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VERIFICATION VALIDATION

COMMONWEALTH OF PENNSYLVANIA
TEST REPORT
FOR
RE-EXAMINATION OF
DOMINION VOTING SYSTEMS
AVC EDGE MODEL 2 DRE VOTING SYSTEM
AND WINEDS 3.1.012

Prepared by: _Jack Cobb   8/21/12_
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August 21, 2012

TABLE OF CONTENTS

1.0   INTRODUCTION

1.1   Scope

A re-examination of the Dominion Voting Systems AVC Edge Model 2 Direct Recording Electronic (DRE) Voting System and Win-EDS 3.1.012 (hereafter referred to as "Edge Model 2 Voting System") was performed per the direction of the Secretary of the Commonwealth, acting through the Pennsylvania Department of State, Bureau of Commissions, Elections and Legislation. This test report documents the procedures followed, the results obtained, and the conclusions drawn from that re-examination.

1.2   Objective

The objective of the re-examination was to examine the Edge Model 2 Voting System, previously certified for use in the Commonwealth of Pennsylvania on February 15, 2006, to determine whether the system remains compliant with the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22 and to document compliance through the execution of single thread test cases where applicable.

1.3   References

The documents listed below were utilized in the development of the Test Report:

- Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22

- Federal Election Commission 2002 Voting Systems Standards

- Help America Vote Act (HAVA) of 2002, Public Law 107-252, 42 U.S.C. § 15301 *et seq.*

- Pro V&V Test Protocol for Re-Examination of Dominion Voting System AVC Edge Model 2 DRE Voting System and WinEDS 3.1.012

1.4   Terms and Abbreviations

Term	Abbreviation	Definition
Americans with Disabilities Act	ADA	Americans with Disabilities Act of 1990 is a law enacted by the United States Congress to prohibit discrimination based on disability.
Commercial Off-The-Shelf	COTS	Commercial, readily available hardware or software.
Direct Recording Electronic	DRE	An electronic voting system that utilizes electronic components for the functions of ballot presentation, vote capture, vote recording and tabulation which are logically and physically integrated into a single unit.
Election Management System	EMS	Set of processing functions and databases within a voting system that defines, develops and maintains election databases, performs election definitions and setup functions, formats ballots, counts votes, consolidates and reports results, and maintains audit trails.

Term	Abbreviation	Definition
Federal Election Commission	FEC	Commission created in 1975 to regulate the campaign finance legislation in the United States.
Independent Testing Authority	ITA	Independent testing organizations accredited by the National Association of State Election Directors (NASED) to perform voting system qualification testing.
Technical Data Package	TDP	Manufacturer's documentation related to the voting system required to be submitted with the system as a precondition for certification.
Federal Election Commission 2002 Voting System Standards	VSS	Voluntary guidelines published by the FEC, the second iteration of national level voting system standards.

2.0   SYSTEM OVERVIEW AND IDENTIFICATION

The Edge Model 2 Voting System is a DRE Voting System that consists of the AVC Edge Model 2 DRE voting device, the Card Activator and the ADA Handset.

The Edge Model 2 Voting System provides a color Liquid Crystal Display (LCD) with an integrated touchscreen to present the ballot to the voter and allow the voter to make selections. The Edge Model 2 Voting System also includes a control panel for use by election poll workers, electronic circuitry and processing devices for performing system functions, internal memory for storing ballot data and voting records, a removable results cartridge with non-volatile memory, protective and public counters, and integrated voter privacy panels.

The Edge Model 2 Voting System is a stand-alone system that does not require any networking to a central system in order to function. All processing, from loading the ballots generated in WinEDS (the election management software utilized by the Edge Model 2 Voting System) to recording voter's selections, are done on the individual units. Accumulating tallies is accomplished via a Results Cartridge.

The Results Cartridge stores:

- An election representation of the ballot

- Ballot logic to enable the voter to make those selections to which they are lawfully entitled

- The aggregated vote totals

- A randomized record of all individual ballots cast

- A chronological log of significant machine operations, including error conditions

The Card Activator is designed to activate voter cards, which enables the voter to vote upon card insertion into the AVC Edge Model 2 DRE voting device.

The ADA Handset is an optional audio voting accessory used for audio voting with the AVC Edge Model 2 DRE voting device.

2.1 Software

The software listed in Table 2.1 was used during the examination of the Edge Model 2 Voting System. Table 2.1 provides the component name, software/firmware version and a SHA-1 Hash, if calculated, during the re-examination.

Table 2.1 Software

Component Name	Version	Unique Identifier (digital signature or hash value)
AVC Edge Firmware	5.0.24	12202f7415c59e1f0a2c693c8f0fd3865f2d9497 – SHA1
WinEDS	3.1.012	Not Calculated

2.2 Hardware

Table 2.2 provides hardware component name, model number, and the serial number for the units that were examined.

Table 2.2 Hardware

Component Name	Model Number	Serial Numbers(s)	Description
AVC Edge Model 2 DRE Voting System	AVC Edge 2	45692, 46043, 47530	A DRE Voting device which uses color LCD with an integrated touchscreen, a control panel for use by election poll workers, electronic circuitry and processing devise, internal memory for storing ballot data and voting records, a removable results cartridge, protective and public counters, and integrated voter privacy panels.
Card Activator	---	7037	Activates voter cards, which enables the voter to vote on the AVC Edge Model 2 DRE voting device upon card insertion.
ADA Handset	---	---	An optional audio voting accessory used for audio voting.

2.3 Peripherals

Table 2.3 provides the peripheral components used during the re-examination.

Table 2.3 Peripherals

Part Name	Model Number	Description
PCMCIA Cards	---	Results cartridges
Desktop Printer	Brother HL 2240	COTS Printer to print EMS reports
Voter Access Cards	---	Smart cards programmed by Card Activator

2.4 Test Support Equipment/Materials

The test materials listed in Table 2.4 were used during the re-examination.

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Table 2.4 Materials

Part Name	Quanitity	Description
8 ½" x 11" paper	Various	EMS report paper
Paper rolls	Various	Result paper rolls
USB Flash Drive	1	Sandisk USB 2.0 Cruzer 8 GB

3.0   TEST PROCESS

3.1   Background

The Edge Model 2 Voting System was certified for use in the Commonwealth of Pennsylvania on February 15, 2006 after an examination was conducted pursuant to the Pennsylvania Election Code. The Edge Model 2 Voting System has been in use by Pennsylvania counties since its initial certification. Pursuant to section 1105-A of the Pennsylvania Election Code, 25 P.S. § 3031.5, a group of Pennsylvania voters formally requested that the Secretary conduct a re-examination of the Edge Model 2 Voting System. The Secretary granted the request. Pro V&V, Inc. was contracted to develop test protocols and conduct the re-examination testing to ascertain whether the certified electronic voting system complies with the requirements set forth in the Pennsylvania Election Code.

3.2   General Information

The re-examination of the Edge Model 2 Voting System was performed by Jack Cobb of Pro V&V, Inc. (the "Examiner"), per the direction of the Secretary of the Commonwealth, acting through the Pennsylvania Department of State, Bureau of Commissions, Elections and Legislation. The re-examination commenced on March 5, 2012, at the Commonwealth Keystone Building, Hearing Room 1, 400 North Street, Harrisburg, Pennsylvania. The re-examination lasted approximately eight hours.

3.3   Test Approach

To achieve the objective of this re-examination, the Examiner separated the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22, into four main areas of test execution: (1) Review; (2) Targeted Functionality; (3) System Integration; and (4) Penetration Analysis. The "Review" testing consisted of analyzing ITA and other third-party reports for specific tests that satisfied the requirements of the Pennsylvania Election Code and verifying that the Edge Model 2 Voting System met those requirements. The "Targeted Functionality" testing sought to ascertain whether the Edge Model 2 Voting System met all of the requirements of the Pennsylvania Election Code that could be met by execution of a single thread test case. The "System Integration" testing sought to ascertain whether the Edge Model 2 Voting System met all of the requirements of the Pennsylvania Election Code that could be met by the execution of an entire election.   General and closed-primary election definitions were devised and run for the pre-voting, voting, and post-voting functions of the voting system. The "Penetration Analysis" testing sought to ascertain whether the Edge Model 2 Voting System met all of the requirements of the Pennsylvania Election Code that could be met by analyzing security procedures and impoundment of ballots. Precinct tabulation devices were installed for delivery to the precinct, and analysis of the security procedures performed. Appendix A ("As Run Test Protocol") contains the details of the test protocol performed on the Edge Model 2 Voting System.

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4.0   TEST FINDINGS AND RECOMMENDATIONS

The Edge Model 2 Voting System, listed in Section 2.0 of this report, was subjected to the tests summarized in the following paragraphs.

4.1   Review

A review of the ITA reports listed on page 90 of Appendix A was conducted to determine compliance with the following sections of the Election Code:

- 25 P.S. § 3031.5(a), requiring that a DRE "ha[ve] been examined and approved by a federally recognized independent testing authority" and that it "meet any voting system performance and test standards established by the Federal Government;"

- 25 P.S. § 3031.7(11), requiring that a DRE be "suitably designed for the purpose used, … constructed in a neat and workmanlike manner of durable material of good quality, … safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district, … suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth;"

- 25 P.S. § 3031.7(13), requiring that a DRE, "when properly operated, records correctly and computes and tabulates accurately every valid vote registered;"

- 25 P.S. § 3031.7(14), requiring that a DRE be "safely transportable;" and

- 25 P.S. § 3031.7(15), requiring that a DRE be "so constructed that a voter may readily learn the method of operating it."

Summary Findings: The test reports submitted by Dominion Voting Systems satisfied the requirements set forth in 25 P.S. § 3031.5(a). The Edge Model 2 Voting System was examined and approved by an ITA as meeting the applicable performance and test standards. *See* CIBER report Software Qualification Test Report Sequoia WinEDS 3.1.012, Version 3.0, dated March 17, 2006.

The design requirements of Sections 3031.7(11) and (14) of the Pennsylvania Election Code were met by the documented Product Safety Test and Accuracy Test.   *See* page 91 of Appendix A. The transportation requirements of Section 3031.7(14) of the Pennsylvania Election Code were met by the combination of documented Hardware Non-Operating Environmental Tests which included: bench handling, vibration, low temperature, high temperature, and humidity. These tests were designed to test the storage of precinct tabulation devices between elections, as well as transportation between the storage facility and the polling place.   *See* Wyle Report Numbers 51884-03, 51884-04, 51884-05, 51884-06, and 51884-07.

The accuracy requirements of Sections 3031.7(11) and (13) of the Pennsylvania Election Code were met by the documented Accuracy Test submitted in the ITA reports. *See* page 91 of Appendix A.

The manufacturer did not provide a Summative Usability Report to meet the requirements set forth in 25 P.S. § 3031.7(15). The Examiner, however, did not encounter any issues performing the method of operation for standard voting sessions or ADA voting sessions during execution of the re-examination. Additionally, Department of State staff members were used to input voting data for the system integration area of testing. No operational issues were reported.

By review of the above stated documents, and the certification to the FEC 2002 VSS of the Edge Model 2 Voting System, I conclude the Edge Model 2 Voting System meets these requirements of the Pennsylvania Election Code.

4.2   Targeted Functionality

As set forth in the Test Protocols published before the re-examination, nine test cases were designed to determine compliance with the requirements of 25 P.S. § 3031.7(1), (2), (3), (4), (5), (7), (10) and (16). The Examiner conducted each of these tests, with necessary modifications as discussed below. The following is a list of the individual test cases and a summary of the results and observations for each test case.

Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (Regular Voter):

This test case was designed to test for compliance with 25 P.S. § 3031.7(1), requiring that a DRE "provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting." This test case required observation of voter input from a distance that is considered public space for a DRE in the standard voting position. Three different observation positions were used to observe what, if any, voter inputs could be seen.

Summary Finding: During the execution of this test case, the observer did report being able to see parts of the ballot and voter inputs. The observer could not see the actual selections. Any jurisdiction using the Edge Model 2 Voting System should follow Directive 4 of "Directive Concerning the Use, Implementation and Operation of Electronic Voting Systems by the County Board of Elections," dated April 28, 2009, and issued by the Secretary of the Commonwealth. In my opinion, the Edge Model 2 Voting System, if setup per Directive 4, can provide for secrecy so that no person can see whom any voter has voted for, thus meeting the requirement of the Election Code.

Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter):

This test case was designed to determine whether audible and visual voter input from a distance that is considered public space for a DRE in the ADA position could be observed by a third-party. Before test execution, it was determined that the examination room's size and acoustics were invalid for the audio portion of the test (only visual observations were recorded).

Summary Finding: No issues or anomalies were noted during the execution of this test case. The observer did report being able to see parts of the ballot and voter inputs. It should be noted however, that this test was conducted while the Edge Model 2 Voting System was activated for a standard voting session for the purposes of the observations. In an actual ADA voting session the LCD display is not active. Any jurisdiction using the Edge Model 2 Voting System should follow Directive 4 of "Directive Concerning the Use, Implementation and Operation of Electronic Voting Systems by the County Board of Elections," dated April 28, 2009, and issued by the Secretary of the Commonwealth. In my opinion, the Edge Model 2 Voting System, if setup per Directive 4, can provide for secrecy so that no person can see whom any ADA voter has voted for, thus meeting the requirement of the Election Code.

Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA):

This test case was designed to test for compliance with 25 P.S. § 3031.7(2), requiring that a DRE "provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted." This test case ensures a vote for a candidate for "1 of 1," "N of M," and "Question" contests could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The Edge Model 2 Voting System successfully recorded and reported votes for "1 of 1," "N of M," and "Question" contests for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 66 of Appendix A. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude that the Edge Model 2 Voting System meets the requirements of Section 3031.7(2) of the Pennsylvania Election Code.

Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight-Party and Pennsylvania Method:

This test case was designed to test for compliance with 25 P.S. § 3031.7(3), which requires that a DRE allow a voter to perform straight-party voting according to the "Pennsylvania Method." This test case was designed to ensure that a straight-party selection and the Pennsylvania Method of straight-party voting could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the Edge Model 2 Voting System successfully recorded and reported straight-party votes and demonstrated the Pennsylvania Method of straight-party voting for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 68 of Appendix A. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude that the Edge Model 2 Voting System meets the requirements of Section 3031.7(3) of the Pennsylvania Election Code.

Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight-Party and Write-In:

This test case was designed to test for compliance with 25 P.S. § 3031.7(4), which requires that a DRE permit a voter to vote for a candidate of his or her choice through a straight-party or write-in voting. This test case ensures that both a straight-party and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the Edge Model 2 Voting System successfully recorded and reported straight-party and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 72 of Appendix A. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Section 3031.7(4) of the Pennsylvania Election Code.

Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in:

This test case was designed to test for compliance with 25 P.S. § 3031.7(5), which requires that a DRE permit a voter to vote for any candidate or write-in a candidate. This test case ensures that a candidate and write-in selection could be recorded and reported as input for a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the Edge Model 2 Voting System successfully recorded and reported candidate selections and write-in votes for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 75 of Appendix A. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Section 3031.7(5) of the Pennsylvania Election Code.

Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA):

This test case was designed to test for compliance with 25 P.S. § 3031.7(7), which requires that a DRE prevent a voter from over voting. This test case ensures that a voter could not over vote for a contest or question during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The Edge Model 2 Voting System successfully prohibited a voter from selecting more than the number of allowable selections, including write-in votes, for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 78 of Appendix A. The objective criteria for evaluation were analyzed and the system met the criteria. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Section 3031.7(7) of the Pennsylvania Election Code.

Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA):

This test case was designed to test for compliance with 25 P.S. § 3031.7(10), which requires that a DRE allow for ballot review and change before casting the ballot. This test case ensures that a voter can review a voted ballot and make changes before casting the ballot and have a cast ballot input during a standard voting session and an ADA voting session.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case, the Edge Model 2 Voting System provided a voter with a review screen and allowed for the voter to return to either the beginning of the ballot or an individual contest to make changes to his or her selections before casting the ballot for both a standard voting session and an ADA voting session. The actual results obtained during execution met the expected results. *See* page 81 of Appendix A. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Section 3031.7(10) of the Pennsylvania Election Code.

Test Case Identifier: 16 – 1107-A(16), 25 P.S. § 3031.7(16) Public Counter, No Re-opening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports:

This test case was designed to test for compliance with 25 P.S. § 3031.7(16), which requires that a DRE have a public counter, have the ability to lock after the polls are closed, provide for voter secrecy, prohibit over votes, and print zero proof and results reports. This test case verifies the display of a public counter. It also ensures that the device provides (a) a lock to prevent tabulation after the polls are closed and to prevent re-opening of the polls, (b) tamper evident locks and seals, and (c) zero proof and results reports.

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the execution of this test case the Edge Model 2 Voting System provided a public counter that incremented with each cast vote; provided the ability to be locked after the polls were closed; precluded the re-opening of the polls after the polls were closed; provided design features that allow tamper evident locks and seals to be placed on the device (*see* photographs in Section 4.4); and provided zero proof and results reports. The actual results obtained during execution met the expected results. *See* page 84 of Appendix A. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Section 3031.7(16) of the Pennsylvania Election Code.

4.3   System Integration Testing

System Integration Testing was performed to test proprietary hardware, software and peripherals, as well as COTS materials configured as a precinct count system. This test meets many of the requirements of the Election Code that were previously verified in the Targeted Functionality area of testing, but was designed to specifically meet the following sections and requirements:

- 25 P.S. § 3031.1, defining "electronic voting system" to be a "system in which one or more voting devices are used to permit the registering or recording of votes and in which such votes are computed and tabulated by automatic tabulating equipment. The system shall provide for a permanent physical record of each vote cast;"

- 25 P.S. § 3031.7(4), requiring that a DRE "permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot;"

- 25 P.S. § 3031.7(6), requiring that a DRE "permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote and precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote;"

- 25 P.S. § 3031.7(8), requiring that a DRE "precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or upon any question, except in districts and for offices where cumulative voting is authorized by law;"

- 25 P.S. § 3031.7(9), requiring that a DRE "permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and for any candidate for nonpartisan nomination, and for any question upon which he is entitled to vote;" and

- 25 P.S. § 3031.17, requiring that the "county board of elections, as part of the computation and canvass of returns, shall conduct a statistical recount of a random sample of ballots after each election using manual, mechanical or electronic devices of a type different than those used for the specific election. The sample shall include at least two (2) per centum of the votes cast or two thousand (2,000) votes whichever is the lesser."

Two election definitions, a general and closed primary election, were devised to test and measure specific input devices, voting patterns and results. Pre-voting reports were generated, consisting of a ballot proof report, precinct summary report, and election summary report. The polls were opened, and precinct tabulator zero proof reports were generated. The Examiner and Department of State staff members attempted to input a complex voting pattern consisting of distinct combinations of vote selection as documented in the Test Protocol (*See* Appendix A Election Definitions). The polls were closed, and results reports were generated including cast vote records and ballot images. The voted data was then transferred to the election management system (EMS), and election summary reports, precinct summary reports, and ballot images were printed. At the conclusion of the test, the Examiner conducted a statistical recount of at least 10% of the votes cast using the cast vote records and ballot images. The procedure for conducting the statistical recount was to use the documented voting pattern and compare it to the cast vote records and ballot images. The procedure identified each ballot by the distinct voting pattern that was input. The Examiner also generated a backup of the EMS database and retained a copy with the other test data.

Summary Finding: No issues or anomalies were noted during the execution of this test case. The Edge Model 2 Voting System successfully completed both the general and closed primary election. The actual results obtained during execution met the expected results. The objective criteria for evaluation were analyzed, and the system met the criteria. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Sections 3031.1 and 3031.17 of the Pennsylvania Election Code in that the system generated a permanent physical record in the format of the cast vote record and ballot images that were used to conduct a statistical recount. The Edge Model 2 Voting System also complies with Sections 3031.7(4) and (9) in that test voters in the primary election were only able to vote for their party and the system rejected attempts to vote for non-party candidates. The Edge Model 2 Voting System meets the requirements for Sections 3031.7(6) and (8) in that the test voters cast votes on different ballot styles for candidates and questions and the Edge Model 2 Voting System precluded test voters from over voting.

4.4   Penetration Analysis

A penetration analysis was performed to verify compliance with 25 P.S. § 3031.7(12), which requires that a DRE "provides acceptable ballot security procedures and impoundment of ballots to prevent tampering with or substitution of any ballots or ballot cards."

The precinct tabulation devices were configured for delivery to a polling place from a warehouse; this included all seals and locks recommended by the manufacturer. The Examiner inspected the device for the ability to tamper with the transportation case and the device inside the case. The inspection examined the ports, the outer case, and memory devices from the aspect of the device as delivered to the polling place and configured for voting. The Examiner also examined both the precinct device and the EMS for password management of administrative functions and ensured the system counter cannot be reset by unauthorized persons. The Examiner photographed the

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configuration and analyzed the configuration for possible vulnerabilities. Photographs 1.1 through 1.3 indicate locks and seals on the precinct tabulation devices.

Photograph 1.1 Edge Model 2 transportation case

Photograph 1.2 lock on cover to open polls

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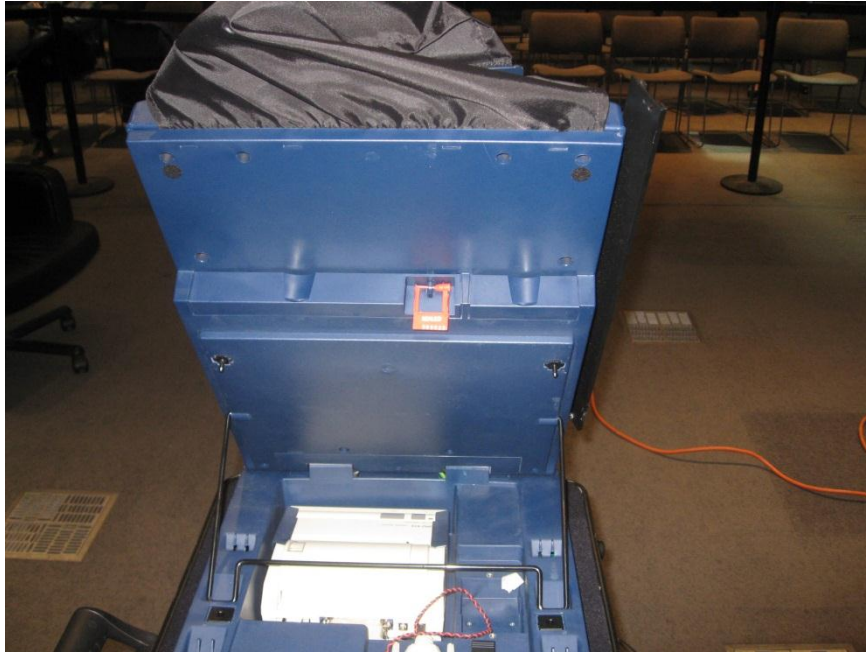
Photograph 1.3 lock on results cartridge door

Summary Finding: No issues or anomalies were noted during the execution of this test case. During the conducting of this analysis, the Edge Model 2 Voting System provided acceptable ballot security procedures and impoundment of ballots to prevent tampering with or substitution of any ballots or ballot cards. It also provided acceptable password management and restriction of access to administrative functions. Therefore, I conclude the Edge Model 2 Voting System meets the requirements of Section 3031.7(12) of the Pennsylvania Election Code.

5.0 CERTIFICATION FOR USE

The Edge Model 2 Voting System, certified for use in the Commonwealth of Pennsylvania and presented for re-examination, meets the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. As the Examiner, I recommend the voting system documented in Section 2.0 of this report remain certified for use in the Commonwealth of Pennsylvania.

APPENDIX A – AS RUN TEST PROTOCOL

COMMONWEALTH OF PENNSYLVANIA

TEST PROTOCOL

FOR

RE-EXAMINATION OF

DOMINION VOTING SYSTEMS

AVC EDGE MODEL 2 DRE VOTING SYSTEM

AND WINEDS 3.1.012

TABLE OF CONTENTS

1.0 INTRODUCTION

The primary purpose of the re-examination is to confirm that the Dominion Voting Systems Edge Model 2 DRE Voting System and WinEDS 3.1.012 meets the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. This re-examination is being performed per the direction of the Secretary of the Commonwealth, acting through the Pennsylvania Department of State, Bureau of Commissions, Elections and Legislation. This re-examination will commence on March 5, 2012**,** at the following location:

<div align="center">

Commonwealth Keystone Building
Hearing Room 1
400 North Street
Harrisburg, Pennsylvania

</div>

The daily duration of this re-examination will be from 9:00 A.M. until 5:00 P.M. Eastern Standard Time unless a representative of the Secretary of the Commonwealth requests an extension, suspension, or a halt in testing.

1.0 References

The documents listed below were used in the development of the Test Protocol.

- Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22

- Federal Election Commission 2002 Voting Systems Standards

- Help America Vote Act (HAVA) of 2002, Public Law 107-252, 42 U.S.C. § 15301 *et seq.*

1.1 Terms and Abbreviation

This subsection lists terms and abbreviations relevant to this re-examination

"ADA" – Americans with Disabilities Act

"COTS" – Commercial Off-The-Shelf

"Department" – Pennsylvania Department of State

"DRE" – Direct Recording Electronic

"EAC" – Election Assistance Commission

"EMS" – Election Management System

"Examiner" – The examiner appointed by the Secretary of the Commonwealth to conduct the re-examination

"FEC" – Federal Election Commission

"ITA" – Independent Testing Authority

"PA" – The Commonwealth of Pennsylvania

"Pennsylvania Election Code" - Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22

"Secretary" – The Secretary of the Commonwealth

"TDP" – Technical Data Package

"VSS" – Federal Election Commission 2002 Voting System Standards

"VVSG" – Election Assistance Commission 2005 Voluntary Voting System Guidelines

1.2   Background

The Dominion Voting Systems Edge Model 2 DRE Voting System and WinEDS 3.1.012 were certified for use in the Commonwealth of Pennsylvania on January 25, 2006 after an examination conducted pursuant to the Pennsylvania Election Code. The Dominion Edge 2 DRE Voting System and WinEDS 3.1.012 have been in use by Pennsylvania counties since their initial certification. Pursuant to section 1105-A of the Pennsylvania Election Code, 25 P.S. § 3031.5, a group of Pennsylvania voters formally requested that the Secretary conduct a re-examination of the Dominion Edge 2 DRE Voting System. The Secretary granted the request.

The Test Protocol was developed to ascertain whether the certified electronic voting system complies with the requirements set forth in the Pennsylvania Election Code.

2.0   TEST ITEMS

This section contains detailed descriptions of the items tested during the re-examination, including all software, hardware, and peripherals, both proprietary and COTS, and any test support equipment or materials necessary for test performance.

2.1   Software

This subsection contains a listing of the software and firmware being evaluated.

Table 2.1 Software

Component Name	Version	Unique Identifier (digital signature or hash value)
AVC Edge Firmware	5.0.24	TBD
WinEDS	3.1.012	TBD

2.2   Hardware

This subsection contains a listing of the hardware being evaluated.

Table 2.2 Hardware

Component Name	Model Number	Revision Number	Description
AVC Edge Model 2 DRE Voting System	AVC Edge 2	N/A	A DRE Voting device which uses color LCD with an integrated touchscreen, a control panel for use by election poll workers, electronic circuitry and processing devise, internal memory for storing ballot data and voting records, a removable results cartridge, protective and public counters, and integrated voter privacy panels.
Card Activator	---	---	

2.3   Peripherals

This subsection contains detailed descriptions of optional equipment used by the system being evaluated.

Table 2.3 Peripherals

Part Name	Model Number	Revision Number	Description
PCMCIA Cards	TBD	TBD	TBD
Desktop Printer	TBD	TBD	COTS Printer to print EMS reports

2.4   Test Support Equipment/Materials

This subsection contains detailed descriptions of the test support equipment and materials needed to perform the required testing.

The Examiner will provide a tape measure (to be used in Test Case 1), Test Execution Logs, and a digital camera for test documentation. The re-examination will be video recorded by the Department.

The voting system manufacturer must provide an EMS system currently certified for use in Pennsylvania loaded with the closed primary and general-election definitions (Appendix A). These election definitions are the ballot configurations that will be used throughout the re-examination. The manufacturer is responsible for providing the Department and the Examiner with technical staff to support the re-examination. The manufacturer must provide three precinct-tabulation devices for each voting system being examined. The manufacturer must be prepared to load the firmware for each precinct tabulation device. The Department will also require manufacturer to configure the precinct tabulation devices as they would be in the precinct on Election Day, including seals and locks. The manufacturer must be prepared to print pre-election reports, precinct results reports, audit logs, and post-election reports.

3.0 TEST MATERIALS

This section contains a detailed description of all materials made available to Examiner for the re-examination.

3.1 Technical Data Package

This subsection lists all manufacturer provided documentation that is relevant to the system being tested.

Table 3.1 Documentation

Document Name	Part Number	Version	Issue Date
AVC Edge Audio Accessory Rev C Poll Worker's/Operator's Manual for AVC Edge Release 5.0	096116601	1.00	October 2005
AVC Edge Change Summary Release 5.021	096051903	1.00	12/29/05
AVC Edge Data Dictionary Release 5.0	096050701	---	10/17/05
AVC Edge Functional Specification Release 5.0	096050501	1.02	2005
AVC Edge System Maintenance Manual	096051001	1.03	5/3/05
AVC Edge Operator's Manual Release 5.0	096050901	1.06	5/12/06
Sequoia Voting Systems AVC Edge Test & Verification 1)Firmware Release 5.0.19, 2)Audio Box Rev C	096051202	1.01	October 2005
WinEDS Technical Data Package Release 3.1	089351511	1.09	June 2006
WinEDS System Overview Release 3.1	089350011	1.13	May 2006
WinEDS Functional Specification Release 3.1	089350111	1.11	May 2006
WinEDS Software Specification Release 3.1	089350211	1.09	February 2006
WinEDS Security Specification Release 3.1	089350311	1.04	January 2006
WinEDS Penetration Analysis (Appendix B to Security Specification) Release 3.1 Noted 'Available Only By Special Request'	089350311	1.04	January 2006
WinEDS Test & Verification Specification	096051201	1.04	June 2007
WinEDS Operators Manual Release 3.1	089352111	1.03	January 2006
WinEDS Personnel & Training Requirements Release 3.1	089350511	1.04	January 2006
WinEDS Configuration Management Plan Release 3.1	089350611	1.06	February 2006
WinEDS Quality Assurance Program Release 3.1	089351911	1.04	January 2006
WinEDS Sample Reports Release 3.1	089352011	2.07	June 2006
WinEDS Installation Guide Software Release 3.1	none	1.00	February 2006
WinEDS Reference Guide Software Release 3.1	none	6.05	May 2006
WinEDS Change Release Summary Release 3.1	089352411	1.04	January 2006
WinEDS SDK: For Optech 400-C Release 3.1	089351111	1.04	January 2006
WinEDS SDK: For Insight and Eagle Release 3.1	089352311	1.01	January 2006
WinEDS Specification Diagrams Release 3.1	089351611	1.05	February 2006
WinEDS System Database Release 3.1	08935121	1.14	May 2006
WinEDS 3.1 FEC VSS 2002 Trace Matrix	092002-01	04	None-e-file date 9/12/2006
Tally Validation TDP supplement	None	None	None: e-file date 9/12/2006

3.2 Third Party Test Reports

This subsection lists the reports provided by third party entities that are relevant to the system being evaluated and the test engagement.

Table 3.2 Third Party Test Reports

Report Title	Description	Report No.	Issue Date
Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, VeriVote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14)	Wyle Laboratories Hardware Qualification Test Report.	51884-03	March 16, 2006
Change Release Report of the Edge Model I & II DRE Voting Machines, VeriVote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.21)	Wyle Laboratories Hardware Functional Test Report.	51884-04	March 16, 2006
Change Release Report of the Edge Models I & II DRE Voting Machines with VeriVote Printer (Firmware Version 5.0.22)	Wyle Laboratories Hardware Functional Test Report.	51884-05	March 16, 2006
Change Release Report of the Edge Models I & II DRE Voting Machines with VeriVote Printer (Firmware Version 5.0.23)	Wyle Laboratories Hardware Functional Test Report.	51884-06	March 16, 2006
Change Release Report of the Edge Models I & II DRE Voting Machines with VeriVote Printer (Firmware Version 5.0.24)	Wyle Laboratories Hardware Functional Test Report.	51884-07	March 16, 2006

3.3 Previous Test Results
This subsection describes the results of any previous testing performed by the Department that are relevant to the re-examination and the system being evaluated.

Table 3.3 Previous Test Results

Report Title	Description	Revision	Issue Date
Sequoia Voting Systems Edge 2 DRE Voting System and WinEDS Election Database System	An Evaluation prepared for the Secretary of the Commonwealth of Pennsylvania by Michael Ian Shamos, Ph.D, J.D	---	October 2005
Sequoia Voting Systems Edge 2 DRE Voting System, Version 5.0.21	An Evaluation prepared for the Secretary of the Commonwealth of Pennsylvania by Michael Ian Shamos, Ph.D, J.D	---	January 2006

4.0   TEST SPECIFICATIONS

This section contains a detailed description of the procedures to be followed during test setup and preparation.

The re-examination of the voting system will occur in an environmentally controlled room. The room will be configured such that the Department, the Examiner, and the voting system manufacturer have their own independent work areas. The public will be allowed to observe the examination, but may not comment or interact with either the employees of the Department, the Examiner, or the voting system manufacturer, at any time. The manufacturer will be allotted time and space to stage the voting system prior to the re-examination. This time and space will be determined between the Department and the manufacturer in advance of the examination date. Once the manufacturer informs the Department that the voting system is properly set up, the Examiner will provide the manufacturer with the firmware/software for the precinct tabulation device, submitted to the Department from the trusted source. The manufacturer will load the firmware/software on to the required media for installation onto the precinct tabulation device and install the firmware/software onto the precinct tabulation device before commencement of the re-examination.   Once each precinct tabulation device is loaded with the firmware/software, the manufacturer will not be allowed access to the internal components of the devices without the consent of the Department or the Examiner. If the re-examination is suspended, the precinct tabulation devices will be secured in a manner to ensure control of the test environment. If, at any point, the Department or the Examiner determines that the control of the test environment has been compromised, all firmware/software will be reloaded on the precinct tabulation devices.

The voting system manufacturer shall set up the precinct tabulation devices as they would be in the precinct on Election Day, minus the locks and seals. The locks and seals will be installed and evaluated at a later time in the re-examination.

The Examiner will maintain photographic and written documentation of the re-examination. This will include, but is not limited to, photographs of the firmware/software installation, test execution notes and observations, photographs of the test setup, and collection of test data. The Department will video record the re-examination.

5.0   TEST PROCEDURES

This section contains a detailed description of the test sequence, test procedures and expected results.

The test cases for this re-examination are contained in Appendix B of this Test Protocol. All steps of the tests cases contain an expected result to provide objective pass/fail criteria. There are no dependencies for execution of the test cases. The test cases have been divided into four main areas for execution: (1) Review; (2) Targeted Functionality; (3) System Integration; and (4) Penetration Analysis. -The Review area of this re-examination will not be performed on-site during the set dates of the re-examination. The Review area of testing includes documentation review of third-party reports and review of the

manufacturer's TDP. All other areas of testing will be performed on-site during the re-examination. The test sequence for this re-examination will be as follows:

Review:

- 1107-A(11), 25 P.S. § 3031.7(11) Suitably Designed, Constructed in Workmanlike Manner of Durable Material, Safely and Efficiently Useable, Capable of Absolute Accuracy
- 1107-A(13), 25 P.S. § 3031.7(13) Record Correctly, Computes and Tabulates Accurately
- 1107-A(14), 25 P.S. § 3031.7(14) Safely Transportable
- 1107-A(15), 25 P.S. § 3031.7(15) Voter May Readily Learn to Operate

Targeted Functionality Test Cases:

- Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (Regular Voter)
- Test Case Identifier: 01 – 1107-A(1), 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)
- Test Case Identifier: 02 – 1107-A(2), 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)
- Test Case Identifier: 03 – 1107-A(3), 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method
- Test Case Identifier: 04 – 1107-A(4), 25 P.S. § 3031.7(4) Straight Party and Write-In
- Test Case Identifier: 05 – 1107-A(5), 25 P.S. § 3031.7(5) Selection of Candidate and Write-in
- Test Case Identifier: 07 – 1107-A(7), 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)
- Test Case Identifier: 10 – 1107-A(10), 25 P.S. § 3031.7(10) Ballot Review and Change (Regular/ADA)
- Test Case Identifier: 16 – 1107-A(16), 25 P.S. § 3031.7(16) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports

System Integration Test Cases:

- Test Case Identifier: 04, 06, 08, 09, Permanent Physical Record, and Statistical Sample – 1107-A(4), 25 P.S. § 3031.7(4) Enables Voting for Legal Combinations; 1107-A(6), 25 P.S. § 3031.7(6) Permits Voting for as Many Candidates as Entitled, Permits Voting For or Against Questions, Precludes Voting for Unauthorized Candidates or Questions; 1107-A(8), 25 P.S. § 3031.7(8) Precludes Multiple Voting and Tabulating Multiple Votes; 1107-A(9), 25 P.S. § 3031.7(9) Permits Voter at Primary to Vote Only for Candidates in Party of Registration, Any Candidate for Nonpartisan Nomination, and For Any Entitled Question; 1101-A, 25 P.S. § 3031.1 Provides for Permanent Physical Record of Each Vote Cast; and 1117-A, 25 P.S. § 3031.17 Statistical Sample

Penetration Analysis Test Cases:

- Test Case Identifier: 12 – 1107-A(12), 25 P.S. § 3031.7(12) Acceptable Ballot Security Procedures and Impoundment of Ballots

6.0 TEST DATA

This section contains a detailed description of the test election definitions and ballot logic being exercised.

The election definitions being used for this re-examination are provided in Appendix A of this Test Protocol. A predefined set of election parameters are included in the election definitions. Both the general election and the closed primary election definitions provide the voting variations, geographic subdivisions, parties, supported languages and test voting pattern with results being tested. The only languages required for this re-examination are English and Spanish. The Department provided the Spanish translation. Each test voting pattern provides the input method and device. For all Write-In selections, the name will be input as "John Doe." For multiple Write-In selections, the name will be appended with the character "I" for the number of Write-In selections (*i.e.,* "John Doe I," "John Doe II," "John Doe III," and "John Doe IIII" in a "Vote for Four" contest with four write-ins).

6.1 Data Recording

This subsection contains a detailed description of the procedures to be followed during test execution and data collection.

All test data produced during this re-examination is the property of the Department. The output test data will be collected and stored in an appropriate manner as to allow for data analysis. Actual results from executed tests will be recorded in real-time in Test Execution Logs.

6.2 Data Evaluation

The Examiner will evaluate all test results against the expected results set forth in the test cases provided in Appendix B. The acceptable range for system performance and the expected results is derived from the test designers experience and expertise. If an expected result is not achieved, an evaluation will be performed as to "why" the test or test step did not produce the expected results. This evaluation will consider test error, invalid expectations, and system performance. Failure to achieve the expected results does not constitute a test failure. A test failure only occurs when the "Criteria for Evaluation of Test Results," as set forth in the test cases, are not achieved for a specific test.

APPENDIX A

ELECTION DEFINITIONS

	Election Definition: Pennsylvania Certification Closed Primary Election	

Primary Election Description:

A closed primary election for 2 parties in 3 precincts. This election contains 35 contests compiled into 6 ballot styles. Each ballot style contains 15 contests. The voting variations supported in a primary election by the Commonwealth of Pennsylvania are defined in this election. The voting variations are as follows:

- Partisan contest
- Non-Partisan
- Primary Presidential delegation nominations
- Write-In voting
- N of M Contest
- Cross-Party Filed Candidates

This closed primary election was designed to functionally test the handling of multiple ballot styles across geographical subdivisions, support for two languages, and support for common primary specific voting variations.

Configuration:

EMS computer loaded with software certified for use in Pennsylvania to create the following configuration:

Name: Pennsylvania Certification Closed Primary Election
Voting Devices: 1 machine for each precinct
Precincts: Precinct 1, Precinct 2, Precinct 3
Parties: Republican, Democrat
Languages: English, Spanish
Totals Contests: 35
Contests as follows:

Precinct 1 REP	Precinct 2 REP	Precinct 3 REP	Precinct 1 DEM	Precinct 2 DEM	Precinct 3 DEM
President of the United States Vote for One			**President of the United States** Vote for One		
James Collins			Barry Josey		
Alexander P. Bicket			Calvin Marino		
Carol Koethen			Write-In		
Write-In					
United States Senator Vote for One			**United States Senator** Vote for One		
Bob Ford *Allegheny County*			Oscar Draper *Cumberland County*		
Colby Lincoln *Delaware County*			Carter McGaw *Philadelphia County*		
Write-In			Write-In		
Representative in Congress 5th District Vote for One		**Representative in Congress 10th District** Vote for One	**Representative in Congress 5th District** Vote for One		**Representative in Congress 10th District** Vote for One
Ben Baker *Allegheny County*		Cheryl Simon	Barbara Barret Hicks *Montgomery County*		William Sullivan

	York County		*Butler County*
Write-In		Clinton Testo	Write-In
	Lois Koss	*Centre County*	
	Erie County	Write-In	
	Write-In		

Governor Vote for One		**Governor** Vote for One	
Dean Lindsey *Allegheny County*		Charles Jasen *Montgomery County*	
Don Etter *Allegheny County*		Shirley Henning *Luzerne County*	
Joe Carlton *Washington County*		Write-In	
Edwin Lewis *Lancaster County*			
Samuel Lawton *Bucks County*			
Write-In			

Lieutenant Governor Vote for One		**Lieutenant Governor** Vote for One	
Scott Montes *Berks County*		Sherman R. Bucher *Philadelphia County*	
Saul Currier *Lehigh County*		Richard V. Suits *Cambria County*	
Arnold Krill *Lycoming County*		Tabathia Song *Allegheny County*	
Write-In		Kenneth Interlicchio *Philadelphia County*	
		Write-In	

Representative in the General Assembly 83rd District Vote for One	**Representative in the General Assembly 84th District** Vote for One	**Representative in the General Assembly 83rd District** Vote for One	**Representative in the General Assembly 84th District** Vote for One
Harry Rider *Cascade*	Peter Valle *Muncy*	R. J. Abbott *Shrewsbury*	Neil Carey *Lewis*
Robert Tyrell *McNett*	Write-In	Peter F. Saxton *Willamsport*	Saul Currier *Eldred*
Write-In		Write-In	Write-In

Delegate to the National Convention –5th District Vote for Not More Than Three	**Delegate to the National Convention –5th District** Electing 2 Males and 2 Females Vote Not More Than Four
Gloria Dillion Heather Heidelbaugh Herbert Devine George A. Fisk Doris Shiddles Andre Ninia Brian Getz Chad Snow Diane Rubin Elizabeth Piazza	Vincent Seymour *(M) Committed to Barry Josey* Toni Hamilton *(F) Committed to Calvin Marino* Sam Patel *(M) Committed to Barry Josey*

Write-In
Write-In
Write-In
	Robert Rocco
	        (M) Committed to Calvin Marino
	
	Renee Cohn Jubelrier
	        (F) Committed to Calvin Marino
	
	Morton Steele
	        (M) Committed to Calvin Marino
	
	Mary Burke
	        (F) Committed to Barry Josey
	
	Nyda E. Hambin
	        (F) Committed to Barry Josey
	
	Write-In
	Write-In
	Write-In
	Write-In

Judge of the Superior Court
Vote for One
 	
Richard Maxian
   Philadelphia County
 	
Marjorie Hall
   Delaware County
 	
Robert L. Linkey
   Bucks County
 	
Write-In
	Judge of the Superior Court
	Vote for One
	
	Linda Gapp
	   Cumberland County
	
	Patricia Smallmon
	   Allegheny County
	
	Write-In

Judge of the Commonwealth Court
Vote for One
 	
Chris Carpenter
   Montgomery County
 	
Write-In
	Judge of the Commonwealth Court
	Vote for One
	
	Eugene Ruff
	   Washington County
	
	Lewis Tese
	   Luzerne County
	
	Write-In

Judge of the Court of Common Pleas
Vote for Not More Than Two
 	
Mary L. Daniel
   Armstrong
 	
John Roy
   Clinton
 	
Jack "Duke" Brodisky
   McNett
 	
Jon Young
   Muncy
 	
Vic Stabile
   Gamble
 	
Write-In
 	
Write-In
	Judge of the Court of Common Pleas
	Vote for Not More Than Two
	
	Joanne Shollzert
	   Williamsport
	
	Kerry Jones
	   Williamsport
	
	Steven Miller
	   Lewis
	
	Shirley Henning
	   Mill Creek
	
	Write-In
	
	Write-In

County Chief Executive Four Year Term Vote for One	**County Chief Executive** Four Year Term Vote for One

Norman Powers *Williamsport*			Micheal Santarcangelo *Fairfield*		
Sandra Reilly *McNett*			Charles Place *Gamble*		
Write-In			Write-In		

School Director **Region 6** Four Year Term Vote for Not More Than Two	**School Director** **Region 6** Four Year Term Vote for Not More Than Two
Gerald Danson	Douglas Stone
Greg Ortiz	Gerald Danson
Shlomo Archibald	Greg Ortiz
Delores DeVan	Shlomo Archibald
Write-In	Delores DeVan
Write-In	Write-In
	Write-In

Commissioner Seat 1 Four Year Term Vote for One	**Commissioner Seat 2** Four Year Term Vote for One	**Commissioner Seat 3** Four Year Term Vote for One	**Commissioner Seat 1** Four Year Term Vote for One	**Commissioner Seat 2** Four Year Term Vote for One	**Commissioner Seat 3** Four Year Term Vote for One
Stephen Harrick	Steve West	William Malicki	George Fisk	Tetty Rogiers	Arnold Wells
Write-In	Write-In	Gary Klemann	Write-In	Write-In	Write-In
		Write-In			

Referendum A
Bond Issue

To promote and assure the preservation and improvement of essential rail passenger and freight services to the inhabitants of the state, shall section two of chapter one hundred eighteen of the laws of nineteen hundred seventy-four, authorizing the creation of a state debt in the amount of two hundred fifty million dollars for capital facilities be approved?

Yes

No

Spanish

Distrito electoral 1 REP	Distrito electoral 2 REP	Distrito electoral 3 REP	Distrito electoral 1 DEM	Distrito electoral 2 DEM	Distrito electoral 3 DEM
Presidente de los Estados Unidos Vote por uno			**Presidente de los Estados Unidos** Vote por uno		
James Collins			Barry Josey		
Alexander P. Bicket			Calvin Marino		
Carol Koethen			Por escrito		
Por escrito					

Senador de los Estados Unidos		Senador de los Estados Unidos	
Vote por uno		Vote por uno	

Bob Ford
Condado de Allegheny

Colby Lincoln
Condado de Delaware

Por escrito

Oscar Draper
Condado de Cumberland

Carter McGaw
Condado de Filadelfia

Por escrito

Representante en el Congreso 5° Distrito Vote por uno	Representante en el Congreso 10.° Distrito Vote por uno	Representante en el Congreso 5° Distrito Vote por uno	Representante en el Congreso 10.° Distrito Vote por uno

Ben Baker
Condado de Allegheny

Por escrito

Cheryl Simon
Condado de York

Lois Koss
Condado de Erie

Por escrito

Barbara Barret Hicks
Condado de Montgomery

Clinton Testo
Condado Centre

Por escrito

William Sullivan
Condado de Butler

Por escrito

Gobernador
Vote por uno

Dean Lindsey
Condado de Allegheny

Don Etter
Condado de Allegheny

Joe Carlton
Condado de Washington

Edwin Lewis
Condado de Lancaster

Samuel Lawton
Condado de Bucks.

Por escrito

Gobernador
Vote por uno

Charles Jasen
Condado de Montgomery

Shirley Henning
Condado de Luzerne

Por escrito

Vicegobergador
Vote por uno

Scott Montes
Condado de Berks

Saul Currier
Condado de Lehigh

Arnold Krill
Condado de Lycoming

Por escrito

Vicegobergador
Vote por uno

Sherman R. Bucher
Condado de Filadelfia

Richard V. Suits
Condado de Cambria

Tabathia Song
Condado de Allegheny

Kenneth Interlicchio
Condado de Filadelfia

Por escrito

Representante en la Asamblea General 83.° Distrito Vote por uno	Representante en la Asamblea General 84.° Distrito Vote por uno	Representante en la Asamblea General 83.° Distrito Vote por uno	Representante en la Asamblea General 84.° Distrito Vote por uno

Neil Carey

Harry Rider *Cascade* Robert Tyrell *McNett* Por escrito	Peter Valle *Muncy* Por escrito	R. J. Abbott *Shrewsbury* Peter F. Saxton *Willamsport* Por escrito	*Lewis* Saul Currier *Eldred* Por escrito

Delegado a la convención nacional – 5.° Distrito No vote por no más de tres	**Delegado a la convención nacional – 5.° Distrito** Elija 2 damas y 2 caballeros No vote por más de cuatro
Gloria Dillion Heather Heidelbaugh Herbert Devine George A. Fisk Doris Shiddles Andre Ninia Brian Getz Chad Snow Diane Rubin Elizabeth Piazza Write-In Write-In Write-In	Vincent Seymour *(H) Committed to Barry Josey* Toni Hamilton *(M) Committed to Calvin Marino* Sam Patel *(H) Committed to Barry Josey* Robert Rocco *(H) Committed to Calvin Marino* Renee Cohn Jubelrier *(M) Committed to Calvin Marino* Morton Steele *(H) Committed to Calvin Marino* Mary Burke *(M) Committed to Barry Josey* Nyda E. Hambin *(M) Committed to Barry Josey* Write-In Write-In Write-In Write-In

Juez de la corte suprema Vote por uno	**Juez de la corte suprema** Vote por uno
Richard Maxian *Condado de Filadelfia* Marjorie Hall *Condado de Delaware* Robert L. Linkey *Condado de Bucks.* Write-In	Linda Gapp *Condado de Cumberland* Patricia Smallmon *Condado de Allegheny* Write-In

Juez de la corte del estado Vote por uno	**Juez de la corte del estado** Vote por uno
Chris Carpenter *Condado de Montgomery* Write-In	Eugene Ruff *Condado de Washington* Lewis Tese *Condado de Luzerne* Write-In

Juez de la corte de primeras instancias Vote por no más de dos	**Juez de la corte de primeras instancias** No vote por más de dos
Mary L. Daniel	Joanne Shollzert

Armstrong	*Williamsport*
John Roy *Clinton*	Kerry Jones *Williamsport*
Jack "Duke" Brodisky *McNett*	Steven Miller *Lewis*
Jon Young *Muncy*	Shirley Henning *Mill Creek*
Vic Stabile *Gamble*	Por escrito
Por escrito	Por escrito
Por escrito	

Jefe principal del condado Término de cuatro años Vote por uno	**Jefe principal del condado** Término de cuatro años Vote por uno
Norman Powers *Williamsport*	Micheal Santarcangelo *Fairfield*
Sandra Reilly *McNett*	Charles Place *Gamble*
Por escrito	Por escrito

Director de la escuela **Región 6** Término de cuatro años No vote por más de dos	**Director de la escuela** **Región 6** Término de cuatro años No vote por más de dos
Gerald Danson	Douglas Stone
Greg Ortiz	Gerald Danson
Shlomo Archibald	Greg Ortiz
Delores DeVan	Shlomo Archibald
Por escrito	Delores DeVan
Por escrito	Por escrito
	Por escrito

Comisionado **Puesto 1** Término de cuatro años Vote por uno	**Comisionado** **Puesto 2** Término de cuatro años Vote por uno	**Comisionado** **Puesto 3** Término de cuatro años Vote por uno	**Comisionado** **Puesto 1** Término de cuatro años Vote por uno	**Comisionado** **Puesto 2** Término de cuatro años Vote por uno	**Comisionado** **Puesto 3** Término de cuatro años Vote por uno
Stephen Harrick	Steve West	William Malicki	George Fisk	Tetty Rogiers	Arnold Wells
Por escrito	Por escrito	Gary Klemann	Por escrito	Por escrito	Por escrito
		Por escrito			

Referéndum a nivel estatal

Asunto del bono

Para promover y asegurar la preservación y mejoramiento del pasajero férreo esencial y servicios de carga para los habitantes del estado, ¿se debe aprobar la sección dos del capítulo ciento dieciocho de las leyes de mil novecientos sesenticuatro, autorizando la creación de una deuda estatal en la cantidad de doscientos cincuenta millones de dólares para instalaciones de capital?

Voting Pattern:

Precinct 1 REP	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10
President of the United States										
James Collins	X				X	X		X		X
Alexander P. Bicket		X					X			
Carol Koethen			X						X	
Write-In				X						
United States Senator										
Bob Ford			X				X		X	
Colby Lincoln	X	X		X	X			X		X
Write-In						X				
Representative in Congress 5th District										
Ben Baker	X	X	X	X	U		X	X	X	X
Write-In						X				
Governor										
Dean Lindsey				X			X			
Don Etter			X		X					
Joe Carlton	X					X			X	X
Edwin Lewis		X								
Samuel Lawton								X		
Write-In										
Lieutenant Governor										
Scott Montes					X					X
Saul Currier				X					X	
Arnold Krill	X		X			X	X	X		
Write-In		X								
Representative in the General Assembly 83rd District										
Harry Rider	X	X		X		X		X	X	
Robert Tyrell			X				X			X
Write-In					X\					
Presidential Nomination Delegation										
Gloria Dillion	X	X		X		X		X	X	X
Heather Heidelbaugh		X			X					X
Herbert Devine		X	X	X			X	X	X	X
George A. Fisk	X				X					
Doris Shiddles			X						X	
Andre Ninia								X		
Brian Getz	X		X	X						
Chad Snow							X			
Diane Rubin							X			
Elizabeth Piazza					X					
Write-In						X				
Write-In						X				
Write-In										
Judge of the Superior Court										
Richard Maxian					X		X		U	
Marjorie Hall		X				X				
Robert L. Linkey	X			X				X		X
Write-In			X							
Judge of the Commonwealth Court										
Chris Carpenter	X	X	X	X	X	U	X	X	X	X
Write-In										
Judge of the Court of Common Pleas										
Mary L. Daniel	X	X		X		X		X	X	X
John Roy		X						U		

Jack "Duke" Brodisky	X		X	X	X		X		X	X
Jon Young			X				U			
Vic Stabile					X					
Write-In						X				
Write-In										
County Chief Executive										
Norman Powers	X		X	X		X	X	X		X
Sandra Reilly		X			X				X	
Write-In										
School Director Region 6										
Gerald Danson	X		X	X		X		X		
Greg Ortiz	X				X		X			X
Shlomo Archibald		X	X	X	X		X	X	X	X
Delores DeVan		X				X			X	
Write-In										
Write-In										
Commissioner Seat 1										
Stephen Harrick	U	X	X	X	X		X	X	X	X
Write-In						X				
Referendum A										
Yes	U		X	X	X		X	X		X
No		X				X			X	

Precinct 1 DEM	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
President of the United States										
Barry Josey	X	U				X				
Calvin Marino			X	X	X			X	X	X
Write-In							X			
United States Senator										
Oscar Draper	X		X	X	X	X		X		X
Carter McGaw		X					X		X	
Write-In										
Representative in Congress 5th District										
Barbara Barret Hicks	X	X	X		X		X		X	
Clinton Testo				X				X		X
Write-In						X				
Governor										
Charles Jasen	X		X	X	X		X			
Shirley Henning		X				X		X	X	
Write-In										X
Lieutenant Governor										
Sherman R. Bucher				X						
Richard V. Suits							X			
Tabathia Song	X								X	
Kenneth Interlicchio		X	X		X	X		X		
Write-In										X
Representative in the General Assembly 83rd District										
R. J. Abbott	X	X		X				X		U
Peter F. Saxton			X		X				X	
Write-In							X			
Presidential Nomination Delegation										
Vincent Seymour			U		X		X		X	
Toni Hamilton	X	X	U	X		X		X		
Sam Patel			U		X		X		X	
Robert Rocco	X	X	U	X	U	X		X		
Renee Cohn Jubelrier	X	X		X	U	X		X		
Morton Steele	X	U		X		X		X		
Mary Burke							X		X	
Nyda E. Hambin							X			

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Write-In									X	X
Write-In										X
Write-In										X
Write-In										X
Judge of the Superior Court										
Linda Gapp				X				X		
Patricia Smallmon	X	X	X		X	X			X	X
Write-In							X			
Judge of the Commonwealth Court										
Eugene Ruff			X	X		X	X	X	X	
Lewis Tese	X	X			X					X
Write-In										
Judge of the Court of Common Pleas										
Joanne Shollzert	X		X	X	X	X		X		X
Kerry Jones	X	X		X	X		X	X	X	
Steven Miller		X				X			X	
Shirley Henning			X			X				
Write-In										X
Write-In										
County Chief Executive										
Micheal Santarcangelo	X		X	X	X		X	X	X	
Charles Place		X				X				X
Write-In										
School Director Region 6										
Douglas Stone		X		X					X	
Gerald Danson	X		X	X			X	X	X	X
Greg Ortiz		X			X					X
Shlomo Archibald	X		X		X	X	X			
Delores DeVan						X		X		
Write-In										
Write-In										
Commissioner Seat 1										
George Fisk	X	X	X	X	X	X	X	X	X	X
Write-In										
Referendum A										
Yes	X		X	X	X		X	U		
No		X				X			X	X

Precinct 2 REP	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
President of the United States										
James Collins	X	X			X		X		X	
Alexander P. Bicket			X			X				
Carol Koethen				X				X		
Write-In										X
United States Senator										
Bob Ford		X						X		X
Colby Lincoln	X		X		X	X	X		X	
Write-In				X						
Representative in Congress 5th District										
Ben Baker	X	U	U		X		X	X	X	X
Write-In				X		X				
Governor										
Dean Lindsey				X			X			
Don Etter			X		X					
Joe Carlton	X					X			X	X
Edwin Lewis		X								
Samuel Lawton								X		
Write-In										
Lieutenant Governor										
Scott Montes	X							X		
Saul Currier		X					X			X
Arnold Krill				X	X	X			X	

Representative in the General Assembly 83rd District	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Write-In						X				

Representative in the General Assembly 83rd District

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Harry Rider	X	X	X		X	X		X		X
Robert Tyrell				X			X		X	
Write-In										

Presidential Nomination Delegation

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Gloria Dillion	X	X	X				X	X		X
Heather Heidelbaugh	X		X							X
Herbert Devine	X			X	X		X	U		X
George A. Fisk		X						U		
Doris Shiddles		X			X					
Andre Ninia		X								
Brian Getz				X	X					
Chad Snow				X		X				
Diane Rubin						X			X	
Elizabeth Piazza					X	X				
Write-In									X	
Write-In									X	
Write-In										

Judge of the Superior Court

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Richard Maxian				X						X
Marjorie Hall		X				X				
Robert L. Linkey	X		X		X		X	X	X	
Write-In										

Judge of the Commonwealth Court

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Chris Carpenter	X	U	X	X	X	X	X	X	X	X
Write-In										

Judge of the Court of Common Pleas

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Mary L. Daniel		X	X	X		X	X	X	X	
John Roy	X	X							X	X
Jack "Duke" Brodisky	X		X		X	X		X		X
Jon Young				X						
Vic Stabile					X		X			
Write-In										
Write-In										

County Chief Executive

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Norman Powers	X				X	X		X	X	
Sandra Reilly		X	X	X			X			X
Write-In										

School Director Region 6

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Gerald Danson	U	X		X	X			X	X	X
Greg Ortiz	U	X	X			X		X	X	
Shlomo Archibald			X	X	X					X
Delores DeVan						X				
Write-In							X			
Write-In							U			

Commissioner Seat 2

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Steve West	X		X	X	X	X	X	X	U	X
Write-In		X								

Referendum A

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Yes	U		X	X	X	X	X	X	U	
No		X								X

Precinct 2 DEM	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10

President of the United States

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Barry Josey	X	X		X		X		X		X
Calvin Marino			X		X		X			
Write-In									X	

United States Senator

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Oscar Draper	X		X	X			X			X
Carter McGaw		X			X			X		
Write-In						X			X	

Representative in Congress 5th District										
Barbara Barret Hicks			X	X	X		X	X	X	X
Clinton Testo		X					X			
Write-In	X									

Governor										
Charles Jasen	X	X	X		X	X			X	
Shirley Henning				X				X		X
Write-In							X			

Lieutenant Governor										
Sherman R. Bucher		X						X		
Richard V. Suits										X
Tabathia Song			X				X			
Kenneth Interlicchio	X			X	X	X			X	
Write-In										

Representative in the General Assembly 83rd District										
R. J. Abbott	X	X		X	X	X		X	X	
Peter F. Saxton			X				X			X
Write-In										

Presidential Nomination Delegation										
Vincent Seymour		X		X		X		X		
Toni Hamilton	X		X		X	X	X		X	X
Sam Patel		X		X		X		X		X
Robert Rocco	X		X		X	X	X	U	X	X
Renee Cohn Jubelrier	X		X		X		X	U	X	X
Morton Steele	X		X		X		X		X	
Mary Burke		X		X						
Nyda E. Hambin		X		X						
Write-In										
Write-In										
Write-In										
Write-In										

Judge of the Superior Court										
Linda Gapp		X				X		X		
Patricia Smallmon	X		X	X	X		X		X	X
Write-In										

Judge of the Commonwealth Court										
Eugene Ruff	X	X		X	X		X	X	X	
Lewis Tese			X			X				X
Write-In										

Judge of the Court of Common Pleas										
Joanne Shollzert	X	X	X		X	X		X	X	X
Kerry Jones	X	X		X	X	U	X		X	
Steven Miller			X				X			X
Shirley Henning				X				X		
Write-In										
Write-In										

County Chief Executive										
Micheal Santarcangelo	X		X		X	X	X		X	
Charles Place		X		X				X		X
Write-In										

School Director Region 6										
Douglas Stone		X					U		X	
Gerald Danson		X		X		X	U	X	X	X
Greg Ortiz	X		X							X
Shlomo Archibald			X	X		X		X		
Delores DeVan	X				X					
Write-In					X					
Write-In										

Commissioner Seat 2										
Tetty Rogiers	X	X	X	X	U	X	X	X	X	X
Write-In										

Referendum A										
Yes	X	X	U	X	U		U	X	X	
No						X				X

Precinct 3 REP	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
President of the United States										
James Collins	X	X		U		X		X		X
Alexander P. Bicket					X		X			
Carol Koethen			X						X	
Write-In										
United States Senator										
Bob Ford	U					X			X	
Colby Lincoln		X		X	X		X	X		X
Write-In			X							
Representative in Congress 10th District										
Cheryl Simon		X		X					X	
Lois Koss	X		X		X	X	X	X		X
Write-In										
Governor										
Dean Lindsey				X			X			
Don Etter			X		X					
Joe Carlton	X					X			X	X
Edwin Lewis		X								
Samuel Lawton								X		
Write-In										
Lieutenant Governor										
Scott Montes	X		X			X		X		
Saul Currier				X						X
Arnold Krill		X			X		X		X	
Write-In										
Representative in the General Assembly 84rd District										
Peter Valle	X	X	X	X	U	X	X		X	X
Write-In								X		
Presidential Nomination Delegation										
Gloria Dillion	X				X	U	X			
Heather Heidelbaugh	X					U		X	X	
Herbert Devine	X				X	U	X			
George A. Fisk		X			X		X			X
Doris Shiddles		X								
Andre Ninia		X		X				X		
Brian Getz			X					X		X
Chad Snow			X	X					X	X
Diane Rubin			X							
Elizabeth Piazza				X						
Write-In									X	
Write-In										
Write-In										
Judge of the Superior Court										
Richard Maxian			X				X			X
Marjorie Hall					X			X		
Robert L. Linkey	X	X		X		X			X	
Write-In										
Judge of the Commonwealth Court										
Chris Carpenter	U	X	X		X	X	X	X	U	X
Write-In				X						
Judge of the Court of Common Pleas										
Mary L. Daniel		U	X	X	X		X	X	X	X
John Roy		U		X					X	
Jack "Duke" Brodisky	X		X		X	X		X		X
Jon Young						X				
Vic Stabile							X			

Write-In	X									
Write-In										
County Chief Executive										
Norman Powers	X		X	X		X	X		X	
Sandra Reilly		X			X			X		X
Write-In										
School Director Region 6										
Gerald Danson		X	X			X		X		X
Greg Ortiz			X	X				X	X	
Shlomo Archibald	X	X		X	X	X	X		X	X
Delores DeVan	X				X		X			
Write-In										
Write-In										
Commissioner Seat 3										
William Malicki	X	X	X		X		X	X	X	X
Gary Klemann			X		X					
Write-In										
Referendum A										
Yes	X		X		X	X		X	X	
No		X		X			X			X

Precinct 3 DEM	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10
President of the United States										
Barry Josey				X		X		X		
Calvin Marino	X		X		X		X		X	X
Write-In		X								
United States Senator										
Oscar Draper		X		X	X	X		X	X	
Carter McGaw	X		X				X			X
Write-In										
Representative in Congress 10th District										
William Sullivan	X	X	X	X	X	X	X	U	X	X
Write-In										
Governor										
Charles Jasen	X		U	X	X		X		X	
Shirley Henning		X				X				X
Write-In								X		
Lieutenant Governor										
Sherman R. Bucher		X	X		X			X		
Richard V. Suits										X
Tabathia Song							X			
Kenneth Interlicchio	X			X		X			X	
Write-In										
Representative in the General Assembly 84rd District										
Neil Carey	X	X		X		X	X	X		X
Saul Currier			X		X				X	
Write-In										
Presidential Nomination Delegation										
Vincent Seymour			U		X		X		X	
Toni Hamilton	X	X	U	X		X		X		
Sam Patel			U		X		X		X	
Robert Rocco	X	X	U	X	U	X		X		
Renee Cohn Jubelrier	X	X		X	U	X		X		
Morton Steele	X	U		X		X		X		
Mary Burke							X		X	
Nyda E. Hambin							X			
Write-In									X	X
Write-In										X
Write-In										X
Write-In										X
Judge of the Superior Court										

Linda Gapp			X			X		X		
Patricia Smallmon	X	X		X	X		X		X	X
Write-In										
Judge of the Commonwealth Court										
Eugene Ruff	X	X		X		X	X		X	
Lewis Tese			X		X			X		X
Write-In										
Judge of the Court of Common Pleas										
Joanne Shollzert		X	X		X	X		X	X	
Kerry Jones			X	X	X	U	X	X		
Steven Miller		X					X		X	X
Shirley Henning				X						X
Write-In	X									
Write-In	X									
County Chief Executive										
Micheal Santarcangelo	X		X	X		X	X		X	X
Charles Place					X			X		
Write-In		X								
School Director Region 6										
Douglas Stone	X		X				X			
Gerald Danson		X	X	X	X	X				X
Greg Ortiz	X			X					X	
Shlomo Archibald		X			X		X	X	X	X
Delores DeVan						X	X			
Write-In										
Write-In										
Commissioner Seat 3										
Arnold Wells	X	X	X	X	X	X	X		X	X
Write-In								X		
Referendum A										
Yes	X		X		X		X		X	
No		X		X		X		X		X

Test Results:

Precinct 1 REP
President of the United States

James Collins	5
Alexander P. Bicket	2
Carol Koethen	2
Write-In	1
Undervotes	0

United States Senator

Bob Ford	3
Colby Lincoln	6
Write-In	1
Undervotes	0

Representative in Congress 5th District

Ben Baker	8
Write-In	1
Undervotes	1

Governor

Dean Lindsey	2
Don Etter	2

Joe Carlton	4
Edwin Lewis	1
Samuel Lawton	1
Write-In	0
Undervotes	0

Lieutenant Governor

Scott Montes	2
Saul Currier	2
Arnold Krill	5
Write-In	1
Undervotes	0

Representative in the General Assembly 83rd District

Harry Rider	6
Robert Tyrell	3
Write-In	1
Undervotes	0

Presidential Nomination Delegation

Gloria Dillion	7
Heather Heidelbaugh	3
Herbert Devine	7
George A. Fisk	2
Doris Shiddles	2
Andre Ninia	1
Brian Getz	3
Chad Snow	1
Diane Rubin	1
Elizabeth Piazza	1
Write-In	2
Undervotes	0

Judge of the Superior Court

Richard Maxian	2
Marjorie Hall	2
Robert L. Linkey	4
Write-In	1
Undervotes	1

Judge of the Commonwealth Court

Chris Carpenter	9
Write-In	0
Undervotes	1

Judge of the Court of Common Pleas

Mary L. Daniel	7
John Roy	1
Jack "Duke" Brodisky	7
Jon Young	1
Vic Stabile	1
Write-In	1
Undervotes	2

County Chief Executive

Norman Powers	7
Sandra Reilly	3
Write-In	0
Undervotes	0

School Director Region 6

Gerald Danson	5
Greg Ortiz	4
Shlomo Archibald	8
Delores DeVan	3
Write-In	0
Undervotes	0

Commissioner Seat 1

Stephen Harrick	8
Write-In	1
Undervotes	1

Referendum A

Yes	6
No	3
Undervote	1

Precinct 1 DEM

President of the United States

Barry Josey	2
Calvin Marino	6
Write-In	1
Undervotes	1

United States Senator

Oscar Draper	7
Carter McGaw	3
Write-In	0
Undervotes	0

Representative in Congress 5th District

Barbara Barret Hicks	6
Clinton Testo	3
Write-In	1
Undervotes	0

Governor

Charles Jasen	5
Shirley Henning	4
Write-In	1
Undervotes	0

Lieutenant Governor

Sherman R. Bucher	1
Richard V. Suits	1
Tabathia Song	2
Kenneth Interlicchio	5
Write-In	1
Undervotes	0

Representative in the General Assembly 83rd District

R. J. Abbott	5
Peter F. Saxton	3
Write-In	1
Undervotes	1

Presidential Nomination Delegation

Vincent Seymour	3
Toni Hamilton	5
Sam Patel	3
Robert Rocco	5
Renee Cohn Jubelrier	5
Morton Steele	4
Mary Burke	2
Nyda E. Hambin	1
Write-In	5
Undervotes	7

Judge of the Superior Court

Linda Gapp	2
Patricia Smallmon	7
Write-In	1
Undervotes	0

Judge of the Commonwealth Court

Eugene Ruff	6
Lewis Tese	4

| Write-In | 0 |
| Undervotes | 0 |

Judge of the Court of Common Pleas

Joanne Shollzert	7
Kerry Jones	7
Steven Miller	3
Shirley Henning	2
Write-In	1
Undervotes	0

County Chief Executive

Micheal Santarcangelo	7
Charles Place	3
Write-In	0
Undervotes	0

School Director Region 6

Douglas Stone	3
Gerald Danson	7
Greg Ortiz	3
Shlomo Archibald	5
Delores DeVan	2
Write-In	0
Undervotes	0

Commissioner Seat 1

George Fisk	10
Write-In	0
Undervotes	0

Referendum A

Yes	5
No	4
Undervote	1

Precinct 2 REP

President of the United States

James Collins	5
Alexander P. Bicket	2
Carol Koethen	2
Write-In	1
Undervotes	0

United States Senator

Bob Ford	3
Colby Lincoln	6
Write-In	1
Undervotes	0

Representative in Congress 5th District

Ben Baker	6
Write-In	2
Undervotes	2

Governor

Dean Lindsey	2
Don Etter	2
Joe Carlton	4
Edwin Lewis	1
Samuel Lawton	1
Write-In	0
Undervotes	0

Lieutenant Governor

Scott Montes	2
Saul Currier	3
Arnold Krill	4
Write-In	1
Undervotes	0

Representative in the General Assembly 83rd District

Harry Rider	7
Robert Tyrell	3
Write-In	0
Undervotes	0

Presidential Nomination Delegation

Gloria Dillion	6
Heather Heidelbaugh	3
Herbert Devine	5
George A. Fisk	1
Doris Shiddles	2
Andre Ninia	1
Brian Getz	2
Chad Snow	2
Diane Rubin	2
Elizabeth Piazza	2
Write-In	2
Undervotes	2

Judge of the Superior Court

Richard Maxian	2
Marjorie Hall	2
Robert L. Linkey	6
Write-In	0
Undervotes	0

Judge of the Commonwealth Court

Chris Carpenter	9
Write-In	0
Undervotes	1

Judge of the Court of Common Pleas

Mary L. Daniel	7
John Roy	4
Jack "Duke" Brodisky	6
Jon Young	1
Vic Stabile	2
Write-In	0
Undervotes	0

County Chief Executive

Norman Powers	5
Sandra Reilly	5
Write-In	0
Undervotes	0

School Director Region 6

Gerald Danson	6
Greg Ortiz	5
Shlomo Archibald	4
Delores DeVan	1
Write-In	1
Undervotes	3

Commissioner Seat 2

Steve West	8
Write-In	1
Undervotes	1

Referendum A

Yes	6
No	2
Undervote	2

Precinct 2 DEM

President of the United States

Barry Josey	6
Calvin Marino	3
Write-In	1
Undervotes	0

United States Senator

Oscar Draper	5
Carter McGaw	3
Write-In	2
Undervotes	0

Representative in Congress 5th District

Barbara Barret Hicks	7
Clinton Testo	2
Write-In	1
Undervotes	0

Governor

Charles Jasen	6
Shirley Henning	3
Write-In	1
Undervotes	0

Lieutenant Governor

Sherman R. Bucher	2
Richard V. Suits	1
Tabathia Song	2
Kenneth Interlicchio	5
Write-In	0
Undervotes	0

Representative in the General Assembly 83rd District

R. J. Abbott	7
Peter F. Saxton	3
Write-In	0
Undervotes	0

Presidential Nomination Delegation

Vincent Seymour	4
Toni Hamilton	7
Sam Patel	5
Robert Rocco	7
Renee Cohn Jubelrier	6
Morton Steele	5
Mary Burke	2
Nyda E. Hambin	2
Write-In	0
Undervotes	2

Judge of the Superior Court

Linda Gapp	3
Patricia Smallmon	7
Write-In	0
Undervotes	0

Judge of the Commonwealth Court

Eugene Ruff	7
Lewis Tese	3
Write-In	0
Undervotes	0

Judge of the Court of Common Pleas

Joanne Shollzert	8
Kerry Jones	6

Steven Miller 3
Shirley Henning 2
Write-In 0
Undervotes 1

County Chief Executive
Micheal Santarcangelo 6
Charles Place 4
Write-In 0
Undervotes 0

School Director Region 6
Douglas Stone 2
Gerald Danson 6
Greg Ortiz 3
Shlomo Archibald 4
Delores DeVan 2
Write-In 1
Undervotes 2

Commissioner Seat 2
Tetty Rogiers 9
Write-In 0
Undervotes 1

Referendum A
Yes 5
No 2
Undervote 3

Precinct 3 REP
President of the United States
James Collins 5
Alexander P. Bicket 2
Carol Koethen 2
Write-In 0
Undervotes 1

United States Senator
Bob Ford 2
Colby Lincoln 6
Write-In 1
Undervotes 1

Representative in Congress 10th District
Cheryl Simon 3
Lois Koss 7
Write-In 0
Undervotes 0

Governor
Dean Lindsey 2
Don Etter 2
Joe Carlton 4
Edwin Lewis 1
Samuel Lawton 1
Write-In 0
Undervotes 0

Lieutenant Governor
Scott Montes 4
Saul Currier 2
Arnold Krill 4
Write-In 0
Undervotes 0

Representative in the General Assembly 84rd District
Peter Valle 8

| Write-In | 1 |
| Undervotes | 1 |

Presidential Nomination Delegation

Gloria Dillion	3
Heather Heidelbaugh	3
Herbert Devine	3
George A. Fisk	4
Doris Shiddles	1
Andre Ninia	3
Brian Getz	3
Chad Snow	4
Diane Rubin	1
Elizabeth Piazza	1
Write-In	1
Undervotes	3

Judge of the Superior Court

Richard Maxian	3
Marjorie Hall	2
Robert L. Linkey	5
Write-In	0
Undervotes	0

Judge of the Commonwealth Court

Chris Carpenter	7
Write-In	1
Undervotes	2

Judge of the Court of Common Pleas

Mary L. Daniel	7
John Roy	2
Jack "Duke" Brodisky	6
Jon Young	1
Vic Stabile	1
Write-In	1
Undervotes	2

County Chief Executive

Norman Powers	6
Sandra Reilly	4
Write-In	0
Undervotes	0

School Director Region 6

Gerald Danson	5
Greg Ortiz	4
Shlomo Archibald	8
Delores DeVan	3
Write-In	0
Undervotes	0

Commissioner Seat 3

William Malicki	8
Gary Klemann	2
Write-In	0
Undervotes	0

Referendum A

Yes	6
No	4
Undervote	0

Precinct 3 DEM
President of the United States

Barry Josey 3
Calvin Marino 6
Write-In 1
Undervotes 0

United States Senator
Oscar Draper 6
Carter McGaw 4
Write-In 0
Undervotes 0

Representative in Congress 10th District
William Sullivan 9
Write-In 0
Undervotes 1

Governor
Charles Jasen 5
Shirley Henning 3
Write-In 1
Undervotes 1

Lieutenant Governor
Sherman R. Bucher 4
Richard V. Suits 1
Tabathia Song 1
Kenneth Interlicchio 4
Write-In 0
Undervotes 0

Representative in the General Assembly 84rd District
Neil Carey 7
Saul Currier 3
Write-In 0
Undervotes 0

Presidential Nomination Delegation
Vincent Seymour 3
Toni Hamilton 5
Sam Patel 3
Robert Rocco 5
Renee Cohn Jubelrier 5
Morton Steele 4
Mary Burke 2
Nyda E. Hambin 1
Write-In 5
Undervotes 7

Judge of the Superior Court
Linda Gapp 3
Patricia Smallmon 7
Write-In 0
Undervotes 0

Judge of the Commonwealth Court
Eugene Ruff 6
Lewis Tese 4
Write-In 0
Undervotes 0

Judge of the Court of Common Pleas
Joanne Shollzert 6
Kerry Jones 5
Steven Miller 4
Shirley Henning 2
Write-In 2
Undervotes 1

County Chief Executive

Micheal Santarcangelo	7
Charles Place	2
Write-In	1
Undervotes	0

School Director Region 6

Douglas Stone	3
Gerald Danson	6
Greg Ortiz	3
Shlomo Archibald	6
Delores DeVan	2
Write-In	0
Undervotes	0

Commissioner Seat 3

Arnold Wells	9
Write-In	1
Undervotes	0

Referendum A

Yes	5
No	5
Undervote	0

Precinct 3 Non Partisan

Referendum A

Yes	2
No	2
Undervote	1

Cumulative Totals REP:

President of the United States

James Collins	15
Alexander P. Bicket	6
Carol Koethen	6
Write-In	2
Undervote	1

United States Senator

Bob Ford	8
Colby Lincoln	18
Write-In	3
Undervote	1

Representative in Congress 5th District

Ben Baker	14
Write-In	3
Undervote	3

Representative in Congress 10th District

Cheryl Simon	3
Lois Koss	7
Write-In	0
Undervote	0

Governor

Dean Lindsey	6
Don Etter	6
Joe Carlton	12
Edwin Lewis	3
Samuel Lawton	3
Write-In	0
Undervotes	0

Lieutenant Governor

Scott Montes	8
Saul Currier	7
Arnold Krill	13
Write-In	2
Undervotes	0

Representative in the General Assembly 83rd District

Harry Rider	13
Robert Tyrell	6
Write-In	1
Undervotes	0

Representative in the General Assembly 84rd District

Peter Valle	8
Write-In	1
Undervotes	1

Presidential Nomination Delegation

Gloria Dillion	16
Heather Heidelbaugh	9
Herbert Devine	15
George A. Fisk	7
Doris Shiddles	5
Andre Ninia	5
Brian Getz	8
Chad Snow	7
Diane Rubin	4
Elizabeth Piazza	4
Write-In	5
Undervotes	5

Judge of the Superior Court

Richard Maxian	7
Marjorie Hall	6
Robert L. Linkey	15
Write-In	1
Undervotes	1

Judge of the Commonwealth Court

Chris Carpenter	25
Write-In	1
Undervotes	4

Judge of the Court of Common Pleas

Mary L. Daniel	21
John Roy	7
Jack "Duke" Brodisky	19
Jon Young	3
Vic Stabile	4
Write-In	2
Undervotes	4

County Chief Executive

Norman Powers	18
Sandra Reilly	12
Write-In	0
Undervotes	0

School Director Region 6

Gerald Danson	16
Greg Ortiz	13
Shlomo Archibald	20
Delores DeVan	7
Write-In	1
Undervotes	3

Commissioner Seat 1 REP

Stephen Harrick	8
Write-In	1
Undervotes	1

Commissioner Seat 2 REP
Steve West	8
Write-In	1
Undervotes	1

Commissioner Seat 3 REP
William Malicki	8
Gary Klemann	2
Write-In	0
Undervotes	0

Referendum A REP
Yes	18
No	9
Undervote	3

Cumulative Totals DEM:

President of the United States
Barry Josey	11
Calvin Marino	15
Write-In	3
Undervotes	1

United States Senator
Oscar Draper	18
Carter McGaw	10
Write-In	2
Undervotes	0

Representative in Congress 5th District
Barbara Barret Hicks	13
Clinton Testo	5
Write-In	2
Undervotes	0

Representative in Congress 10th District
William Sullivan	9
Write-In	0
Undervotes	1

Governor
Charles Jasen	16
Shirley Henning	10
Write-In	3
Undervotes	1

Lieutenant Governor
Sherman R. Bucher	7
Richard V. Suits	3
Tabathia Song	5
Kenneth Interlicchio	14
Write-In	1
Undervotes	0

Representative in the General Assembly 83rd District
R. J. Abbott	12
Peter F. Saxton	6
Write-In	1
Undervotes	1

Representative in the General Assembly 84rd District
| Neil Carey | 7 |
| Saul Currier | 3 |

Write-In	0
Undervotes	0

Presidential Nomination Delegation

Vincent Seymour	10
Toni Hamilton	17
Sam Patel	11
Robert Rocco	17
Renee Cohn Jubelrier	16
Morton Steele	13
Mary Burke	6
Nyda E. Hambin	4
Write-In	10
Undervotes	16

Judge of the Superior Court

Linda Gapp	8
Patricia Smallmon	21
Write-In	1
Undervotes	0

Judge of the Commonwealth Court

Eugene Ruff	19
Lewis Tese	11
Write-In	0
Undervotes	0

Judge of the Court of Common Pleas

Joanne Shollzert	21
Kerry Jones	18
Steven Miller	10
Shirley Henning	6
Write-In	3
Undervotes	2

County Chief Executive

Micheal Santarcangelo	20
Charles Place	9
Write-In	1
Undervotes	0

School Director Region 6

Douglas Stone	8
Gerald Danson	19
Greg Ortiz	9
Shlomo Archibald	15
Delores DeVan	6
Write-In	1
Undervotes	2

Commissioner Seat 1 DEM

George Fisk	10
Write-In	0
Undervotes	0

Commissioner Seat 2 DEM

Tetty Rogiers	9
Write-In	0
Undervotes	1

Commissioner Seat 3 DEM

Arnold Wells	9
Write-In	1
Undervotes	0

Referendum A DEM

Yes	15
No	11
Undervote	4

Cumulative Totals Non Partisan:

Referendum A

Yes	33
No	20
Undervote	7

Election Definition: Pennsylvania Certification General Election

General Election Description:

A general election combining presidential year contests, non-presidential year contests, and municipal contests into a single election held in 3 precincts one of which is a split precinct on the "Representative in the General Assembly" contests. This election contains 21 contests compiled into 4 ballot styles (excluding language styles). 15 of the contests are in all ballot styles. The other 6 are split between at least 2 of the precincts with a maximum of 21 different contests spread across the 3 precincts. All voting variations supported by the Commonwealth of Pennsylvania are defined in this election. The voting variations are as follows:

- Partisan contest
- Non-Partisan contest
- N of M contest
- Referendum contest
- Retention Contest
- Straight Party voting
- Write-In voting
- Split Precinct
- Cross-Party Nominated

This general election was designed to functionally test the handling of multiple ballot styles across geographical subdivisions, support for English and Spanish languages, support for all Pennsylvania voting variations, and audio support for English and Spanish.

Configuration:

EMS computer loaded with software certified for use in Pennsylvania to create the following configuration:

Name: Pennsylvania Certification General Election
Voting Devices: 1 machine for each precinct
Precincts: Precinct 1, Precinct 2 split into 2a and 2b, Precinct 3
Parties: Republican, Democratic, Green, Libertarian
Languages: English, Spanish
Totals Contests: 21
Contests as follows:

Precinct 1	Precinct 2a	Precinct 2b	Precinct 3
Straight Party			
Republican			
Democratic			
Green			
Libertarian			
President/Vice President of the United States Vote for the Candidate of One Party for President and Vice President or insert the names of candidates			
James Collins Arthur Remus			

Republican

Calvin Marino
Keith Satterwhite
    Democratic

John P. Defazio
Louis Denn
    Green

June Perkins
David Heroux
    Libertarian

Write-In

United States Senator
Vote for One

Colby Lincoln
    Republican

Oscar Draper
    Democratic

Eric Sheely
    Libertarian

Write-In

Representative in Congress 5th District Vote for One	Representative in Congress 10th District Vote for One

Ben Baker
  Republican
	Lois Koss
	  Republican

Barbara Barrett Hicks
  Democratic
	William Sullivan
	  Democratic

Write-In	Write-In

Governor/Lieutenant Governor
Vote for the Candidate of One Party for Governor and Lieutenant Governor

Joe Carlton
Arnold Krill
    Republican

Charles Jasen
Kenneth Interlicchio
    Democratic

Robert Marsh
Theodore Kopp
    Green

Write-In

Representative in the General Assembly 83rd District Vote for One	Representative in the General Assembly 84th District Vote for One

Harry Rider
  Republican
	Peter Valle
	  Republican

R. J. Abbott
  Democratic
	Neil Carey
	  Democratic

Derek Carlson	Write-In
Libertarian	
Write-In	

Judge of the Superior Court
Vote for One

Robert L .Linkey
Republican

Patricia Smallmon
Democratic

Write-In

Judge of the Commonwealth Court
Vote for One

Chris Carpenter
Republican

Eugene Ruff
Democratic

Write-In

Judge of the Court of Common Pleas
Vote for Not More Than Two

Mary L. Daniel
Republican

Jack "Duke" Brodisky
Republican

Joanne Schollzert
Democratic

Kerry Jones
Democratic

Write-In

Write-In

County Chief Executive
Four Year Term
Vote for One

Norman Powers
Republican

Micheal Santarcangelo
Democratic
Write-In

County Controller
Four Year Term
Vote for One

Paul M Bertel-Lincoln
Republican

Donna Berke
Democratic

Write-In

District Attorney
Four Year Term
Vote for One

Franklin Margo
Republican

Donald Hensley
Democratic

Write-In

School Director
Region 6
Four Year Term
Vote for Not More Than Two

Gerald Danson
Republican/Democratic

Shlomo Archibald
Republican/Democratic

Write-In

Write-In

Commissioner Seat 1 Four Year Term Vote for One	**Commissioner** Seat 2 Four Year Term Vote for One	**Commissioner** Seat 3 Four Year Term Vote for One
Stephen Harrick *Republican*	Steve West *Republican*	William Malicki *Republican*
George Fisk *Democratic*	Tetty Rogiers *Democratic*	Arnold Wells *Democratic*
Write-In	Write-In	Write-In

Statewide Referendum
Water and Sewer Improvements Bond Referendum

Do you favor the incurring of indebtedness by the Commonwealth of $400,000,000 for grants and loans to municipalities and public utilities for the cost of all labor, materials, necessary operational machinery and equipment, lands, property, rights and easements, plans and specifications, surveys, estimates of costs and revenues, prefeasibility studies, engineering and legal services and all other expenses necessary or incident to the acquisition, construction, improvement, expansion, extension, repair or rehabilitation of all or part of the drinking water system, storm water, nonpoint source projects, nutrient credits and wastewater treatment system projects?

Yes

No

Retention of Tony Grzanich

Shall Tony Grzanich be retained for an additional term as Justice of the Supreme Court of the Commonwealth of Pennsylvania?

Yes

No

Retention of Debbie Marks
Shall Debbie Marks be retained for an additional term as Justice of the Supreme Court of the Commonwealth of Pennsylvania?
Yes
No

Spanish

Distrito electoral 1	Distrito electoral 2a	Distrito electoral 2b	Distrito electoral 3
Partido íntegro			
Republicano			
Demócrata			
Verde			
Libertario			

Presidente/Vicepresidente de los Estados Unidos
Vote para el candidato de un partido para presidente y vicepresidente
o inserte los nombres de los candidatos
James Collins Arthur Remus *Republicano*
Calvin Marino Keith Satterwhite *Demócrata*
John P. Defazio Louis Denn *Verde*
June Perkins David Heroux *Libertario*
Por escrito

Senador de los Estados Unidos
Vote por uno
Colby Lincoln *Republicano*
Oscar Draper *Demócrata*
Eric Sheely *Libertario*
Por escrito

Representante en el Congreso **5º Distrito** Vote por uno	**Representante en el Congreso** **10.º Distrito** Vote por uno
Ben Baker *Republicano*	Lois Koss

Barbara Barret Hicks *Demócrata* Por escrito	*Republicano* William Sullivan *Demócrata* Por escrito

Gobernador/vicegobernador
Vote para el candidato de un partido para gobernador y vicegobernador

Joe Carlton
Arnold Krill
     Republicano

Charles Jasen
Kenneth Interlicchio
     Demócrata

Robert Marsh
Theodore Kopp
     Verde

Por escrito

Representante en la Asamblea General **83.° Distrito** Vote por uno	**Representante en la Asamblea General** **84.° Distrito** Vote por uno

Harry Rider
     Republicano
 	
R. J. Abbott
     Demócrata
 	
Derek Carlson
     Libertario
 	
Por escrito
	Peter Valle
	     Republicano
	
	Neil Carey
	     Demócrata
	
	Por escrito

Juez de la corte suprema
Vote por uno

Robert L. Linkey
     Republicano

Patricia Smallmon
     Demócrata

Por escrito

Juez de la corte del estado
Vote por uno

Chris Carpenter
     Republicano

Eugene Ruff
     Demócrata

Por escrito

Juez de la corte de primeras instancias
No vote por más de dos

Mary L. Daniel

Republicano

Jack "Duke" Brodisky
     Republicano

Joanne Schollzert
     Demócrata

Kerry Jones
     Demócrata

Por escrito

Por escrito

Jefe principal del condado
Término de cuatro años
Vote por uno

Norman Powers
     Republicano

Micheal Santarcangelo
     Demócrata
Por escrito

Contralor del condado
Término de cuatro años
Vote por uno

Paul M Bertel-Lincoln
     Republicano

Donna Berke
     Demócrata

Por escrito

Procurador del distrito
Término de cuatro años
Vote por uno

Franklin Margo
     Republicano

Donald Hensley
     Demócrata

Por escrito

Director de la escuela
Región 6
Término de cuatro años
No vote por más de dos

Gerald Danson
     Republicano/Demócrata

Shlomo Archibald
     Republicano/Demócrata

Por escrito

Por escrito

	Comisionado	Comisionado	Comisionado
	Puesto 1	Puesto 2	Puesto 3
	Término de cuatro años	Término de cuatro años	Término de cuatro años
	Vote por uno	Vote por uno	Vote por uno
	Stephen Harrick *Republicano*	Steve West *Republicano*	William Malicki *Republicano*
	George Fisk *Demócrata*	Tetty Rogiers *Demócrata*	Arnold Wells *Demócrata*
	Por escrito	Por escrito	Por escrito

Referendum a nivel estatal
Referéndum de bono de mejoramientos de agua y drenaje

¿Está usted a favor de incurrir un endeudamiento por el Estado de $400,000,000 por subvenciones y prestamos a municipalidades y servicios públicos por el cotos de toda la mano de obra, materiales, maquinaria operacional necesaria y equipo, tierras, propiedad, derechos y servidumbres, planos y especificación, encuestas, calculo de costos e ingresos, estudios de previabilidad, servicios de legales y de ingeniería y todos los gastos necesarios o incidente a la adquisición, construcción, mejora, expansión, extensión, reparación o rehabilitación de todo o parte del sistema de agua potable, agua pluviales, proyectos de recurso sin punto, créditos de nutrientes y proyectos de sistemas de tratamiento de aguas negras?

Sí

No

Retención de Tony Grzanich

¿Debe Tony Grzanich ser retenido por un término adicional como magistrado de la corte suprema del Estado de Pennsylvania?

Sí

No

Retención de Debbie Marks

¿Debe Debbie Marks ser retenida por un término adicional como magistrada de la corte suprema del Estado de Pennsylvania?

Sí

No

Voting Pattern:

Ballots will be voted and cast with the following pattern. Ballots 10 and 18 will be input using the ADA audio capability. Ballots 5 and 10 in Precinct 1 and Ballot 10 in Precinct 3 will exercise the Pennsylvania Method for straight party.

The following test pattern will be input for the given precinct:

Precinct 1	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Straight Party																				
Republican	X		X		P	U	U		U		U	U	U	U		U	U	U	U	U
Democratic		X		X						P										
Green																				
Libertarian							X							X						
President/Vice President of the United States																				
James Collins Arthur Remus					X			X		X	X						X			U
Calvin Marino Keith Satterwhite						X							X	X		X		X		
John P. Defazio																				

Louis Denn																
June Perkins David Heroux						X					X					
Write-In															X	

United States Senator

Colby Lincoln				X						X		X				
Oscar Draper					X			X	X		X	X		X	X	X
Eric Sheely					X											
Write-In						X										X

Representative in Congress 5th District

Ben Baker				X	X				U		X	X		X		X	X
Barbara Barrett Hicks						X		X		X					X	
Write-In						X								X		

Governor/Lieutenant Governor

Joe Carlton Arnold Krill					X	X		X	X		X	X		X	X	X
Charles Jasen Kenneth Interlicchio					X				X		X		X		X	
Robert Marsh Theodore Kopp																
Write-In				X												

Representative in the General Assembly 83rd District

Harry Rider											X	X		X	X	X
R. J. Abbott					X		X		X						X	
Derek Carlson						X					X					
Write-In					X			X					X			

Judge of the Superior Court

Robert L. Linkey				X		X			U		X			X		
Patricia Smallmon					X		X		X	X	X	X		X	X	
Write-In																X

Judge of the Commonwealth Court

Chris Carpenter						X	X		X		X		X			
Eugene Ruff				X	X				X		X		X	X		
Write-In									X						X	X

Judge of the Court of Common Pleas

Mary L. Daniel				X				X	X	X				X	X	X	X
Jack "Duke" Brodisky				X	X			X	X		X				X	X
Joanne Schollzert					X	X				X		X	X	X	X	
Kerry Jones					X	X					X	X	X			
Write-In						X	P									
Write-In							U									

County Chief Executive

Norman Powers				X	X				X		U	X		X		
Micheal Santarcangelo					X	X		X		X			X		X	
Write-in															X	X

County Controller

Paul M Bertel-Lincoln				U			X		X	X	X			X	U	
Donna Berke					X			X		X			X		X	X
Write-In					X								X			

District Attorney

Franklin Margo				X			X			X		X		X	X	
Donald Hensley					X		X		X		X		X		X	
Write-In					X			X								X

School Director Region 6

Gerald Danson				X	X	X		X	X		X	X	X	U		X	X
Shlomo Archibald				X	X	X		X	X	X	X	U	U		X	X
Write-In		P		X	X			X	X				X		
Write-In		P												U	

Commissioner Seat 1

Stephen Harrick				X	X	X	X	X	X		X	X		X		X
George Fisk					X			X			X			X		
Write-in															X	

Statewide Referendum

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Yes			X	U	X							X		X	X	X	U			
No	X	X				X	X	X	X	X	X		X					X	X	X
Retention of Tony Grzanich																				
Yes	X	X			X	X		X		X	X	X	X		X			U	X	
No			X	X			X		X					X		X	X			X
Retention of Debbie Marks																				
Yes		X		X	X	X		X	X	X	X	X	X		X	U	U			X
No	X		X				X	X						X	X				X	

Precinct 2a	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Straight Party																				
Republican	X	X	X		U	U	U		U	P	U	U	U	U		U	U	U	U	U
Democratic				X																
Green																				
Libertarian								X							X					
President/Vice President of the United States																				
James Collins Arthur Remus					X	X	X				X	X				X	X	X	X	
Calvin Marino Keith Satterwhite									X				X	X						
John P. Defazio Louis Denn																				
June Perkins David Heroux								X							X					
Write-In																				X
United States Senator																				
Colby Lincoln					X		X				X	X		X		X	X			X
Oscar Draper						X			X				X						X	
Eric Sheely								X							X					
Write-In																X				
Representative in Congress 5th District																				
Ben Baker					X	X	X		X		X			X	U	X	X	X		
Barbara Barrett Hicks								X				X							X	X
Write-In													X							
Governor/Lieutenant Governor																				
Joe Carlton Arnold Krill					X		X	X	X			X			U	X	X		X	X
Charles Jasen Kenneth Interlicchio						X					X		X					X		
Robert Marsh Theodore Kopp																				
Write-In															X					
Representative in the General Assembly 83rd District																				
Harry Rider					X	X		X						X		X	X			X
R. J. Abbott							X				X	X	X					X	X	
Derek Carlson									X						X					
Write-In																				
Judge of the Superior Court																				
Robert L .Linkey					U		X		X		X	X	X				X	X	X	X
Patricia Smallmon					X						X				X	X	X			
Write-In								X												
Judge of the Commonwealth Court																				
Chris Carpenter					X	X	X		X		X	X		X		X		U	X	
Eugene Ruff								X					X				X			X
Write-In															X					
Judge of the Court of Common Pleas																				
Mary L. Daniel					X	X	X	X			X			X	X	X		X	X	
Jack "Duke" Brodisky					X	X			X		U		X		X	X				
Joanne Schollzert							X		X	P							X		X	X
Kerry Jones								X		P		X				X				X

47

Precinct 2a	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Write-In												X		X						
Write-In												X					X			
County Chief Executive																				
Norman Powers					X		X	X	X		U	X					X	X	X	X
Micheal Santarcangelo						X				X				X	X					
Write-in														X						
County Controller																				
Paul M Bertel-Lincoln					X	X		X			X			X	U	X		X		U
Donna Berke							X		X		X	X					X		X	
Write-In																				
District Attorney																				
Franklin Margo						X	X				X			X		X				
Donald Hensley					X			X	X			X	X				X	X	X	X
Write-In															X					
School Director Region 6																				
Gerald Danson					X	X	X	X	X		X	X	U		X	X	X		X	X
Shlomo Archibald					X	X	X	X			X	X	U		X	U		X	X	X
Write-In									X					X		X	X			
Write-In														X						
Commissioner Seat 2																				
Steve West					U		X		X		X	X			X		X	X		
Tetty Rogiers						U		X					X			X			X	X
Write-in														X						
Statewide Referendum																				
Yes					U	X	X		X		U	X					X		X	X
No	X	X	X	X			X	X	X			X	X	X	X		X			
Retention of Tony Grzanich																				
Yes	X	X	X	X		X	X	X	X	X	U		X	X	X	X		U	X	X
No					X							X					X			
Retention of Debbie Marks																				
Yes	X	X	U	X		X	X	X		X	X	X	X		X	X	X	X	X	
No					X				X				X							X

Precinct 2b	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20
Straight Party																				
Republican		X			U	U	U	U	U		U			U		U		U	U	U
Democratic	X		X	X						P										
Green												X		X		X				
Libertarian													X							
President/Vice President of the United States																				
James Collins Arthur Remus					X	X		X	X		X			X		X		X	X	X
Calvin Marino Keith Satterwhite							X									X		X		
John P. Defazio Louis Denn												X		X						
June Perkins David Heroux													X							
Write-In																				
United States Senator																				
Colby Lincoln					X	X		X	X		X	X		X		U	X		X	X
Oscar Draper							X											X		
Eric Sheely													X							
Write-In															X					
Representative in Congress 5th District																				
Ben Baker					X	X	X		X				U		X		X		X	
Barbara Barrett Hicks								X			X			X		X		X		X
Write-In													X							
Governor/Lieutenant Governor																				
Joe Carlton Arnold Krill					X		X		X					X				X	X	X

Precinct 3	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Charles Jasen Kenneth Interlicchio					X		X			X					X					
Robert Marsh Theodore Kopp											X			X		X				
Write-In												X								
Representative in the General Assembly 84th District																				
Peter Valle					X	X		X	X		X				X	X	X		X	
Neil Carey							X				X	X						X		X
Write-In												X								
Judge of the Superior Court																				
Robert L. Linkey					X		X	X		X	X	X		X	X	X	X			
Patricia Smallmon					X			X						X					X	
Write-In																			X	
Judge of the Commonwealth Court																				
Chris Carpenter					X		X	X		X		X			X	X	U			X
Eugene Ruff							X			X		X			X				X	
Write-In					X									X						
Judge of the Court of Common Pleas																				
Mary L. Daniel					X	X	X	X			X		U		X	X	X			
Jack "Duke" Brodisky					X	X			X		X		U		X	X				
Joanne Schollzert							X		X									X	X	X
Kerry Jones							X							X					X	X
Write-In											X	X	U							
Write-In													X							
County Chief Executive																				
Norman Powers					X	X		X	X		X				X	X	U		X	X
Micheal Santarcangelo							X				X		X	X						
Write-in																		X		
County Controller																				
Paul M Bertel-Lincoln					U		X	X	X		X	X			X	X		X	X	X
Donna Berke					X						X			X		X				
Write-In																				
District Attorney																				
Franklin Margo										X				X			X			
Donald Hensley					X	X	X	X	X		X	X			X	X		X	X	X
Write-In																				
School Director Region 6																				
Gerald Danson					X	X	X	X			X	X	U	X	X	X		X	X	X
Shlomo Archibald					X	X		X	X		X	X	U	X	X	X	X	X	X	X
Write-In							X		X								U			
Write-In																				
Commissioner Seat 2																				
Steve West					X	X		X	X		X	X	X		X	X	X	X	X	
Tetty Rogiers							X													X
Write-in														X						
Statewide Referendum																				
Yes	X	X			X		X		X		X	X	X							
No			X	X		X		X		X				X	X	X	X	X	X	X
Retention of Tony Grzanich																				
Yes	X	X		X	X	X		X	X	X		U	X		X	X	X		X	X
No			X				X				X			X				X		
Retention of Debbie Marks																				
Yes		X	X	X		U			X	X	X	X	X		X	X			X	X
No	X				X		X	X							X			X		

Precinct 3	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Straight Party																				
Republican	X	X	X	X	U	U		U	U		U	U	U		U		U	U		U
Democratic									P											
Green														X		X				
Libertarian							X												X	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
President/Vice President of the United States																	
James Collins / Arthur Remus				X			X	X			X	X		X		X	X
Calvin Marino / Keith Satterwhite					X						X						
John P. Defazio / Louis Denn													X		X		
June Perkins / David Heroux							X									X	
Write-In																	
United States Senator																	
Colby Lincoln					X		X				X		X	X	X	X	X
Oscar Draper				X				X			X				X		
Eric Sheely						X										X	
Write-In																	
Representative in Congress 10th District																	
Lois Koss				X		X	X	X		X	X		X		U	X	X
William Sullivan					X						X				X		
Write-In													X				
Governor/Lieutenant Governor																	
Joe Carlton / Arnold Krill				X	X		X			X		X		X		X	
Charles Jasen / Kenneth Interlicchio					X					X						X	X
Robert Marsh / Theodore Kopp													X		X		
Write-In							X				X						
Representative in the General Assembly 84rd District																	
Peter Valle				X		X	X	X		X		X		U	X		
Neil Carey					X					X		X		X		X	
Write-In																	X
Judge of the Superior Court																	
Robert L. Linkey				X	X		X			X	X	X		X	X	X	X
Patricia Smallmon					X		X					X				X	
Write-In											X						
Judge of the Commonwealth Court																	
Chris Carpenter				X			X			X		X	X		X	X	X
Eugene Ruff					X	X		X					X		X		
Write-In											X						
Judge of the Court of Common Pleas																	
Mary L. Daniel				X							U	X	X		X	X	X
Jack "Duke" Brodisky				X	X	X	X				X	X	U	X	X	X	X
Joanne Schollzert					X	X		X		X	X		U			X	
Kerry Jones							X	X		X	X					X	
Write-In								P			X	X					
Write-In								U									
County Chief Executive																	
Norman Powers					X		X	X		X		X		X	X		X
Micheal Santarcangelo				X		X				X		X			X	X	
Write-in																	
County Controller																	
Paul M Bertel-Lincoln				U		U	X	X		X				X	X	X	X
Donna Berke					X					X		X			X		
Write-In													X				
District Attorney																	
Franklin Margo						X				X		U			X	X	X
Donald Hensley				X	X		X	X			X			X	X		
Write-In													X				
School Director Region 6																	
Gerald Danson	X	X	X	X	X		X		X	X	U	X		X	U	X	X
Shlomo Archibald	X	X	X	X	X		X	X	X	X	U	X			X	X	X
Write-In											X				X		
Write-In																	

Commissioner Seat 3																			
William Malicki						X	X	X			X	X		X		X	U	X	
Arnold Wells			X						X				X		X				X
Write-in										X									

Statewide Referendum																			
Yes	X				X		X		U		X			X			U	X	
No		X	X	X		X	X		X		X		X	X		X	X	X	

Retention of Tony Grzanich																			
Yes	X	X	X		X	X		X		X	X	X		X	X		X		X
No				X			X		X				X			X		X	

Retention of Debbie Marks																			
Yes		X		X		X		X		X	X	X	X					X	X
No	X		X		X		X		X					X	X	X	X		

Test Results:

Precinct 1:

Straight Party

Republican	3
Democratic	3
Green	0
Libertarian	2
Undervote	12

President/Vice President of the United States

James Collins	
Arthur Remus	8
Calvin Marino	
Keith Satterwhite	8
John P .Defazio	
Louis Denn	0
June Perkins	
David Heroux	2
Write-In	1
Undervote	1

United States Senator

Colby Lincoln	6
Oscar Draper	11
Eric Sheely	1
Write-In	2
Undervote	0

Representative in Congress District 5

Ben Baker	10
Barbara Barrett-Hicks	7
Write-In	2
Undervote	1

Governor/Lieutenant Governor

Joe Carlton	
Arnold Krill	12
Charles Jasen	
Kenneth Interlicchio	7
Robert Marsh	
Theodore Kopp	0
Write-In	1
Undervote	0

Representative in the General Assembly District 83

Harry Rider	8
R.J. Abbott	7
Derek Carlson	2
Write-In	3
Undervote	0

Judge of Superior Court

Robert L. Linkey	7
Patricia Smallmon	11
Write-In	1
Undervote	1

Judge of the Commonwealth Court

Chris Carpenter	8
Eugene Ruff	9
Write-In	3
Undervote	0

Judge of the Court of Common Pleas

Mary L. Daniel	11
Jack "Duke" Brodisky	10
Joanne Scholzert	9
Kerry jones	7
Write-In	2
Undervote	1

County Chief Executive

Norman Powers	8
Micheal Santarcangelo	9
Write-In	2
Undervote	1

County Controller

Paul M. Bertel-Lincoln	8
Donna Berke	8
Write-In	2
Undervote	2

District Attorney

Franklin Margo	9
Donald Hensley	8
Write-In	3
Undervote	0

School Director Region 6

Gerald Danson	15
Shlomo Archibald	14
Write-In	7
Undervote	4

Commissioner Seat 1

Stephen Harrick	13
George Fisk	6
Write-In	1
Undervote	0

Statewide Referendum

Yes	6
No	12
Undervote	2

Retention of Tony Grzanich

Yes	11
No	8
Undervote	1

Retention of Debbie Marks

Yes	11
No	7
Undervote	2

Precinct 2a:
Straight Party

Republican	4
Democratic	1

Green	0
Libertarian	2
Undervote	13

President/Vice President of the United States

James Collins	
Arthur Remus	13
Calvin Marino	
Keith Satterwhite	4
John P. Defazio	
Louis Denn	0
June Perkins	
David Heroux	2
Write-In	1
Undervote	0

United States Senator

Colby Lincoln	12
Oscar Draper	5
Eric Sheely	2
Write-In	1
Undervote	0

Representative in Congress District 5

Ben Baker	13
Barbara Barrett-Hicks	5
Write-In	1
Undervote	1

Governor/Lieutenant Governor

Joe Carlton	
Arnold Krill	13
Charles Jasen	
Kenneth Interlicchio	5
Robert Marsh	
Theodore Kopp	0
Write-In	1
Undervote	1

Representative in the General Assembly District 83

Harry Rider	11
R.J. Abbott	7
Derek Carlson	2
Write-In	0
Undervote	0

Judge of Superior Court

Robert L .Linkey	12
Patricia Smallmon	6
Write-In	1
Undervote	1

Judge of the Commonwealth Court

Chris Carpenter	13
Eugene Ruff	5
Write-In	1
Undervote	1

Judge of the Court of Common Pleas

Mary L. Daniel	13
Jack "Duke" Brodisky	9
Joanne Scholzert	7
Kerry jones	6
Write-In	4
Undervote	1

County Chief Executive

Norman Powers	13
Micheal Santarcangelo	5
Write-In	1

Undervote	1

County Controller

Paul M. Bertel-Lincoln	11
Donna Berke	7
Write-In	0
Undervote	2

District Attorney

Franklin Margo	9
Donald Hensley	10
Write-In	1
Undervote	0

School Director Region 6

Gerald Danson	17
Shlomo Archibald	15
Write-In	5
Undervote	3

Commissioner Seat 2

Steve West	11
Tetty Rogiers	6
Write-In	1
Undervote	2

Statewide Referendum

Yes	6
No	12
Undervote	2

Retention of Tony Grzanich

Yes	15
No	3
Undervote	2

Retention of Debbie Marks

Yes	15
No	4
Undervote	1

Precinct 2b:
Straight Party

Republican	1
Democratic	4
Green	3
Libertarian	1
Undervote	11

President/Vice President of the United States

James Collins	
Arthur Remus	10
Calvin Marino	
Keith Satterwhite	7
John P. Defazio	
Louis Denn	2
June Perkins	
David Heroux	1
Write-In	0
Undervote	0

United States Senator

Colby Lincoln	11
Oscar Draper	6
Eric Sheely	1
Write-In	1
Undervote	1

Representative in Congress District 5

Ben Baker	8
Barbara Barrett-Hicks	10
Write-In	1
Undervote	1

Governor/Lieutenant Governor

Joe Carlton	
Arnold Krill	8
Charles Jasen	
Kenneth Interlicchio	8
Robert Marsh	
Theodore Kopp	3
Write-In	1
Undervote	0

Representative in the General Assembly District 84

Peter Valle	10
Neil Carey	9
Write-In	1
Undervote	0

Judge of Superior Court

Robert L. Linkey	11
Patricia Smallmon	8
Write-In	1
Undervote	0

Judge of the Commonwealth Court

Chris Carpenter	9
Eugene Ruff	8
Write-In	2
Undervote	1

Judge of the Court of Common Pleas

Mary L. Daniel	9
Jack "Duke" Brodisky	7
Joanne Scholzert	9
Kerry jones	8
Write-In	4
Undervote	3

County Chief Executive

Norman Powers	10
Micheal Santarcangelo	8
Write-In	1
Undervote	1

County Controller

Paul M. Bertel-Lincoln	11
Donna Berke	8
Write-In	0
Undervote	1

District Attorney

Franklin Margo	4
Donald Hensley	16
Write-In	0
Undervote	0

School Director Region 6

Gerald Danson	17
Shlomo Archibald	18
Write-In	2
Undervote	3

Commissioner Seat 2

Steve West	13
Tetty Rogiers	6
Write-In	1
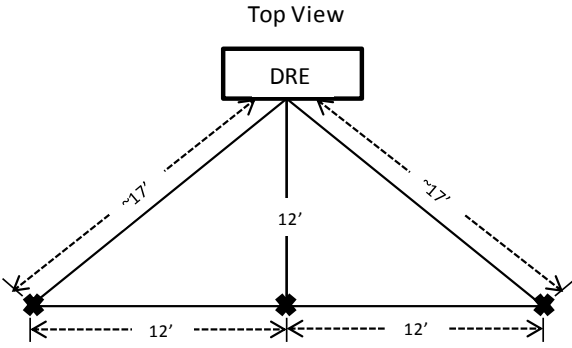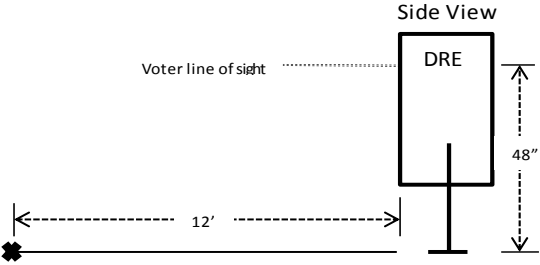
Undervote	0

Statewide Referendum

Yes	9
No	11
Undervote	0

Retention of Tony Grzanich

Yes	14
No	5
Undervote	1

Retention of Debbie Marks

Yes	13
No	6
Undervote	1

Precinct 3:
Straight Party

Republican	4
Democratic	1
Green	2
Libertarian	2
Undervote	11

President/Vice President of the United States

James Collins	
Arthur Remus	13
Calvin Marino	
Keith Satterwhite	3
John P. Defazio	
Louis Denn	2
June Perkins	
David Heroux	2
Write-In	0
Undervote	0

United States Senator

Colby Lincoln	13
Oscar Draper	5
Eric Sheely	2
Write-In	0
Undervote	0

Representative in Congress District 10

Lois Koss	14
William Sullivan	4
Write-In	1
Undervote	1

Governor/Lieutenant Governor

Joe Carlton	
Arnold Krill	11
Charles Jasen	
Kenneth Interlicchio	5
Robert Marsh	
Theodore Kopp	2
Write-In	2
Undervote	0

Representative in the General Assembly District 84

Peter Valle	12
Neil Carey	6
Write-In	1
Undervote	1

Judge of Superior Court

Robert L. Linkey	14
Patricia Smallmon	5

| Write-In | 1 |
| Undervote | 0 |

Judge of the Commonwealth Court

Chris Carpenter	13
Eugene Ruff	6
Write-In	1
Undervote	0

Judge of the Court of Common Pleas

Mary L. Daniel	9
Jack "Duke" Brodisky	14
Joanne Scholzert	6
Kerry jones	4
Write-In	3
Undervote	4

County Chief Executive

Norman Powers	13
Micheal Santarcangelo	7
Write-In	0
Undervote	0

County Controller

Paul M. Bertel-Lincoln	12
Donna Berke	5
Write-In	1
Undervote	2

District Attorney

Franklin Margo	9
Donald Hensley	9
Write-In	1
Undervote	1

School Director Region 6

Gerald Danson	17
Shlomo Archibald	18
Write-In	2
Undervote	3

Commissioner Seat 3

William Malicki	12
Arnold Wells	6
Write-In	1
Undervote	1

Statewide Referendum

Yes	6
No	12
Undervote	2

Retention of Tony Grzanich

Yes	14
No	6
Undervote	0

Retention of Debbie Marks

Yes	10
No	10
Undervote	0

Cumulative Totals:

Straight Party

Republican	12
Democratic	9
Green	5
Libertarian	7

Undervote   47

President/Vice President of the United States
James Collins
Arthur Remus   44
Calvin Marino
Keith Satterwhite   22
John P. Defazio
Louis Denn   4
June Perkins
David Heroux   7
Write-In   2
Undervote   1

United States Senator
Colby Lincoln   42
Oscar Draper   27
Eric Sheely   6
Write-In   4
Undervote   1

Representative in Congress District 5
Ben Baker   31
Barbara Barrett-Hicks   22
Write-In   4
Undervote   3

Representative in Congress District 10
Lois Koss   14
William Sullivan   4
Write-In   1
Undervote   1

Governor/Lieutenant Governor
Joe Carlton
Arnold Krill   44
Charles Jasen
Kenneth Interlicchio   25
Robert Marsh
Theodore Kopp   5
Write-In   5
Undervote   1

Representative in the General Assembly District 83
Harry Rider   19
R.J. Abbott   14
Derek Carlson   4
Write-In   3
Undervote   0

Representative in the General Assembly District 84
Peter Valle   22
Neil Carey   15
Write-In   2
Undervote   1

Judge of Superior Court
Robert L. Linkey   44
Patricia Smallmon   30
Write-In   4
Undervote   2
Judge of the Commonwealth Court
Chris Carpenter   43
Eugene Ruff   28
Write-In   7
Undervote   2

Judge of the Court of Common Pleas
Mary L.Daniel   42
Jack "Duke" Brodisky   40
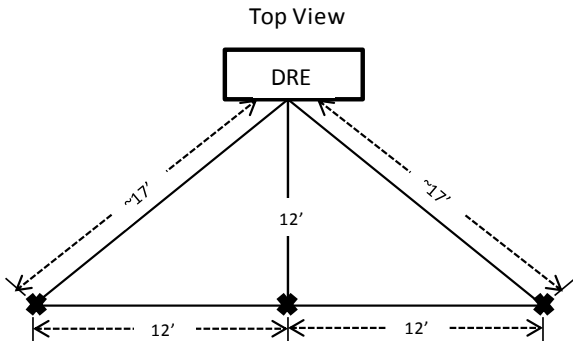
Joanne Scholzert	31
Kerry jones	25
Write-In	13
Undervote	9

County Chief Executive

Norman Powers	44
Micheal Santarcangelo	29
Write-In	4
Undervote	3

County Controller

Paul M. Bertel-Lincoln	42
Donna Berke	28
Write-In	3
Undervote	7

District Attorney

Franklin Margo	31
Donald Hensley	43
Write-In	5
Undervote	1

School Director Region 6

Gerald Danson	66
Shlomo Archibald	65
Write-In	16
Undervote	13

Commissioner Seat 1

Stephen Harrick	13
George Fisk	6
Write-In	1
Undervote	0

Commissioner Seat 2

Steve West	24
Tetty Rogiers	12
Write-In	2
Undervote	2

Commissioner Seat 3

William Malicki	12
Arnold Wells	6
Write-In	1
Undervote	1

Statewide Referendum

Yes	27
No	47
Undervote	6

Retention of Tony Grzanich

Yes	54
No	22
Undervote	4

Retention of Debbie Marks

Yes	49
No	27
Undervote	4

APPENDIX B - TEST CASES

Test Case Identifier: 01 – 25 P.S. § 3031.7(1) Voter Secrecy (ADA Voter)	
PA ST 25 P.S. § 3031.7 Requirement:	*(1) Provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting.*
Test Objective: To determine if a voters selections input using an ADA device can be observed during the act of voting, or once a vote has been cast.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and or the device manufacturer for an ADA voter. A marker is placed 12 feet (measured from the lowest point of the devices voting surface to the floor) directly behind the center of the voting device. From that marker, another marker is placed 12 feet to the right side and the left side. The side distance observation points should be approximately 17 feet. See Step 1000 for a layout diagram. The ADA voter will be positioned in the center of the tabulation device with a site line of 4 feet. See Step 1001.
Test Equipment:	Standard 15+ foot tape measure
Special Procedural Requirements:	Two roles are required for this test case. An ADA Voter role and an observer role. The ADA voter will be positioned with a line of site at 48 inches. The observation must be made by an individual between the heights 68 inches and 71 inches.
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Layout Diagram: Verify all measurements. *Expected:* Center measurement is 12 feet and the side distance observation points are approximately 17 feet. *Actual:* Measured 12 feet.
1001	ADA Voter Position:

	Verify all measurements. *Expected:* Center measurement is 12 feet and the side distance observation points are approximately 17 feet with a voter line of sight at 48 inches. *Actual:* Measured line of site at 48 inches.
1010	Observer Role - Activate a ballot for ADA voting. *Expected:* Ballot is presented and vote selections can be input. *Actual:* Ballot is presented and vote selections can be input.
1020	ADA Voter Role - Select the candidate corresponding to the upper most left hand position of the ballot presentation. Observer Role - Attempt to ascertain visually, the voters input from the right most position, the center position, and the left most position ADA Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the upper most left hand position. All other selections are to be under voted. *Expected:* The Observer cannot determine the Voter's input selections. *Actual:* Observer reported no observations.
1030	ADA Voter Role - Select the candidate corresponding to the upper most right hand position of the ballot presentation. Observer Role - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position ADA Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the upper most right hand position. All other selections are to be under voted. *Expected:* The Observer cannot determine the Voter's input selections. *Actual:* Observer reported no observations.
1040	ADA Voter Role - Select the candidate corresponding to the lower most left hand position of the ballot presentation. Observer Role - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position ADA Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should

| | be the lower most left hand position. All other selections are to be under voted.

Expected: The Observer cannot determine the Voter's input selections.

Actual: Observer reported no observations. |
|---|---|
| **1050** | ADA Voter Role - Select the candidate corresponding to the lower most right hand position of the ballot presentation.

Observer Role - - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position

ADA Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the lower most right hand position. All other selections are to be under voted.

Expected: The Observer cannot determine the Voter's input selections.

Actual: Observer reported no observations. |

Criteria for Evaluation of the Test Results: The observer must not be able to determine the voter's selection from any observation position or any voter selection surface position.

Test Case Identifier: 01 – 25 P.S. § 3031.7(1) Voter Secrecy (Regular Voter)	
PA ST 25 P.S. § 3031.7 Requirement:	*(1) Provides for voting in absolute secrecy and prevents any person from seeing or knowing for whom any voter, except one who has received or is receiving assistance as prescribed by law, has voted or is voting.*
Test Objective: To determine if a voters selections can be observed during the act of voting, or once a vote has been cast.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and or the device manufacturer. A marker is placed 12 feet (measured from the lowest point of the devices voting surface to the floor) directly behind the center of the voting device. From that marker, another marker is placed 12 feet to the right side and the left side. The side distance observation points should be approximately 17 feet. See step 1000 for a layout diagram.
Test Equipment:	Standard 15+ foot tape measure
Special Procedural Requirements:	Two roles are required for this test case. A Voter role and an observer role. The observation must be made by an individual between the heights of 5 feet 8 inches and 5 feet 11 inches.
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Layout Diagram: Verify all measurements. *Expected:* Center measurement is 12 feet and the side distance observation points are approximately 17 feet. *Actual:* Measured 12 feet.
1010	Observer Role - Activate a ballot for regular voting. *Expected:* Ballot is presented and vote selections can be input. *Actual:* The ballot is presented and vote selections can be input.
1020	Voter Role - Select the candidate in the upper most left hand position of the ballot presentation. Observer Role - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the upper most left hand position. All other selections are to be under voted.

	Expected: The Observer cannot determine the Voter's input selections.
	Actual: Observer reported no observations.
1030	Voter Role - Select the candidate in the upper most right hand position of the ballot presentation.
	Observer Role - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position
	Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the upper most right hand position. All other selections are to be under voted.
	Expected: The Observer cannot determine the Voter's input selections.
	Actual: Observer reported no observations.
1040	Voter Role - Select the candidate in the lower most left hand position of the ballot presentation.
	Observer Role - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position
	Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the lower most left hand position. All other selections are to be under voted.
	Expected: The Observer cannot determine the Voter's input selections.
	Actual: Observer reported no observations.
1050	Voter Role - Select the candidate in the lower most right hand position of the ballot presentation.
	Observer Role - Attempt to ascertain, both audibly and visually, the voters input from the right most position, the center position, and the left most position
	Voters Role - Use the supplied method to advance the ballot to a cast vote state. The only selection should be the lower most right hand position. All other selections are to be under voted.
	Expected: The Observer cannot determine the Voter's input selections.
	Actual: Observer reported no observations.
Criteria for Evaluation of the Test Results: The observer must not be able to determine the voter's selection from any observation position or any voter selection surface position.	

Test Case Identifier: 02 – 25 P.S. § 3031.7(2) Selection of Candidates and Questions by Voter (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirement:	*(2) Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.*
Test Objective: To determine if a voter has the ability to select candidates and questions.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Activate a ballot for voting *Expected:* The ballot is presented and vote selections can be input. *Actual:* The Ballot was presented.
1010	Select the first candidate in the first partisan contest excluding a straight party contest. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the first candidate in the first partisan contest excluding a straight party contest. *Actual:* Selection was made for James Collins.
1020	Use the designated method to advance the ballot to the first "N of M" contest. Select the first "N" candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected). *Expected:* The precinct tabulation device advances to the first "N of M" contest. Once selected the precinct tabulation device displays or provides an indication of a vote for the first "N" candidates in the first "N of M" contest. *Actual:* Selections were made for Mary L. Daniel and Jack "Duke" Brodisky.
1030	Use the designated method to advance the ballot to the first "Question" contest. Select the "Yes" option in the contest. *Expected:* The precinct tabulation device advances to the first "Question" contest. Once selected the precinct tabulation device displays or provides an indication of a vote selection for the "Yes" option in the first "Question" contest. *Actual:* Selection was made of "Yes".
1040	Use the designated method to advance the ballot to the second "Question" contest. Select the "No" option in the contest. *Expected:* The precinct tabulation device advances to the second "Question" contest. Once selected the precinct tabulation device displays or provides an indication of a vote selection for the "No" option in the second "Question" contest.

	Actual: Selection was made for "No".
1050	Use the designated method to advance the "Ballot Review". Observe the "Ballot Review" to see if the above selections are displayed. Use the designated method to cast the voted selections. *Expected:* The precinct tabulation device advances to the "Ballot Review" screen. After review and ballot is cast successfully. *Actual:* Ballot was cast successfully for all selections.
1060	Repeat steps 1000- 1050 from above using an ADA input device. *Expected:* Repeat 1000 __X__ Repeat 1010 __X___ Repeat 1020 __X___ Repeat 1030 __X___ Repeat 1040 __X___ Repeat 1050 __X___ *Actual:* All steps were successfully repeated was audio session.
1070	Close the polls and print the closed polls report tape. *Expected:* The polls closed and a report is printed. *Actual:* The polls closed and report printed.
1080	Review the closed polls report to ensure all selections input above are recorded and reported correctly. *Expected:* The closed polls report presents the accumulated totals for the selections input above. *Actual:* All selections were accurately reported on the results report.

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester.

Test Case Identifier: 03 – 25 P.S. § 3031.7(3) Straight Party and Pennsylvania Method	
PA ST 25 P.S. § 3031.7 Requirements:	*(3) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and, by one mark or act, to vote for all the candidates of one political party for presidential electors and, by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors, except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.*
Test Objective: To determine if the voting system supports straight party voting and the Pennsylvania Method.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1010	Select the option for the first party selection of the straight party. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the first party selection in the straight party contest. *Actual:* Republican was selected.
1020	Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for the indication of a voter selection for all partisan candidates associated with the first straight party selection. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection. *Actual:* All Republican candidates were selected.
1030	Use the designated method to advance through the remainder of the ballots advancing to the ballot review screen. Observe the selection in the ballot review observing only the partisan contests associated with the first straight party selections are present. Use the designated method to cast the voted ballot. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for only the partisan contests associated with the first straight party selection. After review the ballot is cast successfully.

	Actual: All republican candidates were selected and under votes for non-partisan contests.
1040	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1050	Select the option for the second party selection of the straight party. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the second party in the straight party contest. *Actual:* Democrat was selected.
1060	Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for an indication of a voter selection for all partisan candidates associated with the second straight party selection. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the second straight party selection. *Actual:* Democratic candidates were selected.
1070	Use the designated method to retreat through the ballot selections to the first "N of M" contest. Select the first partisan candidate that is not the party associated with the second straight party selection. Leave the remainder of the selections under voted. *Expected:* "N" candidates for the party of the second straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated. *Actual:* Mary L. Daniel was selected and all other candidates were deselected.
1080	Use the designated method to retreat through the ballot to the "Straight Party" contest. Observe the selection for the second straight party selection. *Expected:* The second straight party selections should be displayed or an indication given as selected. *Actual:* Democrat was selected.
1090	Use the designated method to advance through the remainder of the ballot advancing to the ballot review. Review the selections in the ballot review to verify that the partisan contests associated with the second straight party selections are present with the exception of the first "N of M" contest. Use the designated method to cast the voted ballot. *Expected:* The precinct tabulation device displays or indicates the selection for the partisan contests associated

	with the second straight party selection for all contests except the first "N of M" contest. The first "N of M" contest displays or indicates the selection of the first candidate that is not associated with the second straight party selection. After review the ballot is cast successfully. *Actual:* The ballot review screen displayed the correct selections.
1100	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was displayed.
1110	Select the option for the first party selection of the straight party. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the first party in the straight party contest. *Actual:* Republican was selected.
1120	Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for an indication of a voter selection for all partisan candidates associated with the first straight party selection. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection. *Actual:* All Republican candidates were selected.
1130	Use the designated method to retreat through the ballot selections to the first "N of M" contest. Select the first partisan candidate that is associated with the first straight party selection. Leave this contest and the remainder of the selections under voted. *Expected:* "N" candidates for the party of the first straight party selections should display or provide an indication of the non-selection. The selected candidate should be the only selection displayed or indicated. *Actual:* Mary L. Daniel was selected and all other candidates were deselected.
1140	Use the designated method to advance through the remainder of the ballot advancing to the ballot review. Review the selections in the ballot review to verify that the partisan contests associated with the first straight party selections are present with the exception of the first "N of M" contest. Use the designated method to cast the voted ballot. *Expected:* The precinct tabulation device displays or indicates the selection for the partisan contests associated with the first straight party selection for all contests except the first "N of M" contest. The first "N of M" contest displays or indicates the selection of the second candidate that is associated with the first straight party selection and an under vote. After review the ballot is cast successfully. *Actual:* All selections were indicated.
1150	Repeat steps 1000- 1150 from above using an ADA input device.

	Expected: Repeat 1000 __X___
	          Repeat 1010 __X___
	          Repeat 1020 __X___
	          Repeat 1030 __X___
	          Repeat 1040 __X___
	          Repeat 1050 __X___
	          Repeat 1060 __X___
	          Repeat 1070 __X___
	          Repeat 1080 __X___
	          Repeat 1090 __X___
	          Repeat 1100 __X___
	          Repeat 1110 __X___
	          Repeat 1120 __X___
	          Repeat 1130 __X___
	          Repeat 1140 __X___
	          Repeat 1150 __X___
	
	Actual: All steps were successfully repeated using the audio session.

1160	Close the polls and print the closed polls report tape. Expected: The polls closed and a report is printed. Actual: The polls were closed and results report printed.
1170	Review the closed polls report to ensure all selections input above are recorded and reported correctly. Expected: The closed polls report presents the accumulated totals for the selections input above. Actual: All selections were accurately reported on the results report.
Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate of the same party or of a different party of the straight party selection de-selects all candidates for the straight party vote.	

Test Case Identifier: 04 – 25 P.S. § 3031.7(4) Straight Party and Write-In	
PA ST 25 P.S. § 3031.7 Requirements:	*(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.*
Test Objective: To determine if the voting system supports straight party voting and write-in.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Activate a ballot for voting *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1010	Select the option for the first party selection of the straight party. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the first party selection in the straight party contest. *Actual:* Republican was selected.
1020	Use the designated method to advance through the ballot to each partisan contest. Observe all partisan contests for a display or indication of a voter selection for all partisan candidates associated with the first straight party selection. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for all the partisan candidates in each contest associated with the first straight party selection. *Actual:* All Republican candidates were selected.
1030	Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the partisan contests associated with the first straight party selections are present. Use the designated method to cast the voted ballot. *Expected:* The precinct tabulation device displays or provides an indication of the selection for only the partisan contests associated with the first straight party selection. After review the ballot is cast successfully. *Actual:* The ballot review screen displayed the selections for all republican candidates and no selection for non-partisan contests.
1040	Activate a ballot for regular voting *Expected:* The ballot is presented and vote selections can be input.

	Actual: The ballot was presented.
1050	Select the option for the first party selection of the straight party. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection associated with the first party selection in the straight party contest. *Actual:* Republican was selected.
1060	Use the designated method to advance to the first partisan contest. Select the write-in option. Input John Doe as the write-in name. *Expected:* The precinct tabulation advances to the first partisan contest and allows the input of the "Write-In" candidate John Doe. *Actual:* John Doe was input as a write-in candidate for President of the United States.
1070	Use the designated method to advance to the ballot review screen. Observe the selections associated with the first straight party selection with the exception of the first partisan contest. Use the designated method to cast the voted ballot. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection associated with the first party selection in the straight party contest with the exception of the first partisan contest which should indicate the write-in input of John Doe. *Actual:* Republican candidates in all partisan races were selected with the exception of John Doe as a write-in for President of the United States
1080	Activate a ballot for regular voting *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1090	Select the option for the first party selection of the straight party. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection associated with the first party selection in the straight party contest. *Actual:* Republican was selected.
1100	Use the designated method to advance to the first "Question" contest. Select the "Yes" option. Attempt to over vote by selecting the "No" option. Observe the action of attempting to select the second option. *Expected:* The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication. *.Actual:* The device toggled so test steps were executed to exercise overvote capture in the N of M race. Both were successful.

1110	Repeat steps 1000- 1100 from above using an ADA input device.
	Expected: Repeat 1000 __X___
	Repeat 1010 __X___
	Repeat 1020 __X___
	Repeat 1030 __X___
	Repeat 1040 __X___
	Repeat 1050 __X___
	Repeat 1060 __X___
	Repeat 1070 __X___
	Repeat 1080 __X___
	Repeat 1090 __X___
	Repeat 1100 __X___
	Actual: All steps were repeated using an audio session.
1120	Close the polls and print the closed polls report tape.
	Expected: The polls closed and a report is printed.
	Actual: The polls were closed and the results report was printed.
1130	Review the closed polls report to ensure all selections input above are recorded and reported correctly.
	Expected: The closed polls report presents the accumulated totals for the selections input above.
	Actual: All selections were accurately reported on the results report.

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a write-in candidate functions with a straight party selection.

Test Case Identifier: 05 – 25 P.S. § 3031.7(5) Selection of Candidate and Write-in	
PA ST 25 P.S. § 3031.7 Requirements:	
Test Objective: To determine if the voting system supports the selection of a candidate and a write-in candidate.	**Test Configuration:** *(5) Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.*
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1010	Select the option for the first candidate in the first partisan contest. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the first candidate selection in the first partisan contest. *Actual:* James Collins and Arthur Remus were selected for President of the United States.
1020	Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the first candidate in the first partisan contest is selected. Use the designated method to cast the voted ballot. *Expected:* The precinct tabulation device displays or provides an indication of the selection for only the first candidate selection in first partisan contests. After review the ballot is cast successfully. *Actual:* James Collins and Arthur Remus were the only selection displayed.
1030	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1040	Select the option for a write-in candidate in the first partisan contest. Use the designed method to input "John Doe". *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for a write-in candidate. *Actual:* John Doe was input for President of the United States.

| 1050 | Use the designated method to advance through the remainder of the ballot advancing to the ballot review screen. Observe the selection in the ballot review observing only the write-in candidate in the first partisan contest is selected. Use the designated method to cast the voted ballot.

Expected: The precinct tabulation device displays or provides an indication of the selection for only the write-in candidate "John Doe" in first partisan contests. After review the ballot is cast successfully.

Actual: John Doe was the only selection displayed. |
|---|---|
| 1060 | Activate a ballot for voting.

Expected: The ballot is presented and vote selections can be input.

Actual: The ballot was presented. |
| 1070 | Select the option for a write-in candidate in the first "N of M" contest. Use the designed method to input "John Doe" for all selections. Observe any activity to preclude the same input.

Expected: The precinct tabulation device displays or provides an indication of a duplicate vote selection for a write-in candidate. If no indication is provided then trace the ability to adjudicate the vote through the entire system. It may require the EMS component to verify.

Actual: John Doe and John Doe were input. It was traced through the EMS to adjudicate the duplicate inputs successfully. |
| 1080 | Repeat steps 1000- 1070 from above using an ADA input device.

Expected: Repeat 1000 __X___
Repeat 1010 __X___
Repeat 1020 __X___
Repeat 1030 __X___
Repeat 1040 __X___
Repeat 1050 __X___
Repeat 1060 __X___
Repeat 1070 __X___

Actual: All steps were repeated using an audio session. |
| 1090 | Close the polls and print the closed polls report tape.

Expected: The polls closed and a report is printed.

Actual: The polls were closed and the results report printed. |
| 1100 | Review the closed polls report to ensure all selections input above are recorded and reported correctly.

Expected: The closed polls report presents the accumulated totals for the selections input above.

Actual: All selections were accurately reported on the results report. |

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The functionality of selecting a candidate and a write-in candidate functions.

Test Case Identifier: 07– 25 P.S. § 3031.7(7) Attempt to Over Vote Contests and Questions (Regular/ADA)	
PA ST 25 P.S. § 3031.7 Requirements:	*(7) If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.*
Test Objective: To determine if the voting device allows over voting on contests and questions	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1010	Select the first candidate in the first partisan "1 of 1" contest excluding a straight party contest. *Expected:* The precinct tabulation device displays or provides an indication of a vote selection for the first candidate in the first partisan "1 of 1" contest excluding a straight party contest. *Actual:* James Collins and Arthur Remus were selected for President of the United States.
1020	Attempt to select the second candidate in the first partisan "1 of 1" contest ensure the contest is the same contest as voted in step 1010. Observe the action of attempting to place a second vote. *Expected:* The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication. *Actual:* Calvin Marino and Keith Satterwhite were selected. The device toggled between the selections.
1030	Attempt to select the write-in option. Observe the action of attempting to input a write-in. *Expected:* The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication. *Actual:* The device toggled.
1040	Use the designated method to advance the ballot to the first "N of M" contest. Select the first "N" candidates in the contest. (e.g. in a Vote for Two contest the first two candidates would be selected). *Expected:* The precinct tabulation device advances to the first "N of M" contest. Once selected, the precinct tabulation device displays or provides an indication of a vote for the first "N" candidates in the first "N of M" contest. *Actual:* Mary L. Daniel and Jack "Duke" Brodisky were selected.

| 1050 | Attempt to select the "N +1" candidate in the first "N of M" contest ensure the contest is the same contest as voted in step 1030. Observe the action of attempting to place an over vote.

Expected: The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication.

Actual: The device displayed an indication of an attempt to overvote. |
|---|---|
| 1060 | Use the designated method to advance the ballot to the first "Question" contest. Select the "Yes" option in the contest.

Expected: The precinct tabulation device advances to the first "Question" contest. Once selected, the precinct tabulation device displays or provides an indication of a vote for the "Yes" option in the first "Question" contest.

Actual: "Yes" was selected. |
| 1070 | Attempt to select the "No" option in the first "Question" contest ensure the contest is the same contest as voted in step 1050. Observe the action of attempting to place an over vote.

Expected: The precinct tabulation device displays or provides an indication of an attempt to over vote. The precinct tabulation device might disallow the selection and not display any communication.

Actual: The device toggled between selections. |
| 1080 | Use the designated method to advance the "Ballot Review". Observe the "Ballot Review" to see if the above selections are indicated. Use the designated method to cast the voted selections.

Expected: The precinct tabulation device advances to the "Ballot Review" screen. After review and ballot is cast successfully.

Actual: The selections were displayed correctly. |
| 1090 | Repeat steps 1000- 1080 from above using an ADA input device.

Expected: Repeat 1000 __X___
       Repeat 1010 __X___
       Repeat 1020 __X___
       Repeat 1030 __X___
       Repeat 1040 __X___
       Repeat 1050 __X___
       Repeat 1060 __X___
       Repeat 1070 __X___
       Repeat 1080 __X___

Actual: All steps were repeated using an audio session. |
| 1100 | Close the polls and print the closed polls report tape.

Expected: The polls closed and a report is printed. |

	Actual: The polls were closed and the results report printed.
1110	Review the closed polls report to ensure all selections input above are recorded and reported correctly.
	Expected: The closed polls report presents the accumulated totals for the selections input above.
	Actual: All selections were accurately reported on the results report.

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The attempts to select more persons than the vote for and any question more than once are unsuccessful.

Test Case Identifier: 10 – 25 P.S. § 3031.7(10) Ballot Review and Change (Regular ADA)	
PA ST 25 P.S. § 3031.7 Requirements:	(*10*) *If it is of a type that registers the vote electronically, the voting system shall permit each voter to change his vote for any candidate or upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed.* *If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes, the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.*
Test Objective: To determine if the voting device allows the voter to review the selections and change a vote selection before cast of the ballot.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer.
Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	An election is loaded on the device and the polls are open, ready for voting.

Step	Description
1000	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input. *Actual:* The ballot was presented.
1010	Select the first candidate in the first all "1 of 1" contest excluding a straight party contest, the first "N" candidates in all "N of M" contests, and select the "Yes" option in all "Question" contests. *Expected:* The precinct tabulation device allow for the navigation and the voting inputs to be selected as described above. *Actual:* James Collins and Arthur Remus were selected for President of the United States. Mary L. Daniel and Jack "Duke' Brodisky were selected for Court of Common Pleas and "Yes" selected in all question contests.
1020	Use the designated method to advance the "Ballot Review". Observe the "Ballot Review" to see if the above selections are indicated. *Expected:* The precinct tabulation device advances to the "Ballot Review" screen. The vote selections can be verified. *Actual:* The ballot review screen displayed the selection correctly.
1030	Use the designated method to retract to the first partisan "1 of 1" contest excluding the straight party contest. *Expected:* The precinct tabulation device navigates to the first partisan "1 of 1" contest excluding the straight party contest. *Actual:* Navigated to President of the United States.

| 1040 | Deselect the first candidate selection and select the second candidate.

Expected: The precinct tabulation device indicates the de-selection of the first candidate and the select of the second candidate.

Actual: Calvin Marino and Keith Satterwhite were selected. |
|---|---|
| 1050 | Use the designated method to advance to the first "Question" contest. De-select the "Yes" option and select the "No" option.

Expected: The precinct tabulation device navigates to the first "Question" contest and provides an indication of the de-selection of the "Yes" option and a selection of the "No" option.

Actual: " No" was selected in the Statewide Referendum contest. |
| 1060 | Use the designated method to advance the "Ballot Review". Observe the "Ballot Review" to see if the above selections are indicated. Use the designated method to cast the voted selections.

pected: The precinct tabulation device advances to the "Ballot Review" screen. After review and ballot is cast successfully.

Actual: The selections were displayed correctly. |
| 1070 | Repeat steps 1000- 1060 from above using an ADA input device.

Expected: Repeat 1000 __X___
           Repeat 1010 __X___
           Repeat 1020 __X___
           Repeat 1030 __X___
           Repeat 1040 __X___
           Repeat 1050 __X___
           Repeat 1060 __X___

Actual: All steps were repeated using an audio session. |
| 1080 | Close the polls and print the closed polls report tape.

Expected: The polls closed and a report is printed.

Actual: The polls were closed and the results report printed. |
| 1090 | Review the closed polls report to ensure all selections input above are recorded and reported correctly.

Expected: The closed polls report presents the accumulated totals for the selections input above.

Actual: All selections were accurately reported on the results report. |

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored,

and reported as input by the tester. The voter input can be changed by navigating through the ballot after a ballot has been reviewed.

Test Case Identifier: 16 – 25 P.S. § 3031.7(16) Public Counter, No Reopening of Polls, Media Security with Tamper Proof Locks and Zero Proof and Tally Reports.	
PA ST 25 P.S. § 3031.7 Requirements:	*(16) If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:* *(i) A public counter, the register of which is visible from the outside of the automatic tabulating equipment component into which the ballots are entered, which shall show during any period of operation the total number of ballots entered for computation and tabulation.* *(ii) A lock, or locks, by the use of which all operation of the tabulation element of the automatic tabulating equipment is absolutely prevented immediately after the polls are closed or where the tabulation of votes is completed.* *(iii) It shall be so constructed and controlled that, during the progress of voting, it shall preclude every person from seeing or knowing the number of votes theretofore registered for any candidate or question; and it shall preclude every person from tampering with the tabulating element.* *(iv)If the number of choices recorded for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question, provided, that if used during the period of voting it may also have the capacity to indicate to a voter that he has improperly voted for more candidates for any office than he is entitled to vote for, and in such case it shall have the capacity to permit the voter to mark a new ballot or to forego his opportunity to make such correction.* *(v) It shall be equipped with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero and with an element which generates a printed record at the finish of its operation of the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.*

Test Objective: To determine if the voting device has a public counter, does not allow the reopening of the polls, and supplies a zero proof and tally report.	**Test Configuration:** Precinct tabulation device configured as described for normal election day operation by Pennsylvania procedures and/or the device manufacturer. This includes all security locks and seals.

Test Equipment:	None
Special Procedural Requirements:	None
Assumptions:	The election media is installed but the polls have not been opened.

Step	Description
1000	Ensure media is loaded but the polls have not been opened. Use the designated method to open polls. If a response is needed to print "Zero Proof" report, select this option. *Expected:* The precinct tabulation device opens the polls and prints a "Zero Proof" report. *Actual:* Polls opened and zero proof report was printed.
1010	Activate a ballot for voting. *Expected:* The ballot is presented and vote selections can be input.

	Actual: The ballot was presented.
1020	Use the designated method to navigate to the straight party contest. Select the first selection in the straight party contest. *Expected:* The precinct tabulation device navigates to the first straight party contest, allows the input of the first selection, and indicts the first selections was input. *Actual:* Republican was selected.
1030	Use the designated method to advance the "Ballot Review". Observe all selections for the party associated with the selection for the first straight party selection are selected. Observe the public counter value being 0. *Expected:* The precinct tabulation device navigates to the "Ballot Review" screen. The public counter is visible and the value is 0. *Actual:* Selections for Republican candidates were displayed. The counters had to be observed before the ballot is presented.
1040	Use the designated method to cast the voted selections. Observe the acknowledgement of "successful" ballot cast if provided, and the public counter incrementing by one. *Expected:* The precinct tabulation device successfully cast the ballot and the public counter is incremented. If the ballot was not cast successfully the test is halted. *Actual:* The ballot was cast successfully. The incrementing of the counter had to be observed after the ballot was cast.
1050	Close the polls and print the closed polls report tape. *Expected:* The polls closed and a report is printed. *Actual:* The polls were closed and the results report printed.
1060	Use the designated method to attempt to reopen the polls. *Expected:* The polls cannot be reopened. *Actual:* The polls could not be reopened.
1070	Place lock on precinct tabulation device per Pennsylvania Procedures to ensure all operation of the tabulation element is prevented. *Expected:* The precinct tabulation device can by secured so that all operation of the tabulation element is prevented.

	Actual: The precinct tabulation device could be locked.
1070	Review the closed polls report to ensure all selections input above are recorded and reported correctly.
	Expected: The closed polls report presents the accumulated totals for the selections input above.
	Actual: The polls were closed and the results report printed.

Criteria for Evaluation of the Test Results: The intended selections input above are recorded, stored, and reported as input by the tester. The voting device is able to produce a "Zero Proof" and "Tally Report". The voting device has a visible public counter and the counter increments correctly.

Test Case Identifier: 04, 06, 08, 09, Permanent Physical Record, and Statistical Sample – 25 P.S. §§ 3031.7(4), (6), (8), (9); 3031.1; and 3031.17 System Integration	
PA ST 25 P.S. § 3031.7 Requirements:	*(4) Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.* *(6) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote and precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.* *(8) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or upon any question, except in districts and for offices where cumulative voting is authorized by law.* *(9) Permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and for any candidate for nonpartisan nomination, and for any question upon which he is entitled to vote.*
PA ST 25 P.S. § 3031.1 Requirements:	*"ELECTRONIC VOTING SYSTEM" means a system in which one or more voting devices are used to permit the registering or recording of votes and in which such votes are computed and tabulated by automatic tabulating equipment. The system shall provide for a permanent physical record of each vote cast.*
PA ST 25 P.S. § 3031.17 Requirements:	*The county board of elections, as part of the computation and canvass of returns, shall conduct a statistical recount of a random sample of ballots after each election using manual, mechanical or electronic devices of a type different than those used for the specific election. The sample shall include at least two (2) per centum of the votes cast or two thousand (2,000) votes whichever is the lesser.*

Test Objective:
This area of testing will focus on the system being able to perform a general and a closed primary from ballot design to reporting of results.

Test Configuration:
The system integration testing will execute a general and a primary election from ballot design through vote accumulation, consolidation and reporting. The election definitions will include all supported voting variations, languages, multiple ballot styles, and ADA voting. Two election definitions will be defined and executed according to a predefined voting pattern. All requirements tested in the targeted functionality testing will be monitored including accuracy throughout system integration testing.

Test Method:
The method for testing these requirements is defined as follows:

Provide an election definition that contains multiple ballot styles based on geographical subdivision in both a general election and a closed primary and tests that each vote is counted only once.

Two elections will be utilized to perform System Integration Testing:
- PA Certification General Election

- PA Certification Closed Primary Election

This test will be performed by evaluating the system from the pre-voting state of loading the media and obtaining pre-voting reports through the post-voting state of accumulation of voted data and printing of post-election reports. All documented steps will be followed to perform this test.

- Election definition and ballot layout coded prior to test

- Print pre-election report for ballot layout, precinct summary, and election summary

- Load election media

- Install election onto the precinct tabulation device

- Open polls and print zero proof report

- Vote pre-defined voting pattern

- Closed polls and print results tapes

- Print audit logs

- Perform a 10% sample according to PA procedures

- Harvest permanent physical record example

- Load election results into EMS

- Print precinct summary and election summary reports

- Collect and analyze all data

Criteria for Evaluation of the Test Results:
All intended selection input by the tester are recorded, stored and reported accurately.

Test Case Identifier: 12 – 25 P.S. § 3031.7(12) Penetration Analysis	
PA ST 25 P.S. § 3031.7 Requirements:	*(12) Provides acceptable ballot security procedures and impoundment of ballots to prevent tampering with or substitution of any ballots or ballot cards.*

Test Objective:
This area of testing will focus on the current documented procedures and configuration to ensure that the physical and access secure measures provide a determined level of security. *Depending on the scope of this project this may be performed by a third-party expert.*

Test Configuration:
The voting system will be configured as would be for a polling place with all security precautions in place.

Test Method:
The method for testing these requirements is defined as follows:

Test steps will be followed to evaluate the physical and access controls and procedures in place for the storage of voted ballots. This test will be performed by evaluating the system to ensure that all access areas and seals and/or locks provide adequate security from external access. The tester will:

- check all seal and/or locks and attempt to open the system

- verify that the ballot storage device is secure by attempting to insert and retrieve ballots without removing any seals and/or locks

- verify that any needed supplies can be accessed by the poll worker without allowing access to the ballots or internal components of the voting system

- verify that the system counter cannot be reset by any unauthorized person at any unauthorized point

- exercise verification of password security management

Criteria for Evaluation of the Test Results:
All intended access controls are in place and are sufficient.

Comments:

List all reports provided by the manufacturer for review to meet the review requirements in the space provided below:

Document I - ___Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14) Report No. 51884-03, Dated March 16, 2006_____

Document II - ___Change Release Report of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.21) Report No. 51884-04, Dated March 16, 2006_____

Document III - ___Change Release Report of the Edge Models I & II DRE Voting Machines with Verivote Printer (Firmware Version 5.0.22) Report No. 51884-05, Dated March 16, 2006_____

Document IV - ___Change Release Report of the Edge Models I & II DRE Voting Machines with Verivote Printer (Firmware Version 5.0.23) Report No. 51884-06, Dated March 16, 2006_____

Document V - ___Change Release Report of the Edge Models I & II DRE Voting Machines with Verivote Printer (Firmware Version 5.0.24) Report No. 51884-07, Dated March 16, 2006_____

Document VI – Software Qualification Test Report Sequoia WinEDS 3.1.012 dated March, 17, 2006

25 P.S. § 3031.5. Examination and approval of electronic voting systems by the Secretary of the Commonwealth
(a) Any person or corporation owning, manufacturing or selling, or being interested in the manufacture or sale of, any electronic voting system, may request the Secretary of the Commonwealth to examine such system if the voting system has been examined and approved by a federally recognized independent testing authority and if it meets any voting system performance and test standards established by the Federal Government. The costs of the examination shall be paid by the person requesting the examination in an amount set by the Secretary of the Commonwealth. Any ten or more persons, being qualified registered electors of this Commonwealth, may, at any time, request the Secretary of the Commonwealth to reexamine any electronic voting system theretofore examined and approved by him. Before any reexamination, the person, persons, or corporation, requesting such reexamination, shall pay to the Treasurer of the Commonwealth a reexamination fee of four hundred fifty dollars ($450). The Secretary of the Commonwealth may, at any time, in his discretion, reexamine any such system therefore examined and approved by him. The Secretary of the Commonwealth may issue directives or instructions for implementation of electronic voting procedures and for the operation of electronic voting systems.

ITA/ VSTL Reports

Report Title, Version and Date -___Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14) Report No. 51884-03, Dated March 16, 2006_____

25 P.S. § 3031.7 Requirement -

11) Is suitably designed for the purpose used, is constructed in a neat and workmanlike manner of durable material of good quality, is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district, is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

Review of Product Safety Test or other similar test

Report Title -   Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14) Report No. 51884-03, Dated March 16, 2006

Section -   Attachment H Product Safety Review UL60950-1 Safety of Information Technology Equipment Report No. 44733-03, Dated 11/1/2004

Page(s) - H-1 through H-81

Paragraphs - all

Review of Accuracy Test

Report Title -   Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14) Report No. 51884-03, Dated March 16, 2006

Section - 6.4.1 Operating Environmental Test, 6.6 Electrical Tests, Attachment A VSS 2002 Functional Requirements Matrix

Page(s) - 15, 17, A-3, A-13, A-18-A19, A-20, A-25

Paragraphs -   all, all, 2.2.2.1 a-e, 3.2.1 b, 3.2.4.3.3 a-f,3.2.6.2.2 a-b, 4.4.2 f

25 P.S. § 3031.7 Requirement -

(13) When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Review of Accuracy Test

Report Title -   Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14) Report No. 51884-03, Dated March 16, 2006

Section - 6.4.1 Operating Environmental Test, 6.6 Electrical Tests, Attachment A VSS 2002 Functional Requirements Matrix

Page(s) - 15, 17, A-3, A-13, A-18-A19, A-20, A-25

Paragraphs -   all, all, 2.2.2.1 a-e, 3.2.1 b, 3.2.4.3.3 a-f,3.2.6.2.2 a-b, 4.4.2 f

25 P.S. § 3031.7 Requirement -

(14) Is safely transportable.

Review of Hardware Environmental Tests

Report Title - _ Hardware Qualification Testing of the Edge Models I & II DRE Voting Machines, Verivote Printer, Card Activator, and ADA Audio Adapter Peripherals (Firmware Version 5.0.14) Report No. 51884-03, Dated March 16, 2006_____

Section - __6.2 Electrical and Environmental Tests,_ Attachment C High and Low Storage Temperature MIL-STD 810D Method 501.2 and 502.2, Attachment D Bench Handling MIL-STD 810D Method 516.3 Procedure VI, Attachment E Vibration MIL-STD 810D Method 514.3 Category 1 Basic Transportation Common Carrier, Attachment F Humidity MIL-STD 810D Method 507.2 Procedure 1 Natural Hot-Humid, Attachment G Environmental Operating 163-H, Attachment K Instrumentation Equipment Sheets

Paragraphs - __all, all, all, all, all, all, all_____

25 P.S. § 3031.7 Requirement -

15) Is so constructed that a voter may readily learn the method of operating it.

Review of Usability Evaluation

Report Title - __Not Available_____

Section - _____

Page - _____

Paragraphs - _____

_____   _____
Reviewers Signature   **Date Completed**