3.83	
D1208033.D	72584-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	115.1	1	115.1	5.9660	6.1055	0.8508	9.9789	0.7355	8.06		51.15	1	51.15	3.58	
D1208034.D	72584-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	105.3	1	105.3	5.9660	6.1055	0.8508	9.9789	0.7714	7.03	7.14	51.15	1	51.15	3.42	3.44
D1208036.D	72584-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	97.22	1	97.22	5.9660	6.1055	0.8508	9.9789	0.7911	6.33		51.15	1	51.15	3.33	
D1208037.D	72585-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	174.7	1	174.7	6.7819	7.0869	0.9511	9.9929	0.7871	10.4		51.15	1	51.15	3.05	
D1208038.D	72585-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	173.9	1	173.9	6.7819	7.0869	0.9511	9.9929	0.7593	10.8	10.8	51.15	1	51.15	3.17	3.08
D1208039.D	72585-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	189.3	1	189.3	6.7819	7.0869	0.9511	9.9929	0.7991	11.2		51.15	1	51.15	3.58	
D1208040.D	72586-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	99.41	1	99.41	5.5413	5.4921	0.8773	9.7948	0.6017	6.96		51.15	1	51.15	3.78	
D1208043.D	72586-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	95.72	1	95.72	5.5413	5.4921	0.8773	9.7948	0.6563	7.07	7.04	51.15	1	51.15	3.58	3.64
D1208044.D	72586-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	101.8	1	101.8	5.5413	5.4921	0.8773	9.7948	0.6964	7.08		51.15	1	51.15	3.56	
D1208045.D	72587-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	80.94	1	80.94	6.1868	6.0769	0.9380	9.5098	0.7745	4.81		51.15	1	51.15	2.92	
D1208046.D	72587-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	80.53	1	80.53	6.1868	6.0769	0.9380	9.5098	0.6862	5.18		51.15	1	51.15	3.29	3.18
D1208047.D	72587-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	76.62	1	76.62	6.1868	6.0769	0.9380	9.5098	0.6796	4.98	4.92	51.15	1	51.15	3.32	
D1208049.D	72588-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	90.72	1	90.72	6.0890	5.9833	0.9069	9.6087	0.6956	8.00		51.15	1	51.15	3.38	
D1208050.D	72588-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	93.04	1	93.04	6.0890	5.9833	0.9069	9.6087	0.7985	5.36	5.89	51.15	1	51.15	2.95	3.20
D1208051.D	72588-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	99.06	1	99.06	6.0890	5.9833	0.9069	9.6087	0.7215	6.31		51.15	1	51.15	3.26	
D1208052.D	72589-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	163.7	1	163.7	6.4026	6.2746	0.9768	9.7832	0.7738	9.23		51.15	1	51.15	2.88	
D1208053.D	72589-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	156.1	1	156.1	6.4026	6.2746	0.9768	9.7832	0.6868	9.91	9.59	51.15	1	51.15	3.25	3.06
D1208056.D	72590-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	162.0	1	162.0	6.4026	6.2746	0.9768	9.7832	0.7347	9.62		51.15	1	51.15	3.04	
D1208057.D	72590-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	292.6	1	292.6	5.3528	5.2959	0.9476	9.5770	0.8085	16.0		51.15	1	51.15	2.80	
D1208058.D	72590-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	299.7	1	299.7	5.3528	5.2959	0.9476	9.5770	0.7586	16.2	16.9	51.15	1	51.15	3.17	2.98
D1208060.D	72591-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	278.6	1	278.6	5.3528	5.2959	0.9476	9.5770	0.7586	16.2		51.15	1	51.15	2.98	
D1208062.D	72591-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	640.8	1	640.8	6.0191	5.9767	1.0008	9.9059	0.7533	36.9		51.15	1	51.15	2.95	
D1208063.D	72591-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	596.9	1	596.9	6.0191	5.9767	1.0008	9.9059	0.7192	36.0	36.5	51.15	1	51.15	3.09	3.00
D1208064.D	72592-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	630.8	1	630.8	6.0191	5.9767	1.0008	9.9059	0.7516	36.5		51.15	1	51.15	2.96	
D1208065.D	72592-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	249.0	1	249.0	6.6361	6.2336	0.8661	9.6492	0.7280	16.1		51.15	1	51.15	3.31	
D1208066.D	72592-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	232.1	1	232.1	6.6361	6.2336	0.8661	9.6492	0.7216	15.7	15.6	51.15	1	51.15	3.34	3.29
D1208069.D	72593-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	249.5	1	249.5	6.6361	6.2336	0.8661	9.6492	0.7489	15.7		51.15	1	51.15	3.22	
D1208070.D	72593-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	469.0	1	469.0	6.1262	6.0186	0.8771	9.7310	0.8044	28.0		51.15	1	51.15	3.05	
D1208071.D	72593-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	493.7	1	493.7	6.1262	6.0186	0.8771	9.7310	0.8055	29.4	28.6	51.15	1	51.15	3.05	3.05
D1208072.D	72594-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	474.7	1	474.7	6.1262	6.0186	0.8771	9.7310	0.7992	28.5		51.15	1	51.15	3.07	
D1208073.D	72594-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	239.8	1	239.8	6.9918	6.9682	0.9742	9.8456	0.8017	13.3		51.15	1	51.15	2.83	
D1208075.D	72594-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	229.8	1	229.8	6.9918	6.9682	0.9742	9.8456	0.8018	12.7	13.3	51.15	1	51.15	2.83	2.83
D1208076.D	72595-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	253.9	1	253.9	6.9918	6.9682	0.9742	9.8456	0.8040	14.0		51.15	1	51.15	2.67	
D1208077.D	72595-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	485.3	1	485.3	6.1803	6.1551	1.0233	9.7014	0.8000	25.4		51.15	1	51.15	2.68	
D1208078.D	72595-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	483.5	1	483.5	6.1803	6.1551	1.0233	9.7014	0.8034	25.2	25.2	51.15	1	51.15	2.66	2.67
			481.8	1	481.8	6.1803	6.1551	1.0233	9.7014	0.8038	25.1		51.15	1	51.15	2.66	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Quail Eggs, Lots B and G

File	Sample Name	Sample Info	Concentration of PFBS in Extract, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Egg (homogenate), g	Weight of Water (in homogenate), g	Weight of Egg (in solvent), g	Weight of ACN (in solvent), g	Weight of Aliquot, g	Concentration of PFBS in Original Egg Sample, ug/g	Average, ug/g	LLOQ On-Column, ng/mL	Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1208078.D	72596-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	462.0	1	462.0	6.9614	6.8616	0.8775	9.8844	0.8012	28.1	29.3	51.15	1	51.15	3.12
D1208082.D	72596-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	511.5	1	511.5	6.9614	6.8616	0.8775	9.8844	0.8005	31.1		51.15	1	51.15	3.11
D1208083.D	72596-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	487.7	1	487.7	6.9614	6.8616	0.8775	9.8844	0.7973	28.6		51.15	1	51.15	3.12
D1215028.D	72597-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	408.1	2	812.2	6.4044	6.4870	0.9059	9.7535	0.8006	48.1		51.15	2	102.3	3.03
D1215029.D	72597-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	388.0	2	776.1	6.4044	6.4870	0.9059	9.7535	0.8084	45.5		51.15	2	102.3	3.00
D1215030.D	72597-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	410.4	2	820.8	6.4044	6.4870	0.9059	9.7535	0.8100	48.0		51.15	2	102.3	3.01
D1215031.D	72598-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	359.5	2	718.9	6.5160	6.5751	0.9503	9.8197	0.8031	40.8		51.15	2	102.3	2.99
D1215032.D	72598-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	360.3	2	720.6	6.5160	6.5751	0.9503	9.8197	0.8027	40.9		51.15	2	102.3	2.90
D1215033.D	72598-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	353.5	2	707.0	6.5160	6.5751	0.9503	9.8197	0.8000	40.2		51.15	2	102.3	2.91
D1215034.D	72599-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	393.6	2	787.3	5.8762	6.0844	0.8634	10.0666	0.8006	50.7		51.15	2	102.3	3.29
D1215037.D	72599-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	416.2	2	832.4	5.8762	6.0844	0.8634	10.0666	0.8028	53.4		51.15	2	102.3	3.28
D1215038.D	72599-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	397.1	2	794.2	5.8762	6.0844	0.8634	10.0666	0.8006	50.5		51.15	2	102.3	3.26
D1215039.D	72600-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	325.6	2	651.1	5.9850	6.1942	0.9589	9.5706	0.8038	36.2		51.15	2	102.3	2.84
D1215043.D	72600-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	323.0	2	646.0	5.9850	6.1942	0.9589	9.5706	0.8006	35.8		51.15	2	102.3	2.83
D1215044.D	72600-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	335.2	2	670.5	5.9850	6.1942	0.9589	9.5706	0.8000	37.5		51.15	2	102.3	2.85
D1215045.D	72601-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	320.0	2	640.0	6.9960	7.1509	0.9637	10.2208	0.8051	37.3		51.15	2	102.3	2.98
D1215046.D	72601-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	321.4	2	642.8	6.9960	7.1509	0.9637	10.2208	0.8091	37.3		51.15	2	102.3	2.97
D1215047.D	72601-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	315.3	2	630.6	6.9960	7.1509	0.9637	10.2208	0.8021	37.0		51.15	2	102.3	2.98
D1215050.D	72602-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	493.3	4	1973.3	7.0453	7.1335	0.9192	9.8949	0.8012	117		51.15	4	204.6	3.02
D1215051.D	72602-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	423.3	4	1693.3	7.0453	7.1335	0.9192	9.8949	0.8027	123		51.15	4	204.6	3.02
D1215052.D	72602-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	489.7	4	1958.7	7.0453	7.1335	0.9192	9.8949	0.8057	115		51.15	4	204.6	3.01
D1215053.D	72603-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	320.3	2	640.7	6.2094	6.5864	0.8936	9.7780	0.7980	39.5		51.15	2	102.3	3.15
D1215054.D	72603-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	308.1	2	616.3	6.2094	6.5864	0.8936	9.7780	0.8060	37.6		51.15	2	102.3	3.12
D1215058.D	72604-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	322.2	2	644.5	6.2094	6.5864	0.8936	9.7780	0.8039	39.5		51.15	2	102.3	3.13
D1215059.D	72604-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	298.8	2	597.6	6.4870	6.5151	0.9313	9.8760	0.8002	34.7		51.15	2	102.3	2.97
D1215060.D	72604-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	293.5	2	587.0	6.4870	6.5151	0.9313	9.8760	0.7964	34.3		51.15	2	102.3	2.99
D1215061.D	72604-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	278.4	2	556.8	6.4870	6.5151	0.9313	9.8760	0.8019	32.3		51.15	2	102.3	2.97
D1207046.D	72727-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.3847	6.0637	1.2811	9.6918	0.7134	< LLOQ	< LLOQ	25.58	0.2	5.116	1.31
D1207047.D	72727-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.3847	6.0637	1.2811	9.6918	0.7791	< LLOQ	< LLOQ	25.58	0.2	5.116	1.20
D1207049.D	72727-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.3847	6.0637	1.2811	9.6918	0.7899	< LLOQ	< LLOQ	25.58	0.2	5.116	1.17
D1207050.D	72728-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.3937	6.1000	0.9772	9.5684	0.8017	< LLOQ	< LLOQ	25.58	0.2	5.116	1.47
D1207051.D	72728-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.3937	6.1000	0.9772	9.5684	0.7918	< LLOQ	< LLOQ	25.58	0.2	5.116	1.49
D1207052.D	72728-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.3937	6.1000	0.9772	9.5684	0.8084	< LLOQ	< LLOQ	25.58	0.2	5.116	1.45
D1207053.D	72729-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	4.8310	5.7115	1.1197	9.6822	0.8010	< LLOQ	< LLOQ	25.58	0.2	5.116	1.34
D1207056.D	72729-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	4.8310	5.7115	1.1197	9.6822	0.8030	< LLOQ	< LLOQ	25.58	0.2	5.116	1.34
D1207057.D	72729-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	4.8310	5.7115	1.1197	9.6822	0.7961	< LLOQ	< LLOQ	25.58	0.2	5.116	1.35
D1207058.D	72730-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	7.1333	6.1762	1.0097	10.0317	0.8005	< LLOQ	< LLOQ	25.58	0.2	5.116	1.30
D1207059.D	72730-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	7.1333	6.1762	1.0097	10.0317	0.7964	< LLOQ	< LLOQ	25.58	0.2	5.116	1.31
D1207060.D	72730-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	7.1333	6.1762	1.0097	10.0317	0.7912	< LLOQ	< LLOQ	25.58	0.2	5.116	1.32
D1207062.D	72731-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.4336	5.8077	1.0236	9.3654	0.8000	< LLOQ	< LLOQ	25.58	0.2	5.116	1.34
D1207063.D	72731-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.4336	5.8077	1.0236	9.3654	0.7178	< LLOQ	< LLOQ	25.58	0.2	5.116	1.50
D1207064.D	72731-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.4336	5.8077	1.0236	9.3654	0.7948	< LLOQ	< LLOQ	25.58	0.2	5.116	1.35
D1207065.D	72732-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.1340	5.8360	1.3093	9.3674	0.7771	< LLOQ	< LLOQ	25.58	0.2	5.116	1.15
D1207066.D	72732-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.1340	5.8360	1.3093	9.3674	0.7818	< LLOQ	< LLOQ	25.58	0.2	5.116	1.14
D1207069.D	72732-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.1340	5.8360	1.3093	9.3674	0.7439	< LLOQ	< LLOQ	25.58	0.2	5.116	1.20
D1207070.D	72733-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.6345	5.0946	1.1424	9.2504	0.7981	< LLOQ	< LLOQ	25.58	0.2	5.116	1.11
D1207071.D	72733-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.6345	5.0946	1.1424	9.2504	0.8030	< LLOQ	< LLOQ	25.58	0.2	5.116	1.10
D1207072.D	72733-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	5.6345	5.0946	1.1424	9.2504	0.7989	< LLOQ	< LLOQ	25.58	0.2	5.116	1.11
D1207073.D	72734-1	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.2556	5.5628	1.3371	9.3602	0.7919	< LLOQ	< LLOQ	25.58	0.2	5.116	0.976
D1207075.D	72734-2	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.2556	5.5628	1.3371	9.3602	0.7971	< LLOQ	< LLOQ	25.58	0.2	5.116	0.970
D1207076.D	72734-3	0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	< LLOQ	0.2	< LLOQ	6.2556	5.5628	1.3371	9.3602	0.7993	< LLOQ	< LLOQ	25.58	0.2	5.116	0.967
D1209028.D	72735-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	247.8	1	247.8	5.7086	5.8385	1.0697	9.6358	0.7977	12.6		51.15	1	51.15	2.60
D1209029.D	72735-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	233.3	1	233.3	5.7086	5.8385	1.0697	9.6358	0.7964	11.9		51.15	1	51.15	2.60
D1209030.D	72735-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	250.7	1	250.7	5.7086	5.8385	1.0697	9.6358	0.8125	12.5		51.15	1	51.15	2.55
D1209031.D	72736-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	247.8	1	247.8	5.2914	5.6720	1.0491	9.4826	0.7997	12.9		51.15	1	51.15	2.66
D1209032.D	72736-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	248.5	1	248.5	5.2914	5.6720	1.0491	9.4826	0.8060	12.8		51.15	1	51.15	2.64
D1209034.D	72736-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	220.1	1	220.1	5.2914	5.6720	1.0491	9.4826	0.7720	11.9		51.15	1	51.15	2.76
D1209035.D	72737-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	251.4	1	251.4	5.0295	5.5232	1.0820	9.5708	0.8007	13.0		51.15	1	51.15	2.64
D1209036.D	72737-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	266.0	1	266.0	5.0295	5.5232	1.0820	9.5708	0.8082	13.6		51.15	1	51.15	2.61
D1209037.D	72737-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	254.0	1	254.0	5.0295	5.5232	1.0820	9.5708	0.8146	12.9		51.15	1	51.15	2.59

Quail Eggs, Lots B and G

File	Sample Name	Sample Info	Concentration of PFBS in Extract, ng/mL	On-Column Dilution Factor	Concentration of PFBS in Extract, ng/mL	Weight of Egg (in homogenate), g	Weight of Water (in homogenate), g	Weight of Egg (in solvent precipitate), g	Weight of ACN (in solvent precipitate), g	Weight of Aliquot, g	Concentration of PFBS in Original Egg Sample, ug/g	Average, ug/g	LLOQ on Column, ng/mL	Dilution Factor	LLOQ On Column, Corrected for Dilution Factor	LLOQ in Matrix, ug/g	Average, ug/g
D1209038.D	72738-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	300.1	1	300.1	6.9734	6.7848	1.3204	9.5125	0.8005	12.1		51.15	1	51.15	2.07	
D1209041.D	72738-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	306.5	1	306.5	6.9734	6.7848	1.3204	9.5125	0.7945	12.5		51.15	1	51.15	2.08	
D1209042.D	72738-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	290.5	1	290.5	6.9734	6.7848	1.3204	9.5125	0.8075	11.6	12.1	51.15	1	51.15	2.05	2.07
D1209043.D	72739-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	619.9	1	619.9	6.3458	5.7451	1.2793	10.3128	0.8042	26.6		51.15	1	51.15	2.20	
D1209044.D	72739-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	592.9	1	592.9	6.3458	5.7451	1.2793	10.3128	0.8069	25.4		51.15	1	51.15	2.19	
D1209045.D	72739-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	618.9	1	618.9	6.3458	5.7451	1.2793	10.3128	0.8036	26.6	26.2	51.15	1	51.15	2.20	2.19
D1209047.D	72740-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	237.4	1	237.4	7.2935	5.9338	1.2529	9.9761	0.8073	9.56		51.15	1	51.15	2.06	
D1209048.D	72740-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	256.2	1	256.2	7.2935	5.9338	1.2529	9.9761	0.8067	10.3		51.15	1	51.15	2.06	
D1209049.D	72740-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	265.0	1	265.0	7.2935	5.9338	1.2529	9.9761	0.8002	10.8	10.2	51.15	1	51.15	2.08	2.07
D1209050.D	72741-1	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	145.6	1	145.6	5.7561	6.1724	0.9924	9.6734	0.8000	8.11		51.15	1	51.15	2.85	
D1209051.D	72741-2	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	149.6	1	149.6	5.7561	6.1724	0.9924	9.6734	0.7974	8.38		51.15	1	51.15	2.86	
D1209054.D	72741-3	100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	158.4	1	158.4	5.7561	6.1724	0.9924	9.6734	0.7983	8.84	8.44	51.15	1	51.15	2.85	2.85
D1209055.D	72742-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	382.2	1	382.2	5.6233	5.8898	1.2184	9.1957	0.8095	16.5		51.15	1	51.15	2.21	
D1209056.D	72742-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	395.7	1	395.7	5.6233	5.8898	1.2184	9.1957	0.7892	17.5		51.15	1	51.15	2.27	
D1209057.D	72742-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	377.4	1	377.4	5.6233	5.8898	1.2184	9.1957	0.8039	16.4	18.8	51.15	1	51.15	2.23	2.24
D1209058.D	72743-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	487.6	1	487.6	5.3228	5.6111	1.1314	9.5154	0.7970	23.7		51.15	1	51.15	2.48	
D1209060.D	72743-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	430.1	1	430.1	5.3228	5.6111	1.1314	9.5154	0.7916	21.0	21.9	51.15	1	51.15	2.50	2.48
D1209061.D	72743-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	436.0	1	436.0	5.3228	5.6111	1.1314	9.5154	0.8038	21.0		51.15	1	51.15	2.46	
D1215123.D	72744-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	873.8	2	1747	5.5748	5.7430	1.4015	9.9304	0.8046	71.3		51.15	2	102.3	2.09	
D1215124.D	72744-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	884.7	2	1769	5.5748	5.7430	1.4015	9.9304	0.7980	72.8	73.1	51.15	2	102.3	2.10	2.13
D1215128.D	72744-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	879.9	2	1742	5.5748	5.7430	1.4015	9.9304	0.7958	75.3		51.15	2	102.3	2.21	
D1209067.D	72745-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	350.1	1	350.1	6.3395	5.3789	1.1076	10.0185	0.8049	16.2		51.15	1	51.15	2.36	
D1209068.D	72745-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	337.7	1	337.7	6.3395	5.3789	1.1076	10.0185	0.7990	15.7	16.1	51.15	1	51.15	2.38	2.38
D1209069.D	72745-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	350.0	1	350.0	6.3395	5.3789	1.1076	10.0185	0.7946	16.4		51.15	1	51.15	2.39	
D1209070.D	72746-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	612.2	1	612.2	5.7476	5.9349	1.2561	9.7351	0.8021	27.1		51.15	1	51.15	2.27	
D1209071.D	72746-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	665.3	1	665.3	5.7476	5.9349	1.2561	9.7351	0.8052	29.4		51.15	1	51.15	2.26	
D1209073.D	72746-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	596.0	1	596.0	5.7476	5.9349	1.2561	9.7351	0.8029	28.4	27.6	51.15	1	51.15	2.27	2.26
D1209074.D	72747-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	586.3	1	586.3	5.3841	6.0705	1.1377	9.6130	0.8026	29.4		51.15	1	51.15	2.56	
D1209075.D	72747-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	588.8	1	588.8	5.3841	6.0705	1.1377	9.6130	0.8023	29.5		51.15	1	51.15	2.56	
D1209076.D	72747-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	564.1	1	564.1	5.3841	6.0705	1.1377	9.6130	0.8056	28.2	29.0	51.15	1	51.15	2.55	2.56
D1209077.D	72748-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	519.0	1	519.0	4.4578	5.1991	0.9626	9.4078	0.7924	30.6		51.15	1	51.15	3.01	
D1209080.D	72748-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	577.9	1	577.9	4.4578	5.1991	0.9626	9.4078	0.7914	34.1	31.1	51.15	1	51.15	3.02	3.01
D1209081.D	72748-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	487.5	1	487.5	4.4578	5.1991	0.9626	9.4078	0.7953	28.6		51.15	1	51.15	3.00	
D1209082.D	72749-1	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	375.4	1	375.4	5.1541	5.9287	1.0494	9.7273	0.7578	21.9		51.15	1	51.15	2.98	
D1209083.D	72749-2	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	361.0	1	361.0	5.1541	5.9287	1.0494	9.7273	0.7906	20.2	21.1	51.15	1	51.15	2.86	2.90
D1209084.D	72749-3	300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	379.7	1	379.7	5.1541	5.9287	1.0494	9.7273	0.7906	21.2		51.15	1	51.15	2.86	
D1215062.D	72750-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	717.0	2	1434	6.3477	5.8498	1.1579	9.5206	0.8074	63.0		51.15	2	102.3	2.25	
D1215065.D	72750-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	713.5	2	1427	6.3477	5.8498	1.1579	9.5206	0.7981	63.4	62.7	51.15	2	102.3	2.27	2.26
D1215066.D	72750-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	695.4	2	1391	6.3477	5.8498	1.1579	9.5206	0.7989	61.7		51.15	2	102.3	2.27	
D1215067.D	72751-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	601.5	4	2406	5.5334	5.9022	1.0567	10.3738	0.7928	136		51.15	4	204.6	2.88	
D1215068.D	72751-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	602.8	4	2411	5.5334	5.9022	1.0567	10.3738	0.7903	136		51.15	4	204.6	2.89	
D1215069.D	72751-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	618.7	4	2475	5.5334	5.9022	1.0567	10.3738	0.7962	139	137	51.15	4	204.6	2.87	2.88
D1215088.D	72752-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	627.3	4	2509	6.7625	5.7876	1.0017	9.5982	0.8009	123		51.15	4	204.6	2.51	
D1215089.D	72752-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	642.3	4	2569	6.7625	5.7876	1.0017	9.5982	0.8012	125		51.15	4	204.6	2.48	
D1215100.D	72752-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	619.4	4	2478	6.7625	5.7876	1.0017	9.5982	0.8012	121	123	51.15	4	204.6	2.51	2.50
D1215101.D	72753-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	643.6	4	2574	5.2728	5.5241	1.0834	9.4240	0.8009	128		51.15	4	204.6	2.54	
D1215102.D	72753-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	589.1	4	2356	5.2728	5.5241	1.0834	9.4240	0.8028	117		51.15	4	204.6	2.53	
D1215105.D	72753-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	576.9	4	2307	5.2728	5.5241	1.0834	9.4240	0.8091	113	119	51.15	4	204.6	2.51	2.53
D1215106.D	72754-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	533.9	2	1068	5.5138	5.5448	1.0660	9.1952	0.8017	51.4		51.15	2	102.3	2.46	
D1215107.D	72754-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	553.8	2	1107	5.5138	5.5448	1.0660	9.1952	0.8032	53.2		51.15	2	102.3	2.46	
D1215108.D	72754-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	532.2	2	1064	5.5138	5.5448	1.0660	9.1952	0.7745	53.1	52.6	51.15	2	102.3	2.45	2.49
D1215109.D	72755-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	917.7	2	1835	5.0282	5.0125	1.1070	9.4987	0.7979	88.0		51.15	2	102.3	2.45	
D1215113.D	72755-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	878.4	2	1757	5.0282	5.0125	1.1070	9.4987	0.7883	85.3	89.6	51.15	2	102.3	2.48	2.50
D1215114.D	72755-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	954.1	2	1908	5.0282	5.0125	1.1070	9.4987	0.7637	95.6		51.15	2	102.3	2.55	
D1215115.D	72756-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	643.4	2	1287	5.8875	6.1236	1.1471	9.3925	0.7949	61.8		51.15	2	102.3	2.46	
D1215116.D	72756-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	627.4	2	1255	5.8875	6.1236	1.1471	9.3925	0.8023	59.7	61.4	51.15	2	102.3	2.43	2.48
D1215117.D	72756-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	628.0	2	1255	5.8875	6.1236	1.1471	9.3925	0.7633	62.8		51.15	2	102.3	2.56	
D1215120.D	72757-1	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	523.0	4	2092	7.4389	6.4798	1.1131	9.0444	0.7974	89.6		51.15	4	204.6	2.18	
D1215121.D	72757-2	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	560.4	4	2241	7.4389	6.4798	1.1131	9.0444	0.8005	95.6	95.1	51.15	4	204.6	2.18	2.19
D1215122.D	72757-3	900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE	582.8	4	2331	7.4389	6.4798	1.1131	9.0444	0.7950	100		51.15	4	204.6	2.20	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Extracted Serum Calibration

File	Sample Name	Sample Info	Compound Name	RT	Area	Amount, ng/mL	Recovery, %
D0902016.D	040901-5ppb	EC-040901; 5 ppb extracted curve	PFBS (299)	1.915	164156	5.258	103%
D0902017.D	040901-10ppb	EC-040901; 10 ppb extracted curve	PFBS (299)	1.922	316861	10.89	106%
D0902018.D	040901-25ppb	EC-040901; 25 ppb extracted curve	PFBS (299)	1.922	741202	26.73	104%
D0902019.D	040901-50ppb	EC-040901; 50 ppb extracted curve	PFBS (299)	1.915	1384835	51.32	100%
D0902020.D	040901-75ppb	EC-040901; 75 ppb extracted curve	PFBS (299)	1.929	1912327	72.02	94%
D0902021.D	040901-100ppb	EC-040901; 100 ppb extracted curve	PFBS (299)	1.929	2703477	104.1	102%
D0902022.D	040901-250ppb	EC-040901; 250 ppb extracted curve	PFBS (299)	1.922	6042810	257.0	100%
D0902023.D	040901-500ppb	EC-040901; 500 ppb extracted curve	PFBS (299)	1.929	10004778	511.1	100%
D0902024.D	040901-750ppb	EC-040901; 750 ppb extracted curve	PFBS (299)	1.922	13129533	>ULOQ	
D0902025.D	040901-1000ppb	EC-040901; 1000 ppb extracted curve	PFBS (299)	1.901	15905851	>ULOQ	
D0907016.D	040901-5ppb	EC-040901; 5 ppb extracted curve	PFBS (299)	3.279	244112	4.517	88%
D0907017.D	040901-10ppb	EC-040901; 10 ppb extracted curve	PFBS (299)	3.279	465475	10.37	101%
D0907018.D	040901-25ppb	EC-040901; 25 ppb extracted curve	PFBS (299)	3.279	1093039	27.19	106%
D0907019.D	040901-50ppb	EC-040901; 50 ppb extracted curve	PFBS (299)	3.279	1983810	51.68	101%
D0907020.D	040901-75ppb	EC-040901; 75 ppb extracted curve	PFBS (299)	3.28	2706774	72.11	94%
D0907021.D	040901-100ppb	EC-040901; 100 ppb extracted curve	PFBS (299)	3.279	3840497	105.3	103%
D0907022.D	040901-250ppb	EC-040901; 250 ppb extracted curve	PFBS (299)	3.279	8365781	255.8	100%
D0907023.D	040901-500ppb	EC-040901; 500 ppb extracted curve	PFBS (299)	3.279	13726732	511.4	100%
D0907024.D	040901-750ppb	EC-040901; 750 ppb extracted curve	PFBS (299)	3.279	18090283	> ULOQ	
D0907025.D	040901-1000ppb	EC-040901; 1000 ppb extracted curve	PFBS (299)	3.279	22046841	> ULOQ	
D0908016.D	040901-5ppb	EC-040901; 5 ppb extracted curve	PFBS (299)	3.28	202099	4.458	87%
D0908017.D	040901-10ppb	EC-040901; 10 ppb extracted curve	PFBS (299)	3.279	382592	10.18	99%
D0908018.D	040901-25ppb	EC-040901; 25 ppb extracted curve	PFBS (299)	3.279	905873	26.97	105%
D0908019.D	040901-50ppb	EC-040901; 50 ppb extracted curve	PFBS (299)	3.279	1652395	51.53	101%
D0908020.D	040901-75ppb	EC-040901; 75 ppb extracted curve	PFBS (299)	3.279	2291043	73.14	95%
D0908021.D	040901-100ppb	EC-040901; 100 ppb extracted curve	PFBS (299)	3.279	3206354	105.2	103%
D0908022.D	040901-250ppb	EC-040901; 250 ppb extracted curve	PFBS (299)	3.28	6997586	255.4	100%
D0908023.D	040901-500ppb	EC-040901; 500 ppb extracted curve	PFBS (299)	3.279	11563346	511.6	100%
D0908024.D	040901-750ppb	EC-040901; 750 ppb extracted curve	PFBS (299)	3.279	15318841	> ULOQ	
D0908025.D	040901-1000ppb	EC-040901; 1000 ppb extracted curve	PFBS (299)	3.279	18769611	> ULOQ	

Report EC09-0509

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

7/4/09: A Reproduction Study with the Northern Bobwhite

Extracted Serum Calibration

File	Sample Name	Sample Info	Compound Name	RT	Area	Amount, ng/mL	Recovery, %
3M Environmental Laboratory	D0910016.D	040901-5ppb	EC-040901; 5 ppb extracted curve				
	D0910017.D	040901-10ppb	EC-040901; 10 ppb extracted curve	PFBS (299)	3.273	130592	< LLOQ
	D0910018.D	040901-25ppb	EC-040901; 25 ppb extracted curve	PFBS (299)	3.272	244823	< LLOQ
	D0910019.D	040901-50ppb	EC-040901; 50 ppb extracted curve	PFBS (299)	3.273	584310	23.95
	D0910020.D	040901-75ppb	EC-040901; 75 ppb extracted curve	PFBS (299)	3.272	1074139	50.04
	D0910021.D	040901-100ppb	EC-040901; 100 ppb extracted curve	PFBS (299)	3.266	1501286	73.27
	D0910022.D	040901-250ppb	EC-040901; 250 ppb extracted curve	PFBS (299)	3.272	2111367	107.3
	D0910023.D	040901-500ppb	EC-040901; 500 ppb extracted curve	PFBS (299)	3.272	4652274	262.2
	D0910024.D	040901-750ppb	EC-040901; 750 ppb extracted curve	PFBS (299)	3.273	7826002	501.9
	D0910025.D	040901-1000ppb	EC-040901; 1000 ppb extracted curve	PFBS (299)	3.273	10298002	772.5
				PFBS (299)	3.272	12673814	> ULOQ
	D0914016.D	040901-5ppb	EC-040901; 5 ppb extracted curve	PFBS (299)	3.258	108064	< LLOQ
	D0914017.D	040901-10ppb	EC-040901; 10 ppb extracted curve	PFBS (299)	3.258	203150	< LLOQ
	D0914018.D	040901-25ppb	EC-040901; 25 ppb extracted curve	PFBS (299)	3.258	484794	23.23
	D0914019.D	040901-50ppb	EC-040901; 50 ppb extracted curve	PFBS (299)	3.258	886733	49.39
	D0914020.D	040901-75ppb	EC-040901; 75 ppb extracted curve	PFBS (299)	3.258	1246916	73.34
	D0914021.D	040901-100ppb	EC-040901; 100 ppb extracted curve	PFBS (299)	3.259	1755168	108.0
	D0914022.D	040901-250ppb	EC-040901; 250 ppb extracted curve	PFBS (299)	3.258	3860219	264.7
	D0914023.D	040901-500ppb	EC-040901; 500 ppb extracted curve	PFBS (299)	3.258	6411109	498.5
	D0914024.D	040901-750ppb	EC-040901; 750 ppb extracted curve	PFBS (299)	3.259	8514373	774.2
	D0914025.D	040901-1000ppb	EC-040901; 1000 ppb extracted curve	PFBS (299)	3.258	10501469	> ULOQ
	D0917016.D	EC-040901-5ppb	Extracted Curve; 5ppb; Serum; 01 Sept 04	PFBS (299)	3.259	74738	< LLOQ
	D0917017.D	EC-040901-10ppb	Extracted Curve; 10ppb; Serum; 01 Sept 04	PFBS (299)	3.258	143950	< LLOQ
	D0917018.D	EC-040901-25ppb	Extracted Curve; 25ppb; Serum; 01 Sept 04	PFBS (299)	3.258	351259	< LLOQ
	D0917019.D	EC-040901-50ppb	Extracted Curve; 50ppb; Serum; 01 Sept 04	PFBS (299)	3.258	665138	44.32
	D0917020.D	EC-040901-75ppb	Extracted Curve; 75ppb; Serum; 01 Sept 04	PFBS (299)	3.259	936286	69.92
	D0917021.D	EC-040901-100ppb	Extracted Curve; 100ppb; Serum; 01 Sept 04	PFBS (299)	3.259	1319943	106.8
	D0917022.D	EC-040901-250ppb	Extracted Curve; 250ppb; Serum; 01 Sept 04	PFBS (299)	3.259	2955185	274.7
	D0917023.D	EC-040901-500ppb	Extracted Curve; 500ppb; Serum; 01 Sept 04	PFBS (299)	3.258	4955921	511.3
	D0917024.D	EC-040901-750ppb	Extracted Curve; 750ppb; Serum; 01 Sept 04	PFBS (299)	3.258	6568909	742.7
	D0917025.D	EC040901-1000ppb	Extracted Curve; 1000ppb; Serum; 01 Sept 04	PFBS (299)	3.258	8141449	1040
	D0917105.D	EC-040901-5ppb	Extracted Curve; 5ppb; Serum; 01 Sept 04	PFBS (299)	3.272	68746	5.238
	D0917106.D	EC-040901-10ppb	Extracted Curve; 10ppb; Serum; 01 Sept 04	PFBS (299)	3.273	135430	10.72
	D0917107.D	EC-040901-25ppb	Extracted Curve; 25ppb; Serum; 01 Sept 04	PFBS (299)	3.273	330925	27.00
	D0917108.D	EC-040901-50ppb	Extracted Curve; 50ppb; Serum; 01 Sept 04	PFBS (299)	3.272	610635	50.81
	D0917109.D	EC-040901-75ppb	Extracted Curve; 75ppb; Serum; 01 Sept 04	PFBS (299)	3.272	854927	72.15
	D0917110.D	EC-040901-100ppb	Extracted Curve; 100ppb; Serum; 01 Sept 04	PFBS (299)	3.273	1214751	104.6
	D0917111.D	EC-040901-250ppb	Extracted Curve; 250ppb; Serum; 01 Sept 04	PFBS (299)	3.272	2714174	256.7
	D0917112.D	EC-040901-500ppb	Extracted Curve; 500ppb; Serum; 01 Sept 04	PFBS (299)	3.273	4533966	511.2
	D0917113.D	EC-040901-750ppb	Extracted Curve; 750ppb; Serum; 01 Sept 04	PFBS (299)	3.272	5992791	> ULOQ
	D0917114.D	EC040901-1000ppb	Extracted Curve; 1000ppb; Serum; 01 Sept 04	PFBS (299)	3.272	7353470	> ULOQ

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Phase: Analytical
745-A Reproduction Study with the Northern Bobwhite
Determination of PFBS in Northern Bobwhite Tissues

Extracted Serum Calibration

File	Sample Name	Sample Info	Compound Name	RT	Area	Amount, ng/mL	Recovery, %
3M Environmental Laboratory	D0921016.D	EC-040901-5ppb	Extracted Curve; 5ppb; Serum; 01 Sept 04	PFBS (299)	3.258	47780	< LLOQ
	D0921017.D	EC-040901-10ppb	Extracted Curve; 10ppb; Serum; 01 Sept 04	PFBS (299)	3.258	91783	< LLOQ
	D0921018.D	EC-040901-25ppb	Extracted Curve; 25ppb; Serum; 01 Sept 04	PFBS (299)	3.259	220434	24.62 96%
	D0921019.D	EC-040901-50ppb	Extracted Curve; 50ppb; Serum; 01 Sept 04	PFBS (299)	3.258	407707	50.15 98%
	D0921020.D	EC-040901-75ppb	Extracted Curve; 75ppb; Serum; 01 Sept 04	PFBS (299)	3.258	570808	72.82 95%
	D0921021.D	EC-040901-100ppb	Extracted Curve; 100ppb; Serum; 01 Sept 04	PFBS (299)	3.258	802705	105.8 103%
	D0921022.D	EC-040901-250ppb	Extracted Curve; 250ppb; Serum; 01 Sept 04	PFBS (299)	3.258	1827741	264.3 103%
	D0921023.D	EC-040901-500ppb	Extracted Curve; 500ppb; Serum; 01 Sept 04	PFBS (299)	3.258	3082655	500.7 98%
	D0921024.D	EC-040901-750ppb	Extracted Curve; 750ppb; Serum; 01 Sept 04	PFBS (299)	3.258	4119449	772.6 101%
	D0921025.D	EC040901-1000ppb	Extracted Curve; 1000ppb; Serum; 01 Sept 04	PFBS (299)	3.252	5103755	> ULOQ
Phase: Analytical Determination of PFBS in Northern	D0922016.D	EC-040901-5ppb	Extracted Curve; 5ppb; Serum; 01 Sept 04	PFBS (299)	3.259	54465	< LLOQ
	D0922017.D	EC-040901-10ppb	Extracted Curve; 10ppb; Serum; 01 Sept 04	PFBS (299)	3.258	103369	< LLOQ
	D0922018.D	EC-040901-25ppb	Extracted Curve; 25ppb; Serum; 01 Sept 04	PFBS (299)	3.258	247708	21.18 83%
	D0922019.D	EC-040901-50ppb	Extracted Curve; 50ppb; Serum; 01 Sept 04	PFBS (299)	3.258	451778	48.05 94%
	D0922020.D	EC-040901-75ppb	Extracted Curve; 75ppb; Serum; 01 Sept 04	PFBS (299)	3.258	633838	72.44 94%
	D0922021.D	EC-040901-100ppb	Extracted Curve; 100ppb; Serum; 01 Sept 04	PFBS (299)	3.258	892808	107.9 105%
	D0922022.D	EC-040901-250ppb	Extracted Curve; 250ppb; Serum; 01 Sept 04	PFBS (299)	3.258	2003093	270.9 106%
	D0922023.D	EC-040901-500ppb	Extracted Curve; 500ppb; Serum; 01 Sept 04	PFBS (299)	3.258	3386705	510.1 100%
	D0922024.D	EC-040901-750ppb	Extracted Curve; 750ppb; Serum; 01 Sept 04	PFBS (299)	3.258	4465383	745.7 97%
	D0922025.D	EC040901-1000ppb	Extracted Curve; 1000ppb; Serum; 01 Sept 04	PFBS (299)	3.258	5416611	1040 102%
Results Summary							
%RSD Over 9 Calibrations (Listed Above)							
	EC-040901-5ppb	Extracted Curve; 5ppb; Serum; 01 Sept 04		9.0%			
	EC-040901-10ppb	Extracted Curve; 10ppb; Serum; 01 Sept 04		3.1%			
	EC-040901-25ppb	Extracted Curve; 25ppb; Serum; 01 Sept 04		8.8%			
	EC-040901-50ppb	Extracted Curve; 50ppb; Serum; 01 Sept 04		4.7%			
	EC-040901-75ppb	Extracted Curve; 75ppb; Serum; 01 Sept 04		1.4%			
	EC-040901-100ppb	Extracted Curve; 100ppb; Serum; 01 Sept 04		1.4%			
	EC-040901-250ppb	Extracted Curve; 250ppb; Serum; 01 Sept 04		2.7%			
	EC-040901-500ppb	Extracted Curve; 500ppb; Serum; 01 Sept 04		1.1%			
	EC-040901-750ppb	Extracted Curve; 750ppb; Serum; 01 Sept 04		2.1%			
	EC040901-1000ppb	Extracted Curve; 1000ppb; Serum; 01 Sept 04		0.015%			

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues
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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Extracted Liver Calibration

File	Sample Name	Sample Info	Compound Name	RT	Area	Amount PFBS, ng/mL	Recovery, %
D1004014.D	EC-041004-5ppb	Extracted Curve; 5ppb; Liver; 4 Oct 04	PFBS (299)	3.265	43498	< LLOQ	
D1004015.D	EC-041004-10ppb	Extracted Curve; 10ppb; Liver; 4 Oct 04	PFBS (299)	3.335	86532	< LLOQ	
D1004016.D	EC-041004-25ppb	Extracted Curve; 25ppb; Liver; 4 Oct 04	PFBS (299)	3.265	237796	23.90	93%
D1004017.D	EC-041004-50ppb	Extracted Curve; 50ppb; Liver; 4 Oct 04	PFBS (299)	3.265	478465	53.27	104%
D1004018.D	EC-041004-75ppb	Extracted Curve; 75ppb; Liver; 4 Oct 04	PFBS (299)	3.265	708799	82.37	107%
D1004019.D	EC-041004-100ppb	Extracted Curve; 100ppb; Liver; 4 Oct 04	PFBS (299)	3.272	806519	95.03	93%
D1004020.D	EC-041004-250ppb	Extracted Curve; 250ppb; Liver; 4 Oct 04	PFBS (299)	3.265	1924274	257.3	101%
D1004021.D	EC-041004-500ppb	Extracted Curve; 500ppb; Liver; 4 Oct 04	PFBS (299)	3.265	3170525	511.2	100%
D1004022.D	EC-041004-750ppb	Extracted Curve; 750ppb; Liver; 4 Oct 04	PFBS (299)	3.265	4757997	> ULOQ	
D1004023.D	EC-041004-1ppm	Extracted Curve; 1ppm; Liver; 4 Oct 04	PFBS (299)	3.273	6070909	> ULOQ	
D1008016.D	EC-041004-5ppb	Extracted Curve; 5ppb; Liver; 04 Oct 04	PFBS (299)	3.439	63549	5.358	105%
D1008017.D	EC-041004-10ppb	Extracted Curve; 10ppb; Liver; 04 Oct 04	PFBS (299)	3.446	140546	10.08	99%
D1008018.D	EC-041004-25ppb	Extracted Curve; 25ppb; Liver; 04 Oct 04	PFBS (299)	3.439	372023	25.25	99%
D1008019.D	EC-041004-50ppb	Extracted Curve; 50ppb; Liver; 04 Oct 04	PFBS (299)	3.439	716092	51.51	101%
D1008020.D	EC-041004-75ppb	Extracted Curve; 75ppb; Liver; 04 Oct 04	PFBS (299)	3.439	978098	76.65	100%
D1008021.D	EC-041004-100ppb	Extracted Curve; 100ppb; Liver; 04 Oct 04	PFBS (299)	3.447	1177030	102.2	100%
D1008022.D	EC-041004-250ppb	Extracted Curve; 250ppb; Liver; 04 Oct 04	PFBS (299)	3.439	2602783	> ULOQ	
D1008023.D	EC-041004-500ppb	Extracted Curve; 500ppb; Liver; 04 Oct 04	PFBS (299)	3.447	3985908	> ULOQ	
D1008024.D	EC-041004-750ppb	Extracted Curve; 750ppb; Liver; 04 Oct 04	PFBS (299)	3.446	5681577	> ULOQ	
D1008025.D	EC041004-1000ppb	Extracted Curve; 1000ppb; Liver; 04 Oct 04	PFBS (299)	3.439	6937696	> ULOQ	
D1009016.D	EC-041004-5ppb	Extracted Curve; 5ppb; Liver; 04 Oct 04	PFBS (299)	3.447	61758	5.357	105%
D1009017.D	EC-041004-10ppb	Extracted Curve; 10ppb; Liver; 04 Oct 04	PFBS (299)	3.447	134849	10.03	98%
D1009018.D	EC-041004-25ppb	Extracted Curve; 25ppb; Liver; 04 Oct 04	PFBS (299)	3.446	357898	25.25	99%
D1009019.D	EC-041004-50ppb	Extracted Curve; 50ppb; Liver; 04 Oct 04	PFBS (299)	3.44	692330	51.81	101%
D1009020.D	EC-041004-75ppb	Extracted Curve; 75ppb; Liver; 04 Oct 04	PFBS (299)	3.446	937737	76.17	99%
D1009021.D	EC-041004-100ppb	Extracted Curve; 100ppb; Liver; 04 Oct 04	PFBS (299)	3.446	1137124	102.5	100%
D1009022.D	EC-041004-250ppb	Extracted Curve; 250ppb; Liver; 04 Oct 04	PFBS (299)	3.446	2518554	> ULOQ	
D1009023.D	EC-041004-500ppb	Extracted Curve; 500ppb; Liver; 04 Oct 04	PFBS (299)	3.44	3911666	> ULOQ	
D1009024.D	EC-041004-750ppb	Extracted Curve; 750ppb; Liver; 04 Oct 04	PFBS (299)	3.439	5506036	> ULOQ	
D1009025.D	EC041004-1000ppb	Extracted Curve; 1000ppb; Liver; 04 Oct 04	PFBS (299)	3.439	6783621	> ULOQ	
D1014016.D	EC-041004-5ppb	Extracted Curve; 5ppb; Liver; 04 Oct 04	PFBS (299)	3.446	17953	5.223	102%
D1014017.D	EC-041004-10ppb	Extracted Curve; 10ppb; Liver; 04 Oct 04	PFBS (299)	3.447	41902	10.18	100%
D1014018.D	EC-041004-25ppb	Extracted Curve; 25ppb; Liver; 04 Oct 04	PFBS (299)	3.447	110637	25.17	98%
D1014019.D	EC-041004-50ppb	Extracted Curve; 50ppb; Liver; 04 Oct 04	PFBS (299)	3.447	220423	52.11	102%
D1014020.D	EC-041004-75ppb	Extracted Curve; 75ppb; Liver; 04 Oct 04	PFBS (299)	3.446	302345	75.77	99%
D1014021.D	EC-041004-100ppb	Extracted Curve; 100ppb; Liver; 04 Oct 04	PFBS (299)	3.446	378902	102.7	100%
D1014022.D	EC-041004-250ppb	Extracted Curve; 250ppb; Liver; 04 Oct 04	PFBS (299)	3.446	898613	> ULOQ	
D1014023.D	EC-041004-500ppb	Extracted Curve; 500ppb; Liver; 04 Oct 04	PFBS (299)	3.446	1470759	> ULOQ	
D1014024.D	EC-041004-750ppb	Extracted Curve; 750ppb; Liver; 04 Oct 04	PFBS (299)	3.446	2136736	> ULOQ	
D1014025.D	EC041004-1000ppb	Extracted Curve; 1000ppb; Liver; 04 Oct 04	PFBS (299)	3.439	2698945	> ULOQ	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Extracted Liver Calibration

File	Sample Name	Sample Info	Compound Name	RT	Area	Amount PFBS, ng/mL	Recovery, %
D1015016.D	EC-041012d-2.5	Extracted Curve; 2.5ppb; Liver; 12 Oct 04	PFBS (299)	3.454	33986	< LLOQ	
D1015017.D	EC-041012d-5	Extracted Curve; 5ppb; Liver; 12 Oct 04	PFBS (299)	3.453	66347	< LLOQ	
D1015018.D	EC-041012d-10	Extracted Curve; 10ppb; Liver; 12 Oct 04	PFBS (299)	3.454	101188	< LLOQ	
D1015019.D	EC-041012d-25	Extracted Curve; 25ppb; Liver; 12 Oct 04	PFBS (299)	3.454	219291	20.72	83%
D1015020.D	EC-041012d-50	Extracted Curve; 50ppb; Liver; 12 Oct 04	PFBS (299)	3.453	451082	52.19	102%
D1015021.D	EC-041012d-75	Extracted Curve; 75ppb; Liver; 12 Oct 04	PFBS (299)	3.454	606824	73.79	99%
D1015022.D	EC-041012d-100	Extracted Curve; 100ppb; Liver; 12 Oct 04	PFBS (299)	3.453	810741	102.7	100%
D1015023.D	EC-041012d-175	Extracted Curve; 175ppb; Liver; 12 Oct 04	PFBS (299)	3.454	1347993	182.4	103%
D1015024.D	EC-041012d-250	Extracted Curve; 250ppb; Liver; 12 Oct 04	PFBS (299)	3.453	1852981	262.9	105%
D1015025.D	EC-041012d-375	Extracted Curve; 375ppb; Liver; 12 Oct 04	PFBS (299)	3.447	2348046	348.6	94%
D1015026.D	EC-041012d-500	Extracted Curve; 500ppb; Liver; 12 Oct 04	PFBS (299)	3.447	3216160	521.6	102%
D1015027.D	EC-041012d-750	Extracted Curve; 750ppb; Liver; 12 Oct 04	PFBS (299)	3.447	4141918	> ULOQ	
D1015028.D	EC041012d-1000	Extracted Curve; 1000ppb; Liver; 12 Oct 04	PFBS (299)	3.446	5145502	> ULOQ	
D1018016.D	EC-041012d-2.5	Extracted Curve; 2.5ppb; Liver; 04 Oct 04	PFBS (299)	3.454	32118	< LLOQ	
D1018017.D	EC-041012d-5	Extracted Curve; 5ppb; Liver; 04 Oct 04	PFBS (299)	3.454	65488	< LLOQ	
D1018018.D	EC-041012d-10	Extracted Curve; 10ppb; Liver; 04 Oct 04	PFBS (299)	3.454	100601	< LLOQ	
D1018019.D	EC-041012d-25	Extracted Curve; 25ppb; Liver; 04 Oct 04	PFBS (299)	3.454	217705	20.47	82%
D1018020.D	EC-041012d-50	Extracted Curve; 50ppb; Liver; 04 Oct 04	PFBS (299)	3.454	449938	52.41	102%
D1018021.D	EC-041012d-75	Extracted Curve; 75ppb; Liver; 04 Oct 04	PFBS (299)	3.454	602456	73.86	99%
D1018022.D	EC-041012d-100	Extracted Curve; 100ppb; Liver; 04 Oct 04	PFBS (299)	3.454	799451	102.2	100%
D1018023.D	EC-041012d-175	Extracted Curve; 175ppb; Liver; 04 Oct 04	PFBS (299)	3.454	1334009	182.8	103%
D1018024.D	EC-041012d-250	Extracted Curve; 250ppb; Liver; 04 Oct 04	PFBS (299)	3.454	1833669	264.2	105%
D1018025.D	EC-041012d-375	Extracted Curve; 375ppb; Liver; 04 Oct 04	PFBS (299)	3.454	2297312	346.4	93%
D1018026.D	EC-041012d-500	Extracted Curve; 500ppb; Liver; 04 Oct 04	PFBS (299)	3.453	3152930	522.6	102%
D1018027.D	EC-041012d-750	Extracted Curve; 750ppb; Liver; 04 Oct 04	PFBS (299)	3.454	4051681	> ULOQ	
D1018028.D	EC041012d-1000	Extracted Curve; 1000ppb; Liver; 04 Oct 04	PFBS (299)	3.454	5033558	> ULOQ	
D1018115.D	EC-041012d-2.5	Extracted Curve; 2.5ppb; Liver; 04 Oct 04	PFBS (299)	3.454	13361	2.472	97%
D1018116.D	EC-041012d-5	Extracted Curve; 5ppb; Liver; 04 Oct 04	PFBS (299)	3.454	25921		Point excluded
D1018117.D	EC-041012d-10	Extracted Curve; 10ppb; Liver; 04 Oct 04	PFBS (299)	3.447	39174	10.06	98%
D1018118.D	EC-041012d-25	Extracted Curve; 25ppb; Liver; 04 Oct 04	PFBS (299)	3.454	86164	23.95	95%
D1018119.D	EC-041012d-50	Extracted Curve; 50ppb; Liver; 04 Oct 04	PFBS (299)	3.454	181055	52.31	102%
D1018120.D	EC-041012d-75	Extracted Curve; 75ppb; Liver; 04 Oct 04	PFBS (299)	3.454	250217	73.25	98%
D1018121.D	EC-041012d-100	Extracted Curve; 100ppb; Liver; 04 Oct 04	PFBS (299)	3.447	342790	101.7	99%
D1018122.D	EC-041012d-175	Extracted Curve; 175ppb; Liver; 04 Oct 04	PFBS (299)	3.454	588622	179.3	101%
D1018123.D	EC-041012d-250	Extracted Curve; 250ppb; Liver; 04 Oct 04	PFBS (299)	3.447	838048	261.7	104%
D1018124.D	EC-041012d-375	Extracted Curve; 375ppb; Liver; 04 Oct 04	PFBS (299)	3.447	1078273	345.1	93%
D1018125.D	EC-041012d-500	Extracted Curve; 500ppb; Liver; 04 Oct 04	PFBS (299)	3.447	1579022	534.5	105%
D1018126.D	EC-041012d-750	Extracted Curve; 750ppb; Liver; 04 Oct 04	PFBS (299)	3.447	2041229	735.4	99%
D1018127.D	EC041012d-1000	Extracted Curve; 1000ppb; Liver; 04 Oct 04	PFBS (299)	3.447	2583329	1025	100%
D1021016.D	EC-041012d-2.5	Extracted Curve; 2.5ppb; Liver; 04 Oct 04	PFBS (299)	3.46	29280	< LLOQ	

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesExtracted Liver Calibration

File	Sample Name	Sample Info	Compound Name	RT	Area	Amount PFBS, ng/mL	Recovery, %
D1021017.D	EC-041012d-5	Extracted Curve; 5ppb; Liver; 04 Oct 04	PFBS (299)	3.461	57454	< LLOQ	
D1021018.D	EC-041012d-10	Extracted Curve; 10ppb; Liver; 04 Oct 04	PFBS (299)	3.461	86951	< LLOQ	
D1021019.D	EC-041012d-25	Extracted Curve; 25ppb; Liver; 04 Oct 04	PFBS (299)	3.461	187133	< LLOQ	
D1021020.D	EC-041012d-50	Extracted Curve; 50ppb; Liver; 04 Oct 04	PFBS (299)	3.461	382908	46.09	90%
D1021021.D	EC-041012d-75	Extracted Curve; 75ppb; Liver; 04 Oct 04	PFBS (299)	3.461	520081	70.48	95%
D1021022.D	EC-041012d-100	Extracted Curve; 100ppb; Liver; 04 Oct 04	PFBS (299)	3.46	691379	101.5	99%
D1021023.D	EC-041012d-175	Extracted Curve; 175ppb; Liver; 04 Oct 04	PFBS (299)	3.461	1142466	186.1	105%
D1021024.D	EC-041012d-250	Extracted Curve; 250ppb; Liver; 04 Oct 04	PFBS (299)	3.461	1550926	267.0	106%
D1021025.D	EC-041012d-375	Extracted Curve; 375ppb; Liver; 04 Oct 04	PFBS (299)	3.461	1954983	351.9	95%
D1021026.D	EC-041012d-500	Extracted Curve; 500ppb; Liver; 04 Oct 04	PFBS (299)	3.461	2688300	521.5	102%
D1021027.D	EC-041012d-750	Extracted Curve; 750ppb; Liver; 04 Oct 04	PFBS (299)	3.461	3464107	733.1	99%
D1021028.D	EC041012d-1000	Extracted Curve; 1000ppb; Liver; 04 Oct 04	PFBS (299)	3.461	4292500	1030	101%

Results Summary

Sample Name	Sample Info	Compound Name	RT	Area	Amount PFBS, ng/mL	%RSD
EC-041004-5ppb	Extracted Curve; 5ppb; Liver; 04 Oct 04	< LLOQ	5.358	5.357	5.223	1.5%
EC-041004-10ppb	Extracted Curve; 10ppb; Liver; 04 Oct 04	< LLOQ	10.08	10.03	10.18	0.8%
EC-041004-25ppb	Extracted Curve; 25ppb; Liver; 04 Oct 04	23.90	25.25	25.25	25.17	2.7%
EC-041004-50ppb	Extracted Curve; 50ppb; Liver; 04 Oct 04	53.27	51.51	51.81	52.11	1.5%
EC-041004-75ppb	Extracted Curve; 75ppb; Liver; 04 Oct 04	82.37	76.65	76.17	75.77	4.0%
EC-041004-100ppb	Extracted Curve; 100ppb; Liver; 04 Oct 04	95.03	102.2	102.5	102.7	3.7%
EC-041004-250ppb	Extracted Curve; 250ppb; Liver; 04 Oct 04	257.3	> ULOQ	> ULOQ	> ULOQ	
EC-041004-500ppb	Extracted Curve; 500ppb; Liver; 04 Oct 04	511.2	> ULOQ	> ULOQ	> ULOQ	
EC-041004-750ppb	Extracted Curve; 750ppb; Liver; 04 Oct 04	> ULOQ	> ULOQ	> ULOQ	> ULOQ	
EC-041004-1ppm	Extracted Curve; 1000ppb; Liver; 04 Oct 04	> ULOQ	> ULOQ	> ULOQ	> ULOQ	
EC-041012d-2.5	Extracted Curve; 2.5ppb; Liver; 04 Oct 04	< LLOQ	< LLOQ	2.472	< LLOQ	
EC-041012d-5	Extracted Curve; 5ppb; Liver; 04 Oct 04	< LLOQ	< LLOQ		< LLOQ	
EC-041012d-10	Extracted Curve; 10ppb; Liver; 04 Oct 04	< LLOQ	< LLOQ		< LLOQ	
EC-041012d-25	Extracted Curve; 25ppb; Liver; 04 Oct 04	20.72	20.47	23.95	< LLOQ	8.9%
EC-041012d-50	Extracted Curve; 50ppb; Liver; 04 Oct 04	52.19	52.41	52.31	46.09	6.1%
EC-041012d-75	Extracted Curve; 75ppb; Liver; 04 Oct 04	73.79	73.86	73.25	70.48	2.2%
EC-041012d-100	Extracted Curve; 100ppb; Liver; 04 Oct 04	102.7	102.2	101.7	101.5	0.5%
EC-041012d-175	Extracted Curve; 175ppb; Liver; 04 Oct 04	182.4	182.8	179.3	186.1	1.5%
EC-041012d-250	Extracted Curve; 250ppb; Liver; 04 Oct 04	262.9	264.2	261.7	267.0	0.9%
EC-041012d-375	Extracted Curve; 375ppb; Liver; 04 Oct 04	348.6	346.4	345.1	351.9	0.9%
EC-041012d-500	Extracted Curve; 500ppb; Liver; 04 Oct 04	521.6	522.6	534.5	521.5	1.2%
EC-041012d-750	Extracted Curve; 750ppb; Liver; 04 Oct 04	> ULOQ	> ULOQ	735.4	733.1	0.2%
EC041012d-1000	Extracted Curve; 1000ppb; Liver; 04 Oct 04	> ULOQ	> ULOQ	1025	1030	0.3%

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Extracted Egg Calibration

File	Sample Name	Sample Info	RT	Area	Amount, ng/mL	Recovery, %
D1207016.D	EC-041202-10	Extracted Curve; 10ppb; Egg; 02 Dec 04	3.44	364846	< LLOQ	
D1207017.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.439	595848	21.81	85%
D1207018.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.439	1174019	50.17	98%
D1207019.D	EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	3.439	1648807	73.97	99%
D1207020.D	EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	3.44	2264284	105.6	103%
D1207021.D	EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	3.44	3559585	175.1	99%
D1207022.D	EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	3.439	4918180	253.4	101%
D1207023.D	EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	3.44	7159838	398.4	107%
D1207024.D	EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	3.439	8187975	474.0	93%
D1207025.D	EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	3.439	11187829	759.1	102%
D1207026.D	EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	3.439	13631574	> ULOQ	
D1208016.D	EC-041202-10	Extracted Curve; 10ppb; Egg; 02 Dec 04	3.44	311298	4.515	
D1208017.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.433	515324	16.63	
D1208018.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.439	1002521	45.94	90%
D1208019.D	EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	3.439	1413158	71.08	96%
D1208020.D	EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	3.439	1930812	103.4	101%
D1208021.D	EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	3.432	3065203	176.6	100%
D1208022.D	EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	3.439	4223798	255.5	102%
D1208023.D	EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	3.439	6230573	404.3	109%
D1208024.D	EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	3.433	7172449	480.8	94%
D1208025.D	EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	3.432	9883555	737.5	99%
D1208026.D	EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	3.432	12149887	1033	101%
D1209016.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.44	845627	45.52	89%
D1209017.D	EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	3.44	1196684	70.90	95%
D1209018.D	EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	3.439	1636757	103.3	101%
D1209019.D	EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	3.439	2623719	178.9	101%
D1209020.D	EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	3.44	3564783	255.0	102%
D1209021.D	EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	3.44	5236990	402.5	108%
D1209022.D	EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	3.439	6043432	480.9	94%
D1209023.D	EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	3.439	8295804	738.6	99%
D1209024.D	EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	3.44	10118338	1033	101%
D1215016.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.481	1002161	41.94	82%
D1215017.D	EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	3.481	1401761	70.76	95%
D1215018.D	EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	3.481	1865902	105.1	103%
D1215019.D	EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	3.482	2837849	180.1	102%

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Extracted Egg Calibration

File	Sample Name	Sample Info	RT	Area	Amount, ng/mL	Recovery, %
D1215020.D	EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	3.482	3795760	258.9	103%
D1215021.D	EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	3.481	5385045	403.6	108%
D1215022.D	EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	3.474	6106476	476.9	93%
D1215023.D	EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	3.481	8193832	734.5	99%
D1215024.D	EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	3.474	9769277	1041	102%
D1215086.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.467	943077	42.83	84%
D1215087.D	EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	3.467	1311200	70.84	95%
D1215088.D	EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	3.468	1755813	105.5	103%
D1215089.D	EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	3.468	2678405	180.4	102%
D1215090.D	EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	3.467	3558425	256.4	102%
D1215091.D	EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	3.467	5085658	401.9	108%
D1215092.D	EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	3.467	5796261	477.2	93%
D1215093.D	EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	3.467	7842100	739.9	99%
D1215094.D	EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	3.467	9342717	1035	101%
D1215145.D	EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	3.461	248214	50.80	99%
D1215146.D	EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	3.461	348880	72.46	97%
D1215147.D	EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	3.461	492082	103.7	101%
D1215148.D	EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	3.461	794277	171.8	97%
D1215149.D	EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	3.46	1129776	250.7	100%
D1215150.D	EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	3.46	1727260	402.5	108%
D1215151.D	EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	3.46	2000362	477.6	93%
D1215152.D	EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	3.461	2878879	755.5	102%
D1215153.D	EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	3.461	3527453	1022	100%

Results Summary

%RSD Over 6 Calibrations (Listed Above)		
EC-041202-50	Extracted Curve; 50ppb; Egg; 02 Dec 04	7.9%
EC-041202-75	Extracted Curve; 75ppb; Egg; 02 Dec 04	1.8%
EC-041202-100	Extracted Curve; 100ppb; Egg; 02 Dec 04	1.0%
EC-041202-175	Extracted Curve; 175ppb; Egg; 02 Dec 04	1.9%
EC-041202-250	Extracted Curve; 250ppb; Egg; 02 Dec 04	1.1%
EC-041202-375	Extracted Curve; 375ppb; Egg; 02 Dec 04	0.5%
EC-041202-500	Extracted Curve; 500ppb; Egg; 02 Dec 04	0.5%
EC-041202-750	Extracted Curve; 750ppb; Egg; 02 Dec 04	1.4%
EC041202-1000	Extracted Curve; 1000ppb; Egg; 02 Dec 04	0.7%

Theoretical concentration, ng/mL	Area Counts
0.2558	68175
0.5115	82118
0.9974	121253
1.535	188329
2.302	205039
5.115	406370

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9940
R Square	0.9881
Adjusted R Square	0.9851
Standard Error	15197
Observations	6

LOD	LOQ
0.732	2.20

ANOVA

	df	SS	MS	F	Significance F
Regression	1	7.654E+10	7.654E+10	331.4	5.355E-05
Residual	4	9.239E+08	2.310E+08		
Total	5	7.746E+10			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	55008	9195	6	0	29479	80538	29479	80538
X Variable 1	69166	3799	18	0	58617	79715	58617	79715

Theoretical concentration, ng/mL	Area Counts
0.2558	27240
0.5115	33869
0.9974	49507
1.535	73037
2.302	100344
5.115	246855

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9957
R Square	0.9914
Adjusted R Square	0.9893
Standard Error	8505
Observations	6

LOD	LOQ
0.620	1.86

ANOVA

	df	SS	MS	F	Significance F
Regression	1	3.342E+10	3.342E+10	4.621E+02	2.770E-05
Residual	4	2.893E+08	7.233E+07		
Total	5	3.371E+10			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	6838	5146	1	0	-7449	21125	-7449	21125
X Variable 1	45707	2126	21	0	39803	51610	39803	51610

Theoretical concentration, ng/mL	Area Counts
0.2558	21169
0.9974	60742
1.535	91911
2.302	123258
5.115	181415

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9664
R Square	0.9339
Adjusted R Square	0.9119
Standard Error	18113
Observations	5

LOD	LOQ
1.917	5.76

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1.391E+10	1.391E+10	42.41	7.355E-03
Residual	3	9.842E+08	3.281E+08		
Total	4	1.490E+10			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.147E+04	1.276E+04	2.466E+00	9.041E-02	-9.148E+03	7.209E+04	-9.148E+03	7.209E+04
X Variable 1	3.147E+04	4.832E+03	6.512E+00	7.355E-03	1.609E+04	4.685E+04	1.609E+04	4.685E+04

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

ATTACHMENT C: SAMPLE CHROMATOGRAMS

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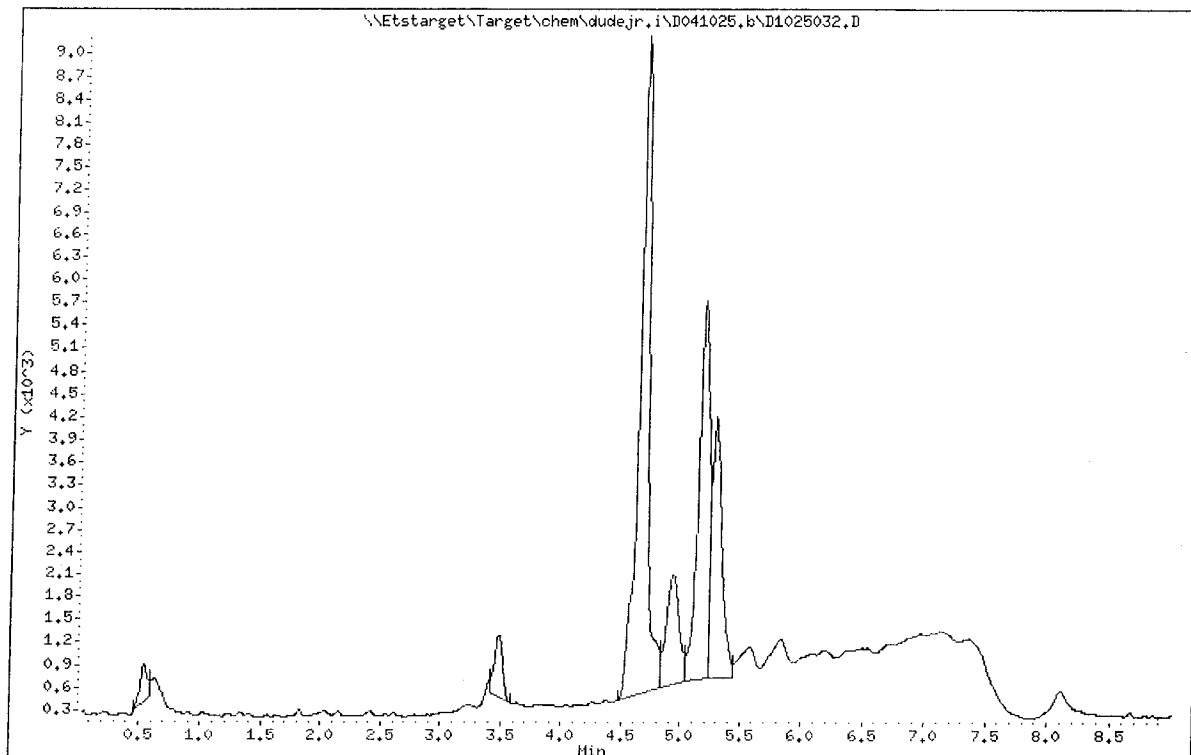
3M Environmental Laboratory

E03-0583, Quantation of PFBS in Quail

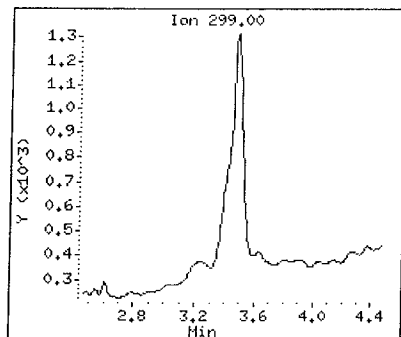
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 Inj Date : 25-OCT-2004 18:28
 Operator : mla Inst ID: dudejr.i
 Smp Info : 0 ppm Dose Group; Serum; 30 Aug 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 0 ppm Dose Group, Control Samples
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 Meth Date : 04-Jan-2005 06:42 carlson Quant Type: ESTD
 Cal Date : 25-OCT-2004 17:15 Cal File: D1025025.D
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	Compound Not Detected.					

Report E03-0583
Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041025.b\\D1025032.D T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 2



1 PFBS (299) (Undetected)



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Data File: E03-0583 \\Etstarget\Target\chem\dudejr.i\041025.b\041025039.D Page 1
 Report Date: 04-Jan-2005 06:45 Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

3M Environmental Laboratory

E03-0583, Quantation of PFBS in Quail

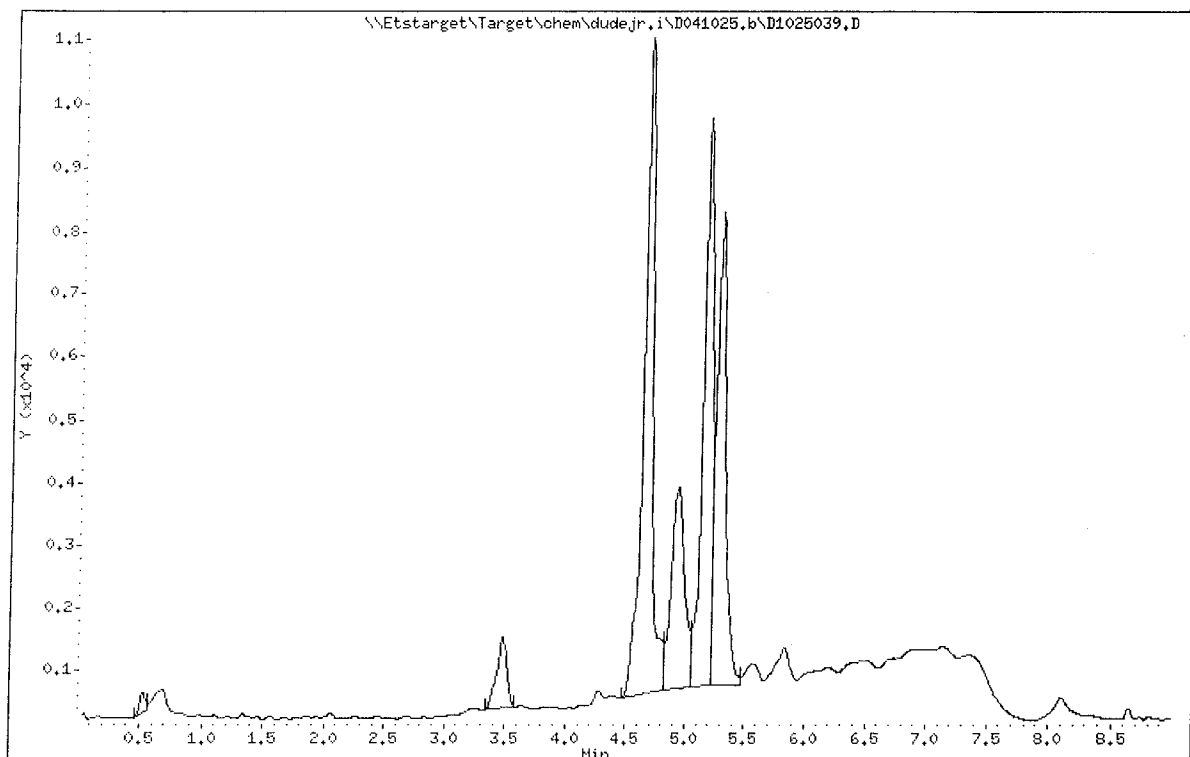
Data file : \\Etstarget\Target\chem\dudejr.i\041025.b\041025039.D
 Lab Smp Id: 72849-1
 Inj Date : 25-OCT-2004 19:41
 Operator : mla Inst ID: dudejr.i
 Smp Info : 0 ppm Dose Group; Serum; 30 Aug 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 0 ppm Dose Group, Control Samples
 Method : \\Etstarget\target\chem\dudejr.i\041025.b\041025.m
 Meth Date : 04-Jan-2005 06:42 carlson Quant Type: ESTD
 Cal Date : 25-OCT-2004 17:15 Cal File: D1025025.D
 Als bottle: 19
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.475	3.468	0.007	6607	2785.82	2790 (M)

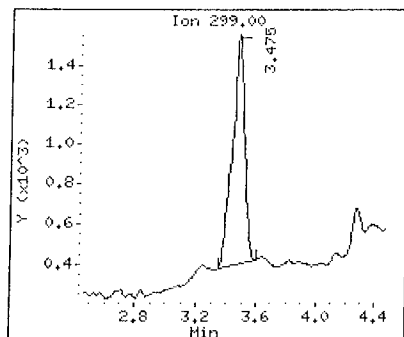
QC Flag Legend

M - Compound response manually integrated.

Report E03-0583 T-7485: A Reproduction Study with the Northern Bobwhite
Data File: \\Etstarget\Target\chem\dudejr.i\041025.b\1025039.D Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 2



1 PFBS (299)



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Data File: E03-0583 \\Etstarget\Target\chem\dudejr.i\D041025.b\1025052.D Page 1
 Report Date: 04-Jan-2005 06:45 Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

3M Environmental Laboratory

E03-0583, Quantation of PFBS in Quail

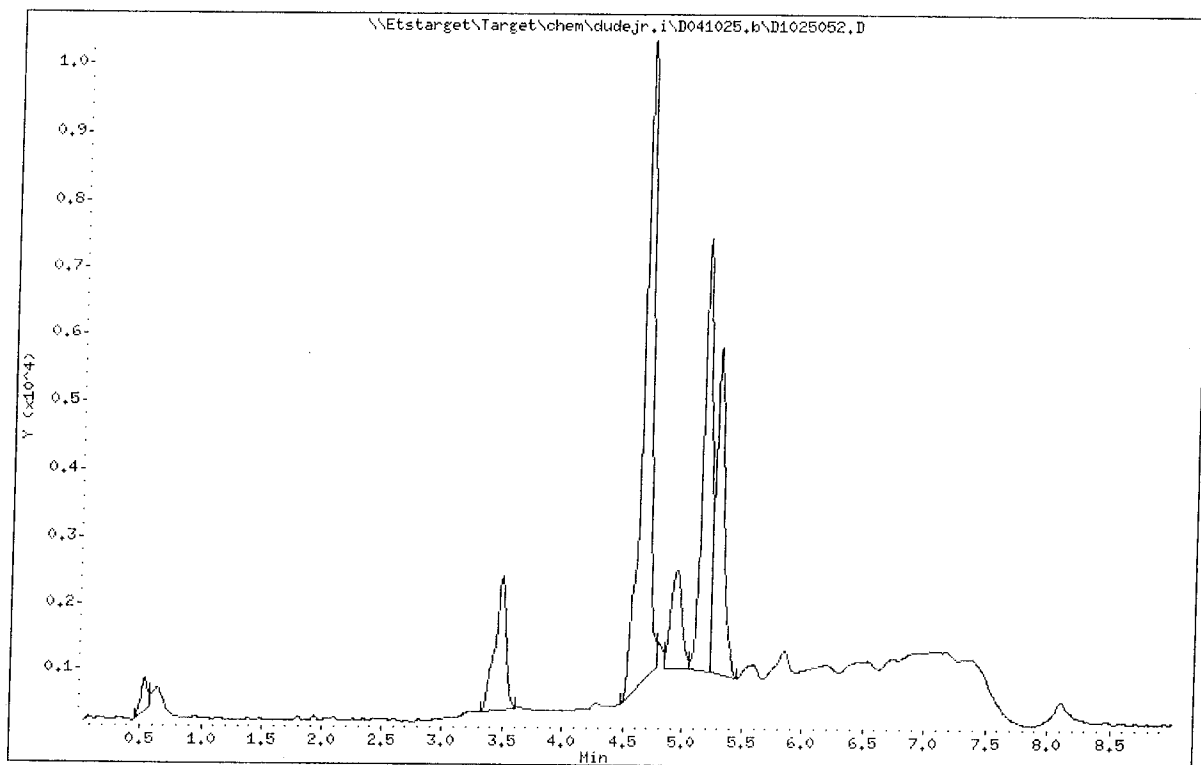
Data file : \\Etstarget\Target\chem\dudejr.i\D041025.b\1025052.D
 Lab Smp Id: 72851-3
 Inj Date : 25-OCT-2004 21:58
 Operator : mla Inst ID: dudejr.i
 Smp Info : 0 ppm Dose Group; Serum; 30 Aug 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 0 ppm Dose Group, Control Samples
 Method : \\Etstarget\target\chem\dudejr.i\D041025.b\1025052.D
 Meth Date : 04-Jan-2005 06:42 carlson Quant Type: ESTD
 Cal Date : 25-OCT-2004 17:15 Cal File: D1025025.D
 Als bottle: 27
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.481	3.468	0.013	12652	1.83292	1.83 (M)

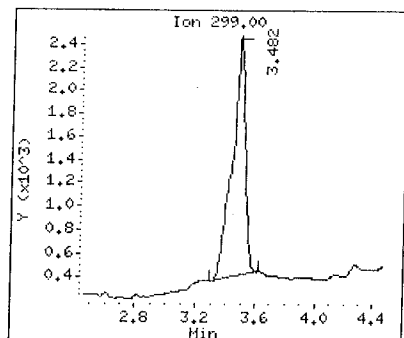
QC Flag Legend

M - Compound response manually integrated.

Report E03-0583
Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041025.b\\D1025052.D T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 2



1 PFBS (299)



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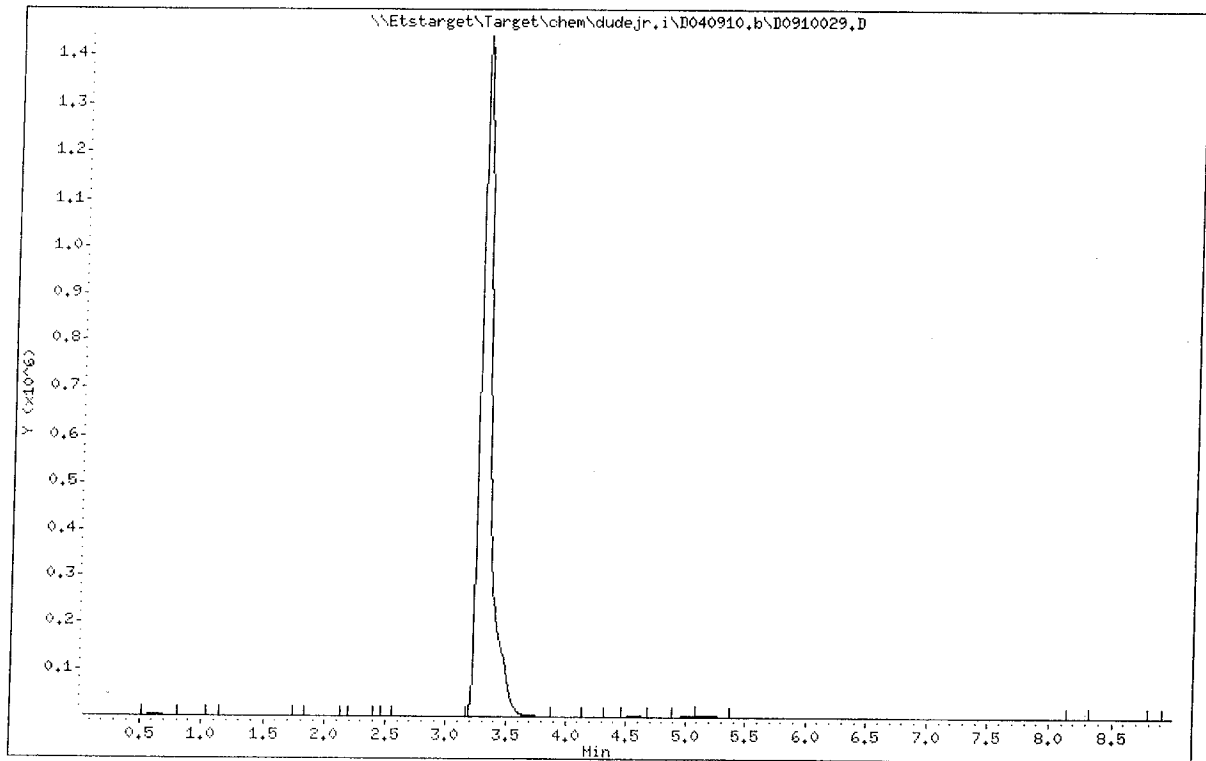
Data File: E03-0583 \\Etstarget\Target\chem\dudejr.i\D040910.b\D0910029.D Page 1
 Report Date: 04-Jan-2005 06:58 Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

3M Environmental Laboratory

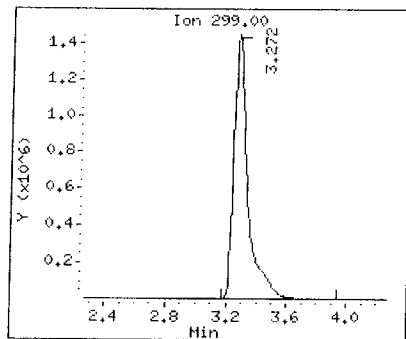
E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\Target\chem\dudejr.i\D040910.b\D0910029.D
 Lab Smp Id: 72882-1
 Inj Date : 10-SEP-2004 16:01
 Operator : mla Inst ID: dudejr.i
 Smp Info : 100 ppm group, Serum, 9/1/2004 MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 100 ppm Dose Group
 Method : \\Etstarget\Target\chem\dudejr.i\D040910.b\D040910.m
 Meth Date : 04-Jan-2005 06:55 carlson Quant Type: ESTD
 Cal Date : 10-SEP-2004 15:20 Cal File: D0910025.D
 Als bottle: 11
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.272	3.272	0.000	9525142	672.921	673

Report E03-0583
Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D040910,b\\D0910029.D T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 2



1 PFBS (299)



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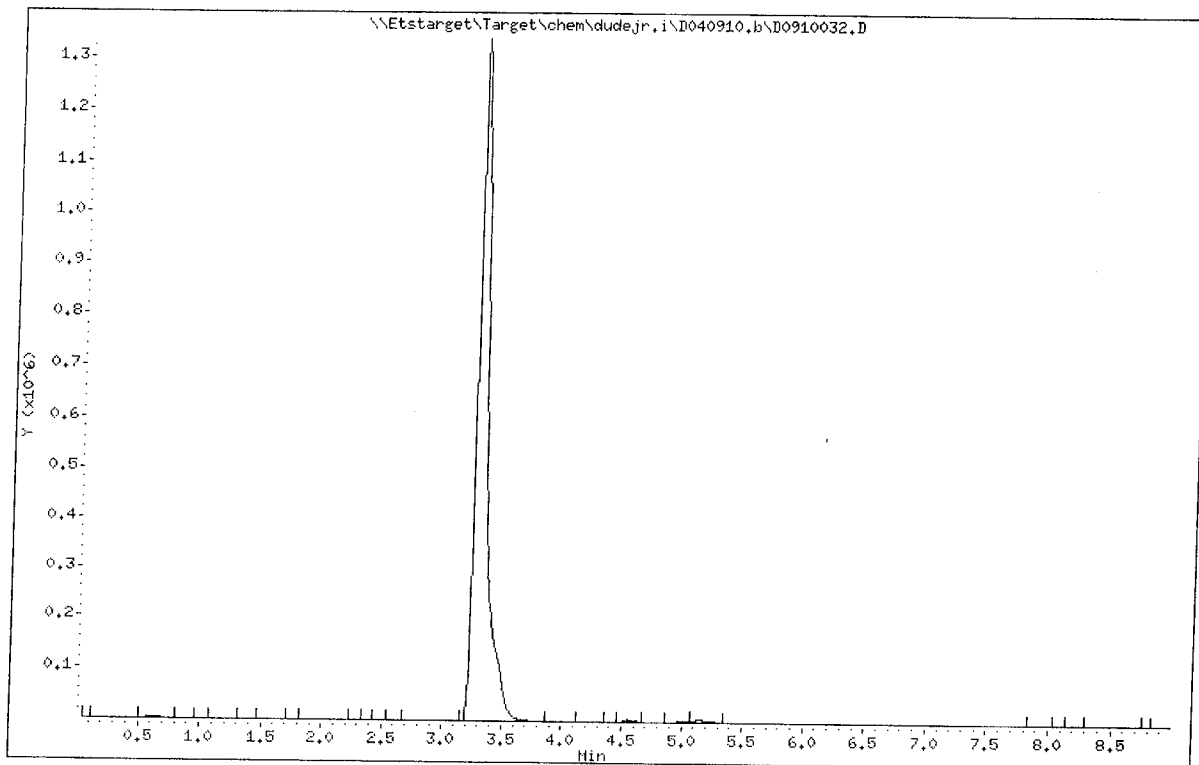
Data File: E03-0583 \\Etstarget\Target\chem\dudejr.i\7485r A Reproduction Study With The Northern Bobwhite
 Report Date: 04-Jan-2005 06:58 Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 1

3M Environmental Laboratory

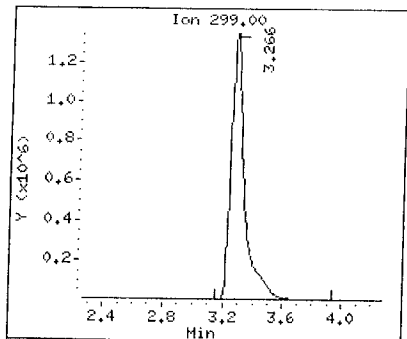
E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\Target\chem\dudejr.i\D040910.b\D0910032.D
 Lab Smp Id: 72883-1
 Inj Date : 10-SEP-2004 16:32
 Operator : mla Inst ID: dudejr.i
 Smp Info : 100 ppm group, Serum, 9/1/2004 MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 100 ppm Dose Group
 Method : \\Etstarget\Target\chem\dudejr.i\D040910.b\D040910.m
 Meth Date : 04-Jan-2005 06:55 carlson Quant Type: ESTD
 Cal Date : 10-SEP-2004 15:20 Cal File: D0910025.D
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.265	3.272	-0.007	8782325	592.285	592

Report E03-0583 T-7485: A Reproduction Study with the Northern Bobwhite
 Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D040910.b\\D0910032.D Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 2



1 PFBS (299)



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Data File: E03-0583 \\Etstarget\Target\chem\dudejr.i\T7495-A Reproduction Study with the Northern Bobwhite
 Report Date: 04-Jan-2005 07:01 Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues Page 1

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\Target\chem\dudejr.i\D040927.b\D0927029.D
 Lab Smp Id: 73118-1
 Inj Date : 27-SEP-2004 15:58
 Operator : cmc Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group, Serum, 9/1/2004 MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 100 ppm Dose Group Offspring
 Method : \\Etstarget\Target\chem\dudejr.i\D040927.b\D040927.m
 Meth Date : 04-Jan-2005 06:59 carlson Quant Type: ESTD
 Cal Date : 27-SEP-2004 15:16 Cal File: D0927025.D
 Als bottle: 11
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG MASS	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.265	3.258	0.007	17958	5.22483	5.22 (M)

QC Flag Legend

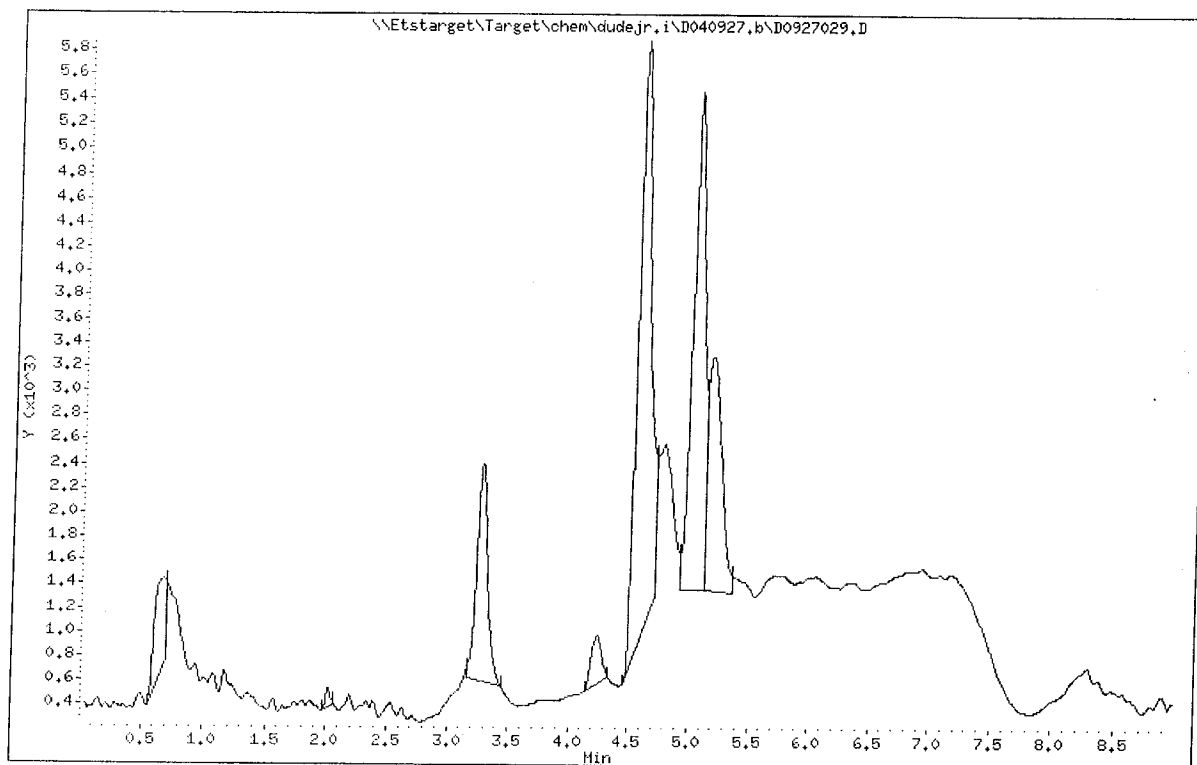
M - Compound response manually integrated.

Report EVS-0000

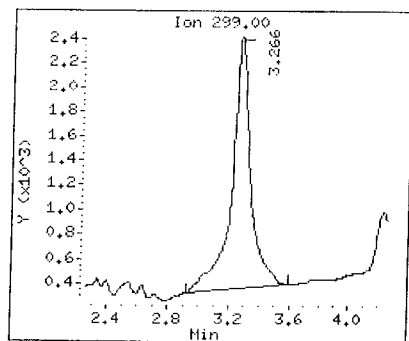
1-7463: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D040927,b\\D0927029.D

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1 PFBS (299)



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Report E03-0000

1-7460: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\Target\chem\dudejr.i\D040927.b\D0927032.D Page 1
Report Date: 04-Jan-2005 07:01

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\Target\chem\dudejr.i\D040927.b\D0927032.D
 Lab Smp Id: 73119-1
 Inj Date : 27-SEP-2004 16:29
 Operator : cmc Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group, Serum, 9/1/2004 MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 100 ppm Dose Group Offspring
 Method : \\Etstarget\Target\chem\dudejr.i\D040927.b\D040927.m
 Meth Date : 04-Jan-2005 06:59 carlson Quant Type: ESTD
 Cal Date : 27-SEP-2004 15:16 Cal File: D0927025.D
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.265	3.258	0.007	17804	5.16393	5.16 (M)

QC Flag Legend

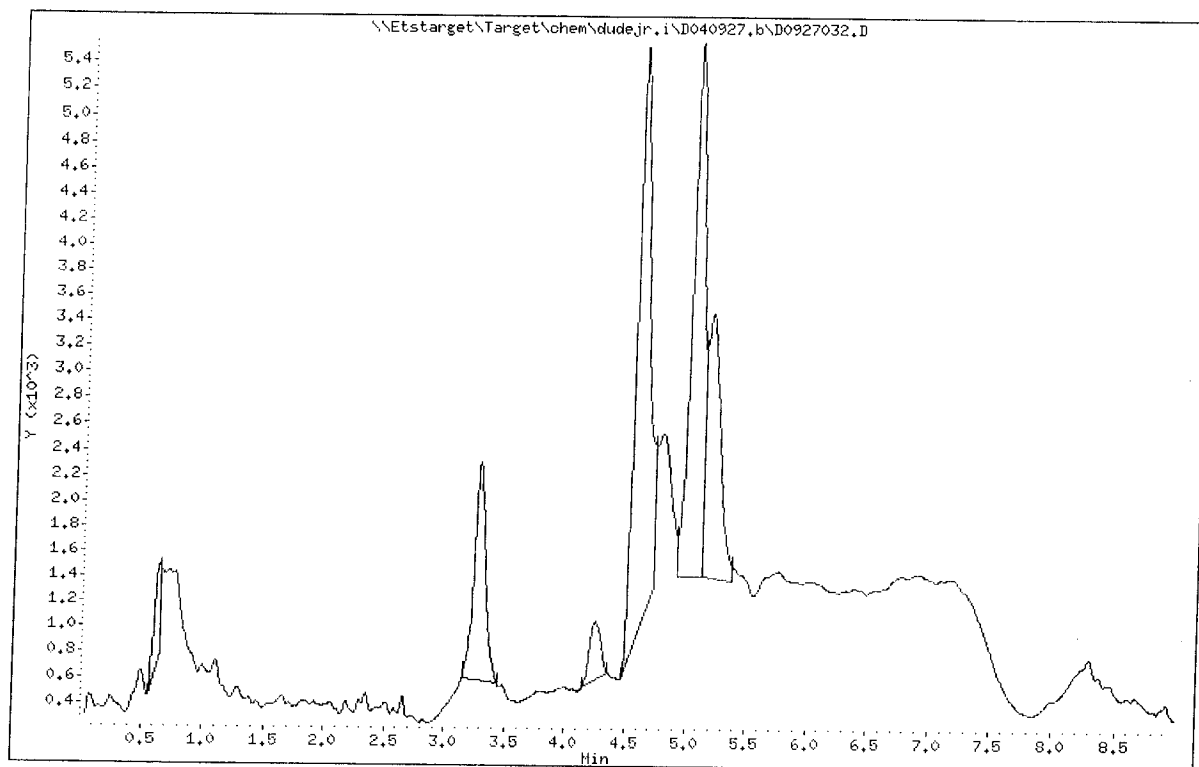
M - Compound response manually integrated.

Report E03-0000

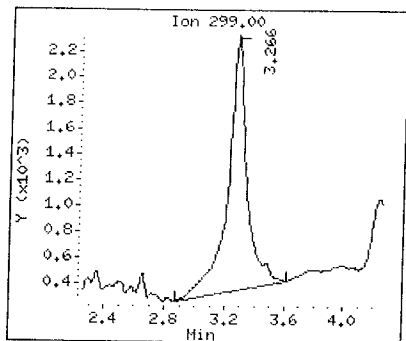
1-7400: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dude,jr.i\\D040927,b\\D0927032.D

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1 PFBS (299)



Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D040922.b\\D0922029.D Page 1
Report Date: 04-Jan-2005 07:04

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040922.b\\D0922029.D
Lab Smp Id: 72912-1
Inj Date : 22-SEP-2004 18:52
Operator : mla Inst ID: dudejr.i
Smp Info : 300 ppm Dose Group; Serum; 07 Sept 04; MLA/CMC/MEE
Misc Info :
Comment : Serum, 300 ppm Dose Group
Method : \\Etstarget\\target\\chem\\dudejr.i\\D040922.b\\D040922.m
Meth Date : 04-Jan-2005 07:03 carlson Quant Type: ESTD
Cal Date : 22-SEP-2004 18:11 Cal File: D0922025.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

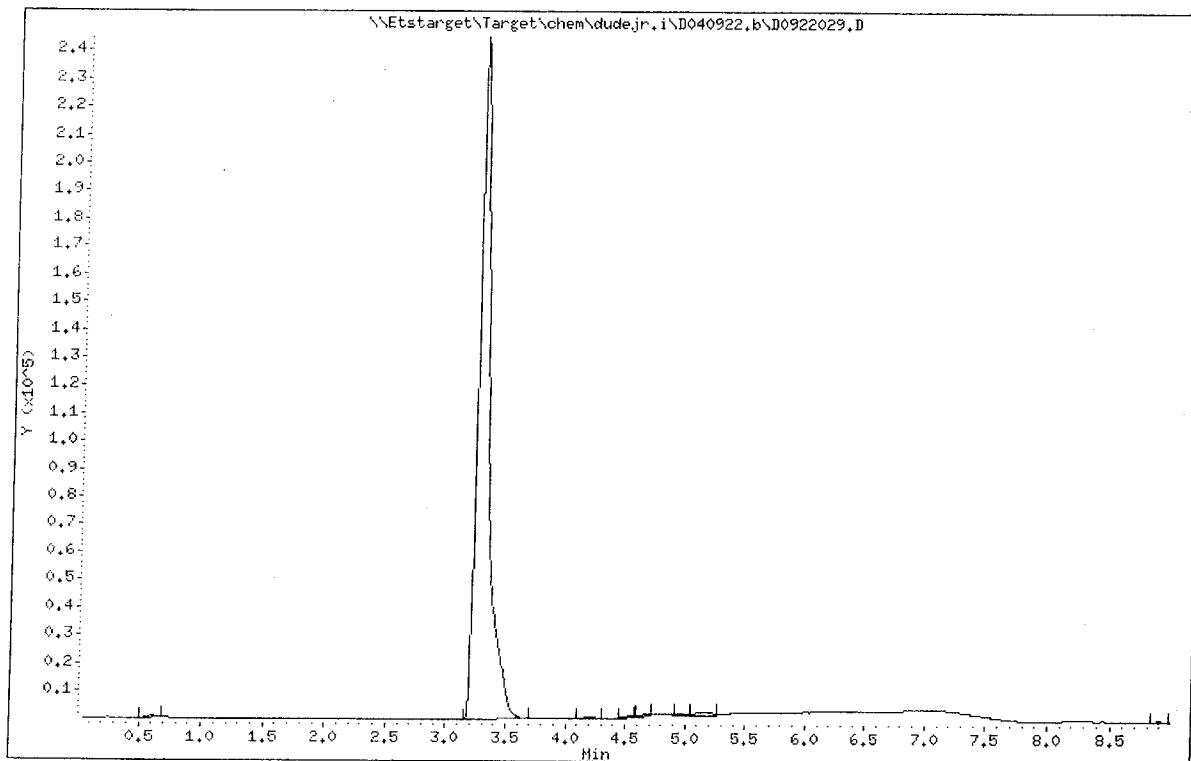
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.258	3.258	0.000	1656511	217.842	218

Report E03-0583

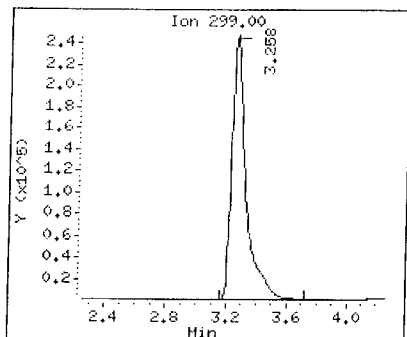
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D040922.b\\D0922029.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D040922.b\\D0922032.D Page 1

Report Date: 04-Jan-2005 07:04

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040922.b\\D0922032.D
Lab Smp Id: 72913-1
Inj Date : 22-SEP-2004 19:24
Operator : mla Inst ID: dudejr.i
Smp Info : 300 ppm Dose Group; Serum; 07 Sept 04; MLA/CMC/MEE
Misc Info :
Comment : Serum, 300 ppm Dose Group
Method : \\Etstarget\\target\\chem\\dudejr.i\\D040922.b\\D040922.m
Meth Date : 04-Jan-2005 07:03 carlson Quant Type: ESTD
Cal Date : 22-SEP-2004 18:11 Cal File: D0922025.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

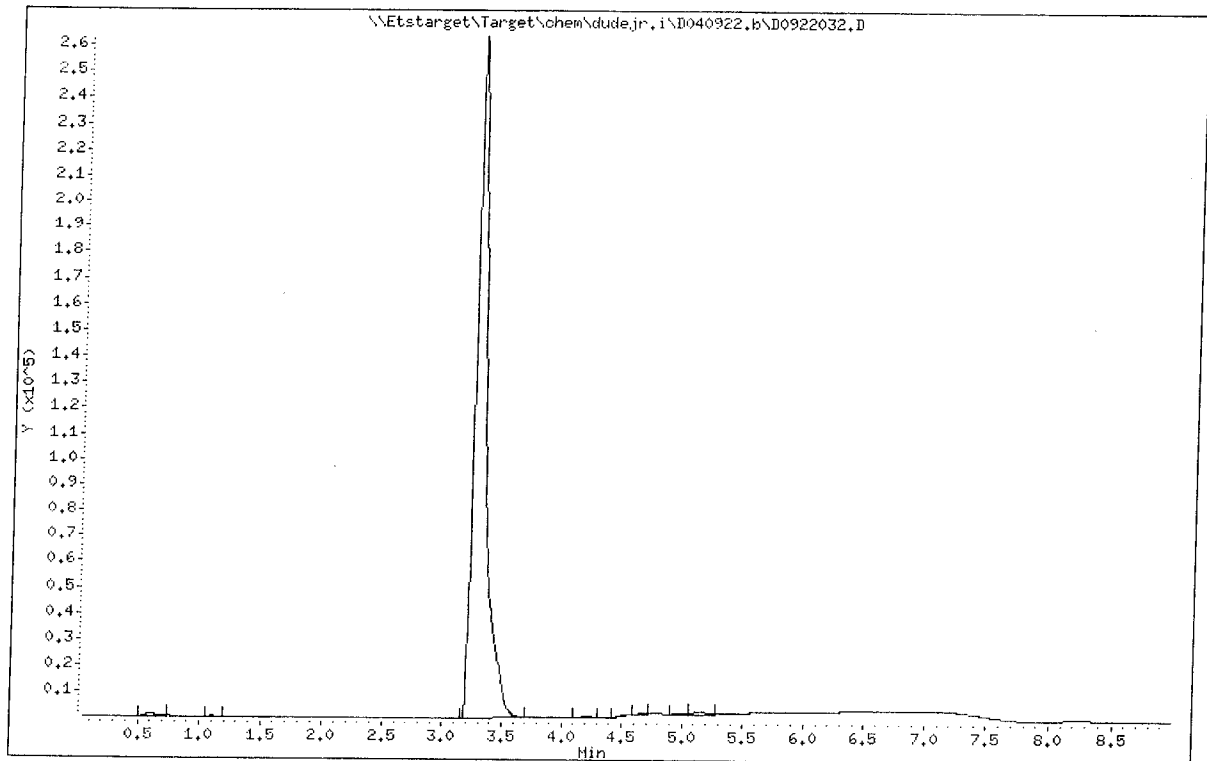
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.258	3.258	0.000	1811217	241.268	241

Report E03-0583

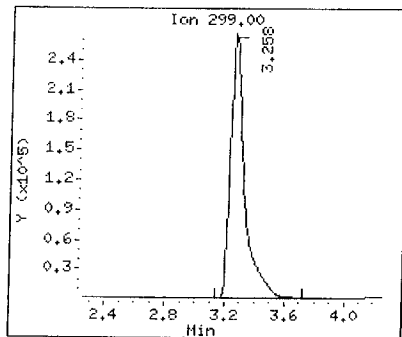
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dude,jr,i\\D040922,b\\D0922032.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D0928029.D Page 1
Report Date: 04-Jan-2005 07:07

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D0928029.D
 Lab Smp Id: 73133-1
 Inj Date : 28-SEP-2004 11:47
 Operator : cmc Inst ID: dudejr.i
 Smp Info : 300 ppm Dose Group; Serum; 07 Sept 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 300 ppm Dose Group Offspring
 Method : \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D040928.m
 Meth Date : 04-Jan-2005 07:06 carlson Quant Type: ESTD
 Cal Date : 28-SEP-2004 11:06 Cal File: D0928025.D
 Als bottle: 11
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12
 Processing Host: W50352

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.258	3.252	0.006	54344	18.7751	18.8 (M)

QC Flag Legend

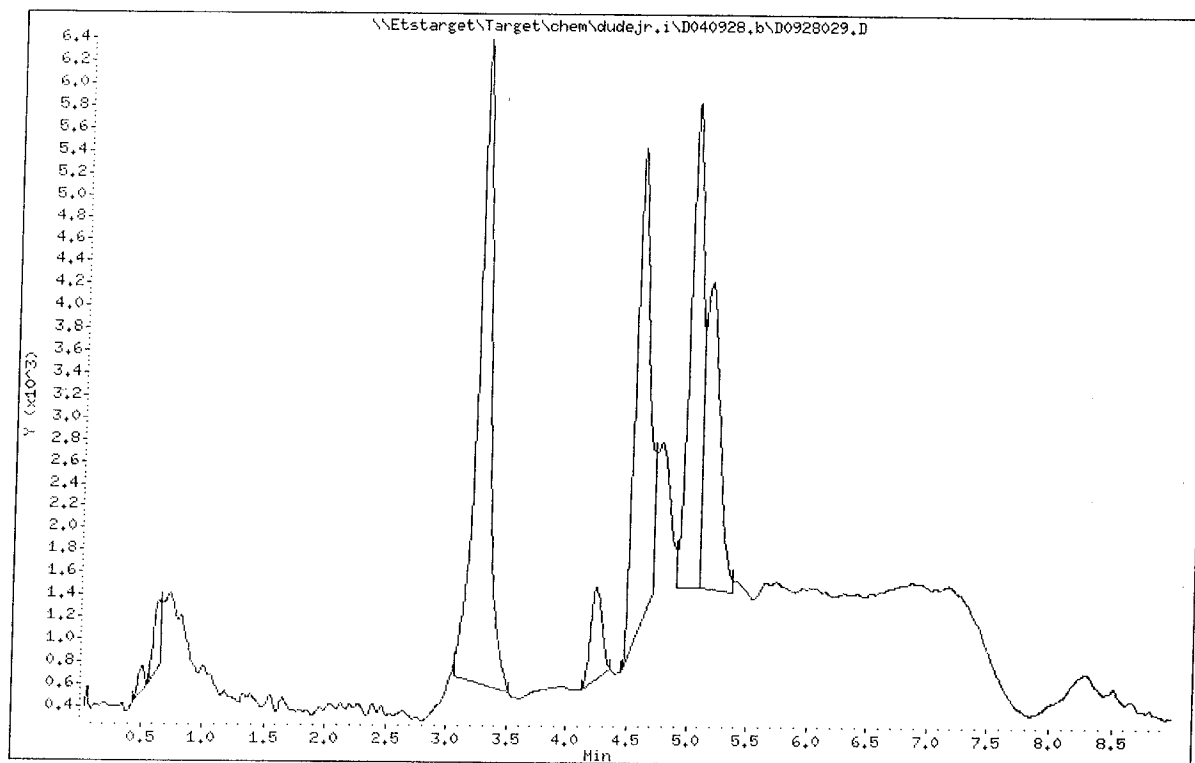
M - Compound response manually integrated.

Report E03-0583

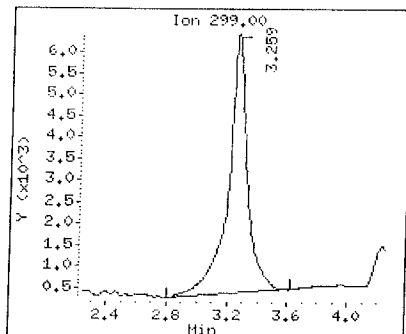
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D0928029.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D0928032.D Page 1
Report Date: 04-Jan-2005 07:07

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D0928032.D
 Lab Smp Id: 73134-1
 Inj Date : 28-SEP-2004 12:19
 Operator : cmc Inst ID: dudejr.i
 Smp Info : 300 ppm Dose Group; Serum; 07 Sept 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 300 ppm Dose Group Offspring
 Method : \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D040928.m
 Meth Date : 04-Jan-2005 07:06 carlson Quant Type: ESTD
 Cal Date : 28-SEP-2004 11:06 Cal File: D0928025.D
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12
 Processing Host: W50352

Compounds	QUANT SIG						CONCENTRATIONS	
		MASS	RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN	FINAL
							(ng/mL)	(ng/mL)
1 PFBS (299)	299	3.258	3.252	0.006	55715	19.2936	19.3 (M)	

QC Flag Legend

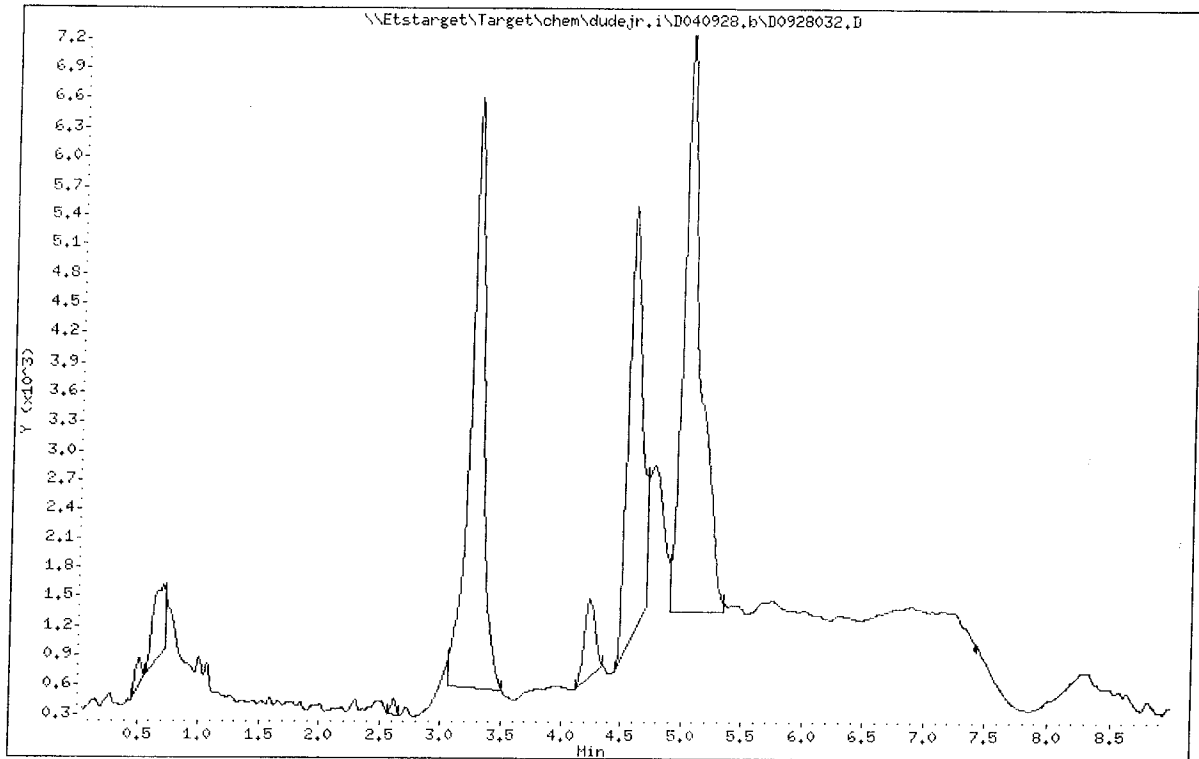
M - Compound response manually integrated.

Report E03-0583

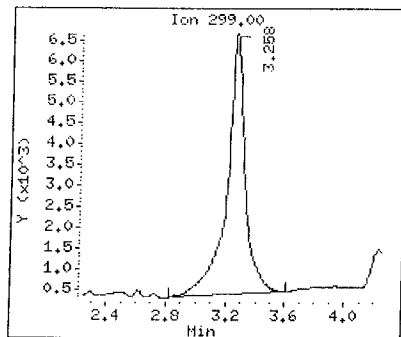
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D040928.b\\D0928032.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D040924.b\\D0924029.D Page 1
Report Date: 04-Jan-2005 06:37

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040924.b\\D0924029.D
Lab Smp Id: 72944-1
Inj Date : 24-SEP-2004 18:13
Operator : mla Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE
Misc Info :
Comment : Serum, 900 ppm Dose Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D040924.b\\D040924.m
Meth Date : 04-Jan-2005 06:36 carlson Quant Type: ESTD
Cal Date : 24-SEP-2004 17:31 Cal File: D0924025.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

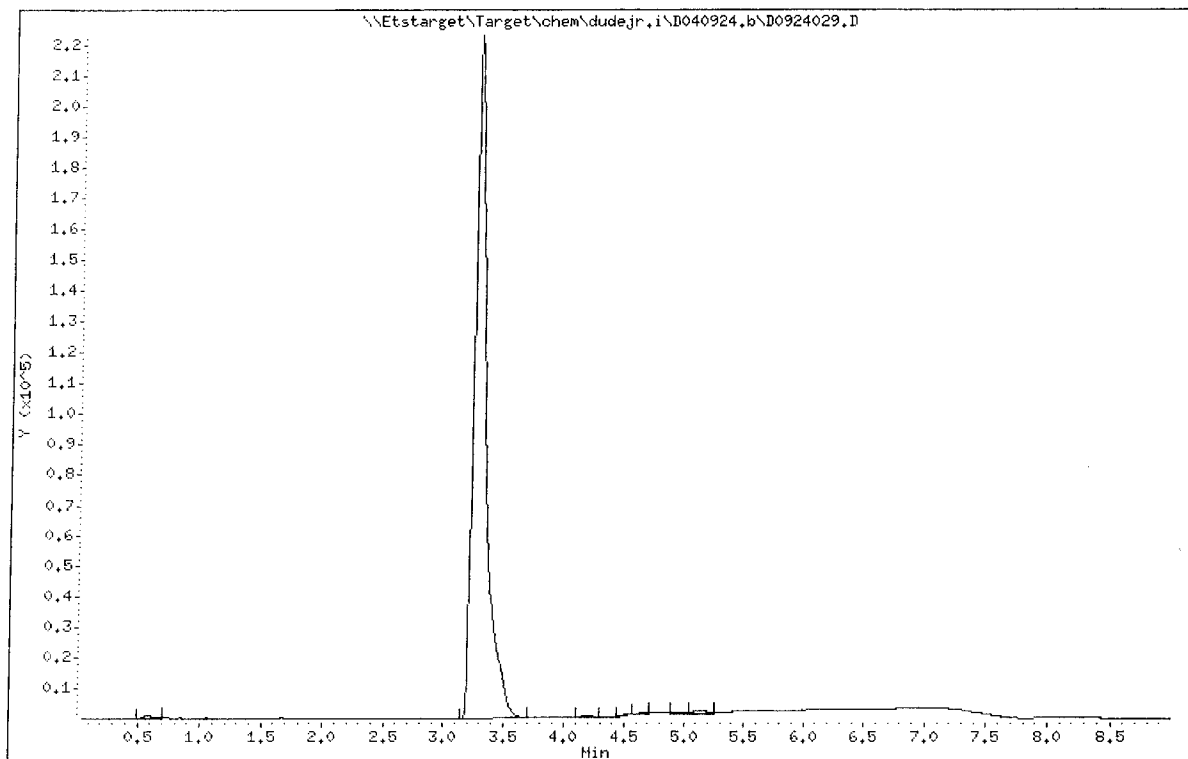
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.258	3.258	0.000	1602357	175.206	175

Report E03-0583

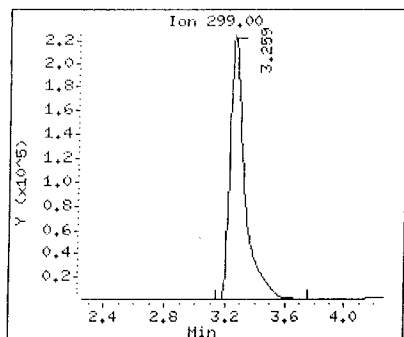
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D040924,b\\D0924029.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D040924.b\\D0924032.D Page 1
Report Date: 04-Jan-2005 06:37

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040924.b\\D0924032.D
Lab Smp Id: 72945-1
Inj Date : 24-SEP-2004 18:44
Operator : mla Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE
Misc Info :
Comment : Serum, 900 ppm Dose Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D040924.b\\D040924.m
Meth Date : 04-Jan-2005 06:36 carlson Quant Type: ESTD
Cal Date : 24-SEP-2004 17:31 Cal File: D0924025.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

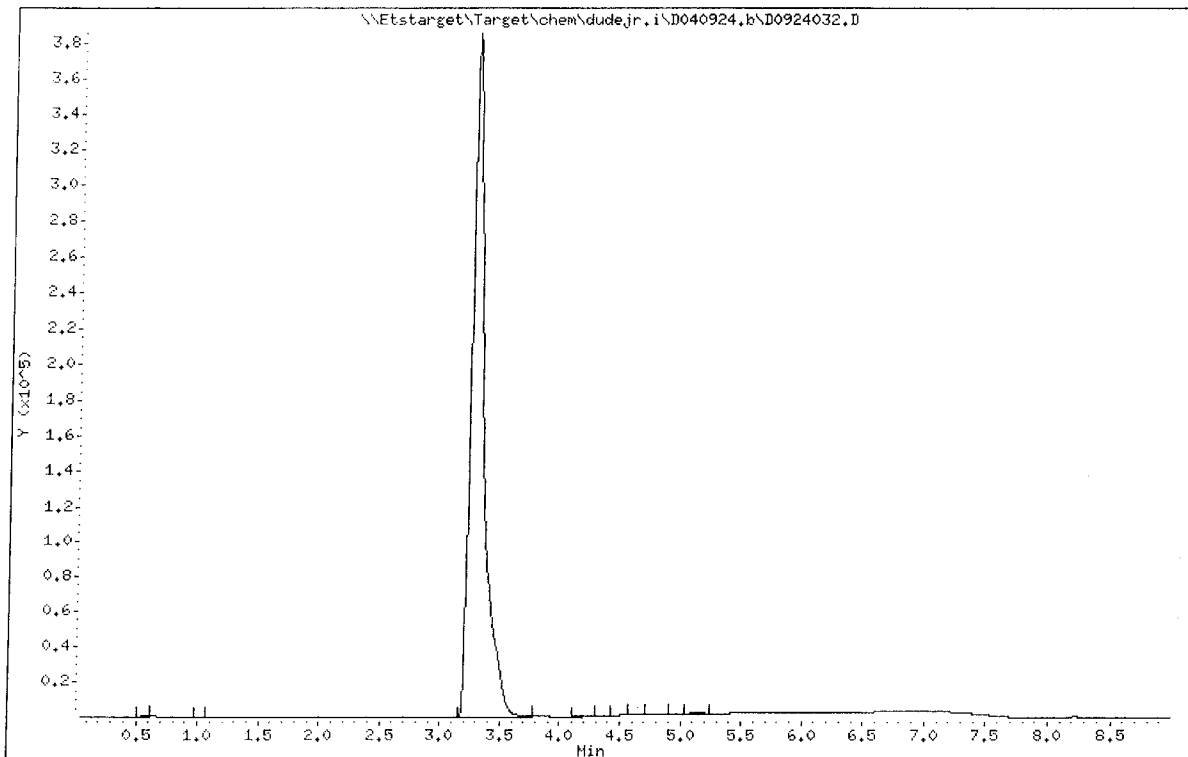
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.258	3.258	0.000	2909643	357.710	358

Report E03-0583

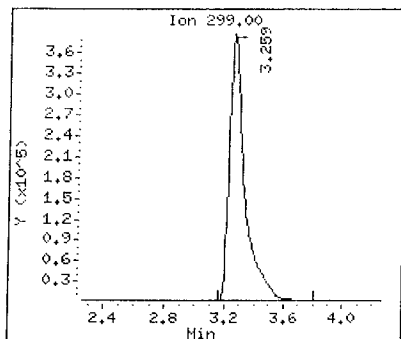
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D040924,b\\D0924032.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D040930.b\\D0930027.D Page 1
Report Date: 04-Jan-2005 06:41

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D040930.b\\D0930027.D
 Lab Smp Id: 73148-1
 Inj Date : 30-SEP-2004 18:44
 Operator : cmc Inst ID: dudejr.i
 Smp Info : 900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 900 ppm Dose Group Offspring
 Method : \\Etstarget\\Target\\chem\\dudejr.i\\D040930.b\\D040930.m
 Meth Date : 04-Jan-2005 06:40 carlson Quant Type: ESTD
 Cal Date : 30-SEP-2004 18:02 Cal File: D0930023.D
 Als bottle: 11
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
1 PFBS (299)	299	3.272	3.265	0.007	93522		32.4297	32.4 (M)

QC Flag Legend

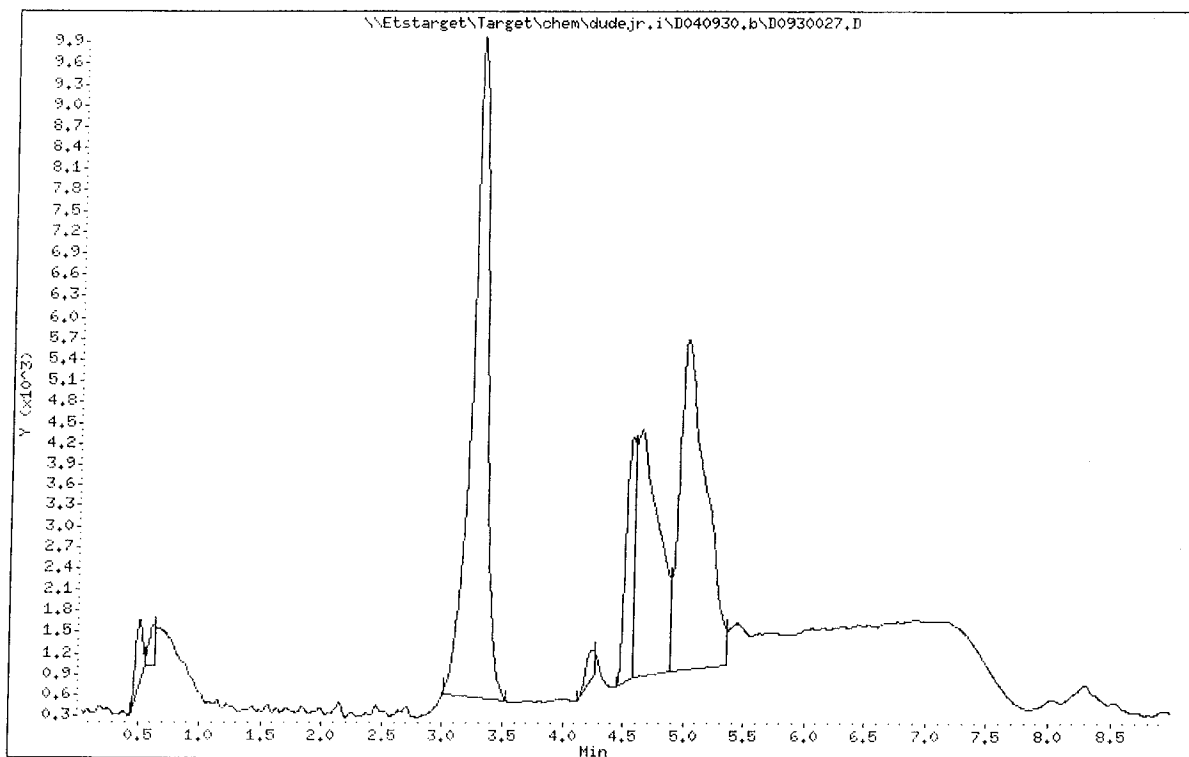
M - Compound response manually integrated.

Report E03-0583

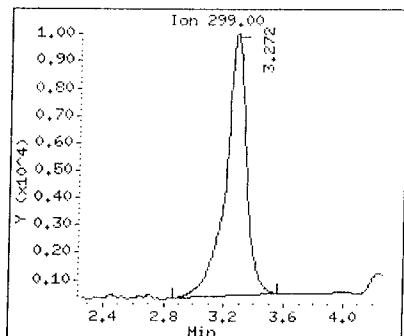
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D040930,b\\D0930027.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\Target\chem\dudejr.i\D040930.b\D0930030.D Page 1
Report Date: 04-Jan-2005 06:41

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\Target\chem\dudejr.i\D040930.b\D0930030.D
 Lab Smp Id: 73149-1
 Inj Date : 30-SEP-2004 19:15
 Operator : cmc Inst ID: dudejr.i
 Smp Info : 900 ppm Dose Group; Serum; 13 Sept 04; MLA/CMC/MEE
 Misc Info :
 Comment : Serum, 900 ppm Dose Group Offspring
 Method : \\Etstarget\Target\chem\dudejr.i\D040930.b\D040930.m
 Meth Date : 04-Jan-2005 06:40 carlson Quant Type: ESTD
 Cal Date : 30-SEP-2004 18:02 Cal File: D0930023.D
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG							CONCENTRATIONS	
	MASS		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
								(ng/mL)	(ng/mL)
1 PFBS (299)	299		3.279	3.265	0.014	67034		22.8488	22.8 (M)

QC Flag Legend

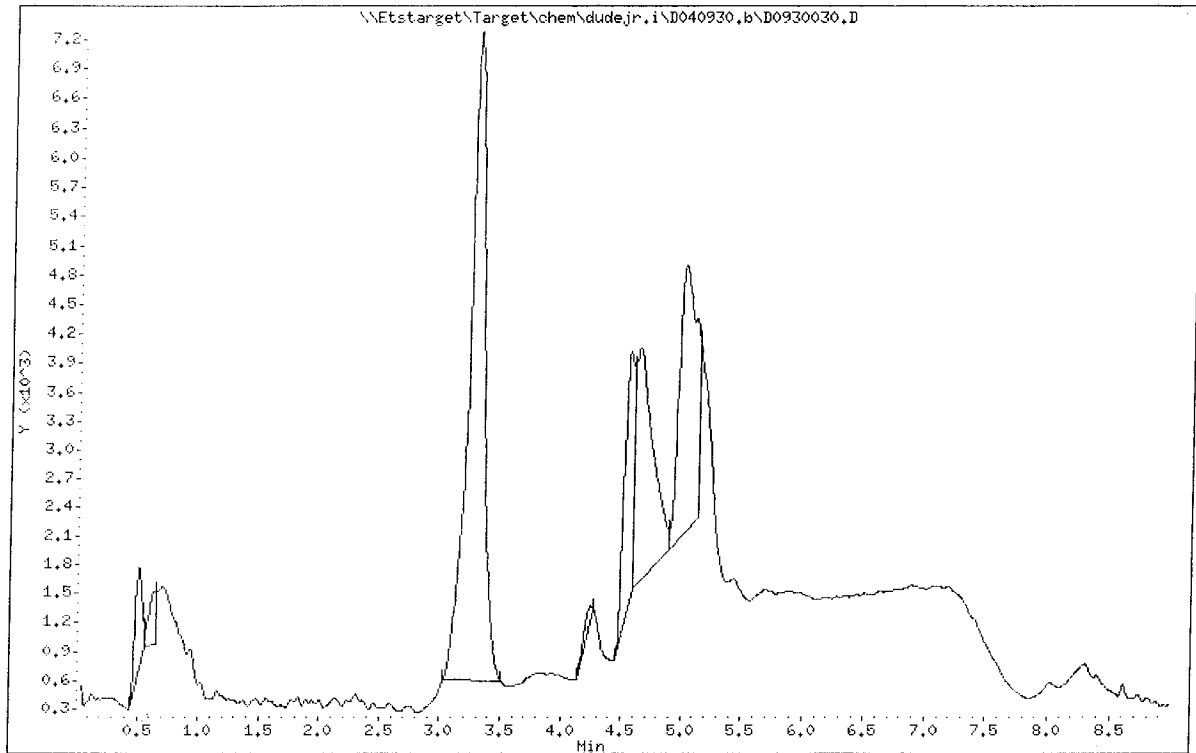
M - Compound response manually integrated.

Report E03-0583

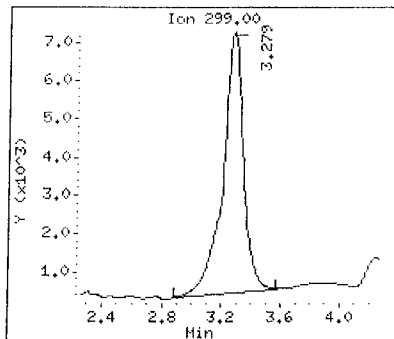
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D040930.b\\D0930030.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023033.D Page 1
Report Date: 04-Jan-2005 06:51

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023033.D
Lab Smp Id: 72976-1
Inj Date : 23-OCT-2004 19:04
Operator : mla Inst ID: itchy.i
Smp Info : 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE
Misc Info :
Comment : Liver, Control Group
Method : \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I041023.m
Meth Date : 04-Jan-2005 06:49 carlson Quant Type: ESTD
Cal Date : 23-OCT-2004 18:23 Cal File: I1023029.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	----	----	-----	-----	-----	-----	-----	-----
1 PFBS (299)	299	3.488	3.478	0.010	23914		1.00677	1.01 (M)

QC Flag Legend

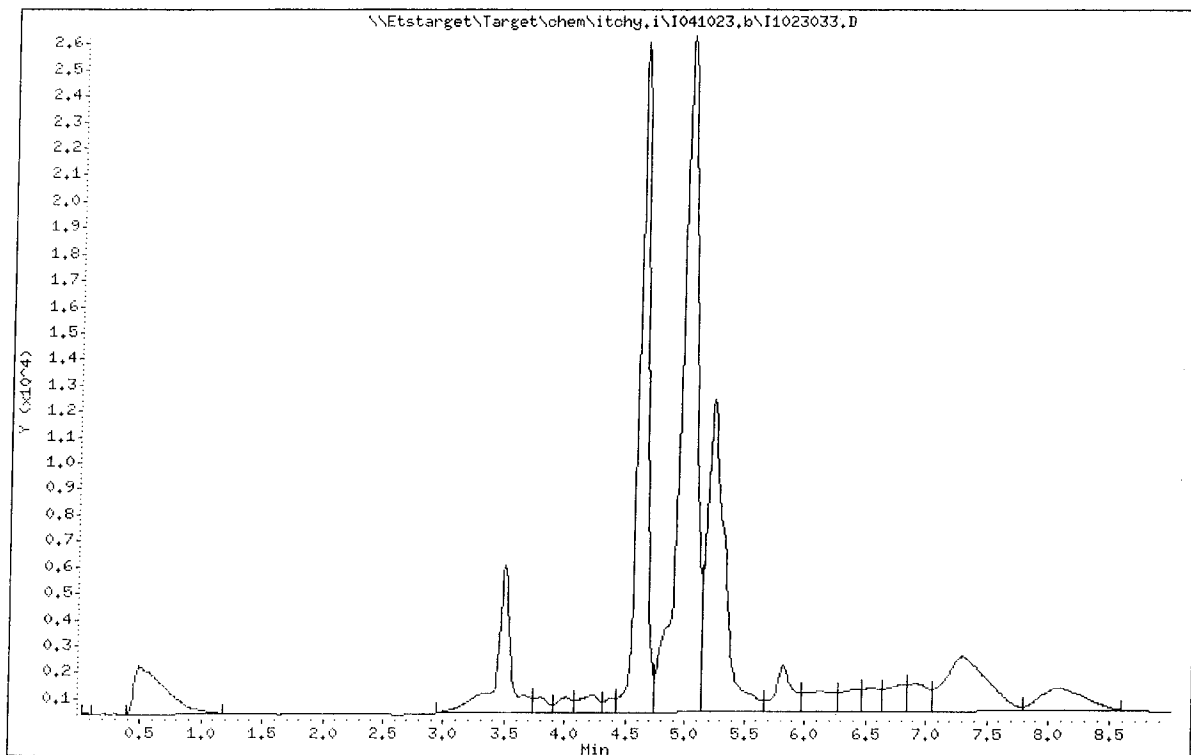
M - Compound response manually integrated.

Report E03-0583

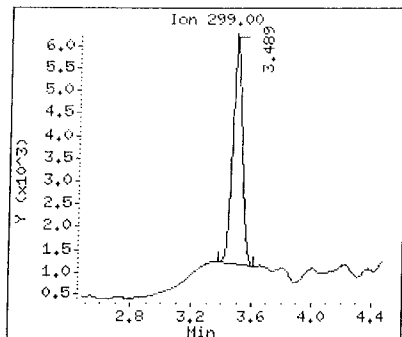
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\itohy,i\\I041023,b\\I1023033.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023036.D Page 1
Report Date: 04-Jan-2005 06:51

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023036.D
Lab Smp Id: 72977-1
Inj Date : 23-OCT-2004 19:35
Operator : mla Inst ID: itchy.i
Smp Info : 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE
Misc Info :
Comment : Liver, Control Group
Method : \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I041023.m
Meth Date : 04-Jan-2005 06:49 carlson Quant Type: ESTD
Cal Date : 23-OCT-2004 18:23 Cal File: I1023029.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.498	3.478	0.020	54121	3.94820	3.95 (M)

QC Flag Legend

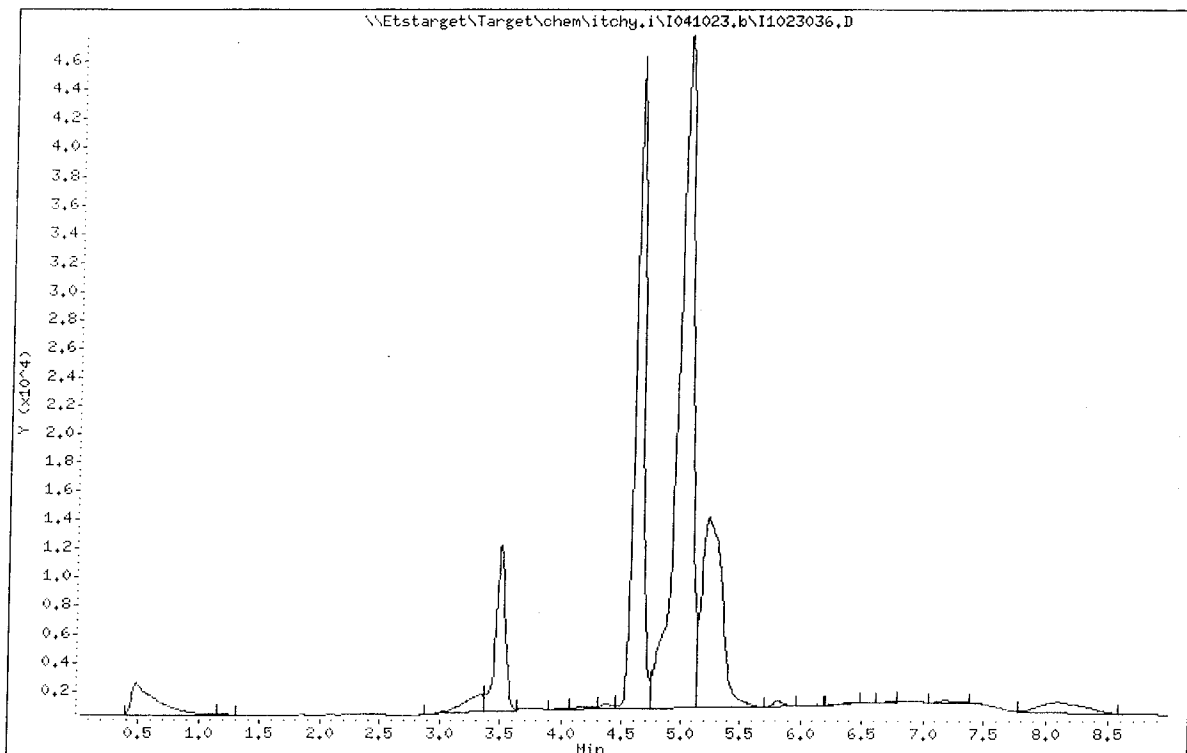
M - Compound response manually integrated.

Report E03-0583

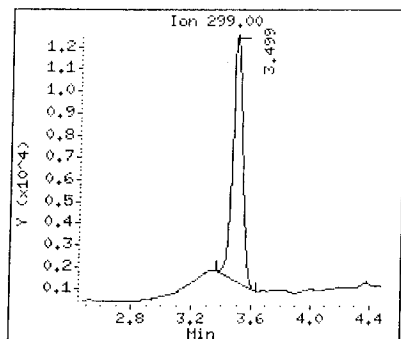
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023036.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023041.D Page 1
Report Date: 04-Jan-2005 06:51

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I1023041.D
Lab Smp Id: 72978-1
Inj Date : 23-OCT-2004 20:27
Operator : mla Inst ID: itchy.i
Smp Info : 0 ppm Dose Group; Liver; 27 Sep 04; MLA/CMC/MEE
Misc Info :
Comment : Liver, Control Group
Method : \\Etstarget\\Target\\chem\\itchy.i\\I041023.b\\I041023.m
Meth Date : 04-Jan-2005 06:49 carlson Quant Type: ESTD
Cal Date : 23-OCT-2004 18:23 Cal File: I1023029.D
Als bottle: 27
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.498	3.478	0.020	59815		4.50326	4.50 (M)

QC Flag Legend

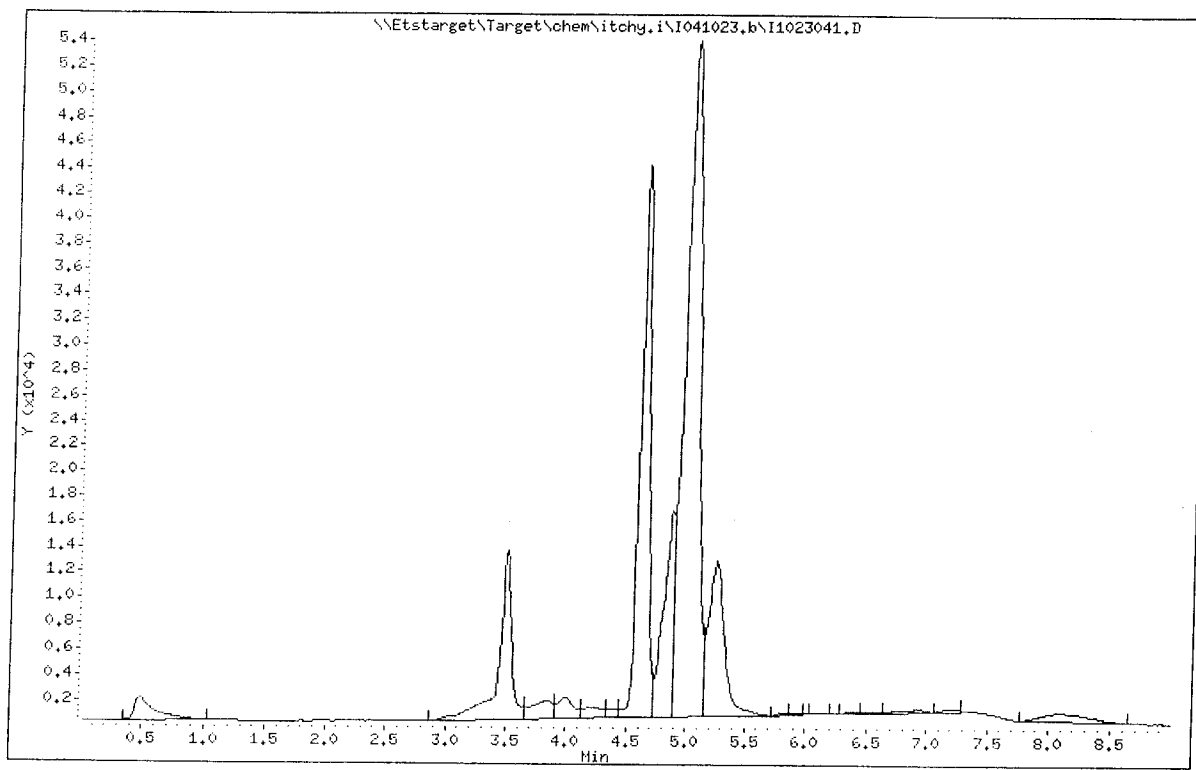
M - Compound response manually integrated.

Report E03-0583

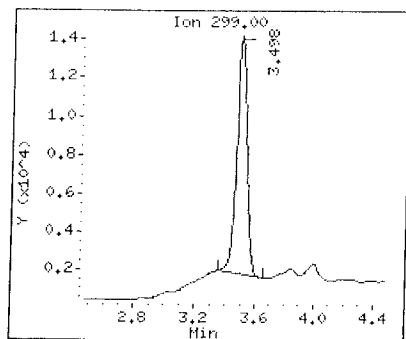
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\itchy.i\\I041023,b\\I1023041.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041009.b\\D1009029.D Page 1
Report Date: 04-Jan-2005 07:13

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041009.b\\D1009029.D
 Lab Smp Id: 73008-1
 Inj Date : 09-OCT-2004 17:58
 Operator : mla Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 100 ppm Dose Group
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041009.b\\D041009.m
 Meth Date : 04-Jan-2005 07:13 carlson Quant Type: ESTD
 Cal Date : 09-OCT-2004 17:16 Cal File: D1009025.D
 Als bottle: 11
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.439	3.439	0.000	666726	49.5659	49.6 (M)

QC Flag Legend

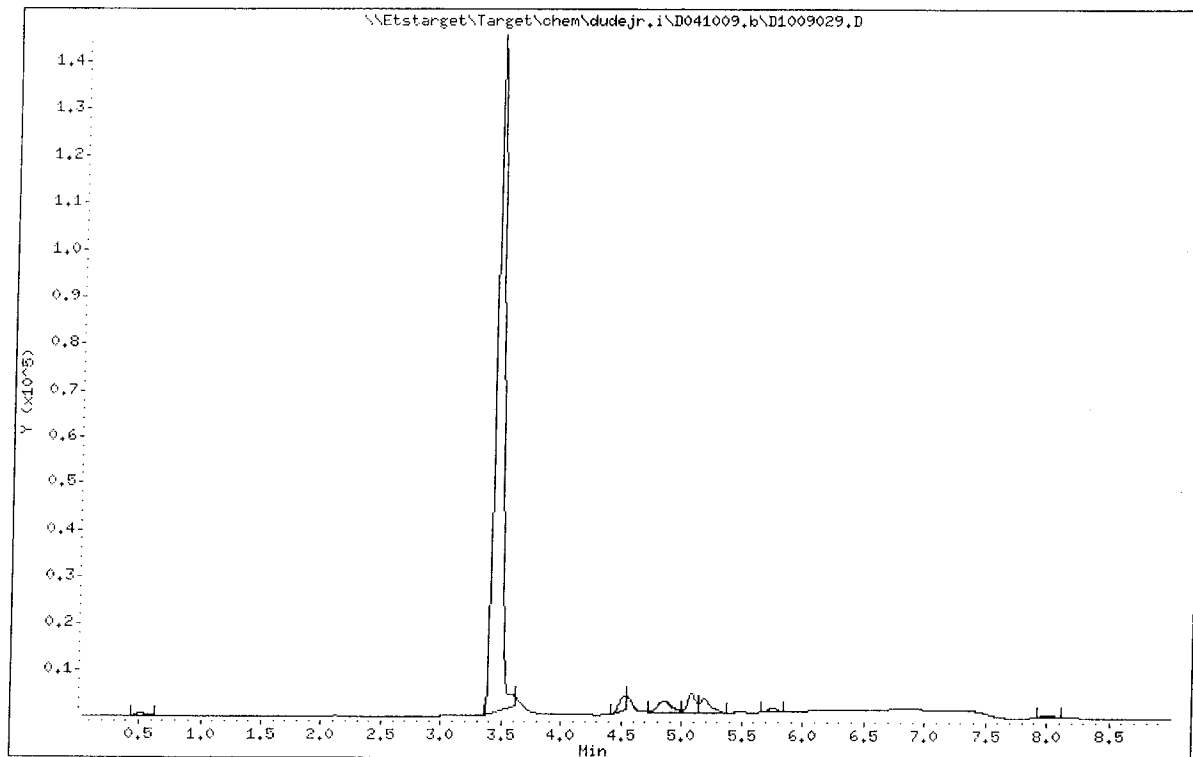
M - Compound response manually integrated.

Report E03-0583

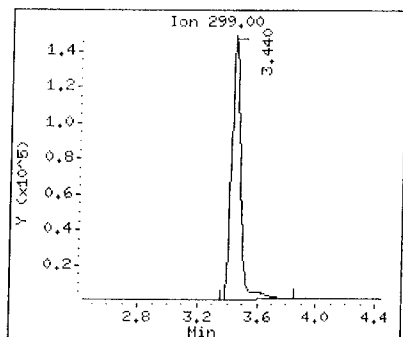
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\Target\chem\dudejr,i\D041009,b\1009029.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041009.b\\D1009032.D Page 1
Report Date: 04-Jan-2005 07:13

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041009.b\\D1009032.D
 Lab Smp Id: 73009-1
 Inj Date : 09-OCT-2004 18:29
 Operator : mla Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group; Liver; 30 Sept 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 100 ppm Dose Group
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041009.b\\D041009.m
 Meth Date : 04-Jan-2005 07:13 carlson Quant Type: ESTD
 Cal Date : 09-OCT-2004 17:16 Cal File: D1009025.D
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

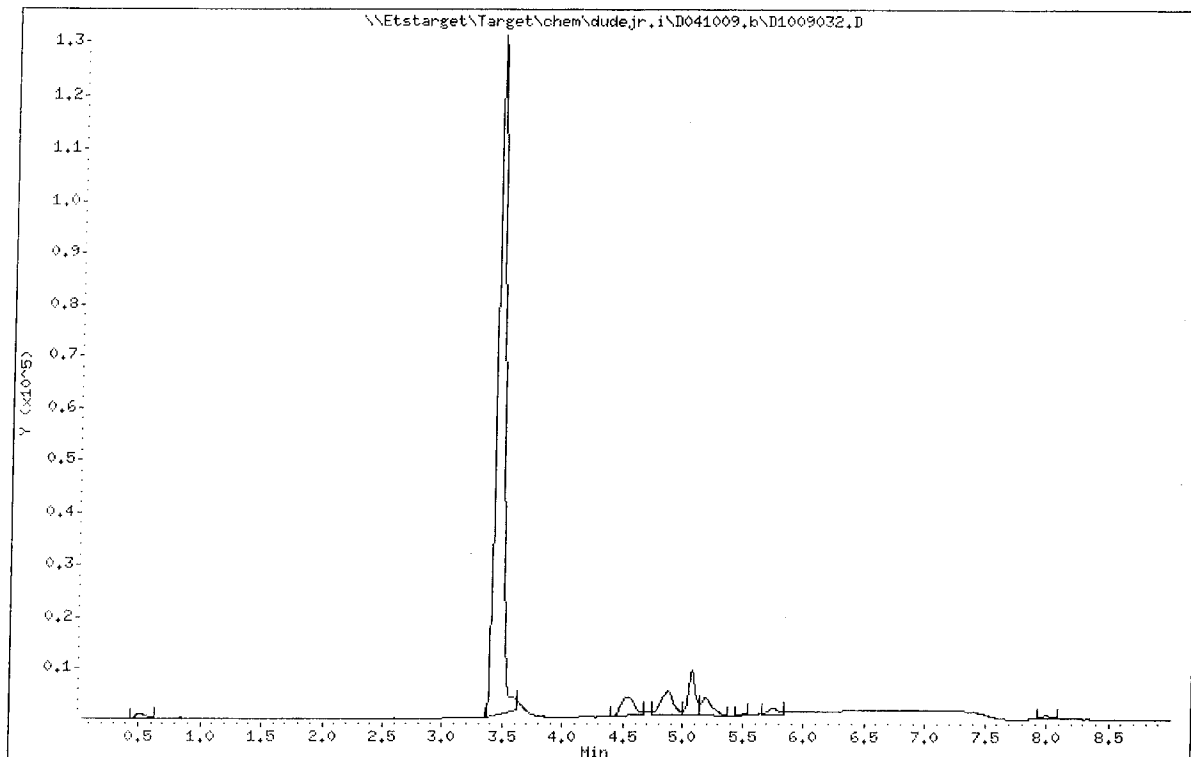
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.439	3.439	0.000	601802	44.0515	44.1

Report E03-0583

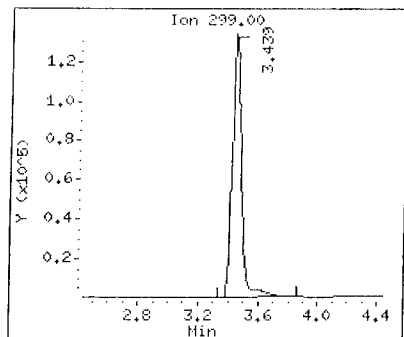
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041009,b\\D1009032.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041024.b\\D1024087.D Page 1
Report Date: 04-Jan-2005 07:17

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041024.b\\D1024087.D
 Lab Smp Id: 73190-1
 Inj Date : 25-OCT-2004 07:09
 Operator : mla Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group; Offspring; Liver; 30 sep 04; MLA/CMC/MEE<
 Misc Info :
 Comment : Liver, 100 ppm Dose Group, Offspring
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041024.b\\D041024.m
 Meth Date : 04-Jan-2005 07:16 carlson Quant Type: ESTD
 Cal Date : 24-OCT-2004 20:49 Cal File: D1024028.D
 Als bottle: 60
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	=====	=====	=====	=====	=====		=====	=====
1 PFBS (299)	299	3.482	3.460	0.022	9834		1.89137	1.89(M)

QC Flag Legend

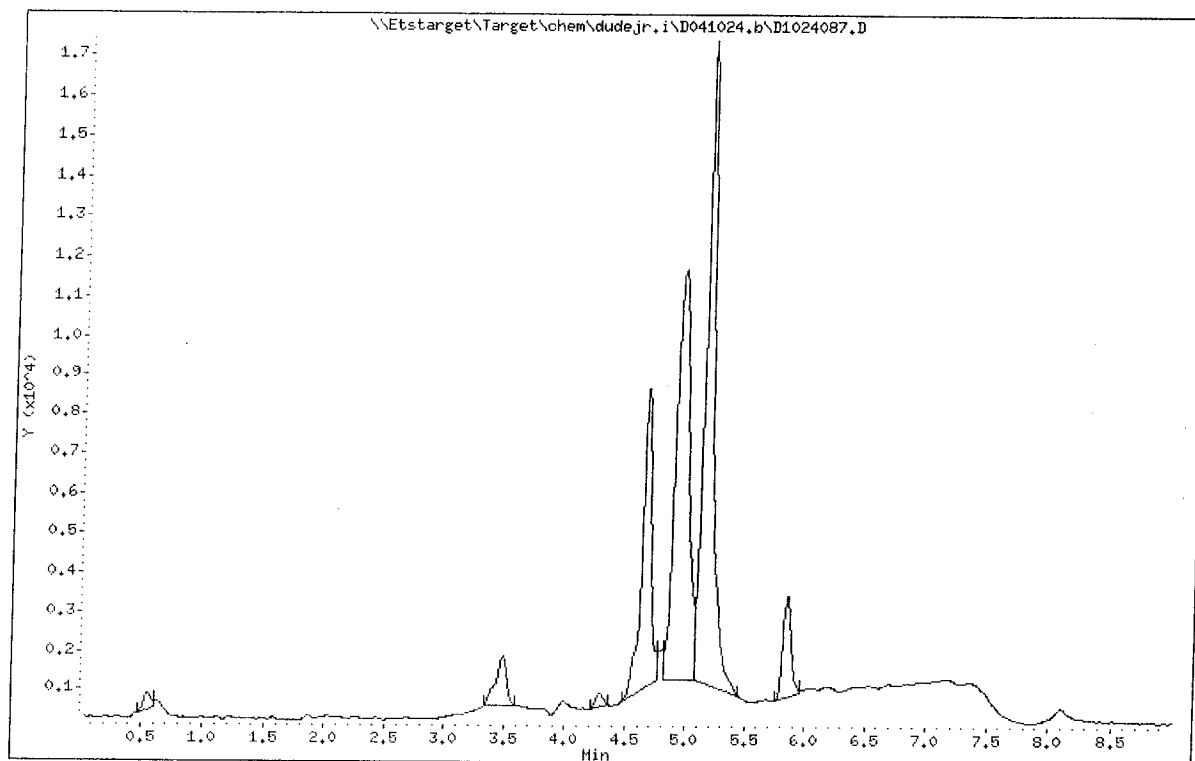
M - Compound response manually integrated.

Report E03-0583

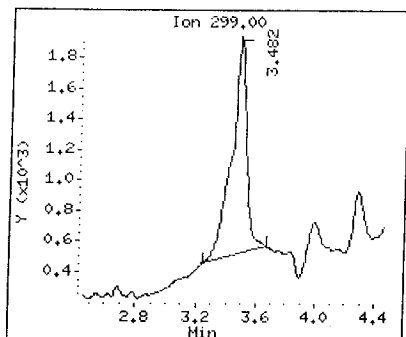
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041024.b\\D1024087.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041024.b\\D1024093.D Page 1
Report Date: 04-Jan-2005 07:17

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041024.b\\D1024093.D
 Lab Smp Id: 73191-1
 Inj Date : 25-OCT-2004 08:12
 Operator : mla Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group; Offspring; Liver; 30 sep 04; MLA/CMC/MEE?
 Misc Info :
 Comment : Liver, 100 ppm Dose Group, Offspring
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041024.b\\D041024.m
 Meth Date : 04-Jan-2005 07:16 carlson Quant Type: ESTD
 Cal Date : 24-OCT-2004 20:49 Cal File: D1024028.D
 Als bottle: 63
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.481	3.460	0.021	20460	5.74229	5.74 (M)

QC Flag Legend

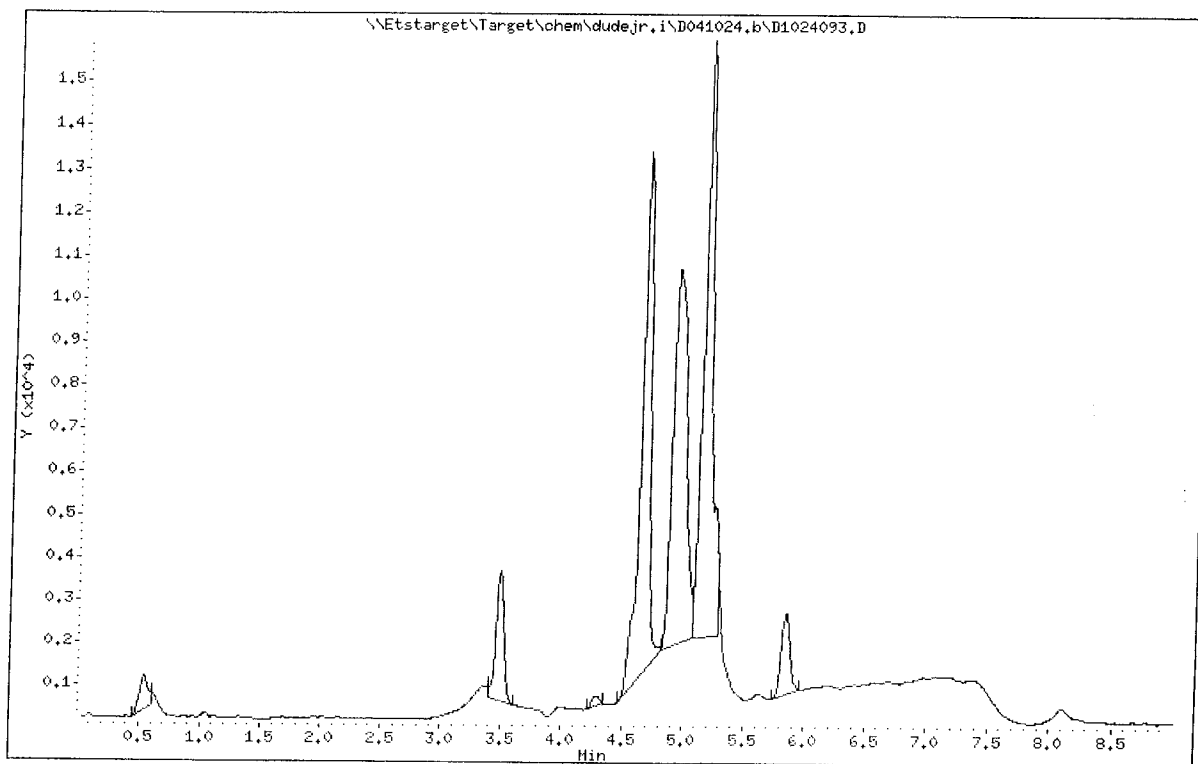
M - Compound response manually integrated.

Report E03-0583

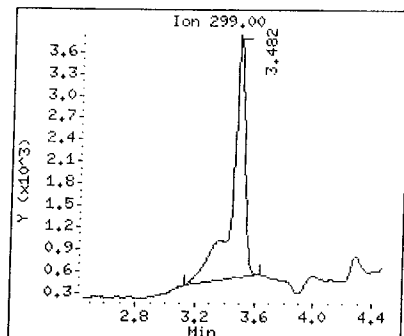
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dude,jr,i\\D041024,b\\D1024093.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041015.b\\D1015032.D Page 1
Report Date: 04-Jan-2005 07:21

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041015.b\\D1015032.D
 Lab Smp Id: 73041-1
 Inj Date : 15-OCT-2004 15:04
 Operator : mla Inst ID: dudejr.i
 Smp Info : 300 ppm Dose Group; Liver; 05 Oct 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 300 ppm Dose Group
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041015.b\\D041015.m
 Meth Date : 04-Jan-2005 07:19 carlson Quant Type: ESTD
 Cal Date : 15-OCT-2004 14:23 Cal File: D1015028.D
 Als bottle: 21
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.446	3.446	0.000	1353885	183.282	183 (M)

QC Flag Legend

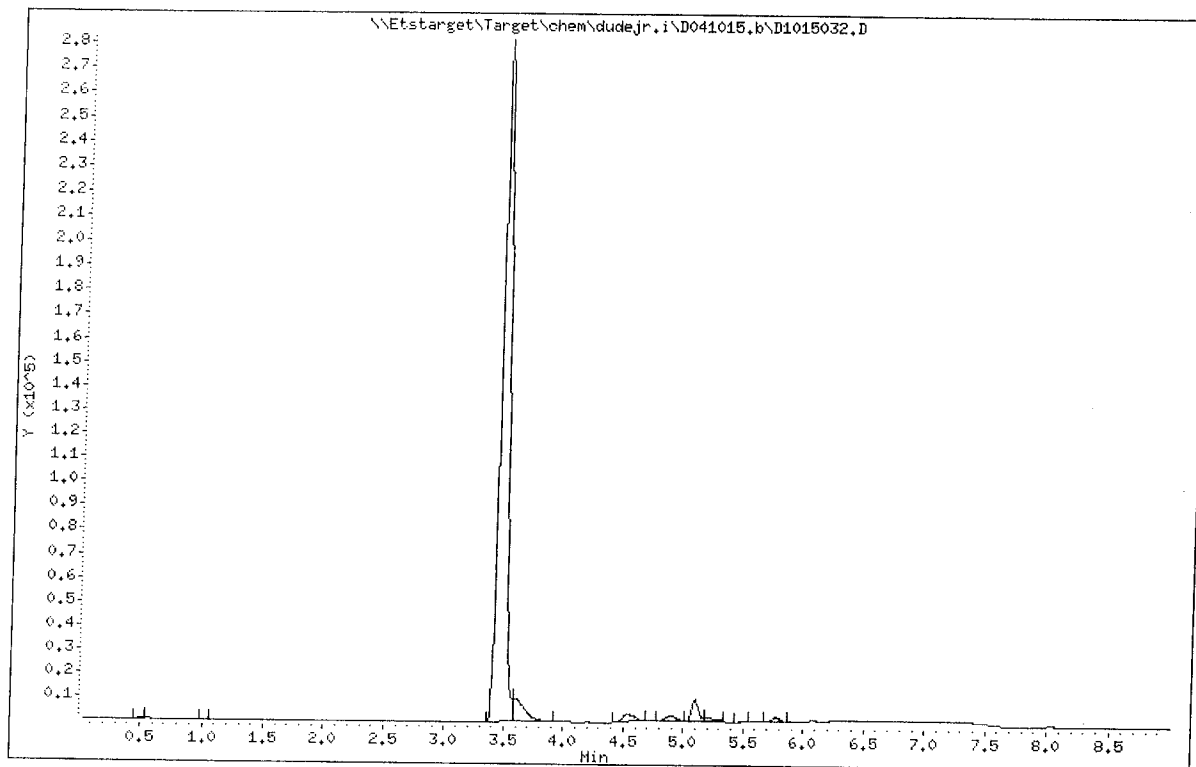
M - Compound response manually integrated.

Report E03-0583

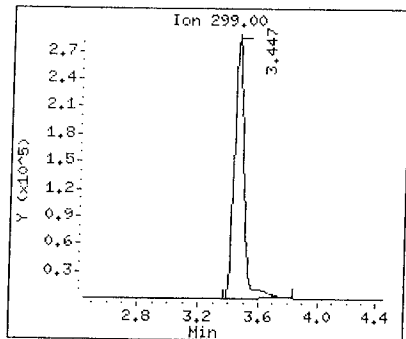
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041015.b\\D1015032.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041015.b\\D1015035.D Page 1
Report Date: 04-Jan-2005 07:21

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041015.b\\D1015035.D
 Lab Smp Id: 73042-1
 Inj Date : 15-OCT-2004 15:36
 Operator : mla Inst ID: dudejr.i
 Smp Info : 300 ppm Dose Group; Liver; 05 Oct 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 300 ppm Dose Group
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041015.b\\D041015.m
 Meth Date : 04-Jan-2005 07:19 carlson Quant Type: ESTD
 Cal Date : 15-OCT-2004 14:23 Cal File: D1015028.D
 Als bottle: 24
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	====	----	-----	-----	-----		=====	=====
1 PFBS (299)	299	3.446	3.446	0.000	794000		100.276	100 (M)

QC Flag Legend

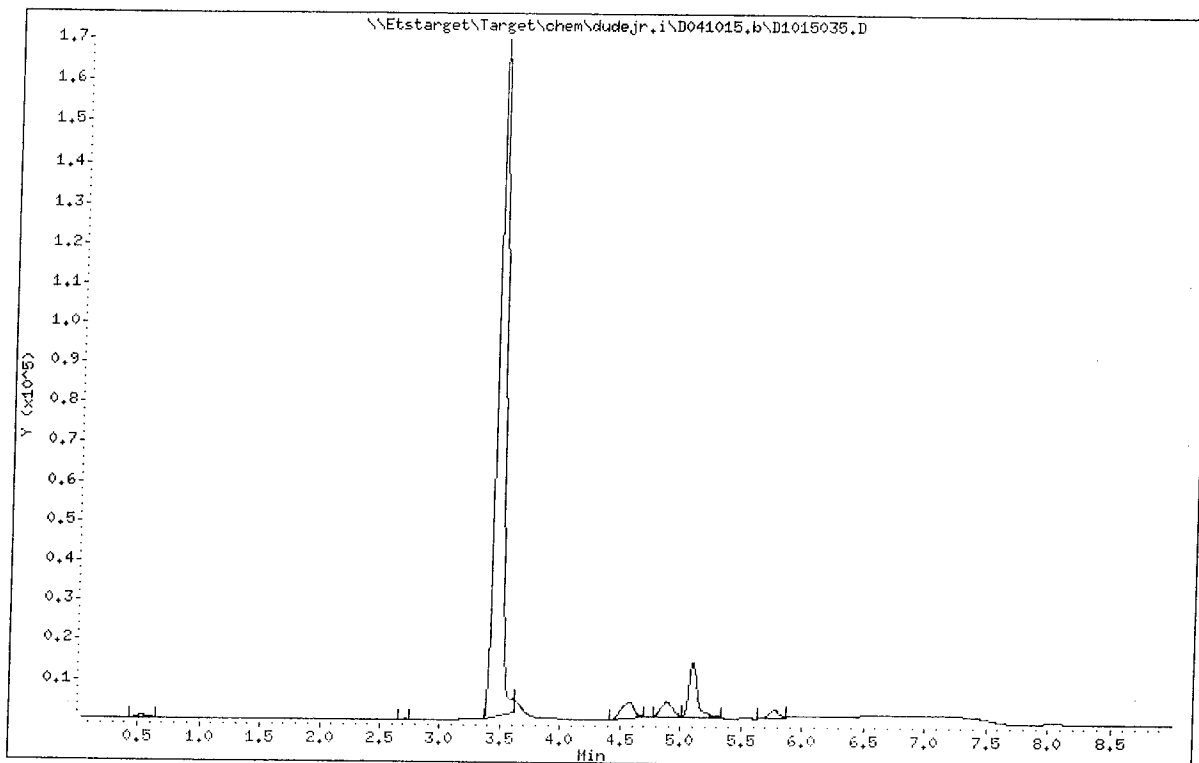
M - Compound response manually integrated.

Report E03-0583

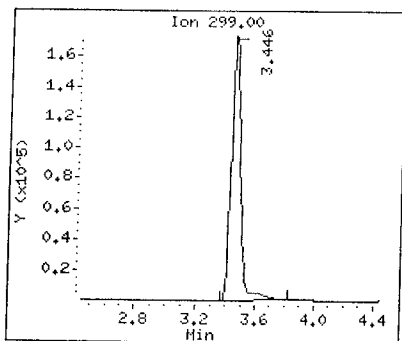
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041015.b\\D1015035.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041018b.b\\D1018131.D Page 1
Report Date: 04-Jan-2005 07:24

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041018b.b\\D1018131.D
Lab Smp Id: 73192-1
Inj Date : 19-OCT-2004 11:37
Operator : mla Inst ID: dudejr.i
Smp Info : 300 ppm Dose Group; Liver; 05 Oct 04; MLA/CMC/MEE
Misc Info :
Comment : Liver, 300 ppm Dose Group Offspring
Method : \\Etstarget\\target\\chem\\dudejr.i\\D041018b.b\\D041018b.m
Meth Date : 04-Jan-2005 07:23 carlson Quant Type: ESTD
Cal Date : 19-OCT-2004 10:55 Cal File: D1018127.D
Als bottle: 54
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.461	3.447	0.014	34195	8.59423	8.59(M)

QC Flag Legend

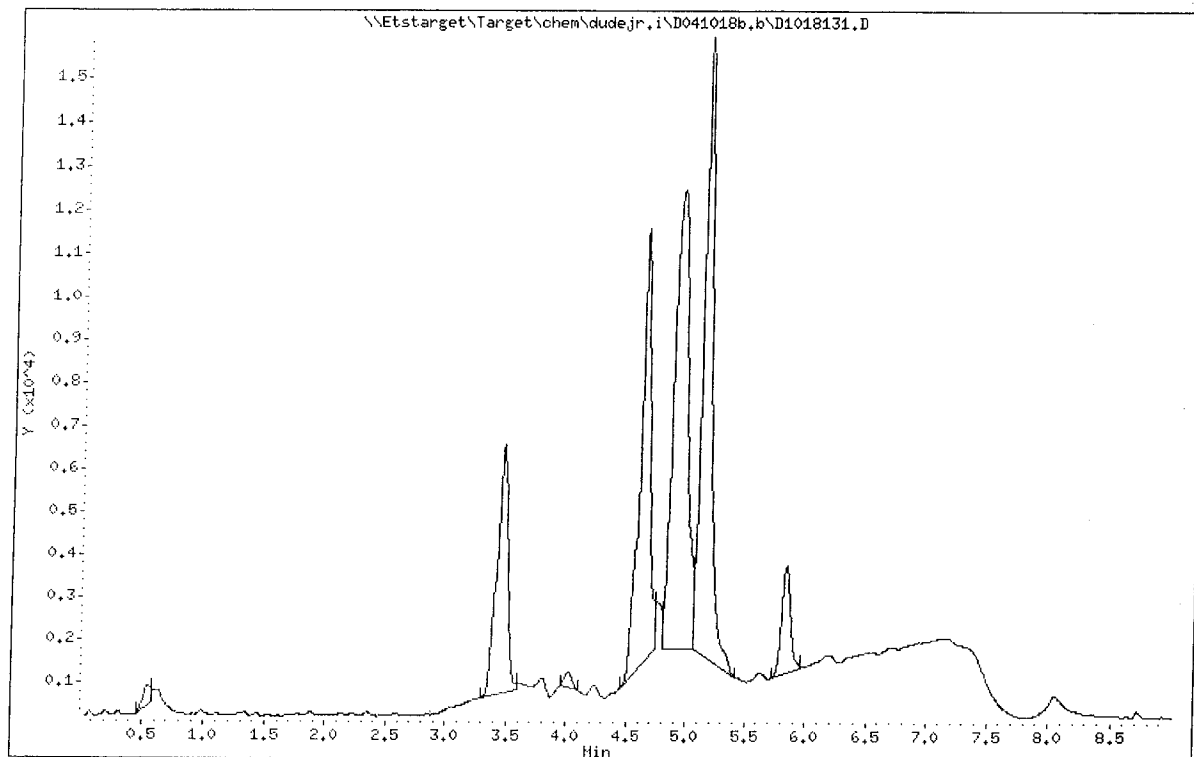
M - Compound response manually integrated.

Report E03-0583

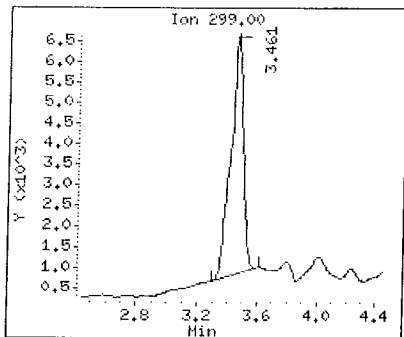
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041018b,b\\D1018131.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041018b.b\\D1018134.D Page 1
Report Date: 04-Jan-2005 07:24

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041018b.b\\D1018134.D
 Lab Smp Id: 73193-1
 Inj Date : 19-OCT-2004 12:09
 Operator : mla Inst ID: dudejr.i
 Smp Info : 300 ppm Dose Group; Liver; 05 Oct 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 300 ppm Dose Group Offspring
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041018b.b\\D041018b.m
 Meth Date : 04-Jan-2005 07:23 carlson Quant Type: ESTD
 Cal Date : 19-OCT-2004 10:55 Cal File: D1018127.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

Compounds	QUANT SIG MASS	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.460	3.447	0.013	18754	4.05468	4.05 (M)

QC Flag Legend

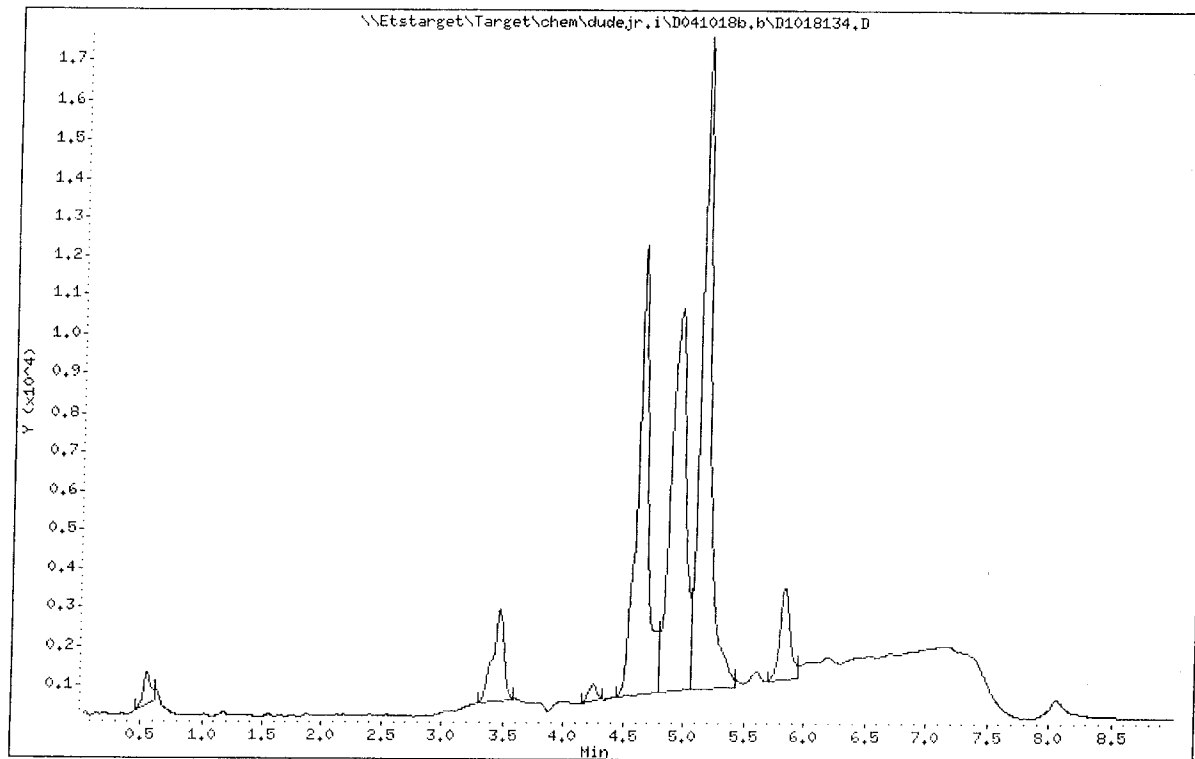
M - Compound response manually integrated.

Report E03-0583

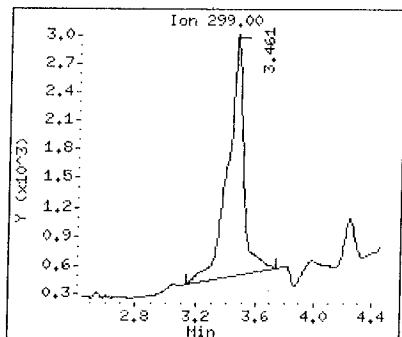
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041018b,b\\D1018134.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041023.b\\D1023032.D Page 1
Report Date: 04-Jan-2005 07:27

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041023.b\\D1023032.D
 Lab Smp Id: 73072-1
 Inj Date : 23-OCT-2004 18:46
 Operator : mla Inst ID: dudejr.i
 Smp Info : 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 900 ppm Dose Group
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041023.b\\D041023.m
 Meth Date : 04-Jan-2005 07:27 carlson Quant Type: ESTD
 Cal Date : 23-OCT-2004 18:04 Cal File: D1023028.D
 Als bottle: 21
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
1 PFBS (299)	299	3.461	3.468	-0.007	492162		46.9848	47.0 (M)

QC Flag Legend

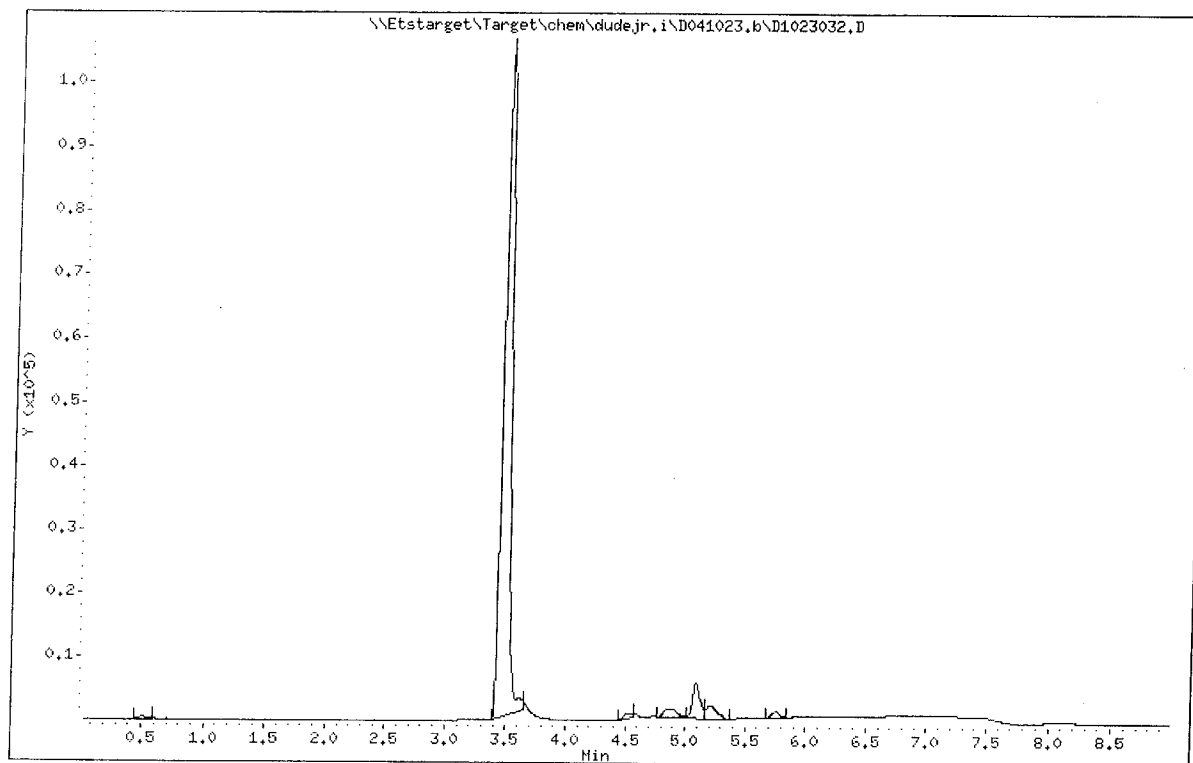
M - Compound response manually integrated.

Report E03-0583

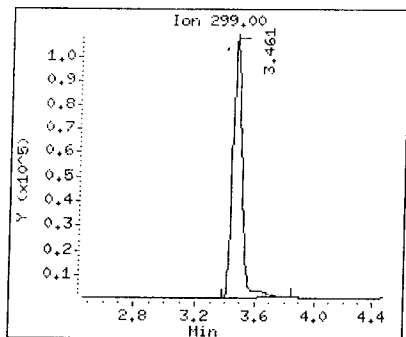
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041023.b\\D1023032.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041023.b\\D1023035.D Page 1
Report Date: 04-Jan-2005 07:27

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041023.b\\D1023035.D
 Lab Smp Id: 73073-1
 Inj Date : 23-OCT-2004 19:17
 Operator : mla Inst ID: dudejr.i
 Smp Info : 900 ppm Dose Group; Liver; 19 Oct 04; MLA/CMC/MEE
 Misc Info :
 Comment : Liver, 900 ppm Dose Group
 Method : \\Etstarget\\target\\chem\\dudejr.i\\D041023.b\\D041023.m
 Meth Date : 04-Jan-2005 07:27 carlson Quant Type: ESTD
 Cal Date : 23-OCT-2004 18:04 Cal File: D1023028.D
 Als bottle: 24
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
1 PFBS (299)	299	3.460	3.468	-0.008	1120075		116.795	117(M)

QC Flag Legend

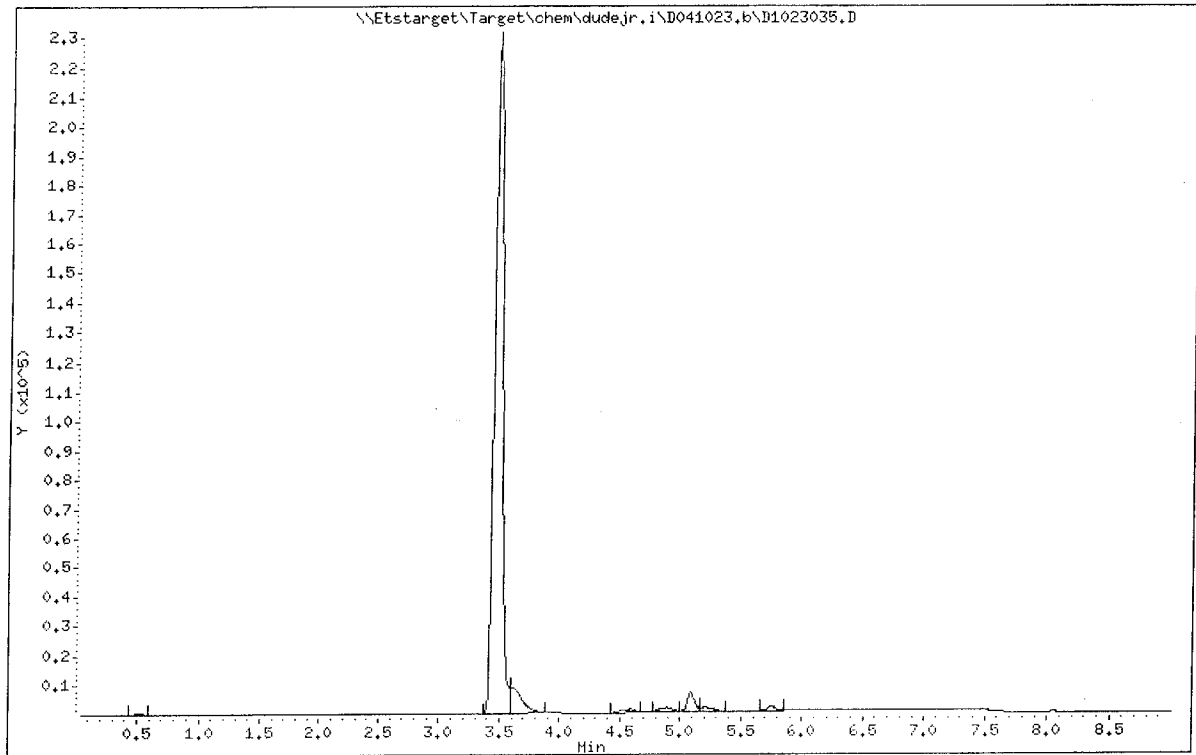
M - Compound response manually integrated.

Report E03-0583

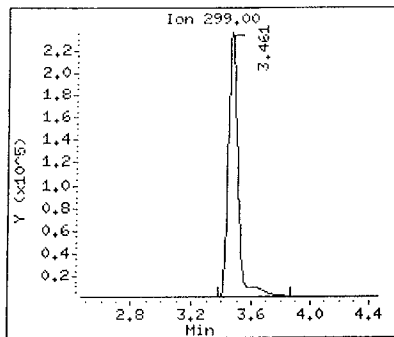
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041023,b\\D1023035.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\Target\chem\dudejr.i\D041022.b\D1022032.D Page 1

Report Date: 04-Jan-2005 07:30

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\Target\chem\dudejr.i\D041022.b\D1022032.D
 Lab Smp Id: 73207-1
 Inj Date : 22-OCT-2004 19:47
 Operator : mla Inst ID: dudejr.i
 Smp Info : 900 ppm Dose Group; Offspring; Liver; 19 Oct 04; MLA/CMC/MEEs
 Misc Info :
 Comment : Liver, 900 ppm Dose Group Offspring
 Method : \\Etstarget\target\chem\dudejr.i\D041022.b\D041022.m
 Meth Date : 04-Jan-2005 07:28 carlson Quant Type: ESTD
 Cal Date : 22-OCT-2004 19:05 Cal File: D1022028.D
 Als bottle: 21
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

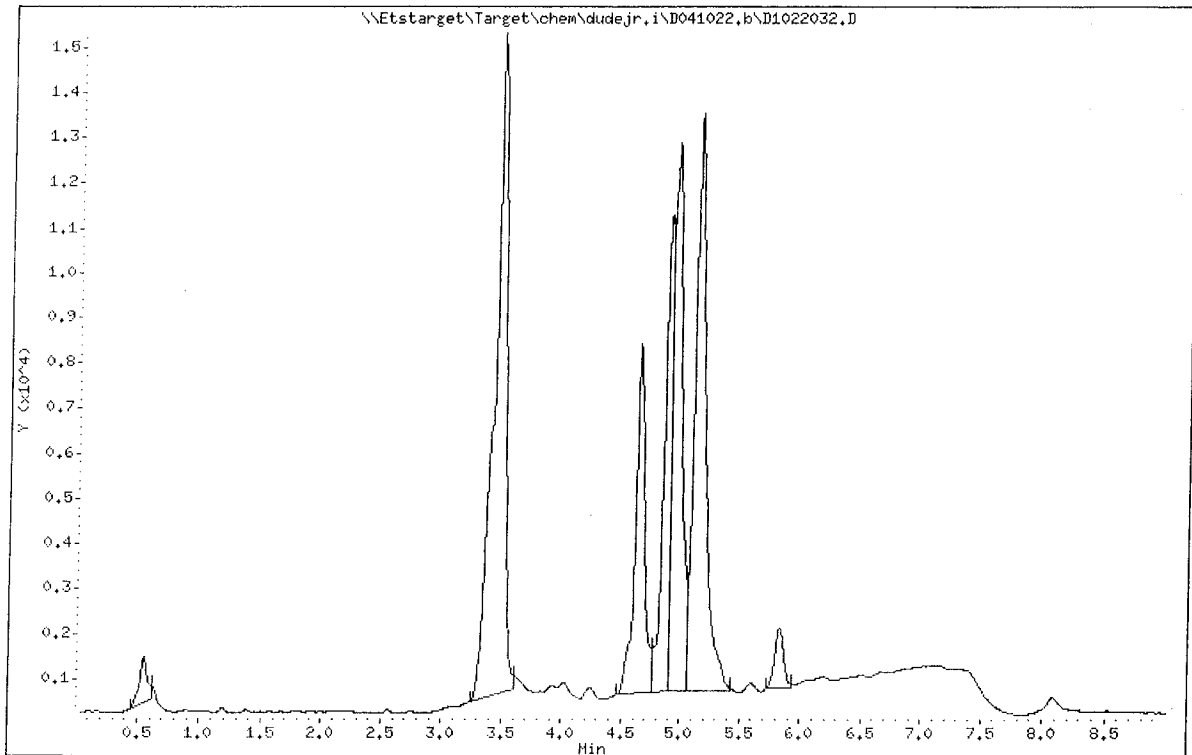
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.468	3.454	0.014	96273	32.6494	32.6

Report E03-0583

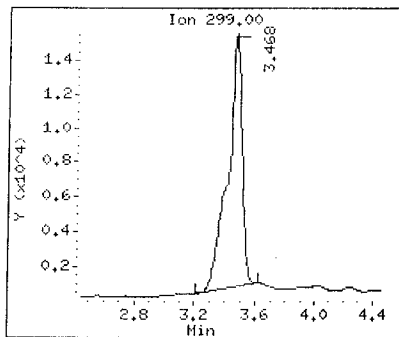
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041022,b\\D1022032.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041022.b\\D1022036.D Page 1
Report Date: 04-Jan-2005 07:30

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041022.b\\D1022036.D
Lab Smp Id: 73208-2
Inj Date : 22-OCT-2004 20:29
Operator : mla Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Offspring; Liver; 19 Oct 04; MLA/CMC/MEEV
Misc Info :
Comment : Liver, 900 ppm Dose Group Offspring
Method : \\Etstarget\\target\\chem\\dudejr.i\\D041022.b\\D041022.m
Meth Date : 04-Jan-2005 07:28 carlson Quant Type: ESTD
Cal Date : 22-OCT-2004 19:05 Cal File: D1022028.D
Als bottle: 25
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

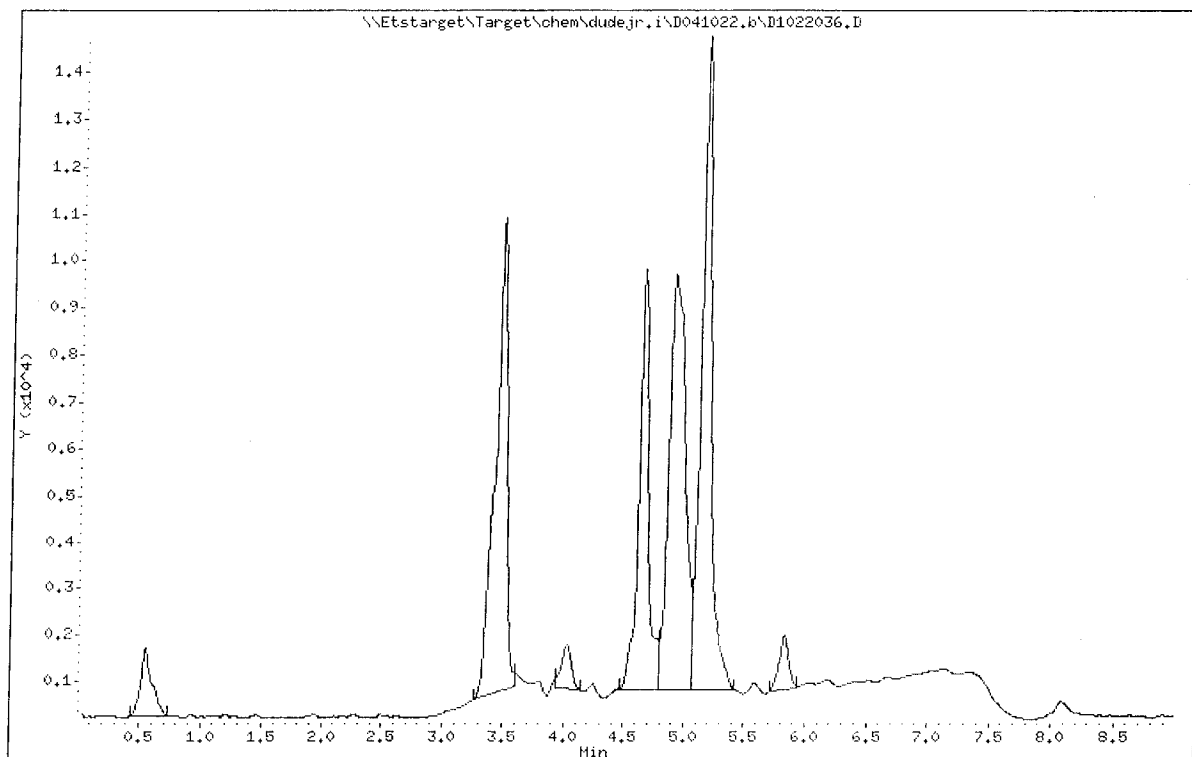
Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	----	----	-----	-----	-----	-----	-----	-----
1 PFBS (299)	299	3.467	3.454	0.013	64785		21.4773	21.5

Report E03-0583

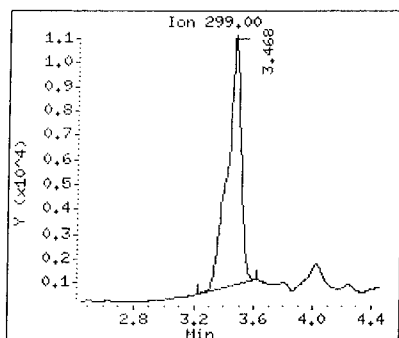
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041022,b\\D1022036.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207046.D Page 1
Report Date: 04-Jan-2005 07:34

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207046.D
Lab Smp Id: 72727-1
Inj Date : 07-DEC-2004 18:42
Operator : rsk Inst ID: dudejr.i
Smp Info : 0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, Control Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D041207.m
Meth Date : 04-Jan-2005 07:32 carlson Quant Type: ESTD
Cal Date : 07-DEC-2004 15:15 Cal File: D1207026.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

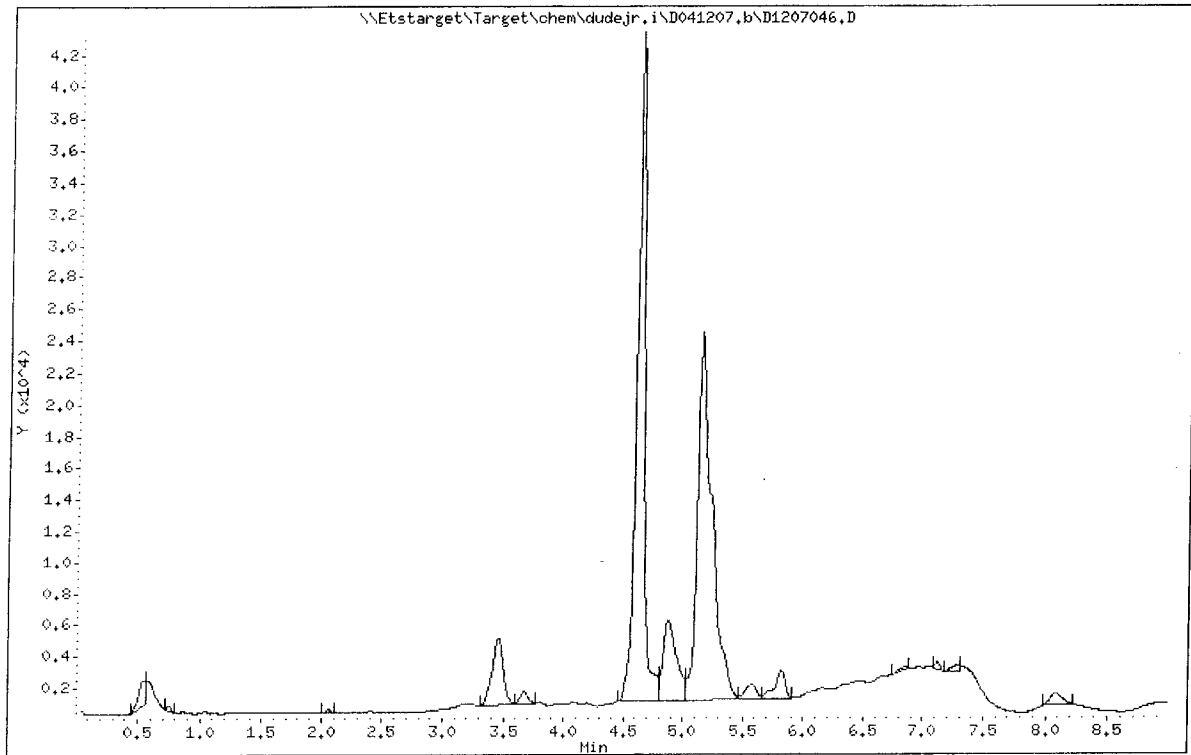
Compounds	QUANT SIG					CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	Compound Not Detected.					

Report E03-0583

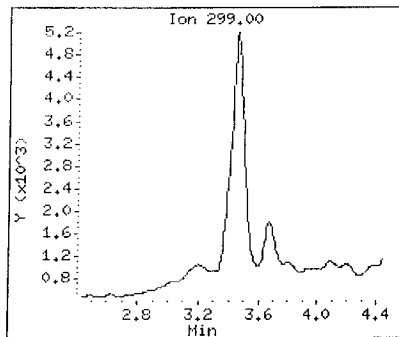
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041207,b\\D1207046.D

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1 PFBS (299) (Undetected)



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T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207050.D Page 1
Report Date: 04-Jan-2005 07:34

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207050.D
Lab Smp Id: 72728-1
Inj Date : 07-DEC-2004 19:23
Operator : rsk Inst ID: dudejr.i
Smp Info : 0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, Control Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D041207.m
Meth Date : 04-Jan-2005 07:32 carlson Quant Type: ESTD
Cal Date : 07-DEC-2004 15:15 Cal File: D1207026.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

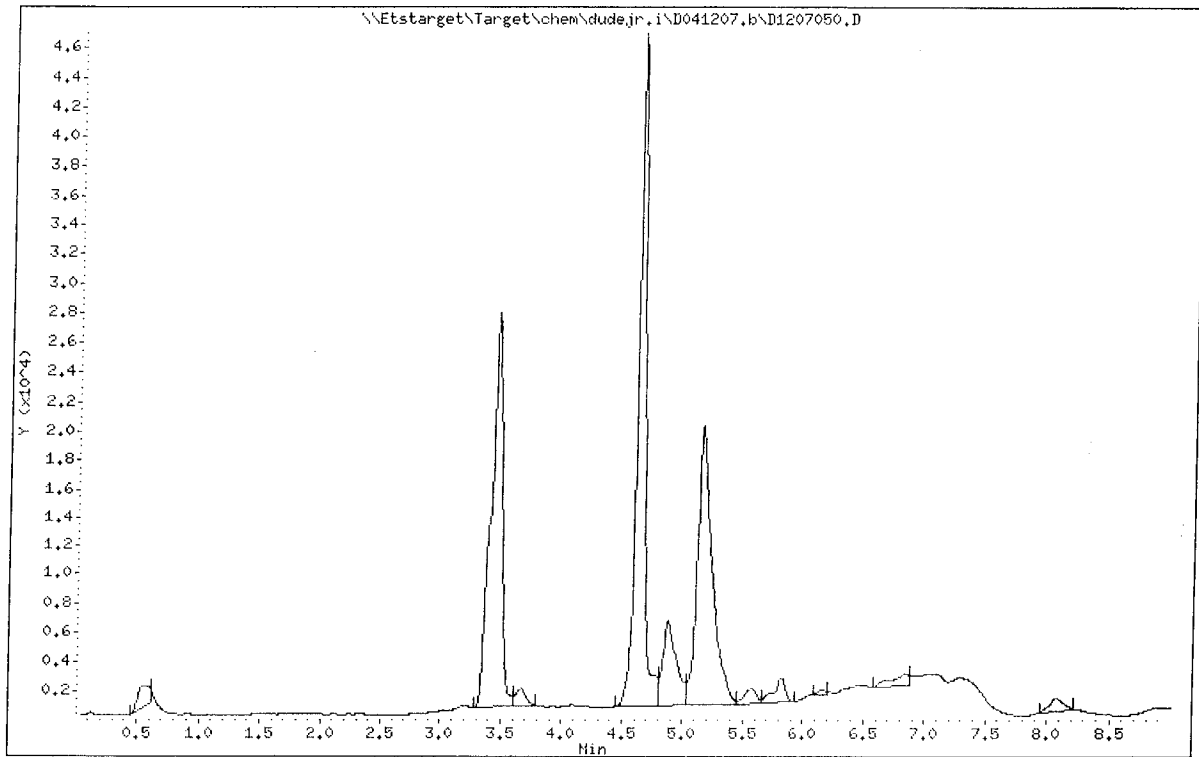
Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	====	====	=====	=====	=====		=====	=====
1 PFBS (299)	299	3.453	3.439	0.014	167503		1.22748	1.23

Report E03-0583

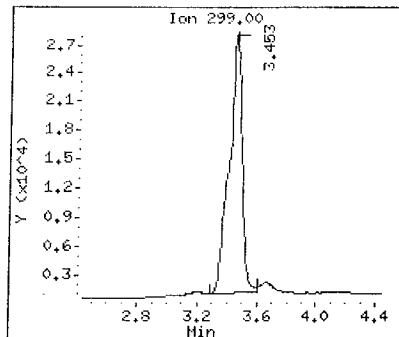
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041207,b\\D1207050.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207077.D Page 1
Report Date: 04-Jan-2005 07:34

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207077.D
Lab Smp Id: 72577-1
Inj Date : 08-DEC-2004 00:05
Operator : rsk Inst ID: dudejr.i
Smp Info : 0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, Control Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D041207.m
Meth Date : 04-Jan-2005 07:32 carlson Quant Type: ESTD
Cal Date : 07-DEC-2004 15:15 Cal File: D1207026.D
Als bottle: 71
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

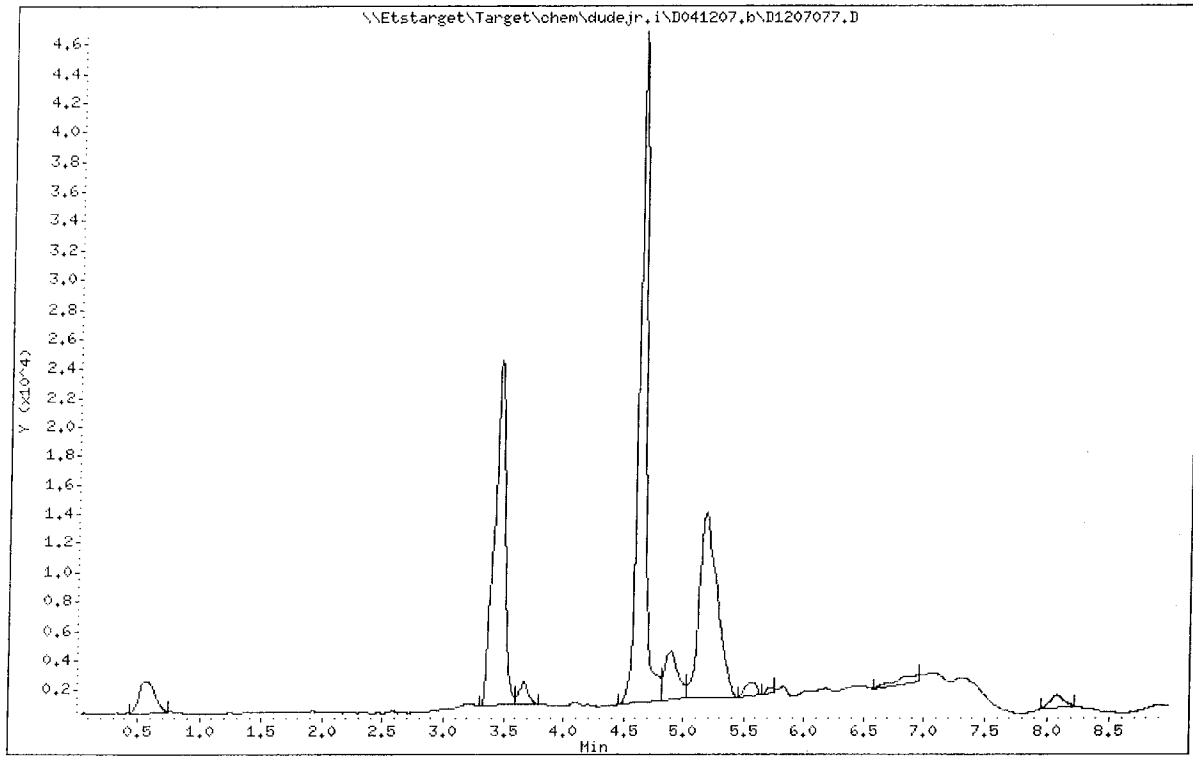
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.454	3.439	0.015	144822	0.14700	0.147

Report E03-0583

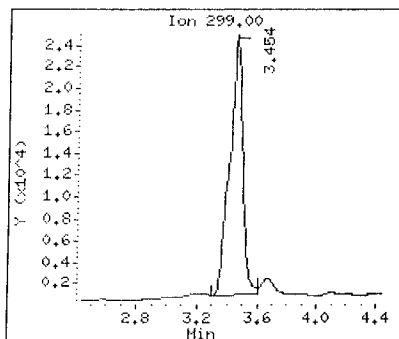
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207077.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207082.D Page 1
Report Date: 04-Jan-2005 07:34

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D1207082.D
Lab Smp Id: 72578-1
Inj Date : 08-DEC-2004 00:57
Operator : rsk Inst ID: dudejr.i
Smp Info : 0 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, Control Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041207.b\\D041207.m
Meth Date : 04-Jan-2005 07:32 carlson Quant Type: ESTD
Cal Date : 07-DEC-2004 15:15 Cal File: D1207026.D
Als bottle: 74
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

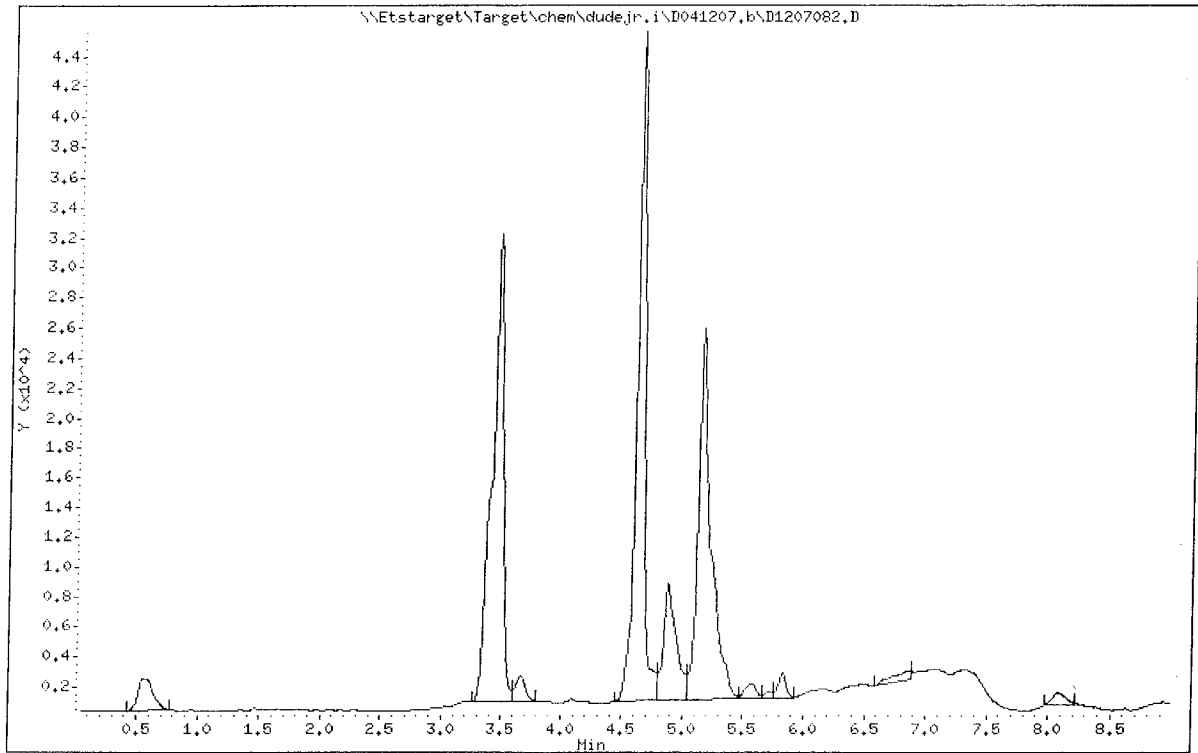
Compounds	QUANT SIG						CONCENTRATIONS	
	MASS	RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
							(ng/mL)	(ng/mL)
1 PFBS (299)	299	3.460	3.439	0.021	204316		2.98319	2.98

Report E03-0583

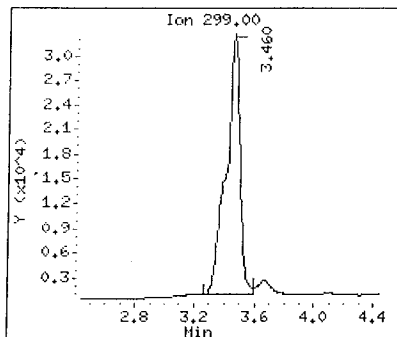
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\Target\chem\dudejr.i\D041207,b\D1207082.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208030.D Page 1
Report Date: 04-Jan-2005 07:38

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208030.D
 Lab Smp Id: 72583-1
 Inj Date : 08-DEC-2004 17:19
 Operator : vjt Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
 Misc Info :
 Comment : Egg Samples, 100 and 300 ppm dose groups, lot B
 Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D041208.m
 Meth Date : 04-Jan-2005 07:37 carlson Quant Type: ESTD
 Cal Date : 08-DEC-2004 16:37 Cal File: D1208026.D
 Als bottle: 21
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: all.sub
 Target Version: 4.12

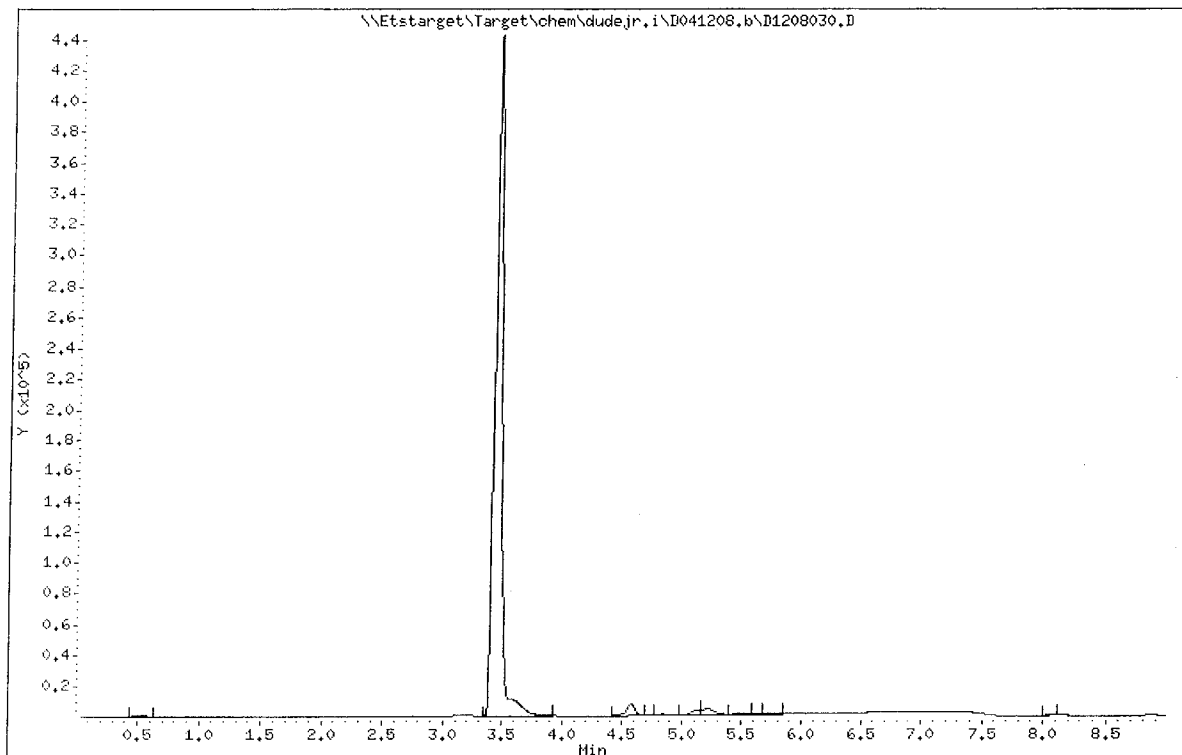
Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 PFBS (299)	299	3.432	3.432	0.000	1966789		105.636	106

Report E03-0583

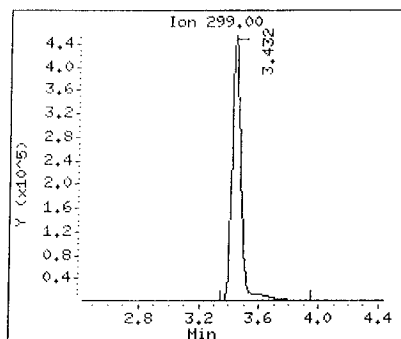
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041208,b\\D1208030.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208033.D Page 1
Report Date: 04-Jan-2005 07:38

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208033.D
Lab Smp Id: 72584-1
Inj Date : 08-DEC-2004 17:49
Operator : vjt Inst ID: dudejr.i
Smp Info : 100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, 100 and 300 ppm dose groups, lot B
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D041208.m
Meth Date : 04-Jan-2005 07:37 carlson Quant Type: ESTD
Cal Date : 08-DEC-2004 16:37 Cal File: D1208026.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

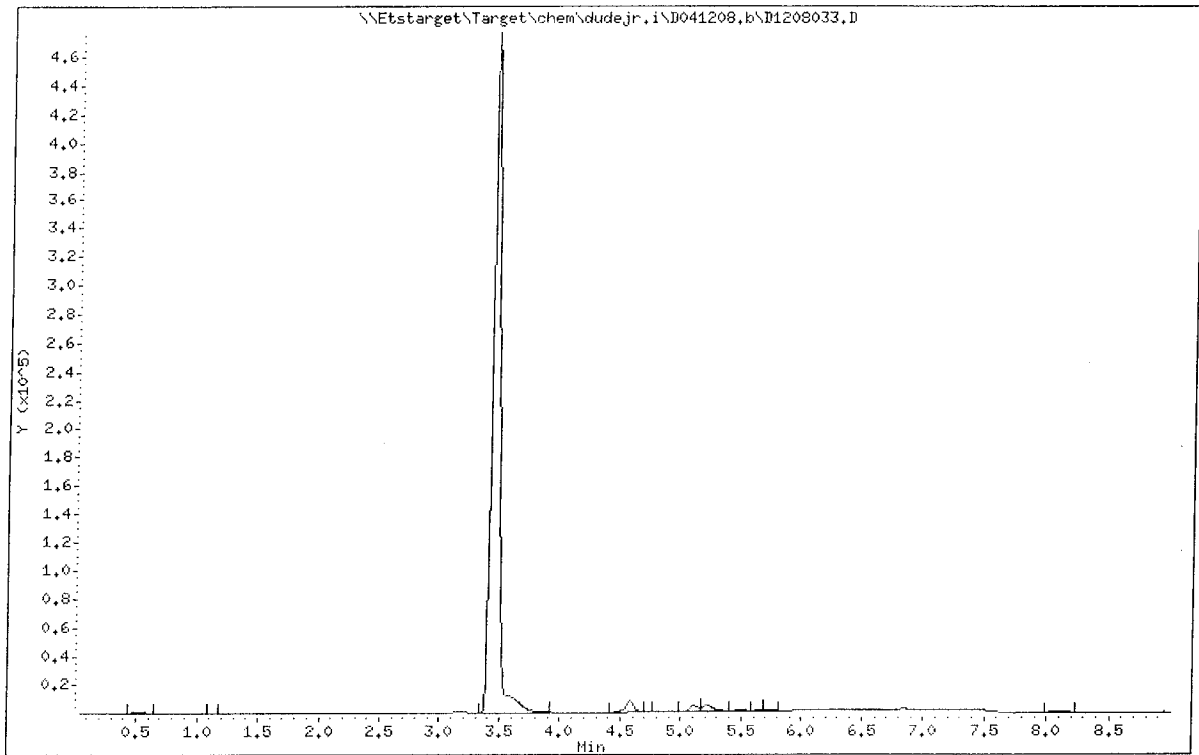
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.439	3.432	0.007	2115573	115.057	115

Report E03-0583

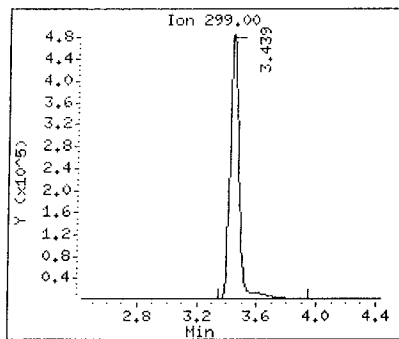
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041208,b\\D1208033.D

Page 2



1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209028.D Page 1
Report Date: 04-Jan-2005 07:41

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209028.D
Lab Smp Id: 72735-1
Inj Date : 09-DEC-2004 18:25
Operator : rsk Inst ID: dudejr.i
Smp Info : 100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, 100 and 300 ppm dose groups, lot G
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D041209.m
Meth Date : 04-Jan-2005 07:39 carlson Quant Type: ESTD
Cal Date : 09-DEC-2004 17:44 Cal File: D1209024.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

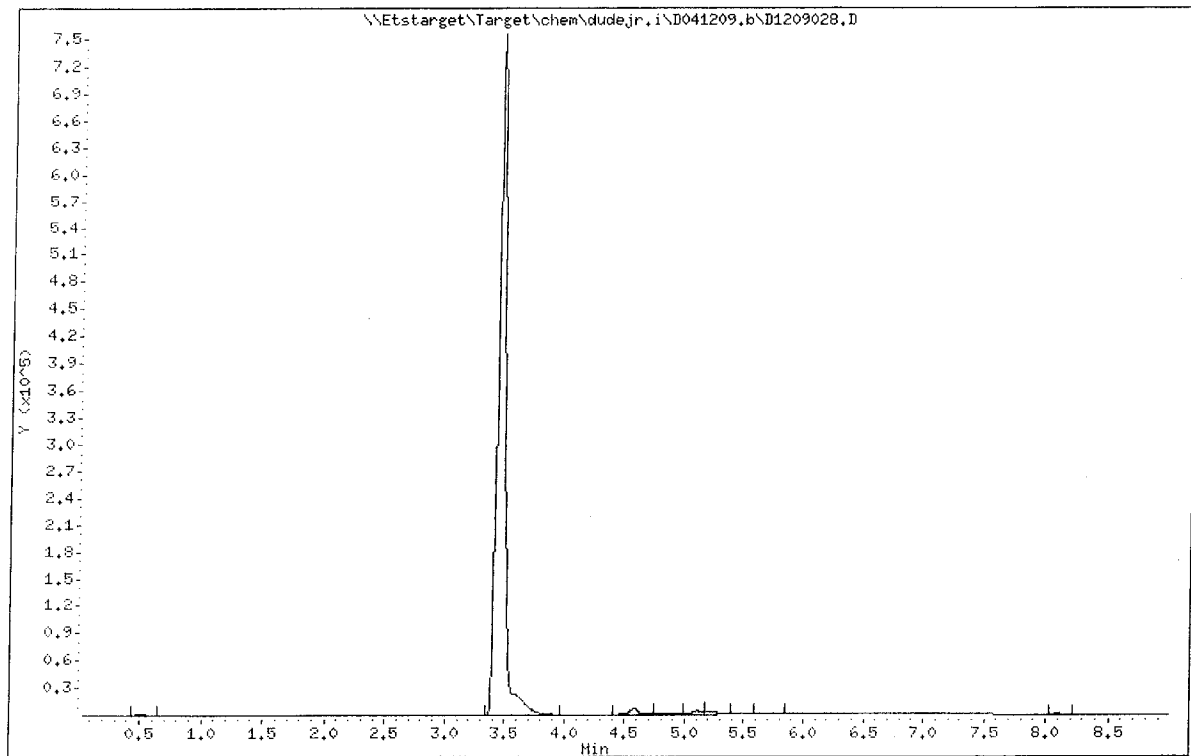
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.439	3.440	-0.001	3478355	247.787	248

Report E03-0583

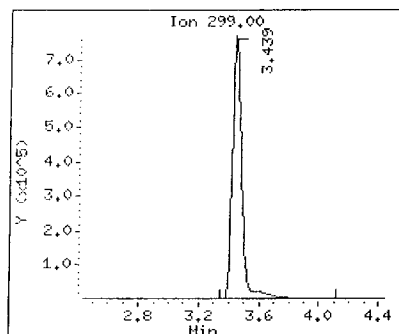
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209,b\\D1209028.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209031.D Page 1
Report Date: 04-Jan-2005 07:41

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209031.D
 Lab Smp Id: 72736-1
 Inj Date : 09-DEC-2004 18:56
 Operator : rsk Inst ID: dudejr.i
 Smp Info : 100 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
 Misc Info :
 Comment : Egg Samples, 100 and 300 ppm dose groups, lot G
 Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D041209.m
 Meth Date : 04-Jan-2005 07:39 carlson Quant Type: ESTD
 Cal Date : 09-DEC-2004 17:44 Cal File: D1209024.D
 Als bottle: 24
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

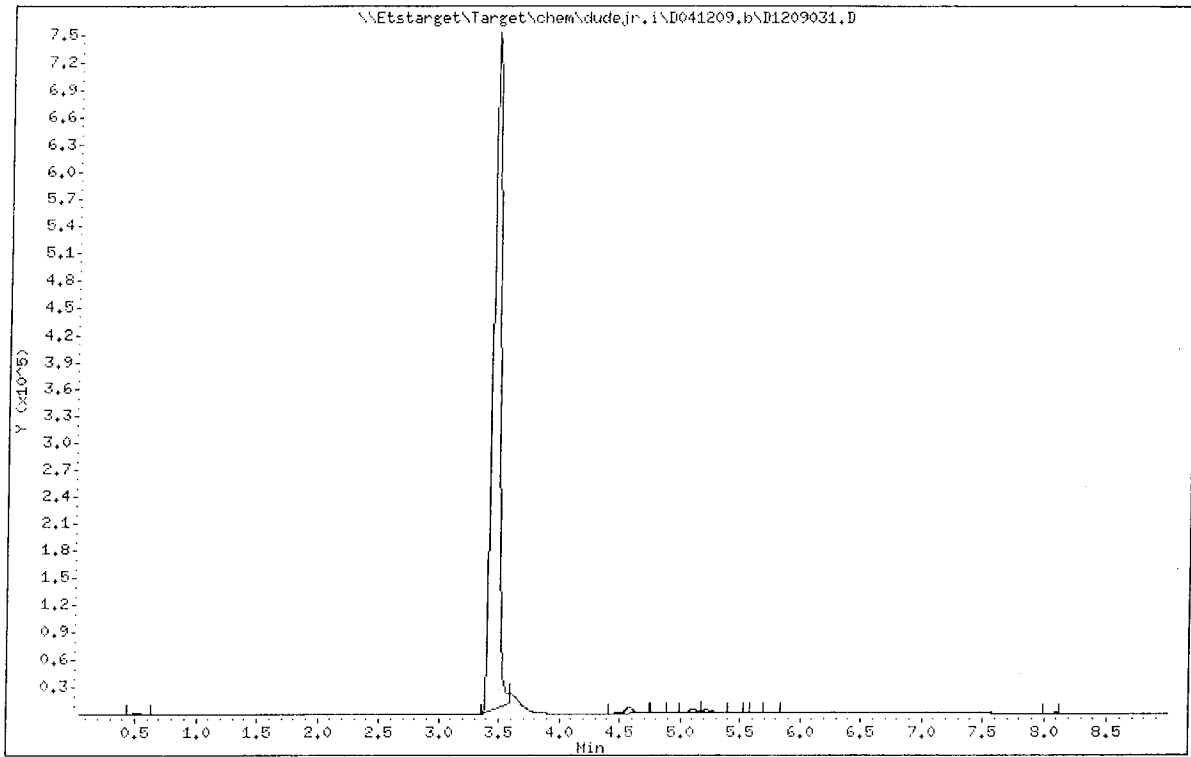
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.439	3.440	-0.001	3478839	247.827	248

Report E03-0583

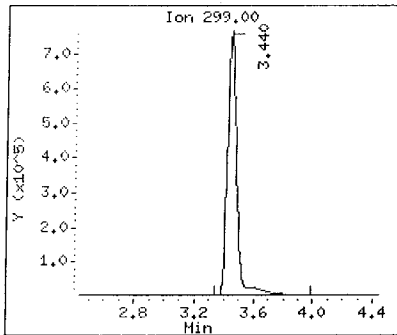
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209031.D

Page 2



1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208057.D Page 1
Report Date: 04-Jan-2005 07:38

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208057.D
Lab Smp Id: 72590-1
Inj Date : 08-DEC-2004 21:56
Operator : vjt Inst ID: dudejr.i
Smp Info : 300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, 100 and 300 ppm dose groups, lot B
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D041208.m
Meth Date : 04-Jan-2005 07:37 carlson Quant Type: ESTD
Cal Date : 08-DEC-2004 16:37 Cal File: D1208026.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

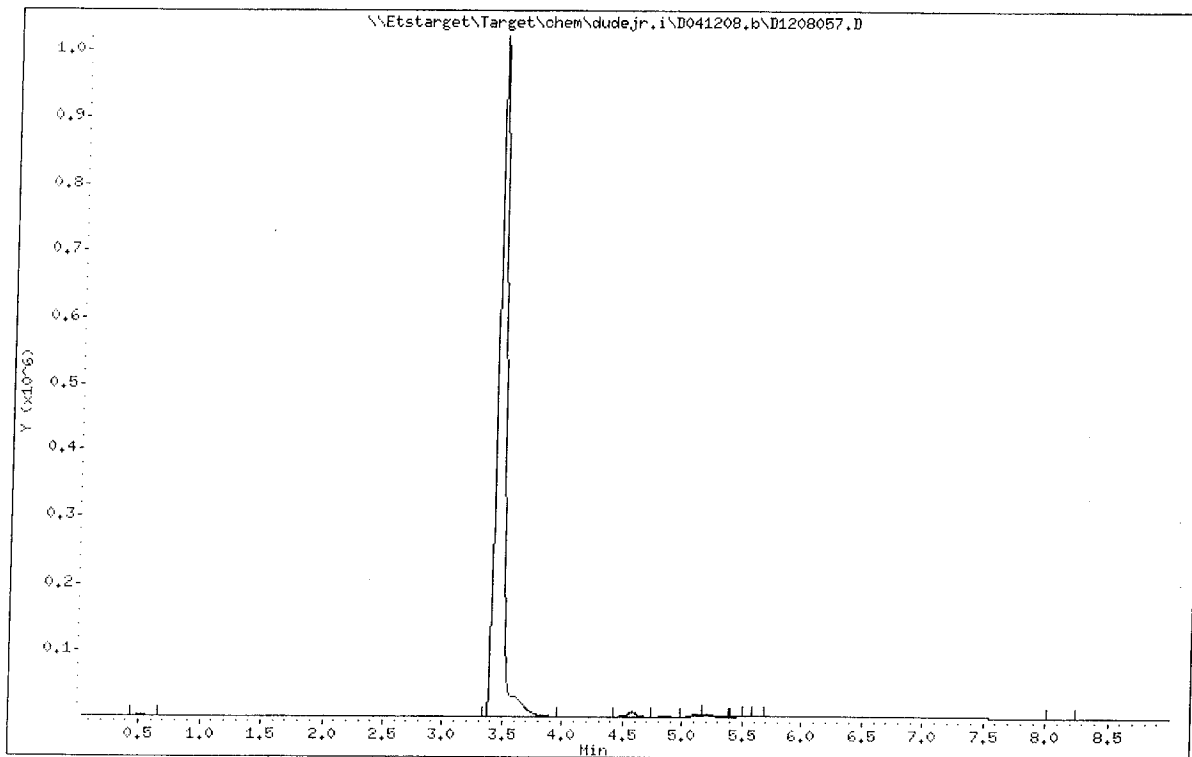
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.439	3.432	0.007	4745356	292.605	293

Report E03-0583

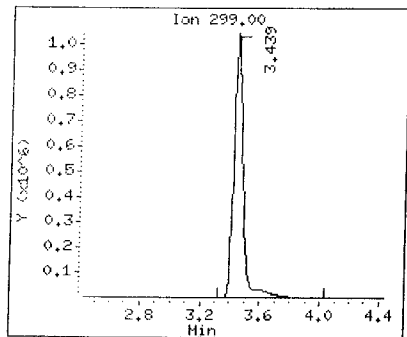
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208057.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208060.D Page 1
Report Date: 04-Jan-2005 07:38

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D1208060.D
Lab Smp Id: 72591-1
Inj Date : 08-DEC-2004 22:27
Operator : vjt Inst ID: dudejr.i
Smp Info : 300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, 100 and 300 ppm dose groups, lot B
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041208.b\\D041208.m
Meth Date : 04-Jan-2005 07:37 carlson Quant Type: ESTD
Cal Date : 08-DEC-2004 16:37 Cal File: D1208026.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12

Compound Sublist: all.sub

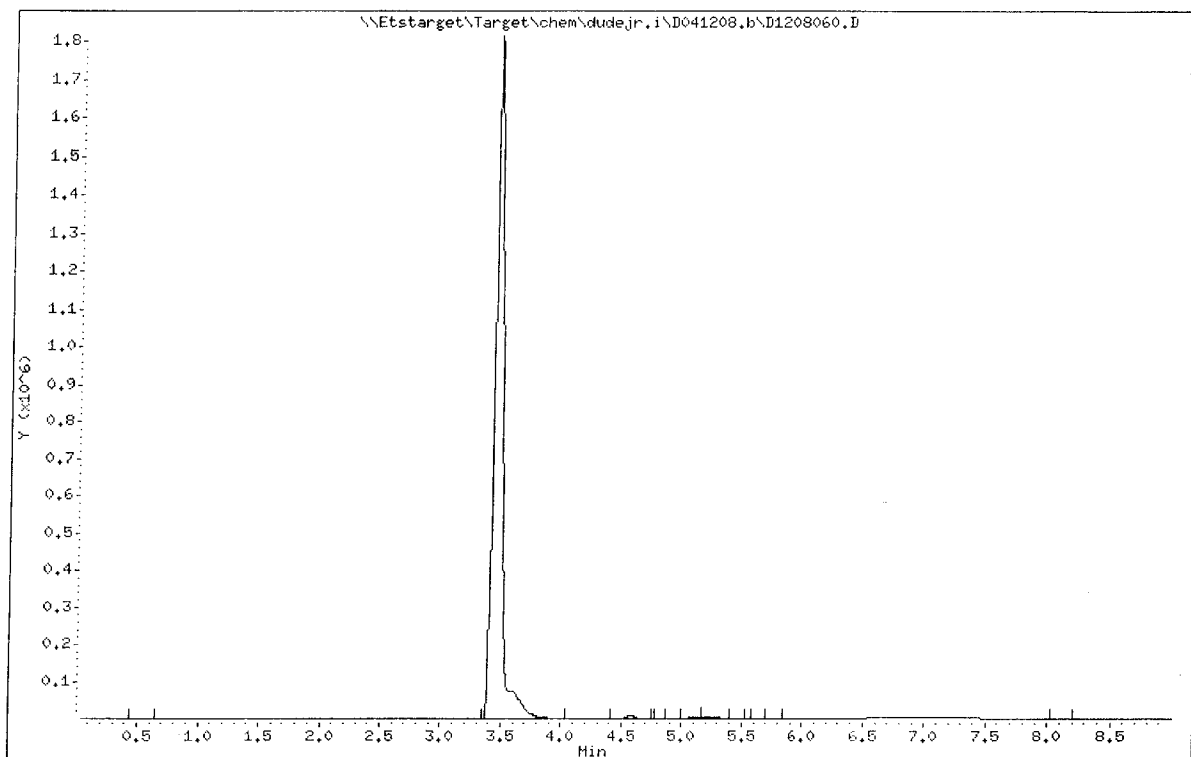
Compounds	QUANT SIG	CONCENTRATIONS					
		ON-COLUMN	RT		DLT RT	RESPONSE	FINAL
	MASS	(ng/mL)	EXP RT				(ng/mL)
=====	====	=====	=====	=====	=====	=====	=====
1 PFBS (299)	299	640.768	3.439	3.432	0.007	8942646	641

Report E03-0583

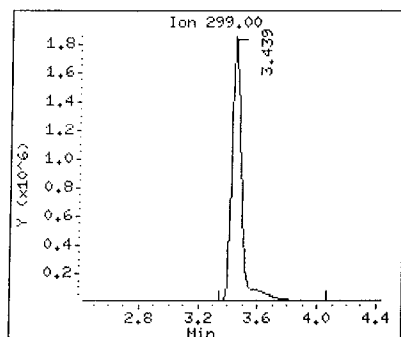
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041208,b\\D1208060.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209055.D Page 1
Report Date: 04-Jan-2005 07:41

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209055.D
Lab Smp Id: 72742-1
Inj Date : 09-DEC-2004 23:03
Operator : rsk Inst ID: dudejr.i
Smp Info : 300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples, 100 and 300 ppm dose groups, lot G
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D041209.m
Meth Date : 04-Jan-2005 07:39 carlson Quant Type: ESTD
Cal Date : 09-DEC-2004 17:44 Cal File: D1209024.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

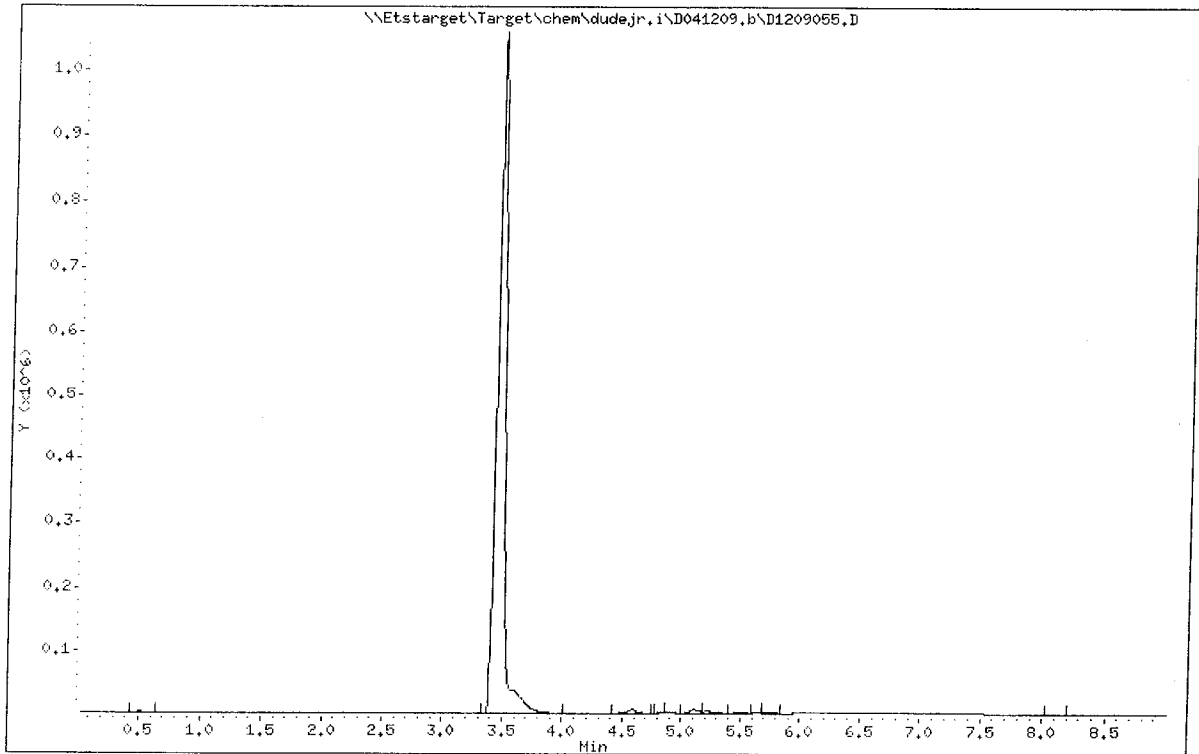
Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	----	----	-----	-----	-----		-----	-----
1 PFBS (299)	299	3.446	3.440	0.006	5018844		382.196	382

Report E03-0583

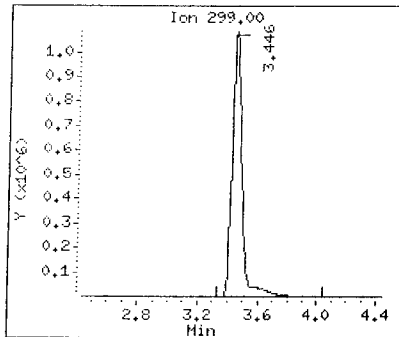
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209055.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209058.D Page 1
Report Date: 04-Jan-2005 07:41

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
 Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D1209058.D
 Lab Smp Id: 72743-1
 Inj Date : 09-DEC-2004 23:34
 Operator : rsk Inst ID: dudejr.i
 Smp Info : 300 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
 Misc Info :
 Comment : Egg Samples, 100 and 300 ppm dose groups, lot G
 Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041209.b\\D041209.m
 Meth Date : 04-Jan-2005 07:39 carlson Quant Type: ESTD
 Cal Date : 09-DEC-2004 17:44 Cal File: D1209024.D
 Als bottle: 45
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 4.12
 Compound Sublist: all.sub

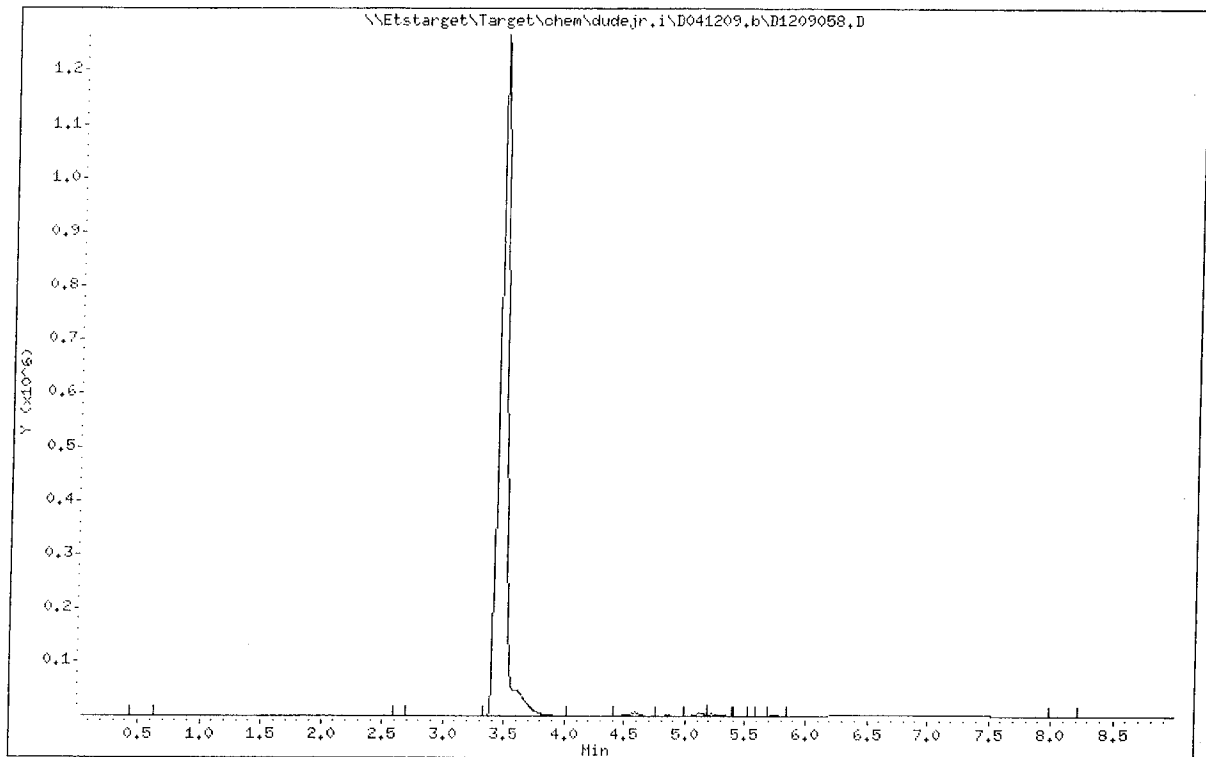
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.446	3.440	0.006	6110226	487.607	488

Report E03-0583

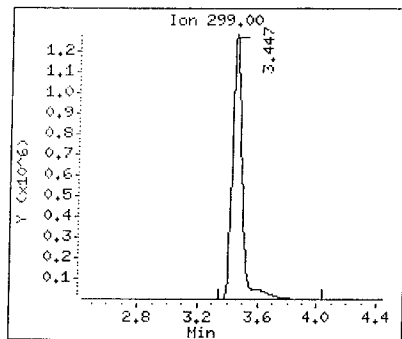
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041209,b\\D1209058.D

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1 PFBS (299)



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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215028.D Page 1
Report Date: 04-Jan-2005 07:43

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215028.D
Lab Smp Id: 72597-1
Inj Date : 15-DEC-2004 12:33
Operator : cmc Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples 900 ppm Dose Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D041215a.m
Meth Date : 04-Jan-2005 07:43 carlson Quant Type: ESTD
Cal Date : 15-DEC-2004 11:52 Cal File: D1215024.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

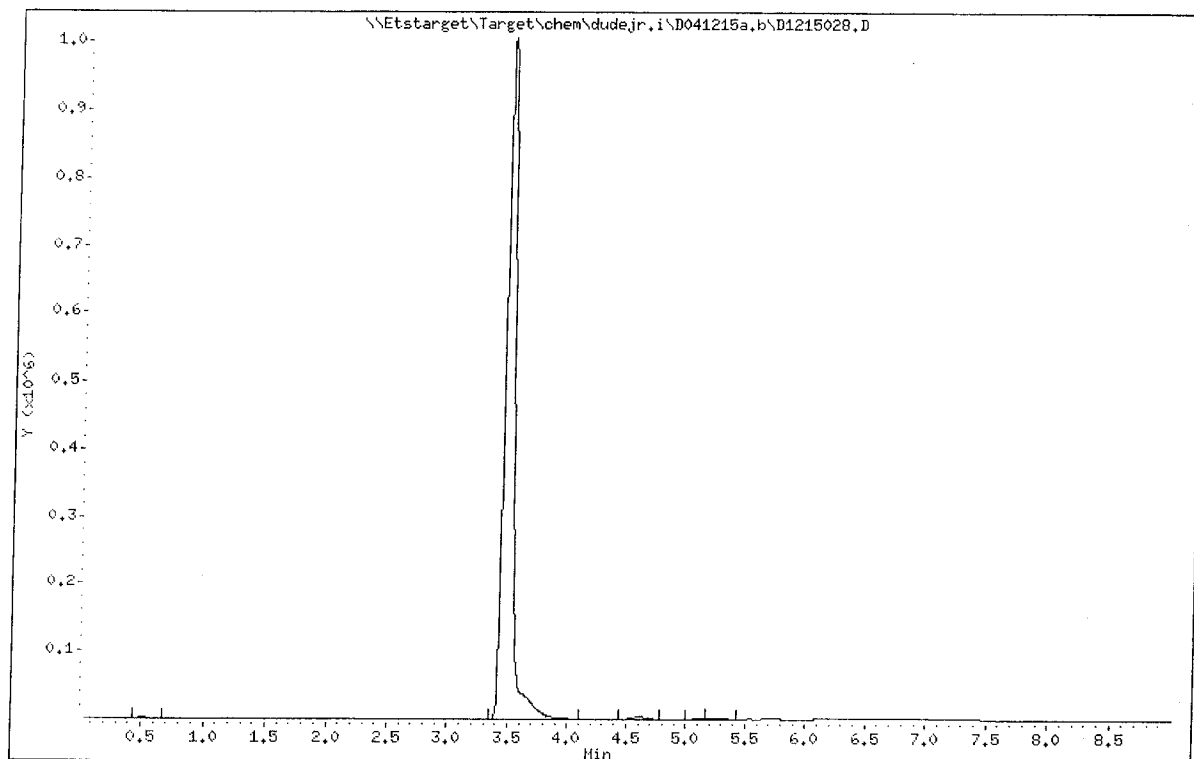
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.474	3.474	0.000	5410682	406.101	406

Report E03-0583

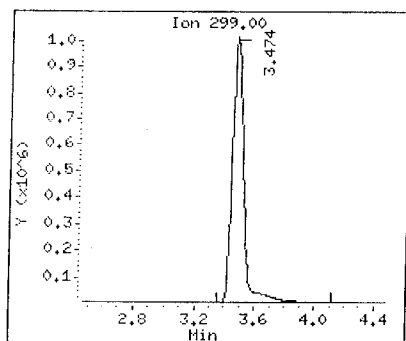
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041215a,b\\D1215028.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215031.D Page 1

Report Date: 04-Jan-2005 07:43

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215031.D
Lab Smp Id: 72598-1
Inj Date : 15-DEC-2004 13:04
Operator : cmc Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples 900 ppm Dose Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D041215a.m
Meth Date : 04-Jan-2005 07:43 carlson Quant Type: ESTD
Cal Date : 15-DEC-2004 11:52 Cal File: D1215024.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

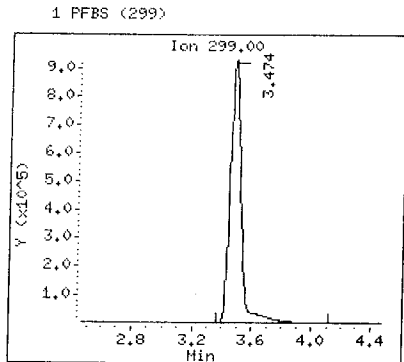
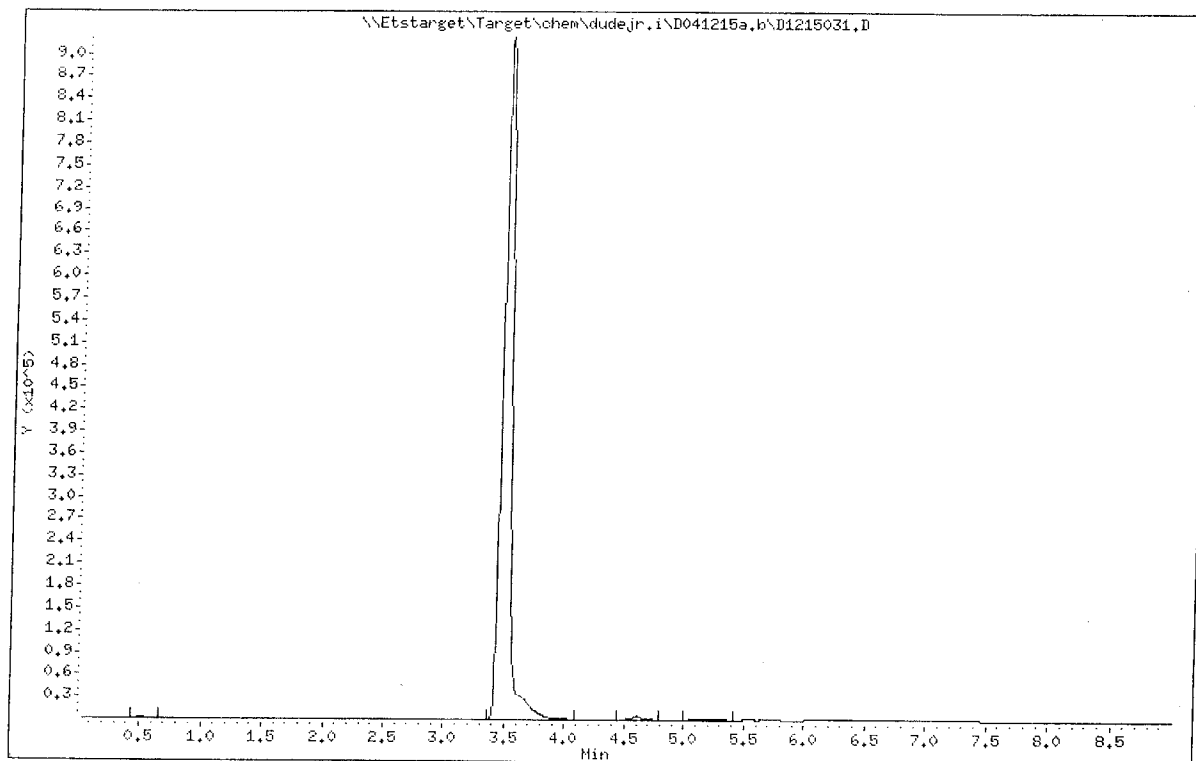
Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN	FINAL
	MASS						(ng/mL)	(ng/mL)
=====	=====	=====	=====	=====	=====		=====	=====
1 PFBS (299)	299	3.474	3.474	0.000	4923631		359.454	359

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041215a,b\\D1215031.D

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesData File: \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215062.D Page 1
Report Date: 04-Jan-2005 07:43

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215062.D
Lab Smp Id: 72750-1
Inj Date : 15-DEC-2004 18:24
Operator : cmc Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples 900 ppm Dose Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D041215a.m
Meth Date : 04-Jan-2005 07:43 carlson Quant Type: ESTD
Cal Date : 15-DEC-2004 11:52 Cal File: D1215024.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 4.12
Compound Sublist: all.sub

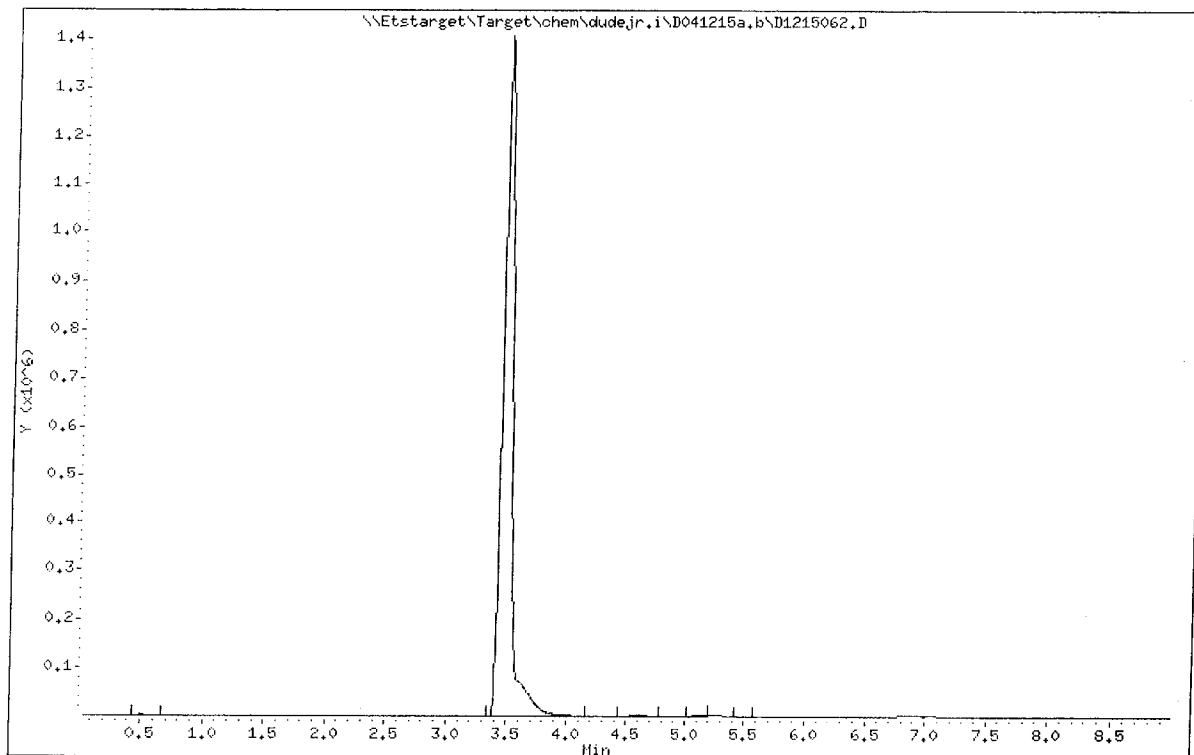
Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.460	3.474	-0.014	8074161	717.029	717

Report E03-0583

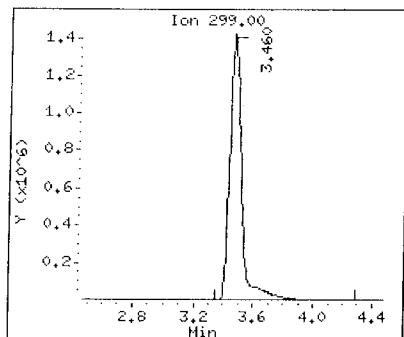
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\Target\chem\dudejr,i\041215a,b\01215062.D

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1 PFBS (299)



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Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215067.D Page 1

Report Date: 04-Jan-2005 07:43

3M Environmental Laboratory

E03-0583 Phase: Quantitation of PFBS in Quail Tissues
Data file : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D1215067.D
Lab Smp Id: 72751-1
Inj Date : 15-DEC-2004 19:15
Operator : cmc Inst ID: dudejr.i
Smp Info : 900 ppm Dose Group; Egg; 02 Dec 04; CMC/MLA/MEE
Misc Info :
Comment : Egg Samples 900 ppm Dose Group
Method : \\Etstarget\\Target\\chem\\dudejr.i\\D041215a.b\\D041215a.m
Meth Date : 04-Jan-2005 07:43 carlson Quant Type: ESTD
Cal Date : 15-DEC-2004 11:52 Cal File: D1215024.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

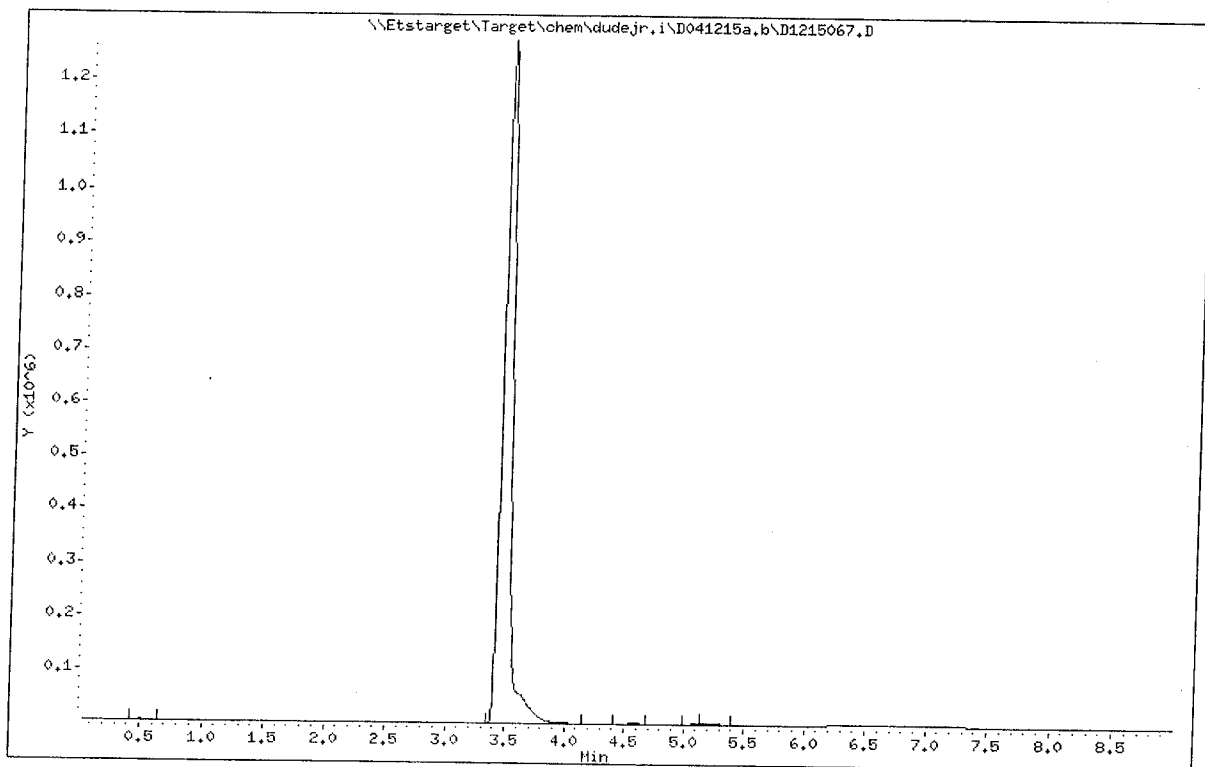
Compounds	QUANT SIG MASS						CONCENTRATIONS	
		RT	EXP RT	DLT RT	RESPONSE		ON-COLUMN (ng/mL)	FINAL (ng/mL)
1 PFBS (299)	299	3.460	3.474	-0.014	7202747		601.484	601

Report E03-0583

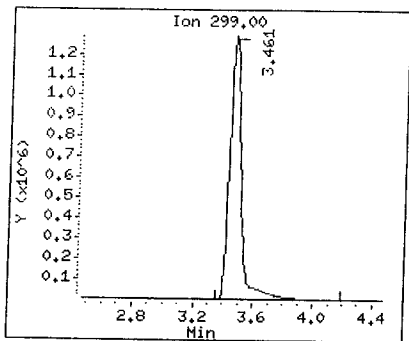
T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Data File: \\Etstarget\\Target\\chem\\dudejr,i\\D041215a,b\\D1215067.D

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1 PFBS (299)



Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

ATTACHMENT D: STUDY PROTOCOL AND PROTOCOL AMENDMENTS

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

PROTOCOL

T-7485: A REPRODUCTION STUDY
WITH THE NORTHERN BOBWHITE

FIFRA Subdivision E, Section 71-4

OECD Guideline 206

3M Environmental Lab Project No. E03-0583

Submitted to

3M Corporation
Environmental Laboratory
P.O. Box 33331
St. Paul, Minnesota 55133

Wildlife International, Ltd.

8598 Commerce Drive
Easton, Maryland 21601
(410) 822-8600

July 14, 2003

Report E03-0583

T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite TissuesWildlife International, Ltd.

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T-7485: A REPRODUCTION STUDY
WITH THE NORTHERN BOBWHITE

SPONSOR: 3M Corporation
Environmental Laboratory
935 Bush Avenue
St. Paul, Minnesota 55106

SPONSOR'S REPRESENTATIVE: Dr. John Newsted
Entrix
East Lansing Office
4295 Okemos Road, Suite 101
Okemos, MI 48864

TESTING FACILITY: Wildlife International, Ltd.
8598 Commerce Drive
Easton, Maryland 21601

STUDY DIRECTOR: Sean P. Gallagher
Senior Avian Biologist

LABORATORY MANAGEMENT: Joann B. Beavers
Director of Avian Toxicology

FOR LABORATORY USE ONLY

Proposed Dates:	
Experimental	Experimental
Start Date: 9/10/03	Termination Date: 3/15/04
Project No.: 454-116	Study Room: 45
Test Concentrations: 0, 100, 300 and 900 ppm a.i.	
Test Substance No.: 6407	Reference Substance No. (if applicable):

PROTOCOL APPROVAL

Sean P. Gallagher
STUDY DIRECTOR

9/5/03
DATE

Joann B. Beavers
LABORATORY MANAGEMENT

9/8/03
DATE

John Newsted
SPONSOR'S REPRESENTATIVE

9/9/03
DATE

PROTOCOL NO.: 454/071-003/QR/SUB454

3M LAB PROJECT NO. E03-0583

Wildlife International, Ltd.

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OBJECTIVE

The objective of this study is to evaluate the effects of dietary exposure to T-7485 upon adult northern bobwhite (*Colinus virginianus*) over a five-month period. Effects on adult health, weight gain and feed consumption will be evaluated. In addition, the effects of adult exposure to the test substance on the number of eggs laid, normal development of eggs, viability of the embryos, percent hatchability, offspring survival and egg shell thickness will be evaluated.

SUMMARY

Three treatment groups, each containing 16 pairs of Northern bobwhite, will be fed diets containing T-7485 at selected concentrations. A control group containing 16 pairs will be maintained concurrently. The bobwhite will be 16 to 36 weeks old and approaching their first breeding season. The birds will be fed the test diets for approximately ten weeks prior to the expected onset of egg laying, as well as during an egg laying period of at least 8 weeks. During the study, all birds will be monitored for toxicological responses. In addition, each of the treatment groups will be compared to the controls in order to detect statistically significant differences in body weight, feed consumption, egg production, fertility, hatching success, shell thickness and survivorship of offspring. Samples of sera, liver, and egg contents will be collected for potential analysis. Additionally, samples of liver, kidney and gonad will be collected for histopathological examination. The approximate duration of the study is six months.

MATERIALS AND METHODS

The methods, species used and route of administration described in this protocol are based upon procedures specified in Section 71-4 of the Environmental Protection Agency's Registration Guidelines, Pesticide Assessment Guidelines, FIFRA Subdivision E Hazard Evaluation: Wildlife and Aquatic Organisms (1); ASTM "Standard Practice for Conducting Reproductive Studies with Avian Species" (2); and upon OECD Guideline 206, Avian Reproduction Test (3). In order to control bias, adult birds will be randomized to pens. No other potential sources of bias are expected to affect the results of the study.

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The test substance will be administered in the diet. This route of administration was selected because it represents the most likely route of exposure to avian species in the environment.

Test Substance

The test substance will be T-7485. Information on the characterization of test, control or reference substances is required by Good Laboratory Practice (GLP) Standards and Principles. The Sponsor is responsible for providing Wildlife International, Ltd. verification that the test substance has been characterized according to GLPs prior to its use in the study. If verification of GLP test substance characterization is not provided to Wildlife International, Ltd., it will be noted in the compliance statement of the final report.

The Sponsor is responsible for all information related to the test substance and agrees to accept any unused test substance and/or test substance containers remaining at the end of the study.

Treatment Groups

There will be at least three treatment groups and a control group. Each treatment and the control group will consist of 16 pairs of birds, housed with one male and one female per pen. Control birds will receive diet identical to the treated birds, but without the addition of the test substance. The test concentrations were established based upon results of a pilot reproduction study (Wildlife International, Ltd. Project No. 454-115). Wildlife International, Ltd. consulted with the Sponsor prior to establishing the test concentrations.

Experimental Group (ppm a.i.)	Number of Pens Per Concentration	BIRDS PER PEN	
		MALES	FEMALES
Control (0)	16	1	1
100	16	1	1
300	16	1	1
900	16	1	1

Duration of Test

The primary phases of the test and their approximate durations are:

1. Acclimation - At least 2 weeks.
2. Pre-photostimulation - 7 to 10 weeks.

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3. Pre-egg laying (with photostimulation) - Generally 1 to 4 weeks depending on response of birds.
4. Egg laying - At least 8 weeks.
5. Post-adult termination (final incubation, hatching, and 14-day offspring rearing period) - Approximately 6 weeks.

Test Species

The Northern bobwhite represents an ecologically significant and widely distributed species in the United States. The bobwhite has demonstrated sensitivity to the effects produced by known toxic chemicals and has proven to be a good laboratory species from which a large amount of baseline data has been gathered.

All bobwhite will be 16-36 weeks of age and apparently healthy at initiation of the test (first day of exposure to diets containing the test substance). All test birds will be from the same hatch. Selection of the appropriate weight range will be in accordance with Wildlife International, Ltd. Standard Operating Procedures. Test birds will be approaching their first breeding season at the time of test initiation. Sex of the birds will be determined by a visual examination of the plumage. Birds will be obtained from K & L Quail Farm, Oroville, California or from another reputable supplier.

All test birds will be acclimated to the caging and facilities for at least fourteen days prior to initiation of the test. Extra birds from the same lot will be acclimated and may be used as replacements prior to the initiation of administration of test diets. Birds will be replaced if a pair appears to be incompatible or if a bird is deemed unsuitable due to injury, poor health or abnormal behavior.

Identification

Adult birds will be identified by individual leg bands and will be randomly assigned to a pen and treatment group. Each pen will be identified by a unique number, and groups of pens will be identified by project number and concentration. All eggs laid during the study will be marked with a soft lead pencil or permanent ink for identification. Hatchlings will be identified by leg banding.

Animal Diet

All adult test birds will be fed a game bird ration formulated to Wildlife International, Ltd. specifications (Table 1). Five percent (w/w) limestone will be added to the ration of adult birds to

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provide a calcium source. Water will be provided by the town of Easton public water supply. Feed and water will be analyzed periodically according to Wildlife International, Ltd. Standard Operating Procedures. Neither the adults nor offspring will receive any form of antibiotic medication in the diet during the test without prior approval from the Sponsor.

Specifications for acceptable levels of contaminants in game bird ration for avian species have not been established. However, there are no known levels of contaminants reasonably expected to be present in the diet that are considered to interfere with the purpose or conduct of the study.

The adult birds will receive the appropriate treated or control diet for at least ten weeks prior to the anticipated onset of egg production. Exposure will continue until the adult termination. Appropriate feed and water will be provided *ad libitum* during acclimation and during the test.

All offspring also will receive game bird ration (Table 1), but without the addition of limestone. The test substance will not be mixed into the diet of the offspring. Offspring will receive a water-soluble vitamin mix in their water. Feed and water will be provided to the offspring *ad libitum* during rearing.

Diet Preparation

Test diets will be prepared by mixing the test substance directly into the feed. Diet premixes will be prepared in a Hobart mixer (Model Number AS200T). If not used immediately, the premix will be frozen until used. Premixes will be prepared as frequently as necessary to assure stability of the test substance. Once each week, aliquots of the premix will be blended into bulk quantities of the ration to give the desired dietary concentrations of the test substance. Bulk diet mixing will be done in a Hobart mixer or a Patterson-Kelley twin shell dry blender. Excessive feed consumption may necessitate more frequent preparation of the diet.

All test substance calculations will be based on the purity of the test substance as received or corrected to 100% active ingredient based on the information provided by the Sponsor.

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Diet Sampling

Samples of the experimental diets will be collected for chemical analysis to determine the homogeneity and stability of the test substance in the avian diet and to verify/measure test concentrations. All samples will be placed in uniquely identified polypropylene jars.

Samples will be collected on Day 0 of Week 1, at diet preparation, to determine homogeneity, measure test concentrations, and establish Day 0 values for evaluating stability. On Day 7 of Week 1, samples will be collected from the feeders containing the experimental diets to assess stability of the test substance under test conditions. Additionally, verification samples will be collected at specified intervals to measure/verify test concentrations. If a separate study is conducted with a different species (e.g., mallard), at the same test concentrations, diets that are prepared may be divided between the two studies. Therefore, samples collected for homogeneity and verification will be common to both studies. However, stability samples (e.g., Week 1 - Day 7) will be unique to that respective study. Stability samples will be collected by compositing diet from feeders presented to the birds, and taking samples from the composited feed. The diet sampling scheme is summarized below:

ESTIMATED NUMBER OF SAMPLES

Experimental Group	Week 1		Week 4	Week 8	Week 12	Week 16	Week 20
	Day 0	Day 7					
Control	1	1	1	1	1	1	1
100 ppm	62	2	2	2	2	2	2
300 ppm	62	2	2	2	2	2	2
900 ppm	62	2	2	2	2	2	2
Totals	19	7	7	7	7	7	7

GRAND TOTAL = 61

¹Samples collected during Weeks 4 through 20 will be taken on Day 0 of the corresponding week.

²Samples collected from the left and right sides of the top, middle and bottom layers of feed in the mixing vessel to determine homogeneity.

The above numbers of samples represent those collected from the test and do not include quality control (QC) samples such as matrix blanks and fortifications prepared and analyzed during the analytical chemistry phase of the study. If the number of treatment groups is increased, the number of samples collected will increase proportionately.

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Diet Analyses

Samples of the experimental diets will be stored in a freezer until prepared and/or extracted and analyzed. Chemical analyses of diets will be performed by Wildlife International, Ltd using liquid chromatography-mass spectrometry. The methodology used to analyze the test samples will be documented in the raw data and summarized in the final report.

Housing and Environmental Conditions

The adult birds will be housed in battery breeding pens manufactured by GQF Manufacturing Company (Model No. 206 or 0330) or equivalent. Each pen has floor space that measures approximately 25 X 51 cm. Floors are sloping so that ceiling height will range from approximately 20 to 26 cm. External walls, ceilings and floors of each breeder pen are constructed of wire mesh while side walls are constructed of galvanized sheeting. Each pen will house one male and one female. During the test all birds will be maintained at an ambient temperature of approximately 15 to 30°C. Ambient temperature and relative humidity will be recorded at least twice per day during the test.

During the first seven weeks, the photoperiod for the adults will be 8 hours of light per day. The photoperiod will then be increased to 17 hours of light per day to induce egg laying. The average light intensity for each test concentration will be at least sixty-five lux. Light intensity will be measured at least once during the test in accordance with Wildlife International, Ltd. Standard Operating Procedures. The average will be based upon light intensity measurements in each pen at bird height. Lighting will be provided by fluorescent lights which closely approximate noon-day sunlight (noon-day sun - 4870°, Chroma 50 or equivalent - 5000° Kelvin).

Hatchlings will be placed in batteries of thermostatically controlled brooding pens manufactured by the Beacon Steel Company (Model B735Q) or equivalent. Each pen measures approximately 72 X 90 X 23 cm high. The external walls and ceilings of each pen are constructed of wire mesh and galvanized sheeting. Floors are of wire mesh. The brooding compartment temperature will be maintained at approximately 38°C and will be recorded once per day. Acceptable ranges for brooding compartment temperatures will be specified in Wildlife International, Ltd. Standard Operating Procedures. Ambient room temperature will be maintained at approximately 16 to 32°C. Ambient temperature and relative humidity will be recorded at least twice daily throughout the test. Photoperiod for the offspring will be 16 hours of light per day.

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Housing and husbandry practices will be conducted so as to adhere to the guidelines established by the National Research Council (4).

Incubation and Hatching

Eggs will be collected daily, and marked with a soft lead pencil or permanent ink according to the pen from which they were collected. Eggs then will be stored at an average temperature of approximately 10 to 16°C and an overall relative humidity of approximately 40 to 95%. Temperature and relative humidity in the cold room will be recorded twice per day during egg storage.

All eggs collected will be placed in order by pen number and counted each week. Eggs selected for egg shell thickness measurements then will be removed. All remaining eggs will be candled to detect egg shell cracks or internal abnormalities. Cracked or abnormal eggs will be recorded and discarded. All eggs not selected for egg shell thickness measurement or discarded as cracked or abnormal will be fumigated with formaldehyde gas to reduce the possibility of pathogen contamination.

Following fumigation the eggs will be incubated. Temperature and relative humidity in the incubator will average approximately 37.2-37.8°C and 50-60%, respectively. The eggs will be candled between Days 10-12 for embryonation, and between Days 20-22 for embryo survival. Between Days 20-22 of incubation the eggs will be removed from the incubator and placed in a hatcher. Temperature and humidity in the hatcher will average approximately 36.9-37.5°C and 60-80%, respectively. Dividers will be placed in the hatching trays to separate hatchlings by parental pen. Wet and dry bulb temperatures in the incubator and hatcher will be recorded at least twice daily during incubation and hatching.

Hatchlings will be removed from the hatcher over an approximately 24 hour period beginning on approximately Day 25. Hatchlings will be leg banded so that they can be identified by parental pen. Offspring will be observed over a 14 day period beginning when birds are first removed from the hatcher. The observation period will be extended if late mortality occurs which appears to be treatment related.

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Observations

All adults and offspring will be observed at least once daily for mortality, general condition, overt signs of toxicity and abnormal behavior.

Animal Body Weights/Feed Consumption

Individual body weights of the adults will be taken at the initiation of the test, at the end of test weeks 2, 4, 6, 8 and at adult termination. Group body weights of offspring by parental pen will be recorded at hatching and on Day 14 post-hatch.

With the exception of the last interval, feed consumption of the adults will be recorded by pen for a seven-day period each week throughout the test. The length of the last feed consumption interval will be determined by the scheduling of adult termination. Feed consumption will be measured by weighing the freshly filled feeder on Day 0 of each week, recording any additional diet added during the week, and weighing the feeder and remaining feed at the end of the seven day period. The accuracy of feed consumption values may be affected by unavoidable wastage of feed by birds. No attempt will be made to quantify the amount of wasted feed as it is normally scattered and mixed with water and excreta.

Reproductive Parameters

The following reproductive parameters will be measured and recorded:

1. eggs laid
2. eggs cracked
3. eggs incubated
4. infertile or clear eggs
5. dead embryos (to Day 10-12)
6. viable embryos
7. dead embryos (to Day 20-22)
8. live three week embryos
9. unhatched eggs
10. hatchlings
11. 14-day old offspring survival

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12. offspring body weights, day 0 and 14
13. egg shell thickness

Egg Shell Thickness Measurements

Each week eggs will be selected from those eggs laid during that week for egg shell thickness measurement. Normally, one egg will be collected from each of the odd numbered pens during odd numbered weeks (1,3,5, etc.), and one egg will be collected from each of the even numbered pens during even numbered weeks (2,4,6, etc.). Prior to being opened, eggs will be rinsed with water to remove any excreta or feed adhering to the shell. Each egg will be cut open, the contents will be placed in an appropriate labeled container and stored frozen for potential analysis. The empty shell will be rinsed with tap water, and the shell air dried for at least one week. The thickness of the dried shell, including membranes, will be measured to the nearest 0.002 mm at five points around the equator of the egg with a micrometer. Egg contents that are collected will be shipped to the Sponsor's designate and analyzed at the Sponsor's discretion.

Necropsy and Tissue Collection

All adult test birds that die during the course of the test and all adults remaining at the termination of the adult portion of the test will be subjected to a gross necropsy. Adult birds that are not found dead during the course of the study will have blood drawn prior to euthanasia. The blood will be separated and the serum collected for potential analysis. Livers from each bird will be weighed and collected. A portion of the liver will be collected for histopathological examination, and the remaining liver will be stored frozen for potential analysis. Samples of kidney and gonad also will be collected for histopathological examination. All histopathological samples will be fixed in 10% buffered formalin and sent to EPL in Herndon, Virginia for histopathology. Additionally, similar samples will be collected from a single indiscriminately selected offspring from each pen (if available) at 14 days of age. Offspring will be sampled from the last lot of offspring produced. All samples collected for potential analysis will be placed in labeled polypropylene jars or other suitable containers and stored frozen until shipped to the Sponsor's designate. Blood and tissue samples will be analyzed at the Sponsor's discretion.

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Disposition of Test Birds

At test termination, test birds will be euthanized by using carbon dioxide gas, cervical dislocation or other appropriate methods. The method used will be documented in the raw data. All birds will be disposed of by incineration or other appropriate methods.

Statistical Analyses

Each of the treatment groups will be compared to the control group using Dunnett's Multiple Comparison Procedure (5,6). The sample unit will be the individual pens within each experimental group, except for adult body weights where the sample unit will be the individual bird. Data expressed as a percentage will be arcsine transformed prior to using Dunnett's method. Nonparametric statistics may be used, if appropriate. Any pen in which an adult mortality occurs, including the one on the day the study is terminated, will not be used in statistical comparisons of the reproductive data. Analyses will be performed on each of the following parameters:

1. adult body weight
2. adult feed consumption
3. eggs laid per pen per day (eggs laid/maximum laid)
4. eggs cracked of eggs laid
5. viable embryos of eggs incubated
6. live 3-week embryos of viable embryos
7. hatchability of 3-week embryos
8. fourteen-day old survivors of normal hatchlings
9. normal hatchlings of eggs incubated
10. normal hatchlings per pen per day (hatchlings/maximum set)
11. fourteen-day old survivors of eggs incubated
12. fourteen-day old survivors per pen per day (14-day olds/maximum set)
13. hatchling body weights
14. fourteen-day old survivor body weights
15. egg shell thickness

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RECORDS TO BE MAINTAINED

Records to be maintained for data generated by Wildlife International, Ltd. will include:

1. A copy of the signed protocol.
2. Identification and characterization of the test substance, if provided by the Sponsor.
3. Date of initiation, critical phases, and termination of the test.
4. Animal history.
5. Husbandry and environmental conditions.
6. Dietary concentration calculations and diet preparation.
7. Individual body weight measurements of adults and group body weight measurements of offspring.
8. Feed consumption measurements of adults.
9. Daily observations.
10. Necropsy findings.
11. Records of all reproductive parameters detailed in this protocol.
12. Analytical chemistry methods, results and chromatograms, if applicable.
13. Statistical calculations, if applicable.
14. A copy of the final report.

FINAL REPORT

A final report of the results of the study will be prepared by Wildlife International, Ltd. The report will include, but not be limited to, the following:

1. Name and address of the facility performing the study.
2. Experimental start and experimental termination dates and study completion date. It is the responsibility of the Sponsor to provide the final date that data are recorded for chemistry, pathology and/or supporting evaluations that may be generated at other laboratories.
3. A statement of compliance signed by the Study Director addressing any exceptions to Good Laboratory Practice Standards.
4. Objectives and procedures stated in the approved protocol, including any changes in the original protocol.
5. Statistical methods employed for analyzing the data, when applicable.

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6. The test, control and reference substances identified by name, chemical abstracts number or code number, strength, purity, and composition or other appropriate characteristics, if provided by the Sponsor.
7. Stability and, when relevant to the conduct of the study, the solubility of the test, control and reference substances under the conditions of administration, if provided by the Sponsor.
8. A description of the methods used.
9. A description of the test system used. Where applicable, the final report shall include the number of animals used, sex, body weight range, source of supply, species, age, and procedure used for identification.
10. A description of the dosage, dosage regimen, route of administration, and duration.
11. A description of all circumstances that may have affected the quality or integrity of the data.
12. The name of the Study Director, the names of other scientists or professionals, and the names of all supervisory personnel, involved in the study.
13. A description of the transformations, calculations, or operations performed on the data, a summary and analysis of the data, and a statement of the conclusions drawn from the analysis.
14. The signed and dated reports of each of the individual scientists or other professionals involved in the study, if applicable.
15. The location where all specimens, raw data, and the final report are to be stored.
16. A statement prepared by the Quality Assurance Unit listing the dates that study inspections and audits were made and the dates of any findings reported to the Study Director and Management.
17. If it is necessary to make corrections or additions to a final report after it has been accepted, such changes shall be in the form of amendment by the Study Director. The amendment should clearly identify the part of the final report that is being added to or corrected and the reasons for the correction or addition. Amendments shall be signed and dated by the Study Director.

CHANGING OF PROTOCOL

Planned changes to the protocol will be in the form of written amendments signed by the Study Director and approved by the Sponsor's Representative. Amendments will be considered as part of the protocol and will be attached to the final protocol. Any other changes will be in the form of written deviations signed by the Study Director and filed with the raw data. All changes to the protocol will be indicated in the final report.

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues*Wildlife International, Ltd.*

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GOOD LABORATORY PRACTICES

This study will be conducted in accordance with Good Laboratory Practice Standards for EPA (40 CFR Part 160); OECD Principles of Good Laboratory Practices (ENV/MC/CHEM (98) 17); and Japan MAFF (11 NohSan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999). Each study conducted by Wildlife International, Ltd. is routinely examined by the Wildlife International, Ltd. Quality Assurance Unit for compliance with Good Laboratory Practices, Standard Operating Procedures and the specified protocol. A statement of compliance with Good Laboratory Practices will be prepared for all portions of the study conducted by Wildlife International, Ltd. The Sponsor will be responsible for compliance with Good Laboratory Practices for procedures performed by other laboratories (e.g., residue analyses or pathology). Raw data for all work performed at Wildlife International, Ltd. and a copy of the final report will be filed by project number in archives located on the Wildlife International, Ltd. site, or at an alternative location to be specified in the final report.

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REFERENCES

- 1 U.S. Environmental Protection Agency. 1982. *Pesticide Assessment Guidelines, FIFRA Subdivision E, Hazard Evaluation: Wildlife and Aquatic Organisms*, subsection 71-4, Environmental Protection Agency, Office of Pesticide Programs. Washington, D.C.
- 2 American Society for Testing and Materials. 1986. *Standard Practice for Conducting Reproductive Studies with Avian Species*. ASTM Standard E1062-86. Annual Book of ASTM Standards. Vol. 11.04. Philadelphia, PA. 15 pp.
- 3 Organization for Economic Cooperation and Development. 1984. *Avian Reproduction Test*. OECD Guideline for Testing of Chemicals. Guideline 206. Paris.
- 4 National Research Council. 1996. *Guide for the Care and Use of Laboratory Animals*. Washington, DC. National Academy Press. 125 pp.
- 5 Dunnett, C.W. 1955. A Multiple Comparison's Procedure for Comparing Several Treatments with a Control. *Jour. Amer. Statis. Assoc.* 50: 1096-1121.
- 6 Dunnett, C.W. 1964. New Tables for Multiple Comparisons with a Control. *Biometrics* 20: 482-491.

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TABLE 1: DIET FORMULATION
WILDLIFE INTERNATIONAL, LTD. GAME BIRD RATION¹

INGREDIENTS	PERCENT (%)
Fine Corn Meal	44.83
Soy Bean Meal, 48% Protein	30.65
Wheat Midds	6.50
Protein Base	6.00
Agway Special, 60% Protein	4.00
Alfalfa Meal, 20% Protein	3.00
Dried Whey	2.50
Ground Limestone	0.90
Eastman CalPhos	0.61
Methionine Premix + Liquid	0.34
Vitamin and Mineral Premix (see below)	0.32
GL Ferm (Fermatco) ²	0.25
Salt Iodized	0.10
Total	100.00

VITAMIN AND MINERAL PREMIX

AMOUNT ADDED PER TON

Vitamin D ₃	2,000,000 I.C.U.
Vitamin A	7,000,000 I.U.
Riboflavin	6 grams
Niacin	40 grams
Pantothenic Acid	10 grams
Vitamin B ₁₂	8 mgs
Folic Acid	600 mgs
Biotin	64 mgs
Pyridoxine	1.2 grams
Thiamine	1.2 grams
Vitamin E	20,000 I.U.
Vitamin K (Menadione Dimethylpyrazinidinol Bisulfite)	5.8 grams
Manganese	102 grams
Zinc	47 grams
Copper	6.8 grams
Iodine	1.5 grams
Iron	51 grams
Selenium	182 mgs

¹ The guaranteed analysis is a minimum of 27% protein, a minimum of 2.5% crude fat and a maximum of 5% crude fiber.² Fermentation By-Products (Source of Unidentified Growth Factors)

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Lab Request Number E03-0583



PROTOCOL Amendment #1

Study Title

T-7485: A reproduction Study with the Northern Bobwhite

Data Requirement

40 CFR Part 160

Amendment Title

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Amendment Date:

Upon Signing

Performing Laboratory

3M Environmental Health and Safety Operations
3M Environmental Laboratory
935 Bush Avenue
St. Paul, MN 55106

Laboratory Project Identification

3M Environmental Lab Project No. E03-0583
Wildlife International, Ltd. Project No. 454-116

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Laboratory Request Number E03-0583

Study IdentificationT-7485: A reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Test Substance	Perfluorobutanesulfonate (PFBS)
Sponsor	3M Environmental Laboratory 935 Bush Avenue, Building 2-3E-09 St. Paul, MN 55106
Sponsor Representative	Dr. John Newsted ENTRIX, Inc. East Lansing Office 4295 Okemos Road, Suite 101 Okemos, MI 48864
Study Director	Sean P. Gallagher, Senior Avian Biologist Wildlife International, Ltd. 8598 Commerce Drive Easton, Maryland 21601 (410) 822-8600
Principal Analytical Investigator, Analytical Phase	Mark E. Ellefson 3M Environmental Laboratory 935 Bush Avenue, Building 2-3E-09 St. Paul, MN 55106
Testing Facility Management, Analytical Phase	William K. Reagen 3M Environmental Laboratory 935 Bush Avenue, Building 2-3E-09 St. Paul, MN 55106
Study Location	
Testing Facility, In-Life Phase	Wildlife International, Ltd. 8598 Commerce Drive Easton, Maryland 21601
Testing Facility, Analytical Phase	3M Environmental Laboratory 935 Bush Avenue, Building 2-3E-09 St. Paul, MN 55106
Proposed Study Timetable	
Experimental Start Date	September 10, 2003
Experimental Termination Date	September 30, 2004

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T-7485: A Reproduction Study with the Northern Bobwhite
Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

*Laboratory Request Number E03-0583***1. STUDY**

T-7485: A reproduction Study with the Northern Bobwhite; Phase: Analytical Determination of PFBS (T-7485) in Northern Bobwhite Tissues.

2. PURPOSE

In this study, Northern Bobwhite quail were regularly exposed to nominal doses of T-7485 (Perfluorobutanesulfonate, potassium salt or PFBS) in their feed in order to evaluate the effects of dietary exposure upon adults over a five-month period. The purpose of this amendment is to address the analytical phase of the study in order to quantify PFBS in the liver, sera and eggs of both control and dosed Northern Bobwhite quail.

3. REGULATORY COMPLIANCE

The analytical phase of this study will be conducted in accordance with Good Laboratory Practice Standards for EPA (40 CFR Part 160), OECD Principles of Good Laboratory Practices (ENV/MC/CHEM (98) 17); and Japan MAFF (11 NohSan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999). The quality control samples prepared in this study will cumulatively constitute a cross validation of method ETS-8-231, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry."

4. QUALITY ASSURANCE

The 3M Environmental Laboratory Quality Assurance Unit will audit the study conduct, raw data, and final report to determine compliance with Good Laboratory Practice Regulations, this protocol, and 3M Environmental Laboratory Standard Operating Procedures for this phase of the study. The Quality Assurance Unit will report all findings to the Study Director and the Principal Analytical Investigator.

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5. TEST, CONTROL, AND REFERENCE SUBSTANCE

Table 1: Test Substance

Test Substance	Acronym and Structure	Identification Number	Source	Solubility in Water	Purity	Storage Conditions	Expiration Date
Perfluorobutane sulfonate**	PFBS $C_4F_9CO_2^-$	TCR-282	3M Specialty Chemicals	52.6 mg/mL	97.3%	Frozen	1/17/2007

* According to E00-1877, "Determination of the Solubility of Ammonium Perfluorobutanesulfonate (PFBS) in Water"

**The vapor pressure and octanol/water partition coefficient are not available.

5.1 Stability

The stability of PFBS has been investigated in the following studies:
E00-2188, "Screening Studies on the Aqueous Photolytic Degradation of Perfluorobutanesulfonate (PFBS)"
E00-2170, "Hydrolysis Reactions of Perfluorobutanesulfonate (PFBS)"

5.2 Reserve Samples

A retention sample of the test substance has been taken and stored frozen at $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$. The sample will be archived for at least the period required by the EPA GLPs, Section 792.195.

5.3 Disposition

The disposition of the test substance, if any, will be conducted and recorded according to ETS-3-8, "Disposition of Test, Control, and Reference Substances Received for GLP Studies."

5.4 Safety Precautions

Wear appropriate personal protective equipment. Consult the MSDS located in the TCR database in Lotus Notes for more specific information.

5.5 Location of Method Documentation for Synthesis

Contact 3M Specialty Materials for information regarding the synthesis/origins of this lot of PFBS.

6. TEST SYSTEM

The test system is Northern Bobwhite quail. Northern Bobwhite serum, liver and egg samples were collected by Wildlife International, Ltd.

6.1 Justification of the Selection of the Test System:

The Northern Bobwhite quail represents wild bird populations and is an EPA recommended species. The use of these matrices for this study is to determine the levels of test substance in the liver, serum and eggs of mating adults that were fed PFBS. Analysis of liver and serum from hatchlings will determine if PFBS was passed on to the offspring of these mating adults.

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6.2 Dosing of the Test System

The dosing of the test system involved adding the test substance to the animal feed, and was described in the study protocol. This phase of the study involves only the analytical determination of PFBS in tissue samples.

The sample identification scheme for this phase of the study will be as follows:

- Each study sample, each control sample, each control blank and all of their aliquots will have a unique identifier throughout the course of the analytical phase of the study. (Sample numbers will be generated by the 3M Environmental lab LIMS system, and will reference the sample numbers generated at Wildlife International, Ltd.)
- When the study samples are received, they will be given a unique identification number in the LIMS system. This number will stay with the tissue sample throughout this phase of the study. Homogenates, extracts, and diluted extracts will be designated as such on the label.

7. SPECIMEN RECEIPT

Serum, liver and eggs were collected by Wildlife International, Ltd. and shipped on dry ice to the 3M Environmental Laboratory for analysis. Upon arrival in the lab, the samples will be maintained frozen except when removed for extraction and analysis as described in the method. The samples will be kept isolated from the test substance during storage.

The following type and number of birds were euthanized at the 20-week endpoint in this study:

32 control adult birds (16 mating pairs) unexposed to PFBS
32 experimental adult birds (16 mating pairs) dosed at 100 ppm PFBS
32 experimental adult birds (16 mating pairs) dosed at 300 ppm PFBS
32 experimental adult birds (16 mating pairs) dosed at 900 ppm PFBS
First generation offspring birds from each test group

Sample receipt conditions were recorded on the external chain of custody form that arrived with the samples. Sample movement within the 3M Environmental Lab will be tracked using an internal chain of custody. Both forms will be archived with the study data at the end of the study.

8. EXPERIMENTAL DESIGN

8.1 Preparatory Methods

Preparation and analysis will be conducted using ETS-8-231, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry" with the following modifications:

- 8.1.2 A different make/model of centrifuge, tissue grinder, vortex mixer, and analytical column may be used.
- 8.1.3 An Agilent MSD detector will be used in place of the Micromass instrument. The

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conditions used for analysis will be recorded in the raw data. Modifications to the conditions in the method will be made as needed.

- 8.1.4 All sample measurements and calculations will be based on weight, not volume (volumes need not be recorded).
- 8.1.5 Sample weights other than $1 \text{ g} \pm 0.100 \text{ g}$ may be used. Dilutions other than 1/6 will be allowed.
- 8.1.6 Samples will be homogenized in acetonitrile rather than water. Consequently, the protein precipitation step followed by shaking will be omitted. Acetonitrile will then also be used for the method blanks, etc.
- 8.1.7 The homogenized samples will be extracted using a Zymark RapidTrace Automated SPE System, as described in ETS-9-29. Modifications to the conditions in the method will be made as needed.
- 8.1.8 Extracted standards may be used for the system suitability standards in place of unextracted standards.

8.3 Methods for Control of Bias

Control of bias is accomplished using analytical spikes (as indicators of sample recovery and accuracy) and matrix blanks (for evaluation of possible contamination of the matrix). Solvent blanks will also be analyzed (possible sample contamination during the dilution process, carryover between analyses, and instrument contamination). Samples will be prepared in triplicate and used as indicators of precision.

9. DATA QUALITY OBJECTIVES

9.1 Calibration Standards.

Samples will be bracketed by a calibration curve and passing CCVs. Calibration standards used to generate a calibration curve should be prepared in the same manner as the study samples. The number of calibration standards and concentration levels should be sufficient to encompass the expected concentrations of the study samples or dilutions thereof. The coefficient of determination (r^2) of the standard curve must be equal to or greater than 0.990. If the calibration curve residuals are greater than 15% deviation (LLOQ 80%-120%) from the theoretical value, quadratic curve fitting and/or dropping low/high curve points may be required if data review shows this to be a consistent and more accurate representation of the instrument response.

9.2 Continuing Calibration Verification (CCV).

Analyze a mid-range calibration standard after a maximum of every ten samples. Acceptable CCV values are 85–115% of true value.

9.3 Solvent blank.

Solvent blanks are run at a minimum before and after every calibration curve, and after every CCV. Solvent blanks may be run before and after matrix and control blanks if contamination is noted. Acceptable values for the blanks are values below 50% of the limit of quantitation (LLOQ). If analyte carryover is a problem, use back-to-back solvent blanks and use the last solvent blank to evaluate carryover.

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9.4 Quality Control Samples

Quality control samples (QCS) will be prepared according to method ETS-8-231. The QCS will be spiked at three levels as described in the method. The analyst shall accept percent spike recoveries between 85% and 115% of theoretical value. A minimum of 2/3 of all QCS in any one analytical run must pass; otherwise, the sample set must either be reanalyzed or re-extracted.

9.5 Lower Limit of Quantitation (LLOQ).

The lowest concentration that can be reliably measured within specified limits of accuracy during routine laboratory operating conditions. The LLOQ is defined as the lowest non-zero standard (80%-120%) in the calibration curve that is greater than or equal to 2 times the level of the matrix blank. Sample LLOQ are highly matrix-dependent.

9.6 Demonstration of Specificity.

The analytical technique of HPLC/MS provides for chromatographic separation of targeted materials and detection/quantitation of selected ions which are characteristic of the targeted compounds.

9.7 System Suitability

Three injections of a mid-level standard will be run prior to the calibration curve and after the last sample. The area counts should have a relative standard deviation <5% and the retention times should be <2% when evaluated independently.

10. STATISTICAL ANALYSIS

Statistical methods for the analytical results will be limited to the calculations of means, standard deviations, relative percent difference, and percent recoveries (as appropriate). Calculations will be performed as described in the applicable methods.

11 REPORT

A report of the results of the analytical phase of this study will be prepared by 3M Environmental Laboratory. The report will include, but not be limited to, the following, when applicable:

- Name and address of the facility performing the analysis,
- Dates upon which the analysis was initiated and completed.
- A statement of compliance by the Study Director addressing any exceptions to Good Laboratory Practice Standards.
- Objectives and procedures as stated in this protocol amendment.
- The test substance identification by name, chemical abstracts number or code number, strength, purity, and composition or other appropriate characteristics, if provided by the Sponsor.
- Stability and the solubility of the test substances under the conditions of administration, if provided by the Sponsor.
- A description of the methods used to conduct the test(s).
- A description of the test system.
- A description of any circumstances that may have affected the quality or the integrity of the data.
- The name of the Study Director and the names of other scientists, professionals, and supervisory personnel involved in the study.

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A description of the transformations, calculations, or operations performed on the data, a summary and analysis of the analytical chemistry data, and a statement of the conclusions drawn from the analyses.

Statistical methods used to evaluate the data, if applicable.

The signed and dated reports of each of the individual scientists or other professionals involved in the study, if applicable.

The location where raw data and the phase report are to be stored.

A statement prepared by the Quality assurance unit listing the dates that study inspections and audits were made for this phase of the study, and the dates of any findings reported to the Study Director, the Principal Analytical Investigator and Management.

If it is necessary to make corrections or additions to a phase report after it has been accepted, the changes will be made in the form of an amendment issued by the Study Director. The amendment will clearly identify the part of the phase report that is being amended, the reasons for the amendment, and will be signed by the Study Director.

12. LOCATION OF RAW DATA, RECORDS, AND PHASE REPORT

Original data or copies thereof, will be available at 3M Environmental Laboratory to facilitate audits of the study during its progress and before acceptance of the final report. When the final report is completed, all original paper data, including those items listed below will be retained in the archives of 3M Environmental Laboratory for a period of not less than 10 years following signing of the final report.

The following raw data and records will be retained in the study folder in the archives according to 3M Environmental Laboratory Standard Operating Procedures.

- 12.1.1** Approved protocol and amendments
- 12.1.2** Study correspondence
- 12.1.3** Shipping records
- 12.1.4** Raw data
- 12.1.5** Approved phase report (original signed copy)
- 12.1.6** Electronic copies of data

The following supporting records will be retained separately from the study folder in the archives according to 3M Environmental Laboratory Standard Operating Procedures:

- 12.1.7** Training records
- 12.1.8** Calibration records
- 12.1.9** Instrument maintenance logs
- 12.1.10** Standard Operating Procedures, Equipment Procedures, and Methods
- 12.1.11** Appropriate specimens

13. DATA / SAMPLE RETENTION

A portion of the test substance used in this study will be retained for a period not less than 10 years following the application of the final test rule. The extracts will only be retained so long as their quality affords evaluation.

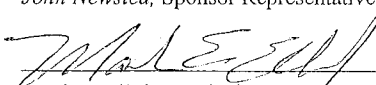
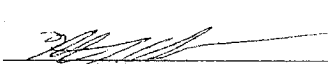
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14. PROTOCOL AMENDMENTS AND DEVIATIONS

Planned changes to the protocol will be in the form of written amendments signed by the Study Director and the Sponsor's Representative. Amendments will be considered as part of the protocol and will be attached to the final protocol. Any other changes (unplanned) will be in the form of written deviations, signed by the Study Director and filed with the raw data. All changes to the protocol and the reason for the changes will be indicated in the final report.

15. ATTACHMENTS**None****SIGNATURES**_____
Sean P. Gallagher, Study Director_____
Date_____
John Newsted, Sponsor Representative_____
Date
Mark E. Ellefson, Principal Analytical Investigator_____
Date
William K. Reagen, 3M Environmental Laboratory Management_____
Date

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Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

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Laboratory Request Number E03-0583

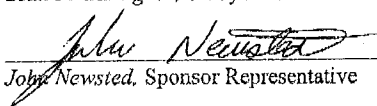
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15. ATTACHMENTS**None****SIGNATURES**

Sean P. Gallagher, Study Director

Date



John Newsted, Sponsor Representative

Date

Aug 20, 2004

Mark E. Ellefson, Principal Analytical Investigator

Date

William K. Reagen, 3M Environmental Laboratory Management

Date

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14. PROTOCOL AMENDMENTS AND DEVIATIONS

Planned changes to the protocol will be in the form of written amendments signed by the Study Director and the Sponsor's Representative. Amendments will be considered as part of the protocol and will be attached to the final protocol. Any other changes (unplanned) will be in the form of written deviations, signed by the Study Director and filed with the raw data. All changes to the protocol and the reason for the changes will be indicated in the final report.

15. ATTACHMENTS**None****SIGNATURES**

Sean P. Gallagher 8/20/04
Sean P. Gallagher, Study Director Date

John Newsted, Sponsor Representative Date

Mark E. Ellefson, Principal Analytical Investigator Date

William K. Reagen, 3M Environmental Laboratory Management Date

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PROTOCOL Amendment #2

Study Title

T-7485: A Reproduction Study with the Northern Bobwhite

Data Requirement

40 CFR Part 792

Amendment Title

Phase: Analytical Determination of PFBS in Northern Bobwhite Tissues

Amendment Date:

Upon Signing

Performing Laboratory

3M Environmental Health and Safety Operations
3M Environmental Laboratory
935 Bush Avenue
St. Paul, MN 55106

Laboratory Project Identification

3M Environmental Lab Project No. E03-0583
Wildlife International, Ltd. Project No. 454-116

Protocol Reads (from Protocol Amendment #1):**3. REGULATORY COMPLIANCE**

The analytical phase of this study will be conducted in accordance with Good Laboratory Practice Standards for EPA (40 CFR Part 160), OECD Principles of Good Laboratory Practices (ENV/MC/CHEM (98) 17); and Japan MAFF (11 NohSan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999). The quality control samples prepared in this study will cumulatively constitute a cross validation of method ETS-8-231, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry."

Amend to Read:**3. REGULATORY COMPLIANCE**

The analytical phase of this study will be conducted in accordance the United States Environmental Protection Agency Good Laboratory Practice Regulations, 40 CFR 792. The quality control samples prepared in this study will cumulatively constitute a cross validation of method ETS-8-231, "Solid Phase Extraction and Analysis of Perfluorinated Acids, Alcohols, Amides, Sulfonates and other Fluorinated Compounds by High Performance Liquid Chromatography/Mass Spectrometry."

Reason: The previous regulations were not appropriate for this type of study.

Protocol Reads (Page 15):

This study will be conducted in accordance with Good Laboratory Practice Standards for EPA (40 CFR Part 160); OECD Principles of Good Laboratory Practices (ENV/MC/CHEM (98) 17); and Japan MAFF (11 NohSan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999).

Amend to Read:

This study will be conducted in accordance with Good Laboratory Practice Standards for EPA (40 CFR Part 792).

Reason: The previous regulations were not appropriate for this type of study.

Protocol Reads (from Protocol Amendment #1):**5. TEST, CONTROL, AND REFERENCE SUBSTANCE****Table 1: Test Substance**

Test Substance	Acronym and Structure	Identification Number	Source	Solubility in Water	Purity	Storage Conditions	Expiration Date
Perfluorobutane sulfonate**	PFBS $C_4F_9CO_2^-$	TCR-282	3M Specialty Chemicals	52.6 mg/mL	97.3%	Frozen	1/17/2007

Amend to Read:**5. TEST AND REFERENCE SUBSTANCE**

The test substance in this study is identified in the protocol as T-7485. This number is traceable to the substance PFBS, which was provided to the test facility by the sponsor. The lot number of the test substance was not provided to the principal analytical investigator for the analytical phase of the study.

Table 1: Reference Substance

Reference Substance	Acronym and Structure	Identification Number	Source	Solubility in Water	Purity	Storage Conditions	Expiration Date
Perfluorobutane sulfonate**	PFBS $C_4F_9SO_3^-$	TCR-282	3M Specialty Chemicals	52.6 mg/mL	97.3%	Frozen	1/17/2007

Reason: Incorrect molecular formula. Change "test" to "reference" substance.

Protocol Reads (from Protocol Amendment #1, Section 8.1.7):

The homogenized samples will be extracted using a Zymark RapidTrace Automated SPE System, as described in ETS-9-29. Modifications to the conditions in the method will be made as needed.

Amend to Read (Section 8.1.7):

The homogenized samples will be extracted using a Zymark RapidTrace Automated SPE System, as described in ETS-9-29. Modifications to the conditions in the method will be made as needed. In the event of incomplete aspiration of the sample by the RapidTrace, the amount left in the sample tube will be noted in the raw data. If more than 0.5 mL is left unextracted, that sample will be discounted. If less than or equal to 0.5 mL is left, the sample may be used without correction.

Reason: Clarify sample usage in the event of an incomplete extraction of a sample.

Protocol Reads (from Protocol Amendment #1, Section 10):

Statistical methods for the analytical results will be limited to the calculations of means, standard deviations, relative percent difference, and percent recoveries (as appropriate). Calculations will be performed as described in the applicable methods.

Amend to Read (Section 10):

Statistical methods for the analytical results will be limited to the calculations of means, standard deviations, relative percent difference, and percent recoveries (as appropriate). Calculations will be performed as described in the applicable methods. In the event that one (or more) of the replicate samples is below the LLOQ and one (or more) is above the LLOQ a result equal to ½ the LLOQ will be used for the calculation of an average value for that sample.

Reason: Clarify calculations used in the analytical phase of the study.

Protocol Reads (from Protocol Amendment #1, Section 9.4):

Quality control samples (QCS) will be prepared according to method ETS-8-231. The QCS will be spiked at three levels as described in the method. The analyst shall accept percent spike

recoveries between 85% and 115% of theoretical value. A minimum of 2/3 of all QCS in any one analytical run must pass; otherwise, the sample set must either be reanalyzed or re-extracted.

Amend to Read (Section 9.4):

Quality control samples (QCS) will be prepared according to method ETS-8-231. The QCS will be spiked at three levels as described in the method. The analyst shall accept percent spike recoveries between 85% and 115% of theoretical value. A minimum of 2/3 of all QCS from anyone extraction day must pass; otherwise, the sample set must either be reanalyzed or re-extracted.

Reason: Clarify data quality objectives actually used in the study.

Protocol Reads:

No previous section.

Amend to Read (Section 9.8, Protocol Amendment #1):

9.8 Method Validation

The method will be validated as described below.

9.8.1 Specificity

Specificity will be demonstrated by the acceptable recovery of quality control samples prepared during the course of this study, and by the examination of chromatographic resolution provided by the instrument. The acceptance limits will be the same as described in the protocol for the QCS samples (2/3 of spike recoveries between 85% and 115% of theoretical value and a precision of 15%).

9.8.2 Selectivity

Selectivity will be demonstrated by the evaluation of the 0 ppm dose group samples. Specimens with endogenous levels of analyte greater than 50% of the LLOQ will be noted in the phase report and will not be used as blank matrix in the remainder of the study.

9.8.3 Calibration

The calibration curves generated during the course of the study will be evaluated according to the acceptance criteria described by the analytical method (Any level outside 85% - 115% of nominal must be deactivated, and regression re-calculated, except the LLOQ which must be within 20% of nominal. All levels must show a response greater than twice that of the blank.). For information purposes only, relative standard deviation (RSD) will be calculated for each concentration over the several days' data, only using the values that were kept activated.

9.8.4 Limit of Detection (LOD) and Limit of Quantitation (LOQ)

For each matrix, six matrix spikes will be prepared ranging in concentration from 0.25 ng/mL to 5.0 ng/mL. The instrument response will be evaluated against the theoretical concentration using a linear regression tool in Excel. The LOD and LOQ will be calculated using the resulting standard error (σ_0) and slope (called "X Variable 1" in the spreadsheet):

$$LOD = 3.3 \times \sigma_0 / S \quad \text{and} \quad LOQ = 10 \times \sigma_0 / S$$

9.8.5 Method Precision and Accuracy

Quality control samples will be prepared according to the requirements of the method. These samples will be evaluated according to the acceptance limits described in the protocol to demonstrate precision and accuracy.

9.8.6 Absolute Recovery and Matrix Effect

Blank matrix will be spiked at three levels and evaluated against a solvent curve. The results will be presented in the phase report. There is no acceptance limit for this evaluation.

9.8.7 Ruggedness

Several analysts will participate in the preparation and analysis of the samples in this study. Since it is a long preparation and analysis procedure, it is not practical to have a totally separate group of personnel perform the procedure from beginning to end. If the QC samples pass within the requirements of the method (2/3 of spike recoveries between 85% and 115% of theoretical value and a precision of 15%) the ruggedness of the method will be judged sufficient.

9.8.8 Robustness

No experiments will be performed to evaluate this parameter. As the sample calculations will be performed using weights rather than volumes individual technique is not expected to play a significant role in the generation of results. If the evaluation of the data quality objectives described in the protocol yields acceptable results, the method will be considered sufficiently robust.

9.8.9 Carry Over

During the course of the study solvent blanks immediately following high level standards and samples will be evaluated for evidence of instrument carry over. Solvent blanks should show peak areas no more than 50% of peak areas in the LLOQ standard. If carry-over is more than 50% of LLOQ, additional steps must be taken to alleviate the carry-over (e.g., an additional blank analyzed after the high standard, re-injection of a LLOQ-level sample that follows a high sample, etc.).

9.8.10 Range of Quantitation

The range of analyte concentrations for which all components of the validation meet their respective acceptance criteria will be evaluated and discussed in the phase report.

9.8.11 System Suitability

The test results for all the previous components will be evaluated. Parameters that may be used for documenting the proper operation of the analytical equipment will be established and discussed in the phase report.

9.8.12 Dilution Scheme

It is expected that samples may occasionally exceed the validated upper limit of the range of quantitation. The reference dilution scheme, which does not need to be validated, is to take a new aliquot of the original matrix, dilute it with blank matrix, and extract the diluted sample. If instead the injection volume is varied to produce an on-column dilution (or concentration) then quality control samples will be evaluated using the same technique. They must pass within the same acceptance limits described in the protocol (2/3 of spike recoveries between 85% and 115% of theoretical value and a precision of 15%).

9.8.13 Stability Testing

The stability of the test substance in the test system (tissues) and in the homogenate is not known and will not be investigated during the course of this study. Stability of the test substance in the final extract (stored in autosials) will be evaluated over some reasonable length of storage (approximately one month). Three levels of quality control samples will be run soon after extraction, and then again approximately one month later against a newly extracted curve. The acceptance criteria will be the same as discussed in the protocol for quality control samples (2/3 of spike recoveries between 85% and 115% of theoretical value and a precision of 15%).

If the samples do not have acceptable recoveries an investigation of extract holding times will be made and described in the report. Also, any sample results obtained with extracts beyond this holding time will be evaluated. Either the samples will be re-extracted or the data flagged to indicate possible bias of the data. Results will be presented in the phase report.

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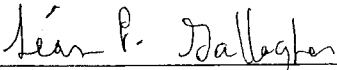
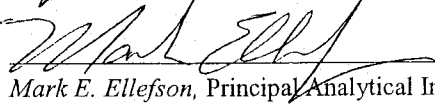
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9.8.14 Uncertainty

After all other phases of the validation are complete the measurement uncertainty will be calculated using the model provided as Attachment A in ETS-8-231.2. The same factor will be used for estimating the uncertainty of the liver subsample homogeneity as was used in that reference. The egg and serum samples do not require this additional factor, as the entire egg will be used to make the homogenate and the serum is expected to be homogeneous.

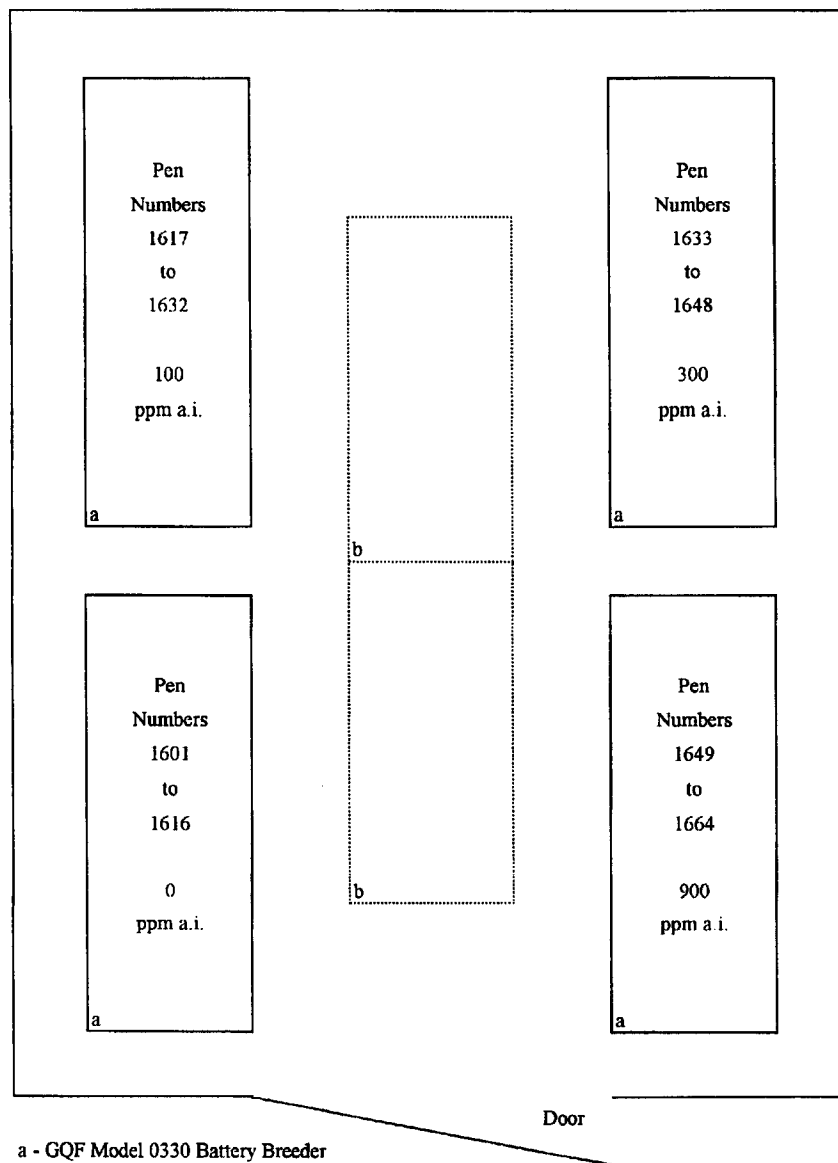
Reason: Clarify the scheme used to validate the method for the current study.

SIGNATURES

	2/23/05
Sean P. Gallagher, Study Director	Date
	2/25/05
John Newsted, Sponsor Representative	Date
	2/11/05
Mark E. Ellefson, Principal Analytical Investigator	Date
	2/11/05
William K. Reagen, 3M Environmental Laboratory Management	Date

Appendix XVIII

Diagram of Test Layout



a - GQF Model 0330 Battery Breeder

b - Chroma lights, four-foot

Diagram not to scale. Room approximately 15 x 9 ft. (4.6 x 2.7 m)

Appendix XIX
Changes To Study Protocol

This study was conducted in accordance with the study protocol signed on September 5, 2003 and the following amendments and deviations:

1. The protocol was amended to indicate sampling of offspring would be conducted when the offspring were 16 days of age.
2. The protocol was amended to change the description of the basal diet formulation for Wildlife International Ltd. Game Bird Ration in Table 1. Prior to test initiation the formulation for the game bird ration was modified to replace one protein source with another protein source.
3. The protocol was amended to add the description of the diet formulation for diet used for approximately the last quarter of the study. The source of Choline Chloride added to the diet was changed during the test. However, the overall nutritional balance of the diet did not change.
4. The protocol was amended to indicate the spleen from the adult female in Pen 1655 of the 900 ppm a.i. test concentration would be collected for histopathological examination. The spleen for this hen was noted to be slightly enlarged during gross necropsy.
5. The protocol was amended to indicate fresh diets would not be prepared and feed consumption would not be measured for the final day (Week 22, Day 1) of the adult in-life portion of the test. Instead, birds were fed diets remaining from Week 21 on the final day prior to adult termination.
6. A blood sample was inadvertently not collected from the female in Pen 1639 of the 300 ppm a.i. treatment group, prior to euthanasia. This female was euthanized in Week 14 of the test due to its moribund condition.
7. The liver for the adult male in Pen 1654 of the 900 ppm a.i. concentration was inadvertently not weighed prior to collection for histology and residue analysis.
8. Statistical comparison of liver weights were made by Dunnett's t-test, using TOXSTAT® software. The protocol did not require statistical comparison of liver weights.
9. The protocol was amended to change the EPA regulations under which the study was conducted to Good Laboratory Practice Standards for EPA (40 CFR Part 792).

Appendix XX

Personnel Involved in Study

The following key personnel were involved in the conduct or management of this study:

Avian Toxicology

- (1) Mark Jaber, Wildlife Toxicologist
- (2) Joann B. Beavers, Director of Avian Toxicology
- (3) Linda R. Mitchell, Manager of EcoTox Operations
- (4) Diana Temple, Supervisor, Avian Toxicology
- (5) Sean P. Gallagher, Senior Biologist

Chemistry

- (1) Willard B. Nixon, Ph.D., Director of Chemistry
- (2) Raymond L. Van Hoven, Ph.D., Scientist