



January 30, 2023

Mr. David Shelton  
Knox County Clerk of Courts  
111 N 7<sup>th</sup> St.  
Vincennes, IN 47591

Dear Clerk Shelton,

On January 17, 2023, the VSTOP team successfully completed a post-election audit in Knox County, Indiana, for the 2022 General Election. The VSTOP Team members who participated in person included Liz Beatrice, Program Manager; Rachael Alaniz, Project Specialist; Marc Chatot, Certification Specialist; and Duncan Klemm, IT Specialist. This activity was carried out by the VSTOP Team in collaboration with the Knox County Audit Team including David Shelton, Knox County Clerk of Courts and Rita Melidith, Knox County Deputy of Elections. Vendor representatives Steve Shamo, MicroVote General Manager, and Jason Jacobs, MicroVote Customer Service Representative, were also present and assisted throughout the audit.

The VSTOP Team would like to thank Clerk Shelton, the Knox County Audit Team, and the Knox County Election Board for hosting this post-election audit. Several preparatory meetings were conducted with the county in the weeks leading up to the post-election audit and David Shelton provided valuable information and data that was used to conduct the audit.

The post-election audit began with an introductory presentation to the county participants on the morning of the audit. This presentation included the generation of a 20-digit seed number, in collaboration with all county participants. The seed number produced is as follows: 71430208505254164796

The VSTOP team would also like to take this opportunity to provide a brief description of the post-election audit conducted and the contests that were audited. Knox County uses the **MicroVote EMS 4.3 direct-recording electronic voting system** with voter-verifiable paper audit trail. The post-election audit included the total number of Absentee Walk-In and Absentee Mail-In ballots cast during the Knox County 2022 General Election.

In consultation with Knox County, the following three races were audited with an initial risk limit set at 9% (as the attached report shows, the actual risk limits attained were lower):

- Knox County Commissioner District 3
- Knox County Recorder
- United States Senator

There were 3,621 Absentee Mail-In and Absentee Walk-In ballots. 321 Absentee Mail-In and Walk-In ballots were sampled to reach the risk limit and verify the outcomes. Of this total, the audit team was required to sample 74 ballots for County Commissioner District 3, 132 ballots for County Recorder, and 115 ballots for United States Senator to meet the risk limit. Specifics regarding each race's outcomes are displayed by images provided by Dr. Philip Stark's Audit Tool used to conduct the post-election audit and can be found in Appendix A.

VSTOP acknowledges the Indiana Secretary of State and his office staff for their full support. At the end of all post-election audits for the 2022 General Election, a full report of the audit results will be prepared and submitted to the Indiana Secretary of State and each participating county.

A handwritten signature in cursive script that reads "Jay Bagga".

Dr. Jay Bagga, VSTOP Co-Director

A handwritten signature in cursive script that reads "Chad Kinsella".

Dr. Chad Kinsella, VSTOP Co-Director

## Knox County Post-Election Audit Procedure

**Election:** 2022 General Election

**Date(s) of Audit:** January 17, 2023

**Number of Registered Voters:** 22,375

**Total Number of Ballots Cast:** 10435

**Total Paper Absentee Ballots Cast:** 748

**Total Walk-in Absentee Ballots Cast:** 2,873

**Stark's Risk-Limit:** Initially set at 9%  
(See below for the actual risk limit achieved)

**Seed Number:** 71430208505254164796

**Post-Election Audit Method(s):**

- Ballot Polling Post-Election Audit (Paper Absentee Ballots)
- Ballot Comparison Post-Election Audit (Walk-in Absentee Ballots)

**Post-Election Audit Tools used:** The ballot polling post-election audit tools have been designed by Dr. Philip Stark and are available at:

<https://www.stat.berkeley.edu/~stark/Vote/ballotPollTools.htm>

## Audited Races Details

### Races Audited – Ballot Polling Method:

Knox County Ballot Polling Audit (ABS Mail-In)					
Race/Question	Outcome		Smallest Margin	Diluted Margin	Number of Ballots to be Audited*
County Commissioner District 3	(R) Kellie E Streeter*	407	245	32.75%	36
	(I) Betsy R Irvine	162			
	Undervotes	179			
	<b>Total Ballots Cast</b>	748			
County Recorder	(R) Kelley Kopp Hopwood*	430	155	20.72%	110
	(D) Laura A Arial	275			
	Undervotes	43			
	<b>Total Ballots Cast</b>	748			
United States Senator	(R) Todd Young*	429	149	19.92%	119 <sup>1</sup>
	(D) Thomas M McDermott, Jr.	280			
	(L) James M. Sceniak	8			
	Undervotes	31			
	<b>Total Ballots Cast</b>	748			

Asterisk (\*) denotes the winner of each contest

<sup>1</sup> The Stark Audit Tool's algorithm provided a randomized list of ballots to review in the total sequence of ballots. This initial sample included 119 ballots for the United States Senator race audit. Due to the randomization, the audit tool may require that the audit team review the same ballot twice. The risk of auditing the same ballot twice is eliminated by utilizing the "remove duplicates" feature within the auditing tool. This ensures that the 6-cut method can be conducted accurately and ensures each ballot audited represents a unique data point. Removing these 20 duplicates resulted in a sample size of 99, which met the risk limit and did not require further ballots to be sampled.

**Races Audited – Ballot Comparison Method:**

<b>Knox County Ballot Comparison Audit (ABS Walk-In ONLY)</b>					
<b>Race/Question</b>	<b>Outcome</b>		<b>Smallest Margin</b>	<b>Diluted Margin</b>	<b>Number of Ballots to be Audited*</b>
County Commissioner District 3	(R) Kellie E Streeter*	1722	889	30.94%	18
	(I) Betsy R Irvine	833			
	Undervotes	318			
	<b>Total Ballots Cast</b>	2873			
County Recorder	(R) Kelley Kopp Hopwood*	1816	888	30.91%	18
	(D) Laura A Arial	928			
	Undervotes	129			
	<b>Total Ballots Cast</b>	2873			
United States Senator	(R) Todd Young*	1885	1043	36.30%	16
	(D) Thomas M McDermott, Jr.	842			
	(L) James M. Sceniak	60			
	Undervotes	86			
	<b>Total Ballots Cast</b>	2873			
Asterisk (*) denotes the winner of each contest					

## Knox County Commissioner District 3 (Absentee Mail-In)

### Initial Sample Size:

With the selected risk limit of 9%, the initial sample size for this contest was 36 ballots.

Initial sample size

Contest information

Ballots cast in all contests:  Smallest margin (votes): 245. Diluted margin: 32.75%.

Contest 1. Contest name:

Winners:

Reported votes:

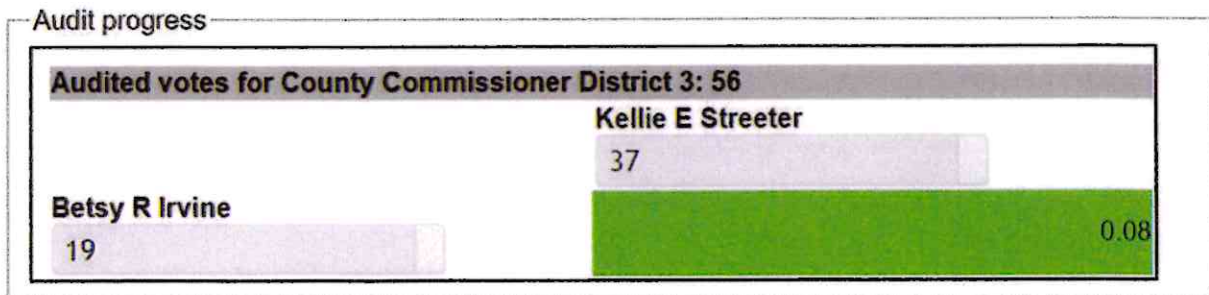
Candidate 1 Name:	<input type="text" value="Kellie E Streeter"/>	Votes:	<input type="text" value="407"/>
Candidate 2 Name:	<input type="text" value="Betsy R Irvine"/>	Votes:	<input type="text" value="162"/>

Audit parameters

Risk limit:  Expected sample size: 36.

### Final Outcome:

The risk limit was not met with the initial sample size of 36 ballots. An additional 20 ballots were sampled. With the sample size of 56 ballots, the final outcome resulted in an 8% risk limit, which indicates 92% confidence that the audit confirmed the results of this contest.



## Knox County Commissioner District 3 (Absentee Walk-In)

### Sample Size:

With the selected risk limit of 9%, the initial sample size for this contest was 18 ballots.

Initial sample size

Contest information

Ballot cards cast in all contests: 2073    Smallest margin (votes): 889. Diluted margin: 30.94%.

Contest 1. Contest name: County Commissioner District 3

Contest type:  plurality  super-majority

Winners: 1

Reported votes:

Candidate 1 Name:	Kellie E Streeter	Votes:	1722
Candidate 2 Name:	Betsy R Irvine	Votes:	833

Add candidate to contest 1    Remove last candidate from contest 1

Add contest    Remove last contest

Audit parameters

Risk limit: 9%

Expected rates of differences (as decimal numbers):

Overstatements. 1-vote:	0.001	2-vote:	0.0001
Understatements. 1-vote:	0.001	2-vote:	0.0001

Starting size

Round up 1-vote differences.  Round up 2-vote differences. Calculate size 18.

### Final Outcome:

With the initial sample size of 18 ballots, the final outcome resulted in a 0% risk limit, which indicates 100% confidence that the audit confirmed the results of this contest. Further sampled ballots were not required for this audit.

Stopping sample size and escalation

Ballots audited so far: 18

1-vote overstatements:	0	Rate:	0
2-vote overstatements:	0	Rate:	0
1-vote understatements:	0	Rate:	0
2-vote understatements:	0	Rate:	0

Estimated stopping size

Calculate **Audit complete**

If no more differences are observed: 17.

If differences continue at the same rates: 17.

Estimated additional ballots if difference rates stay the same: 0.

## Knox County Recorder (Absentee Mail-In)

### Initial Sample Size:

With the selected risk limit of 9%, the initial sample size for this contest was 110 ballots.

Initial sample size

Contest information

Ballots cast in all contests: 748      Smallest margin (votes): 155. Diluted margin: 20.72%.

Contest 1. Contest name: County Recorder

Winners: 1

Reported votes:

Candidate 1 Name: Kelley Kopp Hopwood	Votes: 430
Candidate 2 Name: Laura A Arial	Votes: 275

Add candidate to contest 1    Remove last candidate from contest 1

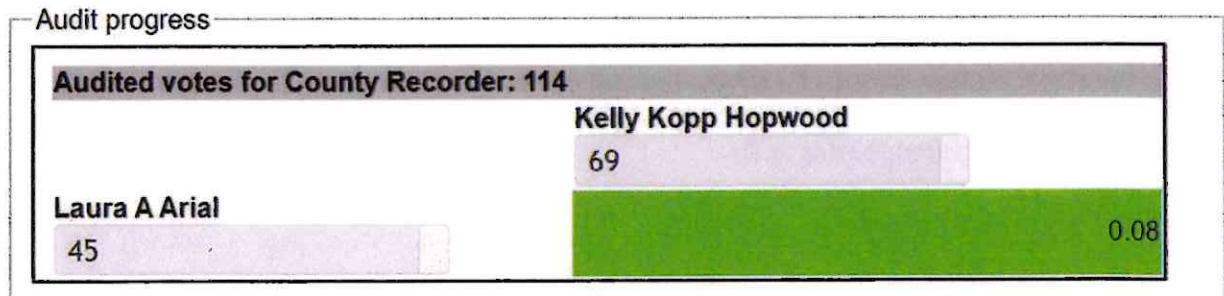
Add contest    Remove last contest

Audit parameters

Risk limit: 9%      Expected sample size: 110

### Final Outcome:

The risk limit was not met with the initial sample size of 110 ballots. An additional 4 ballots were sampled. With the final sample size of 114 ballots, the final outcome resulted in an 8% risk limit, which indicates 92% confidence that the audit confirmed the results of this contest.



## Knox County Recorder (Absentee Walk-In)

### Sample Size:

With the selected risk limit of 9%, the initial sample size for this contest was 18 ballots.

Initial sample size

Contest information

Ballot cards cast in all contests:  Smallest margin (votes): 888. Diluted margin: 30.91%.

Contest 1. Contest name:

Contest type:  plurality  super-majority

Winners:

Reported votes:

Candidate 1 Name	Votes
Kelley Kopp Hopwood	1816
Candidate 2 Name: Laura A.Arial	Votes: 928

Audit parameters

Risk limit:

Expected rates of differences (as decimal numbers):

Overstatements. 1-vote:  2-vote:

Understatements. 1-vote:  2-vote:

Starting size

Round up 1-vote differences.  Round up 2-vote differences.  18.

### Final Outcome:

With the initial sample size of 18 ballots, the final outcome resulted in a 0% risk limit, which indicates 100% confidence that the audit confirmed the results of this contest. Further sampled ballots were not required for this audit.

Stopping sample size and escalation

Ballots audited so far: 18

1-vote overstatements:  Rate: 0

2-vote overstatements:  Rate: 0

1-vote understatements:  Rate: 0

2-vote understatements:  Rate: 0

Estimated stopping size

If no more differences are observed: 17.

If differences continue at the same rates: 17.

Estimated additional ballots if difference rates stay the same: 0.



## United States Senator (Absentee Mail-In)

### Sample Size:

With the selected risk limit of 9%, the initial sample size for this contest was 119. Once duplicates were removed, the sample size was 99 ballots.

Initial sample size

Contest information

Ballots cast in all contests: 748    Smallest margin (votes): 149. Diluted margin: 19.92%.

Contest 1. Contest name: United States Senator

Winners: 1

Reported votes:

Candidate 1 Name:	Todd Young	Votes:	429
Candidate 2 Name:	Thomas M McDermott, Jr.	Votes:	280
Candidate 3 Name:	James M Sceniak	Votes:	8

Add candidate to contest 1    Remove last candidate from contest 1

Add contest    Remove last contest

Audit parameters

Risk limit: 9%    Expected sample size: 119

### Final Outcome:

With a sample size of 99 ballots, the final outcome resulted in a 7% risk limit, which indicates 93% confidence that the audit confirmed the results of this contest. Further sampled ballots were not required for this audit.

Audit progress

**Audited votes for United States Senator: 99**

	Todd Young	61	
Thomas M McDermott, Jr	38		0.07
James M Sceniak	0		0

## United States Senator (Absentee Walk-In)

### Sample Size:

With the selected risk limit of 9%, the initial sample size for this contest was 16 ballots.

Initial sample size

Contest information

Ballot cards cast in all contests: 2873    Smallest margin (votes): 1,043. Diluted margin: 36.3%.

Contest 1. Contest name: United States Senator

Contest type:  plurality  super-majority

Winners: 1

Reported votes:

Candidate Name	Votes
Candidate 1 Name: Todd Young	1885
Candidate 2 Name: Thomas M McDermott, Jr	842
Candidate 3 Name: James M Sceniak	60

Add candidate to contest 1    Remove last candidate from contest 1

Add contest    Remove last contest

Audit parameters

Risk limit: 9%

Expected rates of differences (as decimal numbers):

Overstatements. 1-vote: 0.001    2-vote: 0.0001

Understatements. 1-vote: 0.001    2-vote: 0.0001

Starting size

Round up 1-vote differences     Round up 2-vote differences.    Calculate size: 16

### Final Outcome:

With the sample size of 16 ballots, the final outcome resulted in a 0% risk limit, which indicates 100% confidence that the audit confirmed the results of this contest. Further sampled ballots were not required for this audit.

Stopping sample size and escalation

Ballots audited so far: 16

1-vote overstatements: 0    Rate: 0

2-vote overstatements: 0    Rate: 0

1-vote understatements: 0    Rate: 0

2-vote understatements: 0    Rate: 0

Estimated stopping size

Calculate: **Audit complete**

If no more differences are observed: 14.

If differences continue at the same rates: 14.

Estimated additional ballots if difference rates stay the same: 0.