



Document No. EPA-RPT-021G

**Kingston Ash Recovery Project  
Non-Time-Critical Removal Action**

**River System Sampling and Analysis Plan  
Task Completion Technical Memorandum  
Raccoon Sampling**

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**for the Tennessee Valley Authority**

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## Table of Contents

1.	PURPOSE .....	1
2.	BACKGROUND .....	1
3.	SAMPLING AND ANALYSIS ACTIVITIES .....	1
4.	ANALYTICAL DATA REVIEW .....	3
5.	DATA QUALITY SUMMARY .....	4
6.	DATA SUMMARY .....	5

## List of Tables

Table 1.	Summary of Raccoon Field Activities .....	2
Table 2.	Applicable TVA Documents and Standard Operating Procedures.....	3
Table 3.	Data Review Summary.....	4
Table 4.	Summary of Raccoon Data Quality.....	5
Table 5.	TVA 2009 Raccoon Blood Sampling from the Reference Location at Melton Hill Dam.....	6
Table 6.	TVA 2009 Raccoon Brain Sampling from the Reference Location at Melton Hill Dam .....	7
Table 7.	TVA 2009 Raccoon Gonad Sampling from the Reference Location at Melton Hill Dam.....	8
Table 8.	TVA 2009 Raccoon Hair Sampling from the Reference Location at Melton Hill Dam .....	9
Table 9.	TVA 2009 Raccoon Kidney Sampling from the Reference Location at Melton Hill Dam....	10
Table 10.	TVA 2009 Raccoon Liver Sampling from the Reference Location at Melton Hill Dam.....	11
Table 11.	TVA 2009 Raccoon Skeletal Muscle Sampling from the Reference Location at Melton Hill Dam .....	12
Table 12.	TVA 2009 Raccoon Subcutaneous Fat Sampling from the Reference Location at Melton Hill Dam .....	13
Table 13.	TVA 2009 Raccoon Blood Sampling from Impacted Locations .....	14
Table 14.	TVA 2009 Raccoon Brain Sampling from Impacted Locations .....	15
Table 15.	TVA 2009 Raccoon Gonad Sampling from Impacted Locations.....	16
Table 16.	TVA 2009 Raccoon Hair Sampling from Impacted Locations .....	17
Table 17.	TVA 2009 Raccoon Kidney Sampling from Impacted Locations .....	18
Table 18.	TVA 2009 Raccoon Liver Sampling from Impacted Locations.....	19
Table 19.	TVA 2009 Raccoon Skeletal Muscle Sampling from Impacted Locations.....	20
Table 20.	TVA 2009 Raccoon Subcutaneous Fat Sampling from Impacted Locations .....	21
Table 21.	TVA 2009 Raccoon Ovary Sampling from Impacted Locations .....	22
Table 22.	TVA 2010 Raccoon Blood Sampling from Knox and Hugo Reference Locations.....	23
Table 23.	TVA 2010 Raccoon Brain Sampling from Knox and Hugo Reference Locations.....	24
Table 24.	TVA 2010 Raccoon Gonad Sampling from Knox and Hugo Reference Locations.....	25
Table 25.	TVA 2010 Raccoon Hair Sampling from Knox and Hugo Reference Locations .....	26
Table 26.	TVA 2010 Raccoon Kidney Sampling from Knox and Hugo Reference Locations.....	27
Table 27.	TVA 2010 Raccoon Liver Sampling from Knox and Hugo Reference Locations.....	28
Table 28.	TVA 2010 Raccoon Skeletal Muscle Sampling from Knox and Hugo Reference Locations .....	29
Table 29.	TVA 2010 Raccoon Blood Sampling from Impacted Locations .....	30

Table 30.	TVA 2010 Raccoon Brain Sampling from Impacted Locations .....	31
Table 31.	TVA 2010 Raccoon Gonad Sampling from Impacted Locations.....	32
Table 32.	TVA 2010 Raccoon Hair Sampling from Impacted Locations .....	33
Table 33.	TVA 2010 Raccoon Kidney Sampling from Impacted Locations .....	34
Table 34.	TVA 2010 Raccoon Liver Sampling from Impacted Locations.....	35
Table 35.	TVA 2010 Raccoon Skeletal Muscle Sampling from Impacted Locations.....	36

## **List of Figures (Attached)**

- Figure 1. Raccoon Sampling 2009 and 2010  
Figure 2. Captured Raccoon in Live Trap  
Figure 3. Field Crew Collecting Raccoon in Covered Live Trap  
Figure 4. Field Crew Releasing Non-target Animal (Skunk)

## **List of Appendices**

- Appendix A: Summary of Raccoon Sampling Collections  
Appendix B: Raccoon Sample Shipment Summary

## **List of Acronyms**

CRM	Clinch River Mile
DQO	data quality objective
EDD	electronic data deliverable
EE/CA	Engineering Evaluation/Cost Analysis
KIF	Kingston Fossil Plant
MDL	method detection limit
mg/kg	milligram per kilogram
ND	not detected
QC	quality control
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
TM	Technical Memorandum
TVA	Tennessee Valley Authority
UTCVM	University of Tennessee College of Veterinary Medicine
WP	Work Package

## 1. PURPOSE

The purpose of this Technical Memorandum (TM) is to summarize the completion of the 2009 and 2010 mammal sampling. The collection of these samples is not described in the approved *Kingston Ash Recovery Project Non-Time-Critical Removal Action for the River System Sampling and Analysis Plan* (SAP), Rev. 3, May 24, 2010, Document No. EPA-AO-021; however, the use of these data is described below. This TM is one of a series being prepared to summarize the field work and data collection activities as SAP tasks are completed. The TM series is intended to provide interim presentations of data that will become the basis for the nature and extent of contamination section of the River System Engineering Evaluation/Cost Analysis (EE/CA) Report. No data evaluation or conclusions are presented. Those on the distribution list for these TMs are anticipated to be principal reviewers of the EE/CA Report, so this provides the opportunity to review data summaries in advance of the complete report.

## 2. BACKGROUND

While raccoon bioaccumulation samples are not required in the Baseline Ecological Risk Assessment, Section 2.2.9 of the SAP discusses how these data will be used to support the overall evaluation of ecological risk within the river system. Concentrations of ash-related constituents may bioaccumulate in wildlife over time and adversely affect wildlife populations. Raccoons are opportunistic omnivores who consume a wide variety of prey items. To estimate the potential effects from ingestion of ash-related constituents in wildlife by ecological receptors, the concentrations of those constituents in wildlife tissues need to be determined.

When possible, risks to raccoons will be assessed primarily through comparisons of measured concentrations in various blood and tissue samples with effects values from scientific literature in order to assess potential impacts of ash related constituents on this species. Literature values may be of limited availability for most constituents; therefore, body burden concentrations may be only supplemental evidence of exposure. Metal and metalloid concentrations in raccoons will be compared between impacted and unimpacted sites as well as between years. Significantly elevated concentrations at impacted sites and changes in concentrations over time may indicate environmental stress and potential risk to mammals.

Mammal sampling efforts began in 2009, approximately ten months after the spill. Collection efforts were initially to include raccoons (*Procyon lotor*) and muskrats (*Ondatra zibethicus*), but the focus was narrowed to raccoons only in 2010 when no muskrats were successfully captured in 2009. In both years, adult raccoons were captured in live traps, blood samples were collected from live animals, and necropsies were performed following euthanasia of specimens. Along with blood, additional tissue samples were also collected during necropsies for analysis.

A total of ten raccoons from around the spill area and five raccoons from a reference site were collected in each year. Spill area sites were the plant intake channel, the plant discharge near Clinch River Mile (CRM) 2.5 (2009 only), East Embayment, North Embayment, and West Embayment. The reference site in 2009 was at Melton Hill Dam in Loudon County. In 2010, a combination of reference sites in Knox and Grainger Counties was used to achieve target sample size.

## 3. SAMPLING AND ANALYSIS ACTIVITIES

Field activities occurred in the fall of 2009 and 2010 in accordance with Standard Operating Procedure (SOP) TVA-KIF-SOP-25 *Collecting Samples from Raccoons* (originally issued October 2009; Revision 1 issued August 2010, Revision 2 issued September 2010). Raccoon collection was conducted from October 2 through December 2, 2009 and from September 1 through December 16, 2010. Field crews

deployed baited traps early in the week and returned to check and re-bait each trap the following day. Traps were pulled from the habitat at the end of each week. Any non-target animals captured were immediately released. Captured raccoons were kept in covered live traps until rendered unconscious with a combination of xylazine and ketamine either at the field lab (2009 only) or at the University of Tennessee College of Veterinary Medicine (UTCVM) by Dr. Marcy Souza. Three blood samples were immediately collected from the heart for complete blood counts, plasma biochemistry panels, and metals analysis. If sufficient blood volume was available, then a fourth vial was collected and retained for possible hormone analysis. After blood samples were collected and cooled on ice, raccoons were immediately euthanized with an intra-cardiac overdose of pentobarbital.

A gross necropsy was performed, and tissue samples were collected for metals analysis and histopathology. Standard procedures of the UTCVM Department of Pathobiology were followed for necropsy. Tissues sampled at necropsy for metals analysis included brain, gonad, hair (washed with shampoo prior to analysis), kidney, liver, skeletal muscle, ovary, and subcutaneous fat (as available). Subcutaneous fat was not collected in 2010 given that sufficient volume for analysis was not available for all specimens. Tissues analyzed by the pathologist included liver, kidney, gonad, adrenal gland, lung, brain, and eye. Additional samples collected were stomach contents (to be retained for possible future analysis) and teeth (for age determination only).

All samples were immediately frozen upon collection in labeled, individual vials or resealable plastic bags and maintained at UTCVM. Custody-sealed blood and tissue samples were later shipped to the lab on dry ice and were analyzed for a suite of 26 metals and percent moisture. All remaining blood and tissue samples at UTCVM were either analyzed onsite for other constituents (blood panels, plasma biochemistry, and histopathology) or retained frozen. There were no field quality assurance/quality control (QC) samples collected in either sampling year. A sample of the shampoo used to wash hair samples was analyzed in 2009 for metals content. Field collection activities for 2009 and 2010 are summarized in Table 1.

**Table 1. Summary of Raccoon Field Activities**

Summary	2009	2010
<b>Field Collection Period</b>	October 2 to December 2	September 1 to December 16
<b>Number Raccoons Collected<sup>a</sup></b>		
Reference	5	5
Impacted	10	10
<b>Reference Site(s)</b>	Melton Hill Dam, Loudon County	Hugo Property, Grainger County Residence, Knox County
<b>Tissue Types Sampled for Metals/Percent Moisture</b>	Blood Brain Gonad Hair Kidney Liver Skeletal Muscle Ovary Subcutaneous fat	Blood Brain Gonad Hair Kidney Liver Skeletal Muscle

**Note:** <sup>a</sup>See Appendix A for collection details.

Sampling and analysis were performed in accordance with the *Quality Assurance Project Plan for the Tennessee Valley Authority Kingston Ash Recovery Project* hereinafter referred to as the TVA-KIF-QAPP, except as noted above, the listed SOPs, field guides, and work package WP-1049. Table 2 identifies the applicable TVA documents and SOPs associated with this raccoon sampling.

Blood samples for complete blood counts and plasma biochemistry were submitted to the UTCVM clinical pathology laboratory for analysis, and tissue samples for histopathology were submitted to Dr. Robert Donnell at UTCVM. Blood and tissue samples for metals and percent moisture analysis as well as the shampoo sample were shipped to Pace Analytical Services, Inc., Green Bay, WI (see Appendix B for shipping details). If sufficient blood volume was collected for a fourth vial, samples were retained frozen at UTCVM for possible hormone analysis. Stomach contents, teeth, and any tissue remaining after histopathology were also retained frozen at UTCVM.

**Table 2. Applicable TVA Documents and Standard Operating Procedures**

Document	Document Number
TVA KIF Ash Recovery Project Quality Assurance Project Plan	TVA-KIF-QAPP
TVA-KIF Work Package: Raccoon Sampling	WP-1049
<b>STANDARD OPERATION PROCEDURES:</b>	
Collecting Samples from Raccoons	TVA-KIF-SOP-25
Field Documentation	TVA-KIF-SOP-06
Sample Labeling, Packing, and Shipping	TVA-KIF-SOP-07
Decontamination of Equipment	TVA-KIF-SOP-08
Field Quality Control Sampling	TVA-KIF-SOP-11
Management and Implementation of EQuIS™-Based Chain-of-Custody	TVA-KIF-SOP-18

#### 4. ANALYTICAL DATA REVIEW

TVA's contracted laboratories were required to submit three types of deliverables: a limited (Level 1) data package containing sample results and batch QC sample results; a fully-documented (Level 4) data package including raw data for all analyses; and electronic data deliverables (EDDs) for storage in TVA's EarthSoft EQuIS® database.

EDDs were subjected to completeness and correctness testing during loading to TVA's EQuIS database; once loaded to the EQuIS database, the data were subjected to verification. As defined in the TVA-KIF-QAPP, data verification involved comparison of the data loaded in the EQuIS database to the results reported in the Level 1 data package. In addition, data verification included review of the batch QC summary forms for compliance with the applicable methods and for data usability with respect to the project data quality objectives (DQOs) and the TVA-KIF-QAPP.

Following receipt of the Level 4 data package, data were subjected to validation. As defined in the TVA-KIF-QAPP, data validation included review of raw data and associated QC summary forms for compliance with the applicable methods and for data usability with respect to the appropriate guidance documents. As stated in the TVA-KIF-QAPP: "Initially, 100% of the chemical analysis data will be reported in full documentation data packages for independent data validation. Depending on the nature and frequency of issues identified during data validation, the percentage of data undergoing full data validation may be reduced to a lesser percentage (such as 20%) or data verification may be substituted. The reduction in full data validation may be matrix specific, laboratory specific, or analyte specific. If

after the percentage of full data validation has decreased, a trend in frequency of reporting issues, method non-compliances, or data usability issues is identified, data validation will be conducted for specific data points or the percentage of full data validation percentage may be increased until the issues have been minimized to their initial frequency.” Data validation expands upon the completeness, correctness, and usability assessment performed during verification to include evaluation of instrumental QC analyses, review of sample preparation information, and recalculation of reported results from raw data.

A summary of the data review effort is presented below in Table 3.

**Table 3. Data Review Summary**

No. Chains-of-Custody	Matrix	No. Samples	No. Equipment Blank Samples	# Analytical Results	Percentage Validated
26	Brain	30	1 <sup>a</sup>	810	100%
	Blood	30		810	
	Hair	30		810	
	Kidney	30		810	
	Liver	30		810	
	Ovaries	1		26	
	Skeletal Muscle	30		810	
	Gonad	25		669	
	Subcutaneous Fat	14		378	
<b>Total</b>	-	<b>220</b>	<b>1</b>	<b>5,933</b>	-

**Note:** <sup>a</sup> A sample of the shampoo used to wash raccoon hair was submitted to the laboratory as a material blank.

## 5. DATA QUALITY SUMMARY

Data validation was performed based on the sample results, summary QC data, and raw data provided by the laboratory. Data validation includes a review of the following QC measures (where applicable):

- Sample condition upon laboratory receipt;
- Initial calibration linearity;
- Blank analysis results greater than the method detection limit (MDL);
- Sample preparation and holding times;
- Initial calibration verification/continuing calibration verification standard recoveries;
- Inductively coupled plasma interference check standard results;
- MDLs and linear ranges;
- Internal standard recoveries;
- Percent moisture;
- Matrix spike/matrix spike duplicate;
- Laboratory and field duplicate precision;
- Quantitation of positive results;
- Laboratory control sample/laboratory control sample duplicate recoveries and precision;
- Analytical sequence;
- Reporting limit standard recoveries;

- MDL verification standards; and
- Standard reference material recoveries.

The data met the DQOs defined for this task and are acceptable for use. Table 4 summarizes the data quality based on the review performed and as compared to the data quality measures identified in the TVA-KIF-QAPP. The text of the data validation reports for the samples included in this TM will be included in the EE/CA Report.

**Table 4. Summary of Raccoon Data Quality**

Matrix	Analytical Results (Total Count)	Acceptable (No Qualification) <sup>a</sup>		Acceptable (Estimated) <sup>b</sup>		Blank Qualified <sup>c</sup>		Rejected <sup>d,e</sup>	
Brain	810	501	62%	223	27%	72	9%	14	2%
Blood	810	613	76%	146	18%	38	5%	13	1%
Hair	810	518	64%	167	20%	110	14%	15	2%
Kidney	810	558	69%	207	26%	39	5%	6	<1%
Liver	810	567	70%	188	23%	49	6%	6	<1%
Ovaries	26	17	65%	7	27%	2	8%	0	0%
Skeletal Muscle	810	610	75%	148	18%	45	6%	7	<1%
Gonad	669	445	66%	163	24%	54	8%	7	1%
Subcutaneous Fat	378	285	75%	68	20%	22	6%	3	<1%

**Notes:**

<sup>a</sup>Acceptable, No Qualification – Qualification of data was not warranted based on a review of the applicable QC measures.

<sup>b</sup>Acceptable, Estimated – Quantitation or detection limit is approximate due to limitations or bias identified during a review of the applicable QC measures.

<sup>c</sup>Blank Qualified – Result is considered “not-detected” because it was detected in an associated blank at a similar level.

<sup>d</sup>Rejected – Unreliable result or detection limit; analyte may or may not be present in sample.

<sup>e</sup>Rejected results are percent moisture results qualified as unusable due to limited sample mass and/or extended frozen storage prior to moisture determination.

## 6. DATA SUMMARY

Summary statistics for raccoons are provided in Tables 5 through 35 for each location collected in 2009 and 2010. Rejected percent moisture results were due to small sample sizes and uncertainty in holding times; as a result, the data are presented in wet weight until the percent moistures issues have been clarified.

**Table 5. TVA 2009 Raccoon Blood Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		80.8	80.8	80.8	1 / 1	80.8
Aluminum	mg/kg	0.87 / 0.89	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.019 / 0.04	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.016 / 0.034	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.02 / 0.022	ND	0.057	0.057	1 / 5	0.057
Beryllium	mg/kg	0.0032 / 0.0033	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.063 / 0.11	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.0059 / 0.014	ND	ND	ND	0 / 5	0
Calcium	mg/kg	49 / 50	ND	51.3	56.9	3 / 5	54.53
Chromium	mg/kg	0.12 / 0.12	ND	ND	ND	0 / 5	0
Cobalt	mg/kg	0.0048 / 0.013	ND	ND	ND	0 / 5	0
Copper	mg/kg		0.99	0.99	2	5 / 5	1.398
Iron	mg/kg		61.3	61.3	434	5 / 5	322.9
Lead	mg/kg	0.01 / 0.022	ND	0.011	0.011	1 / 5	0.011
Magnesium	mg/kg	49 / 50	ND	101	101	1 / 5	101
Manganese	mg/kg	0.083 / 0.084	ND	0.25	0.25	1 / 5	0.25
Mercury	mg/kg	0.0042 / 0.005	ND	0.0086	0.0086	1 / 5	0.0086
Molybdenum	mg/kg	0.011 / 0.11	ND	0.12	0.12	1 / 5	0.12
Nickel	mg/kg	0.033 / 0.034	ND	ND	ND	0 / 5	0
Potassium	mg/kg		594	594	2180	5 / 5	944.8
Selenium	mg/kg		0.43	0.43	0.47	5 / 5	0.454
Silver	mg/kg	0.003 / 0.003	ND	ND	ND	0 / 5	0
Sodium	mg/kg		1490	1490	3020	5 / 5	2592
Strontium	mg/kg	0.015 / 0.029	ND	0.022	0.022	2 / 5	0.022
Thallium	mg/kg	0.015 / 0.03	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.054 / 0.11	ND	ND	ND	0 / 5	0
Zinc	mg/kg		3.8	3.8	15.4	5 / 5	10.24

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 6. TVA 2009 Raccoon Brain Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		75.9	75.9	75.9	1 / 1	75.9
Aluminum	mg/kg	0.8463 / 0.8692	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.01866 / 0.03888	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.01507 / 0.03392	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.01975 / 0.04338	ND	0.02096	0.02544	3 / 5	0.02342
Beryllium	mg/kg	0.00312 / 0.00656	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.06244 / 0.1507	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.0058 / 0.01378	ND	ND	ND	0 / 5	0
Calcium	mg/kg	47.95 / 48.36	ND	51.96	67	4 / 5	58.3
Chromium	mg/kg	0.1182 / 0.123	ND	0.3374	0.3374	1 / 5	0.3374
Cobalt	mg/kg	0.0068 / 0.01783	ND	ND	ND	0 / 5	0
Copper	mg/kg		2.862	2.862	3.884	5 / 5	3.484
Iron	mg/kg		16.91	16.91	21.79	5 / 5	18.8
Lead	mg/kg	0.0102 / 0.01039	ND	ND	ND	0 / 5	0
Magnesium	mg/kg		135.8	135.8	145.3	5 / 5	141.2
Manganese	mg/kg		0.2673	0.2673	0.3472	5 / 5	0.3114
Mercury	mg/kg	0.00413 / 0.01251	ND	0.00558	0.01239	3 / 5	0.009925
Molybdenum	mg/kg	0.01045 / 0.06507	ND	0.05346	0.05346	1 / 5	0.05346
Nickel	mg/kg	0.03122 / 0.03255	ND	0.03816	0.05061	2 / 5	0.04439
Potassium	mg/kg		3234	3234	3776	5 / 5	3448
Selenium	mg/kg		0.217	0.217	0.3402	5 / 5	0.2584
Silver	mg/kg	0.00292 / 0.00795	ND	ND	ND	0 / 5	0
Sodium	mg/kg		1189	1189	1309	5 / 5	1233
Strontium	mg/kg	0.01454 / 0.01993	ND	0.02078	0.02651	2 / 5	0.02365
Thallium	mg/kg	0.01411 / 0.02968	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.05208 / 0.1085	ND	ND	ND	0 / 5	0
Zinc	mg/kg		12.64	12.64	15.23	5 / 5	13.93

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 7. TVA 2009 Raccoon Gonad Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
Aluminum	mg/kg	0.819 / 2.1	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.01794 / 0.093	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.01629 / 0.079	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.01911 / 0.02013	ND	0.0195	1.2	4 / 5	0.3444
Beryllium	mg/kg	0.00312 / 0.0086	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.06045 / 0.15	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.01287 / 0.1007	ND	ND	ND	0 / 5	0
Calcium	mg/kg	46.22 / 116	ND	53.8	78.4	3 / 5	63.5
Chromium	mg/kg	0.1151 / 0.29	ND	0.1268	0.1268	1 / 5	0.1268
Cobalt	mg/kg	0.0072 / 0.01702	ND	ND	ND	0 / 5	0
Copper	mg/kg		1.248	1.248	5.051	5 / 5	2.28
Iron	mg/kg		36.47	36.47	722.9	5 / 5	183.7
Lead	mg/kg	0.00975 / 0.08235	ND	ND	ND	0 / 5	0
Magnesium	mg/kg	46.22 / 116	ND	90.5	131.6	4 / 5	115.8
Manganese	mg/kg		0.27	0.27	2.233	5 / 5	0.703
Mercury	mg/kg	0.00421 / 0.01	ND	0.012	0.2013	2 / 5	0.1067
Molybdenum	mg/kg	0.00995 / 0.2	ND	0.1053	0.8967	2 / 5	0.501
Nickel	mg/kg	0.0312 / 0.042	ND	0.04095	0.092	3 / 5	0.07132
Potassium	mg/kg		1638	1638	2828	5 / 5	2163
Selenium	mg/kg		0.4	0.4	1.098	5 / 5	0.5829
Silver	mg/kg	0.00273 / 0.007	ND	ND	ND	0 / 5	0
Sodium	mg/kg		1080	1080	1958	5 / 5	1503
Strontium	mg/kg	0.01404 / 0.047	ND	0.01931	0.059	3 / 5	0.04077
Thallium	mg/kg	0.01464 / 0.069	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.0507 / 0.25	ND	0.4392	0.4392	1 / 5	0.4392
Zinc	mg/kg		14.1	14.1	29.65	5 / 5	19.3

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 8. TVA 2009 Raccoon Hair Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
Aluminum	mg/kg	0.789 / 0.847	ND	19.49	44.63	4 / 5	31.17
Antimony	mg/kg	0.01734 / 0.03896	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.01387 / 0.01525	ND	0.0867	0.1448	4 / 5	0.111
Barium	mg/kg	0.01821 / 0.02287	ND	0.905	2.61	4 / 5	1.594
Beryllium	mg/kg	0.00295 / 0.00331	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.05722 / 0.7046	ND	0.4248	0.5249	2 / 5	0.4749
Cadmium	mg/kg	0.00577 / 0.01214	ND	ND	ND	0 / 5	0
Calcium	mg/kg	44.48 / 48.53	ND	441.3	596	4 / 5	522.2
Chromium	mg/kg	0.1127 / 0.4344	ND	1.098	1.301	2 / 5	1.2
Cobalt	mg/kg	0.00932 / 0.03711	ND	ND	ND	0 / 5	0
Copper	mg/kg		1.016	1.016	9.831	5 / 5	7.543
Iron	mg/kg		26.35	26.35	332.9	5 / 5	94.44
Lead	mg/kg	0.00954 / 0.01016	ND	0.1392	0.181	4 / 5	0.1623
Magnesium	mg/kg	44.48 / 48.53	ND	91.9	126.2	4 / 5	109.6
Manganese	mg/kg	0.07456 / 0.08131	ND	3.892	7.83	4 / 5	5.591
Mercury	mg/kg	0.00382 / 0.00415	ND	0.119	1.127	4 / 5	0.5587
Molybdenum	mg/kg	0.01016 / 0.0896	ND	0.06945	0.06945	1 / 5	0.06945
Nickel	mg/kg	0.03203 / 0.1127	ND	0.07137	0.07137	1 / 5	0.07137
Potassium	mg/kg	48.31 / 603.9	ND	212.3	212.3	1 / 5	212.3
Selenium	mg/kg		0.3981	0.3981	3.439	5 / 5	2.574
Silver	mg/kg	0.00288 / 0.00373	ND	ND	ND	0 / 5	0
Sodium	mg/kg	48.31 / 2465	ND	225.1	225.1	1 / 5	225.1
Strontium	mg/kg	0.01464 / 0.5916	ND	0.5582	0.5582	1 / 5	0.5582
Thallium	mg/kg	0.0144 / 0.02987	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.05481 / 0.1101	ND	ND	ND	0 / 5	0
Zinc	mg/kg		8.555	8.555	236.1	5 / 5	161

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 9. TVA 2009 Raccoon Kidney Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		73.7	73.7	80	4 / 4	77.18
Aluminum	mg/kg	0.8 / 0.8416	ND	158.4	158.4	1 / 5	158.4
Antimony	mg/kg	0.01794 / 0.036	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.01469 / 0.0322	ND	0.814	0.814	1 / 5	0.814
Barium	mg/kg	0.0188 / 0.04471	ND	0.0437	3.256	4 / 5	0.8805
Beryllium	mg/kg	0.00299 / 0.01276	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.0598 / 1.188	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.0054 / 0.00572	ND	0.46	2.262	4 / 5	1.402
Calcium	mg/kg		62.86	62.86	413.6	5 / 5	158.4
Chromium	mg/kg	0.114 / 0.1153	ND	0.1288	0.396	3 / 5	0.2433
Cobalt	mg/kg	0.01788 / 0.1232	ND	ND	ND	0 / 5	0
Copper	mg/kg		3.58	3.58	8.866	5 / 5	4.84
Iron	mg/kg		51.6	51.6	125.8	5 / 5	96.73
Lead	mg/kg	0.00989 / 0.056	ND	0.04294	0.308	3 / 5	0.186
Magnesium	mg/kg		91.52	91.52	142.5	5 / 5	121.9
Manganese	mg/kg		0.66	0.66	18.13	5 / 5	4.276
Mercury	mg/kg		0.0192	0.0192	0.66	5 / 5	0.177
Molybdenum	mg/kg		0.1034	0.1034	0.42	5 / 5	0.3154
Nickel	mg/kg	0.03 / 0.03164	ND	0.034	0.1782	4 / 5	0.0763
Potassium	mg/kg		108	108	2175	5 / 5	1477
Selenium	mg/kg		1.153	1.153	4.224	5 / 5	2.012
Silver	mg/kg	0.00271 / 0.00289	ND	ND	ND	0 / 5	0
Sodium	mg/kg		158.6	158.6	2060	5 / 5	1580
Strontium	mg/kg	0.01403 / 0.062	ND	0.023	1.342	4 / 5	0.3544
Thallium	mg/kg	0.01379 / 0.02893	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.0506 / 0.1052	ND	0.352	0.352	1 / 5	0.352
Zinc	mg/kg		16.68	16.68	180.2	5 / 5	51.77

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 10. TVA 2009 Raccoon Liver Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		71.2	71.2	74.6	4 / 4	72.93
Aluminum	mg/kg	0.8416 / 0.8928	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.0171 / 0.04064	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.01394 / 0.03456	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.01815 / 0.0556	ND	0.02311	0.02893	2 / 5	0.02602
Beryllium	mg/kg	0.00289 / 0.00334	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.05786 / 0.06394	ND	ND	ND	0 / 5	0
Cadmium	mg/kg		0.1279	0.1279	0.556	5 / 5	0.3173
Calcium	mg/kg	44.45 / 50.04	ND	54.43	83.96	4 / 5	72.93
Chromium	mg/kg	0.1105 / 0.1245	ND	0.265	0.265	1 / 5	0.265
Cobalt	mg/kg	0.00447 / 0.03456	ND	0.07784	0.08942	2 / 5	0.08363
Copper	mg/kg		4.615	4.615	10.59	5 / 5	7.399
Iron	mg/kg		141.2	141.2	700.6	5 / 5	422.6
Lead	mg/kg	0.00947 / 0.0762	ND	0.05786	0.5282	3 / 5	0.2472
Magnesium	mg/kg		123.2	123.2	171.4	5 / 5	150.3
Manganese	mg/kg		1.056	1.056	3.253	5 / 5	2.426
Mercury	mg/kg		0.05842	0.05842	0.2752	5 / 5	0.156
Molybdenum	mg/kg		0.4448	0.4448	1.168	5 / 5	0.8599
Nickel	mg/kg	0.02893 / 0.03302	ND	0.06048	0.695	3 / 5	0.2908
Potassium	mg/kg		1573	1573	2052	5 / 5	1879
Selenium	mg/kg		0.8382	0.8382	1.946	5 / 5	1.116
Silver	mg/kg	0.00278 / 0.00815	ND	ND	ND	0 / 5	0
Sodium	mg/kg		1455	1455	2277	5 / 5	1715
Strontium	mg/kg	0.01341 / 0.0417	ND	0.0263	0.0432	3 / 5	0.03429
Thallium	mg/kg	0.01315 / 0.03058	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.04997 / 0.1094	ND	0.1575	0.2419	2 / 5	0.1997
Zinc	mg/kg		19.4	19.4	41.4	5 / 5	36.01

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 11. TVA 2009 Raccoon Skeletal Muscle Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		68.9	68.9	74.8	4 / 4	72.8
Aluminum	mg/kg	0.837 / 1.403	ND	1.306	1.306	1 / 5	1.306
Antimony	mg/kg	0.01734 / 0.0378	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.01403 / 0.03421	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.01836 / 0.0425	ND	0.02167	0.05865	2 / 5	0.04016
Beryllium	mg/kg	0.00306 / 0.00328	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.05865 / 0.0875	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.00536 / 0.03	ND	ND	ND	0 / 5	0
Calcium	mg/kg	44.63 / 49.75	ND	ND	ND	0 / 5	0
Chromium	mg/kg	0.1097 / 0.1225	ND	ND	ND	0 / 5	0
Cobalt	mg/kg	0.00459 / 0.01	ND	ND	ND	0 / 5	0
Copper	mg/kg		1.301	1.301	1.663	5 / 5	1.466
Iron	mg/kg		28.56	28.56	35.91	5 / 5	32.38
Lead	mg/kg	0.00944 / 0.0105	ND	ND	ND	0 / 5	0
Magnesium	mg/kg		234.8	234.8	267.1	5 / 5	248.3
Manganese	mg/kg		0.105	0.105	0.2219	5 / 5	0.1604
Mercury	mg/kg	0.00403 / 0.01701	ND	0.00529	0.024	3 / 5	0.01619
Molybdenum	mg/kg	0.01075 / 0.04354	ND	0.0425	0.0425	1 / 5	0.0425
Nickel	mg/kg	0.0306 / 0.0325	ND	0.03276	0.04043	2 / 5	0.0366
Potassium	mg/kg		3203	3203	4077	5 / 5	3687
Selenium	mg/kg		0.2168	0.2168	0.297	5 / 5	0.2474
Silver	mg/kg	0.00277 / 0.0055	ND	ND	ND	0 / 5	0
Sodium	mg/kg		504	504	727.7	5 / 5	581.9
Strontium	mg/kg	0.01352 / 0.05	ND	ND	ND	0 / 5	0
Thallium	mg/kg	0.01326 / 0.0297	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.04845 / 0.11	ND	ND	ND	0 / 5	0
Zinc	mg/kg		48.83	48.83	69.87	5 / 5	62.29

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 12. TVA 2009 Raccoon Subcutaneous Fat Sampling from the Reference Location at Melton Hill Dam**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		3.2	3.2	13.1	4 / 4	7.625
Aluminum	mg/kg	0.8149 / 9.385	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.01832 / 0.03872	ND	0.0205	0.0205	1 / 5	0.0205
Arsenic	mg/kg	0.01549 / 0.03355	ND	0.01651	0.01651	1 / 5	0.01651
Barium	mg/kg	0.01852 / 0.04066	ND	0.1477	0.1477	1 / 5	0.1477
Beryllium	mg/kg	0.00306 / 0.00326	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.05926 / 0.06431	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.00546 / 0.01398	ND	ND	ND	0 / 5	0
Calcium	mg/kg	45.74 / 49.58	ND	ND	ND	0 / 5	0
Chromium	mg/kg	0.1111 / 0.1217	ND	ND	ND	0 / 5	0
Cobalt	mg/kg	0.00445 / 0.01025	ND	ND	ND	0 / 5	0
Copper	mg/kg	0.1667 / 0.1771	ND	0.2607	1.549	2 / 5	0.9049
Iron	mg/kg	11.48 / 12.4	ND	46.66	46.66	1 / 5	46.66
Lead	mg/kg	0.00926 / 0.01065	ND	0.0113	0.0113	1 / 5	0.0113
Magnesium	mg/kg	45.74 / 49.58	ND	254.6	254.6	1 / 5	254.6
Manganese	mg/kg	0.07686 / 0.08388	ND	0.1646	0.9559	2 / 5	0.5603
Mercury	mg/kg	0.00398 / 0.00429	ND	0.02323	0.02323	1 / 5	0.02323
Molybdenum	mg/kg	0.01065 / 0.03262	ND	0.05324	0.05324	1 / 5	0.05324
Nickel	mg/kg	0.03056 / 0.03355	ND	ND	ND	0 / 5	0
Potassium	mg/kg		137.9	137.9	3804	5 / 5	901.8
Selenium	mg/kg	0.04908 / 0.1118	ND	0.06691	0.4162	2 / 5	0.2416
Silver	mg/kg	0.00278 / 0.00298	ND	ND	ND	0 / 5	0
Sodium	mg/kg		133.7	133.7	632.1	5 / 5	290.5
Strontium	mg/kg	0.01389 / 0.01491	ND	0.03476	0.03476	1 / 5	0.03476
Thallium	mg/kg	0.01452 / 0.02982	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.05313 / 0.1118	ND	ND	ND	0 / 5	0
Zinc	mg/kg		1.305	1.305	56.72	5 / 5	12.77

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 13. TVA 2009 Raccoon Blood Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		81.4	81.4	81.4	1 / 1	81.4
Aluminum	mg/kg	0.83 / 0.89	ND	ND	ND	0 / 10	0
Antimony	mg/kg	0.019 / 0.062	ND	ND	ND	0 / 10	0
Arsenic	mg/kg	0.015 / 0.034	ND	ND	ND	0 / 10	0
Barium	mg/kg	0.019 / 0.042	ND	0.025	0.025	1 / 10	0.025
Beryllium	mg/kg	0.0031 / 0.01	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.061 / 0.26	ND	ND	ND	0 / 10	0
Cadmium	mg/kg	0.0056 / 0.014	ND	ND	ND	0 / 10	0
Calcium	mg/kg	47 / 48.8	ND	50.5	62	9 / 10	55.5
Chromium	mg/kg	0.12 / 0.12	ND	ND	ND	0 / 10	0
Cobalt	mg/kg	0.0049 / 0.014	ND	ND	ND	0 / 10	0
Copper	mg/kg		0.98	0.98	4.6	10 / 10	1.588
Iron	mg/kg		25.8	25.8	434	10 / 10	306.5
Lead	mg/kg	0.01 / 0.018	ND	0.03	0.03	1 / 10	0.03
Magnesium	mg/kg	47 / 50	ND	149	149	1 / 10	149
Manganese	mg/kg	0.079 / 0.17	ND	0.27	0.27	1 / 10	0.27
Mercury	mg/kg	0.0042 / 0.02	ND	0.0047	0.015	5 / 10	0.0074
Molybdenum	mg/kg	0.01 / 0.082	ND	0.25	0.25	1 / 10	0.25
Nickel	mg/kg	0.032 / 0.034	ND	0.04	0.04	1 / 10	0.04
Potassium	mg/kg		593	593	3200	10 / 10	910.3
Selenium	mg/kg		0.27	0.27	1	10 / 10	0.477
Silver	mg/kg	0.0028 / 0.003	ND	ND	ND	0 / 10	0
Sodium	mg/kg		1430	1430	3060	10 / 10	2711
Strontium	mg/kg	0.014 / 0.021	ND	0.018	0.046	8 / 10	0.02563
Thallium	mg/kg	0.014 / 0.03	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.052 / 0.11	ND	ND	ND	0 / 10	0
Zinc	mg/kg		3.7	3.7	21.9	10 / 10	9.34

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 14. TVA 2009 Raccoon Brain Sampling from Impacted Locations**

<b>Analyte</b>	<b>Units (wet wt. basis)</b>	<b>Detection Limit Range</b>	<b>Minimum</b>	<b>Minimum Detected Result</b>	<b>Maximum Detected Result</b>	<b>Number of Detections / Samples</b>	<b>Mean of Detections</b>
Aluminum	mg/kg	0.8024 / 2.701	ND	2.944	2.944	1 / 10	2.944
Antimony	mg/kg	0.0177 / 0.0405	ND	ND	ND	0 / 10	0
Arsenic	mg/kg	0.01521 / 0.03375	ND	ND	ND	0 / 10	0
Barium	mg/kg	0.01888 / 0.05675	ND	0.02021	0.1283	7 / 10	0.04459
Beryllium	mg/kg	0.00298 / 0.01004	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.059 / 0.27	ND	0.1792	0.1792	1 / 10	0.1792
Cadmium	mg/kg	0.00543 / 0.01363	ND	ND	ND	0 / 10	0
Calcium	mg/kg	45.55 / 49.73	ND	49.82	222.3	7 / 10	76.52
Chromium	mg/kg	0.1133 / 0.1238	ND	0.1293	0.2977	2 / 10	0.2135
Cobalt	mg/kg	0.0048 / 0.0229	ND	0.01856	0.01856	1 / 10	0.01856
Copper	mg/kg		0.2951	0.2951	4.568	10 / 10	3.31
Iron	mg/kg	11.4 / 12.17	ND	14.21	23.97	9 / 10	18
Lead	mg/kg	0.00968 / 0.01058	ND	ND	ND	0 / 10	0
Magnesium	mg/kg	45.55 / 48.58	ND	133.3	153.9	9 / 10	145.2
Manganese	mg/kg		0.1861	0.1861	0.4351	10 / 10	0.3272
Mercury	mg/kg	0.00409 / 0.01841	ND	0.00669	0.0517	7 / 10	0.02248
Molybdenum	mg/kg	0.01075 / 0.0585	ND	0.0784	0.0784	1 / 10	0.0784
Nickel	mg/kg	0.03068 / 0.04351	ND	0.0405	0.08931	4 / 10	0.0565
Potassium	mg/kg		254.2	254.2	4077	10 / 10	3271
Selenium	mg/kg		0.09988	0.09988	0.4484	10 / 10	0.2796
Silver	mg/kg	0.00283 / 0.01457	ND	0.00416	0.00416	1 / 10	0.00416
Sodium	mg/kg		526.6	526.6	1449	10 / 10	1208
Strontium	mg/kg	0.01392 / 0.03178	ND	0.0151	0.08325	8 / 10	0.03033
Thallium	mg/kg	0.0143 / 0.02925	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.05376 / 0.1103	ND	ND	ND	0 / 10	0
Zinc	mg/kg		2.906	2.906	16.04	10 / 10	13.1

**Notes**

Grab sample results are presented in wet weight.

For definitions, see the Acronyms section.

**Table 15. TVA 2009 Raccoon Gonad Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		81.8	81.8	81.8	1 / 1	81.8
Aluminum	mg/kg	0.8256 / 2.485	ND	ND	ND	0 / 9	0
Antimony	mg/kg	0.01702 / 0.044	ND	ND	ND	0 / 9	0
Arsenic	mg/kg	0.01529 / 0.078	ND	ND	ND	0 / 9	0
Barium	mg/kg	0.01814 / 0.04182	ND	0.02244	0.19	7 / 9	0.07168
Beryllium	mg/kg	0.00291 / 0.015	ND	ND	ND	0 / 9	0
Boron	mg/kg	0.056 / 0.15	ND	ND	ND	0 / 9	0
Cadmium	mg/kg	0.00557 / 0.037	ND	ND	ND	0 / 9	0
Calcium	mg/kg	44.13 / 49.2	ND	56.64	178	8 / 9	91.94
Chromium	mg/kg	0.1098 / 0.29	ND	0.1171	0.75	4 / 9	0.3121
Cobalt	mg/kg	0.00461 / 0.025	ND	0.00538	0.00538	1 / 9	0.005376
Copper	mg/kg	0.159 / 0.1771	ND	0.9408	2.1	8 / 9	1.317
Iron	mg/kg	11.02 / 12.3	ND	20.57	150	8 / 9	53.75
Lead	mg/kg	0.00941 / 0.024	ND	ND	ND	0 / 9	0
Magnesium	mg/kg	44.13 / 115	ND	97.4	137.7	7 / 9	119.8
Manganese	mg/kg		0.08364	0.08364	0.47	9 / 9	0.3218
Mercury	mg/kg	0.00403 / 0.045	ND	0.00517	0.015	6 / 9	0.008697
Molybdenum	mg/kg	0.01056 / 0.16	ND	0.1401	0.1401	1 / 9	0.1401
Nickel	mg/kg	0.03072 / 0.05152	ND	0.0364	0.21	6 / 9	0.09155
Potassium	mg/kg		113.9	113.9	3276	9 / 9	2261
Selenium	mg/kg	0.04704 / 0.05412	ND	0.29	0.7462	8 / 9	0.4975
Silver	mg/kg	0.00269 / 0.0069	ND	ND	ND	0 / 9	0
Sodium	mg/kg		128.2	128.2	1710	9 / 9	1202
Strontium	mg/kg	0.01344 / 0.02652	ND	0.0288	0.13	7 / 9	0.05848
Thallium	mg/kg	0.01363 / 0.069	ND	ND	ND	0 / 9	0
Vanadium	mg/kg	0.04992 / 0.13	ND	ND	ND	0 / 9	0
Zinc	mg/kg		1.599	1.599	21	9 / 9	14.27

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 16. TVA 2009 Raccoon Hair Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
Aluminum	mg/kg		13.56	13.56	180.6	10 / 10	86.69
Antimony	mg/kg	0.01729 / 0.03917	ND	0.01962	0.04827	3 / 10	0.03577
Arsenic	mg/kg	0.01373 / 0.1238	ND	0.1806	0.7844	9 / 10	0.4278
Barium	mg/kg		0.8554	0.8554	5.948	10 / 10	2.405
Beryllium	mg/kg	0.00293 / 0.00981	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.05824 / 1.281	ND	0.2366	1.184	7 / 10	0.6781
Cadmium	mg/kg	0.00531 / 0.02103	ND	0.01284	0.02319	2 / 10	0.01802
Calcium	mg/kg		450	450	913.7	10 / 10	625.3
Chromium	mg/kg	0.1098 / 0.6066	ND	0.6741	5.135	5 / 10	1.683
Cobalt	mg/kg	0.00431 / 0.06453	ND	0.04823	0.1467	7 / 10	0.1063
Copper	mg/kg		6.728	6.728	10.43	10 / 10	8.974
Iron	mg/kg		25.12	25.12	534.8	10 / 10	149
Lead	mg/kg		0.08235	0.08235	0.4646	10 / 10	0.2564
Magnesium	mg/kg		70.53	70.53	205.2	10 / 10	115.4
Manganese	mg/kg		7.007	7.007	53.79	10 / 10	21.52
Mercury	mg/kg		0.06419	0.06419	1.682	10 / 10	0.463
Molybdenum	mg/kg	0.01001 / 0.1249	ND	0.2004	0.2184	3 / 10	0.2098
Nickel	mg/kg	0.02934 / 0.3033	ND	0.1822	0.3668	2 / 10	0.2745
Potassium	mg/kg	44.29 / 276.7	ND	157.6	157.6	1 / 10	157.6
Selenium	mg/kg		1.945	1.945	5.733	10 / 10	3.397
Silver	mg/kg	0.00265 / 0.00805	ND	0.00349	0.00349	1 / 10	0.003485
Sodium	mg/kg	48.56 / 267	ND	306.1	306.1	1 / 10	306.1
Strontium	mg/kg	0.01365 / 0.4155	ND	0.6916	2.23	9 / 10	1.439
Thallium	mg/kg	0.01281 / 0.08206	ND	ND	ND	0 / 10	0
Vanadium	mg/kg		0.06322	0.06322	0.4493	10 / 10	0.2089
Zinc	mg/kg		153.8	153.8	407.7	10 / 10	250.4

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 17. TVA 2009 Raccoon Kidney Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		74.8	74.8	81.2	5 / 5	78.96
Aluminum	mg/kg	0.7956 / 1.196	ND	1.94	1.94	1 / 10	1.94
Antimony	mg/kg	0.01612 / 0.03612	ND	ND	ND	0 / 10	0
Arsenic	mg/kg	0.01445 / 0.05264	ND	0.0304	0.0304	1 / 10	0.0304
Barium	mg/kg	0.01716 / 0.0893	ND	0.0351	0.0988	8 / 10	0.06139
Beryllium	mg/kg	0.00286 / 0.0094	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.0546 / 0.2322	ND	ND	ND	0 / 10	0
Cadmium	mg/kg		0.2419	0.2419	3.253	10 / 10	1.748
Calcium	mg/kg		49.39	49.39	172.3	10 / 10	86.68
Chromium	mg/kg	0.104 / 0.1203	ND	0.1269	0.1562	4 / 10	0.1382
Cobalt	mg/kg	0.00416 / 0.0399	ND	0.02243	0.0598	4 / 10	0.03936
Copper	mg/kg		3.196	3.196	5.616	10 / 10	4.221
Iron	mg/kg		53.77	53.77	186.7	10 / 10	99.48
Lead	mg/kg	0.00983 / 0.09594	ND	0.0376	0.129	6 / 10	0.07205
Magnesium	mg/kg		112.2	112.2	153	10 / 10	135.4
Manganese	mg/kg		0.6708	0.6708	1.84	10 / 10	1.096
Mercury	mg/kg		0.0504	0.0504	0.4212	10 / 10	0.1532
Molybdenum	mg/kg		0.2632	0.2632	0.5148	10 / 10	0.3887
Nickel	mg/kg	0.0286 / 0.1215	ND	0.03196	0.1045	7 / 10	0.05652
Potassium	mg/kg		1474	1474	2109	10 / 10	1824
Selenium	mg/kg		1.354	1.354	2.802	10 / 10	1.814
Silver	mg/kg	0.00252 / 0.00304	ND	ND	ND	0 / 10	0
Sodium	mg/kg		1608	1608	2670	10 / 10	2040
Strontium	mg/kg	0.01274 / 0.04386	ND	0.02092	0.06665	8 / 10	0.04168
Thallium	mg/kg	0.01222 / 0.0304	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.0468 / 0.1083	ND	0.07056	0.07056	1 / 10	0.07056
Zinc	mg/kg		15.3	15.3	27.3	10 / 10	20.49

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 18. TVA 2009 Raccoon Liver Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		72.1	72.1	76.8	5 / 5	74.48
Aluminum	mg/kg	0.7598 / 1.459	ND	0.917	0.917	1 / 10	0.917
Antimony	mg/kg	0.01651 / 0.03906	ND	0.01886	0.01886	1 / 10	0.01886
Arsenic	mg/kg	0.01336 / 0.0548	ND	0.04454	0.04454	1 / 10	0.04454
Barium	mg/kg	0.01973 / 0.04096	ND	0.02211	0.0429	8 / 10	0.03045
Beryllium	mg/kg	0.00288 / 0.00998	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.05502 / 0.1423	ND	ND	ND	0 / 10	0
Cadmium	mg/kg		0.04408	0.04408	0.411	10 / 10	0.3072
Calcium	mg/kg		51.97	51.97	84.38	10 / 10	64.82
Chromium	mg/kg	0.1048 / 0.1248	ND	ND	ND	0 / 10	0
Cobalt	mg/kg	0.00419 / 0.04539	ND	0.03712	0.0988	6 / 10	0.07125
Copper	mg/kg		3.946	3.946	37.89	10 / 10	12.42
Iron	mg/kg		276.6	276.6	602.7	10 / 10	482
Lead	mg/kg	0.00891 / 0.0768	ND	0.0806	0.2192	8 / 10	0.134
Magnesium	mg/kg		145.2	145.2	179.5	10 / 10	159
Manganese	mg/kg		2.158	2.158	3.642	10 / 10	2.88
Mercury	mg/kg		0.03712	0.03712	3.952	10 / 10	0.6778
Molybdenum	mg/kg		0.6264	0.6264	1.408	10 / 10	0.9448
Nickel	mg/kg	0.02882 / 0.04806	ND	0.039	0.04743	5 / 10	0.04302
Potassium	mg/kg		1782	1782	2179	10 / 10	1999
Selenium	mg/kg		0.7888	0.7888	2.243	10 / 10	1.265
Silver	mg/kg	0.00257 / 0.01945	ND	0.01485	0.01507	2 / 10	0.01496
Sodium	mg/kg		1400	1400	1810	10 / 10	1653
Strontium	mg/kg	0.01284 / 0.02567	ND	0.02594	0.06006	8 / 10	0.03969
Thallium	mg/kg	0.01408 / 0.03069	ND	ND	ND	0 / 10	0
Vanadium	mg/kg		0.06075	0.06075	0.685	10 / 10	0.2894
Zinc	mg/kg		26.17	26.17	45.31	10 / 10	38.44

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 19. TVA 2009 Raccoon Skeletal Muscle Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		73.4	73.4	75.3	4 / 4	74.33
Aluminum	mg/kg	0.8214 / 3.979	ND	1.109	4.506	3 / 10	2.501
Antimony	mg/kg	0.0173 / 0.04032	ND	ND	ND	0 / 10	0
Arsenic	mg/kg	0.01443 / 0.03705	ND	0.01755	0.05994	2 / 10	0.03875
Barium	mg/kg	0.01834 / 0.04032	ND	0.02174	0.1445	8 / 10	0.05
Beryllium	mg/kg	0.00298 / 0.00973	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.05882 / 0.0645	ND	ND	ND	0 / 10	0
Cadmium	mg/kg	0.00554 / 0.01334	ND	ND	ND	0 / 10	0
Calcium	mg/kg	44.98 / 49.54	ND	58.21	58.21	1 / 10	58.21
Chromium	mg/kg	0.1107 / 0.1224	ND	0.128	1.445	5 / 10	0.409
Cobalt	mg/kg	0.00469 / 0.01858	ND	ND	ND	0 / 10	0
Copper	mg/kg		1.058	1.058	1.889	10 / 10	1.542
Iron	mg/kg		21.22	21.22	46.82	10 / 10	36.19
Lead	mg/kg	0.00969 / 0.01058	ND	ND	ND	0 / 10	0
Magnesium	mg/kg		122.2	122.2	272.5	10 / 10	228.3
Manganese	mg/kg		0.1359	0.1359	0.519	10 / 10	0.2223
Mercury	mg/kg	0.00381 / 0.03354	ND	0.01032	0.1037	8 / 10	0.02862
Molybdenum	mg/kg	0.01048 / 0.1109	ND	0.08122	0.08122	1 / 10	0.08122
Nickel	mg/kg	0.0301 / 0.03458	ND	0.03668	0.3354	7 / 10	0.08188
Potassium	mg/kg		2545	2545	4347	10 / 10	3617
Selenium	mg/kg		0.2304	0.2304	0.5418	10 / 10	0.3664
Silver	mg/kg	0.0027 / 0.0031	ND	ND	ND	0 / 10	0
Sodium	mg/kg		482.5	482.5	1421	10 / 10	684
Strontium	mg/kg	0.01349 / 0.02367	ND	0.01471	0.02717	7 / 10	0.01861
Thallium	mg/kg	0.01315 / 0.03096	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.04844 / 0.1084	ND	ND	ND	0 / 10	0
Zinc	mg/kg		15.09	15.09	60.63	10 / 10	50.99

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 20. TVA 2009 Raccoon Subcutaneous Fat Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		7.4	7.4	20.5	7 / 7	11.91
Aluminum	mg/kg	0.839 / 2.08	ND	1.111	10.34	3 / 9	4.312
Antimony	mg/kg	0.01835 / 0.03986	ND	ND	ND	0 / 9	0
Arsenic	mg/kg	0.0156 / 0.03426	ND	ND	ND	0 / 9	0
Barium	mg/kg	0.01923 / 0.06678	ND	0.02724	0.117	2 / 9	0.07212
Beryllium	mg/kg	0.00318 / 0.01019	ND	ND	ND	0 / 9	0
Boron	mg/kg	0.06118 / 0.0918	ND	ND	ND	0 / 9	0
Cadmium	mg/kg	0.00568 / 0.01352	ND	ND	ND	0 / 9	0
Calcium	mg/kg	47.55 / 49.86	ND	56.56	56.56	1 / 9	56.56
Chromium	mg/kg	0.1136 / 0.1272	ND	0.1482	0.9988	2 / 9	0.5735
Cobalt	mg/kg	0.00481 / 0.01019	ND	ND	ND	0 / 9	0
Copper	mg/kg	0.1725 / 0.1767	ND	0.1748	2.374	6 / 9	0.6569
Iron	mg/kg	11.89 / 12.41	ND	12.96	311.2	3 / 9	113.4
Lead	mg/kg	0.00999 / 0.01076	ND	ND	ND	0 / 9	0
Magnesium	mg/kg	47.55 / 49.95	ND	ND	ND	0 / 9	0
Manganese	mg/kg	0.0795 / 0.1674	ND	0.09614	0.477	4 / 9	0.2355
Mercury	mg/kg	0.00411 / 0.00488	ND	ND	ND	0 / 9	0
Molybdenum	mg/kg	0.01049 / 0.05851	ND	0.117	0.117	1 / 9	0.117
Nickel	mg/kg	0.03213 / 0.04903	ND	0.03397	0.08241	3 / 9	0.05337
Potassium	mg/kg		142.3	142.3	958.2	9 / 9	293.3
Selenium	mg/kg	0.05141 / 0.05371	ND	0.05324	0.4325	6 / 9	0.1459
Silver	mg/kg	0.00285 / 0.00299	ND	ND	ND	0 / 9	0
Sodium	mg/kg		185.4	185.4	3010	9 / 9	646.3
Strontium	mg/kg	0.01453 / 0.01526	ND	0.0227	0.0286	3 / 9	0.02505
Thallium	mg/kg	0.01398 / 0.0296	ND	ND	ND	0 / 9	0
Vanadium	mg/kg	0.05244 / 0.1113	ND	ND	ND	0 / 9	0
Zinc	mg/kg		1.573	1.573	5.005	9 / 9	2.458

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 21. TVA 2009 Raccoon Ovary Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
Aluminum	mg/kg	5.5 / 5.5	ND	ND	ND	0 / 1	0
Antimony	mg/kg	0.12 / 0.12	ND	ND	ND	0 / 1	0
Arsenic	mg/kg	0.21 / 0.21	ND	ND	ND	0 / 1	0
Barium	mg/kg		0.13	0.13	0.13	1 / 1	0.13
Beryllium	mg/kg	0.021 / 0.021	ND	ND	ND	0 / 1	0
Boron	mg/kg	0.4 / 0.4	ND	ND	ND	0 / 1	0
Cadmium	mg/kg	0.038 / 0.038	ND	ND	ND	0 / 1	0
Calcium	mg/kg	312 / 312	ND	ND	ND	0 / 1	0
Chromium	mg/kg		0.95	0.95	0.95	1 / 1	0.95
Cobalt	mg/kg	0.031 / 0.031	ND	ND	ND	0 / 1	0
Copper	mg/kg		2.3	2.3	2.3	1 / 1	2.3
Iron	mg/kg		141	141	141	1 / 1	141
Lead	mg/kg	0.066 / 0.066	ND	ND	ND	0 / 1	0
Magnesium	mg/kg	312 / 312	ND	ND	ND	0 / 1	0
Manganese	mg/kg		0.58	0.58	0.58	1 / 1	0.58
Mercury	mg/kg	0.054 / 0.054	ND	ND	ND	0 / 1	0
Molybdenum	mg/kg	0.19 / 0.19	ND	ND	ND	0 / 1	0
Nickel	mg/kg	0.21 / 0.21	ND	ND	ND	0 / 1	0
Potassium	mg/kg		3770	3770	3770	1 / 1	3770
Selenium	mg/kg		0.78	0.78	0.78	1 / 1	0.78
Silver	mg/kg	0.019 / 0.019	ND	ND	ND	0 / 1	0
Sodium	mg/kg		1480	1480	1480	1 / 1	1480
Strontium	mg/kg	0.095 / 0.095	ND	ND	ND	0 / 1	0
Thallium	mg/kg	0.19 / 0.19	ND	ND	ND	0 / 1	0
Vanadium	mg/kg	0.69 / 0.69	ND	ND	ND	0 / 1	0
Zinc	mg/kg		22.7	22.7	22.7	1 / 1	22.7

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 22. TVA 2010 Raccoon Blood Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		79.7	79.7	82.6	5 / 5	81.08
Aluminum	mg/kg	3.7 / 4.1	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.013 / 0.015	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.026 / 0.029	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.042 / 0.047	ND	0.057	0.057	1 / 5	0.057
Beryllium	mg/kg	0.027 / 0.03	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.38 / 0.42	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.007 / 0.0078	ND	ND	ND	0 / 5	0
Calcium	mg/kg		55.4	55.4	85.1	5 / 5	69.24
Chromium	mg/kg	0.12 / 0.13	ND	ND	ND	0 / 5	0
Cobalt	mg/kg	0.013 / 0.014	ND	0.016	0.016	1 / 5	0.016
Copper	mg/kg		1.2	1.2	1.8	5 / 5	1.4
Iron	mg/kg		304	304	481	5 / 5	397
Lead	mg/kg	0.026 / 0.027	ND	0.029	0.037	3 / 5	0.034
Magnesium	mg/kg	44.3 / 49.1	ND	44.8	60.4	2 / 5	52.6
Manganese	mg/kg	0.16 / 0.17	ND	ND	ND	0 / 5	0
Mercury	mg/kg	0.011 / 0.012	ND	0.019	0.019	1 / 5	0.019
Molybdenum	mg/kg	0.034 / 0.056	ND	0.063	0.087	3 / 5	0.07333
Nickel	mg/kg	0.09 / 0.1	ND	ND	ND	0 / 5	0
Potassium	mg/kg	665 / 720	ND	706	1090	3 / 5	839.3
Selenium	mg/kg		0.36	0.36	0.53	5 / 5	0.434
Silver	mg/kg	0.0027 / 0.0029	ND	ND	ND	0 / 5	0
Sodium	mg/kg		2880	2880	3980	5 / 5	3274
Strontium	mg/kg	0.041 / 0.045	ND	ND	ND	0 / 5	0
Thallium	mg/kg	0.013 / 0.014	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.042 / 0.047	ND	ND	ND	0 / 5	0
Zinc	mg/kg		4.6	4.6	8.2	5 / 5	6.08

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 23. TVA 2010 Raccoon Brain Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		74.4	74.4	78	5 / 5	75.98
Aluminum	mg/kg	3.6 / 4.1	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.013 / 0.015	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.025 / 0.029	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.041 / 0.048	ND	0.047	0.052	2 / 5	0.0495
Beryllium	mg/kg	0.026 / 0.031	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.37 / 0.43	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.0068 / 0.021	ND	0.028	0.028	1 / 5	0.028
Calcium	mg/kg		53.5	53.5	72	5 / 5	59.96
Chromium	mg/kg	0.11 / 0.13	ND	0.17	0.17	1 / 5	0.17
Cobalt	mg/kg		0.013	0.013	0.023	5 / 5	0.0198
Copper	mg/kg		2.5	2.5	4.8	5 / 5	3.9
Iron	mg/kg		13.5	13.5	19.6	5 / 5	17.26
Lead	mg/kg	0.025 / 0.029	ND	ND	ND	0 / 5	0
Magnesium	mg/kg		152	152	169	5 / 5	160.2
Manganese	mg/kg		0.34	0.34	0.42	5 / 5	0.368
Mercury	mg/kg	0.011 / 0.021	ND	0.012	0.056	2 / 5	0.034
Molybdenum	mg/kg	0.031 / 0.036	ND	0.062	0.062	1 / 5	0.062
Nickel	mg/kg	0.087 / 0.1	ND	ND	ND	0 / 5	0
Potassium	mg/kg		3560	3560	4150	5 / 5	3846
Selenium	mg/kg		0.22	0.22	0.33	5 / 5	0.266
Silver	mg/kg	0.0026 / 0.0027	ND	0.005	0.009	3 / 5	0.006767
Sodium	mg/kg		1240	1240	1410	5 / 5	1354
Strontium	mg/kg	0.039 / 0.046	ND	0.071	0.071	1 / 5	0.071
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.041 / 0.047	ND	ND	ND	0 / 5	0
Zinc	mg/kg		14.2	14.2	16.1	5 / 5	15.02

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 24. TVA 2010 Raccoon Gonad Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		79.3	79.3	80.9	3 / 3	79.93
Aluminum	mg/kg	3.7 / 4	ND	ND	ND	0 / 3	0
Antimony	mg/kg	0.014 / 0.014	ND	ND	ND	0 / 3	0
Arsenic	mg/kg	0.026 / 0.028	ND	ND	ND	0 / 3	0
Barium	mg/kg		0.047	0.047	0.083	3 / 3	0.06333
Beryllium	mg/kg	0.028 / 0.029	ND	ND	ND	0 / 3	0
Boron	mg/kg	0.39 / 0.41	ND	ND	ND	0 / 3	0
Cadmium	mg/kg	0.0071 / 0.0076	ND	0.012	0.012	1 / 3	0.012
Calcium	mg/kg		60.4	60.4	78.3	3 / 3	68.57
Chromium	mg/kg	0.12 / 0.13	ND	ND	ND	0 / 3	0
Cobalt	mg/kg	0.013 / 0.014	ND	ND	ND	0 / 3	0
Copper	mg/kg		1	1	1.2	3 / 3	1.1
Iron	mg/kg		17.1	17.1	35.8	3 / 3	24.23
Lead	mg/kg	0.026 / 0.028	ND	ND	ND	0 / 3	0
Magnesium	mg/kg		122	122	150	3 / 3	137
Manganese	mg/kg		0.28	0.28	0.38	3 / 3	0.3467
Mercury	mg/kg	0.011 / 0.014	ND	ND	ND	0 / 3	0
Molybdenum	mg/kg	0.033 / 0.071	ND	0.19	0.24	2 / 3	0.215
Nickel	mg/kg	0.091 / 0.097	ND	ND	ND	0 / 3	0
Potassium	mg/kg		2290	2290	3150	3 / 3	2820
Selenium	mg/kg		0.37	0.37	0.7	3 / 3	0.52
Silver	mg/kg	0.0027 / 0.0029	ND	ND	ND	0 / 3	0
Sodium	mg/kg		1290	1290	1620	3 / 3	1443
Strontium	mg/kg	0.041 / 0.041	ND	0.044	0.045	2 / 3	0.0445
Thallium	mg/kg	0.013 / 0.014	ND	ND	ND	0 / 3	0
Vanadium	mg/kg	0.043 / 0.046	ND	ND	ND	0 / 3	0
Zinc	mg/kg		12.7	12.7	17.3	3 / 3	15.57

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 25. TVA 2010 Raccoon Hair Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		5.4	5.4	7	5 / 5	6.02
Aluminum	mg/kg		11.9	11.9	77.5	5 / 5	38.94
Antimony	mg/kg	0.013 / 0.014	ND	0.015	0.031	3 / 5	0.023
Arsenic	mg/kg		0.036	0.036	0.21	5 / 5	0.1188
Barium	mg/kg		1.4	1.4	11.6	5 / 5	3.96
Beryllium	mg/kg	0.027 / 0.03	ND	ND	ND	0 / 5	0
Boron	mg/kg		1	1	3	5 / 5	1.7
Cadmium	mg/kg	0.007 / 0.007	ND	0.0083	0.058	4 / 5	0.03233
Calcium	mg/kg		493	493	1150	5 / 5	764
Chromium	mg/kg		0.12	0.12	0.42	5 / 5	0.248
Cobalt	mg/kg		0.031	0.031	0.35	5 / 5	0.1346
Copper	mg/kg		20.9	20.9	29.6	5 / 5	23.7
Iron	mg/kg		16.6	16.6	126	5 / 5	53.06
Lead	mg/kg		0.1	0.1	0.86	5 / 5	0.34
Magnesium	mg/kg		99.5	99.5	213	5 / 5	144.3
Manganese	mg/kg		5.5	5.5	42.8	5 / 5	15.9
Mercury	mg/kg	0.011 / 0.068	ND	0.19	1.9	4 / 5	0.855
Molybdenum	mg/kg	0.032 / 0.034	ND	0.045	0.11	3 / 5	0.06967
Nickel	mg/kg		0.099	0.099	0.55	5 / 5	0.2018
Potassium	mg/kg	664 / 734	ND	ND	ND	0 / 5	0
Selenium	mg/kg		2.2	2.2	3.7	5 / 5	2.9
Silver	mg/kg	0.0027 / 0.003	ND	0.0041	0.012	3 / 5	0.007267
Sodium	mg/kg		155	155	235	5 / 5	187.6
Strontium	mg/kg		0.73	0.73	2.1	5 / 5	1.122
Thallium	mg/kg	0.013 / 0.014	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.042 / 0.045	ND	0.075	0.24	3 / 5	0.1717
Zinc	mg/kg		216	216	234	5 / 5	225.6

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 26. TVA 2010 Raccoon Kidney Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		75.4	75.4	79.9	5 / 5	78.2
Aluminum	mg/kg	3.6 / 4.1	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.013 / 0.015	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.025 / 0.029	ND	0.03	0.065	3 / 5	0.04433
Barium	mg/kg		0.067	0.067	0.3	5 / 5	0.1576
Beryllium	mg/kg	0.027 / 0.03	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.37 / 0.42	ND	ND	ND	0 / 5	0
Cadmium	mg/kg		0.93	0.93	10.1	5 / 5	3.102
Calcium	mg/kg		75.3	75.3	162	5 / 5	96.42
Chromium	mg/kg	0.11 / 0.13	ND	ND	ND	0 / 5	0
Cobalt	mg/kg		0.036	0.036	0.11	5 / 5	0.0734
Copper	mg/kg		3.5	3.5	8.7	5 / 5	5.6
Iron	mg/kg		49.9	49.9	231	5 / 5	109.8
Lead	mg/kg		0.041	0.041	0.21	5 / 5	0.1268
Magnesium	mg/kg		146	146	170	5 / 5	155.6
Manganese	mg/kg		1.2	1.2	1.5	5 / 5	1.3
Mercury	mg/kg		0.064	0.064	0.4	5 / 5	0.1734
Molybdenum	mg/kg		0.28	0.28	0.68	5 / 5	0.444
Nickel	mg/kg	0.088 / 0.1	ND	ND	ND	0 / 5	0
Potassium	mg/kg		1730	1730	2160	5 / 5	1896
Selenium	mg/kg		1.5	1.5	2	5 / 5	1.84
Silver	mg/kg	0.0026 / 0.003	ND	ND	ND	0 / 5	0
Sodium	mg/kg		2090	2090	2300	5 / 5	2214
Strontium	mg/kg	0.04 / 0.04	ND	0.048	0.088	3 / 5	0.06233
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.041 / 0.047	ND	0.061	0.061	1 / 5	0.061
Zinc	mg/kg		17.8	17.8	25.7	5 / 5	21.74

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 27. TVA 2010 Raccoon Liver Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		69.7	69.7	74.9	5 / 5	72
Aluminum	mg/kg	3.6 / 4.1	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.013 / 0.015	ND	0.015	0.015	1 / 5	0.015
Arsenic	mg/kg	0.025 / 0.029	ND	0.029	0.039	3 / 5	0.03367
Barium	mg/kg	0.041 / 0.047	ND	0.054	0.062	2 / 5	0.058
Beryllium	mg/kg	0.027 / 0.03	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.37 / 0.42	ND	ND	ND	0 / 5	0
Cadmium	mg/kg		0.21	0.21	1.1	5 / 5	0.454
Calcium	mg/kg	43.6 / 49.1	ND	57.1	69.1	4 / 5	64.45
Chromium	mg/kg	0.11 / 0.13	ND	ND	ND	0 / 5	0
Cobalt	mg/kg		0.068	0.068	0.12	5 / 5	0.086
Copper	mg/kg		5.1	5.1	32.9	5 / 5	16.56
Iron	mg/kg		312	312	555	5 / 5	435.8
Lead	mg/kg		0.066	0.066	0.41	5 / 5	0.1958
Magnesium	mg/kg		179	179	190	5 / 5	184.4
Manganese	mg/kg		2.8	2.8	3.4	5 / 5	3.06
Mercury	mg/kg	0.01 / 0.053	ND	0.08	1.6	4 / 5	0.5408
Molybdenum	mg/kg		0.5	0.5	1.6	5 / 5	1.118
Nickel	mg/kg	0.088 / 0.1	ND	ND	ND	0 / 5	0
Potassium	mg/kg		2150	2150	2990	5 / 5	2426
Selenium	mg/kg		0.79	0.79	1.6	5 / 5	1.026
Silver	mg/kg	0.0026 / 0.0029	ND	0.016	0.055	3 / 5	0.037
Sodium	mg/kg		1020	1020	1660	5 / 5	1458
Strontium	mg/kg	0.04 / 0.045	ND	ND	ND	0 / 5	0
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.041 / 0.047	ND	0.064	0.13	2 / 5	0.097
Zinc	mg/kg		29.7	29.7	51.9	5 / 5	43.9

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 28. TVA 2010 Raccoon Skeletal Muscle Sampling from Knox and Hugo Reference Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		73.4	73.4	76.4	5 / 5	74.66
Aluminum	mg/kg	3.6 / 4	ND	ND	ND	0 / 5	0
Antimony	mg/kg	0.013 / 0.014	ND	ND	ND	0 / 5	0
Arsenic	mg/kg	0.025 / 0.028	ND	ND	ND	0 / 5	0
Barium	mg/kg	0.041 / 0.046	ND	0.044	0.13	3 / 5	0.079
Beryllium	mg/kg	0.027 / 0.03	ND	ND	ND	0 / 5	0
Boron	mg/kg	0.37 / 0.41	ND	ND	ND	0 / 5	0
Cadmium	mg/kg	0.0069 / 0.023	ND	ND	ND	0 / 5	0
Calcium	mg/kg	43.4 / 47.9	ND	46.8	55.6	3 / 5	50.8
Chromium	mg/kg	0.11 / 0.13	ND	ND	ND	0 / 5	0
Cobalt	mg/kg	0.013 / 0.014	ND	ND	ND	0 / 5	0
Copper	mg/kg		1.4	1.4	1.8	5 / 5	1.66
Iron	mg/kg		18.6	18.6	32.4	5 / 5	27.76
Lead	mg/kg	0.025 / 0.028	ND	ND	ND	0 / 5	0
Magnesium	mg/kg		256	256	301	5 / 5	270.4
Manganese	mg/kg	0.15 / 0.16	ND	0.18	0.21	4 / 5	0.1925
Mercury	mg/kg	0.011 / 0.049	ND	0.025	0.12	3 / 5	0.05667
Molybdenum	mg/kg	0.032 / 0.035	ND	0.05	0.067	3 / 5	0.05633
Nickel	mg/kg	0.088 / 0.098	ND	ND	ND	0 / 5	0
Potassium	mg/kg		3740	3740	4470	5 / 5	4048
Selenium	mg/kg		0.22	0.22	0.35	5 / 5	0.286
Silver	mg/kg	0.0026 / 0.0029	ND	ND	ND	0 / 5	0
Sodium	mg/kg		490	490	657	5 / 5	601
Strontium	mg/kg	0.04 / 0.044	ND	ND	ND	0 / 5	0
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 5	0
Vanadium	mg/kg	0.041 / 0.046	ND	ND	ND	0 / 5	0

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 29. TVA 2010 Raccoon Blood Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		74.6	74.6	83.9	10 / 10	79.67
Aluminum	mg/kg	3.5 / 4.1	ND	4	4	1 / 10	4
Antimony	mg/kg	0.013 / 0.015	ND	ND	ND	0 / 10	0
Arsenic	mg/kg	0.025 / 0.029	ND	ND	ND	0 / 10	0
Barium	mg/kg	0.04 / 0.044	ND	0.078	0.078	1 / 10	0.078
Beryllium	mg/kg	0.026 / 0.03	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.36 / 0.42	ND	ND	ND	0 / 10	0
Cadmium	mg/kg	0.0067 / 0.0078	ND	ND	ND	0 / 10	0
Calcium	mg/kg		56.4	56.4	69.4	10 / 10	62.35
Chromium	mg/kg	0.11 / 0.13	ND	ND	ND	0 / 10	0
Cobalt	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 10	0
Copper	mg/kg		1.2	1.2	1.7	10 / 10	1.47
Iron	mg/kg		324	324	563	10 / 10	394.8
Lead	mg/kg	0.024 / 0.027	ND	0.056	0.074	2 / 10	0.065
Magnesium	mg/kg	42.2 / 49.2	ND	42.2	52.7	5 / 10	47
Manganese	mg/kg	0.15 / 0.17	ND	ND	ND	0 / 10	0
Mercury	mg/kg	0.01 / 0.012	ND	0.021	0.032	2 / 10	0.0265
Molybdenum	mg/kg	0.031 / 0.082	ND	0.054	0.12	6 / 10	0.07583
Nickel	mg/kg	0.085 / 0.1	ND	ND	ND	0 / 10	0
Potassium	mg/kg	632 / 678	ND	663	801	6 / 10	730.8
Selenium	mg/kg		0.37	0.37	0.62	10 / 10	0.459
Silver	mg/kg	0.0025 / 0.003	ND	ND	ND	0 / 10	0
Sodium	mg/kg		2740	2740	3440	10 / 10	3029
Strontium	mg/kg	0.039 / 0.042	ND	0.041	0.048	3 / 10	0.04333
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.04 / 0.047	ND	ND	ND	0 / 10	0
Zinc	mg/kg		3.4	3.4	13	10 / 10	6.53

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 30. TVA 2010 Raccoon Brain Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		70.2	70.2	77.4	10 / 10	75.92
Aluminum	mg/kg	3.9 / 4.2	ND	ND	ND	0 / 10	0
Antimony	mg/kg	0.014 / 0.015	ND	ND	ND	0 / 10	0
Arsenic	mg/kg	0.026 / 0.029	ND	ND	ND	0 / 10	0
Barium	mg/kg	0.045 / 0.048	ND	0.048	0.31	3 / 10	0.1727
Beryllium	mg/kg	0.029 / 0.031	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.41 / 0.43	ND	ND	ND	0 / 10	0
Cadmium	mg/kg	0.0075 / 0.018	ND	0.013	0.026	4 / 10	0.01825
Calcium	mg/kg		55.1	55.1	103	10 / 10	64.74
Chromium	mg/kg	0.12 / 0.13	ND	0.17	0.17	2 / 10	0.17
Cobalt	mg/kg	0.014 / 0.015	ND	0.015	0.022	8 / 10	0.01738
Copper	mg/kg		3.2	3.2	4.8	10 / 10	3.99
Iron	mg/kg		15.7	15.7	22	10 / 10	18.08
Lead	mg/kg	0.027 / 0.029	ND	0.033	0.17	2 / 10	0.1015
Magnesium	mg/kg		154	154	162	10 / 10	157.5
Manganese	mg/kg		0.33	0.33	0.41	10 / 10	0.37
Mercury	mg/kg	0.011 / 0.014	ND	0.015	0.1	7 / 10	0.031
Molybdenum	mg/kg	0.036 / 0.04	ND	0.058	0.061	4 / 10	0.059
Nickel	mg/kg	0.096 / 0.1	ND	0.11	0.25	2 / 10	0.18
Potassium	mg/kg		3510	3510	3960	10 / 10	3678
Selenium	mg/kg		0.22	0.22	0.37	10 / 10	0.304
Silver	mg/kg	0.0029 / 0.0072	ND	0.0051	0.0086	3 / 10	0.006767
Sodium	mg/kg		1250	1250	1390	10 / 10	1306
Strontium	mg/kg	0.043 / 0.046	ND	0.047	0.07	4 / 10	0.05475
Thallium	mg/kg	0.014 / 0.014	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.045 / 0.047	ND	ND	ND	0 / 10	0
Zinc	mg/kg		12.9	12.9	18.7	10 / 10	16.02

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 31. TVA 2010 Raccoon Gonad Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		77.4	77.4	79.4	8 / 8	78.8
Aluminum	mg/kg	3.5 / 4.1	ND	12.7	12.7	1 / 8	12.7
Antimony	mg/kg	0.013 / 0.016	ND	ND	ND	0 / 8	0
Arsenic	mg/kg	0.025 / 0.029	ND	ND	ND	0 / 8	0
Barium	mg/kg	0.04 / 0.047	ND	0.043	0.11	6 / 8	0.06083
Beryllium	mg/kg	0.026 / 0.03	ND	ND	ND	0 / 8	0
Boron	mg/kg	0.36 / 0.42	ND	ND	ND	0 / 8	0
Cadmium	mg/kg	0.0067 / 0.0078	ND	0.007	0.01	4 / 8	0.0087
Calcium	mg/kg		61.1	61.1	79	8 / 8	69.04
Chromium	mg/kg	0.11 / 0.15	ND	0.18	0.18	1 / 8	0.18
Cobalt	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 8	0
Copper	mg/kg		0.9	0.9	1.4	8 / 8	1.15
Iron	mg/kg		21.3	21.3	65.4	8 / 8	39.86
Lead	mg/kg	0.024 / 0.028	ND	ND	ND	0 / 8	0
Magnesium	mg/kg		99.1	99.1	169	8 / 8	128.5
Manganese	mg/kg		0.25	0.25	0.51	8 / 8	0.365
Mercury	mg/kg	0.01 / 0.011	ND	0.013	0.045	6 / 8	0.02283
Molybdenum	mg/kg	0.031 / 0.16	ND	0.11	0.14	5 / 8	0.122
Nickel	mg/kg	0.086 / 0.1	ND	ND	ND	0 / 8	0
Potassium	mg/kg		2160	2160	3140	8 / 8	2628
Selenium	mg/kg		0.38	0.38	0.73	8 / 8	0.5125
Silver	mg/kg	0.0025 / 0.003	ND	ND	ND	0 / 8	0
Sodium	mg/kg		1260	1260	1640	8 / 8	1409
Strontium	mg/kg	0.039 / 0.045	ND	0.048	0.063	4 / 8	0.05275
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 8	0
Vanadium	mg/kg	0.04 / 0.064	ND	ND	ND	0 / 8	0
Zinc	mg/kg		12.4	12.4	21.4	8 / 8	16.01

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 32. TVA 2010 Raccoon Hair Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		4.1	4.1	6.2	10 / 10	5.33
Aluminum	mg/kg		17.4	17.4	474	10 / 10	126.5
Antimony	mg/kg	0.013 / 0.022	ND	0.019	0.092	8 / 10	0.033
Arsenic	mg/kg		0.2	0.2	0.83	10 / 10	0.483
Barium	mg/kg		0.9	0.9	4.5	10 / 10	2.2
Beryllium	mg/kg	0.026 / 0.031	ND	ND	ND	0 / 10	0
Boron	mg/kg		0.62	0.62	2	10 / 10	1.241
Cadmium	mg/kg	0.0072 / 0.0096	ND	0.014	0.46	6 / 10	0.09083
Calcium	mg/kg		537	537	1040	10 / 10	682.9
Chromium	mg/kg	0.11 / 0.24	ND	0.16	0.73	8 / 10	0.4088
Cobalt	mg/kg		0.033	0.033	0.62	10 / 10	0.1497
Copper	mg/kg		11.3	11.3	26.2	10 / 10	19.99
Iron	mg/kg		30.7	30.7	630	10 / 10	198.2
Lead	mg/kg		0.15	0.15	6.7	10 / 10	1.177
Magnesium	mg/kg		92.5	92.5	171	10 / 10	125
Manganese	mg/kg		3.2	3.2	71.7	10 / 10	19.39
Mercury	mg/kg		0.13	0.13	4.8	10 / 10	0.927
Molybdenum	mg/kg	0.033 / 0.096	ND	0.044	0.19	6 / 10	0.1007
Nickel	mg/kg		0.096	0.096	0.66	10 / 10	0.2666
Potassium	mg/kg	642 / 724	ND	ND	ND	0 / 10	0
Selenium	mg/kg		2.7	2.7	8	10 / 10	4.67
Silver	mg/kg	0.0025 / 0.0037	ND	0.0028	0.0091	3 / 10	0.005167
Sodium	mg/kg		51.2	51.2	281	10 / 10	138.2
Strontium	mg/kg		0.57	0.57	2.1	10 / 10	1.099
Thallium	mg/kg	0.012 / 0.046	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.04 / 0.21	ND	0.11	0.93	8 / 10	0.3075
Zinc	mg/kg		194	194	288	10 / 10	232.8

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 33. TVA 2010 Raccoon Kidney Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		71.3	71.3	79.6	10 / 10	76.6
Aluminum	mg/kg	3.6 / 4.1	ND	ND	ND	0 / 10	0
Antimony	mg/kg	0.013 / 0.015	ND	0.016	0.016	1 / 10	0.016
Arsenic	mg/kg	0.025 / 0.028	ND	0.031	0.037	3 / 10	0.03367
Barium	mg/kg		0.052	0.052	0.12	10 / 10	0.0806
Beryllium	mg/kg	0.027 / 0.03	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.37 / 0.43	ND	ND	ND	0 / 10	0
Cadmium	mg/kg		0.63	0.63	2.7	10 / 10	1.251
Calcium	mg/kg		69.7	69.7	90.4	10 / 10	79.41
Chromium	mg/kg	0.11 / 0.13	ND	ND	ND	0 / 10	0
Cobalt	mg/kg		0.025	0.025	0.065	10 / 10	0.0424
Copper	mg/kg		3.3	3.3	5.3	10 / 10	4.42
Iron	mg/kg		63	63	204	10 / 10	106
Lead	mg/kg		0.043	0.043	1.3	10 / 10	0.2714
Magnesium	mg/kg		133	133	166	10 / 10	149.2
Manganese	mg/kg		0.92	0.92	1.5	10 / 10	1.207
Mercury	mg/kg		0.057	0.057	0.79	10 / 10	0.1921
Molybdenum	mg/kg		0.29	0.29	0.54	10 / 10	0.423
Nickel	mg/kg	0.088 / 0.1	ND	ND	ND	0 / 10	0
Potassium	mg/kg		1520	1520	2020	10 / 10	1793
Selenium	mg/kg		1.3	1.3	2.3	10 / 10	1.94
Silver	mg/kg	0.0026 / 0.0047	ND	ND	ND	0 / 10	0
Sodium	mg/kg		1900	1900	2470	10 / 10	2124
Strontium	mg/kg	0.04 / 0.045	ND	0.045	0.065	7 / 10	0.05114
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.041 / 0.14	ND	0.063	0.085	2 / 10	0.074
Zinc	mg/kg		17.4	17.4	31	10 / 10	21.28

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

**Table 34. TVA 2010 Raccoon Liver Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		70.9	70.9	75.7	10 / 10	73.08
Aluminum	mg/kg	3.5 / 4.1	ND	ND	ND	0 / 10	0
Antimony	mg/kg	0.013 / 0.015	ND	0.014	0.014	1 / 10	0.014
Arsenic	mg/kg	0.025 / 0.028	ND	0.042	0.046	3 / 10	0.04433
Barium	mg/kg	0.04 / 0.045	ND	0.049	0.055	4 / 10	0.05125
Beryllium	mg/kg	0.026 / 0.03	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.36 / 0.42	ND	ND	ND	0 / 10	0
Cadmium	mg/kg	0.0067 / 0.007	ND	0.12	0.48	9 / 10	0.2733
Calcium	mg/kg		59.7	59.7	98.3	10 / 10	74.57
Chromium	mg/kg	0.11 / 0.13	ND	ND	ND	0 / 10	0
Cobalt	mg/kg	0.012 / 0.013	ND	0.038	0.15	9 / 10	0.07922
Copper	mg/kg		1.5	1.5	23.7	10 / 10	11.12
Iron	mg/kg		29.7	29.7	815	10 / 10	445
Lead	mg/kg	0.024 / 0.025	ND	0.055	0.84	9 / 10	0.2804
Magnesium	mg/kg		161	161	269	10 / 10	186.6
Manganese	mg/kg		0.21	0.21	3.6	10 / 10	2.191
Mercury	mg/kg	0.01 / 0.04	ND	0.045	3.1	9 / 10	0.6298
Molybdenum	mg/kg		0.053	0.053	1.2	10 / 10	0.8113
Nickel	mg/kg	0.086 / 0.1	ND	0.23	0.23	1 / 10	0.23
Potassium	mg/kg		1610	1610	3840	10 / 10	2235
Selenium	mg/kg		0.48	0.48	2.3	10 / 10	1.148
Silver	mg/kg	0.0026 / 0.0088	ND	0.0074	0.02	3 / 10	0.01207
Sodium	mg/kg		694	694	1770	10 / 10	1535
Strontium	mg/kg	0.039 / 0.045	ND	0.044	0.056	2 / 10	0.05
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.04 / 0.086	ND	0.088	0.42	8 / 10	0.2648
Zinc	mg/kg		26.7	26.7	64.5	10 / 10	45.28

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

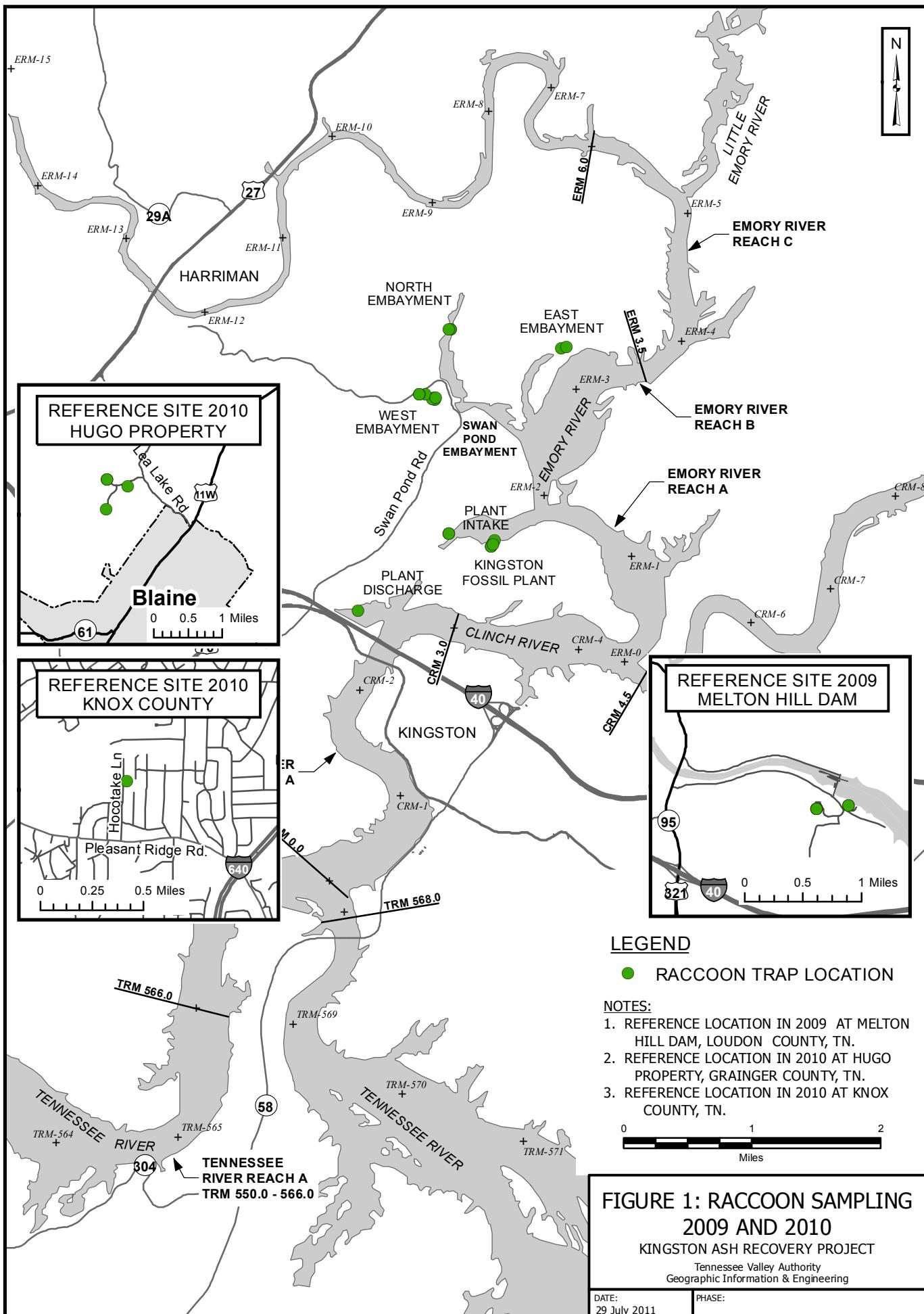
**Table 35. TVA 2010 Raccoon Skeletal Muscle Sampling from Impacted Locations**

Analyte	Units (wet wt. basis)	Detection Limit Range	Minimum	Minimum Detected Result	Maximum Detected Result	Number of Detections / Samples	Mean of Detections
% Moisture	%		68.2	68.2	75	10 / 10	73.37
Aluminum	mg/kg	3.5 / 4.1	ND	5.5	5.5	1 / 10	5.5
Antimony	mg/kg	0.013 / 0.015	ND	0.31	0.31	1 / 10	0.31
Arsenic	mg/kg	0.025 / 0.029	ND	0.025	0.07	3 / 10	0.05433
Barium	mg/kg	0.04 / 0.048	ND	0.046	0.064	3 / 10	0.05667
Beryllium	mg/kg	0.026 / 0.031	ND	ND	ND	0 / 10	0
Boron	mg/kg	0.37 / 0.43	ND	ND	ND	0 / 10	0
Cadmium	mg/kg	0.0067 / 0.0079	ND	0.17	0.17	1 / 10	0.17
Calcium	mg/kg	42.5 / 49.8	ND	50	85.9	5 / 10	61.12
Chromium	mg/kg	0.11 / 0.13	ND	0.93	0.93	1 / 10	0.93
Cobalt	mg/kg	0.012 / 0.015	ND	0.063	0.063	1 / 10	0.063
Copper	mg/kg		1.3	1.3	16.7	10 / 10	3.27
Iron	mg/kg		27.1	27.1	733	10 / 10	108.9
Lead	mg/kg	0.025 / 0.029	ND	3.2	3.2	1 / 10	3.2
Magnesium	mg/kg		188	188	292	10 / 10	265.1
Manganese	mg/kg	0.15 / 0.18	ND	0.18	2.7	8 / 10	0.5475
Mercury	mg/kg		0.012	0.012	0.39	10 / 10	0.0941
Molybdenum	mg/kg	0.031 / 0.05	ND	0.042	0.81	6 / 10	0.176
Nickel	mg/kg	0.086 / 0.1	ND	ND	ND	0 / 10	0
Potassium	mg/kg		2320	2320	4160	10 / 10	3728
Selenium	mg/kg		0.31	0.31	1.3	10 / 10	0.492
Silver	mg/kg	0.0026 / 0.003	ND	0.014	0.014	1 / 10	0.014
Sodium	mg/kg		446	446	1790	10 / 10	736.3
Strontium	mg/kg	0.039 / 0.046	ND	0.053	0.053	1 / 10	0.053
Thallium	mg/kg	0.012 / 0.014	ND	ND	ND	0 / 10	0
Vanadium	mg/kg	0.04 / 0.047	ND	0.25	0.36	2 / 10	0.305
Zinc	mg/kg		39.5	39.5	73.3	10 / 10	57.76

**Notes**

Grab sample results are presented in wet weight.  
For definitions, see the Acronyms section.

## **Figures**



**Figure 2. Captured Raccoon in Live Trap.**



**Figure 3. Field Crew Collecting Raccoon in Covered Live Trap.**



**Figure 4. Field Crew Releasing Non-target Animal (Skunk).**



**APPENDIX A**

**Summary of Raccoon Sampling Collections**

**Table A-1: Summary of Raccoon Collections, 2009**

Location		Aliquot Type Collected								
Site Name	Type	Blood	Brain	Gonad	Hair	Kidney	Liver	Skeletal Muscle	Ovary	Subcutaneous Fat
Melton Hill Dam	Reference Site	5	5	5	5	5	5	5	0	5
Plant Discharge	Potentially Affected Sites	1	1	0	1	1	1	1	1	1
Plant Intake		3	3	3	3	3	3	3	0	3
East Embayment		1	1	1	1	1	1	1	0	0
North Embayment		3	3	3	3	3	3	3	0	3
West Embayment		2	2	2	2	2	2	2	0	2
<b>Total</b>	All	<b>15</b>	<b>15</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>1</b>	<b>14</b>

**Table A-2: Summary of Raccoon Collections, 2010**

Location		Aliquot Type Collected						
Site Name	Type	Blood	Brain	Gonad	Hair	Kidney	Liver	Skeletal Muscle
Hugo Property	Reference Sites	4	4	2	4	4	4	4
Knox County		1	1	1	1	1	1	1
Plant Intake	Potentially Affected Sites	4	4	3	4	4	4	4
East Embayment		1	1	1	1	1	1	1
North Embayment		1	1	1	1	1	1	1
West Embayment		4	4	3	4	4	4	4
<b>Total</b>	All	<b>15</b>	<b>15</b>	<b>11</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>

**APPENDIX B**

**Raccoon Sample Shipment Summary**

**Table B-1: Sample Shipment Summary, 2009**

Shipment Date	Chains-of-Custody (COC) Shipped	Sample Type										Total Samples per COC	Shipment Sample Total
		Blood	Brain	Gonad	Hair	Kidney	Liver	Skeletal Muscle	Ovary	Subcutaneous Fat	Shampoo		
11-Jan-10	BIOMM1002Y09a	1	1	1	1	1	1	1	-	-	-	7	119
	BIOMM1020Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1027Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1028Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1029Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1103Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1104Y09a	2	2	2	2	2	2	2	-	2	-	16	
	BIOMM1105Y09a	2	2	2	2	2	2	2	-	2	-	16	
	BIOMM1110Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1113Y09a	1	1	-	1	1	1	1	1	1	-	8	
	BIOMM1117Y09a	1	1	1	1	1	1	1	-	1	-	8	
	BIOMM1118Y09a	1	1	1	1	1	1	1	-	1	-	8	
14-Jan-10	BIOMM1202Y09a	1	1	1	1	1	1	1	-	1	-	8	1
	BIOMM0112Y10A	-	-	-	-	-	-	-	-	-	1	1	
<b>Total Samples</b>		15	15	14	15	15	15	15	1	14	1	120	120

**Table B-2: Sample Shipment Summary, 2010**

Shipment Date	Chains-of-Custody Shipped	Sample Type							Total Samples per COC	Shipment Sample Total
		Blood	Brain	Gonad	Hair	Kidney	Liver	Skeletal Muscle		
12-Apr-11	BIOMM0901Y10A	1	1	-	1	1	1	1	6	101
	BIOMM0903Y10A	1	1	1	1	1	1	1	7	
	BIOMM0910Y10A	1	1	1	1	1	1	1	7	
	BIOMM0914Y10A	1	1	1	1	1	1	1	7	
	BIOMM0924Y10A	1	1	1	1	1	1	1	7	
	BIOMM0928Y10A	1	1	1	1	1	1	1	7	
	BIOMM0930Y10A	1	1	-	1	1	1	1	6	
	BIOMM1001Y10A	1	1	1	1	1	1	1	7	
	BIOMM1012Y10A	1	1	-	1	1	1	1	6	
	BIOMM1026Y10A	3	3	2	3	3	3	3	20	
	BIOMM1027Y10A	1	1	1	1	1	1	1	7	
	BIOMM1029Y10A	1	1	1	1	1	1	1	7	
	BIOMM1216Y10A	1	1	1	1	1	1	1	7	
<b>Total Samples</b>		15	15	11	15	15	15	15	101	101