

**COUNTY OF**



**ALLEGHENY**

**RICH FITZGERALD**  
COUNTY EXECUTIVE

# **2016 General Primary Experience Report**

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JERRY TYSKIEWICZ, DIRECTOR

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## Overview

Of the 766,088 registered voters eligible to vote for the nomination of candidates in Allegheny County, 355,524 – or 46.41%, cast their vote at the past April 26, 2016 General Primary. By political party affiliation, 223,606 (44.92%) registered Democratic voters and 121,918 (49.55%) Republican voters cast ballots. Pennsylvania Constitution Amendments 1 (pertaining to the mandatory retirement age of justices and judges) and 2 (pertaining to the abolition of the Philadelphia Traffic Court) appeared on every ballot. 4,276 (1.19%) of the eligible 109,613 non-partisan voters participated in these special elections.

A total of 12,718 absentee ballots were issued and 642 provisional ballots were cast. Of the provisional ballots, 83 were fully counted, 322 partially counted and 237 were not counted. The majority of those not counted were due to the fact that the provisional voter was not a registered voter or not registered in the party that the provisional ballot was cast.

Over 160,000 “emergency” paper ballots were supplied to this County’s 1,319 polling places in the event that at least one-half of the voting machines in a precinct were non-functional. 43 emergency ballots were used in 5 voting districts. 24 were used due to the fact that a Judge of Election did not report to her assigned polling place, 7 were used due to a zero tape printer malfunction and the remaining 12 were mainly used due to difficulties printing zero tapes.

A total of 423 candidates appeared on the ballot and 2,638 individual elections were possible for Republican local party county committee members, as well as 42 possible elections for the members of the Democratic and Republican Delegate and Alternate Delegate to the National Party Conventions. Over 150 distinct ballot configurations were created in order to accommodate the 66 possible nominations for State-wide office and the various United States Congress, State Senate and State House districts. Upon certification of the results by the Allegheny County Board of Elections, this Division issued 266 certificates of election to successful Republican county committee candidates. Of these, 25 were elected by write-in vote. 5 candidates were also nominated to State-level office by write-in vote.

## Accessibility

All 1,319 polling places in this County are classified as “accessible” pursuant to the standards promulgated by the Pennsylvania Secretary of the Commonwealth.

## Logic and Accuracy Testing

Extensive automated and manual Logic and Accuracy Testing (L&A) was performed. Automated L&A was performed on all 4226 iVotronic voting machines deployed on Primary Election Day. Manual L&A was also performed for each of the approximately 150 different ballot configurations. Those parties and organizations permitted by Pennsylvania law to be present during this process were duly notified.

A “test deck” comprised of over 69,000 ballots, containing different vote totals for each candidate, was used to verify that the 5 ES&S Model 650 high-speed ballot counters would accurately count the absentee, provisional and emergency optical scan paper ballots to be used at the Primary. This test was conducted prior to the Primary as well as before final certification of the election results. In both tests, the ballot scanners produced an accurate count. The required public notice of the pre-primary test was given.

### Firmware Verification

Allegheny County employed the services of “GRP Consulting Group, LLC” to verify that the software resident on the iVotronic voting devices contain the “trusted build” version certified by the Pennsylvania Department of State. As has been the case since prior to the November 2008 General election, this process has been employed, no instance of uncertified software has been detected. Copies of the reports prepared for the April 26, 2016 General Primary are found on our website.

### Network Security

Also following past practice, an independent third-party review was conducted both prior to and after the past Primary to assure that our election network was isolated and not connected to any external network. A copy of the report produced by “solutions4networks” is found on our website.

### Parallel Testing

Since the November 2006 Election, Allegheny County has employed a Certified Public Accounting firm to ensure that the functionality of the iVotronic voting machine devices have not been compromised. The parallel testing performed at the April 26, 2016 General Primary demonstrated that the randomly-selected voting devices recorded and counted all votes completely and correctly. A copy of the report issued by “Baker Tilly” is found on our website.

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**GRP Consulting Group, LLC**

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***ALLEGHENY COUNTY PRE April 26, 2016  
General Primary Election  
ES&S iVOTRONICS FIRMWARE VERIFICATION  
STUDY***

**EXECUTIVE SUMMARY**

Developed for:

***ALLEGHENY COUNTY  
DIVISION OF ELECTIONS  
STATE OF PENNSYLVANIA***

Document Number GCG-AC-iVo-FRPT-000227

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# 1. INTRODUCTION: ALLEGHENY COUNTY JANUARY 25, 2016 ES&S iVOTRONICS FIRMWARE VERIFICATION STUDY

The Allegheny County, Pennsylvania Division of Elections requested GRP Consulting Group to audit and verify the firmware source code on twenty (20) ES&S iVotronic DRE voting machines before conducting the April 26, 2016 General Primary Election. The devices to be audited were randomly selected from the counties 4700 devices. The purpose was to verify that the samples have in residence on the U1 designated Electronic Erasable Programmable Read Only Memory (EEPROM) chip the firmware version 9.1.4.1 and that all applied firmware versions are accurate and true to the State of Pennsylvania's Trusted Build as held in escrow by the Secretary of State's Office in Harrisburg. The study was accomplished by applying the *'Allegheny County iVotronic Firmware Verification Protocol'* and was performed on location at the Allegheny County Division of Elections warehouse; located at 901 Pennsylvania Ave., Pittsburgh, Pennsylvania. GRP Consulting Group and Allegheny County staff performed this firmware audit on January 25, 2016.

It is the finding of GRP Consulting Group that the firmware verification audit applied to the resident code on the sample population was found to be unaltered versions of the 9.1.4.1 firmware.

## 1.1 Approach

### 1.1.1 Study's Focus

The focus of the exercise was:

1. Implementation of a fair and statically correct random selection process.
2. Deploy the verification protocol, known as the *'Allegheny County iVotronic Firmware Verification Protocol'*, to verify on twenty (20) randomly chosen ES&S iVotronics DRE voting devices that they hold in residence on the U1 designated EEPROM chip the exact, true and unaltered version of the 9.1.4.1 certified firmware source code as held in escrow at the Secretary of State's office.

### 1.1.2 Study's Concentration

The GRP Consulting Group analyst was tasked to independently apply a repeatable and validated verification protocol to verify that the ES&S firmware version 9.1.4.1 that resides in escrow by the Secretary of State's office and is resident on the Allegheny County iVotronic Direct-Recording Entry (DRE) - touch screen voting devices – are exact, true and unaltered versions of the certified firmware source code.

### 1.1.3 Study's Phases

GRP Consulting Group organized the project primary phases, each incorporating the flexibility to accommodate additional requirements, as they may have become known. The general strategy employed was comprised of the following aspects:

1. Setup, configure and control the verification environment and the parameters associated with each verification cycle;
2. Apply the protocol to verify that before the April 26, 2016 General Primary Election the 9.1.4.1 firmware on the iVotronic DREs is the true and certified version of the firmware and has not been altered;
3. Execute twenty (20) verification cycles;
4. Conduct reviews and analyses of all verification results and anomalies obtained during the twenty (20) verification execution cycles;
5. Advise the County on possible root cause(s) of any and all anomalies; and
6. Prepare and deliver a report of the verification activities, the results of all verification executions, and conclusions and recommendations in Executive Summary and Final Report formats.

## 2. FINDINGS – JANUARY 25, 2016

GRP Consulting Group was engaged by the Allegheny Division of Elections on site at 901 Pennsylvania Ave., Pittsburgh, PA on January 25, 2016; the purpose of the engagement was to apply the 'Allegheny County iVotronic Firmware Verification Protocol' to verify that the ES&S iVotronic firmware version 9.1.4.1 has not been altered and is resident on the Allegheny County iVotronic population without corruption or tamper previous to the April 26, 2016 General Primary Election.

On January 25, 2016 the GRP Consulting Group analyst completed the verification process of the firmware on twenty (20) selected Allegheny County iVotronics chosen at random from the population of approximately 4700 machines. It is the findings of GRP Consulting Group that the firmware version 9.1.4.1 residing on the twenty (20) randomly chosen machines, do represent the population, and furthermore, that the firmware version as resident on the U1 designated Electronic Erasable Programmable Read Only Memory (EEPROM) chip is an exact, true, and unaltered version of the NVLAP federally certified trusted build as held in archive at STL, Inc, Denver, CO and in escrow by the Pennsylvania Secretary of State in Harrisburg, PA.

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***ALLEGHENY COUNTY PRE APRIL 26, 2016  
GENERAL PRIMARY ELECTION***

***ES&S I VOTRONICS FIRMWARE VERIFICATION  
STUDY***

## **FINAL REPORT**

Developed for:

***ALLEGHENY COUNTY  
DIVISION OF ELECTIONS  
STATE OF PENNSYLVANIA***

Document Number GCG-AC-iVo-FRPT-000228

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## 1. INTRODUCTION: ALLEGHENY COUNTY ES&S iVOTRONICS FIRMWARE VERIFICATION STUDY

The Allegheny County, Pennsylvania Division of Elections requested GRP Consulting Group to audit and verify the firmware source code on twenty (20) ES&S iVotronic DRE voting machines before conducting the April 26, 2016 General Primary Election. The devices to be audited were randomly selected from the counties 4700 devices. The purpose was to verify that the samples have in residence on the U1 designated Electronic Erasable Programmable Read Only Memory (EEPROM) chip the firmware version 9.1.4.1 and that all applied firmware versions are accurate and true to the State of Pennsylvania's Trusted Build as held in escrow by the Secretary of State's Office in Harrisburg. The study was accomplished by applying the *'Allegheny County iVotronic Firmware Verification Protocol'* process and was performed on location at the Allegheny County Division of Elections warehouse; located at 901 Pennsylvania Ave., Pittsburgh, Pennsylvania. GRP Consulting Group and Allegheny County staff performed this firmware audit on January 25, 2016.

It is the finding of GRP Consulting Group that the firmware verification audit applied to the resident code on the sample population was found to be unaltered versions of the 9.1.4.1 firmware.

### 1.1 Approach

#### 1.1.1 Study's Focus

The focus of the exercise was:

1. Implementation of a fair and random selection process.
2. Deploy the verification protocol, known as the *'Allegheny County iVotronic Firmware Verification Protocol'*, to verify on twenty (20) randomly chosen ES&S iVotronics DRE voting devices that they hold in residence on the U1 designated EEPROM chip the exact, true and unaltered version of the 9.1.4.1 certified firmware source code as held in escrow at the Secretary of State's office.

#### 1.1.2 Study's Concentration

The GRP Consulting Group has been tasked to independently apply a repeatable and validated verification protocol to verify that the ES&S firmware version 9.1.4.1 that resides

in escrow by the Secretary of State's office and is resident on the Allegheny County iVotronic Direct-Recording Entry (DRE) - touch screen voting devices – are exact, true and unaltered versions of the certified firmware source code.

### **1.1.3 Study's Phases**

GRP Consulting Group organized the project primary phases, each incorporating the flexibility to accommodate additional requirements, as they may have become known. The general strategy employed was comprised of the following aspects:

1. Setup and configure the verification environment and the parameters associated with each verification cycle;
2. Apply the protocol to verify that before the April 26, 2016 General Primary Election that the 9.1.4.1 firmware on the iVotronic DREs is the true and certified version of the firmware and has not been altered;
3. Execute twenty (20) verification cycles comprised of verification on performed one (1) ADA (American Disabilities Act) compliant iVotronic and nineteen (19) non-compliant DRE units;
4. Conduct reviews and analyses of all verification results and anomalies obtained during the twenty (20) verification execution cycles;
5. Advise the County on possible root cause(s) of any and all anomalies; and
6. Prepare and deliver reports of the verification activities, the results of all verification executions, and conclusions and recommendations in Executive Summary and Final Report formats.

## **1.2 Purpose**

This document is the Allegheny County pre-April 26, 2016 General Primary Election ES&S iVotronic Firmware Verification Study Final Report. This report was developed as a review of the specific technical details, the project's results, and findings.

## **1.3 Statement of Independence**

As an election validation and verification business practice, GRP Consulting Group is technically, managerially, and financially independent from all electronic voting systems vendors as specified in *IEEE 1012-2004* Annex C.

The consultants of GRP Consulting Group shall maintain an independent decisional relationship between its clients, affiliates, or other organizations so that GRP Consulting Group's capacity to perform services objectively and without bias is not adversely affected.

GRP Consulting Group shall maintain independence in fact and in appearance. The validation and verification environment, whether on-site at GRP Consulting Group facilities or partner organizations or at a client's site, shall be organized so that staff members are not subjected to undue pressure or inducement that might influence their judgment or the results of their work.

## 1.4 References

1. iVotronic Software Verification Protocols: Allegheny County Proposals; Collin Lynch, President, VoteAllegheny; 9/28/2008
2. Firmware vs. Uploaded Firmware Chip Data Comparison Procedure; Election Systems and Software, Inc.; 1/18/2008
3. Allegheny County iVotronic Firmware Verification Protocol; Geoffrey R. Pollich, SysTest Labs, 10/14/08

## 1.5 Systems Information

Items identified in Table 1 reflect firmware deployed at the Allegheny County Division of Elections warehouse on January 25, 2016:

**Table 1 - Matrix of Firmware**

<u>Vendor</u>	<u>System</u>	<u>Description</u>	<u>Software/ Firmware Version</u>
ES&S	iVotronic	Direct Record Entry	9.1.4.1
ES&S	iVotronic	ADA Compliant DRE	9.1.4.1

Equipment identified in Table 2 reflects iVotronic hardware selected at the Allegheny County Division of Elections warehouse on January 25, 2016:

**Table 2 - Matrix of Hardware**

<u>iVotronic Serial Number</u>	<u>Microchip Manufacturer</u>	<u>Microchip Part Number</u>
-> V5178319	Spansion	0603FRC-G
-> V5184812	Spansion	0612FBE-G
-> V5182312	Spansion	0612EBA-G
-> V5184900	Spansion	0609BRB-G
-> V5180900	Spansion	0603FRC-G
-> V5185032	Spansion	0609BRB-G
-> V5186582	Spansion	0612FBE-G
-> V5186553	Spansion	0609BRB-G
-> V5185155	Spansion	0612GBA-G

<u>iVotronic Serial Number</u>	<u>Microchip Manufacturer</u>	<u>Microchip Part Number</u>
-> V5184019	Spansion	0612GBA-G
-> V5186162	Spansion	0603FRD-G
-> V5184044	Spansion	0609BRB-G
-> V5186478	Spansion	0612GBA-G
-> V5182938	Spansion	0612EBA-G
-> V5184661	Spansion	0609BRB-G
-> V5186976	Spansion	0609BRB-G
-> V5186241	Spansion	0612FBE-G
-> V5185206	Spansion	0612FBE-G
-> V5182212	Spansion	0603FRC-G
-> V5172646	Spansion	0446EBE-G

**Table 3 - Matrix of Testing Hardware**

<u>Description</u>	<u>Manufacturer</u>	<u>Model</u>
EEPROM Device Programmer	Logical Devices, Inc.	ChipMaster 6000XPu
Flash Module Programmer Adapter	Logical Devices, Inc.	Version 1
ESD Static Mat with wrist strap	N/A	N/A
#10 Tamper Proof Torx screwdriver	N/A	N/A
Small flathead screwdriver	N/A	N/A

**Table 4 - Matrix of Testing Software**

<u>Description</u>	<u>Manufacturer</u>	<u>Software Version</u>
Software- CHIPMASTER 6000 XPU for USB	Logical Devices, Inc	ChipMaster 6000Xpu for USB
WinLink2	Logical Devices, Inc	v. 01.51.00
Hex Editor	Xvi32	v. 2.5
Microsoft Visual C++, Binary Editor	Microsoft Corporation	Version 6.0
SHA_V Sha-1 and other SHA segments Hash Code Identification	Microsoft File Checksum Integrity Verifier (FCIV) <a href="http://support.microsoft.com/kb/841290">http://support.microsoft.com/kb/841290</a>	Version 2.05

## **2. ALLEGHENY COUNTY PRE APRIL 26, 2016 GENERAL PRIMARY iVOTRONIC FIRMWARE VERIFICATION PROCESS; PREFORMED JANUARY 25, 2016**

To establish a best practice protocol and verification procedure, Geoffrey Pollich, consultant with GRP Consulting Group, reviewed and analyzed the *VoteAllegheny: iVotronic Software Verification Protocols: Allegheny County Proposals*, the *ES&S Firmware vs. Uploaded Firmware Chip Data Comparison Procedure*, and NIST Standard Lab Procedures best practices. It was from these primary sources that the ‘Allegheny County iVotronic Firmware Verification Protocol’ was established.

### **2.1 Present during the January 25, 2016 Verification Process:**

#### GRP Consulting Group:

Geoffrey Pollich – GRP Consulting Group, Principle Consultant

#### Allegheny County Division of Elections:

Mark Wolosik – Elections Division Manager

John O’Brien – Manager of Voting Machines

Elizabeth Dell – Business Analyst, Division of Computer Services

#### Election Advocacy Observers:

Benjamin Cox – VoteAllegheny

Louise Cannon – League of Women Voters

### **2.2 Sample Size Randomization Procedure**

The sample size must be carefully selected due to the need to open the warranty seal over the lower left chassis screw in order to conduct the firmware verification. When this seal is broken, the DRE should be inspected and tested by ES&S. If a larger sample of machines were inspected per election, the availability of certified election machines may not satisfy the needs of individual precincts for federal, state, county, municipal and special issue elections held over the calendar year. It is also doubtful if a larger sample sizes would yield a more valid result than the present sample size appropriately randomized.

Benjamin Cox of VoteAllegheny and Louise Cannon of the League of Women Voters along with Division of Election employees initiated the machine-selection effort to establish 20 randomly chosen iVotronic units for testing. The Observers walked the isles of DRE and randomly choose the test machines. Mark Wolosik, Elections Division Manager, John O’Brien, Manager of Voting Machines, Elizabeth Dell, Business Analyst, Division of Computer Services, and Geoffrey Pollich of the GRP Consulting Group believed the selection was consistent with a valid random selection process and was free of any and all mathematical bias.



### 3. Allegheny County Pre April 26, 2016 General Primary Election ES&S iVotronic Firmware Verification Study Results

#### 3.1 January 25, 2016 Results

**08:30 – 9:30 am GRP Consulting Group and observers arrive at the Allegheny County warehouse facility to set up the verification work area; the Observer launches their randomization process**

1. GRP Consulting Group connected the CHIPMASTER 6000 XPU EEPROM Programmer; the analyst setup the device to a GRP Consulting Group laptop; County Employees, and the Observer brought 20 randomly picked iVotronics into the verification work area to begin the firmware verification procedure.

#### **09:33 Verify firmware procedure for iVotronic DRE #1**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5178319 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

#### **09:35 Verify firmware procedure for iVotronic DRE #2**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5184812 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display

**09:38 Verify firmware procedure for iVotronic DRE #3**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5182312 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:41 Verify firmware procedure for iVotronic DRE #4**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5184900 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:44 Verify firmware procedure for iVotronic DRE #5**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5180900 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:49 Verify firmware procedure for iVotronic DRE #6**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5185032 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:50 Verify firmware procedure for iVotronic DRE #7**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5186582 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:53 Verify firmware procedure for iVotronic DRE #8**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5186553 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:56 Verify firmware procedure for iVotronic DRE #9**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5185519 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**09:59 Verify firmware procedure for iVotronic DRE #10**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5184019 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:02 Verify firmware procedure for iVotronic DRE #11**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5186162 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:05 Verify firmware procedure for iVotronic DRE #12**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n V5184944 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:08 Verify firmware procedure for iVotronic DRE #13**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5186478 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was an Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The AMD firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:11 Verify firmware procedure for iVotronic DRE #14**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5182938 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:14 Verify firmware procedure for iVotronic DRE #15**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5184661 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:17 Verify firmware procedure for iVotronic DRE #16**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->5186976 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:20 Verify firmware procedure for iVotronic DRE #17**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5186241 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:24 Verify firmware procedure for iVotronic DRE #18**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5185206 was selected.
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

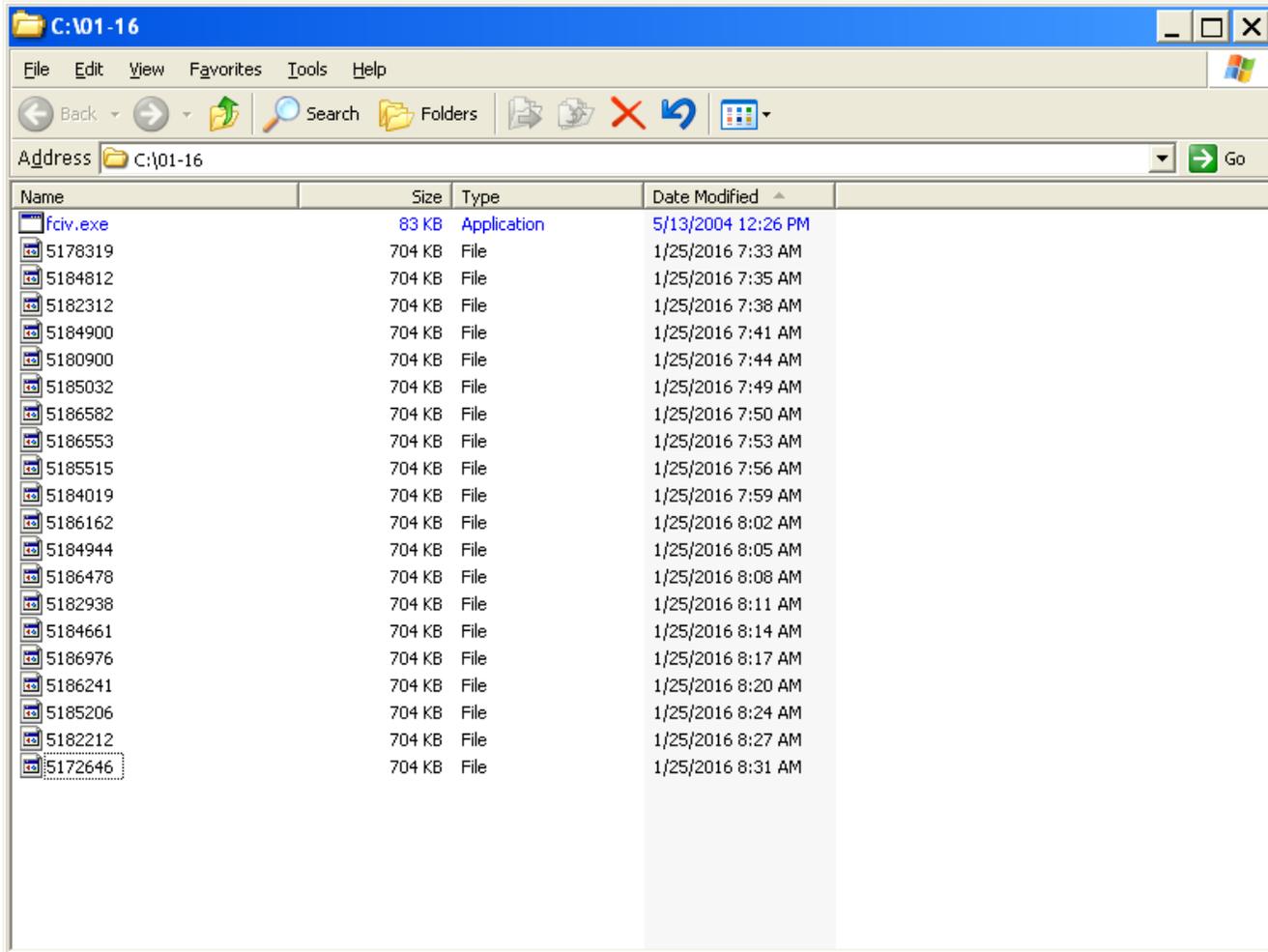
**10:27 Verify firmware procedure for iVotronic DRE #19**

1. Randomly select an iVotronic DRE from the warehouse for the firmware verification procedure; s/n ->V5182212 was selected. Perform iVotronic Firmware Verify Procedure.
2. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
3. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
4. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

**10:36 Verify firmware procedure for iVotronic DRE #20**

1. Randomly select an iVotronic ADA equipped DRE from the warehouse for the firmware verification procedure; s/n V5172646 was selected. (*ADA Device*)
2. Perform iVotronic Firmware Verify Procedure.
3. Upon opening of iVotronic DRE, the removable CMOS was a Spansion CMOS part S29AL016D90TF101, and the CHIPMASTER 6000 XPU EEPROM programmer was used to read and save the binary firmware code.
4. The Spansion firmware chip was successfully read into the PC and the hash code generated did match the trusted build hash code:  
(F6A8D4570988E2D159398503144E64D48F0CC69F) .
5. The iVotronic DRE was closed and powered by County employees to verify that the DRE was working properly with the correct firmware date, time, and version number showing on the initial display.

### 3.2 January 25, 2016 Collective Firmware Files (Date Modified in Mountain Standard Time)



Name	Size	Type	Date Modified
fciv.exe	83 KB	Application	5/13/2004 12:26 PM
5178319	704 KB	File	1/25/2016 7:33 AM
5184812	704 KB	File	1/25/2016 7:35 AM
5182312	704 KB	File	1/25/2016 7:38 AM
5184900	704 KB	File	1/25/2016 7:41 AM
5180900	704 KB	File	1/25/2016 7:44 AM
5185032	704 KB	File	1/25/2016 7:49 AM
5186582	704 KB	File	1/25/2016 7:50 AM
5186553	704 KB	File	1/25/2016 7:53 AM
5185515	704 KB	File	1/25/2016 7:56 AM
5184019	704 KB	File	1/25/2016 7:59 AM
5186162	704 KB	File	1/25/2016 8:02 AM
5184944	704 KB	File	1/25/2016 8:05 AM
5186478	704 KB	File	1/25/2016 8:08 AM
5182938	704 KB	File	1/25/2016 8:11 AM
5184661	704 KB	File	1/25/2016 8:14 AM
5186976	704 KB	File	1/25/2016 8:17 AM
5186241	704 KB	File	1/25/2016 8:20 AM
5185206	704 KB	File	1/25/2016 8:24 AM
5182212	704 KB	File	1/25/2016 8:27 AM
5172646	704 KB	File	1/25/2016 8:31 AM

```
C:\WINDOWS\system32\cmd.exe

C:\01-16>fciv -sha1 5178319
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5178319

C:\01-16>fciv -sha1 5184812
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5184812

C:\01-16>fciv -sha1 5182312
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5182312

C:\01-16>fciv -sha1 5184900
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5184900

C:\01-16>fciv -sha1 5180900
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5180900

C:\01-16>fciv -sha1 5185032
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5185032

C:\01-16>fciv -sha1 5186582
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5186582

C:\01-16>fciv -sha1 5186553
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5186553

C:\01-16>fciv -sha1 5185515
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5185515

C:\01-16>fciv -sha1 5184019
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5184019

C:\01-16>fciv -sha1 5186162
```

```
C:\WINDOWS\system32\cmd.exe
C:\01-16>fciv -sha1 5186162
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5186162
C:\01-16>fciv -sha1 5184944
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5184944
C:\01-16>fciv -sha1 5186478
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5186478
C:\01-16>fciv -sha1 5182938
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5182938
C:\01-16>fciv -sha1 5184661
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5184661
C:\01-16>fciv -sha1 5186976
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5186976
C:\01-16>fciv -sha1 5186241
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5186241
C:\01-16>fciv -sha1 5185206
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5185206
C:\01-16>fciv -sha1 5182212
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5182212
C:\01-16>fciv -sha1 5172646
///
/// File Checksum Integrity Verifier version 2.05.
f6a8d4570988e2d159398503144e64d48f0cc69f 5172646
C:\01-16>_
```

## 4. FINDINGS

GRP Consulting Group was engaged by the Allegheny Division of Elections on site at 901 Pennsylvania Ave., Pittsburgh, PA on January 25, 2016; the purpose of the engagement was to apply the ‘*Allegheny County iVotronic Firmware Verification Protocol*’ to verify the ES&S iVotronic firmware version 9.1.4.1 is resident on the Allegheny County iVotronic population.

On January 25, 2016, the GRP Consulting Group analyst completed the verification process of the firmware residing on twenty (20) Allegheny County ES&S iVotronics Direct-Recording Entry electronic voting machines chosen at random from the population of approximately 4700 iVotronic Direct-Recording Entry (DRE) electronic voting machines. It is the findings of GRP Consulting Group that the firmware version 9.1.4.1 residing on the twenty (20) randomly chosen DRE electronic voting machines, do represent the population, and furthermore; the firmware version as resident on the U1 designated Electronic Erasable Programmable Read Only Memory (EEPROM) chip is an exact, true, and unaltered version of the NVLAP federally certified trusted build as held in archive at SysTest Labs in Denver, Colorado and in escrow by the Pennsylvania Secretary of State in Harrisburg, PA.

## 5. APPENDIX A - TERMS AND ABBREVIATIONS

These terms and abbreviations will be used throughout this document:

**Table 2 - Matrix of Terms & Abbreviations**

Terms & Abbreviation	Description
Binary	The system of representing text or computer processor instructions by the use of a two digit number system. This system is composed of only the number zero, representing the off state, and the number one, representing the on state, combined in groups of 8. These groups of 8 bits can represent up to 256 different values and can correspond to a variety of different symbols, letters or instructions.
DOE	Division of Elections
DRE	Direct-Recording Entry - touch screen voting device
Firmware	Firmware is the programmable content of a hardware device, which can consist of machine language instructions for a processor or configuration settings for a fixed-function device, gate array or programmable logic device. A common feature of firmware is that it can be updated post-manufacturing, either electronically, or by replacing a storage medium such as a socketed memory chip.
Hardware	Hardware refers to the physical artifacts of a technology such as the physical components of a computer system
Hash Code	A hash function is a well-defined procedure or mathematical function for turning binary code into a relatively small integer that serves as a unique mathematical footprint.
ITA	Independent Test Authority
iVotronic	ES&S touch screen voting terminal
Protocol	Rules governing process conduct to a written instruction.
Trusted Build	Unaltered, true, and certified complied binary code.
SHA-1	Algorithm used to define the hash code value.
Software	Computer software is human interfacing computer programs, procedures and documentation that perform defined task on a computer system. The term includes application software that performs productive tasks for users, system software such as operating systems, which interface with hardware to provide the necessary services for application software.
Voting System Components	The units of equipment (server platform, DRE voting terminal, ballot scan device) when used together create a voting system.
Verification	The act of reviewing, inspecting, and/or testing to establish and document

Terms & Abbreviation	Description
	that a product, service, or system meets the regulatory, standard, or specification requirements.

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End of Report

---

# County of Allegheny

## 2016 Pre/**Post**-Election Air Gap Analysis of Election Tabulation Network

Research and Recommendations Provided by:



*a network infrastructure company*

Jacob Winkle  
Senior Consultant  
[jwinkle@s4nets.com](mailto:jwinkle@s4nets.com)  
412.660.0867

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## **Overview**

The County of Allegheny has engaged solutions4networks to perform an “Air Gap” analysis of their elections tabulation network located in Pittsburgh, PA. solutions4networks has been tasked to verify the tabulation network is a stand-alone, isolated network and to assess the network’s vulnerability to external access and/or tampering. In addition to the network, solutions4networks has been asked to assess and document the general physical security of the warehouse building.

An on site visit was made by Jacob Winkle of solutions4networks on April 25, 2016. The purpose of this document is to report the results of the assessment, identify security concerns and to make recommendations for the remediation of these concerns. A post-Election onsite visit was made on April 28, 2015. This report covers both the Pre-Election assessment and the **Post-Election review**. Post-Election Review updates will be noted in **red**.

## **Site Contact**

Elizabeth Dell  
Elizabeth.Dell@AlleghenyCounty.US  
412-350-6059

Robin Gigliotti  
Robin.Gigliotti@AlleghenyCounty.US  
412-629-7322

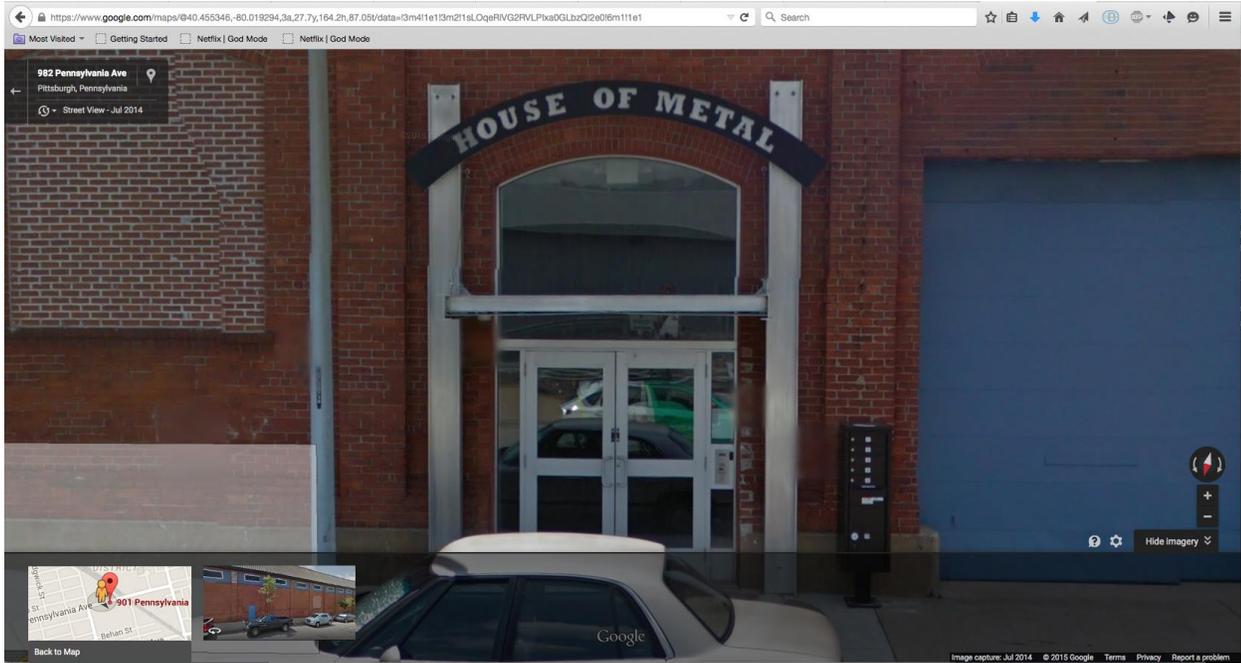
901 Pennsylvania Avenue  
Pittsburgh, PA 15233

## **General Physical Security/Building Access**

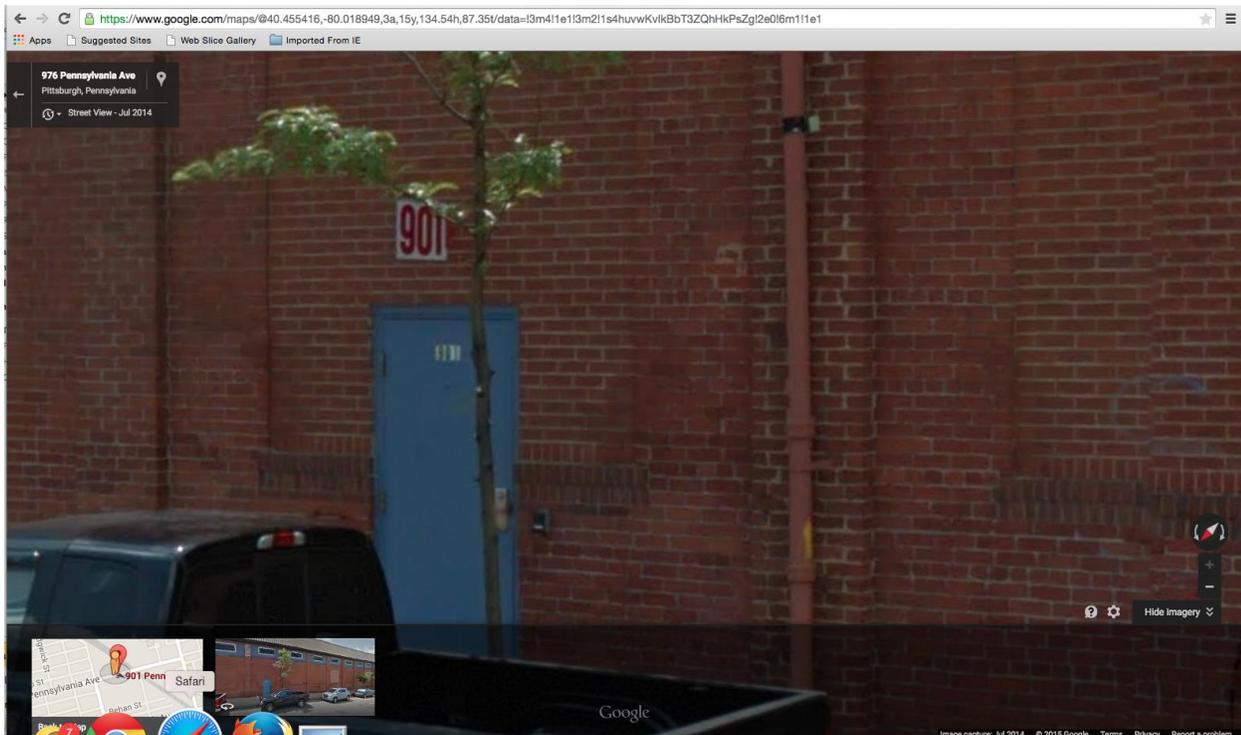
### **Physical Security/Building Access - No Issues Found**

There are several suites within the warehouse and there were no outside signs, which identified the County of Allegheny building space. The building phone at the main entrance also did not have any entries to dial for the County of Allegheny.

## Building Main Entrance:



## Suite 901:



solutions4networks was met at suite 901 by Robin Gigliotti after a call was placed to her cell phone and was asked to provide driver's license identification and a business card before access to the building was granted.

Entrance from the street required badge card access. The first door in the warehouse required a security code, but it was a physical, non-electronic lock.

Security cameras were observed over the street entrance and inside the computer room. Cell phones were not permitted into the computer room that contained the tabulation network.

**Post-Election Review:** All items indicated above remained the same.

# Election Tabulations Network

## Network Overview - Physical

A Network Topology diagram was provided to solutions4networks. The observed network topology was identical to the provided drawing.

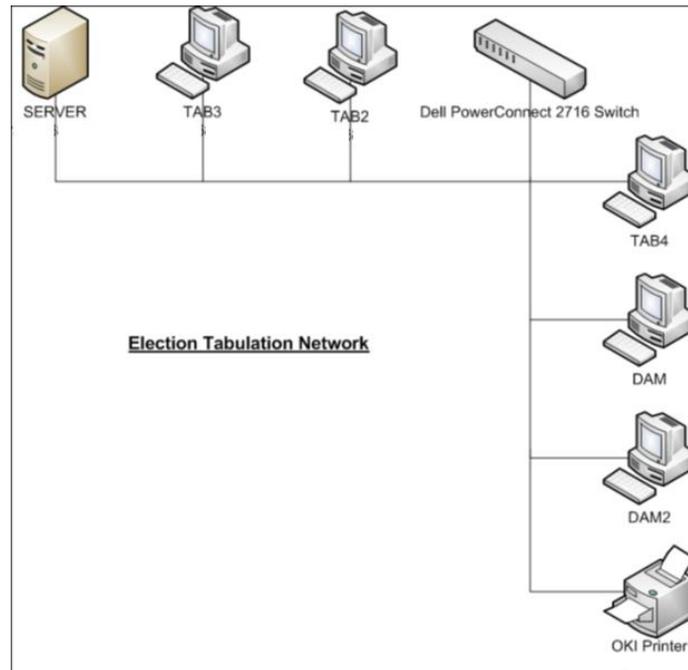


Figure 1 - Election Tabulation Network

The Election Tabulation Network consisted of the following devices:

- 1 Dell Powerconnect 2716 Ethernet Switch
- 1 Windows Server
- 5 Client PC's
  - Two DAM (Dial Access Modem) Servers
  - 3 Windows XP Clients
- 1 Printer

## Network Overview - Logical

All of the devices had an address from RFC1918 private network 192.168.1.0/24. The Windows Server with address 192.168.1.20 provided DHCP, DNS and WINS services. A default gateway of 192.168.1.1 was configured, but no such device was found on the network.

**Post-Election Review:** All items indicated above remained the same.

Dell Server PE-SC1420	Dell Optiplex GX520	Dell Optiplex GX520	Dell Optiplex GX520	Dell Precision PWS690	Dell Precision PWS690
BOE.elections.local	TAB3.elections.local	TAB2.elections.local	TAB4.elections.local	DAM.elections.local	DAM2.elections.local
Provides DHCP, WINS, DNS Services	DHCP enabled	DHCP enabled	DHCP enabled	DHCP disabled, static address	DHCP enabled/DNS hard coded
Win2003 SP1	WinXP SP3	WinXP SP2	WinXP SP2	WinXP SP2	WinXP SP2
2GB Ram	1 GB Ram	1 GB Ram	1 GB Ram	2 GB Ram	2 GB Ram
192.168.1.20	192.168.1.13	192.168.1.10	192.168.1.11	192.168.1.101	192.168.1.12
255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
gateway: 192.168.1.1 (doesn't exist)	gateway: 192.168.1.1 (doesn't exist)	gateway: 192.168.1.1 (doesn't exist)	gateway: 192.168.1.1 (doesn't exist)	N/A	gateway: 192.168.1.1 (doesn't exist)
N/A	DHCP Server: 192.168.1.20	DHCP Server: 192.168.1.20	DHCP Server: 192.168.1.20	N/A	DHCP Server: 192.168.1.20
N/A	DNS Server: 192.168.1.20	DNS Server: 192.168.1.20	DNS Server: 192.168.1.20	DNS Server: 192.168.1.20	DNS Server: 192.168.1.20
N/A	Wins Server: 192.168.1.20	Wins Server: 192.168.1.20	Wins Server: 192.168.1.20	N/A	Wins Server: 192.168.1.20
Conexant 56k modem	N/A	N/A	N/A	N/A	N/A
3.5 floppy disk	3.5 floppy disk	3.5 floppy disk	3.5 floppy disk	3.5 floppy disk	3.5 floppy disk
cd drive	RW/DVD	RW/DVD	RW/DVD	RW/DVD	RW/DVD
tape drive	N/A	N/A	N/A	N/A	N/A
com1/com2/lpt1	com1/com2/lpt1	com1/com2/lpt1	com1/com2/lpt1	com1/com2/lpt1	com1/com2/lpt1
Dell PowerVault 100T DAT72 Tape drive	N/A	N/A	N/A	Zip Drive	Zip Drive
Remote Desktop Enabled. Allowed users ELECTIONS\SBS Remote Operators	Remote Assistance is enabled	Remote Assistance is enabled	Remote Assistance is enabled	Remote Assistance is enabled	Remote Assistance is enabled
No Automatic Updates Allowed	No Automatic Updates Allowed	No Automatic Updates Allowed	No Automatic Updates Allowed	Nothing is selected for Auto Updates	Auto Updates enabled for 3:00AM daily
Enterprise Symantec A/V installed and running, password protected	Symantec A/V: Parent Server BOE Definition File 5/8/2006 Rev. 35	Symantec A/V: Parent Server BOE Definition File 5/8/2006 Rev. 35	Symantec A/V: Parent Server BOE Definition File 5/8/2006 Rev. 35	N/A	N/A
Windows Firewall is off, ICS service not running	Windows Firewall is off	Windows Firewall is off	Windows Firewall is off	Windows Firewall is on	Windows Firewall is on
<b>Physical Connections:</b>	<b>Physical Connections:</b>	<b>Physical Connections:</b>	<b>Physical Connections:</b>	<b>Physical Connections:</b>	<b>Physical Connections:</b>
ethernet	ethernet	ethernet	ethernet	ethernet	ethernet
ps/2 mouse	usb mouse	usb mouse	usb mouse	usb mouse	usb mouse
ps/2 keyboard	usb keyboard	usb keyboard	usb keyboard	usb keyboard	usb keyboard
monitor	monitor	monitor	monitor	monitor	monitor
		External Zip drive			
power cord connected to APC Battery Backup	power cord	power cord	power cord	power cord	power cord
	Serial connection to the ESS (Elections System&Software) Hub. This is the cartridge that the voter data is on	Serial connection to the ESS (Elections System&Software) Hub. This is the cartridge that the voter data is on	Serial connection to the ESS (Elections System&Software) Hub. This is the cartridge that the voter data is on	Serial Bus connection going to a bank of v.92 modems - some are powered on	Serial Bus connection going to a bank of v.92 modems - some are powered on

“Air Gap” Analysis – No Issues Found

### **No External Connections Found**

The only outside connections found on the network were the dial-up modems on the DAM servers which are part of the application. No other external connections were found on the network. The 7 connections on the Dell 2716 switch were traced to valid devices. No other cables were connected to the Dell Switch and no loose cables were observed in the vicinity of the switch. solutions4networks asked if there was a valid login for the Dell 2716 switch but was told that no one was aware of one.

### **No Wireless Adapters or Bluetooth Capability Found on Client Devices**

Each PC was physically inspected for the presence of a wireless adapter or Bluetooth adapter and none were found.

The Windows “Device Manager” of each device was also inspected for the presence of any wireless devices.

### **No Wireless Keyboards and Mice**

The keyboards and mice all had physical wires connected to the computers.

**Post-Election Review:** All items indicated above remained the same.

## **“Air Gap” Network Intact - Recommendations for Improvement**

solutions4networks did not find any problems with the Election Tabulation Network, but have these recommendations to improve security of the network:

### **Client Operating Systems – Update the Clients to a supported OS.**

The clients PC’s were found to be running Windows XP which is no longer supported by Microsoft. These may be more vulnerable to attack if the network was compromised. The clients also had their internal Firewall disabled. They did have Symantec Anti-virus installed, but the definitions were out of date.

### **Server Operating System – Update the Server Operating System.**

The server operating system is running Windows Server 2003, which is end of life July 2015. Any OS that is end of life is more vulnerable to attack if the network is compromised as it is no longer updated with any security patches.

### **Remote Assistance Enabled.**

Remote Assistance is enabled on the 3 clients and 2 DAM servers. This serves no positive purpose in a closed network environment where each machine is physically accessible and should be disabled in the event the network is compromised.

### **Remote Desktop is Enabled.**

Remoted Desktop is enabled on the BOE server. Once again this does not serve any positive purpose in a closed local network and should be disabled in the event the network may be compromised.

### **Windows Update Enabled/None Selected.**

The two DAM servers are configured differently from the rest of the computers on the network. Consistency should be the norm. All other computers have Auto Updates turned off. DAM1 has nothing selected and DAM2 has Auto Updates enabled and set for 3:00AM.

### **Lock Physical Access to the Dell PowerConnect 2716**

The Dell switch is easily accessible on the countertop. A locked cabinet would make it more difficult to connect an external cable. It is also recommended to disable any unused ports on the Dell Switch or move the unused ports to a different VLAN from the production network.

### **Remove the Default Gateway Option**

The DHCP server is giving the clients a default gateway of 192.168.1.1 even though no device exists. Removing the default gateway completely would make it more difficult for the clients to communicate with external networks. There is some inconsistency on the network in that not all of the clients are set up for DHCP. Either set them all up for DHCP or set them all up for Static. For a more secure environment it would be better to disable DHCP on the BOE server entirely and configure static IPs on all of the clients that way if someone were to ever connect to the Dell switch they would never obtain a DHCP address but would have to know the network addressing to hard code their PC.

**County of Allegheny,  
Commonwealth of Pennsylvania**

Parallel Test Report  
General Primary Election

April 26, 2016



**BAKER TILLY**

Candor. Insight. Results.

# County of Allegheny, Commonwealth of Pennsylvania

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Mr. William McKain, County Manager  
County of Allegheny, Commonwealth of Pennsylvania  
Office of the County Manager  
436 Grant Street  
Room 119 Courthouse  
Pittsburgh, PA 15219

To assist with your evaluation of County of Allegheny's electronic voting machines, we randomly selected an election day polling location, scripted votes for parallel testing, and tested the functionality of the Direct Recording Electronic equipment, ES&S iVotronic voting machines. The test was performed on April 26, 2016, the date of the primary election. The scripting component included creating hypothetical ballots for parallel testing by mimicking voter behavior and voting patterns from data and statistics provided by County of Allegheny, Department of Elections, for Precinct 340, McKeesport, Ward 4. Our engagement was performed in accordance with the consulting standards prescribed by the American Institute of Certified Public Accountants.

The results of the work performed indicate that the two voting machines tested accurately recorded and counted the results of 102 ballots cast for the selected polling location. Our results are supported by visual evidence that the electronic voting machine recorded and maintained the vote counts properly. At the beginning of the process, we verified that the zero tape did in fact contain zero vote counts for each candidate in each race. Testing was done under video surveillance, capturing votes as they were entered into each voting machine from the scripted ballots. At the end of the election process, we compared the vote totals in the script, the Master Personalized Electronic Ballot (PEB), the Final Results Tape, and Flash Cards from the machines tested and found them to be in agreement. There were no discrepancies between the number of ballots cast, ballots cast for a particular party, votes for a particular candidate, the number of under-votes, the number of canceled votes, and the audio ballot cast for the visually impaired.

Because of its special purpose, this report is not suited for any purpose other than to assist you in your evaluation and, as such, is intended only for your internal use.

*Baker Tilly Virchow Krause, LLP*

Pittsburgh, Pennsylvania  
April 26, 2016

**COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
RECONCILIATION OF VOTE TOTALS IN SCRIPT TO FINAL RESULTS TAPE, FLASH CARDS AND MASTER PEB  
APRIL 26, 2016**

PRECINCT: MCKEESPORT WARD 4

	Voter Terminal Data per Script			Final Results Tape	Flash Card Data (from Precinct Report)			Master PEB Data	Differences
	V5180789	V5172240	Total		V5180789	V5172240	Total		
Public Count	93	0	93	93	93	0	93	93	0
	0	9	9	9	0	9	9	9	0
	<u>93</u>	<u>9</u>	<u>102</u>	<u>102</u>	<u>93</u>	<u>9</u>	<u>102</u>	<u>102</u>	<u>0</u>
President of the United States									
Hillary Clinton	44	2	46	46	44	2	46	46	0
Bernie Sanders	39	2	41	41	39	2	41	41	0
Roque Rocky De La Fuente	7	1	8	8	7	1	8	8	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Democratic</b>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>0</u>
President of the United States									
Ted Cruz	1	0	1	1	1	0	1	1	0
Marco Rubio	1	0	1	1	1	0	1	1	0
Jeb Bush	0	0	0	0	0	0	0	0	0
Ben Carson	0	1	1	1	0	1	1	1	0
John R. Kasich	1	0	1	1	1	0	1	1	0
Donald J. Trump	0	2	2	2	0	2	2	2	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Republican</b>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>0</u>
United States Senator									
Joseph J. Vodvarka	22	2	24	24	22	2	24	24	0
John Fetterman	26	2	28	28	26	2	28	28	0
Joe Sestak	12	0	12	12	12	0	12	12	0
Katie McGinty	30	1	31	31	30	1	31	31	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Democratic</b>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>0</u>
United States Senator									
Pat Toomey	2	3	5	5	2	3	5	5	0
Write-in: (A) Alpha	1	0	1	1	1	0	1	1	0
<b>Total Republican</b>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>0</u>

**COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA**  
**RECONCILIATION OF VOTE TOTALS IN SCRIPT TO FINAL RESULTS TAPE, FLASH CARDS AND MASTER PEB**  
**APRIL 26, 2016**

PRECINCT: MCKEESPORT WARD 4

	Voter Terminal Data per Script			Final Results Tape	Flash Card Data (from Precinct Report)			Master PEB Data	Differences
	V5180789	V5172240	Total		V5180789	V5172240	Total		
Attorney General									
John Morganelli	41	2	43	43	41	2	43	43	0
Josh Shapiro	36	2	38	38	36	2	38	38	0
Stephen A. Zappala, Jr.	13	1	14	14	13	1	14	14	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Democratic</b>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>0</u>
Attorney General									
Joe Peters	2	2	4	4	2	2	4	4	0
John Rafferty	1	1	2	2	1	1	2	2	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Republican</b>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>0</u>
Auditor General									
Eugene A. DePasquale	82	3	85	85	82	3	85	85	0
Write-in: (A) Alpha	8	2	10	10	8	2	10	10	0
<b>Total Democratic</b>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>0</u>
Auditor General									
John Brown	3	2	5	5	3	2	5	5	0
Write-in: (B) Bravo	0	1	1	1	0	1	1	1	0
<b>Total Republican</b>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>0</u>
State Treasurer									
Joe Torsella	85	3	88	88	85	3	88	88	0
Write-in: (B) Bravo	5	2	7	7	5	2	7	7	0
<b>Total Democratic</b>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>90</u>	<u>5</u>	<u>95</u>	<u>95</u>	<u>0</u>
State Treasurer									
Otto Voit	3	2	5	5	3	2	5	5	0
Write-in: (C) Charlie	0	1	1	1	0	1	1	1	0
<b>Total Republican</b>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>0</u>

**COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA**  
**RECONCILIATION OF VOTE TOTALS IN SCRIPT TO FINAL RESULTS TAPE, FLASH CARDS AND MASTER PEB**  
**APRIL 26, 2016**

PRECINCT: MCKEESPORT WARD 4

	Voter Terminal Data per Script			Final Results Tape	Flash Card Data (from Precinct Report)			Master PEB Data	Differences
	V5180789	V5172240	Total		V5180789	V5172240	Total		
Representative in Congress									
Janis C. Brooks	42	2	44	44	42	2	44	44	0
Mike Doyle	48	3	51	51	48	3	51	51	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Democratic</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>0</b>
Representative in Congress									
Write-in: (D) Delta	2	3	5	5	2	3	5	5	0
Write-in: (E) Echo	1	0	1	1	1	0	1	1	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
Senator in the General Assembly									
James R. Brewster	85	3	88	88	85	3	88	88	0
Write-in: (C) Charlie	5	2	7	7	5	2	7	7	0
<b>Total Democratic</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>0</b>
Senator in the General Assembly									
Write-in: (F) Foxtrot	2	2	4	4	2	2	4	4	0
Write-in: (G) Golf	1	1	2	2	1	1	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
Representative in the General Assembly									
Marc J. Gergely	85	4	89	89	85	4	89	89	0
Write-in: (D) Delta	5	1	6	6	5	1	6	6	0
<b>Total Democratic</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>0</b>
Representative in the General Assembly									
Write-in: (H) Hotel	1	3	4	4	1	3	4	4	0
Write-in: (I) India	2	0	2	2	2	0	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>

**COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA**  
**RECONCILIATION OF VOTE TOTALS IN SCRIPT TO FINAL RESULTS TAPE, FLASH CARDS AND MASTER PEB**  
**APRIL 26, 2016**

PRECINCT: MCKEESPORT WARD 4

	Voter Terminal Data per Script			Final Results Tape	Flash Card Data (from Precinct Report)			Master PEB Data	Differences
	V5180789	V5172240	Total		V5180789	V5172240	Total		
Delegate to the National Convention									
Alex Austin (M)	48	4	52	52	48	4	52	52	0
Kevin L. Carter (M)	48	4	52	52	48	4	52	52	0
Elizabeth Ussey (F)	42	1	43	43	42	1	43	43	0
Jim Lewis (M)	48	4	52	52	48	4	52	52	0
Rob Beckwith (M)	48	4	52	52	48	4	52	52	0
Lynda Wrenn (F)	42	1	43	43	42	1	43	43	0
Gisele B. Fetterman (F)	42	1	43	43	42	1	43	43	0
Austin Davis (M)	48	4	52	52	48	4	52	52	0
Bill Dopico (M)	42	1	43	43	42	1	43	43	0
Jill M. Lamb (F)	42	1	43	43	42	1	43	43	0
Valerie McDonald Roberts (F)	48	4	52	52	48	4	52	52	0
Debra H. Dermody (F)	48	4	52	52	48	4	52	52	0
Moira B. Kaleida (F)	48	4	52	52	48	4	52	52	0
Debra Frankel (F)	48	4	52	52	48	4	52	52	0
Jay Costa, Jr. (M)	42	1	43	43	42	1	43	43	0
Rich Fitzgerald (M)	42	1	43	43	42	1	43	43	0
Neal Bisno (M)	42	1	43	43	42	1	43	43	0
William Peduto (M)	42	1	43	43	42	1	43	43	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Democratic</b>	<b>810</b>	<b>45</b>	<b>855</b>	<b>855</b>	<b>810</b>	<b>45</b>	<b>855</b>	<b>855</b>	<b>0</b>
Delegate to the National Convention									
Mary Ann Meloy	3	3	6	6	3	3	6	6	0
Cameron S. Linton	3	3	6	6	3	3	6	6	0
Mike DeVanney	3	3	6	6	3	3	6	6	0
Write-in	0	0	0	0	0	0	0	0	0
<b>Total Republican</b>	<b>9</b>	<b>9</b>	<b>18</b>	<b>18</b>	<b>9</b>	<b>9</b>	<b>18</b>	<b>18</b>	<b>0</b>
Alternate Delegate to the National Convention									
Kathryn Harrison (F)	85	3	88	88	85	3	88	88	0
Write-in: (E) Echo	5	2	7	7	5	2	7	7	0
<b>Total Democratic</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>0</b>

**COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA**  
**RECONCILIATION OF VOTE TOTALS IN SCRIPT TO FINAL RESULTS TAPE, FLASH CARDS AND MASTER PEB**  
**APRIL 26, 2016**

PRECINCT: MCKEESPORT WARD 4

	Voter Terminal Data per Script			Final Results Tape	Flash Card Data (from Precinct Report)			Master PEB Data	Differences
	V5180789	V5172240	Total		V5180789	V5172240	Total		
Alternate Delegate to the National Convention									
Mallory Ruhling	2	2	4	4	2	2	4	4	0
Write-in: (J) Juliet	1	1	2	2	1	1	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
County Committeeman									
Write-in: (K) Kilo	2	2	4	4	2	2	4	4	0
Write-in: (L) Lima	1	1	2	2	1	1	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
County Committeewoman									
Write-in: (M) Mike	2	2	4	4	2	2	4	4	0
Write-in: (N) November	1	1	2	2	1	1	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
Proposed Consitutional Amendment #1									
Yes	55	3	58	58	55	3	58	58	0
No	35	2	37	37	35	2	37	37	0
<b>Total Democratic</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>0</b>
Proposed Consitutional Amendment #1									
Yes	2	2	4	4	2	2	4	4	0
No	1	1	2	2	1	1	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
Proposed Consitutional Amendment #1									
Yes	0	0	0	0	0	0	0	0	0
No	0	1	1	1	0	1	1	1	0
<b>Total Nonpartisan</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>
Proposed Consitutional Amendment #2									
Yes	35	2	37	37	35	2	37	37	0
No	55	3	58	58	55	3	58	58	0
<b>Total Democratic</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>5</b>	<b>95</b>	<b>95</b>	<b>0</b>

**COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
 RECONCILIATION OF VOTE TOTALS IN SCRIPT TO FINAL RESULTS TAPE, FLASH CARDS AND MASTER PEB  
 APRIL 26, 2016**

PRECINCT: MCKEESPORT WARD 4

	Voter Terminal Data per Script			Final Results Tape	Flash Card Data (from Precinct Report)			Master PEB Data	Differences
	V5180789	V5172240	Total		V5180789	V5172240	Total		
Proposed Consitutional Amendment #2									
Yes	1	3	4	4	1	3	4	4	0
No	2	0	2	2	2	0	2	2	0
<b>Total Republican</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>0</b>
Proposed Consitutional Amendment #2									
Yes	0	1	1	1	0	1	1	1	0
No	0	0	0	0	0	0	0	0	0
<b>Total Nonpartisan</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>

## **Exhibit A**

The parallel testing work performed was as follows:

### **Control and Security Procedures**

1. We randomly selected a precinct.
2. We selected two ES&S iVotronic voting machines with "tamper-evident" seals from the County of Allegheny warehouse. We test-voted on each of the ES&S iVotronic voting machines.
3. We created a script for parallel testing to mimic voter behavior and voting patterns for the polling location randomly selected.
4. We obtained and secured the Master Personalized Electronic Ballot (PEB) and two Supervisor PEBs. The Master PEB is used to open voting machines and to print the zero tape (a "zero-vote" count tape from the iVotronic voting machines) before electronic balloting starts, and the Supervisor PEB is used to activate an iVotronic voting machine for each voter. Each PEB was secured in a locked file in our office after election day to prevent access and tampering.
5. We set up parallel test equipment where all actions could be visibly recorded by video surveillance. One video camera was set up to document the votes cast on each of the ES&S iVotronic voting machines selected.
6. We conducted the parallel test in a low traffic area to avoid interruptions.

### **Casting Votes**

1. Ballots were scripted to ensure that "voter turnout" in the mock election closely approximated the projected voter turnout for the randomly selected polling location.
2. The video camera was focused on the ES&S iVotronic voting machine screen in a manner such that votes could be seen as they were entered.
3. Actual voting was conducted as follows:
  - First team member: Called out each vote as marked on the ballot script.
  - Second team member: As each vote was called, entered the vote in the ES&S iVotronic voting machine.
  - Second team member: Called back the votes cast as they appeared on the summary screen(s) on the ES&S iVotronic voting machine.
  - First team member: As the second team member called back the votes, verified that the vote was cast as it was read, and made a notation on the script.

The terminals closed at 8:00 PM. The final results tape was printed and the flash card from each voting machine was removed. Video camera tapes were marked according to the applicable voting machine and the time votes were entered into the voting machine selected for testing.

Terminal S/N: V5172240->  
PEB S/N PS215634- (FMW 1.07)  
Software Version 9.1.4.1  
Created 02/01/06 8:50  
Copyright ES&S, Inc. 1993-2005  
All Rights Reserved  
Diagnostic check completed: OK  
IVotronic I

2016 General Primary  
MCKEESPORT WARD 4  
POLLING LOCATION ZERO TAPE

Public Count Statistics  
Total Ballots Cast: 0  
Total Ballots Counted: 0

Number of Terminals Opened: 2  
Individual Voter Terminal Data

S/N V5180789  
Public Count: 0  
Protective Count: 4170  
OPENED 06:56:53 04/26/2016  
NOT CLOSED

S/N V5172240  
Public Count: 0  
Protective Count: 3255  
OPENED 07:01:52 04/26/2016  
NOT CLOSED

\*\*\*\*\*  
PRECINCT: MCKEESPORT WARD 4  
Public Count: 0  
Party Counts  
Democratic 0  
Republican 0  
Non-Partisan 0  
Ballot Style Counts  
DEM - Ballot Style #340 0  
REP - Ballot Style #340 0  
NON - Ballot Style #340 0

DEM - President of the United States  
(Vote for 1) Total: 0  
DEM-Hillary Clinton 0  
DEM-Bernie Sanders 0  
DEM-Roque Rocky De La Fuente 0

>Write-ins in above contest: 0  
UnderVotes For Above contest: 0

DEM - United States Senator  
(Vote for 1) Total: 0  
DEM-Joseph J. Vodvarka 0  
DEM-John Fetterman 0  
DEM-Joe Sestak 0  
DEM-Katie McGinty 0

>Write-ins in above contest: 0  
UnderVotes For Above contest: 0

DEM - Attorney General			0
(Vote for 1)	Total:		0
DEM-John Morganeli			0
DEM-Josh Shapiro			0
DEM-Stephen A. Zappala, Jr.			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
DEM - Auditor General			0
(Vote for 1)	Total:		0
DEM-Eugene A. DePasquale			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
DEM - State Treasurer			0
(Vote for 1)	Total:		0
DEM-Joe Torsella			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
DEM - CNG0014 Representative in Congress			0
(Vote for 1)	Total:		0
DEM-Janis C. Brooks			0
DEM-Mike Doyle			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
DEM - SEN0045 Senator in the General Ass			0
(Vote for 1)	Total:		0
DEM-James R. Brewster			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
DEM - LEG0035 Representative in the Gene			0
(Vote for 1)	Total:		0
DEM-Marc J. Gergely			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0

DEM - CNG0014 Delegate to the National C  
 (Vote for 9) Total: 0  
 DEM-Alex Austin (M) 0  
 DEM-Kevin L. Carter (M) 0  
 DEM-Elizabeth Ussery (F) 0  
 DEM-Jim Lewis (M) 0  
 DEM-Rob Beckwith (M) 0  
 DEM-Lynda Wrenn (F) 0  
 DEM-Gisele B. Fetterman (F) 0  
 DEM-Austin Davis (M) 0  
 DEM-Bill Dopico (M) 0  
 DEM-Jill M. Lamb (F) 0  
 DEM-Valerie McDonald Roberts (F) 0  
 DEM-Debra H. Dermody (F) 0  
 DEM-Moira B. Kaleida (F) 0  
 DEM-Debra Frankel (F) 0  
 DEM-Jay Costa, Jr. (M) 0  
 DEM-Rich Fitzgerald (M) 0  
 DEM-Neal Bisno (M) 0  
 DEM-William Peduto (M) 0

>Write-ins in above contest: 0  
 UnderVotes For Above contest: 0

DEM - CNG0014 Alternate Delegate to the  
 (Vote for 1) Total: 0  
 DEM-Kathryn Harrison (F) 0

>Write-ins in above contest: 0  
 UnderVotes For Above contest: 0

REP - President of the United States  
 (Vote for 1) Total: 0  
 REP-Ted Cruz 0  
 REP-Marco Rubio 0  
 REP-Jeb Bush 0  
 REP-Ben Carson 0  
 REP-John R. Kasich 0  
 REP-Donald J. Trump 0

>Write-ins in above contest: 0  
 UnderVotes For Above contest: 0

REP - United States Senator  
 (Vote for 1) Total: 0  
 REP-Pat Toomey 0

>Write-ins in above contest: 0  
 UnderVotes For Above contest: 0

REP - Attorney General  
 (Vote for 1) Total: 0  
 REP-Joe Peters 0  
 REP-John Rafferty 0

>Write-ins in above contest: 0  
 UnderVotes For Above contest: 0

REP - Auditor General			
(Vote for 1)	Total:		0
REP-John Brown			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - State Treasurer			
(Vote for 1)	Total:		0
REP-Otto Voit			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - CNG0014 Representative in Congress			
(Vote for 1)	Total:		0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - SEN0045 Senator in the General Ass			
(Vote for 1)	Total:		0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - LEG0035 Representative in the Gene			
(Vote for 1)	Total:		0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - CNG0014 Delegate to the National C			
(Vote for 3)	Total:		0
REP-Mary Ann Meloy			0
REP-Cameron S. Linton			0
REP-Mike DeVanney			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - CNG0014 Alternate Delegate to the			
(Vote for 3)	Total:		0
REP-Mallory Ruhling			0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - CCMAN County Committeeman			
(Vote for 1)	Total:		0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0
REP - CCWOMAN County Committeewoman			
(Vote for 1)	Total:		0
>Write-ins in above contest:			0
UnderVotes For Above contest:			0

Constitutional Amendment # 1  
(Vote for 1) Total: 0  
Yes 0  
No 0  
UnderVotes For Above contest: 0

Constitutional Amendment # 2  
(Vote for 1) Total: 0  
Yes 0  
No 0  
UnderVotes For Above contest: 0

Time/Date: 07:07:58 04/26/2016

Signature: 

Signature: 

Signature: 

Signature: 

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
 ELECTION, TUESDAY, APRIL 26, 2016  
 SUMMARY OF SCRIPTS

DEMOCRAT	Public Count #	President of the United States (vote for one)					United States Senator (vote for one)			Attorney General (vote for one)					
		Clinton	Sanders	De La Fuente	Write-In		Vabvaraka	Fetterman	Sestak	McGinty	Write-In	Morganelli	Shapiro	Zappala	Write-In
Machine 1 0004447	90	44	39	7	0		22	26	12	30	0	41	36	13	0
Machine 2 0004448	5	2	2	1	0		2	2	0	1	0	2	2	1	0
Total	95	46	41	8	0		24	28	12	31	0	43	38	14	0
REPUBLICAN	Public Count #	President of the United States (vote for one)					United States Senator (vote for one)			Attorney General (vote for one)					
		Cruz	Rubio	Bush	Carson	Kasich	Trump	Write-In	Toomey	(A) Alpha	Write-In	Peters	Rafferty	Write-In	
Machine 1 0004447	3	1	1	0	0	1	0	0	2	1	0	2	1	0	
Machine 2 0004448	3	0	0	0	1	0	0	0	3	0	0	2	1	0	
Total	6	1	1	0	1	1	0	0	5	1	0	4	2	0	
INDEPENDENT	Public Count #														
Machine 2 0004448	1														
Total	1														



COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
 ELECTION, TUESDAY, APRIL 26, 2016  
 SUMMARY OF SCRIPTS

MACHINE	PUBLIC COUNT #	Delegate to the National Convention																			
		Avstin (M)	Carter (M)	Ussery (F)	Lewis (M)	Beckwith (M)	Wrenn (F)	Fetterman (F)	Davis (M)	Dopiso (M)	Lamb (F)	McDonald Roberts (F)	Dermody (F)	Kalsida (F)	Frankel (F)	Costa, Jr. (M)	Fitzgerald (M)	Bisno (M)	Poduro (M)	Write-in	
Machine 1 0004447	90	48	48	42	48	48	42	42	48	42	42	48	48	48	48	48	42	42	42	42	0
Machine 2 0004448	5	4	4	1	4	4	1	1	4	1	1	4	4	4	4	4	1	1	1	1	0
Total	95	52	52	43	52	52	43	43	52	43	43	52	52	52	52	43	43	43	43	43	0
REPUBLICAN		Alternate Delegate to the National Convention (vote for not more than three)																			
Machine 1 0004447	3	3	3	3	0	2	1	0	County Committeeman (vote for one)			County Committeeman (vote for one)			County Committeeman (vote for one)			County Committeeman (vote for one)			
Machine 2 0004448	3	3	3	3	0	2	1	0	(K) Kilo	(L) Lima	Write-in	(K) Kilo	(L) Lima	Write-in	(K) Kilo	(L) Lima	Write-in	(K) Kilo	(L) Lima	Write-in	
Total	6	6	6	6	0	4	2	0	4	2	0	4	2	0	4	2	0	4	2	0	
INDEPENDENT		Public Count #																			
Machine 2 0004448	1																				
Total	1																				

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
 ELECTION, TUESDAY, APRIL 26, 2016  
 SUMMARY OF SCRIPTS

DEMOCRAT	Public Count #	Alternate Delegate to the National Convention (vote for one)			Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)	
		Harrison (F)	(E) Echo	Write-in	Yes	No	Yes	No
Machine 1 0004447	90	85	5	0	55	35	35	55
Machine 2 0004448	5	3	2	0	3	2	2	3
Total	95	88	7	0	58	37	37	58
REPUBLICAN	Public Count #	County Committeewoman (vote for one)			Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)	
(M) Mike		(S) November	Write-in	Yes	No	Yes	No	
Machine 1 0004447	3	2	1	0	2	1	1	2
Machine 2 0004448	3	2	1	0	2	1	3	0
Total	6	4	2	0	4	2	4	2
INDEPENDENT	Public Count #	Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)				
Yes		No	Yes	No				
Machine 2 0004448	1	0	1	1	0			
Total	1	0	1	1	0			

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
ELECTION, TUESDAY, APRIL 26, 2016  
VOTER SIMULATION PROJECT SCRIPT

Public Count #	President of United States (vote for one)			United States Senator (vote for one)				Attorney General (vote for one)					
	Clinton	Sanders	De La Fuente	Write-In	Yudofsky	Fetterman	Sestak	McGinty	Write-In	Morgenthau	Shapiro	Zappala	Write-In
1													
2													
3													
4													
5													
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90													
Subtotal	44	39	7	0	22	26	12	30	0	41	36	13	0

Public Count #	Auditor General (vote for one)			State Treasurer (vote for one)			Representative in Congress (vote for one)			Senator in the General Assembly (vote for one)			Representative in the General Assembly (vote for one)		
	DePasquale	(A) Alpha	Write-In	Turtella	(B) Bravo	Write-In	Brooks	Boyle	Write-In	Brewster	(C) Charlie	Write-In	Gergely	(D) Delta	Write-In
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90															
Subtotal	82	8	0	85	5	0	42	49	0	85	5	0	85	5	0

Delegate to the National Convention																				
(vote for not more than nine; Five Males (M), Four Females (F) to be elected)																				
Public Count #	Austin (M)	Carter (M)	Essery (F)	Lewis (M)	Beckwith (M)	Wrenn (F)	Fotterman (F)	Davis (M)	Dopies (M)	Lamb (F)	McDonald Roberts (F)	Dermody (F)	Katuhn (F)	Frenkel (F)	Costa, Jr. (M)	Fitzgerald (M)	Bison (M)	Peduto (M)	Write-In	
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90																				
Subtotal	48	48	42	48	48	42	42	48	42	42	48	48	48	48	42	42	42	42	42	0

Public Count #	Alternate Delegate to the National Convention (Vote for one)			Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)	
	Harrison (F)	(E) Echo	Write-in	Yes	No	Yes	No
	1	1			1		1
2	1						
3	1			1		1	
4	1						
5	1	1		1		1	
6	1			1		1	
7	1						
8	1			1		1	
9	1						
10	1			1		1	
11	1			1		1	
12	1			1		1	
13	1			1		1	
14	1			1		1	
15	1			1		1	
16	1			1		1	
17	1			1		1	
18	1			1		1	
19	1			1		1	
20	1			1		1	
21	1			1		1	
22	1			1		1	
23	1			1		1	
24	1			1		1	
25	1			1		1	
26	1			1		1	
27	1			1		1	
28	1			1		1	
29	1			1		1	
30	1			1		1	
31	1			1		1	
32	1			1		1	
33	1			1		1	
34	1			1		1	
35	1			1		1	
36	1			1		1	
37	1			1		1	
38	1			1		1	
39	1			1		1	
40	1			1		1	
41	1			1		1	
42	1			1		1	
43	1			1		1	
44	1			1		1	
45	1			1		1	
46	1			1		1	
47	1			1		1	
48	1			1		1	
49	1			1		1	
50	1			1		1	
51	1			1		1	
52	1			1		1	
53	1			1		1	
54	1			1		1	
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56	1			1		1	
57	1			1		1	
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67	1			1		1	
68	1			1		1	
69	1			1		1	
70	1			1		1	
71	1			1		1	
72	1			1		1	
73	1			1		1	
74	1			1		1	
75	1			1		1	
76	1			1		1	
77	1	1		1		1	
78	1			1		1	
79	1			1		1	
80	1			1		1	
81	1			1		1	
82	1			1		1	
83	1			1		1	
84	1			1		1	
85	1			1		1	
86	1			1		1	
87	1			1		1	
88	1			1		1	
89	1			1		1	
90	1			1		1	
Subtotal	85	5	0	85	35	35	55

Machine #0004448  
DEM

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
ELECTION, TUESDAY, APRIL 26, 2016  
VOTER SIMULATION PROJECT SCRIPT

Public Count #	President of United States (vote for one) Clinton   Sanders   De La Fuente   Write-In	United States Senator (vote for one) Vodvarkal   Fettermann   Sestaki   McGinty   Write-In	Attorney General (vote for one) Morgancelli   Shapiro   Zappala   Write-In
1	1	1	1
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
Subtotal	2 2 1 1 0 0	2 2 0 0 1 1 0	2 2 2 2 1 1 0

Machine #000448  
DEM

Public Count #	Auditor General (vote for one) DePasquale (A) Alpha Write-in	State Treasurer (vote for one) Torsella (B) Bravo Write-in	Representative in Congress (vote for one) Brooks   Doyle   Write-in	Senator in the General Assembly (vote for one) Breyster   (C) Charlie   Write-in	Representative in the General Assembly (vote for one) Geraghy   (D) Delta   Write-in
1	1	1	1	1	1
2	1	1	1	1	1
3	1	1	1	1	1
4	1	1	1	1	1
5	1	1	1	1	1
Subtotal	3	2	3	2	4
	0	0	0	0	0
	3	2	3	2	4
	0	0	0	0	0
	3	2	3	2	4



Machine #000448  
 DEVI

Public Count #	Alternate Delegate to the National Convention (vote for one)		Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)	
	Harrison (F)	(E) Echo   Write-in	Yes	No	Yes	No
1	1		1		1	
2	1		1		1	
3	1		1		1	
4	1		1		1	
5	1		1		1	
Subtotal	3	0	3	2	2	3

Machine #0004447  
 REP

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
 ELECTION, TUESDAY, APRIL 26, 2016  
 VOTER SIMULATION PROJECT SCRIPT

Public Count #	President of the United States (vote for one)			United States Senator (vote for one)			Attorney General (vote for one)			Auditor General (vote for one)						
	Cruz	Rubio	Bush	Carson	Kasich	Trump	Write-In	Toomey	(A) Alpha	Write-in	Peters	Rafferty	Write-in	Brown	(B) Bravo	Write-In
91	1							1			1			1		
92								1			1			1		
93	1	1	0	0	1	0	0	2	1	0	2	1	0	3	0	0
Subtotal	1	1	0	0	1	0	0	2	1	0	2	1	0	3	0	0

Machine #0004447  
 REP

Public Count #	State Treasurer (vote for one)	Representative in Congress (vote for one)	Senator in the General Assembly (vote for one)	Representative in the General Assembly (vote for one)	Representative in the General Assembly (vote for one)	Delegate to the National Convention (vote for not more than three)
	Voit   (C) Charlie   Write-in	(D) Delta   (E) Echo   Write-in	(F) Foxtrot   (G) Golf   Write-in	(H) Hotel   (I) India   Write-in	Meloy   Linton   DeVanney   Write-in	
91	1	1	1	1	1	1
92	1	1	1	1	1	1
93	1	1	1	1	1	1
Subtotal	3	2	2	1	3	3
	0	0	0	0	0	0
	0	1	1	1	3	3
	0	1	1	1	3	3
	0	0	0	0	0	0

Machine #0004447  
 REP

Public Count #	Alternate Delegate to the National Convention (vote for not more than three) Ruhling   (J) Juliet   Write-in	County Committeeman (vote for one) (K) Kilo   (L) Lima   Write-in	County Committeewoman (vote for one) (M) Mike   (N) November   Write-in	Proposed Constitutional Amendment #1 (Yes or No) Yes   No	Proposed Constitutional Amendment #2 (Yes or No) Yes   No
91	1	1	1	1	1
92	1	1	1	1	1
93	2	2	2	2	2
Subtotal	4	4	4	4	4

Machine #0004448  
 REP

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
 ELECTION, TUESDAY, APRIL 26, 2016  
 VOTER SIMULATION PROJECT SCRIPT

Public Count #	President of the United States (vote for one)			United States Senator (vote for one)			Attorney General (vote for one)			Auditor General (vote for one)								
	Cruz	Rubio	Bush	Carson	Kasich	Trump	Write-In	Toomey	(A)	Alpha	Write-In	Peters	Rafferty	Write-In	Brown	(B)	Bravo	Write-In
6	0	0	0	1	0	2	0	1	1	0	0	1	1	0	1	2	1	0
7	0	0	0	1	0	2	0	1	3	0	0	2	1	0	2	1	1	0
9	0	0	0	1	0	2	0	1	3	0	0	2	1	0	2	1	1	0
Subtotal	0	0	0	1	0	2	0	1	3	0	0	2	1	0	2	1	1	0

Machine #0004448  
 REP

Public Count #	State Treasurer (vote for one) Voit (C) Charlie Write-in	Representative in Congress (vote for one) (D) Delta (E) Echo Write-in	Senator in the General Assembly (vote for one) (F) Foxtrot (G) Golf Write-in	Representative in the General Assembly (vote for one) (H) Hotel (I) India Write-in	Delegate to the National Convention (vote for not more than three) Meloy Linton DeVanney Write-in
6	1	1	1	1	1
7	1	1	1	1	1
9	2	3	2	3	3
Subtotal	4	5	4	5	5

Machine #0004448  
 REP

Public Count #	Alternate Delegate to the National Convention (vote for not more than three)			County Committeeman (vote for one)			County Committeewoman (vote for one)			Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)	
	Ruhling	(J) Juliet	Write-in	(K) Kilo	(L) Lima	Write-in	(M) Mike	(N) November	Write-in	Yes	No	Yes	No
6	1			1			1			1		1	
7	1			1			1			1		1	
9	2	1	0	2	1	0	2	1	0	2	1	3	0
Subtotal													

Machine #0004448  
IND

COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA  
ELECTION: TUESDAY, APRIL 26, 2016  
VOTER SIMULATION PROJECT SCRIPT

Public Count #	Proposed Constitutional Amendment #1 (Yes or No)		Proposed Constitutional Amendment #2 (Yes or No)	
	Yes	No	Yes	No
8	1	1	1	0
Subtotal	0	1	1	0

Terminal S/N: V5172240->  
PEB S/N PS215634- (FMW 1.07)  
Software Version 9.1.4.1  
Created 02/01/06 8:50  
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Diagnostic check completed: OK  
iVotronic I

2016 General Primary  
MCKEESPORT WARD 4  
POLLING LOCATION RESULTS

Public Count Statistics

Total Ballots Cast: 102  
Total Ballots Counted: 102

Number of Terminals Opened: 2

Individual Voter Terminal Data  
S/N V5180789

Public Count: 93  
Protective Count: 4263  
OPENED 08:56:53 04/26/2016  
CLOSED 20:09:12 04/26/2016  
Terminal Ballots Counted: 93

S/N V5172240

Public Count: 9  
Protective Count: 3264  
OPENED 07:01:52 04/26/2016  
CLOSED 20:15:04 04/26/2016  
Terminal Ballots Counted: 9

\*\*\*\*\*

PRECINCT: MCKEESPORT WARD 4

Public Count: 102

Party Counts

Democratic 95  
Republican 6  
Non-Partisan 1

Ballot Style Counts

DEM - Ballot Style #340 95  
REP - Ballot Style #340 6  
NON - Ballot Style #340 1

DEM - President of the United States

(Vote for 1) Total: 95  
DEM-Hillary Clinton 46  
DEM-Bernie Sanders 41  
DEM-Roque Rocky De La Fuente 8

>Write-ins in above contest: 0  
UnderVotes For Above contest: 0

DEM - United States Senator		
(Vote for 1)	Total:	95
DEM-Joseph J. Vodvarka		24
DEM-John Fetterman		28
DEM-Joe Sestak		12
DEM-Katie McGinty		31
>Write-ins in above contest:		0
UnderVotes For Above contest:		0

DEM - Attorney General		
(Vote for 1)	Total:	95
DEM-John Morganelli		43
DEM-Josh Shapiro		38
DEM-Stephen A. Zappala, Jr.		14
>Write-ins in above contest:		0
UnderVotes For Above contest:		0

DEM - Auditor General		
(Vote for 1)	Total:	95
DEM-Eugene A. DePasquale		85

>A		
>Write-ins in above contest:		10
UnderVotes For Above contest:		0

DEM - State Treasurer		
(Vote for 1)	Total:	95
DEM-Joe Torsella		88

>B		
>Write-ins in above contest:		7
UnderVotes For Above contest:		0

DEM - CNG0014 Representative in Congress		
(Vote for 1)	Total:	95
DEM-Janis C. Brooks		44
DEM-Mike Doyle		51

>Write-ins in above contest:		0
UnderVotes For Above contest:		0

DEM - SEN0045 Senator in the General Ass		
(Vote for 1)	Total:	95
DEM-James R. Brewster		88

>C  
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>C

>Write-ins in above contest:		7
UnderVotes For Above contest:		0

DEM - LEG0035 Representative in the Gene		
(Vote for 1)	Total:	95
DEM-Marc J. Gergely		89

>D  
>D  
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>D

>Write-ins in above contest:		6
UnderVotes For Above contest:		0

DEM - CNG0014 Delegate to the National C		
(Vote for 9)	Total:	855

DEM-Alex Austin (M)	52
DEM-Kevin L. Carter (M)	52
DEM-Elizabeth Ussery (F)	43
DEM-Jim Lewis (M)	52
DEM-Rob Beckwith (M)	52
DEM-Lynda Wrenn (F)	43
DEM-Gisele B. Fetterman (F)	43
DEM-Austin Davis (M)	52
DEM-Bill Dopico (M)	43
DEM-Jill M. Lamb (F)	43
DEM-Valerie McDonald Roberts (F)	52
DEM-Debra H. Dermody (F)	52
DEM-Moira B. Kaleida (F)	52
DEM-Debra Frankel (F)	43
DEM-Jay Costa, Jr. (M)	43
DEM-Rich Fitzgerald (M)	43
DEM-Neal Bisno (M)	43
DEM-William Peduto (M)	43

>Write-ins in above contest:		0
UnderVotes For Above contest:		0

DEM - CNG0014 Alternate Delegate to the		
(Vote for 1)	Total:	95
DEM-Kathryn Harrison (F)		88

>E  
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>E

>Write-ins in above contest:		7
UnderVotes For Above contest:		0

REP - President of the United States		6
(Vote for 1)	Total:	1
REP-Ted Cruz		1
REP-Marco Rubio		0
REP-Jeb Bush		1
REP-Ben Carson		1
REP-John R. Kasich		2
REP-Donald J. Trump		
>Write-ins in above contest:		0
UnderVotes For Above contest:		0
REP - United States Senator		6
(Vote for 1)	Total:	5
REP-Pat Toomey		
>A		
>Write-ins in above contest:		1
UnderVotes For Above contest:		0
REP - Attorney General		6
(Vote for 1)	Total:	4
REP-Joe Peters		2
REP-John Rafferty		
>Write-ins in above contest:		0
UnderVotes For Above contest:		0
REP - Auditor General		6
(Vote for 1)	Total:	5
REP-John Brown		
>B		
>Write-ins in above contest:		1
UnderVotes For Above contest:		0
REP - State Treasurer		6
(Vote for 1)	Total:	5
REP-Otto Voit		
>C		
>Write-ins in above contest:		1
UnderVotes For Above contest:		0
REP - CNG0014 Representative in Congress		6
(Vote for 1)	Total:	
>E		
>D		
>Write-ins in above contest:		6
UnderVotes For Above contest:		0

REP - SEN0045 Senator in the General Ass		
(Vote for 1)	Total:	6
>G		
>F		
>G		
>Write-ins in above contest:		6
UnderVotes For Above contest:		0
REP - LEG0035 Representative in the Gene		
(Vote for 1)	Total:	6
>I		
>I		
>H		
>Write-ins in above contest:		6
UnderVotes For Above contest:		0
REP - CNG0014 Delegate to the National C		
(Vote for 3)	Total:	18
REP-Mary Ann Meloy		6
REP-Cameron S. Linton		6
REP-Mike DeVanney		6
>Write-ins in above contest:		0
UnderVotes For Above contest:		0
REP - CNG0014 Alternate Delegate to the		
(Vote for 3)	Total:	6
REP-Mallory Ruhling		4
>J		
>J		
>Write-ins in above contest:		2
UnderVotes For Above contest:		12
REP - CCMAN County Committeeman		
(Vote for 1)	Total:	6
>K		
>K		
>L		
>L		
>K		
>K		
>Write-ins in above contest:		6
UnderVotes For Above contest:		0

REP - CCWOMAN County Committeewoman  
(Vote for 1) Total: 6

- >M
- >N
- >M
- >N
- >M
- >M

>Write-ins in above contest: 6  
UnderVotes For Above contest: 0

Constitutional Amendment # 1  
(Vote for 1) Total: 102

Yes 62  
No 40  
UnderVotes For Above contest: 0

Constitutional Amendment # 2  
(Vote for 1) Total: 102

Yes 42  
No 60  
UnderVotes For Above contest: 0

Time/Date: 20:20:09 04/26/2016

Signature: 

Signature: 

Signature: 

Signature: 

{126C8820-4959-491B-BA19-D3742C759BC0}

STATISTICS

-E-12a0o7c067f--(s0p16.66h3b6T-&a00L  
 PRECINCT REPORT  
 RUN DATE:05/23/16 09:24 AM

0340 MCKEESPORT WARD 4

	VOTES	PERCENT
REGISTERED VOTERS - TOTAL	293	
REGISTERED VOTERS - DEMOCRATIC	246	83.96
REGISTERED VOTERS - REPUBLICAN	20	6.83
REGISTERED VOTERS - NONPARTISAN	27	9.22
BALLOTS CAST - TOTAL	102	
BALLOTS CAST - DEMOCRATIC	95	93.14
BALLOTS CAST - REPUBLICAN	6	5.88
BALLOTS CAST - NONPARTISAN	1	.98
VOTER TURNOUT - TOTAL	34.81	
VOTER TURNOUT - DEMOCRATIC	38.62	
VOTER TURNOUT - REPUBLICAN	30.00	
VOTER TURNOUT - NONPARTISAN	3.70	
#PRECINCT REPORT		Democratic
RUN DATE:05/23/16 09:24 AM		

0340 MCKEESPORT WARD 4

	VOTES	PERCENT
President of the United States		
Vote for 1		
Hillary Clinton	46	48.42
Bernie Sanders	41	43.16
Roque Rocky De La Fuente	8	8.42
WRITE-IN	0	
United States Senator		
Vote for 1		
Joseph J. Vovvarka	24	25.26
John Fetterman	28	29.47
Joe Sestak	12	12.63
Katie McGinty	31	32.63
WRITE-IN	0	
Attorney General		
Vote for 1		
John Morganello	43	45.26
Josh Shapiro	38	40.00
Stephen A. Zappala, Jr.	14	14.74
WRITE-IN	0	
Auditor General		
Vote for 1		
Eugene A. DePasquale	85	89.47
WRITE-IN	10	10.53
State Treasurer		
Vote for 1		
Joe Torsella	88	92.63
WRITE-IN	7	7.37

	VOTES	PERCENT
Delegate to the National Convention 14TH DISTRICT		
Vote for 9		
Alex Austin (M)	52	6.08
Kevin L. Carter (M)	52	6.08
Elizabeth Ussery (F)	43	5.03
Jim Lewis (M)	52	6.08
Rob Beckwith (M)	52	6.08
Lynda Wrenn (F)	43	5.03
Gisele B. Fetterman (F)	43	5.03
Austin Davis (M)	52	6.08
Bill Dopico (M)	43	5.03
Jill M. Lamb (F)	43	5.03
Valerie McDonald Roberts (F)	52	6.08
Debra H. Dermody (F)	52	6.08
Maira B. Kaleida (F)	52	6.08
Debra Frankel (F)	52	6.08
Jay Costa, Jr. (M)	43	5.03
Rich Fitzgerald (M)	43	5.03
Neal Bisno (M)	43	5.03
William Peduto (M)	43	5.03
WRITE-IN	0	
Alternate Delegate to the Natl conv 14TH DISTRICT		
Vote for 1		
Kathryn Harrison (F)	88	92.63
WRITE-IN	7	7.37

{126C8820-4959-491B-BA19-D3742C759BC0}

Representative in Congress 14TH DISTRICT

Vote for 1  
 Janis C. Brooks . . . . . 44 46.32  
 Mike Doyle . . . . . 51 53.68  
 WRITE-IN. . . . . 0

Senator in the General Assembly 45TH DISTRICT

Vote for 1  
 James R. Brewster. . . . . 88 92.63  
 WRITE-IN. . . . . 7 7.37

Representative in the General Assembly 35TH DISTRICT

Vote for 1  
 Marc J. Gergely . . . . . 89 93.68  
 WRITE-IN. . . . . 6 6.32  
 #PRECINCT REPORT Republican  
 RUN DATE:05/23/16 09:24 AM

0340 MCKEESPORT WARD 4

	VOTES	PERCENT		VOTES	PERCENT
President of the United States			Alternate Delegate to the Natl Conv 14TH DISTRICT		
Vote for 1			Vote for 3		
Ted Cruz. . . . .	1	16.67	Mallory Ruhling . . . . .	4	66.67
Marco Rubio. . . . .	1	16.67	WRITE-IN. . . . .	2	33.33
Jeb Bush. . . . .	0				
Ben Carson . . . . .	1	16.67	County Committeeman		
John R. Kasich. . . . .	1	16.67	Vote for 1		
Donald J. Trump . . . . .	2	33.33	WRITE-IN. . . . .	6	100.00
WRITE-IN. . . . .	0				

United States Senator

Vote for 1  
 Pat Toomey . . . . . 5 83.33  
 WRITE-IN. . . . . 1 16.67

Attorney General

Vote for 1  
 Joe Peters . . . . . 4 66.67  
 John Rafferty . . . . . 2 33.33  
 WRITE-IN. . . . . 0

Auditor General

Vote for 1  
 John Brown . . . . . 5 83.33  
 WRITE-IN. . . . . 1 16.67

State Treasurer

Vote for 1  
 Otto Voit . . . . . 5 83.33  
 WRITE-IN. . . . . 1 16.67

Representative in Congress 14TH DISTRICT

{126C8820-4959-491B-BA19-D3742C7598C0}

Vote for 1  
WRITE-IN. . . . . 6 100.00

Senator in the General Assembly 45TH DISTRICT  
Vote for 1  
WRITE-IN. . . . . 6 100.00

Representative in the General Assembly 35TH DISTRICT  
Vote for 1  
WRITE-IN. . . . . 6 100.00

Delegate to the National Convention 14TH DISTRICT  
Vote for 3  
Mary Ann Meloy. . . . . 6 33.33  
Cameron S. Linton. . . . . 6 33.33  
Mike Devanney . . . . . 6 33.33  
WRITE-IN. . . . . 0  
#PRECINCT REPORT Nonpartisan  
RUN DATE:05/23/16 09:24 AM

0340 MCKEESPORT WARD 4

Constitutional Amendment # 1  
Vote for 1  
Yes . . . . . 62 60.78  
No. . . . . 40 39.22

Constitutional Amendment # 2  
Vote for 1  
Yes . . . . . 42 41.18  
No. . . . . 60 58.82

{7AFEB68F-6DE0-4006-AB6B-84CC9A9AE46A}

PREC REPORT-GROUP DETAIL  
RUN DATE:05/23/16 10:11 AM

STATISTICS

0340 MCKEESPORT WARD 4

	TOTAL VOTES	%	5180789	5172240
REGISTERED VOTERS - TOTAL . . . . .	293			
REGISTERED VOTERS - DEMOCRATIC . . . . .	246	83.96		
REGISTERED VOTERS - REPUBLICAN . . . . .	20	6.83		
REGISTERED VOTERS - NONPARTISAN . . . . .	27	9.22		
BALLOTS CAST - TOTAL . . . . .	102		93	9
BALLOTS CAST - DEMOCRATIC . . . . .	95	93.14	90	5
BALLOTS CAST - REPUBLICAN . . . . .	6	5.88	3	3
BALLOTS CAST - NONPARTISAN . . . . .	1	.98	0	1
VOTER TURNOUT - TOTAL . . . . .		34.81		
VOTER TURNOUT - DEMOCRATIC . . . . .		38.62		
VOTER TURNOUT - REPUBLICAN . . . . .		30.00		
VOTER TURNOUT - NONPARTISAN . . . . .		3.70		

\*\*\*\*\* (Democratic) \*\*\*\*\*

President of the United States

Vote for 1				
Hillary Clinton . . . . .	46	48.42	44	2
Bernie Sanders . . . . .	41	43.16	39	2
Roque Rocky De La Fuente . . . . .	8	8.42	7	1
WRITE-IN . . . . .	0		0	0

United States Senator

Vote for 1				
Joseph J. Vodvarka . . . . .	24	25.26	22	2
John Fetterman . . . . .	28	29.47	26	2
Joe Sestak . . . . .	12	12.63	12	0
Katie McGinty . . . . .	31	32.63	30	1
WRITE-IN . . . . .	0		0	0

Attorney General

Vote for 1				
John Morganelli . . . . .	43	45.26	41	2
Josh Shapiro . . . . .	38	40.00	36	2
Stephen A. Zappala, Jr. . . . .	14	14.74	13	1
WRITE-IN . . . . .	0		0	0

Auditor General

Vote for 1				
Eugene A. DePasquale . . . . .	85	89.47	82	3
WRITE-IN . . . . .	10	10.53	8	2

State Treasurer

Vote for 1				
Joe Torsella . . . . .	88	92.63	85	3
WRITE-IN . . . . .	7	7.37	5	2

Representative in Congress 14TH DISTRICT

Vote for 1				
Janis C. Brooks . . . . .	44	46.32	42	2
Mike Doyle . . . . .	51	53.68	48	3
WRITE-IN . . . . .	0		0	0

Senator in the General Assembly 45TH DISTRICT

Vote for 1				
James R. Brewster . . . . .	88	92.63	85	3
WRITE-IN . . . . .	7	7.37	5	2

Representative in the General Assembly 35TH DISTRICT

Vote for 1				
Marc J. Gergely . . . . .	89	93.68	85	4
WRITE-IN . . . . .	6	6.32	5	1

Delegate to the National Convention 14TH DISTRICT  
vote for 9

	{7AFEB68F-6DE0-4006-AB6B-84CC9A9AE46A}			
Alex Austin (M)	52	6.08	48	4
Kevin L. Carter (M)	52	6.08	48	4
Elizabeth Ussery (F)	43	5.03	42	1
Jim Lewis (M)	52	6.08	48	4
Rob Beckwith (M)	52	6.08	48	4
Lynda Wrenn (F)	43	5.03	42	1
Gisele B. Fetterman (F)	43	5.03	42	1
Austin Davis (M)	52	6.08	48	4
Bill Dopico (M)	43	5.03	42	1
Jill M. Lamb (F)	43	5.03	42	1
Valerie McDonald Roberts (F)	52	6.08	48	4
Debra H. Dermody (F)	52	6.08	48	4
Moira B. Kaleida (F)	52	6.08	48	4
Debra Frankel (F)	52	6.08	48	4
Jay Costa, Jr. (M)	43	5.03	42	1
Rich Fitzgerald (M)	43	5.03	42	1
Neal Bisno (M)	43	5.03	42	1
William Peduto (M)	43	5.03	42	1
WRITE-IN.	0		0	0

Alternate Delegate to the Natl Conv 14TH DISTRICT

Vote for 1				
Kathryn Harrison (F)	88	92.63	85	3
WRITE-IN.	7	7.37	5	2

\*\*\*\*\* (Republican) \*\*\*\*\*

President of the United States

Vote for 1				
Ted Cruz.	1	16.67	1	0
Marco Rubio.	1	16.67	1	0
Jeb Bush.	0		0	0
Ben Carson.	1	16.67	0	1
John R. Kasich.	1	16.67	1	0
Donald J. Trump	2	33.33	0	2
WRITE-IN.	0		0	0

United States Senator

Vote for 1				
Pat Toomey	5	83.33	2	3
WRITE-IN.	1	16.67	1	0

Attorney General

Vote for 1				
Joe Peters	4	66.67	2	2
John Rafferty	2	33.33	1	1
WRITE-IN.	0		0	0

Auditor General

Vote for 1				
John Brown	5	83.33	3	2
WRITE-IN.	1	16.67	0	1

State Treasurer

Vote for 1				
Otto Voit	5	83.33	3	2
WRITE-IN.	1	16.67	0	1

Representative in Congress 14TH DISTRICT

Vote for 1				
WRITE-IN.	6	100.00	3	3

Senator in the General Assembly 45TH DISTRICT

Vote for 1				
WRITE-IN.	6	100.00	3	3

Representative in the General Assembly 35TH DISTRICT

Vote for 1				
WRITE-IN.	6	100.00	3	3

{7AFEB68F-6DE0-4006-AB6B-84CC9A9AE46A}

Delegate to the National Convention 14TH DISTRICT

Vote for 3				
Mary Ann Meloy . . . . .	6	33.33	3	3
Cameron S. Linton . . . . .	6	33.33	3	3
Mike Devaney . . . . .	6	33.33	3	3
WRITE-IN . . . . .	0		0	0

Alternate Delegate to the Natl Conv 14TH DISTRICT

Vote for 3				
Mallory Ruhling . . . . .	4	66.67	2	2
WRITE-IN . . . . .	2	33.33	1	1

County Committeeman

Vote for 1				
WRITE-IN . . . . .	6	100.00	3	3

County Committeewoman

Vote for 1				
WRITE-IN . . . . .	6	100.00	3	3

\*\*\*\*\* (Nonpartisan) \*\*\*\*\*

Constitutional Amendment # 1

Vote for 1				
Yes . . . . .	62	60.78	57	5
No. . . . .	40	39.22	36	4

Constitutional Amendment # 2

Vote for 1				
Yes . . . . .	42	41.18	36	6
No. . . . .	60	58.82	57	3

DistrictID	DistrictName	DEM	REP	LN	OTH	TOTAL
1010001	ALEPPO 00 01	517	685	7	135	1344
1020001	ASPINWALL 00 01	427	281	3	127	838
1020002	ASPINWALL 00 02	261	208	1	92	562
1020003	ASPINWALL 00 03	420	291	8	129	848
1030100	AVALON 01 00	660	251	7	145	1063
1030201	AVALON 02 01	402	166	6	91	665
1030202	AVALON 02 02	250	145	3	65	463
1030301	AVALON 03 01	187	81	3	49	320
1030302	AVALON 03 02	256	129	2	61	448
1030303	AVALON 03 03	277	129	2	67	475
1040001	BALDWIN BR 00 01	369	131	0	55	555
1040002	BALDWIN BR 00 02	590	244	6	105	945
1040003	BALDWIN BR 00 03	510	190	4	73	777
1040004	BALDWIN BR 00 04	459	201	0	74	734
1040005	BALDWIN BR 00 05	485	189	1	84	759
1040006	BALDWIN BR 00 06	418	220	4	79	721
1040007	BALDWIN BR 00 07	438	232	4	89	763
1040008	BALDWIN BR 00 08	398	183	4	83	668
1040009	BALDWIN BR 00 09	413	224	6	72	715
1040010	BALDWIN BR 00 10	571	172	9	133	885
1040011	BALDWIN BR 00 11	579	209	4	122	914
1040012	BALDWIN BR 00 12	426	123	1	56	606
1040013	BALDWIN BR 00 13	417	171	2	62	652
1040014	BALDWIN BR 00 14	346	171	4	45	566
1040015	BALDWIN BR 00 15	508	179	4	62	753
1040016	BALDWIN BR 00 16	560	212	2	94	868
1040017	BALDWIN BR 00 17	406	181	3	64	654
1040018	BALDWIN BR 00 18	538	231	2	95	866
1050001	BALDWIN TP 00 01	419	241	3	85	748
1050002	BALDWIN TP 00 02	415	188	7	78	688
1060001	BELL ACRES 00 01	404	499	3	158	1064
1070101	BELLEVUE 01 01	587	231	7	148	973
1070102	BELLEVUE 01 02	566	222	8	127	923
1070201	BELLEVUE 02 01	675	237	11	166	1089
1070202	BELLEVUE 02 02	539	263	8	147	957
1070301	BELLEVUE 03 01	498	272	5	169	944
1070302	BELLEVUE 03 02	468	264	11	121	864
1080001	BEN AVON 00 01	249	156	3	55	463
1080002	BEN AVON 00 02	450	319	11	130	910
1090001	BEN AVON HT 00 01	111	157	3	35	306
1100101	BETHEL PARK 01 01	384	359	4	112	859
1100102	BETHEL PARK 01 02	451	238	4	90	783
1100103	BETHEL PARK 01 03	419	297	5	82	803
1100201	BETHEL PARK 02 01	293	378	2	50	723

1100202	BETHEL PARK 02 02	352	417	9	96	874
1100203	BETHEL PARK 02 03	518	427	6	128	1079
1100301	BETHEL PARK 03 01	335	366	6	80	787
1100302	BETHEL PARK 03 02	367	443	6	88	904
1100303	BETHEL PARK 03 03	428	483	2	114	1027
1100401	BETHEL PARK 04 01	567	466	5	116	1154
1100402	BETHEL PARK 04 02	414	288	3	70	775
1100403	BETHEL PARK 04 03	361	369	8	94	832
1100501	BETHEL PARK 05 01	285	217	2	68	572
1100502	BETHEL PARK 05 02	320	196	3	94	613
1100503	BETHEL PARK 05 03	638	573	9	185	1405
1100601	BETHEL PARK 06 01	532	557	6	127	1222
1100602	BETHEL PARK 06 02	431	364	5	114	914
1100603	BETHEL PARK 06 03	291	360	2	85	738
1100701	BETHEL PARK 07 01	481	482	8	137	1108
1100702	BETHEL PARK 07 02	412	452	6	77	947
1100703	BETHEL PARK 07 03	342	292	5	96	735
1100801	BETHEL PARK 08 01	231	204	3	48	486
1100802	BETHEL PARK 08 02	296	176	4	52	528
1100803	BETHEL PARK 08 03	545	497	10	134	1186
1100804	BETHEL PARK 08 04	196	174	3	70	443
1100901	BETHEL PARK 09 01	230	276	4	58	568
1100902	BETHEL PARK 09 02	286	318	3	73	680
1100903	BETHEL PARK 09 03	502	632	5	158	1297
1110001	BLAWNOX 00 01	610	232	4	148	994
1120100	BRACKENRIDGE 01 00	292	107	3	65	467
1120200	BRACKENRIDGE 02 00	437	211	6	84	738
1120300	BRACKENRIDGE 03 00	352	192	4	82	630
1130100	BRADDOCK 01 00	463	22	1	40	526
1130200	BRADDOCK 02 00	492	31	3	40	566
1130300	BRADDOCK 03 00	380	25	3	41	449
1140001	BRADDOCK HL 00 01	606	121	0	63	790
1140002	BRADDOCK HL 00 02	402	76	2	43	523
1150001	BRADFORDWOOD 00 01	327	519	9	130	985
1160001	BRENTWOOD 00 01	278	191	3	61	533
1160002	BRENTWOOD 00 02	406	214	10	100	730
1160003	BRENTWOOD 00 03	345	154	2	68	569
1160004	BRENTWOOD 00 04	463	199	2	94	758
1160005	BRENTWOOD 00 05	427	156	5	86	674
1160006	BRENTWOOD 00 06	381	167	6	106	660
1160007	BRENTWOOD 00 07	378	203	6	97	684
1160008	BRENTWOOD 00 08	402	218	1	70	691
1160009	BRENTWOOD 00 09	334	167	4	65	570
1160010	BRENTWOOD 00 10	286	175	2	76	539
1170001	BRIDGEVILLE 00 01	422	230	5	83	740
1170002	BRIDGEVILLE 00 02	474	237	6	117	834
1170003	BRIDGEVILLE 00 03	419	285	4	91	799

1170004	BRIDGEVILLE 00 04	490	334	8	116	948
1180101	CARNEGIE 01 01	270	125	2	83	480
1180102	CARNEGIE 01 02	616	334	10	166	1126
1180103	CARNEGIE 01 03	499	209	4	78	790
1180104	CARNEGIE 01 04	248	51	1	53	353
1180201	CARNEGIE 02 01	364	160	0	93	617
1180202	CARNEGIE 02 02	306	115	7	55	483
1180203	CARNEGIE 02 03	280	135	3	48	466
1180204	CARNEGIE 02 04	541	211	3	133	888
1190001	CASL SHANNON 00 01	520	286	5	140	951
1190002	CASL SHANNON 00 02	458	254	11	97	820
1190003	CASL SHANNON 00 03	428	203	7	115	753
1190004	CASL SHANNON 00 04	342	180	5	95	622
1190005	CASL SHANNON 00 05	368	149	1	79	597
1190006	CASL SHANNON 00 06	366	176	4	58	604
1190007	CASL SHANNON 00 07	452	209	3	83	747
1190008	CASL SHANNON 00 08	316	166	5	68	555
1200001	CHALFANT 00 01	371	134	3	55	563
1210001	CHESWICK 00 01	338	198	3	68	607
1210002	CHESWICK 00 02	360	198	1	59	618
1220001	CHURCHILL 00 01	408	203	2	47	660
1220002	CHURCHILL 00 02	407	181	2	88	678
1220003	CHURCHILL 00 03	326	233	2	68	629
1220004	CHURCHILL 00 04	336	254	8	67	665
1230101	CLAIRTON 01 01	260	49	1	40	350
1230102	CLAIRTON 01 02	305	56	1	36	398
1230103	CLAIRTON 01 03	236	64	1	32	333
1230201	CLAIRTON 02 01	123	5	0	7	135
1230202	CLAIRTON 02 02	288	15	3	17	323
1230203	CLAIRTON 02 03	385	27	0	26	438
1230301	CLAIRTON 03 01	344	65	2	36	447
1230302	CLAIRTON 03 02	305	48	1	22	376
1230303	CLAIRTON 03 03	324	54	0	46	424
1230401	CLAIRTON 04 01	356	22	0	22	400
1230402	CLAIRTON 04 02	345	22	0	25	392
1230403	CLAIRTON 04 03	299	85	4	38	426
1240001	COLLIER 00 01	1091	1266	12	333	2702
1240002	COLLIER 00 02	700	559	5	145	1409
1240003	COLLIER 00 03	733	390	2	116	1241
1240004	COLLIER 00 04	287	205	1	66	559
1250101	CORAOPOLIS 01 01	326	91	5	49	471
1250102	CORAOPOLIS 01 02	321	118	1	53	493
1250200	CORAOPOLIS 02 00	540	156	5	66	767
1250301	CORAOPOLIS 03 01	350	169	4	60	583
1250302	CORAOPOLIS 03 02	322	190	1	73	586
1250401	CORAOPOLIS 04 01	238	118	1	51	408
1250402	CORAOPOLIS 04 02	310	118	6	50	484

1260101	CRAFTON 01 01	513	235	14	89	851
1260102	CRAFTON 01 02	334	147	5	100	586
1260201	CRAFTON 02 01	339	176	3	73	591
1260202	CRAFTON 02 02	487	161	7	113	768
1260301	CRAFTON 03 01	506	292	6	129	933
1260302	CRAFTON 03 02	305	180	2	77	564
1270100	CRESCENT 01 00	518	410	8	131	1067
1270200	CRESCENT 02 00	313	241	2	83	639
1280001	DORMONT 00 01	429	207	8	94	738
1280002	DORMONT 00 02	288	158	2	65	513
1280003	DORMONT 00 03	526	222	13	149	910
1280004	DORMONT 00 04	375	157	4	72	608
1280005	DORMONT 00 05	624	257	8	157	1046
1280006	DORMONT 00 06	295	146	3	70	514
1280007	DORMONT 00 07	316	108	2	70	496
1280008	DORMONT 00 08	236	113	5	48	402
1280009	DORMONT 00 09	295	125	3	70	493
1280010	DORMONT 00 10	367	148	3	77	595
1290001	DRAVOSBURG 00 01	332	161	1	52	546
1290002	DRAVOSBURG 00 02	206	115	2	35	358
1290003	DRAVOSBURG 00 03	202	53	1	23	279
1300101	DUQUESNE 01 01	345	61	3	37	446
1300102	DUQUESNE 01 02	403	47	0	48	498
1300103	DUQUESNE 01 03	222	19	0	31	272
1300104	DUQUESNE 01 04	166	23	2	18	209
1300201	DUQUESNE 02 01	333	27	1	33	394
1300202	DUQUESNE 02 02	353	33	0	22	408
1300203	DUQUESNE 02 03	361	44	3	28	436
1300301	DUQUESNE 03 01	178	12	0	10	200
1300302	DUQUESNE 03 02	148	13	1	14	176
1300303	DUQUESNE 03 03	442	63	3	39	547
1310100	EAST DEER 01 00	191	72	1	33	297
1310200	EAST DEER 02 00	320	150	3	84	557
1320001	E MCKEESPORT 00 01	264	100	6	30	400
1320002	E MCKEESPORT 00 02	336	98	3	57	494
1320003	E MCKEESPORT 00 03	279	131	6	49	465
1330100	E PITTSBURGH 01 00	265	35	0	33	333
1330200	E PITTSBURGH 02 00	327	34	2	31	394
1330300	E PITTSBURGH 03 00	380	40	0	44	464
1340001	EDGEWOOD 00 01	627	169	8	134	938
1340002	EDGEWOOD 00 02	566	212	5	132	915
1340003	EDGEWOOD 00 03	557	149	11	134	851
1350001	EDGEWORTH 00 01	199	349	2	96	646
1350002	EDGEWORTH 00 02	241	376	0	90	707
1360001	ELIZABETH BR 00 01	477	319	7	95	898
1370101	ELIZABETH TP 01 01	327	198	1	33	559
1370102	ELIZABETH TP 01 02	450	362	4	64	880

1370200	ELIZABETH TP 02 00	616	506	1	110	1233
1370300	ELIZABETH TP 03 00	700	439	2	116	1257
1370401	ELIZABETH TP 04 01	457	333	4	70	864
1370402	ELIZABETH TP 04 02	229	180	1	27	437
1370501	ELIZABETH TP 05 01	196	177	1	46	420
1370502	ELIZABETH TP 05 02	438	269	1	78	786
1370601	ELIZABETH TP 06 01	317	247	1	50	615
1370602	ELIZABETH TP 06 02	394	243	4	62	703
1370700	ELIZABETH TWP 07 00	745	352	3	90	1190
1380001	EMSWORTH 00 01	406	244	6	104	760
1380002	EMSWORTH 00 02	515	272	12	139	938
1390100	ETNA 01 00	494	179	4	122	799
1390200	ETNA 02 00	411	152	3	103	669
1390300	ETNA 03 00	410	181	2	88	681
1400001	FAWN 00 01	279	197	2	52	530
1400002	FAWN 00 02	418	355	4	81	858
1410001	FINDLAY 00 01	444	385	3	104	936
1410002	FINDLAY 00 02	741	641	5	185	1572
1410003	FINDLAY 00 03	564	433	7	141	1145
1420001	FOREST HILLS 00 01	364	186	2	72	624
1420002	FOREST HILLS 00 02	376	163	5	64	608
1420003	FOREST HILLS 00 03	329	187	7	76	599
1420004	FOREST HILLS 00 04	472	155	3	72	702
1420005	FOREST HILLS 00 05	396	187	3	82	668
1420006	FOREST HILLS 00 06	331	155	5	60	551
1420007	FOREST HILLS 00 07	468	150	5	91	714
1420008	FOREST HILLS 00 08	405	210	3	63	681
1430001	FORWARD 00 01	186	129	1	38	354
1430002	FORWARD 00 02	502	261	5	86	854
1430003	FORWARD 00 03	238	99	2	33	372
1430004	FORWARD 00 04	271	129	2	45	447
1440001	FOX CHAPEL 00 01	332	350	1	99	782
1440002	FOX CHAPEL 00 02	367	444	9	136	956
1440003	FOX CHAPEL 00 03	260	368	3	87	718
1440004	FOX CHAPEL 00 04	453	503	7	177	1140
1440005	FOX CHAPEL 00 05	289	437	4	117	847
1450101	FRANKLIN PK 01 01	379	551	9	167	1106
1450102	FRANKLIN PK 01 02	351	540	8	218	1117
1450103	FRANKLIN PK 01 03	455	622	7	193	1277
1450201	FRANKLIN PK 02 01	351	421	6	190	968
1450202	FRANKLIN PK 02 02	391	624	4	165	1184
1450203	FRANKLIN PK 02 03	444	613	6	190	1253
1450301	FRANKLIN PK 03 01	402	635	2	205	1244
1450302	FRANKLIN PK 03 02	278	375	3	115	771
1450303	FRANKLIN PK 03 03	403	628	5	151	1187
1460001	FRAZER 00 01	373	281	4	73	731
1470001	GLASSPORT 00 01	372	139	2	37	550

1470002	GLASSPORT 00 02	256	75	1	52	384
1470003	GLASSPORT 00 03	415	69	3	40	527
1470004	GLASSPORT 00 04	152	49	0	26	227
1470005	GLASSPORT 00 05	322	99	0	47	468
1470006	GLASSPORT 00 06	324	82	0	26	432
1480001	GLENFIELD 00 01	64	58	2	15	139
1490001	GREENTREE 00 01	403	271	5	92	771
1490002	GREENTREE 00 02	515	394	3	123	1035
1490003	GREENTREE 00 03	440	344	4	100	888
1490004	GREENTREE 00 04	424	237	3	97	761
1500001	HAMPTON 00 01	429	563	7	148	1147
1500002	HAMPTON 00 02	460	534	10	130	1134
1500003	HAMPTON 00 03	467	610	5	173	1255
1500004	HAMPTON 00 04	292	223	1	77	593
1500005	HAMPTON 00 05	321	261	6	90	678
1500006	HAMPTON 00 06	255	332	3	49	639
1500007	HAMPTON 00 07	419	671	7	164	1261
1500008	HAMPTON 00 08	364	436	2	104	906
1500009	HAMPTON 00 09	534	525	6	143	1208
1500010	HAMPTON 00 10	588	604	6	190	1388
1500011	HAMPTON 00 11	691	750	10	166	1617
1500012	HAMPTON 00 12	337	352	4	118	811
1500013	HAMPTON 00 13	332	306	2	90	730
1510001	HARMAR 00 01	608	496	1	106	1211
1510002	HARMAR 00 02	467	181	3	62	713
1510003	HARMAR 00 03	231	83	0	30	344
1520101	HARRISON 01 01	154	92	1	25	272
1520102	HARRISON 01 02	267	252	3	42	564
1520103	HARRISON 01 03	298	230	4	83	615
1520201	HARRISON 02 01	195	82	0	36	313
1520202	HARRISON 02 02	369	120	4	93	586
1520301	HARRISON 03 01	516	341	1	81	939
1520302	HARRISON 03 02	341	187	7	64	599
1520401	HARRISON 04 01	368	205	2	82	657
1520402	HARRISON 04 02	321	174	3	62	560
1520501	HARRISON 05 01	315	94	5	62	476
1520502	HARRISON 05 02	416	247	5	88	756
1530001	HAYSVILLE 00 01	21	29	0	8	58
1540001	HEIDELBERG 00 01	502	197	8	100	807
1550101	HOMESTEAD 01 01	453	51	1	65	570
1550102	HOMESTEAD 01 02	301	14	0	30	345
1550201	HOMESTEAD 02 01	333	26	3	30	392
1550202	HOMESTEAD 02 02	295	13	2	21	331
1550301	HOMESTEAD 03 01	447	31	1	44	523
1550302	HOMESTEAD 03 02	267	14	1	20	302
1560001	INDIANA 00 01	389	424	11	100	924
1560002	INDIANA 00 02	370	373	7	118	868

1560003	INDIANA 00 03	527	411	8	167	1113
1560004	INDIANA 00 04	456	446	8	144	1054
1560005	INDIANA 00 05	402	365	5	116	888
1570001	INGRAM 00 01	486	194	8	91	779
1570002	INGRAM 00 02	369	154	5	71	599
1570003	INGRAM 00 03	550	241	9	90	890
1580001	JEFFERSON HL 00 01	675	641	7	156	1479
1580002	JEFFERSON HL 00 02	480	271	9	72	832
1580003	JEFFERSON HL 00 03	325	224	3	58	610
1580004	JEFFERSON HL 00 04	345	211	1	77	634
1580005	JEFFERSON HL 00 05	824	906	15	228	1973
1580006	JEFFERSON HL 00 06	467	352	7	66	892
1580007	JEFFERSON HL 00 07	172	139	3	40	354
1580008	JEFFERSON HL 00 08	509	427	6	85	1027
1590001	KENNEDY 00 01	1041	362	3	107	1513
1590002	KENNEDY 00 02	530	187	3	49	769
1590003	KENNEDY 00 03	680	236	5	73	994
1590004	KENNEDY 00 04	342	55	0	27	424
1590005	KENNEDY 00 05	826	317	9	110	1262
1590006	KENNEDY 00 06	541	175	5	60	781
1590007	KENNEDY 00 07	361	127	1	32	521
1600001	KILBUCK 00 01	237	261	5	53	556
1610001	LEET 00 01	204	125	5	44	378
1610002	LEET 00 02	268	367	3	79	717
1620001	LEETSDALE 00 01	483	261	7	98	849
1630001	LIBERTY 00 01	528	265	7	89	889
1630002	LIBERTY 00 02	492	225	6	57	780
1640001	LINCOLN 00 01	388	229	1	50	668
1650001	MARSHALL 00 01	270	470	5	115	860
1650002	MARSHALL 00 02	287	593	6	151	1037
1650003	MARSHALL 00 03	224	397	4	118	743
1650004	MARSHALL 00 04	344	490	9	144	987
1650005	MARSHALL 00 05	363	534	10	166	1073
1650006	MARSHALL 00 06	282	468	5	169	924
1660101	MCCANDLESS 01 01	308	616	6	134	1064
1660102	MCCANDLESS 01 02	392	323	6	106	827
1660103	MCCANDLESS 01 03	447	507	12	198	1164
1660201	MCCANDLESS 02 01	529	607	10	212	1358
1660202	MCCANDLESS 02 02	306	426	7	96	835
1660203	MCCANDLESS 02 03	329	359	4	123	815
1660301	MCCANDLESS 03 01	398	391	8	117	914
1660302	MCCANDLESS 03 02	412	469	4	150	1035
1660303	MCCANDLESS 03 03	397	480	1	121	999
1660401	MCCANDLESS 04 01	606	657	4	190	1457
1660402	MCCANDLESS 04 02	397	363	9	116	885
1660403	MCCANDLESS 04 03	258	365	2	79	704
1660501	MCCANDLESS 05 01	310	389	8	89	796

1660502	MCCANDLESS 05 02	511	543	16	166	1236
1660503	MCCANDLESS 05 03	396	365	8	134	903
1660601	MCCANDLESS 06 01	216	200	0	60	476
1660602	MCCANDLESS 06 02	419	446	3	118	986
1660603	MCCANDLESS 06 03	630	806	4	208	1648
1660701	MCCANDLESS 07 01	618	674	14	218	1524
1660702	MCCANDLESS 07 02	377	437	3	119	936
1660703	MCCANDLESS 07 03	194	247	3	50	494
1670005	MCDONALD 00 05	101	63	0	21	185
1680100	MCKEESPORT 01 00	13	2	0	1	16
1680200	MCKEESPORT 02 00	189	29	1	27	246
1680301	MCKEESPORT 03 01	224	17	0	14	255
1680302	MCKEESPORT 03 02	104	7	0	9	120
1680400	MCKEESPORT 04 00	246	20	0	27	293
1680500	MCKEESPORT 05 00	417	52	2	44	515
1680601	MCKEESPORT 06 01	308	31	1	33	373
1680602	MCKEESPORT 06 02	258	22	1	32	313
1680701	MCKEESPORT 07 01	427	44	2	15	488
1680702	MCKEESPORT 07 02	266	17	0	13	296
1680703	MCKEESPORT 07 03	277	32	2	25	336
1680704	MCKEESPORT 07 04	354	44	2	39	439
1680705	MCKEESPORT 07 05	453	45	3	38	539
1680706	MCKEESPORT 07 06	403	62	1	35	501
1680707	MCKEESPORT 07 07	335	23	0	16	374
1680801	MCKEESPORT 08 01	219	54	2	28	303
1680802	MCKEESPORT 08 02	391	91	3	42	527
1680803	MCKEESPORT 08 03	427	59	2	28	516
1680804	MCKEESPORT 08 04	293	113	2	32	440
1680805	MCKEESPORT 08 05	429	30	3	43	505
1680806	MCKEESPORT 08 06	144	63	2	28	237
1680901	MCKEESPORT 09 01	353	82	1	34	470
1680902	MCKEESPORT 09 02	417	95	2	56	570
1680903	MCKEESPORT 09 03	326	57	0	30	413
1681001	MCKEESPORT 10 01	238	52	2	34	326
1681002	MCKEESPORT 10 02	217	59	4	38	318
1681101	MCKEESPORT 11 01	345	73	1	38	457
1681102	MCKEESPORT 11 02	300	80	0	31	411
1681103	MCKEESPORT 11 03	202	38	0	13	253
1681201	MCKEESPORT 12 01	225	57	2	20	304
1681202	MCKEESPORT 12 02	258	86	0	15	359
1681203	MCKEESPORT 12 03	419	132	2	30	583
1690101	MCKEES ROCKS 01 01	204	15	0	21	240
1690102	MCKEES ROCKS 01 02	449	62	1	45	557
1690201	MCKEES ROCKS 02 01	539	71	2	75	687
1690202	MCKEES ROCKS 02 02	467	69	2	72	610
1690301	MCKEES ROCKS 03 01	541	118	2	74	735
1690302	MCKEES ROCKS 03 02	423	61	3	58	545

1690303	MCKEES ROCKS 03 03	413	68	4	47	532
1700001	MILLVALE 00 01	352	110	3	84	549
1700002	MILLVALE 00 02	248	93	2	57	400
1700003	MILLVALE 00 03	288	91	0	67	446
1700004	MILLVALE 00 04	250	100	7	58	415
1700005	MILLVALE 00 05	393	103	5	56	557
1710101	MONROEVILLE 01 01	417	149	3	87	656
1710102	MONROEVILLE 01 02	316	238	4	72	630
1710103	MONROEVILLE 01 03	443	289	4	89	825
1710104	MONROEVILLE 01 04	565	177	4	96	842
1710201	MONROEVILLE 02 01	465	316	3	93	877
1710202	MONROEVILLE 02 02	476	355	9	112	952
1710203	MONROEVILLE 02 03	512	420	3	135	1070
1710301	MONROEVILLE 03 01	570	482	1	129	1182
1710302	MONROEVILLE 03 02	321	242	1	60	624
1710303	MONROEVILLE 03 03	486	341	3	113	943
1710304	MONROEVILLE 03 04	189	165	2	52	408
1710401	MONROEVILLE 04 01	341	223	8	86	658
1710402	MONROEVILLE 04 02	497	374	5	139	1015
1710403	MONROEVILLE 04 03	515	311	2	105	933
1710501	MONROEVILLE 05 01	342	176	1	70	589
1710502	MONROEVILLE 05 02	488	208	4	132	832
1710503	MONROEVILLE 05 03	455	311	6	79	851
1710504	MONROEVILLE 05 04	330	167	6	107	610
1710601	MONROEVILLE 06 01	477	238	6	64	785
1710602	MONROEVILLE 06 02	443	208	3	91	745
1710603	MONROEVILLE 06 03	593	263	4	155	1015
1710604	MONROEVILLE 06 04	228	81	0	36	345
1710701	MONROEVILLE 07 01	814	347	5	130	1296
1710702	MONROEVILLE 07 02	525	185	5	83	798
1710703	MONROEVILLE 07 03	340	190	3	54	587
1720001	MOON 00 01	557	379	4	209	1149
1720002	MOON 00 02	724	783	7	236	1750
1720003	MOON 00 03	739	430	12	192	1373
1720004	MOON 00 04	364	274	5	90	733
1720005	MOON 00 05	922	991	14	315	2242
1720006	MOON 00 06	883	914	11	270	2078
1720007	MOON 00 07	734	492	13	213	1452
1720008	MOON 00 08	486	353	1	105	945
1720009	MOON 00 09	721	821	14	230	1786
1720010	MOON 00 10	338	276	3	111	728
1720011	MOON 00 11	533	584	4	178	1299
1720012	MOON 00 12	434	398	4	113	949
1720013	MOON 00 13	295	297	6	80	678
1730101	MT LEBANON 01 01	290	411	5	111	817
1730102	MT LEBANON 01 02	355	180	10	94	639
1730103	MT LEBANON 01 03	315	226	4	80	625

1730104	MT LEBANON 01 04	341	276	6	130	753
1730105	MT LEBANON 01 05	298	216	1	70	585
1730106	MT LEBANON 01 06	461	475	1	120	1057
1730107	MT LEBANON 01 07	452	213	2	99	766
1730201	MT LEBANON 02 01	434	389	5	113	941
1730202	MT LEBANON 02 02	299	217	3	78	597
1730203	MT LEBANON 02 03	316	253	3	86	658
1730204	MT LEBANON 02 04	279	197	3	67	546
1730205	MT LEBANON 02 05	309	196	5	63	573
1730206	MT LEBANON 02 06	282	188	1	67	538
1730207	MT LEBANON 02 07	328	204	4	69	605
1730208	MT LEBANON 02 08	505	369	3	100	977
1730301	MT LEBANON 03 01	305	260	2	69	636
1730302	MT LEBANON 03 02	414	304	2	113	833
1730303	MT LEBANON 03 03	275	313	1	82	671
1730304	MT LEBANON 03 04	325	284	6	102	717
1730305	MT LEBANON 03 05	324	263	4	85	676
1730306	MT LEBANON 03 06	215	157	4	65	441
1730307	MT LEBANON 03 07	365	360	4	95	824
1730308	MT LEBANON 03 08	149	129	3	31	312
1730401	MT LEBANON 04 01	359	246	4	115	724
1730402	MT LEBANON 04 02	449	281	4	124	858
1730403	MT LEBANON 04 03	367	247	4	86	704
1730404	MT LEBANON 04 04	310	250	5	84	649
1730405	MT LEBANON 04 05	276	235	5	77	593
1730406	MT LEBANON 04 06	324	221	2	103	650
1730407	MT LEBANON 04 07	396	289	4	85	774
1730501	MT LEBANON 05 01	329	173	0	95	597
1730502	MT LEBANON 05 02	245	100	4	66	415
1730503	MT LEBANON 05 03	313	191	5	87	596
1730504	MT LEBANON 05 04	253	208	0	79	540
1730505	MT LEBANON 05 05	335	218	3	71	627
1730506	MT LEBANON 05 06	228	156	3	66	453
1730507	MT LEBANON 05 07	393	263	6	103	765
1730508	MT LEBANON 05 08	514	275	5	167	961
1740001	MT OLIVER 00 01	502	73	9	87	671
1740002	MT OLIVER 00 02	549	72	3	82	706
1740003	MT OLIVER 00 03	349	56	3	60	468
1740004	MT OLIVER 00 04	237	41	1	41	320
1750001	MUNHALL 00 01	305	110	3	61	479
1750002	MUNHALL 00 02	362	66	0	56	484
1750003	MUNHALL 00 03	405	56	2	51	514
1750004	MUNHALL 00 04	309	67	0	36	412
1750005	MUNHALL 00 05	499	147	1	65	712
1750006	MUNHALL 00 06	475	145	3	76	699
1750007	MUNHALL 00 07	782	229	3	92	1106
1750008	MUNHALL 00 08	402	151	1	50	604

1750009	MUNHALL 00 09	491	130	3	57	681
1750010	MUNHALL 00 10	360	93	3	41	497
1750011	MUNHALL 00 11	582	250	1	75	908
1750012	MUNHALL 00 12	381	129	4	32	546
1760100	NEVILLE 01 00	156	71	1	37	265
1760200	NEVILLE 02 00	133	64	3	32	232
1760300	NEVILLE 03 00	174	69	0	25	268
1770101	N BRADDOCK 01 01	162	33	1	17	213
1770102	N BRADDOCK 01 02	369	54	4	53	480
1770103	N BRADDOCK 01 03	402	78	2	63	545
1770201	N BRADDOCK 02 01	342	42	1	36	421
1770202	N BRADDOCK 02 02	487	44	4	56	591
1770301	N BRADDOCK 03 01	346	22	0	20	388
1770302	N BRADDOCK 03 02	425	29	0	41	495
1780001	N FAYETTE 00 01	907	752	10	194	1863
1780002	N FAYETTE 00 02	1034	816	12	333	2195
1780003	N FAYETTE 00 03	1139	883	12	297	2331
1780004	N FAYETTE 00 04	501	346	9	140	996
1780005	N FAYETTE 00 05	974	930	10	268	2182
1790101	N VERSAILLES 01 01	424	168	4	60	656
1790102	N VERSAILLES 01 02	415	187	4	48	654
1790201	N VERSAILLES 02 01	405	156	1	56	618
1790202	N VERSAILLES 02 02	155	46	2	10	213
1790301	N VERSAILLES 03 01	296	137	2	42	477
1790302	N VERSAILLES 03 02	379	147	1	61	588
1790401	N VERSAILLES 04 01	304	103	3	44	454
1790402	N VERSAILLES 04 02	245	103	2	31	381
1790501	N VERSAILLES 05 01	352	88	1	70	511
1790502	N VERSAILLES 05 02	285	88	1	39	413
1790601	N VERSAILLES 06 01	379	173	0	43	595
1790602	N VERSAILLES 06 02	324	150	0	54	528
1790700	N VERSAILLES 07 00	551	69	2	51	673
1800001	OAKDALE 00 01	320	161	1	79	561
1800002	OAKDALE 00 02	273	129	0	37	439
1810001	OAKMONT 00 01	427	364	3	110	904
1810002	OAKMONT 00 02	418	520	2	104	1044
1810003	OAKMONT 00 03	371	237	6	76	690
1810004	OAKMONT 00 04	420	315	6	98	839
1810005	OAKMONT 00 05	337	250	7	100	694
1810006	OAKMONT 00 06	503	336	4	128	971
1820101	OHARA 01 01	446	376	6	136	964
1820102	OHARA 01 02	320	213	3	75	611
1820201	OHARA 02 01	302	199	3	73	577
1820202	OHARA 02 02	403	348	4	107	862
1820301	OHARA 03 01	324	236	3	75	638
1820302	OHARA 03 02	328	176	1	45	550
1820401	OHARA 04 01	288	199	2	47	536

1820402	OHARA 04 02	419	217	3	107	746
1820501	OHARA 05 01	329	286	4	105	724
1820502	OHARA 05 02	435	294	3	116	848
1830001	OHIO 00 01	448	698	10	159	1315
1830002	OHIO 00 02	576	580	7	168	1331
1830003	OHIO 00 03	675	707	5	259	1646
1840001	GLEN OSBORNE 00 01	170	188	2	55	415
1850101	PENN HILLS 01 01	657	33	0	45	735
1850102	PENN HILLS 01 02	637	55	0	46	738
1850103	PENN HILLS 01 03	476	13	0	35	524
1850104	PENN HILLS 01 04	309	13	1	23	346
1850105	PENN HILLS 01 05	219	9	1	17	246
1850201	PENN HILLS 02 01	655	41	2	67	765
1850202	PENN HILLS 02 02	628	47	2	46	723
1850203	PENN HILLS 02 03	666	105	0	70	841
1850204	PENN HILLS 02 04	429	98	3	55	585
1850301	PENN HILLS 03 01	441	249	4	87	781
1850302	PENN HILLS 03 02	368	76	1	46	491
1850303	PENN HILLS 03 03	428	111	3	58	600
1850304	PENN HILLS 03 04	578	125	5	63	771
1850305	PENN HILLS 03 05	343	75	4	40	462
1850306	PENN HILLS 03 06	284	102	1	38	425
1850401	PENN HILLS 04 01	352	114	1	54	521
1850402	PENN HILLS 04 02	521	136	1	44	702
1850403	PENN HILLS 04 03	476	163	5	83	727
1850404	PENN HILLS 04 04	376	122	1	62	561
1850405	PENN HILLS 04 05	398	105	2	66	571
1850501	PENN HILLS 05 01	504	140	5	61	710
1850502	PENN HILLS 05 02	407	111	2	72	592
1850503	PENN HILLS 05 03	408	192	4	52	656
1850504	PENN HILLS 05 04	373	170	2	54	599
1850505	PENN HILLS 05 05	304	139	3	57	503
1850506	PENN HILLS 05 06	431	205	3	85	724
1850601	PENN HILLS 06 01	323	145	4	70	542
1850602	PENN HILLS 06 02	424	125	3	58	610
1850603	PENN HILLS 06 03	372	115	2	32	521
1850604	PENN HILLS 06 04	465	51	2	52	570
1850605	PENN HILLS 06 05	403	100	5	45	553
1850606	PENN HILLS 06 06	393	115	4	46	558
1850701	PENN HILLS 07 01	469	110	5	60	644
1850702	PENN HILLS 07 02	393	155	3	69	620
1850703	PENN HILLS 07 03	590	182	5	89	866
1850704	PENN HILLS 07 04	393	141	1	54	589
1850705	PENN HILLS 07 05	425	188	0	65	678
1850706	PENN HILLS 07 06	498	168	0	75	741
1850707	PENN HILLS 07 07	429	196	3	65	693
1850801	PENN HILLS 08 01	349	192	2	51	594

1850802	PENN HILLS 08 02	309	167	5	51	532
1850803	PENN HILLS 08 03	293	180	5	62	540
1850804	PENN HILLS 08 04	361	190	0	64	615
1850805	PENN HILLS 08 05	550	270	4	89	913
1850806	PENN HILLS 08 06	253	149	0	53	455
1850901	PENN HILLS 09 01	274	180	2	45	501
1850902	PENN HILLS 09 02	306	185	2	47	540
1850903	PENN HILLS 09 03	469	230	2	86	787
1850904	PENN HILLS 09 04	320	175	5	71	571
1850905	PENN HILLS 09 05	277	22	0	21	320
1860001	PINE 00 01	281	633	4	161	1079
1860002	PINE 00 02	403	946	6	260	1615
1860003	PINE 00 03	155	203	4	50	412
1860004	PINE 00 04	348	601	5	167	1121
1860005	PINE 00 05	442	791	9	267	1509
1860006	PINE 00 06	114	293	2	84	493
1860007	PINE 00 07	478	658	8	201	1345
1860008	PINE 00 08	300	593	3	160	1056
1870001	PITCAIRN 00 01	568	213	5	102	888
1870002	PITCAIRN 00 02	335	106	0	56	497
1870003	PITCAIRN 00 03	421	162	4	58	645
1880101	PITTSBURGH 01 01	1548	563	27	689	2827
1880102	PITTSBURGH 01 02	464	70	3	85	622
1880201	PITTSBURGH 02 01	916	395	10	281	1602
1880202	PITTSBURGH 02 02	355	198	9	150	712
1880301	PITTSBURGH 03 01	233	5	0	8	246
1880302	PITTSBURGH 03 02	595	24	0	35	654
1880303	PITTSBURGH 03 03	318	13	2	23	356
1880304	PITTSBURGH 03 04	350	88	3	90	531
1880305	PITTSBURGH 03 05	375	18	2	38	433
1880401	PITTSBURGH 04 01	202	8	0	21	231
1880402	PITTSBURGH 04 02	506	73	6	108	693
1880403	PITTSBURGH 04 03	346	15	1	24	386
1880404	PITTSBURGH 04 04	237	11	0	20	268
1880405	PITTSBURGH 04 05	527	152	8	208	895
1880406	PITTSBURGH 04 06	420	70	5	109	604
1880407	PITTSBURGH 04 07	1285	479	19	623	2406
1880408	PITTSBURGH 04 08	1978	840	24	1150	3992
1880409	PITTSBURGH 04 09	403	89	1	69	562
1880410	PITTSBURGH 04 10	282	81	3	120	486
1880411	PITTSBURGH 04 11	403	76	2	55	536
1880412	PITTSBURGH 04 12	358	89	3	110	560
1880413	PITTSBURGH 04 13	501	83	1	153	738
1880414	PITTSBURGH 04 14	742	208	6	238	1194
1880415	PITTSBURGH 04 15	553	123	5	163	844
1880416	PITTSBURGH 04 16	712	199	4	255	1170
1880417	PITTSBURGH 04 17	443	54	3	78	578

1880418	PITTSBURGH 04 18	255	39	2	36	332
1880419	PITTSBURGH 04 19	177	23	1	44	245
1880501	PITTSBURGH 05 01	220	3	0	22	245
1880502	PITTSBURGH 05 02	293	13	0	12	318
1880503	PITTSBURGH 05 03	148	7	0	11	166
1880504	PITTSBURGH 05 04	293	11	1	13	318
1880505	PITTSBURGH 05 05	200	6	0	17	223
1880506	PITTSBURGH 05 06	460	22	1	37	520
1880507	PITTSBURGH 05 07	405	9	1	26	441
1880508	PITTSBURGH 05 08	397	21	1	36	455
1880509	PITTSBURGH 05 09	701	126	6	176	1009
1880510	PITTSBURGH 05 10	396	15	1	35	447
1880511	PITTSBURGH 05 11	318	12	1	37	368
1880512	PITTSBURGH 05 12	374	12	0	26	412
1880513	PITTSBURGH 05 13	247	11	1	13	272
1880514	PITTSBURGH 05 14	271	5	0	13	289
1880515	PITTSBURGH 05 15	164	2	0	10	176
1880516	PITTSBURGH 05 16	176	3	0	18	197
1880517	PITTSBURGH 05 17	215	10	2	18	245
1880518	PITTSBURGH 05 18	46	2	0	5	53
1880601	PITTSBURGH 06 01	577	110	7	118	812
1880602	PITTSBURGH 06 02	455	62	4	92	613
1880603	PITTSBURGH 06 03	552	81	7	121	761
1880604	PITTSBURGH 06 04	443	70	2	77	592
1880605	PITTSBURGH 06 05	337	40	1	61	439
1880701	PITTSBURGH 07 01	384	78	3	120	585
1880702	PITTSBURGH 07 02	585	220	10	149	964
1880703	PITTSBURGH 07 03	455	107	3	139	704
1880704	PITTSBURGH 07 04	597	166	10	194	967
1880705	PITTSBURGH 07 05	366	120	6	136	628
1880706	PITTSBURGH 07 06	383	125	2	103	613
1880707	PITTSBURGH 07 07	468	101	3	101	673
1880708	PITTSBURGH 07 08	399	121	4	126	650
1880709	PITTSBURGH 07 09	464	126	5	134	729
1880710	PITTSBURGH 07 10	575	170	5	163	913
1880711	PITTSBURGH 07 11	565	169	7	163	904
1880712	PITTSBURGH 07 12	465	154	3	166	788
1880713	PITTSBURGH 07 13	292	58	4	108	462
1880714	PITTSBURGH 07 14	274	86	4	78	442
1880801	PITTSBURGH 08 01	255	47	1	42	345
1880802	PITTSBURGH 08 02	489	74	5	78	646
1880803	PITTSBURGH 08 03	529	101	7	145	782
1880804	PITTSBURGH 08 04	386	93	1	110	590
1880805	PITTSBURGH 08 05	382	76	6	84	548
1880806	PITTSBURGH 08 06	294	39	2	68	403
1880807	PITTSBURGH 08 07	516	79	7	131	733
1880808	PITTSBURGH 08 08	431	71	5	74	581

1880809	PITTSBURGH 08 09	439	70	4	129	642
1880810	PITTSBURGH 08 10	424	65	2	85	576
1880811	PITTSBURGH 08 11	396	72	3	88	559
1880812	PITTSBURGH 08 12	461	42	1	93	597
1880813	PITTSBURGH 08 13	519	37	3	58	617
1880901	PITTSBURGH 09 01	328	48	3	72	451
1880902	PITTSBURGH 09 02	427	66	4	81	578
1880903	PITTSBURGH 09 03	419	64	6	78	567
1880904	PITTSBURGH 09 04	426	54	4	72	556
1880905	PITTSBURGH 09 05	512	69	4	86	671
1880906	PITTSBURGH 09 06	420	62	2	56	540
1880907	PITTSBURGH 09 07	342	43	2	60	447
1880908	PITTSBURGH 09 08	505	58	0	95	658
1880909	PITTSBURGH 09 09	439	73	5	99	616
1881001	PITTSBURGH 10 01	374	46	6	74	500
1881002	PITTSBURGH 10 02	455	65	7	68	595
1881003	PITTSBURGH 10 03	488	62	4	90	644
1881004	PITTSBURGH 10 04	424	50	1	44	519
1881005	PITTSBURGH 10 05	383	53	2	49	487
1881006	PITTSBURGH 10 06	392	59	5	44	500
1881007	PITTSBURGH 10 07	392	104	1	64	561
1881008	PITTSBURGH 10 08	410	101	1	50	562
1881009	PITTSBURGH 10 09	389	69	4	56	518
1881010	PITTSBURGH 10 10	451	75	4	50	580
1881011	PITTSBURGH 10 11	437	85	3	68	593
1881012	PITTSBURGH 10 12	463	35	1	41	540
1881013	PITTSBURGH 10 13	447	35	2	44	528
1881014	PITTSBURGH 10 14	457	42	3	40	542
1881015	PITTSBURGH 10 15	315	19	0	16	350
1881016	PITTSBURGH 10 16	281	21	0	17	319
1881017	PITTSBURGH 10 17	459	26	0	38	523
1881018	PITTSBURGH 10 18	454	23	2	58	537
1881019	PITTSBURGH 10 19	393	25	1	41	460
1881101	PITTSBURGH 11 01	450	51	4	85	590
1881102	PITTSBURGH 11 02	464	22	2	48	536
1881103	PITTSBURGH 11 03	398	15	0	20	433
1881104	PITTSBURGH 11 04	445	27	2	42	516
1881105	PITTSBURGH 11 05	434	34	1	64	533
1881106	PITTSBURGH 11 06	670	67	11	98	846
1881107	PITTSBURGH 11 07	467	81	4	79	631
1881108	PITTSBURGH 11 08	427	82	4	67	580
1881109	PITTSBURGH 11 09	493	52	0	68	613
1881110	PITTSBURGH 11 10	430	61	2	72	565
1881111	PITTSBURGH 11 11	493	81	3	87	664
1881112	PITTSBURGH 11 12	544	48	1	66	659
1881113	PITTSBURGH 11 13	517	47	2	85	651
1881114	PITTSBURGH 11 14	497	24	2	41	564

1881115	PITTSBURGH 11 15	320	8	0	27	355
1881116	PITTSBURGH 11 16	443	44	2	75	564
1881117	PITTSBURGH 11 17	538	31	0	60	629
1881118	PITTSBURGH 11 18	429	52	2	65	548
1881201	PITTSBURGH 12 01	170	7	1	33	211
1881202	PITTSBURGH 12 02	316	11	0	21	348
1881203	PITTSBURGH 12 03	94	3	0	10	107
1881204	PITTSBURGH 12 04	293	8	2	20	323
1881205	PITTSBURGH 12 05	146	6	0	18	170
1881206	PITTSBURGH 12 06	225	5	0	19	249
1881207	PITTSBURGH 12 07	252	9	0	25	286
1881208	PITTSBURGH 12 08	209	5	0	7	221
1881209	PITTSBURGH 12 09	323	6	0	9	338
1881210	PITTSBURGH 12 10	420	9	0	18	447
1881211	PITTSBURGH 12 11	406	14	0	22	442
1881212	PITTSBURGH 12 12	619	46	3	86	754
1881213	PITTSBURGH 12 13	348	11	1	24	384
1881214	PITTSBURGH 12 14	311	9	0	25	345
1881215	PITTSBURGH 12 15	490	11	0	31	532
1881216	PITTSBURGH 12 16	352	12	1	22	387
1881301	PITTSBURGH 13 01	266	9	0	30	305
1881302	PITTSBURGH 13 02	380	6	0	20	406
1881303	PITTSBURGH 13 03	287	16	0	23	326
1881304	PITTSBURGH 13 04	282	14	0	22	318
1881305	PITTSBURGH 13 05	313	13	0	18	344
1881306	PITTSBURGH 13 06	330	6	0	25	361
1881307	PITTSBURGH 13 07	352	11	0	27	390
1881308	PITTSBURGH 13 08	239	9	0	11	259
1881309	PITTSBURGH 13 09	275	15	0	25	315
1881310	PITTSBURGH 13 10	196	9	0	6	211
1881311	PITTSBURGH 13 11	357	8	0	31	396
1881312	PITTSBURGH 13 12	401	12	0	23	436
1881313	PITTSBURGH 13 13	257	7	0	16	280
1881314	PITTSBURGH 13 14	235	13	0	24	272
1881315	PITTSBURGH 13 15	298	11	1	28	338
1881316	PITTSBURGH 13 16	315	14	2	22	353
1881317	PITTSBURGH 13 17	715	26	0	63	804
1881318	PITTSBURGH 13 18	183	8	0	14	205
1881319	PITTSBURGH 13 19	436	14	0	24	474
1881401	PITTSBURGH 14 01	405	74	2	121	602
1881402	PITTSBURGH 14 02	729	147	7	335	1218
1881403	PITTSBURGH 14 03	562	106	3	110	781
1881404	PITTSBURGH 14 04	525	77	6	99	707
1881405	PITTSBURGH 14 05	548	98	3	99	748
1881406	PITTSBURGH 14 06	438	116	6	115	675
1881407	PITTSBURGH 14 07	1522	269	14	990	2795
1881408	PITTSBURGH 14 08	478	83	6	116	683

1881409	PITTSBURGH 14 09	582	112	4	82	780
1881410	PITTSBURGH 14 10	477	95	3	83	658
1881411	PITTSBURGH 14 11	537	113	1	112	763
1881412	PITTSBURGH 14 12	533	70	3	126	732
1881413	PITTSBURGH 14 13	596	58	7	83	744
1881414	PITTSBURGH 14 14	614	114	7	106	841
1881415	PITTSBURGH 14 15	580	69	8	89	746
1881416	PITTSBURGH 14 16	349	91	2	45	487
1881417	PITTSBURGH 14 17	335	61	2	58	456
1881418	PITTSBURGH 14 18	542	96	4	103	745
1881419	PITTSBURGH 14 19	464	63	3	50	580
1881420	PITTSBURGH 14 20	458	83	2	85	628
1881421	PITTSBURGH 14 21	421	72	3	66	562
1881422	PITTSBURGH 14 22	501	70	1	100	672
1881423	PITTSBURGH 14 23	513	84	4	81	682
1881424	PITTSBURGH 14 24	375	66	3	94	538
1881425	PITTSBURGH 14 25	663	138	4	122	927
1881426	PITTSBURGH 14 26	423	90	3	85	601
1881427	PITTSBURGH 14 27	375	101	7	47	530
1881428	PITTSBURGH 14 28	352	111	2	51	516
1881429	PITTSBURGH 14 29	489	111	7	111	718
1881430	PITTSBURGH 14 30	496	88	5	85	674
1881431	PITTSBURGH 14 31	669	151	10	145	975
1881432	PITTSBURGH 14 32	465	86	8	152	711
1881433	PITTSBURGH 14 33	474	138	4	143	759
1881434	PITTSBURGH 14 34	485	163	5	137	790
1881435	PITTSBURGH 14 35	436	70	0	91	597
1881436	PITTSBURGH 14 36	548	114	3	122	787
1881437	PITTSBURGH 14 37	404	112	5	107	628
1881438	PITTSBURGH 14 38	392	88	0	66	546
1881439	PITTSBURGH 14 39	373	84	3	76	536
1881440	PITTSBURGH 14 40	358	65	5	80	508
1881441	PITTSBURGH 14 41	63	8	0	19	90
1881501	PITTSBURGH 15 01	442	67	1	85	595
1881502	PITTSBURGH 15 02	513	86	6	100	705
1881503	PITTSBURGH 15 03	412	78	7	93	590
1881504	PITTSBURGH 15 04	424	92	2	86	604
1881505	PITTSBURGH 15 05	356	79	2	75	512
1881506	PITTSBURGH 15 06	372	80	3	78	533
1881507	PITTSBURGH 15 07	475	80	5	86	646
1881508	PITTSBURGH 15 08	422	88	10	89	609
1881509	PITTSBURGH 15 09	138	21	2	18	179
1881510	PITTSBURGH 15 10	415	75	5	91	586
1881511	PITTSBURGH 15 11	388	97	4	60	549
1881512	PITTSBURGH 15 12	355	49	1	63	468
1881513	PITTSBURGH 15 13	375	24	2	35	436
1881514	PITTSBURGH 15 14	280	33	0	26	339

1881515	PITTSBURGH 15 15	278	38	1	42	359
1881516	PITTSBURGH 15 16	456	28	2	45	531
1881517	PITTSBURGH 15 17	24	2	0	5	31
1881518	PITTSBURGH 15 18	463	48	1	42	554
1881519	PITTSBURGH 15 19	425	34	0	32	491
1881601	PITTSBURGH 16 01	451	164	2	138	755
1881602	PITTSBURGH 16 02	510	215	18	203	946
1881603	PITTSBURGH 16 03	438	164	7	131	740
1881604	PITTSBURGH 16 04	276	55	3	60	394
1881605	PITTSBURGH 16 05	337	95	3	88	523
1881606	PITTSBURGH 16 06	294	76	3	63	436
1881607	PITTSBURGH 16 07	313	32	0	45	390
1881608	PITTSBURGH 16 08	149	11	0	14	174
1881609	PITTSBURGH 16 09	406	56	0	52	514
1881610	PITTSBURGH 16 10	295	47	3	36	381
1881611	PITTSBURGH 16 11	296	40	4	39	379
1881701	PITTSBURGH 17 01	103	32	1	35	171
1881702	PITTSBURGH 17 02	406	176	11	145	738
1881703	PITTSBURGH 17 03	373	108	6	107	594
1881704	PITTSBURGH 17 04	407	166	5	129	707
1881705	PITTSBURGH 17 05	325	129	2	85	541
1881706	PITTSBURGH 17 06	288	62	4	74	428
1881707	PITTSBURGH 17 07	244	71	1	59	375
1881708	PITTSBURGH 17 08	271	86	5	63	425
1881801	PITTSBURGH 18 01	416	101	2	58	577
1881802	PITTSBURGH 18 02	384	23	0	27	434
1881803	PITTSBURGH 18 03	334	10	0	18	362
1881804	PITTSBURGH 18 04	399	15	0	36	450
1881805	PITTSBURGH 18 05	554	175	10	125	864
1881806	PITTSBURGH 18 06	281	34	0	50	365
1881807	PITTSBURGH 18 07	283	57	2	59	401
1881808	PITTSBURGH 18 08	195	16	0	29	240
1881809	PITTSBURGH 18 09	476	74	5	73	628
1881810	PITTSBURGH 18 10	40	31	1	11	83
1881811	PITTSBURGH 18 11	463	65	3	60	591
1881901	PITTSBURGH 19 01	324	120	2	71	517
1881902	PITTSBURGH 19 02	406	155	1	107	669
1881903	PITTSBURGH 19 03	291	148	7	78	524
1881904	PITTSBURGH 19 04	221	125	3	57	406
1881905	PITTSBURGH 19 05	239	103	5	56	403
1881906	PITTSBURGH 19 06	286	121	5	77	489
1881907	PITTSBURGH 19 07	123	52	2	46	223
1881908	PITTSBURGH 19 08	329	138	5	56	528
1881909	PITTSBURGH 19 09	327	88	6	80	501
1881910	PITTSBURGH 19 10	414	109	6	100	629
1881911	PITTSBURGH 19 11	307	78	3	61	449
1881912	PITTSBURGH 19 12	314	81	4	35	434

1881913	PITTSBURGH 19 13	305	80	4	57	446
1881914	PITTSBURGH 19 14	358	92	4	72	526
1881915	PITTSBURGH 19 15	381	106	6	82	575
1881916	PITTSBURGH 19 16	400	72	6	71	549
1881917	PITTSBURGH 19 17	391	111	2	64	568
1881918	PITTSBURGH 19 18	340	47	1	77	465
1881919	PITTSBURGH 19 19	347	79	5	65	496
1881920	PITTSBURGH 19 20	329	101	1	64	495
1881921	PITTSBURGH 19 21	438	92	4	68	602
1881922	PITTSBURGH 19 22	365	88	2	60	515
1881923	PITTSBURGH 19 23	388	108	5	89	590
1881924	PITTSBURGH 19 24	341	98	6	68	513
1881925	PITTSBURGH 19 25	374	80	2	51	507
1881926	PITTSBURGH 19 26	307	86	2	60	455
1881927	PITTSBURGH 19 27	314	89	6	40	449
1881928	PITTSBURGH 19 28	411	145	3	71	630
1881929	PITTSBURGH 19 29	319	99	5	71	494
1881930	PITTSBURGH 19 30	348	107	6	49	510
1881931	PITTSBURGH 19 31	324	121	2	38	485
1881932	PITTSBURGH 19 32	337	82	5	74	498
1881933	PITTSBURGH 19 33	314	81	2	43	440
1881934	PITTSBURGH 19 34	331	109	2	55	497
1881935	PITTSBURGH 19 35	335	103	3	49	490
1881936	PITTSBURGH 19 36	447	109	3	73	632
1881937	PITTSBURGH 19 37	290	83	3	45	421
1881938	PITTSBURGH 19 38	322	85	1	64	472
1882001	PITTSBURGH 20 01	369	153	5	72	599
1882002	PITTSBURGH 20 02	126	42	4	32	204
1882003	PITTSBURGH 20 03	463	142	3	73	681
1882004	PITTSBURGH 20 04	32	11	1	11	55
1882005	PITTSBURGH 20 05	405	82	2	57	546
1882006	PITTSBURGH 20 06	408	76	2	63	549
1882007	PITTSBURGH 20 07	492	85	5	59	641
1882008	PITTSBURGH 20 08	563	74	3	68	708
1882009	PITTSBURGH 20 09	157	15	0	27	199
1882010	PITTSBURGH 20 10	497	65	0	52	614
1882011	PITTSBURGH 20 11	538	66	6	68	678
1882012	PITTSBURGH 20 12	685	97	3	105	890
1882013	PITTSBURGH 20 13	386	30	0	30	446
1882014	PITTSBURGH 20 14	638	120	9	69	836
1882015	PITTSBURGH 20 15	512	183	8	140	843
1882016	PITTSBURGH 20 16	416	153	4	63	636
1882017	PITTSBURGH 20 17	286	94	1	42	423
1882018	PITTSBURGH 20 18	326	116	4	38	484
1882101	PITTSBURGH 21 01	413	25	3	35	476
1882102	PITTSBURGH 21 02	392	16	1	36	445
1882103	PITTSBURGH 21 03	555	25	2	51	633

1882104	PITTSBURGH 21 04	478	51	6	68	603
1882201	PITTSBURGH 22 01	484	101	3	88	676
1882202	PITTSBURGH 22 02	463	97	2	92	654
1882203	PITTSBURGH 22 03	482	64	0	86	632
1882204	PITTSBURGH 22 04	480	95	3	96	674
1882301	PITTSBURGH 23 01	671	231	9	173	1084
1882302	PITTSBURGH 23 02	548	126	4	104	782
1882303	PITTSBURGH 23 03	303	41	0	45	389
1882401	PITTSBURGH 24 01	313	60	3	39	415
1882402	PITTSBURGH 24 02	316	64	2	46	428
1882403	PITTSBURGH 24 03	265	38	1	36	340
1882404	PITTSBURGH 24 04	364	132	2	77	575
1882405	PITTSBURGH 24 05	352	73	5	79	509
1882406	PITTSBURGH 24 06	395	80	2	51	528
1882501	PITTSBURGH 25 01	388	53	0	51	492
1882502	PITTSBURGH 25 02	336	26	2	43	407
1882503	PITTSBURGH 25 03	415	60	1	54	530
1882504	PITTSBURGH 25 04	285	9	0	32	326
1882505	PITTSBURGH 25 05	295	43	2	38	378
1882506	PITTSBURGH 25 06	314	21	0	36	371
1882507	PITTSBURGH 25 07	317	67	1	49	434
1882601	PITTSBURGH 26 01	454	26	1	47	528
1882602	PITTSBURGH 26 02	403	20	2	23	448
1882603	PITTSBURGH 26 03	347	44	2	40	433
1882604	PITTSBURGH 26 04	342	34	1	40	417
1882605	PITTSBURGH 26 05	395	21	2	37	455
1882606	PITTSBURGH 26 06	342	14	1	20	377
1882607	PITTSBURGH 26 07	266	24	3	21	314
1882608	PITTSBURGH 26 08	487	50	1	55	593
1882609	PITTSBURGH 26 09	244	47	1	36	328
1882610	PITTSBURGH 26 10	499	73	7	60	639
1882611	PITTSBURGH 26 11	557	72	5	78	712
1882612	PITTSBURGH 26 12	369	55	4	61	489
1882613	PITTSBURGH 26 13	429	75	3	59	566
1882614	PITTSBURGH 26 14	438	108	2	39	587
1882615	PITTSBURGH 26 15	294	104	3	63	464
1882616	PITTSBURGH 26 16	510	87	5	74	676
1882617	PITTSBURGH 26 17	137	42	0	29	208
1882701	PITTSBURGH 27 01	538	153	6	69	766
1882702	PITTSBURGH 27 02	453	128	5	62	648
1882703	PITTSBURGH 27 03	376	105	3	70	554
1882704	PITTSBURGH 27 04	491	139	11	81	722
1882705	PITTSBURGH 27 05	492	128	4	73	697
1882706	PITTSBURGH 27 06	537	103	5	70	715
1882707	PITTSBURGH 27 07	440	103	1	67	611
1882708	PITTSBURGH 27 08	420	85	6	54	565
1882709	PITTSBURGH 27 09	455	67	2	73	597

1882710	PITTSBURGH 27 10	491	58	2	61	612
1882711	PITTSBURGH 27 11	480	74	3	62	619
1882712	PITTSBURGH 27 12	417	60	4	49	530
1882713	PITTSBURGH 27 13	435	50	2	50	537
1882801	PITTSBURGH 28 01	399	161	4	87	651
1882802	PITTSBURGH 28 02	353	86	2	81	522
1882803	PITTSBURGH 28 03	517	212	6	92	827
1882804	PITTSBURGH 28 04	437	133	1	56	627
1882805	PITTSBURGH 28 05	419	131	4	83	637
1882806	PITTSBURGH 28 06	383	102	2	61	548
1882807	PITTSBURGH 28 07	527	69	2	81	679
1882808	PITTSBURGH 28 08	574	152	5	87	818
1882809	PITTSBURGH 28 09	475	64	0	40	579
1882810	PITTSBURGH 28 10	310	84	8	79	481
1882811	PITTSBURGH 28 11	113	10	0	14	137
1882901	PITTSBURGH 29 01	416	87	5	71	579
1882902	PITTSBURGH 29 02	339	95	6	63	503
1882903	PITTSBURGH 29 03	322	87	0	44	453
1882904	PITTSBURGH 29 04	338	106	5	68	517
1882905	PITTSBURGH 29 05	364	89	3	70	526
1882906	PITTSBURGH 29 06	371	133	3	62	569
1882907	PITTSBURGH 29 07	401	112	5	63	581
1882908	PITTSBURGH 29 08	345	86	3	94	528
1882909	PITTSBURGH 29 09	316	61	1	61	439
1882910	PITTSBURGH 29 10	362	85	1	53	501
1882911	PITTSBURGH 29 11	438	109	3	71	621
1882912	PITTSBURGH 29 12	360	94	3	70	527
1883001	PITTSBURGH 30 01	336	32	0	33	401
1883002	PITTSBURGH 30 02	340	31	0	39	410
1883003	PITTSBURGH 30 03	301	36	2	39	378
1883004	PITTSBURGH 30 04	471	56	4	71	602
1883005	PITTSBURGH 30 05	496	77	2	67	642
1883101	PITTSBURGH 31 01	165	49	0	28	242
1883102	PITTSBURGH 31 02	282	92	2	26	402
1883103	PITTSBURGH 31 03	365	138	4	62	569
1883104	PITTSBURGH 31 04	373	133	5	51	562
1883105	PITTSBURGH 31 05	444	148	3	54	649
1883106	PITTSBURGH 31 06	333	156	3	44	536
1883107	PITTSBURGH 31 07	118	10	0	12	140
1883201	PITTSBURGH 32 01	301	129	2	60	492
1883202	PITTSBURGH 32 02	398	127	5	78	608
1883203	PITTSBURGH 32 03	347	101	1	45	494
1883204	PITTSBURGH 32 04	240	72	2	36	350
1883205	PITTSBURGH 32 05	363	114	2	52	531
1883206	PITTSBURGH 32 06	409	144	4	56	613
1883207	PITTSBURGH 32 07	346	102	3	50	501
1883208	PITTSBURGH 32 08	391	160	3	71	625

1890001	PLEASANT HL 00 01	330	264	5	88	687
1890002	PLEASANT HL 00 02	266	184	2	68	520
1890003	PLEASANT HL 00 03	275	205	4	52	536
1890004	PLEASANT HL 00 04	278	150	3	64	495
1890005	PLEASANT HL 00 05	429	238	4	67	738
1890006	PLEASANT HL 00 06	442	370	5	89	906
1890007	PLEASANT HL 00 07	242	191	2	65	500
1890008	PLEASANT HL 00 08	241	230	4	40	515
1890009	PLEASANT HL 00 09	303	277	2	55	637
1890010	PLEASANT HL 00 10	243	224	3	64	534
1900001	PLUM 00 01	792	729	7	183	1711
1900002	PLUM 00 02	289	188	4	80	561
1900003	PLUM 00 03	384	474	3	59	920
1900004	PLUM 00 04	407	314	3	79	803
1900005	PLUM 00 05	488	276	4	94	862
1900006	PLUM 00 06	586	471	2	126	1185
1900007	PLUM 00 07	613	447	5	112	1177
1900008	PLUM 00 08	288	222	5	61	576
1900009	PLUM 00 09	551	423	5	84	1063
1900010	PLUM 00 10	253	217	4	84	558
1900011	PLUM 00 11	399	272	1	83	755
1900012	PLUM 00 12	523	380	5	121	1029
1900013	PLUM 00 13	265	219	2	58	544
1900014	PLUM 00 14	366	248	5	83	702
1900015	PLUM 00 15	353	289	7	121	770
1900016	PLUM 00 16	262	237	3	52	554
1900017	PLUM 00 17	402	201	7	74	684
1900018	PLUM 00 18	399	300	2	91	792
1900019	PLUM 00 19	820	725	12	198	1755
1900020	PLUM 00 20	346	269	4	83	702
1900021	PLUM 00 21	190	156	1	39	386
1910001	PORT VUE 00 01	377	136	4	53	570
1910002	PORT VUE 00 02	324	143	2	53	522
1910003	PORT VUE 00 03	378	126	3	34	541
1910004	PORT VUE 00 04	398	192	2	64	656
1920100	RANKIN 01 00	317	18	0	25	360
1920200	RANKIN 02 00	363	21	0	29	413
1920300	RANKIN 03 00	527	37	1	32	597
1930100	RESERVE 01 00	325	108	2	48	483
1930200	RESERVE 02 00	331	154	6	63	554
1930300	RESERVE 03 00	315	126	3	72	516
1930400	RESERVE 04 00	498	228	2	102	830
1940001	RICHLAND 00 01	370	486	4	143	1003
1940002	RICHLAND 00 02	407	496	6	133	1042
1940003	RICHLAND 00 03	429	522	8	144	1103
1940004	RICHLAND 00 04	399	548	6	142	1095
1940005	RICHLAND 00 05	323	499	5	140	967

1940006	RICHLAND 00 06	395	526	1	115	1037
1940007	RICHLAND 00 07	401	491	14	158	1064
1940008	RICHLAND 00 08	348	485	8	78	919
1950001	ROBINSON 00 01	741	623	9	143	1516
1950002	ROBINSON 00 02	538	319	6	81	944
1950003	ROBINSON 00 03	418	174	2	50	644
1950004	ROBINSON 00 04	416	173	9	67	665
1950005	ROBINSON 00 05	412	141	4	34	591
1950006	ROBINSON 00 06	425	264	3	134	826
1950007	ROBINSON 00 07	704	536	9	102	1351
1950008	ROBINSON 00 08	689	490	14	175	1368
1950009	ROBINSON 00 09	1154	785	11	268	2218
1960101	ROSS 01 01	334	292	2	78	706
1960102	ROSS 01 02	307	223	3	64	597
1960103	ROSS 01 03	265	142	1	52	460
1960104	ROSS 01 04	368	336	6	102	812
1960201	ROSS 02 01	514	419	6	162	1101
1960202	ROSS 02 02	435	389	3	90	917
1960203	ROSS 02 03	320	278	2	80	680
1960301	ROSS 03 01	306	253	0	99	658
1960302	ROSS 03 02	310	252	3	103	668
1960303	ROSS 03 03	265	179	6	72	522
1960304	ROSS 03 04	332	238	7	75	652
1960401	ROSS 04 01	400	321	0	114	835
1960402	ROSS 04 02	232	196	1	55	484
1960403	ROSS 04 03	321	320	3	74	718
1960404	ROSS 04 04	292	284	8	86	670
1960501	ROSS 05 01	233	266	4	67	570
1960502	ROSS 05 02	195	131	5	41	372
1960503	ROSS 05 03	419	303	4	73	799
1960504	ROSS 05 04	371	281	4	77	733
1960601	ROSS 06 01	274	154	4	65	497
1960602	ROSS 06 02	475	278	8	128	889
1960603	ROSS 06 03	361	202	5	81	649
1960604	ROSS 06 04	345	161	5	55	566
1960701	ROSS 07 01	289	209	0	83	581
1960702	ROSS 07 02	270	168	5	71	514
1960703	ROSS 07 03	409	212	4	68	693
1960704	ROSS 07 04	302	179	3	77	561
1960801	ROSS 08 01	811	507	14	191	1523
1960802	ROSS 08 02	275	175	1	64	515
1960803	ROSS 08 03	274	166	2	58	500
1960901	ROSS 09 01	346	335	1	73	755
1960902	ROSS 09 02	423	360	4	123	910
1960903	ROSS 09 03	401	324	2	83	810
1970001	ROSSLYN FARM 00 01	146	178	1	42	367
1980101	SCOTT 01 01	359	117	2	70	548

1980102	SCOTT 01 02	396	134	6	85	621
1980201	SCOTT 02 01	300	137	1	54	492
1980202	SCOTT 02 02	413	175	0	57	645
1980301	SCOTT 03 01	273	172	1	46	492
1980302	SCOTT 03 02	383	245	4	69	701
1980401	SCOTT 04 01	407	262	6	75	750
1980402	SCOTT 04 02	351	165	2	78	596
1980501	SCOTT 05 01	345	156	2	67	570
1980502	SCOTT 05 02	415	227	4	75	721
1980601	SCOTT 06 01	383	186	5	89	663
1980602	SCOTT 06 02	434	228	3	89	754
1980701	SCOTT 07 01	420	324	3	101	848
1980702	SCOTT 07 02	333	206	0	71	610
1980801	SCOTT 08 01	268	181	3	65	517
1980802	SCOTT 08 02	422	482	4	91	999
1980901	SCOTT 09 01	172	79	1	54	306
1980902	SCOTT 09 02	199	86	2	54	341
1990100	SEWICKLEY 01 00	402	361	8	137	908
1990201	SEWICKLEY 02 01	187	227	2	63	479
1990202	SEWICKLEY 02 02	217	295	3	90	605
1990300	SEWICKLEY 03 00	449	358	5	128	940
2000001	SEWICKLEY HT 00 01	185	447	6	101	739
2010001	SEWICKLEY HL 00 01	184	252	4	69	509
2020101	SHALER 01 01	280	147	3	50	480
2020102	SHALER 01 02	277	150	1	54	482
2020103	SHALER 01 03	340	171	6	72	589
2020104	SHALER 01 04	334	164	3	62	563
2020105	SHALER 01 05	377	183	3	85	648
2020201	SHALER 02 01	522	368	1	114	1005
2020202	SHALER 02 02	360	298	4	68	730
2020203	SHALER 02 03	325	162	0	74	561
2020204	SHALER 02 04	371	256	5	92	724
2020205	SHALER 02 05	203	111	3	45	362
2020301	SHALER 03 01	304	217	4	52	577
2020302	SHALER 03 02	304	213	3	59	579
2020303	SHALER 03 03	259	237	3	66	565
2020304	SHALER 03 04	348	279	2	63	692
2020305	SHALER 03 05	307	302	2	61	672
2020401	SHALER 04 01	385	316	5	103	809
2020402	SHALER 04 02	216	163	3	53	435
2020403	SHALER 04 03	292	262	3	81	638
2020404	SHALER 04 04	275	284	2	68	629
2020405	SHALER 04 05	261	175	3	52	491
2020501	SHALER 05 01	325	298	3	82	708
2020502	SHALER 05 02	322	264	2	74	662
2020503	SHALER 05 03	251	208	0	52	511
2020504	SHALER 05 04	160	151	2	37	350

2020505	SHALER 05 05	359	280	7	100	746
2020601	SHALER 06 01	320	223	1	55	599
2020602	SHALER 06 02	353	237	3	74	667
2020603	SHALER 06 03	233	220	2	55	510
2020604	SHALER 06 04	193	104	1	26	324
2020605	SHALER 06 05	272	224	1	43	540
2020701	SHALER 07 01	322	172	6	59	559
2020702	SHALER 07 02	413	273	6	87	779
2020703	SHALER 07 03	317	214	5	83	619
2020704	SHALER 07 04	536	346	2	106	990
2030001	SHARPSBURG 00 01	395	85	5	65	550
2030002	SHARPSBURG 00 02	547	105	3	96	751
2030003	SHARPSBURG 00 03	543	176	5	87	811
2040001	S FAYETTE 00 01	266	211	5	63	545
2040002	S FAYETTE 00 02	446	459	5	114	1024
2040003	S FAYETTE 00 03	585	528	9	187	1309
2040004	S FAYETTE 00 04	386	336	4	86	812
2040005	S FAYETTE 00 05	384	306	2	97	789
2040006	S FAYETTE 00 06	517	456	5	157	1135
2040007	S FAYETTE 00 07	316	233	3	70	622
2040008	S FAYETTE 00 08	520	714	7	201	1442
2040009	S FAYETTE 00 09	270	279	3	71	623
2040010	S FAYETTE 00 10	384	269	3	111	767
2040011	S FAYETTE 00 11	436	325	4	102	867
2040012	S FAYETTE 00 12	238	181	3	49	471
2050001	SOUTH PARK 00 01	756	664	4	198	1622
2050002	SOUTH PARK 00 02	376	265	5	81	727
2050003	SOUTH PARK 00 03	312	206	0	76	594
2050004	SOUTH PARK 00 04	273	119	3	43	438
2050005	SOUTH PARK 00 05	406	240	5	66	717
2050006	SOUTH PARK 00 06	441	308	3	86	838
2050007	SOUTH PARK 00 07	593	360	15	96	1064
2050008	SOUTH PARK 00 08	269	165	5	48	487
2050009	SOUTH PARK 00 09	365	315	6	90	776
2050010	SOUTH PARK 00 10	437	280	4	89	810
2050011	SOUTH PARK 00 11	310	187	4	76	577
2050012	SOUTH PARK 00 12	301	188	1	59	549
2060001	S VERSAILLES 00 01	97	76	0	23	196
2070001	SPRINGDAL BR 00 01	378	192	2	88	660
2070002	SPRINGDAL BR 00 02	322	186	0	46	554
2070003	SPRINGDAL BR 00 03	308	142	4	47	501
2070004	SPRINGDAL BR 00 04	264	112	3	39	418
2080001	SPRINGDAL TP 00 01	662	356	7	101	1126
2090100	STOWE 01 00	325	49	2	36	412
2090201	STOWE 02 01	123	29	2	23	177
2090202	STOWE 02 02	523	87	0	64	674
2090300	STOWE 03 00	292	51	1	32	376

2090401	STOWE 04 01	278	57	2	34	371
2090402	STOWE 04 02	268	62	2	32	364
2090500	STOWE 05 00	349	65	1	43	458
2090600	STOWE 06 00	354	59	1	39	453
2090700	STOWE 07 00	228	33	0	22	283
2090800	STOWE 08 00	314	37	0	51	402
2090900	STOWE 09 00	251	35	0	35	321
2100001	SWISSVALE 00 01	698	86	5	77	866
2100002	SWISSVALE 00 02	556	71	3	78	708
2100003	SWISSVALE 00 03	479	75	7	75	636
2100004	SWISSVALE 00 04	424	103	6	81	614
2100005	SWISSVALE 00 05	501	106	6	72	685
2100006	SWISSVALE 00 06	311	42	1	40	394
2100007	SWISSVALE 00 07	455	93	5	63	616
2100008	SWISSVALE 00 08	462	129	4	82	677
2100009	SWISSVALE 00 09	485	75	1	58	619
2100010	SWISSVALE 00 10	188	13	1	13	215
2100011	SWISSVALE 00 11	459	104	5	72	640
2110101	TARENTUM 01 01	360	157	5	94	616
2110102	TARENTUM 01 02	254	133	2	70	459
2110200	TARENTUM 02 00	327	116	1	71	515
2110301	TARENTUM 03 01	152	72	6	56	286
2110302	TARENTUM 03 02	326	150	5	77	558
2120001	THORNBURG 00 01	182	175	5	42	404
2120002	PENNSBURY VLG 00 02	306	189	2	77	574
2130001	TRAFFORD 00 01	24	14	0	7	45
2140101	TURTLE CREEK 01 01	561	175	6	68	810
2140102	TURTLE CREEK 01 02	277	63	3	42	385
2140201	TURTLE CREEK 02 01	474	105	4	53	636
2140202	TURTLE CREEK 02 02	203	56	2	37	298
2140301	TURTLE CREEK 03 01	416	96	1	72	585
2140302	TURTLE CREEK 03 02	332	99	0	37	468
2150101	UP ST CLAIR 01 01	233	348	4	70	655
2150102	UP ST CLAIR 01 02	266	405	3	108	782
2150103	UP ST CLAIR 01 03	318	456	4	86	864
2150104	UP ST CLAIR 01 04	281	387	0	109	777
2150201	UP ST CLAIR 02 01	383	390	3	137	913
2150202	UP ST CLAIR 02 02	183	398	4	77	662
2150203	UP ST CLAIR 02 03	451	411	4	126	992
2150204	UP ST CLAIR 02 04	174	265	3	69	511
2150301	UP ST CLAIR 03 01	391	466	2	113	972
2150302	UP ST CLAIR 03 02	351	403	5	88	847
2150303	UP ST CLAIR 03 03	374	649	7	134	1164
2150401	UP ST CLAIR 04 01	340	482	4	138	964
2150402	UP ST CLAIR 04 02	241	401	3	101	746
2150403	UP ST CLAIR 04 03	219	301	1	74	595
2150404	UP ST CLAIR 04 04	231	623	2	96	952

2150501	UP ST CLAIR 05 01	452	635	6	161	1254
2150502	UP ST CLAIR 05 02	271	420	4	93	788
2150503	UP ST CLAIR 05 03	310	396	7	122	835
2160001	VERONA 00 01	339	89	4	65	497
2160002	VERONA 00 02	376	127	3	68	574
2160003	VERONA 00 03	400	111	3	69	583
2170001	VERSAILLES 00 01	328	116	2	48	494
2170002	VERSAILLES 00 02	326	94	1	45	466
2180001	WALL 00 01	194	62	3	34	293
2190001	WEST DEER 00 01	585	567	9	152	1313
2190002	WEST DEER 00 02	263	204	4	56	527
2190003	WEST DEER 00 03	423	271	2	86	782
2190004	WEST DEER 00 04	334	344	4	71	753
2190005	WEST DEER 00 05	430	281	2	78	791
2190006	WEST DEER 00 06	363	252	7	101	723
2190007	WEST DEER 00 07	601	666	11	168	1446
2190008	WEST DEER 00 08	593	573	8	157	1331
2200001	W ELIZABETH 00 01	172	77	1	35	285
2210001	W HOMESTEAD 00 01	355	65	1	52	473
2210002	W HOMESTEAD 00 02	319	82	0	32	433
2210003	W HOMESTEAD 00 03	346	125	1	43	515
2220001	WEST MIFFLIN 00 01	464	134	5	66	669
2220002	WEST MIFFLIN 00 02	371	39	0	32	442
2220003	WEST MIFFLIN 00 03	316	90	1	44	451
2220004	WEST MIFFLIN 00 04	350	14	1	38	403
2220005	WEST MIFFLIN 00 05	607	176	1	40	824
2220006	WEST MIFFLIN 00 06	211	62	0	36	309
2220007	WEST MIFFLIN 00 07	526	122	1	61	710
2220008	WEST MIFFLIN 00 08	448	67	3	41	559
2220009	WEST MIFFLIN 00 09	539	149	2	54	744
2220010	WEST MIFFLIN 00 10	321	115	3	59	498
2220011	WEST MIFFLIN 00 11	443	202	3	98	746
2220012	WEST MIFFLIN 00 12	671	211	3	95	980
2220013	WEST MIFFLIN 00 13	375	123	6	46	550
2220014	WEST MIFFLIN 00 14	572	220	4	61	857
2220015	WEST MIFFLIN 00 15	409	109	2	44	564
2220016	WEST MIFFLIN 00 16	750	302	7	97	1156
2220017	WEST MIFFLIN 00 17	351	142	2	53	548
2220018	WEST MIFFLIN 00 18	517	161	5	71	754
2220019	WEST MIFFLIN 00 19	419	174	6	42	641
2220020	WEST MIFFLIN 00 20	321	78	3	27	429
2220021	WEST MIFFLIN 00 21	396	161	0	71	628
2230001	WEST VIEW 00 01	381	199	4	78	662
2230002	WEST VIEW 00 02	430	194	8	109	741
2230003	WEST VIEW 00 03	310	165	2	62	539
2230004	WEST VIEW 00 04	305	186	7	70	568
2230005	WEST VIEW 00 05	429	185	5	84	703

2230006	WEST VIEW 00 06	400	198	4	89	691
2230007	WEST VIEW 00 07	356	194	4	69	623
2240001	WHITAKER 00 01	294	72	4	31	401
2240002	WHITAKER 00 02	310	48	2	32	392
2250001	WHITEHALL 00 01	284	172	3	48	507
2250002	WHITEHALL 00 02	322	202	2	59	585
2250003	WHITEHALL 00 03	325	245	3	65	638
2250004	WHITEHALL 00 04	336	243	1	72	652
2250005	WHITEHALL 00 05	338	228	3	72	641
2250006	WHITEHALL 00 06	559	129	7	171	866
2250007	WHITEHALL 00 07	292	166	1	20	479
2250008	WHITEHALL 00 08	388	303	5	70	766
2250009	WHITEHALL 00 09	278	187	0	39	504
2250010	WHITEHALL 00 10	326	201	1	62	590
2250011	WHITEHALL 00 11	297	231	2	63	593
2250012	WHITEHALL 00 12	276	210	2	55	543
2250013	WHITEHALL 00 13	252	135	1	54	442
2250014	WHITEHALL 00 14	300	224	3	57	584
2250015	WHITEHALL 00 15	494	316	6	84	900
2250016	WHITEHALL 00 16	270	247	1	58	576
2260001	WHITE OAK 00 01	431	222	8	79	740
2260002	WHITE OAK 00 02	421	272	6	73	772
2260003	WHITE OAK 00 03	475	287	10	79	851
2260004	WHITE OAK 00 04	421	240	6	60	727
2260005	WHITE OAK 00 05	441	254	3	61	759
2260006	WHITE OAK 00 06	374	265	0	59	698
2260007	WHITE OAK 00 07	548	355	3	79	985
2270101	WILKINS 01 01	417	219	2	116	754
2270102	WILKINS 01 02	340	242	4	52	638
2270103	WILKINS 01 03	449	225	6	87	767
2270104	WILKINS 01 04	367	170	3	72	612
2270105	WILKINS 01 05	290	95	1	47	433
2270201	WILKINS 02 01	351	189	3	68	611
2270202	WILKINS 02 02	580	208	5	102	895
2280101	WILKINSBURG 01 01	884	38	0	51	973
2280102	WILKINSBURG 01 02	657	31	0	40	728
2280103	WILKINSBURG 01 03	425	17	0	26	468
2280104	WILKINSBURG 01 04	454	64	3	57	578
2280105	WILKINSBURG 01 05	371	89	6	59	525
2280106	WILKINSBURG 01 06	820	53	2	74	949
2280201	WILKINSBURG 02 01	662	66	2	83	813
2280202	WILKINSBURG 02 02	762	111	0	67	940
2280203	WILKINSBURG 02 03	705	52	2	75	834
2280204	WILKINSBURG 02 04	436	22	1	55	514
2280205	WILKINSBURG 02 05	617	37	6	80	740
2280301	WILKINSBURG 03 01	460	104	6	120	690
2280302	WILKINSBURG 03 02	443	81	6	86	616

2280303	WILKINSBURG 03 03	673	34	3	53	763
2280304	WILKINSBURG 03 04	735	101	13	135	984
2280305	WILKINSBURG 03 05	804	49	11	108	972
2280306	WILKINSBURG 03 06	436	35	1	39	511
2290001	WILMERDING 00 01	399	68	3	56	526
2290002	WILMERDING 00 02	525	123	2	84	734
Total		520069	246040	4645	104969	875723

DistrictID	DistrictName	DEM	REP	LN	OTH	TOTAL
1680400	MCKEESPORT 04 00	246	20	0	27	293