

<p><b>DISTRICT COURT, CITY AND COUNTY OF DENVER, COLORADO</b></p> <p>1437 Bannock St. Denver CO 80202</p>	<p>DATE FILED: November 19, 2021 10:14 PM FILING ID: A3D9A19A24908 CASE NUMBER: 2021CV33691</p>
<p>Plaintiffs: <b>Ron Hanks, Amy Mitchell, Gary Moyer, Jeff Rector, Merlin Klotz, individually and as Clerk and Recorder for Douglas County, Colorado, and Dallas Schroeder, individually and as Clerk and Recorder for Elbert County</b></p> <p>v.</p> <p>Defendant: <b>JENA GRISWOLD, individually and as Colorado Secretary of State</b></p>	
<p>Plaintiff's Attorney:</p> <p>John Case, Atty reg. # 2431 John Case, P.C. 5460 S. Quebec St. #330 Greenwood Village CO 80111 Phone: (303) 667-7407 FAX: (303) 648-4786 E-mail: <a href="mailto:brief@johncaselaw.com">brief@johncaselaw.com</a></p>	<p>Case No: 2021CV033691  Courtroom: 280</p>

### **FIRST AMENDED COMPLAINT and JURY DEMAND**

The plaintiffs state:

#### **PURPOSE, PARTIES, AND VENUE**

1. Plaintiffs are Colorado voters and elected officials who bring this lawsuit to protect the integrity of Colorado voting systems. The purpose of this case is NOT to change the results of any election, including the 2020 election.

2. Plaintiff Ron Hanks is a resident of Fremont County, Colorado who voted in the Colorado November 3, 2020 general election (hereafter "2020 election"). Mr. Hanks retired from military service after 32 years in the U.S. Air Force, where he served as a linguist, intelligence officer, and counterdrug officer. Mr. Hanks served in Desert Storm, Iraq, Kuwait, Kazakhstan, Afghanistan, and U.A.E. In the 2020 election, voters of Colorado House District 60 elected Mr. Hanks to serve in the Colorado House of Representatives. Mr. Hanks was the only Colorado legislator who traveled to Arizona to attend briefings on the Maricopa County election audit.

3. Plaintiff Amy Mitchell is a resident of Park County, Colorado who voted in the 2020 election. Ms. Mitchell is a 5<sup>th</sup> generation Coloradan. She is a graduate of the University of Colorado, and she has worked in the Natural Products Industry for 29 years. In the 2020 election, voters of Park County elected Ms. Mitchell to serve as a Park County Commissioner. In October 2021, Ms. Mitchell voted against the renewal of the contract to use Dominion Voting Systems for future elections in Park County.

4. Plaintiff Gary Moyer is a fourth-generation resident of Rio Blanco County, Colorado. Mr. Moyer voted in the 2020 election. He is a graduate of the University of Minnesota School of Forestry, an independent business owner, and he has served as a County Commissioner of Rio Blanco County since January 2019.

5. Plaintiff Jeff Rector is a resident of Rio Blanco County, Colorado who voted in the 2020 election. Mr. Rector graduated from high school in Rangely, Colorado and has owned his own well servicing company since the age of 27. Mr. Rector was elected a county commissioner of Rio Blanco County in 2016, and re-elected in 2020.

6. Plaintiff Merlin Klotz is a resident of Douglas County who voted in the 2020 election. Mr. Klotz has served as the Douglas County Clerk and Recorder since January 2015. He is a graduate of the University of Iowa with a degree in Accounting. Before being elected to the office of Clerk and Recorder, Mr. Klotz worked in the private sector.

7. Plaintiff Dallas Schroeder is a resident of Elbert County who voted in the 2020 election. Mr. Schroeder was appointed Elbert County Clerk and Recorder in 2013, when the previous clerk resigned. Mr. Schroeder was elected Clerk and Recorder in 2014, and for a second term in 2018. Mr. Schroeder graduated from Milligan College in Tennessee with a double major in history and business. He was a self-employed entrepreneur for 18 years until his appointment as Clerk and Recorder of Elbert County.

8. Defendant Jena Griswold (“Defendant”) has held the office of Colorado Secretary of State since January 8, 2019.

9. Venue is proper pursuant to C.R.C.P. 98(b)(2) and C.R.S. §24-4-106 (4.7).

**FIRST CLAIM FOR RELIEF**

**(Declaratory Judgment – violations of C.R.S. § 1-5-608.5 – Defendant failed to employ a federally accredited laboratory to test Colorado voting systems before the 2020 election)**

10. Plaintiffs incorporate all other allegations of this Complaint as if fully re-written.

11. Dominion Voting Systems, Inc. (hereafter “Dominion”) is a Delaware Corporation that markets and supplies voting systems to government entities throughout Colorado and the U.S.

12. Dominion Democracy Suite 5.11-CO (hereafter “5.11-CO”) is an electronic and/or electromechanical voting system that was used by sixty Colorado counties during the 2020 election cycle.

13. Elbert County used Dominion 5.11-CO in the 2020 election.

14. Clear Ballot Group Inc. (hereafter “Clear Ballot”) is a Delaware Corporation with its principal office located in Boston MA.

15. Clear Ballot markets and supplies voting systems to two counties in Colorado and to government entities throughout the U.S.

16. ClearBallot ClearVote 2.1 (hereafter “CV 2.1”) is an electronic and/or electromechanical voting system that was used by two Colorado counties during the 2020 election cycle.

17. Elbert County used CV 2.1 in the 2020 election.

18. C.R.S. § 1-5-612 states:

(1) The governing body of any political subdivision may, upon consultation with the designated election official, adopt an electronic or electromechanical voting system, including any upgrade in hardware, firmware, or software, for use at the polling locations in the political subdivision. The system may be used for recording, counting, and tabulating votes at all elections held by the political subdivision.

(2) An electronic or electromechanical voting system may be used only if the system has been certified by the secretary of state in accordance with this part 6.

(Underline added)

19. C.R.S. § 1-5-608.5 provides in pertinent part:

**1-5-608.5. Electronic and electromechanical voting systems - testing by federally accredited labs . . .**

(1) A federally accredited laboratory may test, approve, and qualify electronic and electromechanical voting systems for sale and use in the state of Colorado.

(3)

(a) If the electronic and electromechanical voting systems tested pursuant to this section satisfy the requirements of this part 6, the secretary of state shall certify such systems and approve the purchase, installation, and use of such systems by political subdivisions and establish standards for certification.

(Underline added)

20. On or about June 7, 2019, Defendant issued a letter certifying 5.11-CO. A copy of Defendant's Certification Letter is attached to this Complaint and incorporated by reference as Exhibit 1. The letter states in part:

"Pro V&V, a federally accredited voting system testing laboratory, tested Democracy Suite 5.11 CO in accordance with the test plans my office approved on May 20, 2019 and May 23, 2019.

(Exhibit 1, second paragraph, underline added).

21. On or about July 31, 2020, Defendant's deputy issued a letter certifying CV 2.1. A copy of Defendant's Certification Letter is attached to this Complaint and incorporated by reference as Exhibit 2. The letter states in part:

"Pro V&V, a federally accredited voting system testing laboratory, tested ClearVote 2.1 in accordance with the test plans my office approved on December 16, 2019.

(Exhibit 2, second paragraph, underline added).

22. In fact, Pro V&V was not a federally accredited voting system testing laboratory on the dates that Defendant issued Exhibits 1 and 2, or at any time during 2019 and 2020.

23. In late 2002, Congress passed the Help America Vote Act of 2002 (HAVA). HAVA created the U.S. Election Assistance Commission (EAC) and assigned to the EAC the responsibility for both setting voting system standards and providing for the voluntary testing and certification of voting systems.

24. In response to this HAVA requirement, the EAC has developed (a) the voting system standards in the form of the Voluntary Voting System Guidelines (VVSG), (b) a voting system certification program in the form of the Voting System Testing and Certification Program Manual, and (c) an election systems testing laboratory accreditation program in the form of the Voting System Test Laboratory Program Manual (VSTLPM)..

25. HAVA Section 231(b) (originally 42 U.S.C. §15371(b), now 52 U.S.C. §20971(a)) requires that EAC provide for the accreditation and revocation of accreditation of independent, non-federal laboratories qualified to test voting systems to Federal standards.

26. EAC published "The Voting System Test Laboratory Program Manual, Version 2.0" ("VSTLPM 2.0"), which became effective May 31, 2015.

27. VSTLPM 2.0 remained in effect from May 31, 2015, until February 12, 2021, when EAC voted to adopt "The Voting System Test Laboratory Program Manual, Version 3.0."

28. At all times relevant to this Complaint, VSTLPM 2.0 provided the procedural requirements of the EAC voting system Test Laboratory Accreditation Program.

29. Federal law (52 U.S.C. §20971(b)(2)(A)) and VSTLPM 2.0 provide that a voting systems test laboratory can receive federal accreditation only by vote of the EAC Commissioners, and VSTLPM 2.0 specifies that accreditation lasts for a period not exceeding two years.

30. Section 3.6 of VSTLPM 2.0 states:

**3.6 Grant of Accreditation.** Upon a vote of the EAC Commissioners to accredit a laboratory, the Testing and Certification Program Director shall inform the laboratory of the decision, issue a Certificate of Accreditation and post information regarding the laboratory on the EAC Web site.

3.6.1 Certificate of Accreditation. A Certificate of Accreditation shall be issued to each laboratory accredited by vote of the Commissioners. The certificate shall be signed by the Chair of the Commission and state:

3.6.1.1 The name of the VSTL [Voting System Testing Laboratory];

3.6.1.2 The scope of accreditation, by stating the Federal standard or standards to which the VSTL is competent to test;

3.6.1.3 The effective date of the certification, which shall not exceed a period of two (2) years; and

3.6.1.4 The technical standards to which the laboratory was accredited.

(VSTLPM 2.0 §3.6 [underline added])

31. At all times prior to February 1, 2021, EAC normally issued accreditation certificates for two years pursuant to VSTLPM 2.0 §3.6.

32. On or about February 24, 2015, EAC issued a Certificate of Accreditation to Pro V&V, Inc., Huntsville, Alabama. A copy of the Certificate is attached as Exhibit 3 and incorporated by reference. The Certificate states that it was issued on February 24, 2015, and that certification is effective through February 24, 2017.

33. On or about February 1, 2021, EAC issued a subsequent Certificate of Accreditation to Pro V&V, Inc., Huntsville, Alabama. That certificate documented Pro V&V's accreditation only for periods beginning on February 1, 2021. A copy of the Certificate is attached as Exhibit 4 and incorporated by reference.

34. During the 47 months period from February 24, 2017, until February 1, 2021, Pro V&V, Inc., Huntsville, Alabama was not a federally accredited testing laboratory.

35. 5.11-CO was not tested by a federally accredited laboratory prior to its use in the 2020 election.

36. CV 2.1 was not tested by a federally accredited laboratory prior to its use in the 2020 election.

37. Because Defendant violated C.R.S. § 1-5-608.5 by failing to have Colorado voting systems tested by a federally accredited laboratory before Defendant's certification of the voting systems, enabling their use in the 2020 election, an independent forensic audit is necessary to determine whether Colorado voting systems meet mandatory certification standards under Colorado law, and whether the systems accurately recorded the votes of the people of Colorado in the 2020 election.

38. Plaintiffs have a vital interest in obtaining the relief requested in this Claim for Relief.

39. As County Commissioners, Plaintiffs Amy Mitchell, Gary Moyer and Jeff Rector are responsible for ensuring that voting systems in their counties comply with Colorado statutes and regulations promulgated by Defendant.

40. As County Clerks and Recorders, Plaintiffs Merlin Klotz and Dallas Schroeder are responsible for ensuring that voting systems in their counties comply with Colorado statutes and regulations promulgated by Defendant.

41. At the time of the 2020 election, Plaintiffs were not aware that the voting systems in their respective counties had not been tested by a federally accredited laboratory, as required by C.R.S. § 1-5-608.5.

42. If Defendant had timely informed Plaintiffs prior to the 2020 election that the voting systems in their respective counties were not in compliance with state election law, Plaintiffs would have acted to make sure that the systems were properly tested and brought into compliance prior to the 2020 election.

43. If the relief requested in this Complaint is not granted, Plaintiffs Amy Mitchell, Gary Moyer, and Jeff Rector, and other County Commissioners throughout Colorado, could face potential criminal liability under C.R.S. 1-13-107 and 1-13-723 for violating a public official's duty under the election code.

44. If the relief requested in this Complaint is not granted, Plaintiffs Merlin Klotz and Dallas Schroeder, and other County Clerks and Recorders throughout Colorado, could face potential criminal liability under C.R.S. 1-13-107 and 1-13-723 for violating a public official's duty under the election code.

WHEREFORE, on their First Claim for Relief, Plaintiffs pray that this Honorable Court enter judgment declaring that Defendant violated C.R.S. § 1-5-608.5 by failing to have Colorado voting systems tested by a federally accredited laboratory before the 2020 election. Plaintiffs pray that the Court enter judgment that an independent forensic audit is necessary to determine

whether the voting systems meet legal standards, and whether the systems accurately recorded the votes of the people of Colorado in the 2020 election. Plaintiffs pray that the Court order the Defendant to pay the costs of such audit. Because of the importance of this case to the voters of Colorado, Plaintiffs pray for advancement on the docket and accelerated discovery pursuant to C.R.C.P. 57 (m). Plaintiffs pray for an award of costs, expert witness fees, reasonable attorney fees, and all other appropriate relief.

#### **SECOND CLAIM FOR RELIEF**

##### **(Declaratory Judgment and injunctive relief – violations of C.R.S. § 1-7-802 – Defendant deleted or destroyed election records that election officials are required to preserve)**

45. Plaintiffs incorporate all other allegations of this Complaint as if fully re-written.

46. In April of 2021, Defendant notified Colorado counties that Defendant would conduct a “Trusted Build” software update of county election equipment.

47. On information and belief, the Defendant conducted “Trusted Build” software updates of 62 counties in Colorado from April through August of 2021.

48. Employees of Defendant and Clear Ballot performed a “Trusted Build” modification of the Douglas County voting system in May 2021.

49. Employees of Defendant and Dominion performed a “Trusted Build” modification of the Elbert County voting system in August 2021.

50. C.R.S. § 1-5-601.5 states:

***[Editor's note: This version of this section is effective until July 1, 2022.]***

All voting systems and voting equipment offered for sale on or after May 28, 2004, shall meet the voting systems standards that were promulgated in 2002 by the federal election commission. At his or her discretion, the secretary of state may require by rule that voting systems and voting equipment satisfy voting systems standards promulgated after January 1, 2008, by the federal election assistance commission as long as such standards meet or exceed those promulgated in 2002 by the federal election commission. Subject to section 1-5-608.2, nothing in this section shall be construed to require any political subdivision to replace a voting system that is in use prior to May 28, 2004.

(underline added)

51. The voting systems standards promulgated in 2002 by the Federal Election Commission (“FEC”) are set forth in FEC publication “Voting Systems Standards” Volumes 1 and 2 (“2002 VSS”).

52. C.R.S. § 1-7-802 states:

#### **1-7-802 Preservation of election records.**

The designated election official shall be responsible for the preservation of any election records for a period of at least twenty-five months after

the election or until time has expired for which the record would be needed in any contest proceedings, whichever is later. Unused ballots may be destroyed after the time for a challenge to the election has passed. If a federal candidate was on the ballot, the voted ballots and any other required election materials shall be kept for at least twenty-five months after the election.

(Underline added)

53. Colorado voting systems in 64 counties require that all ballots are scanned and stored electronically in a central location.

54. All ballot images are stored on a single physical server hosting a backend “Network Attached Storage” (NAS) application, which is part of an “election management system.” computer called “the server”.

55. The server stores ballot images, election project files and log files, as well as system and system application “log files,” including audit log files, and system software.

56. A “log file” consists of individual log events which represent a system-time correlated record of hardware and software event history, including security, communication, process, error, and operator events, on the computer system.

57. “Log files” contain a date-time stamp, and may contain other information such as usernames, initiated and terminated applications, attempted file system access and modification, and the IP address of any device which has connected to the server.

58. The presence of an IP address, in a log file, belonging to any device that is not part of the voting system, is evidence that the voting system was accessed by a device outside the closed network.

59. An election cannot be secure if the voting system components connect to and communicate with the Internet or any other computer network that is external to the voting system.

60. In order to certify an election, the county clerk must have the ability and expertise to verify that the voting system has not been accessed or used in an unauthorized manner, including the ability and expertise to review all the log files and entries to determine if there have been any unauthorized connections with the voting system from outside the closed network.

61. Defendant limited access to the system event logs of every county voting system by requiring a password that is kept secret from county clerks and the public.

62. The log files meet the requirements of public information under the Colorado

Open Records Act (“CORA”).

63. In the 2020 election, Mesa County used electronic vote-tabulating equipment that scanned ballots, interpreted marks on the ballots as votes, and then tabulated the votes for a final result.

64. As part of its operations, the Mesa County electronic vote-tabulating equipment produced electronic computer files that recorded how the system scanned and tabulated votes.

65. Such equipment also produced “operating system audit” files described in the 2002 VSS, section 2.2.5.3, which also are referred to hereinabove as “log files.”

66. 2002 VSS requires log files to be preserved as election records. 2002 VSS, section 2.2.5.3 requires operating system audit files to include “all session openings and closings,...connection openings and closings,...process executions and terminations, and for the alteration or deletion of any memory or file object.”

67. Log files are necessary to understand and audit how the electronic vote-tabulating equipment scanned, interpreted, and tallied votes.

68. 2002 VSS states, in section 4.3, that all systems shall “Maintain the integrity of voting and audit data during an election, and for at least 22 months thereafter, a time sufficient in which to resolve most contested elections and support other activities related to the reconstruction and investigation of a contested election.”

69. C.R.S. § 1-7-802 requires all electronic files that reside on the server, including log files, to be preserved for 25 months.

70. Along with certification of 5.11-CO, Defendant promulgated mandatory technical procedures directed for use by election officials within Colorado counties in configuring and operating the voting systems certified by Defendant.

71. The mandatory technical procedures included vendor-developed manual “2.09 – Democracy Suite EMS System Maintenance Manual, Version: 5.11-CO::3,” dated April 18, 2019, attached hereto and incorporated herein as Exhibit 5.

72. At Chapter 2, Section 2.1, Exhibit 5 prescribes that the system log file parameters be set at a level that insures the destruction of log files in the normal course of the system’s operation. (Exhibit 5, P. 4)

73. Defendant’s certification of 5.11-CO and promulgation of technical procedures which directed the configuration of 5.11-CO systems by Colorado counties in such a manner as to ensure the destruction of records of the 2020 election, violated C.R.S. § 1-7-802 by deleting or destroying records of the 2020 election.

74. Defendant’s employees, together with employees of the election system

vendor, conducted the “Trusted Build” of Mesa County election equipment on May 25 and 26, 2021.

75. On information and belief, during the “Trusted Build” of Mesa County election equipment, Defendant’s employees and employees of the system vendor permanently deleted or destroyed log files that were election records from the 2020 election.

76. Doug Gould, a qualified cyber-security expert, conducted a forensic examination of the voting systems of Mesa County used in the 2020 election. Mr. Gould’s initial report, dated September 15, 2021 is attached hereto and incorporated herein by reference as Exhibit 6. Mr. Gould concluded in pertinent part:

“Forensic examination found that election records, including data described in the Federal Election Commission’s 2002 Voting System Standards (VSS) mandated by Colorado law as certification requirements for Colorado voting systems, have been destroyed on Mesa County’s voting system, by the system vendor and the Colorado Secretary of State’s office. Because similar system modifications were reportedly performed upon county election servers across the state, it is possible, if not likely, that such data destruction in violation of state and federal law has occurred in numerous other counties.”

(Exhibit 6, P. 4)

77. Defendant’s 2021 “Trusted Build” process violated C.R.S. § 1-7-802 by deleting or destroying records of the 2020 election.

78. On information and belief, Defendant’s 2021 “Trusted Build” process deleted election records in all counties in which it was conducted in violation of C.R.S. § 1-7-802.

79. An independent forensic audit is necessary to determine the extent of deleted or destroyed records, whether such records can be reconstructed, and, to the extent possible, whether Colorado voting systems accurately recorded the votes of the people of Colorado in the 2020 election.

80. Defendant must be enjoined from deleting or destroying election records in the future.

81. Plaintiffs have a vital interest in obtaining the relief requested in this Second Claim for Relief.

82. If the “Trusted Build” process in 2021 erased or deleted election records from the election systems in their respective counties, Plaintiffs Amy Mitchell, Gary Moyer, and Jeff Rector, and other County Commissioners throughout Colorado, could face potential criminal liability under C.R.S. 1-13-107 and 1-13-723 for violating a public official’s duty under the election code.

83. If the “Trusted Build” process in 2021 erased or deleted election records from the election systems in their respective counties, Plaintiffs Merlin Klotz and Dallas Schroeder, and other County Clerks and Recorders throughout Colorado, could face potential criminal liability under C.R.S. 1-13-107 and 1-13-723 for violating a public official's duty under the election code.

WHEREFORE, on their Second Claim for Relief, Plaintiffs pray that this Honorable Court enter judgment declaring that Defendant violated C.R.S. § 1-7-802 by destroying election records as part of installing Dominion 5.11-CO and Defendant's 2021 “Trusted Build” process. Plaintiffs pray that the Court enter judgment that an independent forensic audit is necessary to determine the extent of deleted or destroyed records, whether such records can be reconstructed, and, to the extent possible, whether Colorado voting systems accurately recorded the votes of the people of Colorado in the 2020 election. Plaintiffs pray that the Court order the Defendant to pay the costs of such audit. Plaintiffs pray that the Court enjoin defendant from further altering or destroying election records. Plaintiffs pray that the Court order Defendant to preserve all election records of the 2020 election under her control until February 3, 2023, or until final judgment is entered in this case, whichever is later. Plaintiffs pray for an award of costs, expert witness fees, reasonable attorney fees, and all other appropriate relief.

**THIRD CLAIM FOR RELIEF**  
**(Judicial Review of Agency Action – C.R.S. § 24-4-106)**

84. Plaintiffs incorporate all other allegations of this Complaint as if fully re-written.

85. Colorado County Clerk and Recorders (“CCRs”) have custody and control of all county election equipment.

**New Election Rule 20.5.4**

86. At all times prior to June 17, 2021, CCRs could lawfully hire or designate non-employee technical consultants with the necessary expertise to evaluate, audit, or otherwise ensure that electronic vote-tabulating equipment, and other election equipment, functions correctly and in accordance with Colorado law.

87. On June 17, 2021, Defendant promulgated, on an alleged emergency basis, a new version of Election Rule 20.5.4 that prohibits CCRs from allowing qualified technical consultants access to election equipment. Defendant's emergency Rule 20.5.4 is attached hereto and incorporated herein by reference as Exhibit 7.

88. Rule 20.5.4 allows ONLY the following people to have access to election equipment: (1) employees of Defendant; (2) employees of a County Clerk, (3) election judges, (4) voting system vendors. No independent consultants are allowed.

89. Defendant does not employ on her staff a qualified cyber-security expert with the skills and experience necessary to test the integrity of Colorado voting systems.

90. No Colorado county clerk employs a qualified cyber-security expert with the skills and

experience necessary to test the integrity of Colorado voting systems.

91. Election judges are not cyber security experts who can verify whether the voting system in his or her county is secure nor whether it complies with Colorado law.

92. Employees of Dominion are not cyber security experts, and it would be against Dominion's economic interest to find that a Colorado voting system is insecure or does not comply with Colorado law.

93. Thus, Defendant's new Rule 20.5.4 effectively prevents qualified cyber security experts from being employed to test the integrity of Colorado voting systems and their compliance with Colorado law.

94. Defendant stated on June 17, 2021 that she promulgated Exhibit 7 to prevent an independent forensic audit of the 2020 election, such as occurred in Arizona.

95. "Adoption of these new and amended rules on a temporary basis is necessary given the public concern regarding rapidly increasing instances of purported "forensic audits" conducted by unknown and unverified third parties nationwide." (Exhibit 7, P. 6)

96. On June 17, 2021 Defendant tweeted:

"My office just issued rules prohibiting sham election audits in the state of Colorado. We will not risk the state's election security nor perpetuate The Big Lie. Fraudits have no place in Colorado." (Exhibit 8).

97. Rather than preventing "fraudits," "Big Lies," and "purported forensic audits," Exhibit 7 prevents legitimate forensic and other audits of Colorado elections.

98. Defendant adopted Rule 20.5.4 as part of her plan to conceal from the citizens of Colorado the vulnerabilities of the Colorado election system and the destruction of election records that occurred during the 2021 "Trusted Build.".

99. Defendant directed her staff and CCRs to withhold from the public information related to the schedule for the "Trusted Build" modification of Colorado Dominion Voting Systems from version 5.11-CO to 5.13, conducted in 2021.

100. Exhibit 9, which is attached hereto and incorporated herein by reference, is a report of security testing performed in 2020 by Synack Inc. at the direction of Defendant's security officer.

101. Defendant withheld from the public all information related the election system vulnerability findings, which are reported in Exhibit 9.

102. On July 7, 2021, Maureen West, a licensed Colorado attorney, made a CORA request to Defendant for information related to Emergency Rule 20.5.4. The Cora request is attached hereto and incorporated herein as Exhibit 10.

103. Defendant failed to provide the information requested in Exhibit 10.

104. The Dominion voting system used in 60 Colorado counties relies on Dell computers that were made in Mexico and China.

105. Dell laptop computers used in the Colorado voting system were manufactured in Chengdu, China.

106. Dell computers used in the Colorado voting systems were ordered and built with the ability to connect to external networks and devices, including the internet, both through wireless and wired connections.

107. Election Rule 20.19.1 (8 CCR 1505-1) appears to prohibit voting systems from connecting to the internet. The Rule states:

20.19.1 The county must use the voting system only on a closed network or in a standalone fashion.

(8 CCR 1505-1:20).

108. Election Rule 1.1.14 defines “Closed network” as “a network configuration in which voting system components connect to and communicate only with each other and not with the Internet or any other computer network.” (8 CCR 1505-1:4)

109. Because election system computers are manufactured with wireless connectivity, there is no way to prevent them from being connected to the internet, nor for CCRs and Colorado election officials to determine whether or not the election system computers are, have been, or can connect to the internet or to other outside networks.

110. Only a forensic audit with access to log files can determine whether or not an election computer system was “hacked” or subjected to unauthorized access during, or affecting, an election.

111. By requiring a secret password to access log files and entries, Defendant precludes County Clerks and the citizens of Colorado from knowing whether there have been unauthorized connections with the voting system during an election.

112. Because Defendant refuses to allow county clerks to review log files after an election, citizens and governing officials of each county should be allowed to employ a qualified cyber-security expert to conduct an independent forensic audit of the voting system,

including voting equipment, paper ballots, ballot envelopes, and original signatures, to determine if there were unauthorized connections, or discrepancies in paper ballots, ballot envelopes, and original signatures, and if so, how each unauthorized connection, access or use of voting equipment, or discrepancy in paper ballots, affected election results.

113. The “Risk Limiting Audit” (RLA) permitted by Defendant’s election rules is only a statistical sample of one candidate race or one ballot issue.

114. An RLA does not verify the authenticity of ballots or the eligibility of voters.

115. An RLA is insufficient to guarantee the security or integrity of an election.

116. In the most recent election, November 2, 2021, the El Paso County clerk’s office transmitted election data to Defendant’s website using an internet connection. As batches of votes were transmitted, the total votes counted increased on Defendant’s website by approximately 20 per cent. This happened twice. The El Paso County Clerk telephoned Defendant’s office. Defendant’s office was unaware that its website was showing inflated vote totals from El Paso County. Defendant’s office and the El Paso County Clerk agreed to manually decrease the vote totals that had been transmitted by the voting system.

117. Votes must be cast by anonymous ballot, but the vote counting process should be transparent.

118. Defendant promulgated Rule 20.5.4 with the express purpose of avoiding transparency in the vote counting process.

119. Rule 20.5.4 prohibits independent verification that an election was free or fair.

120. Rule 20.5.4 prevents CCRs from exercising their statutory duties to conduct free and fair elections.

121. On August 3, 2021, Defendant held a public hearing via Zoom to receive public input on Exhibit 7.

122. At the hearing, 360 concerned citizens attended. Sixty-three citizens spoke in opposition to the new Exhibit 7. No person spoke in favor of adopting Exhibit 7.

123. Despite unanimous opposition to Exhibit 7, Defendant adopted it on August 26, 2021.

124. Exhibit 7 became effective October 15, 2021.

### **New Election Rules Promulgated August 26, 2021**

125. On August 26 Defendant adopted new election rules that became effective

October 15, 2021 (“new rules”).

126. A redlined version of the new Judicial review of Defendant’s Rules is attached hereto and incorporated herein by reference as Exhibit 11.

127. Plaintiffs ask the Court to annul Exhibit 11 *in toto* because the new rules centralize power in Defendant, give her dictatorial authority to decertify county voting systems and remove county clerks who disagree with her, and prevent county commissioners and county clerks from carrying out their statutory duties. Specific examples are set forth below.

### **Rule 2.12.3**

128. New Rule 2.13.2 states:

*Amendments to Rule 2.13.2 concerning list maintenance under section 8 of the National Voter Registration Act of 1993:*

2.13.2 In accordance with section 1-2-605(7), C.R.S., no later than 90 days following a General Election, the ~~county clerk in each county must~~ DEPARTMENT OF STATE, WORKING IN CONJUNCTION WITH COUNTY CLERKS, WILL cancel the registrations of electors:

- (a) Whose records have been marked “Inactive – returned mail”, “Inactive – undeliverable ballot”, or “Inactive – NCOA”; AND
- (b) Who have been mailed a confirmation card; and
- (c) Who have ~~since~~—THEREAFTER failed to vote in two consecutive general elections.

129. Defendant cites C.R.S. §1-2-605(7) as her statutory authority for the new rule.

130. C.R.S. §1-2-605(7) states:

(7) If an elector whose registration record is marked “Inactive” fails to update his or her registration record, fails to respond to any confirmation card, and fails to vote in any election conducted by the county clerk and recorder during the time period that includes two consecutive general elections since the elector’s registration record was marked “Inactive”, the county clerk and recorder shall cancel the elector’s registration record. Nothing in this section allows an elector’s registration record to be canceled solely for failure to vote.

(underline added)

131. As the Court can see, the statute C.R.S. §1-2-605(7) gives each county clerk

and recorder exclusive authority to cancel voter registration records in his or her respective county.

132. The legislature gave Defendant no authority under C.R.S. §1-2-605(7) to cancel voter registration records.

133. Defendant promulgated new rule 2.13.2 to usurp the power of CCRs to manage voter registration records in their respective counties.

134. Rule 2.13.2 exceeds Defendant's rule making authority.

135. Defendant's promulgation of Rule 2.13.2 is an *ultra vires* act.

### **Colorado statewide Voter Registration Database - SCORE**

136. C.R.S. 1-2-301 through 1-2-305 establish a statewide voter registration system, which Defendant refers to as 'SCORE' on Defendant's website.

137. Defendant is responsible for maintaining the statewide voter registration database known as SCORE.

138. The statewide voter registration database ("SCORE") is open to search by internet browsers.

139. SCORE is not a secure database, as shown by the following facts:

140. Exhibit 12, attached hereto and incorporated herein by reference, is an email exchange between Ana Konduris of Monument Colorado and Defendant's office.

141. On June 3, 2021 Ms. Konduris made a CORA request to Defendant's CORA Custodian for every IP address that accessed SCORE from January 1, 2018 through June 1, 2021. (Exhibit 12, P. 1)

142. On June 28, 2021 Kerry Colburn, a legal and policy analyst in Defendant's office, emailed to Ms. Konduris the list of IP addresses that she requested. (Exhibit 12, P. 2)

143. The list of IP addresses provided by Defendant to Ms. Konduris is attached hereto and incorporated herein by reference as Exhibit 13.

144. Geographic locations of the IP addresses listed on Exhibit 13 are depicted on the map in Exhibit 14, which is attached hereto and incorporated herein by reference.

145. As the Court can see in the international map (Exhibit 14, bottom), IP addresses from Brazil, Germany, and Mozambique accessed the voter registration records of Colorado voters.

146. As the Court can see from the north American map (Exhibit 14, top), Colorado voter information was accessed from Ottawa, Canada and from the states of Washington (multiple times), Oregon, California (multiple times, multiple locations), Arizona (multiple times, different locations), Utah (multiple times, different locations), New Mexico, Wyoming, Montana, Texas (multiple times, multiple locations), Oklahoma (multiple times and locations), Arkansas, Florida, Georgia, Maryland, New York, Ohio, Indiana, Illinois, Michigan, Wisconsin, and Iowa.

147. The above facts show that foreign actors in other states other countries can access the confidential information of Colorado voters in the state registration database.

148. In November of 2015, Colorado State Auditor Dianne E. Ray, C.P.A., reported on the performance of the Colorado Department of State. Of note, the State Auditor found vulnerability in the “state information technology assets,” i.e. the SCORE voter registration database.

149. Relevant portions of the State Auditor’s report are attached hereto and incorporated herein by reference as Exhibit 15.

During our audit work, we identified certain matters that are not included in this audit report that were reported to the Department’s management in a separate confidential report dated November 2015. These matters were considered sensitive to protecting state information technology assets.

(Exhibit 15, p.4, underline added)

150. Defendant’s predecessor Wayne Williams, who was Secretary of State in 2015, did not inform the people of Colorado about the Auditor’s confidential report that exposed vulnerabilities in the state voter registration database.

151. In the summer of 2020, Defendant hired Synack, a cybersecurity consulting company, to test vulnerabilities in the voter registration website. Synack found seven vulnerabilities (Exhibit 9, *supra*, P. 1).

152. Defendant did not inform Plaintiffs, or county officials in other counties, or the people of Colorado, about the Synack report findings.

153. New rule 7.11 states:

7.12–7.11 At each Voter Service and Polling Center, election judges and, if appropriate, election staff, must:

7.12.1–7.11.1 Provide all services outlined in 1-5-102.9, C.R.S., INCLUDING PROVIDING BLANK CURE FORMS AND COLLECTING COMPLETED CURE FORMS FOR VOTERS WHO WISH TO CURE THEIR BALLOT IN ACCORDANCE WITH SECTIONS 1-2-502.5 (4)(C), 1-7.5-107 (3.5)(D), OR 1-7.5-107.3 (1.5), C.R.S.; and

7.12.2-7.11.2 Use WebSCORE to register voters; update existing voter registrations; issue and replace mail ballots; and issue, spoil, and replace in-person ballots.

(underline added).

154. Rule 7.11.2 requires county clerks to use the vulnerable statewide voter registration system as part of county voting systems.

155. The above evidence shows that (1) Defendant hires cybersecurity experts to assist Defendant, (2) Defendant does not inform Colorado voters of vulnerabilities in the system, and (3) Defendant requires county commissioners and county clerks and recorders to use the state's vulnerable statewide voter registration database; and, (4) Defendant's new rules prohibit county commissioners and county clerks and recorders from hiring cybersecurity experts to protect their respective county voting systems.

156. Judicial review of the new rules is available under C.R.S. § 24-4-106, and C.R.S. § 1-1-110 (1.5).

157. Injunctive relief is expressly authorized as a remedy by C.R.S. §24-4-106 (4.7)

158. This claim for judicial review is timely under C.R.S. § 24-4-106 (4).

159. The new rules are unlawful, exceed Defendant's statutory authority, and unlawfully deprive Plaintiffs of their rights to make sure that elections in Colorado are secure, free, and fair.

160. Plaintiffs ask the Court to stay the new rules until further order of court.

161. If the Court stays the new rules, there is no harm to Defendant or to the public, because county commissioners and county clerks can continue to do their jobs the same as they did before the new rules were promulgated.

WHEREFORE, on their Third Claim for Relief, Plaintiffs pray that this Honorable Court grant the following relief:

- (1) Stay the effective date of the new rules until further Order of Court;
- (2) Declare that Rule 20.5.4 is contrary to law and beyond Defendant's legal authority to implement;
- (3) Declare that Rule 20.5.4 is contrary to public policy and contrary to the public interest in free and fair elections;
- (4) Annul Rule 20.5.4 and permanently enjoin Defendant from enforcing it.

- (5) Declare that Rule 2.12.3 is contrary to law and beyond Defendant's legal authority to implement;
- (6) Declare that Rule 2.12.3 is contrary to public policy and contrary to the public interest in free and fair elections;
- (7) Annul Rule 2.12.3 and permanently enjoin Defendant from enforcing it.
- (8) Declare that Rule 7.11 is contrary to law and beyond Defendant's legal authority to implement;
- (9) Declare that Rule 7.11 is contrary to public policy and contrary to the public interest in free and fair elections;
- (10) Annul Rule 7.11 and permanently enjoin Defendant from enforcing it.
- (11) Allow Plaintiffs to amend their complaint and prayers for relief as additional facts are produced during discovery.
- (12) For advancement on the trial docket and accelerated discovery;
- (13) For an award of costs and reasonable attorney fees;
- (14) And for such further relief as the Court deems just.

**PLAINTIFFS DEMAND TRIAL BY JURY OF DISPUTED ISSUES OF FACT**

Respectfully submitted November 18, 2021.

JOHN CASE, P.C.  
Counsel for Plaintiffs

*s/John Case*

---

John Case, #2431

Plaintiff's addresses are confidential

**STATE OF COLORADO  
Department of State**

1700 Broadway, Suite 200  
Denver, CO 80290



**EXHIBIT 1, Page 1**

**Jena M. Griswold  
Secretary of State**

**Judd Choate  
Director, Elections**

DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

June 7, 2019

Mr. Nick Ikonomakis  
Vice President, Development  
Dominion Voting Systems, Inc.  
1201 18<sup>th</sup> Street, Suite 210  
Denver, CO 80202

**Re: Certification of DVS Democracy Suite 5.11-CO**

Dear Mr. Ikonomakis:

In response to the Application for Modification of a Voting System dated June 6, 2019, as amended, and in accordance with section 1-5-608.5, C.R.S, please be advised that I hereby certify Dominion Voting Systems' Democracy Suite 5.11-CO voting system for use in the State of Colorado. County Clerks and Recorders may now separately apply for authorization to acquire, install and use the Democracy Suite 5.11-CO voting system, pursuant to section 1-5-613(2), C.R.S., and Election Rule 11.8.4.

My office examined the original and amended Applications for Modification of a Voting System and supporting documentation, including the associated technical data package. In addition, Pro V&V, a federally accredited voting-system testing laboratory, tested Democracy Suite 5.11-CO in accordance with the test plans my office approved on May 20, 2019 and May 23, 2019. My office also reviewed Pro V&V's test reports dated June 3, 2019 and June 7, 2019, and the Colorado requirements matrix completed and transmitted by Pro V&V on June 4, 2019. Based on this review, I conclude that Democracy Suite 5.11-CO substantially complies with the requirements of the 2002 Voting System Standards (VSS) promulgated by the Federal Election Commission, and the Colorado standards contained in sections 1-5-601.5, 1-5-615, and 1-5-616, C.R.S., and Election Rule 21.

I reserve the right to promulgate conditions of use in connection with the use by political subdivisions of the Democracy Suite 5.11-CO voting system, and to amend those conditions from time to time, in accordance with section 1-5-608.5(3)(b), C.R.S.

Sincerely,

Jena M. Griswold  
Colorado Secretary of State

STATE OF COLORADO  
Department of State  
1700 Broadway, Suite 200  
Denver, CO 80290



Jena M. Griswold  
Secretary of State  
Judd Choate  
Director, Elections Division

DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

July 31, 2020

Ms. Gwenyth Winship  
State Certification and Government Relations Manager  
Clear Ballot Group, Inc.  
7 Water Street, Suite 700  
Boston, MA 02109

**Re: Temporary Approval of ClearVote 2.1 voting system**

Dear Ms. Winship:

In response to the Application for Certification or Modification of a Voting System dated December 16, 2019 (amended February 28, 2020), and in accordance with section 1-5-619, C.R.S., and Secretary of State Election Rule 21.6, please be advised that I hereby temporarily approve Clear Ballot Group's ClearVote 2.1 voting system for use in the State of Colorado and in the 2020 General Election. County Clerks and Recorders may now separately apply for authorization to acquire, install and use the ClearVote 2.1 voting system, pursuant to section 1-5-613(2), C.R.S., and Election Rule 11.8.4.

My office examined the original and amended Applications for Certification or Modification of a Voting System and supporting documentation, including the associated technical data package. In addition, Pro V&V, a federally accredited voting-system testing laboratory, tested ClearVote 2.1 in accordance with the test plans my office approved on December 16, 2019. My office also reviewed the Colorado requirements matrix completed and transmitted by Pro V&V on February 12, 2020, and Pro V&V's test report dated April 22, 2020. Based on this review, I conclude that ClearVote 2.1 substantially complies with the requirements of the 2002 Voting System Standards (VSS) promulgated by the Federal Election Commission, and the Colorado standards contained in sections 1-5-601.5, 1-5-615, and 1-5-616, C.R.S., and Election Rule 21.

I reserve the right to promulgate conditions of use in connection with the use by political subdivisions of the ClearVote 2.1 voting system, and to amend those conditions from time to time during the temporary approval period, in accordance with section 1-5-608.5(3)(b), C.R.S.

Sincerely,

A handwritten signature in blue ink that appears to read "J.D. Rayder".

Ian J. Rayder  
Colorado Deputy Secretary of State



## United States Election Assistance Commission

DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

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## Certificate of Accreditation

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### Pro V&V, Inc. Huntsville, Alabama

*is recognized by the U.S. Election Assistance Commission for the testing of voting systems to the 2005 Voluntary Voting Systems Guidelines under the criteria set forth in the EAC Voting System*

*Testing and Certification Program and Laboratory Accreditation Program. Pro V&V is also recognized as having successfully completed assessments by the National Voluntary Laboratory Accreditation Program for conformance to the requirements of ISO/IEC 17025 and the criteria set forth in NIST Handbooks 150 and 150-22.*

*Effective Through*

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February 24, 2017

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Date: 2/24/15

*Acting Executive Director, U.S. Election Assistance Commission*

EAC Lab Code: 1501



## United States Election Assistance Commission

DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

### Certificate of Accreditation

#### Pro V&V, Inc. Huntsville, Alabama

*is recognized by the U.S. Election Assistance Commission for the testing of voting systems to the 2005 and 2015 Voluntary Voting Systems Guidelines (VVSG 1.0 & 1.1) under the criteria set forth in the EAC Voting System Testing and Certification Program and Laboratory Accreditation Program. Pro V&V is also recognized as having successfully completed assessments by the National Voluntary Laboratory Accreditation Program for conformance to the requirements of ISO/IEC 17025 and the criteria set forth in NIST Handbooks 150 and 150-22.*

*Original Accreditation Issued on: 2/24/2015*

*Accreditation remains effective until revoked  
by a vote of the EAC pursuant to 52 U.S.C. §  
20971(c)(2).*

*Mona Harrington*

*Date: 2/1/21*

*Mona Harrington  
Executive Director, U.S. Election Assistance Commission  
EAC Lab Code: 1501*

# 2.09 - Democracy Suite<sup>®</sup> EMS System Maintenance Manual

Version: 5.11-CO::3

April 18, 2019

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# CHAPTER 1: INTRODUCTION

**NOTE:** This document is a specification for maintenance of the Democracy Suite Election Management system designed and manufactured by Dominion Voting Systems Corporation.

## 1.1 Document Use

This document is intended for use with the Democracy Suite® 5.11 platform.

## 1.2 Purpose and Scope

This document describes Democracy Suite Election Management System maintenance procedures. This document provides all information necessary for the Election Management System use by all personnel who support pre-election and election preparation, post-election and central counting activities, as applicable.

## 1.3 Relevant Disclaimers

This document may make reference to certain Democracy Suite functionalities that are not part of the current 5.11 campaign and should be disregarded throughout the document.

For a full list of relevant disclaimers, please see the “Relevant Disclaimers” section in the *2.02 - Democracy Suite System Overview Document*.

## 1.4 Network Data Transmission

Please, be aware that, at this point, there is no modem transmission of results data over a network.

## 1.5 Data Handling in the Processor and Memory Units

Within the EMS, the data is handled by Windows Operating System.

## 1.6 Data Output Initiation and Control

The EMS consists of several data outputs. They are, here, grouped by the activities (see *2.03 - Democracy Suite® EMS Functionality Description*, section the Basic EMS Workflow). After the election project has been defined, the ballot artwork is satisfying, the official ballots are produced.

Furthermore, during the process of the defining and configuring optical

tabulators - (ImageCast® Precinct, ImageCast® Evolution and ImageCast® Central devices), the Device Configuration Files (DCF), MBS (machine/or device behavioral settings) and Voting Information Files (VIF) output data needed for the proper operation of the tabulator devices are created. This phase also includes producing (programming) the Compact Flash memory packs with election files for tabulator devices and programming the security tokens for tabulator access control activities. Next, the set of reports can be created. Among them is the auditing report. This report lists all the actions performed for the current election project. All aforementioned outputs are initiated by the electoral office representative. A Dominion representative assists when jurisdiction representatives and officers need help. In addition, please, refer to TDP 2.10 - *Democracy Suite® Personnel Deployment and Training Requirements*.

## **1.7 Power Conversion/Conditioning**

For information on power conversion, please refer your workstation vendor documentation.

## **1.8 Acquiring Test and Diagnostic Information**

Please refer to 2.07 - *Democracy Suite® System Test and Verification* in addition to this manual.

## **1.9 Applicable Documents**

VVSG 1.0, Volume II, Version 1.0, Section 2.9 System Maintenance Procedures

## **1.10 Document Organization**

Every attempt has been made to produce the document structured according to the VVSG 1.0 requirements (VVSG 1.0, Volume 2, Section 2.9).

- Section 1 - Introduction - purpose and scope of the document (this section)
- Section 2 - System Maintenance Manual - provides an overview of the system for maintenance and references to specific documents that explain the maintenance procedures and policies in greater detail.

## **1.11 Design Responsibility**

Dominion Voting is the design authority.

## **1.12 Document Status**

This is a working specification for discussion and analysis. Details are subject to change.

## **1.13 Patent Status**

Certain system concepts, as well as many implementation and construction details are protected by a series of U.S. and foreign patents pending.

## CHAPTER 2: MAINTENANCE PROCEDURES

### 2.1 Preventative Maintenance

#### 2.1.1 Audit Log Contents

According to industry standards, EMS uses Windows Event Audit logging for tracking the details of each change event of all system software and hardware changes.

By default, when the initial maximum size of a log is reached, new events overwrite older events as needed. As such, it is in the best interest of the user to Archive old items.

##### 2.1.1.1 Increasing the Size of an Audit Log

The Audit logs will reside on a disk that has at least 20GB available space. A separate disk or disk array may be considered for these which must be secure against physical and logical tampering.

#### Application Log

The Application Log is used by Windows to log application audit events that have been activated. Because of the large number of events that will be logged during normal use, this log will grow significantly.

Dominion Voting requires the following policies be put in place for the Application Log:

- The size of the Application log will be set to a minimum of 2GB.

To set the size:

1. Start, Administrative Tools, Event Viewer.
2. Expand “Windows Logs” in left tree.
3. Right click “Application” and select “Properties”.
4. Increase the value of the “Maximum Log Size” to at least 20480 KB.
5. Choose the “Overwrite events as needed” option.

## Security Log

The Security log is used by Windows to log security audit events that have been activated. Because of the large number of events that will be logged during normal use, this log will grow significantly. Dominion Voting requires the following policies be put in place for the Security Log:

- The size of the Security log will be set to a minimum of 2GB.

To set the size:

1. Start, Administrative Tools, Event Viewer.
2. Expand “Windows Logs” in left tree.
3. Right click “Security” and select “Properties”.
4. Increase the value of the “Maximum Log Size” to at least 20480 KB.
5. Choose “Overwrite events as needed” option.

## EMS System Log

The Event Log is used by Windows to log audit events that have been activated. Because of the large number of events that will be logged during normal use, this log will grow significantly.

Dominion Voting requires the following policies be put in place for the Event Log:

- The size of the Event Log will be set to a minimum of 2GB.

To set the size:

1. Start, Administrative Tools, Event Viewer.
2. Expand “Applications and Services Logs” in left tree.
3. Right click “EMS System” and select “Properties”.
4. Increase the value of the “Maximum Log Size” to at least 20480 KB.
5. Choose the “Overwrite events as needed” option.

### 2.1.1.2 How to Archive a Log

If you want to save your log data, you can archive event logs in any of the following formats:

- Log-file format (.evt)
- Text-file format (.txt)
- Comma-delimited text-file format (.csv)

To archive a log, follow these steps:

1. Click “Start”, “Administrative Tools”, and then click “EventViewer”.
2. Expand the tree and locate the log you want to archive. Right-click on the log and then click “Save All Events As”.
3. Specify a file name and location where you want to save the file. In the “Save As” window, select the desired format to save the file as, and then click “Save”.

The suggested period for archiving is once a week, on Friday after all work has been done.

### **2.1.1.3 Enabling Audit Log on Specific Folders**

You must be careful which objects you audit or you will end up with information overload problems. It's very easy to end up with information overload because if you audit a folder, the audit applies to every object within the folder and within any subfolders. The audit applies to child objects, grandchild objects, and so on. Therefore, when possible, auditing objects at the file level is recommended.

We also recommend that you avoid auditing system files and folders. Doing so can also result in information overload. For example, if you were to audit the Windows folder, you would end up with countless audit log entries because the system is constantly accessing files found in this folder. If you really wanted to audit Windows, a better solution might be to audit the registry files.

To audit a file or folder, open Windows Explorer and navigate to the folder you want to audit. Right-click it and select the Properties command from the resulting menu. You will see the objects Properties sheet. Select the Security tab, and click the Advanced button to display the Access Control Settings Properties sheet for the object. Select the Auditing tab. Click the Continue button, and you will be presented with a list of users and groups which actions were audited. If you want to add some user which actions you want to audit click on Add button and type the users or groups name that you wish and click OK. New window will open, see

Figure 2-1 . As you can see, you can enable success and/or failure audits for many types of access to the file or folder on a user or group basis.

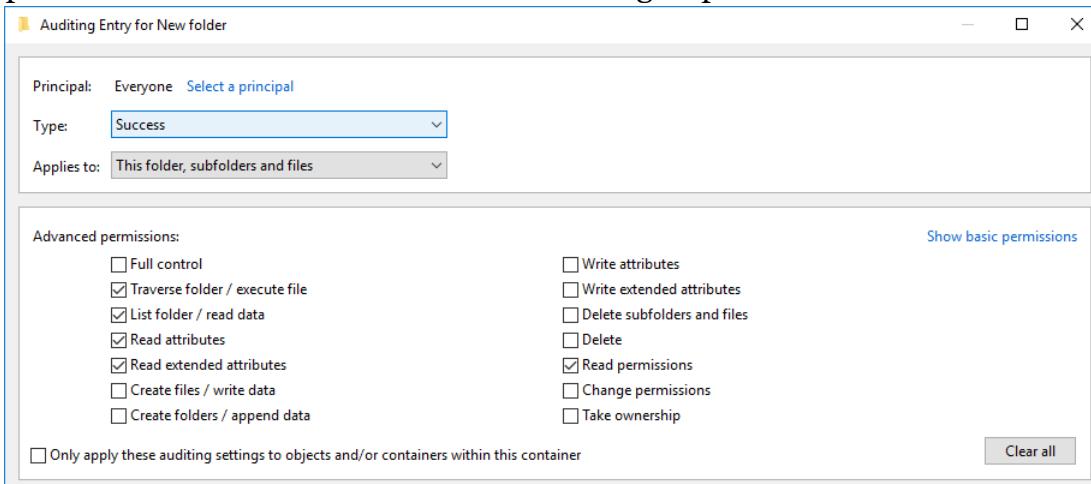


Figure 2-1: Auditing of Different Access Types for Files and Folders.

We recommend only auditing the folders NAS and Databases.

#### 2.1.1.4 Monitoring Audit Log on Specific Folders

To view the audit results, open the Start, then Administrative Tools and then the Event Viewer. When the Event Viewer opens, open Windows Logs in left side tree, then click the Security container to see the security logs. You will notice how many log entries were applied in a matter of a few seconds. This is why it's so important to use discretion when creating an audit policy. If you want to get more information on a particular event, simply double-click it.

#### 2.1.2 Updating Anti Virus Software

For information regarding Installation and Configuration of Anti Virus software, please refer to the following documents:

- *Democracy Suite EMS Client Installation and Configuration Procedure*
- *Democracy Suite EMS Express System Installation and Configuration Procedure*
- *Democracy Suite EMS Standard System Installation and Configuration Procedure*

Also, refer to the same document for details on how to download manually download updates for Anti Virus software.

Suggested period for checking updates for Anti Virus software is once a week, on Friday after all work has been done.

## 2.1.3 Defragmenting

Disk defragmentation should be done on regular basis. Suggested period for defragmenting is once a week, on Friday after all work has been done.

To defragment the partition, go to **Start > All Programs > Accessories > System Tools > Disk Defragmenter**. You will see here the list of all partitions you have (see Figure 2-2 ).

Select the partition you want to defragment and push Defragment disk button. The process may take some time to finish.

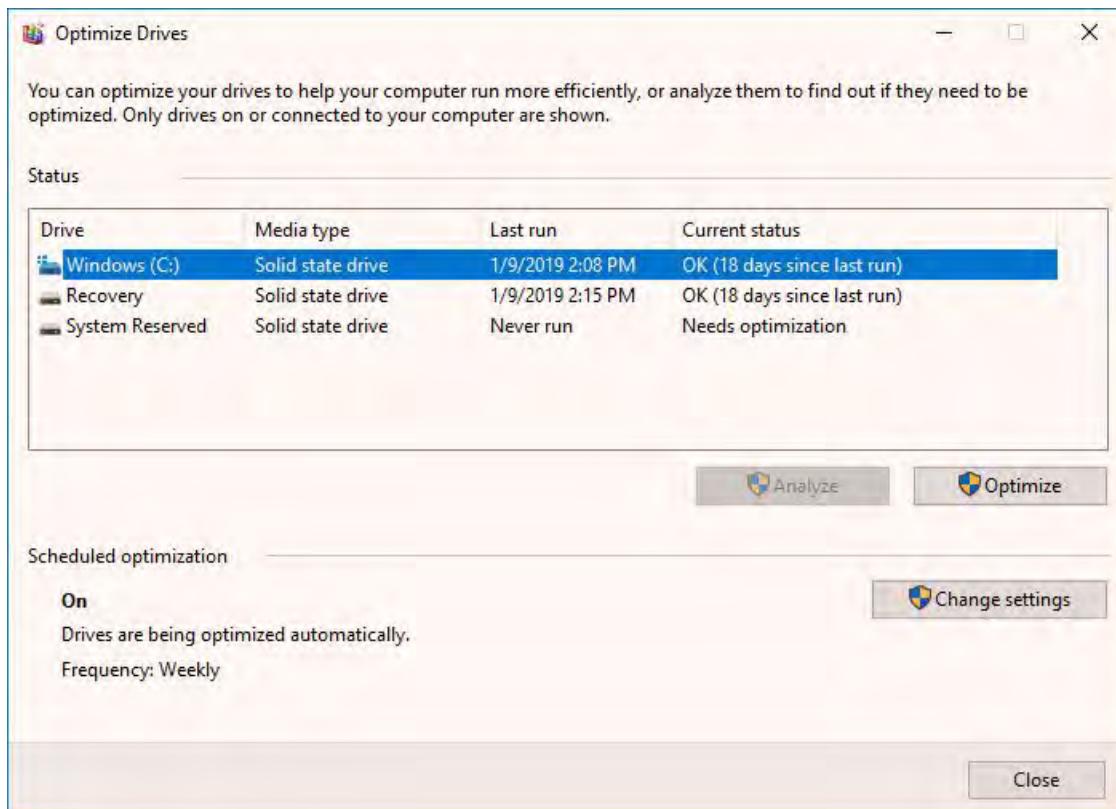


Figure 2-2: Disk Defragmentation.

## 2.1.4 Personnel Requirements

All preventive maintenance procedures must be performed by an EMS Administrator or by Dominion support personnel. At minimum, each jurisdiction must have at least one EMS Administrator who is experienced in server and database installation, configuration and administration as well Democracy Suite EMS.

## 2.2 Direct Server Maintenance

Follow the procedures and guidance provided in the various Manufacturers manuals that arrived with your server and client computer hardware. In addition, here are some common Administrator tasks that are recommended. Your jurisdiction may also have IT hardware and software maintenance programs.

**NOTE:** The system you were provided was certified to a certain configuration. Do not take steps to invalidate that Certification by installing unauthorized software and hardware. Contact your Dominion Voting Systems customer service staff before installing or removing anything on the voting system.

Activities include the following:

1. Review Audit logs
  - a. Check application log for warning and error messages for service startup errors, application or database errors and unauthorized application installs
  - b. Check security log for warning and error messages for invalid logons, unauthorized user creating, opening or deleting files
  - c. Check system log for warning and error messages for hardware and network failures
  - d. Check EMS logs for warnings and error messages
  - e. Report suspicious activity to the proper authorities for your jurisdiction.
2. Perform/verify daily backup
  - a. Run and/or verify that a successful backup of system and data files has completed.
3. Track/monitor system performance and activity
  - a. Use Task Manager to check for CPU and memory usage
  - b. Use Resources Monitor in Task Manager to monitor all system resources
  - c. If hardware vendor provided some kind of software as hardware monitor, use it to check if hardware is operating normally.
4. Physically check and clean the server and client computers
  - a. Ensure that cooling fans are operational
  - b. Remove dust and other buildup from computer chassis
  - c. Pay attention to new and odd noises emanating from a computer
  - d. Ensure network and power connections are fully seated

**NOTE:** Please refer to *Democracy Suite® EMS Election Event Designer User Guide*, section A.7 Backup Database.

## 2.3 Corrective Maintenance Procedures

The corrective maintenance procedure are handled as described in the Problem and Incident Management and Change Control Procedures sections of the TDP document *2.11 - Democracy Suite® Configuration Management Process*.

## 2.4 Troubleshooting and Recovering From an Abnormal State

If any issues are encountered while configuring the EMS Application Server (EMS APPS) using DCM, please try the following troubleshooting procedure:

1. Open SQL Configuration Server
2. Open SQL Server Service
3. Change user to 'NT Service\MSSQLSERVER', no password needed just click 'Apply'.
4. Restart SQL Server Service
5. Open Computer Management
6. Navigate to 'Local Users and Groups'
7. Delete the following user accounts if they exist:

emssqluser

emsdbadmin

emssqluser

8. Reboot the computer
9. Run DCM again

10. If the problem persists, please refer to Section 2.7.

If the EMS system becomes unresponsive during any interaction with the operator, please follow the steps below to recover from that state:

- Make sure that all servers you are using are switched on and working, and that all network equipment (if any) is switched on and working.
- Make sure that all client computers you are using are switched on and working.
- For any problems encountered during installation, make sure you followed the installation and configuration manual for both the server and the client computers.
- Try to log in to the server you are using with the default administrator account. Open Task Manager (press Ctrl+Alt+Delete and click on the

Start Task Manager button). Under the Process tab, make sure that no process that begins with the name DVS occupies 0% of CPU usage. If so, select that process and click on the End Process button at the bottom. Repeat the process, if necessary.

- Try to log in to each client computer you are using with the default administrator account.
- Open the EMS EED client application. Ensure that the entered EMS database and network settings, as well as the application user accounts, are correct. Check to see if the election event properties have been entered correctly. Create and then ensure the System and Audio Log reports are correct.
- Open the EMS RTR client application. Ensure that the entered EMS database and network settings are correct. Ensure the transfer point parameters are correct. Reboot the server and try again reboot the defected client computer(s) and try again.
- If the problem persists, please refer to section 2.7.

## 2.5 Parts and Materials

Parts and materials for system maintenance include:

- Microfiber cloths for removing dust
- Small amount of 70% (or greater) isopropyl alcohol for cleaning stubborn marks that cannot be removed with a cloth
- Storage media (CD or DVD ROM) for performing system updates

## 2.6 Maintenance Facilities and Support

Depending on configuration, please refer to TDP 2.02 - *Democracy Suite® System Overview* or section 2.2 Direct Server Maintenance for details.

Please be aware that Dominion Voting Systems recommends that one unit of each hardware device or component be kept on hand as a spare for repair purposes during periods of system operation.

## 2.7 Operations Support

### 2.7.1 Requesting Support

When requesting support from Dominion Voting Systems, customers can use the following methods. The options listed below appear in order of efficiency.

1. Enter your issue directly into Dominion Voting's support database via <http://online.dominionvoting.com/customerportal/>
2. Email the issue directly to Dominion Voting's support team. In the email message, the following details are mandatory:
  - Name
  - Contact telephone with extension
  - Location
  - Detailed description of the problem

The support technician will record the issue in Dominion Voting's Customer Portal database and either resolve it on the spot or assign it to an appropriate resource for action. Once Dominion Voting's support team creates the ticket in the Customer Portal system, an email message will automatically be sent to the customers' primary contact email address notifying them that the ticket has been created.

### 2.7.2 Prioritizing Support (Impact Levels)

All support request/issues are dealt with according to their priority, which is determined depending on their impact levels.

#### 2.7.3 Impact Level 1

Impact Level 1 is the highest priority support situation and is assigned when one or more of the following conditions occur:

- Multiple users (two or more) are directly affected.
- The IT resource cannot function as designed and installed.
- Problem has a critical impact on the customer's tasks.
- A temporary workaround, alternative, or circumvention is not available.

The first Dominion Voting response must occur within one hour of the service interruption. The Dominion Voting support team will establish definitive contact with the customer's primary contact and maintain contact throughout the interruption. The maximum time for resolution is targeted at four elapsed hours (work will continue after regular working hours or on weekends), or as specified in the customer contract covering the requested service.

## 2.7.4 Impact Level 2

Impact Level 2 describes a medium priority support situation and is assigned when some or all of the following conditions occur:

- Limited (two or less) users are directly affected.
- IT resource is available with degraded performance and/or is difficult to use.
- A temporary workaround, alternative, or circumvention is available.
- The loss may restrict function and have some operational impact; however the situation is not critical.

Dominion Voting will respond within 1 working day. The maximum time targeted for resolution is 40 working hours from the time of Dominion Voting's initial response. Dominion Voting will escalate the problem to the next level and group manager if the targets for response and resolution are not met.

## 2.7.5 Impact Level 3

Impact level 3 describes a low priority support situation, and is assigned when some or all of the following conditions occur:

- The problem resolution specifies that a system component or software upgrade is necessary, or a design change is required.
- The customer has requested additional information pertaining to a problem or a feature of the system or service.

Dominion Voting will first respond within 2 working days. There is no target time for a resolution, but a reminder email will be issued to the assignee once the ticket has been assigned, as well as every time the status of the ticket changes as it is acted upon.

## REVISION HISTORY

<b>Rev.</b>	<b>Date</b>	<b>Author</b>	<b>Summary</b>
3	04-18-2019	tijana.todorovic	Resolving discrepancies for 5.11-CO
2	04-17-2019	tijana.todorovic	Resolving discrepancies for 5.11-CO
1	03-06-2019	tijana.todorovic	Branched for 5.11.

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VVSG 1.0 Vol II - 2.9.1 .....	2
VVSG 1.0 Vol I - 2.1.1.1h .....	4
VVSG 1.0 Vol II - 2.9.2 .....	4
VVSG 1.0 Vol II - 2.9.2.1 .....	4
VVSG 1.0 Vol I - 2.9.2.2d .....	8
VVSG 1.0 Vol I - 2.9.5 .....	8
VVSG 1.0 Vol II - 2.9.2.2a, b, c, f .....	9
VVSG 1.0 Vol II - 2.9.2.3 .....	9
VVSG 1.0 Vol II - 2.9.2.2f .....	10
VVSG 1.0 Vol II - 2.9.4.1 .....	11
VVSG 1.0 Vol I - 2.1.1.1h .....	11
VVSG 1.0 Vol I - 4.3.5e .....	11
VVSG 1.0 Vol II - 2.9.5 .....	11
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# End of Document



**Mesa County**  
HILLING ID: NSeptember191,2021 10:14 PM  
**Colorado**  
HILLING ID: A63D93E3BEC4968  
CASE NUMBER: 2021ICW300914

**Voting Systems**

**Report #1 with  
Forensic Examination and Analysis**

**EXHIBIT**  
**F**

**Mesa County, Colorado, Voting Systems**

**Report #1 with  
Forensic Examination and Analysis**

**15 September 2021**

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## EXECUTIVE SUMMARY

This report documents initial findings in an ongoing forensic examination of the voting systems of Mesa County, Colorado, used in the November, 2020 General Election. These voting systems represent a portion of overall election systems infrastructure, and this report is limited to the findings of an ongoing investigation. The findings in this report were prepared by the cyber forensic expert retained to advise the County Clerk pursuant to her duties as the county's Chief Election Official as part of the impacted parties' legal team.

Federal law requires the preservation of election records – which includes records in electronic or digital form – for twenty-two months after an election. Colorado law requires the preservation of election records for an additional three months beyond the Federal requirement. The obligation to ensure the integrity of elections and that all election records are preserved pursuant to federal and state law falls to the elected Clerk & Recorder. This report, the first of several, is based on examination of the data obtained from forensic images of the Dominion Voting System EMS server last used in Mesa County for the November, 2020, election, images taken in furtherance of the preservation requirements of federal and state law. Based upon information received by the Clerk's office from various sources in early 2021, the Clerk became concerned that the voting system modifications might jeopardize these preservation and other legal requirements under the responsibility of the County Clerk. For this reason the Clerk ensured a full backup of election records from the County voting systems, both before and after the software modification performed by the vendor and the Secretary of State on May 25-26, 2021, just six months after the November, 2020, election.

Forensic examination<sup>1</sup> found that election records, including data described in the Federal Election Commission's 2002 Voting System Standards (VSS) mandated by Colorado law as certification requirements for Colorado voting systems, have been destroyed on Mesa County's voting system, by the system vendor and the Colorado Secretary of State's office. Because similar system modifications were reportedly performed upon county election servers across the state, it is possible, if not likely, that such data destruction in violation of state and federal law has occurred in numerous other counties.

The extent and manner of destruction of the data comprising these election records is consequential, precluding the possibility of any comprehensive forensic audit of the conduct of any involved election. This documented destruction also undermines the conclusion that these Colorado voting systems and accompanying vendor and Colorado Secretary of State-issued procedures could meet the requirements of Colorado and Federal law, and consequently vitiates the premise of the Colorado Secretary of State certification of these systems for use in Colorado.

Two backup images, using forensic imaging methods, were obtained from the Dominion Voting Systems (DVS) Democracy Suite (D-Suite) Election Management System (EMS) Standard Server in Mesa County, Colorado. The first image was made of that EMS Standard Server in the D-Suite 5.11-CO version configuration, as used in the November, 2020 election. The second image was of the configuration of the EMS Standard Server in the D-Suite 5.13 version configuration, following the modification of the EMS Standard Server by a combined team of DVS vendor personnel and Colorado Secretary of State staff. The forensic information provided in this report is presented using screenshots from forensic analysts' systems running industry-standard forensics software tools. The report includes "before" and "after" screenshots from the forensic tool that shows the differences between the two backup images.

The forensic examination found that numerous logfiles had been deleted or overwritten. These logfiles are required to reconstruct the function of and events taking place on the the voting systems, and based upon information

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<sup>1</sup> Many individuals and organizations, some public officials, have made recent claims that no audit performed nor examination conducted on elections or computer-based election systems can be legitimate or credible unless the examiners are "election experts" or accredited election auditors. There is no such thing as an "accredited election auditor," nor are there Federal standards or procedures to credential election auditors.

provided by legal counsel, must, by law, be preserved. By comparing filenames in the two images (before and after the Dominion update on May 25-26, 2021), examination and analysis identified a total of 28,989 files that were deleted. During a software update, some replacement of program files and their related content is normally expected. However the examination found that 695 log and event log files necessary for the determination of election integrity were deleted.

Based upon information provided by legal counsel, Colorado law (Colorado Revised Statute (CRS) § 1-5-601.5) requires that, prior to use in Colorado elections, electronic and computer-based voting systems be certified by the Colorado Secretary of State. This certification is based on the systems' compliance with the requirements of the Federal Election Commission's 2002 Voting System Standards (VSS), verified by their testing by a Federally-accredited (by vote of the U.S. Election Assistance Commission (EAC)) Voting System Testing Lab (VSTL). While several iterations of newer Voluntary Voting System Guidelines (VVSG) have been issued by the EAC, Colorado's statutory requirement is for compliance with 2002 VSS, which states:

"Election audit trails provide the supporting documentation for verifying the accuracy of reported election results. They present a concrete, indestructible archival record of all system activity related to the vote tally, and are essential for public confidence in the accuracy of the tally, for recounts, and for evidence in the event of criminal or civil litigation."

The relevant sections of the VSS are cited in Appendix E.

These statutory requirements establish that voting systems are required to generate and preserve, as critical to the ability to determine and reproduce the conditions and details of election conduct using these systems, logfiles of all system functions, including normal activity, connectivity, file and data access, operator- and automated-processes, and errors. Logfiles are critical to the ability to detect improper operation, including the ability to detect malicious intrusions as well as other improper activities and conditions, and configuration changes that could enable alteration of the actual vote count.

Assuming this information to be correct, this forensic examination found that a substantially large number of these requirements have not been met. This examination also found that destruction of critical logfiles has occurred. This destruction is not incidental or minor but is extensive.

The purpose of this initial report is to document these findings and present preliminary evidence demonstrating unacceptable conduct and system defects revealed by the examined images, as necessary for the Chief Election Official to discharge her statutory obligations. The facts and resultant findings support the conclusions that:

- 1) Election-related data explicitly required to be preserved, as stated in the 2002 VSS criteria referenced in this section, have been destroyed in violation of Federal and State law, and
- 2) Due to non-compliance with the 2002 VSS requirements, these voting systems and accompanying vendor-provided, Colorado Secretary of state-approved procedures cannot meet the certification requirements of the State of Colorado, and should not have been certified for use in the state.

Comprehensive investigation is required to determine whether these critical failures are the result of malicious intent or negligence, and to what extent the systems may have been compromised or subjected to unauthorized access or operation prior to, during, and after election use. That comprehensive investigation *is beyond the scope of this report*. Subsequent reports will address these issues in detail.

Evidence supporting all of these findings is documented in this report.

## Introduction

Election officials, including Secretaries of State, are obligated by law to ensure the integrity of all elections, including the transparency required for citizens to verify that integrity themselves. Modern electronic voting systems are marketed as an efficient solution to streamline the voting process and allow for automated collection, tabulation, and reporting of election results, but the efficiency they promise comes at a cost.

The necessary measures and safeguards to ensure the integrity of the systems and their operation against a severe, mounting and ever-evolving threat from sophisticated nation-state and non-nation-state actors are so complex and dynamic as to outpace the limited capabilities and resources of our government, at all levels. While minimal security safeguards may be within government capacity, modern computer-based voting systems are extremely complex and difficult to secure, even for cybersecurity experts, and since voting systems are not under the direct control of the Federal government's top security experts, any government assurances about the sufficiency of those safeguards can serve only to mislead citizens and policy-makers. Even critical defense systems, relentlessly monitored and defended by highly-trained teams using costly, sophisticated tools, are at risk and are frequently compromised, sometimes before procurement. Earlier generations of voting systems relied on simple, human-scale safeguards, for example "air gaps"—that is—to have no wired network connection to the system. But miniaturized wireless communication technologies and networks have proliferated, with billions of wireless devices installed or in use, and malicious actors have developed sophisticated attacks to bypass air gaps, compromise every kind of hardware, firmware, and software, often before they even come into customer or user possession, and to move laterally through networked systems, often undetected. Supply-chains for these systems, from the initiation of the design of integrated circuits and electronic components, most manufactured overseas with little U.S. insight or oversight, through the fabrication, testing, assembly, integration, and operation of these complex composite systems, are vulnerable and untrustworthy for critical functions of government and lucrative economic and national security targets. For all these reasons logfiles, such as those that have been deleted by the Dominion "Trusted Build" update must be preserved to document the complete operation of the computer system and voting applications, and to be able to verify the authenticity, integrity and accuracy of the vote.

The feature size of individual circuits in the chipsets and components of our voting system computers is at the nanoscale, smaller than the smallest known virus particle, and less than 3/10,000ths of the width of a human hair. So we have lost the ability, if we ever had it, to visually verify what is really happening, even at the physical level, in our computer-based voting system. Regardless of how the systems appear to be configured to authorized users and poll-watchers, the functionality and connectivity in these computers can be enabled and modified remotely and wirelessly, or by the introduction of embedded codes on scanned paper, or triggered by specific unforeseeable and indiscernible predetermined software and hardware conditions, or by specific timing events, or by geographic location, or by the proximity of other devices or combinations of any of these means.

For example, some Colorado voting systems ordered as specified by the voting system vendors, from foreign manufacturing and assembly facilities, have included "Integrated Dell Remote Access Controllers (IDRAC)," which are designed to allow "out-of-band" remote management of those systems, meaning that the computers are explicitly equipped to be controlled by remote automated programs or by individuals other than those logged in locally. Through the IDRAC, voting systems might have any aspect of their Basic Input/Output System (BIOS), operating system, or applications controlled or modified, including the addition and deletion of user accounts, the enabling of communications components like wireless networking cards, and the modification, installation, removal or configuration of software and settings. Like the inclusion of multi-band wireless networking cards, similarly specified and ordered for Colorado voting systems by the vendor, there is no excuse or rational justification for the inclusion of components like these, and the fact that the entirety of U.S. voting system regulatory processes and institutions can apparently neither detect, note, nor address these gross vulnerabilities eviscerates the notion that our computer-based voting systems have been secured.

Faced with incredible miniaturization, the importance of logfiles which are records of operation of a computer system, are more important than ever in managing this technology. When the computer is part of a national critical infrastructure, these operational records become essential, not only for troubleshooting or security alone, but for the integrity of the system itself as a component of the National Critical Infrastructure.

For the purposes of this document and ensuing discussion, two terms are defined to differentiate and clarify the evidentiary findings. *Election Data* is all information regarding Ballot Design, Ballot Marking, Electronic scanning of completed ballots, interpretation of the intention of each voter's choice, including human, machine generated or programmatic adjudication in the event that the election system is unable to determine conclusively the correct vote input from any specific ballot, tabulation of the actual vote including the databases used to actually contain the raw vote totals, scanned ballot images and Voter Registration and Voter identification information associated with any specific election, as well as the actual vote totals. This includes a complete record of any realtime changes in databases resident in the cloud such as voter registration data. *Election-Related Data* includes all of the computer log and configuration data that document the complete configuration state and operation of the entire computer system and infrastructure upon which Election Software is executed, as well as the operating system of devices that store log and election data such as Network Attached Storage (NAS). Also included in Election-Related data are logs and configuration of network Routers, Firewalls, Intrusion Detection Systems, Intrusion Prevention Systems, and other network security devices, including VPNs and more<sup>2</sup>.

Both Election Data AND Election-Related Data must be preserved as "Election Records" under the law, and this is broadly addressed in both the 2002 VSS and the EAC's successor versions of VVSG.

Securing computer systems is a non-trivial task. It involves a litany of processes, including, but not limited to:

- Engineering systems with a focus on security
- Building systems to meet published high-security standards and applicable regulations
- Patching systems to ensure that vulnerabilities are removed
- Securing networks to ensure highly controlled access
- Logging of all communications, processes, access, system modifications
- Auditing of systems and logs regularly to ensure ongoing compliance
- Adequate training and certification for engineers, administrators, and system users
- Adherence to Industry Best Practices, for example, emphasis on password strength and configured security and group policies

These, among other measures, will help to ensure what is known as the CIA triad. The CIA triad represents the three pillars of information security: confidentiality, integrity, and availability, as follows:

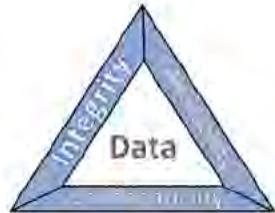
---

<sup>2</sup> Log and configuration examination of not only the computer system(s) but also all network systems are critical to forensic examination. Compromise of any unrelated information (e.g. plain-text configuration data containing normally-encrypted passwords) can be easily prevented, so long as simple, quick forensic examiner and cyber professional industry standards are used to obfuscate private and sensitive data from the network device files.

**Confidentiality** – preserving authorized restrictions on information access and disclosure, including means for protecting personal privacy and proprietary information

**Integrity** — guarding against improper information modification or destruction and ensuring information non-repudiation and authenticity

**Availability** – ensuring timely and reliable access to and use of information



Failure in any of the three pillars can and generally will result in a compromise of the system. Failure in the integrity component can have dire consequences for public perception, election results, the future of our government and our country.

Industry-standard forensics analysis tools were applied to the forensic examination.

Information was forensically evaluated using backup images taken from a Mesa County Election server configured for DVS D-Suite 5.11-CO on Sunday, May 23, 2021, before its modification by Dominion Voting Systems and the Colorado Secretary of State to DVS D-Suite 5.13, and again on Wednesday, May 26, 2021, after the update had been applied. This server was the primary system that was used to process election data in Mesa County for the 2020 general election. The EMS server configuration and administrative standards were prepared by Dominion Voting Systems (DVS), running a combination of COTS and proprietary DVS software, and certified for use by the Colorado Secretary of State. Our conclusions include determining that this system not only failed to meet any reasonable standard or statutory requirement for cybersecurity but was also subject to removal of critical information (data destruction).

Our findings include serious irregularities that resulted in the loss of data integrity on the server, including election data and election-related data.

## LEGAL REFERENCES

Several Federal and Colorado state legal standards apply to the preservation and definition of election records, applicable to the data generated by and resident on voting systems. Beginning with 52 USC §20701, retention and preservation of records and papers by officers of elections; deposit with custodian; penalty for violation, which states:

Every officer of election shall retain and preserve, for a period of twenty-two months from the date of any general, special, or primary election of which candidates for the office of President, Vice President, presidential elector, Member of the Senate, Member of the House of Representatives, or Resident Commissioner from the Commonwealth of Puerto Rico are voted for, all records and papers which come into his possession relating to any application, registration, payment of poll tax, or other act requisite to voting in such election, except that, when required by law, such records and papers may be delivered to another officer of election and except that, if a State or the Commonwealth of Puerto Rico designates a custodian to retain and preserve these records and papers at a specified place, then such records and papers may be deposited with such custodian, and the duty to retain and preserve any record or paper so deposited shall devolve upon such custodian. Any officer of election or custodian who willfully fails to comply with this section shall be fined not more than \$1,000 or imprisoned not more than one year, or both.

In addition to 52 USC §20701, multiple sections of Colorado Revised Statutes (CRS) appear applicable, including:

CRS 1-5-601.5. Compliance with federal requirements (Effective until July 1, 2022)

All voting systems and voting equipment offered for sale on or after May 28, 2004, shall meet the voting systems standards that were promulgated in 2002 by the federal election commission. At his or her discretion, the secretary of state may require by rule that voting systems and voting equipment satisfy voting systems standards promulgated after January 1, 2008, by the federal election assistance commission as long

as such standards meet or exceed those promulgated in 2002 by the federal election commission. Subject to section 1-5-608.2, nothing in this section shall be construed to require any political subdivision to replace a voting system that is in use prior to May 28, 2004.

CRS 1-7-802. Preservation of election records

The designated election official shall be responsible for the preservation of any election records for a period of at least twenty-five months after the election or until time has expired for which the record would be needed in any contest proceedings, whichever is later. Unused ballots may be destroyed after the time for a challenge to the election has passed. If a federal candidate was on the ballot, the voted ballots and any other required election materials shall be kept for at least twenty-five months after the election.

1-13-716. Destroying, removing, or delaying delivery of election records

(1) No person shall willfully destroy, deface, or alter any ballot or any election records or willfully delay the delivery of any such ballots or election records, or take, carry away, conceal, or remove any ballot, ballot box, or election records from the polling location or drop-off location or from the possession of a person authorized by law to have the custody thereof, or aid, counsel, procure, advise, or assist any person to do any of the aforesaid acts.

(2) No election official who has undertaken to deliver the official ballots and election records to the county clerk and recorder shall neglect or refuse to do so within the time prescribed by law or shall fail to account fully for all official ballots and other records in his charge. Informality in the delivery of the ballots and election records shall not invalidate the vote of any precinct if such records are delivered prior to the canvassing of the votes by the county board of canvassers.

(3) Any person who violates any provision of this section is guilty of a misdemeanor and, upon conviction thereof, shall be punished as provided in section 1-13-111.

And several sections of the Code of Colorado Regulations appear applicable, including:

8 CCR 1505-1, Rule 21, 21.4.2: All voting systems must meet the requirements of the 2002 Voting Systems Standards, parts 5 – 7 of article 5 of title 1, CRS, as amended, and this Rule 21.

## **FORENSIC EXAMINATION AND ANALYSIS REPORT**

## FORENSIC ANALYSIS

## SYSTEM IDENTIFICATION

The server that was analyzed is capable of operating on a small local area network (LAN). The network consists of several systems, including servers and workstations running in a non-virtualized environment. The server that we evaluated was named EMSERVER. It is running the Microsoft Windows Server 2016 Standard operating system.

The forensic evaluation and reviews were based upon a forensic image archive collected from the Mesa County Dominion EMS Server. The Before and After forensic images were collected from the same server and same hard drive, as documented below, from the actual acquisition. The serial number of the hard drive shown in each collection data set verifies the data origin to be the same physical device.

Figure 1 – EMS Server (5.11-CO) Image Attributes Before

```
Created By AccessData® FTK® Imager 4.2.0.13
```

Case Information:

Acquired using: ADI4.2.0.13

Case Number: 052321

Evidence Number: 00003

Unique description: EMSERVER

-----

Information for F:\EMSSERVER\EMSSERVER:

Physical Evidentiary Item (Source) Information:

[Device Info]

Source Type: Physical

[Drive Geometry]

Cylinders: 121,534

Tracks per Cylinder: 255

Sectors per Track: 63

Bytes per Sector: 512

Sector Count: 1,952,448,512

[Physical Drive Information]

Drive Model: DELL PERC H730 Adp SCSI Disk Device

Drive Serial Number: 00222e64128c016e1d004fc54220844a

Drive Interface Type: SCSI

Removable drive: False

Source data size: 953344 MB

Sector count: 1952448512

[Computed Hashes]

MD5 checksum: 3d7cf05ca6e42db765bf5c15220c097d

SHA1 checksum: eab06a7ea23586de2746b9142461717e075f5c9f

Image Information:

Acquisition finished: Sun May 23 2021

Segment list:

F:\EMSSERVER\EMSSERVER.E01

Figure 2 - EMS Server (5.13) Image Attributes After

Created By AccessData® FTK® Imager 4.2.0.13

Case Information:

Acquired using: ADI4.2.0.13

Case Number: 052621

Evidence Number: 00002

Unique description: EMSERVER\_v2

-----

Information for E:\Mesa\EMSSERVER\_v2:

Physical Evidentiary Item (Source) Information:

[Device Info]

Source Type: Physical

[Drive Geometry]

Cylinders: 121,534

Tracks per Cylinder: 255

Sectors per Track: 63

Bytes per Sector: 512

Sector Count: 1,952,448,512

[Physical Drive Information]

Drive Model: DELL PERC H730 Adp SCSI Disk Device

Drive Serial Number: 00222e64128c016e1d004fc54220844a

Drive Interface Type: SCSI

Removable drive: False

Source data size: 953344 MB

Sector count: 1952448512

[Computed Hashes]

MD5 checksum: 52861d5a7750ab535a9d5f7277469c10

SHA1 checksum: 1bf8f22edb37f72bb29428a591046a1f64279a3f

Image Information:

Acquisition finished: Wed May 26 2021

Segment list:

E:\Mesa\EMSSERVER\_v2.E01

Two backup images were obtained, using forensic imaging methods, from the Dominion Voting Systems (DVS) Democracy Suite (D-Suite) Election Management System (EMS) Standard Server in Mesa County, Colorado. The first image was made of that EMS Standard Server in the D-Suite 5.11-CO version configuration, as used in the November, 2020 election on May 23, 2021. The second image was of the configuration of the EMS Standard Server in the D-Suite 5.13 version configuration, following the modification of the EMS Standard Server by a combined team of Dominion Voting System vendor personnel and Colorado Secretary of State (SecState) staff, on May 26, 2021. A forensic image (forensic copy) is a bit-by-bit, sector-by-sector duplicate of a physical storage device using specialized hardware and software; it is a much more comprehensive representation of the state and configuration of the imaged system than could be obtained using simple file backup methods. The images include all files, folders, and unallocated, free, and slack space. These forensic images include not only all the files visible to the server operating system but also deleted files and fragments of files left in the slack and free space but every digital bit of data present on the storage medium, in this case, a SCSI hard disk. When forensic images are acquired, a hash function, also known as a Message Digest, is computed. This hash can be used at any time to validate the integrity of the image to ensure that it has not been edited, modified, or changed in any way. The hash function result from the acquisition of data appears in the text above but also appears inside each respective archive and authenticates the data by demonstrating that it has not changed since it was acquired.

These two images were evaluated to gather technical information, including the integrity of the data stored on the system. No effort was made to reverse-design, de-compile or reverse-engineer the Dominion software. Configuration, which is relevant to the operation of the system, was examined to determine whether improper settings could allow undesirable results and were found to contain such errors. Results relevant to this investigation are documented below. Additional supporting documentation can be found in the appendixes. They include directory listings for many of the directories seen in the screenshots and contain complete filenames, full path names where the files are located, and file hashes.

We have included screenshots that can be used to review and verify these findings. These screenshots were obtained from the forensic images of the Dominion server.

## AUTHENTICITY AND CHAIN OF CUSTODY

Digital chain of custody is the record of preservation of digital evidence from collection to presentation in the court of law. This is an essential part of the digital investigation process. The chain of custody is probative that the digital evidence presented to the court remains as originally collected, without tampering. The two images analyzed in this report were obtained through AccessData FTK Imager 4.2.0.13. The serial number on the EMS Server drive on both images match, thus establishing that both images were taken from the same physical drive. I have reviewed the documented chain of custody for both images and have determined that the chain of custody is complete from the forensic operator utilizing FTK Imager through the source from which I directly received these images. (Because of the pending civil litigation and criminal investigation, the written documentation remains in the custody of counsel for later introduction in court proceedings and thus cannot be released as part of this report.) Further confirmation that these are genuine images from the Mesa County EMS Server has been provided by the Colorado Secretary of State's office. See:

<https://www.sos.state.co.us/pubs/newsRoom/pressReleases/2021/PR20210817MesaCounty.html>

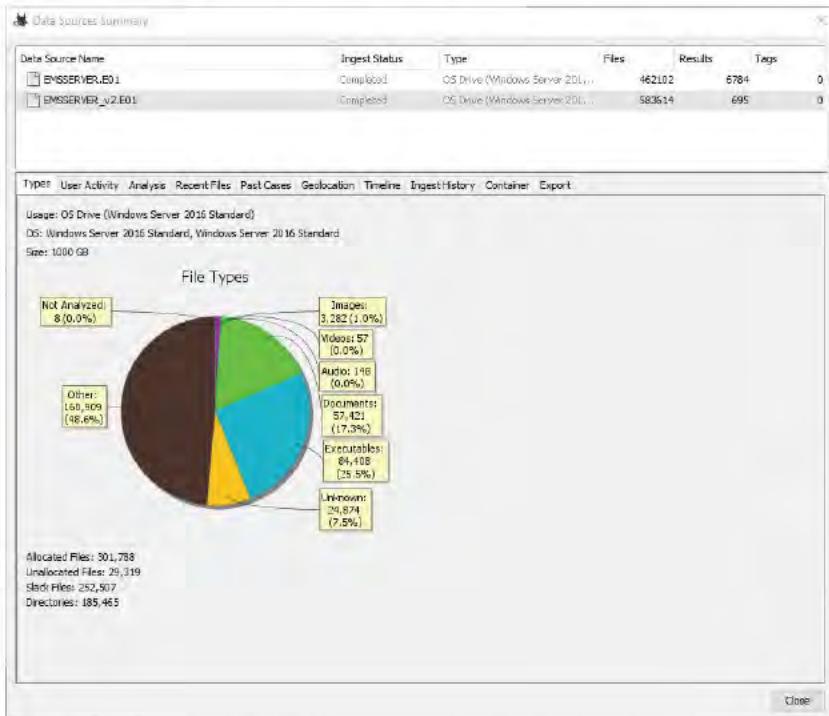
## FINDINGS

## Overview of System Data Sources

Figure 3 – EMS Server (5.11-CO) System Data Sources Before



Figure 4 - EMS Server (5.13) System Data Sources After



## Server Disk Partition Structure Overwritten

**Purpose:** The disk partition structure is the structure of how the hard drive is divided up.

Figure 5 - EMSERVER (5.11-CO) Disk Partition Structure Before

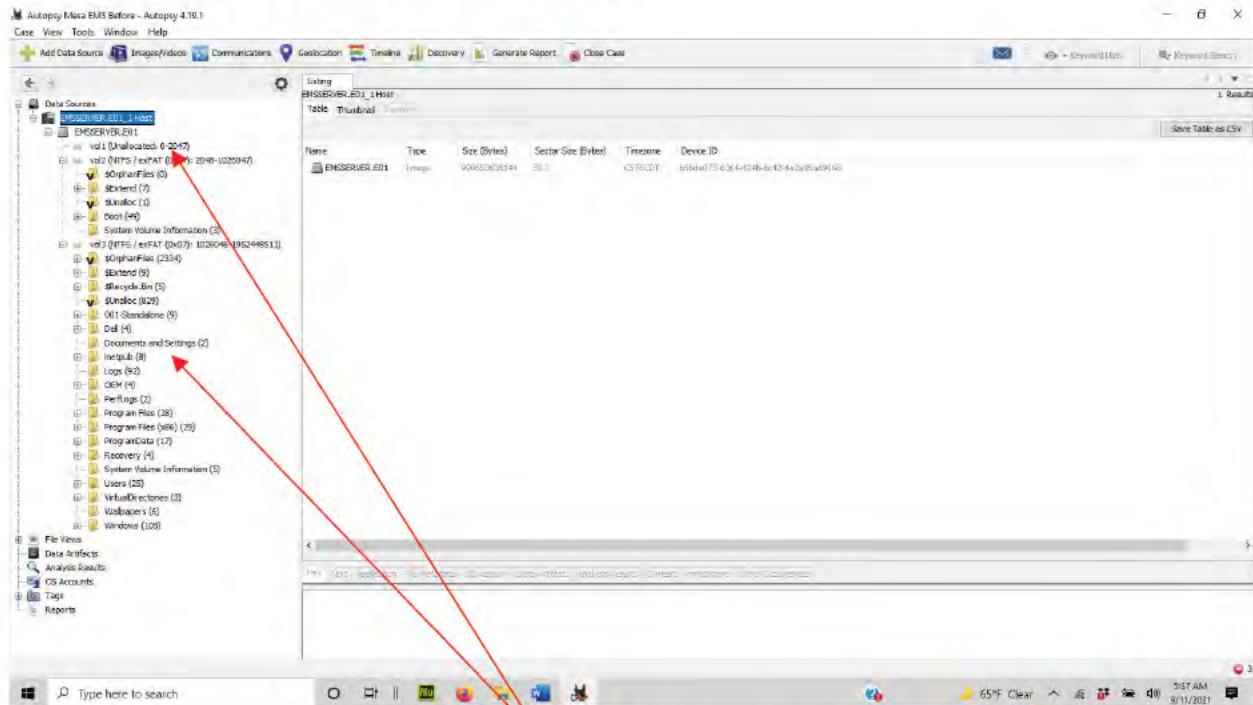
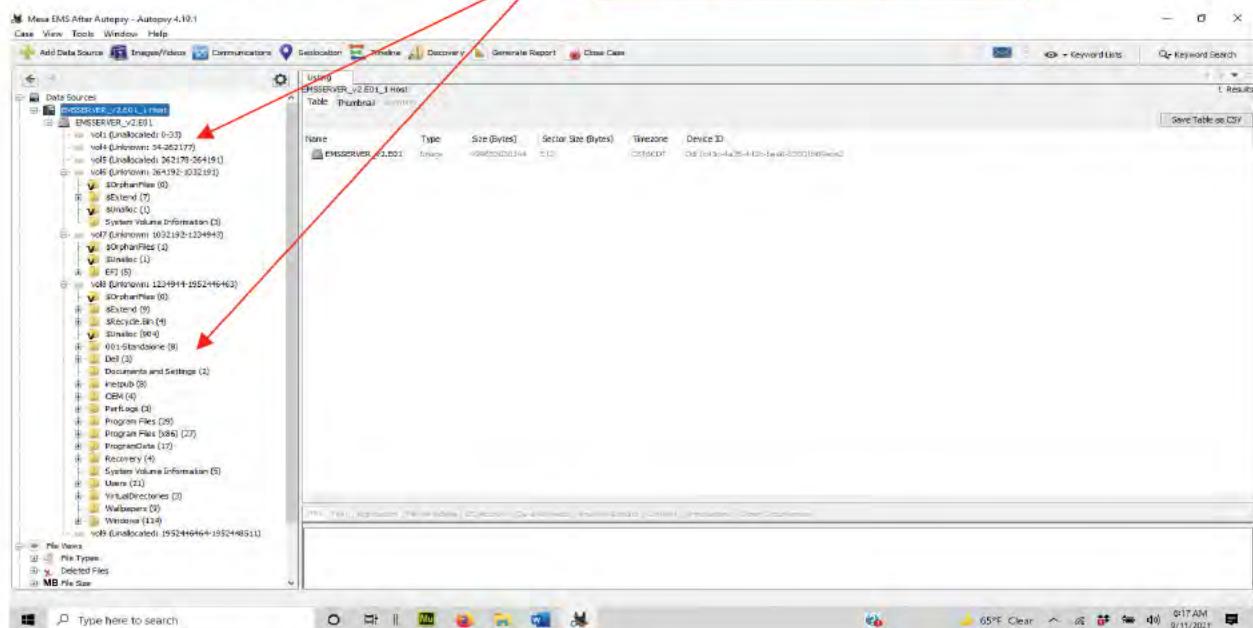
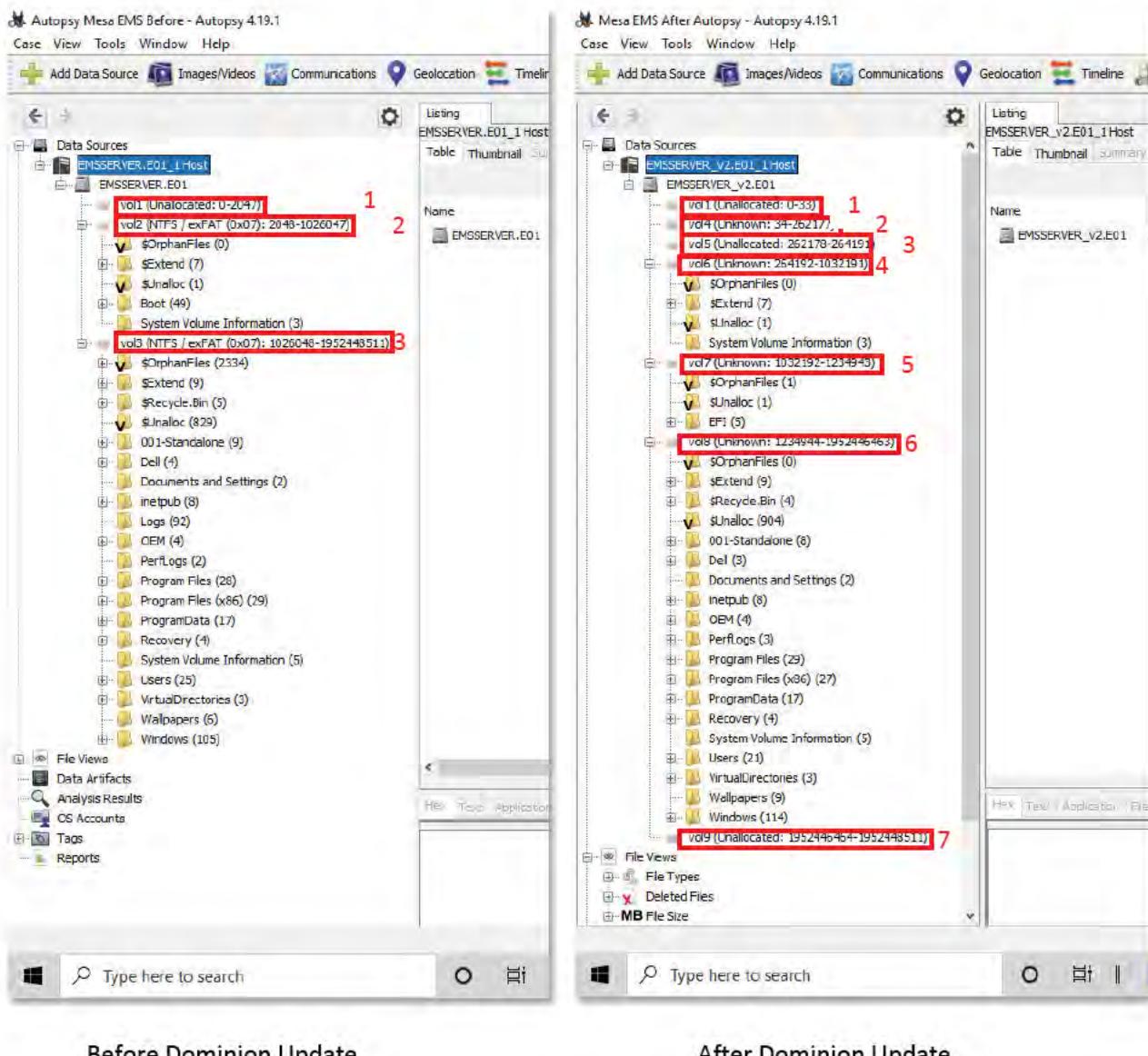


Figure 6 - EMSERVER (5.13) Disk Partition Structure After



Note Changes in Disk Volumes  
and Directory Structures

Figure 7 - Server Disk Partition and Directory Changes



Before Dominion Update

After Dominion Update

Computer hard disk drives are data storage devices that must be prepared before use – specifically, they must be partitioned into logical disk volumes and then formatted. Partitioning a hard disk drive is the equivalent of scoring horizontal and vertical rule lines onto blank paper, and then numbering each line, preparing that paper for the orderly recording and look-up of information. A disk is partitioned to organize information into sets of related data. A partition creates a logical drive, C:, D:, E:, etc., that the Master Boot Record (MBR) or Globally Unique Identifier (GUID) Partition Table, which are like maps of the partitioned and formatted memory storage locations on the hard drive, can then use to write and read stored data.

Creation of such a partition, if previous partitions are not preserved, destroys the “map” of underlying data and data locations when the partition is formatted. The previous partition data is then only recoverable by forensic techniques, and is vulnerable to complete destruction if overwritten by data stored according to the new partition “map.” Note that in the before image above, each disk partition (Labeled “volX,” e.g. “vol1,” for “volume”) is identified together with the addresses of the beginning block and ending block for each volume.

By comparing the images, it is evident that the disk was re-partitioned, reformatted, and the previous data map completely destroyed by overwriting it with new data, rendering the prior data (mostly) unrecoverable.

Forensic examination of the system can reveal remnants of deleted data. When a computer deletes a file, it does not erase the data; it merely changes the first character of the filename to a non-printable character recognized by software that accesses the disk. This first character tells the operating system to no longer display the file as it is marked as a deleted file, and the space occupied by the disk is marked as reusable.

Each block on the disk is the smallest unit of disk space that can be used. The size of all blocks on the disk are determined when the disk is formatted. The smallest disk block size in common use is 512 bytes. Even if a file only occupies 50 bytes of disk space, the entire 512 byte block is marked as "in use".

If a file of 500 bytes is written to the disk, it occupies one block of disk space, with the last 12 bytes (on a newly formatted disk) each containing the numeric value zero (0). If this file is then deleted, and a file of 50 bytes is written to the same disk block, the first 50 bytes of the block contain the new file, and the next remaining 450 bytes of the disk block contain the data from the deleted file that previously occupied the disk block (followed by the 12 null (0) bytes of data). This data remnant is referred to as "File Slack Space" and is defined as any previous remnant data that remains on the disk and is not accessible via the operating system nor allocated as an accessible file.

Special forensic software is required to access file slack space, and the data it contains are partial remnants of previous system data. This data may be of use in forensic investigation, and forensic tools often identify it. File Slack is identified here for clarity and better understanding of these data.

## Website Server Log Files Missing

Figure 8 - EMS Server (5.11-CO) Web Server Log Files Before

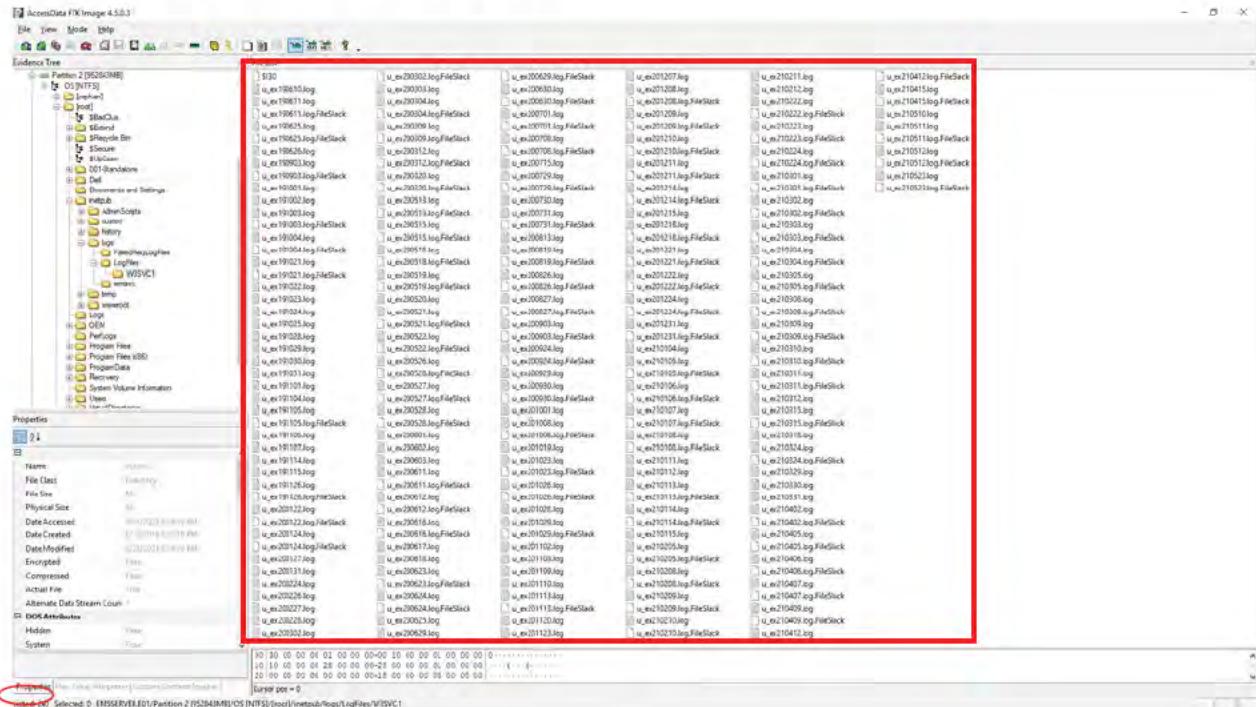
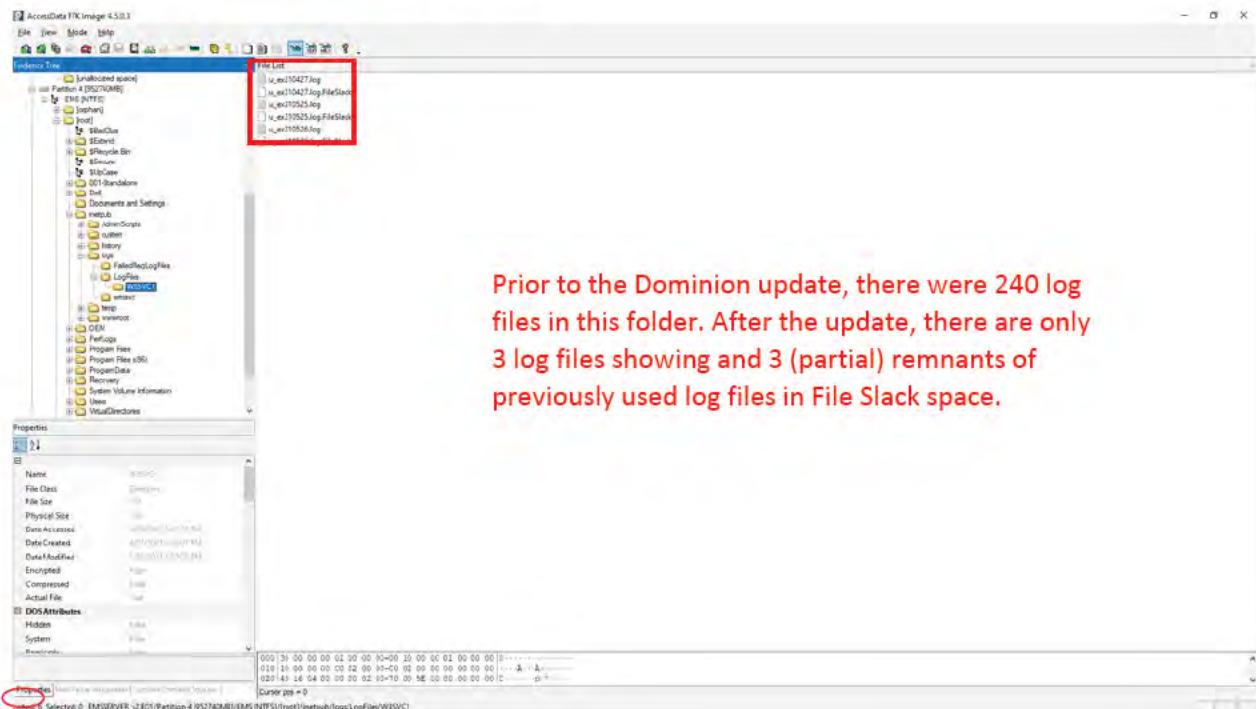


Figure 9 - EMS Server (5.13) Web Server Log Files After



Prior to the Dominion update, there were 240 log files in this folder. After the update, there are only 3 log files showing and 3 (partial) remnants of previously used log files in File Slack space.

A web server provides information to external web clients (via "web browser" software) using the HyperText Transfer Protocol (HTTP). This information can include both read and write access to databases and static presentation of information.

Some software system designs utilize an Ethernet network interface that is essentially an internal connection to itself, known as a *loopback* interface. Thus the presence of a Web Server, by itself, does not indicate a connection to an external ethernet interface. However, such an external connection may be indicated by the data within web server logs, which are stored by default in Microsoft operating systems with Microsoft Internet Information Services (IIS) installed, in a "logs" subfolder to the "inetpub" folder. That log data would include information regarding what web pages and data were accessed and whether it was accessed from within the server (loopback) or via an external network connection.

In these before and after views of the same web server directories, it is clear that the web server logs have been destroyed by or during the Dominion/CO Secretary of State DVS D-Suite 5.13 modification.

This log data is required to verify that the election system was not accessed by an external, unauthorized device, but due to the specific and unusual installation method for a critical computing system, chosen by Dominion Voting Systems and endorsed by the CO Secretary of State, these critical data files with election-related data have clearly been destroyed on the Mesa County EMS Standard Server.

## Server Microsoft SQL Server Installation Log Files Missing

**Purpose:** The Database Management System that is used to hold actual ELECTION DATA – votes from each ballot. These log files contain information detailing the installation events of SQL Server.

Figure 10 - EMS Server (5.11-CO) MS SQL Server Installation Log Files Before

File List

Name	Size	Type	Last Modified
20190610_120251		1 - Directory	6/10/2019 6:50:40 PM
20190610_120309		1 - Directory	6/10/2019 6:16:56 PM
20190610_125107		1 - Directory	6/10/2019 6:55:01 PM
\$I00		4 - NTFS Index All...	6/10/2019 6:55:01 PM
Summary.txt		4 - Regular File	6/10/2019 6:54:59 PM

Properties

Name	Log
File Class	Directory
File Size	56

Figure 11 - EMS Server (5.13) MS SQL Server Installation Log Files After

File List

Name	Size	Type	Last Modified
20210427_181335		1 - Directory	4/27/2021 7:26:34 PM
20210427_181354		1 - Directory	4/27/2021 7:25:47 PM
20210427_182718		1 - Directory	4/27/2021 7:29:05 PM
20210427_183947		1 - Directory	4/27/2021 7:45:14 PM
\$I00		4 - NTFS Index All...	4/27/2021 7:45:14 PM
Summary.txt		4 - Regular File	4/27/2021 7:45:12 PM

The folders in Before are now completely missing.

Properties

Name	Log
File Class	Directory
File Size	56

These log files were created by installing the SQL Server Database Management System software and contain data regarding the initial installation of the software. In a full forensic investigation, these data are part of the information that investigators require to determine a baseline from which can be determined what changes were made, by whom, when the changes were made, and much more on a system with properly configured log recording. Therefore, these data are Election Related as they document not only the configuration but its changes and are relevant to the Integrity of the election.

Figure 12 is an example of log content from the initial software setup. It tells us what (Microsoft) software executes, where data is stored (the G: drive), and it shows us what Registry values have been set during the installation. These are valuable should an investigation of an illegal computer intrusion occur, as they provide a record of the initial configuration during such an investigation.

**Figure 12 - Example of Log File Content from EMS Server (5.11-CO) Before**

## Server Microsoft SQL Server Log Files Missing

**Purpose:** These log files keep track of events that occur within the SQL Server that manages the election databases.

Figure 13 - EMS Server (5.11-CO) SQL Server Log Files Before

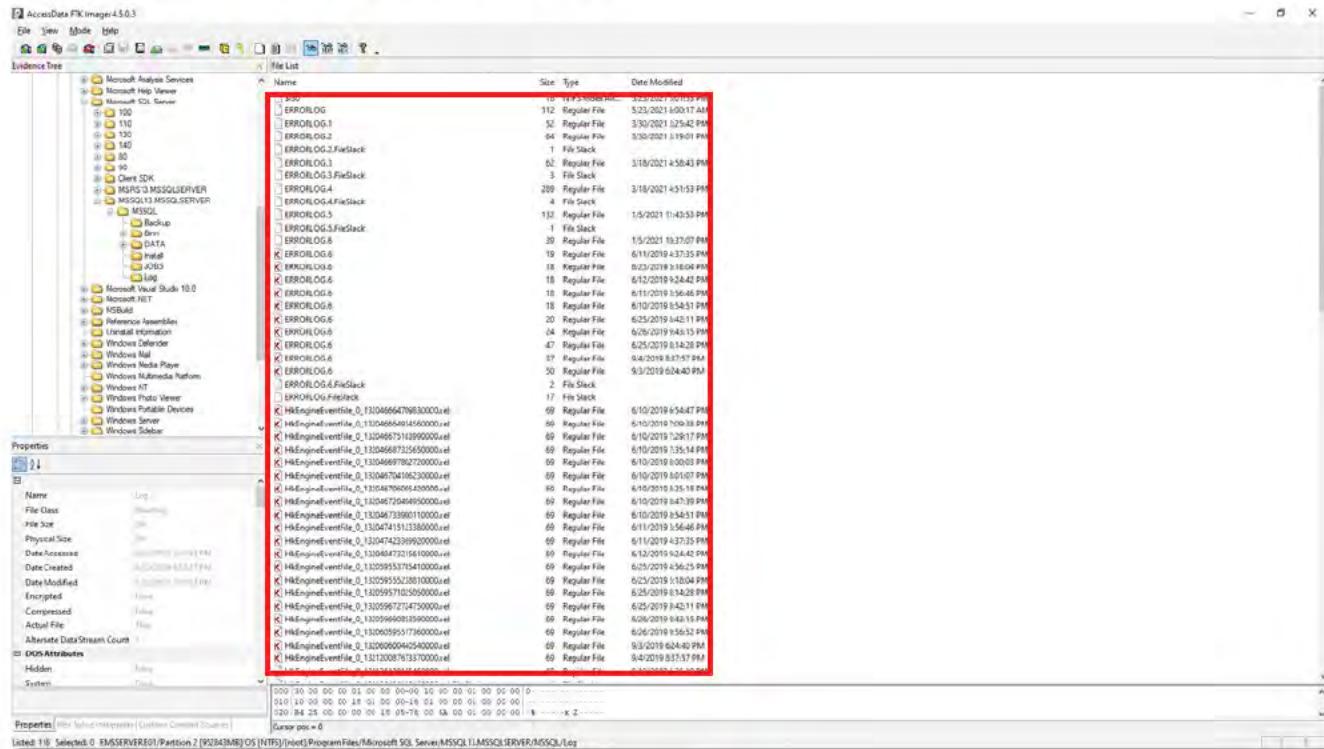
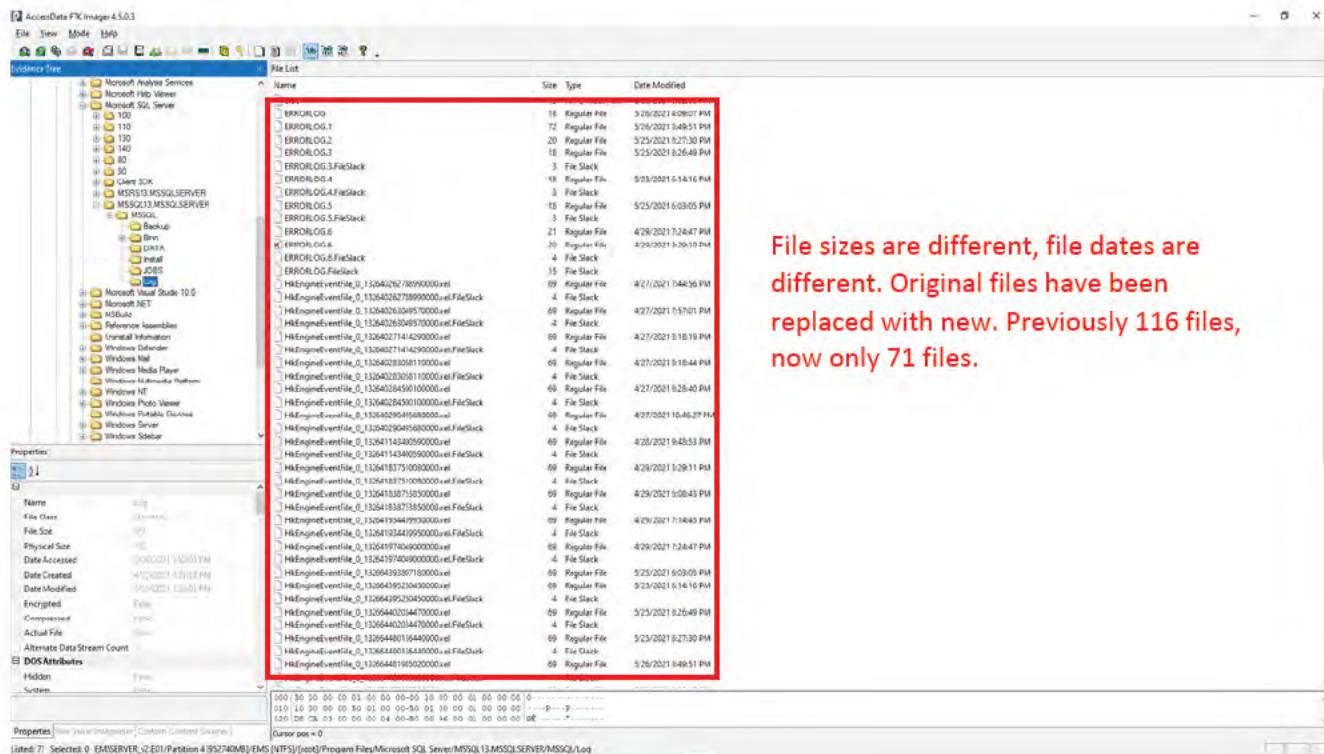


Figure 14 - EMS Server (5.13) SQL Server Log Files After



File sizes are different, file dates are different. Original files have been replaced with new. Previously 116 files, now only 71 files.

## EMS Server Dell Server Updates Missing

**Purpose:** These log files track installation of updates made to the various components of the servers, including updates to software for a remote-access card.

Figure 15 - EMS Server (5.11-CO) Dell Server Update Files Before

File List

Name	Size	Type	Date Modified
\$00	4	NTFS Index Al...	6/15/2019 5:15:27 PM
BIOS_TRYX9_WN64_2.9.1.log	61	Regular File	6/15/2019 5:04:04 PM
BIOS_TRYX9_WN64_2.9.1.log.FileStack	4	File Stack	
BIOS_TRYX9_WN64_2.9.1.log.FileStack	11	Regular File	6/15/2019 5:17:31 PM
BIOS_TRYX9_WN64_2.9.1.log.FileStack	23	Regular File	6/10/2019 5:07:30 PM
Driver-for-OS-Deployment_Application_WD1PH_WN64_18.12.04_A00.01.log	2	File Stack	
Driver-for-OS-Deployment_Application_WD1PH_WN64_18.12.04_A00.01.log.FileStack	23	Regular File	6/10/2019 5:06:22 PM
iDRAC-with-Lifecycle-Controller_Firmware_40TIC_WN64_2.63.60.51_A00.log	2	File Stack	
iDRAC-with-Lifecycle-Controller_Firmware_40TIC_WN64_2.63.60.51_A00.log.FileStack	40	Regular File	6/10/2019 5:05:43 PM
Network_Firmware_F3DN_WN64_2.1.0.9.log	19	Regular File	6/10/2019 5:05:21 PM
Power_Firmware_3RDN_WN64_0.0.1B.53.log	2	File Stack	
Power_Firmware_3RDN_WN64_0.0.1B.53.log.FileStack	31	Regular File	6/10/2019 5:16:11 PM
SAS_RAID_Driver_T244W_WN64_6.0.04.04.00_A01_07.log	2	File Stack	
SAS_RAID_Driver_T244W_WN64_6.0.04.04.00_A01_07.log.FileStack	34	Regular File	6/10/2019 5:04:56 PM
SAS_RAID_Firmware_F079_WN64_25.5.00.05_A11.31.log	3	File Stack	
SAS_RAID_Firmware_F079_WN64_25.5.00.05_A11.31.log.FileStack			

Properties

File List

Code

```
<InstallInstruction fileName="iDRAC-with-Lifecycle-Controller_Firmware_40TIC_WN64_2.63.60.61_A00.EXE" typeCode="IN64">
<Display lang="en"><![CDATA[Update Package Instructions for iDRAC-with-Lifecycle-Controller_Firmware_40TIC_WN64_2.63.60.61_A00.EXE.

Installation
1. Move to the location where you downloaded the file and double-click iDRAC-with-Lifecycle-Controller_Firmware_40TIC_WN64_2.63.60.61_A00.EXE.
2. Read over the release information presented in the dialog window.
3. Download and install any prerequisites identified in the dialog window before proceeding.
4. If this is a BIOS update package, install any necessary Enhanced Systems Management Firmware prior to this BIOS update. Otherwise, go next step.
5. Click the Install button.
6. Follow the remaining prompts to perform the update.

]]></Display>
</InstallInstruction>
</SoftwareComponent>

<< PACKAGE LOG >>2019-06-10 10:06:21
<< PACKAGE LOG (SelfExtractable) >>
Unique Temporary Folder Path << C:\Users\ADMINI-1\AppData\Local\Temp\203a3f40-b67f-4af2-9d7f-f49258c00823 >> is Deleted.

Update Package finished. Exit code = 0

2019-06-10 10:06:22
```

Properties

File List

Code

Figure 16 - EMS Server (5.13) Dell Server Update Files After

File List

Name	Size	Type	Date Modified
\$00	4	NTFS Index Al...	5/25/2021 5:05:11 PM
BIOS_TRYX9_WN64_2.11.01.log	17	Regular File	4/27/2021 5:01:40 PM
BIOS_HD1PH_WN64_2.11.01.log	14	Regular File	5/25/2021 6:06:38 PM
BIOS_HD1PH_WN64_2.11.01.log.FileStack	3	File Stack	
Chiper_Driver_A730M_WN64_0.1.1824.8188_A05.02.log	339	Regular File	4/29/2021 7:22:04 PM
Chiper_Driver_A730M_WN64_0.1.1824.8188_A05.02.log.FileStack	2	File Stack	
iDRAC-with-Lifecycle-Controller_Firmware_DPVIP_WN64_2.75.100.75_A00.log	53	Regular File	5/25/2021 6:08:19 PM
iDRAC-with-Lifecycle-Controller_Firmware_DPVIP_WN64_2.75.100.75_A00.log.FileStack	4	File Stack	
Network_Driver_2848_WN64_20.0.0.0_A00.log	75	Regular File	5/25/2021 6:09:16 PM
Network_Driver_2848_WN64_20.0.0.0_A00.log.FileStack	2	File Stack	
Network_Driver_49034_WN64_11.80.3.2.18.169.21.log	51	Regular File	4/27/2021 5:03:17 PM
Network_Driver_49034_WN64_11.80.3.2.18.169.21.log.FileStack	2	File Stack	
Network_Firmware_40TIC_WN64_2.63.60.51_A00.log	49	Regular File	4/27/2021 5:01:18 PM
Network_Firmware_40TIC_WN64_2.63.60.51_A00.log.FileStack	43	Regular File	4/27/2021 5:04:15 PM
Network_Firmware_704M_WN64_21.0.16.0.log	2	File Stack	
Network_Firmware_704M_WN64_21.0.16.0.log.FileStack	208	Regular File	4/27/2021 5:04:46 PM
Power_Firmware_POFN_WN64_0.0.1B.83.log	263	Regular File	5/25/2021 6:10:46 PM
Power_Firmware_POFN_WN64_0.0.1B.83.log.FileStack	2	File Stack	
SAS_RAID_Driver_T244W_WN64_6.0.04.04.00_A01_07.log	30	Regular File	5/25/2021 6:11:19 PM
SAS_RAID_Driver_T244W_WN64_6.0.04.04.00_A01_07.log.FileStack	3	File Stack	
SAS_RAID_Firmware_WRNIV_WN64_25.5.00.05_A11.log	67	Regular File	5/25/2021 6:12:17 PM
SAS_RAID_Firmware_WRNIV_WN64_25.5.00.05_A11.log.FileStack	2	File Stack	

Properties

File List

Code

Sizes, Dates/Times are different. These Log Files have been replaced with different files.

Several log files of great importance to an investigation are shown in Figure 16. The SAS RAID firmware and drivers logs tell us about the functionality of hard disk controllers (RAID is an acronym for Redundant Array of Independent Disks) and about this storage redundancy's physical capability. Network Firmware logs tell us which hardware devices were updated with new firmware, and the version allows us to trace back to its network (and possibly Internet) functionality. The application of iDRAC controller firmware may indicate the presence of a special hardware controller intended to permit complete remote control of the computer system. This iDRAC controller is often used when a data center must be located an inconvenient distance away from its owner and/or operators, or for example, when such a computer might be physically located at an Internet Service Provider's secure data center. The iDRAC controller permits a remote user to remotely turn on the power to the server, reboot it, access administrative control functions, and make changes to the server, *OUTSIDE THE CONTROL, or even the awareness, of the local computer operator and its operating system*. Among the changes possible via an iDRAC are changes to the BIOS (Basic I/O System) including those firmware settings that include the computer Clock, boot device order, which disks or other data storage devices are used to boot the computer, and some other computer capabilities.

Take note of what files remain following the update.

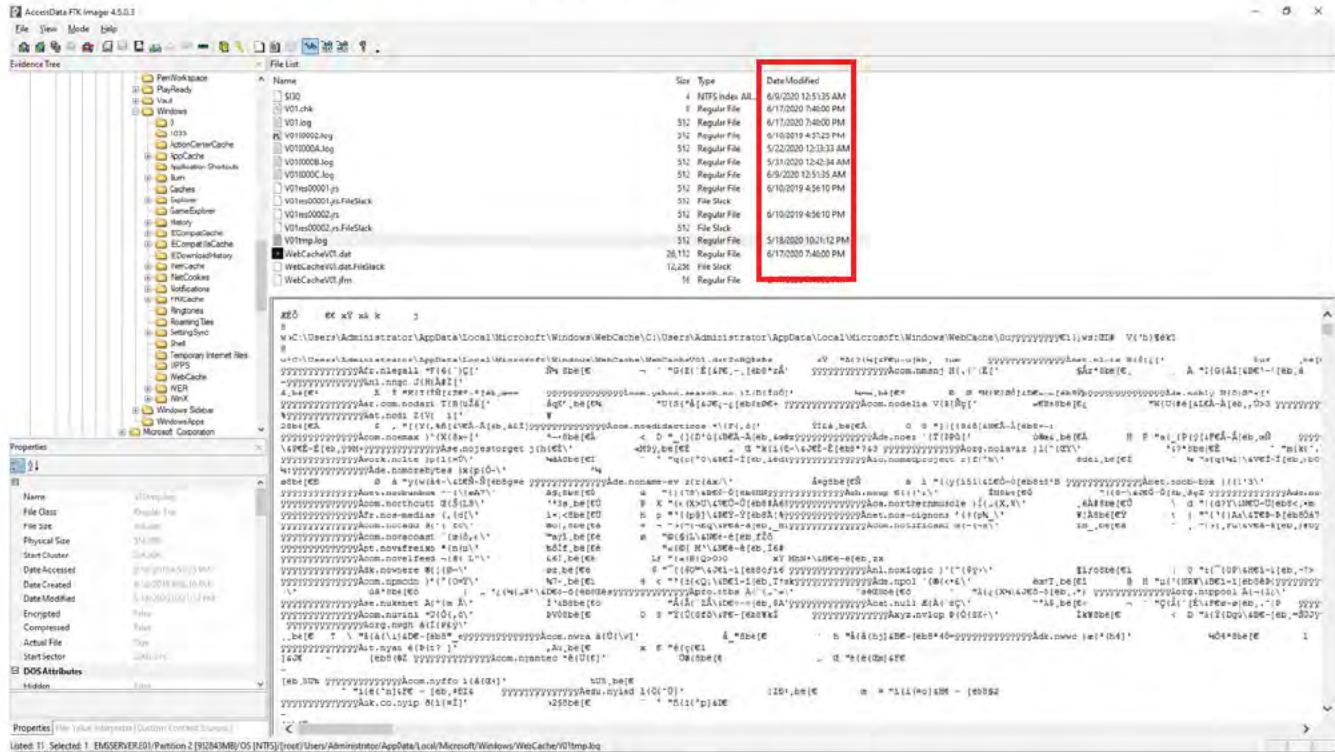
Not only are the files in an entirely different directory, but the file modification dates have changed, and more importantly, these logs are for DIFFERENT versions of the software, and the previous logs have been overwritten.

Physical examination of the EMS computer system is required to verify the presence or absence of an iDRAC controller, however it is highly irregular for update software to install updates to software for a hardware device that has not been installed.

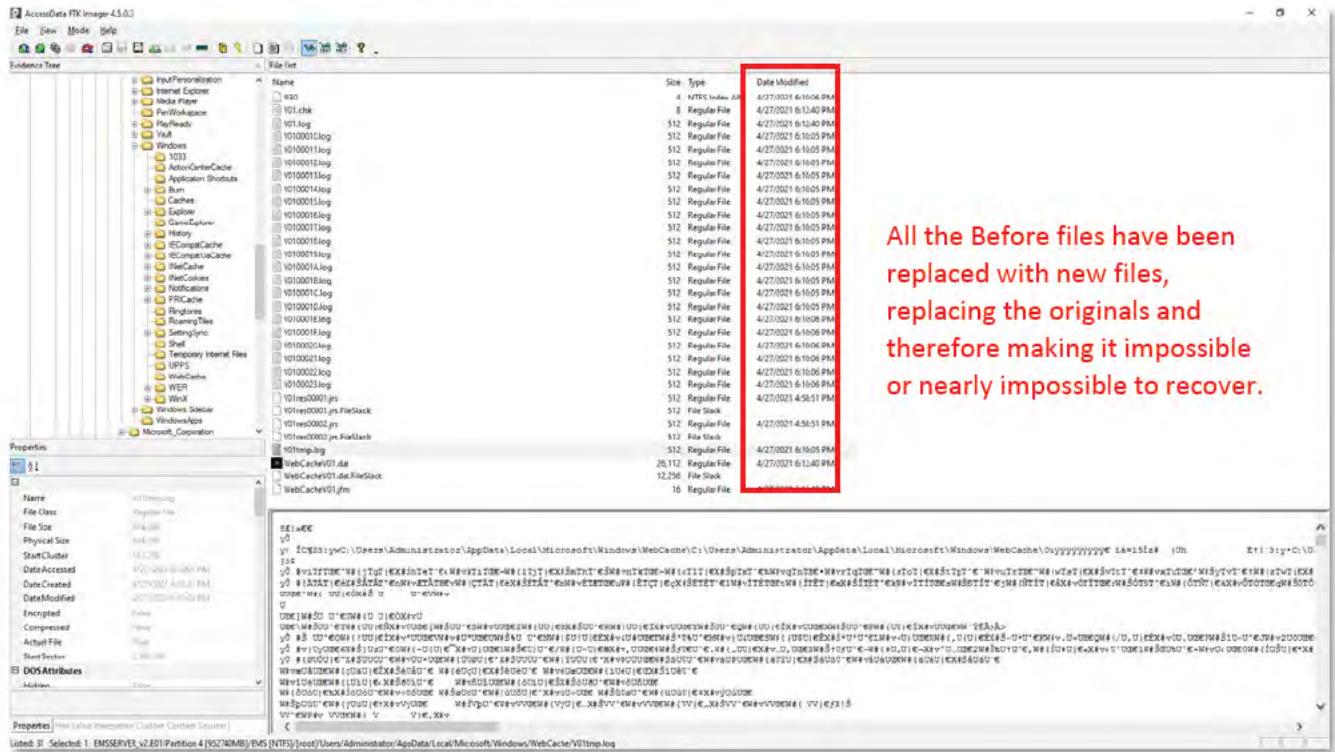
## Server 'Administrator' WebCache Log Files Overwritten

**Purpose:** These log files store information about websites visited, files opened, etc.

**Figure 17 - EMS Server (5.11-CO) Administrator WebCache Log Files Before**



**Figure 18 - EMS Server (5.13) Administrator WebCache Log Files After**



All the Before files have been replaced with new files, replacing the originals and therefore making it impossible or nearly impossible to recover.

## Server 'emsadmin' WebCache Log Files Overwritten

**Purpose:** These log files store information about websites visited, files opened, etc.

Figure 19 - EMS Server (5.11-CO) "emsadmin" WebCache Log Files Before

The screenshot shows the 'emsadmin' WebCache log files before they were overwritten. The 'WebCache01.log' file is highlighted with a red box in the file list. The file list shows various log files and configuration files for the WebCache service. The properties for 'WebCache01.log' are displayed in the properties pane, showing details like Name, File Class, File Size, Physical Size, and DOS Attributes. The large text area below shows the raw log data, which is mostly illegible but contains typical log entries for a web cache system.

Figure 20 -EMS Server (5.13) "emsadmin" WebCache Log Files After

The screenshot shows the 'emsadmin' WebCache log files after they were overwritten. The 'WebCache01.log' file is highlighted with a red box in the file list. The file list shows the same set of log files as in Figure 19. The properties for 'WebCache01.log' are displayed in the properties pane. The large text area below shows the raw log data, which is mostly illegible but contains typical log entries for a web cache system, similar to Figure 19 but with some differences in the log entries.

The WebCache log files have been overwritten. IF the computer has been used on the Internet or with ANY webserver (even one on the local network, including this computer's OWN webserver), these WebCache files indicate the connections that were sought, as well as files that were opened. These may provide *critical* evidence that the system has been connected to a network, including networks that have access to the Internet. THESE ARE NOT the same files in the before and after images. They have been deleted and replaced.

Here is a small subset of some of the information that was found on the Before image in these WebCache log files:

Figure 21 - EMS Server (5.11-CO) Webcache Log File Content Before

Container_15 [Table ID = 49, 25 Columns]			
EntryId	ContainerId	Url	AccessedTime
① 1	15	:2020060820200615: DVSAdministrator@:Host: This PC	132368189382665280
② 2	15	:2020060820200615: DVSAdministrator@file:///C:/Users/Administrator/Desktop/DVS%20Adjudication%20%20Key.pfx	132368189382821518

For instance, the above log file entry seems to show a DVS Adjudication Encryption Key was accessed, where it was stored and accessed from, and when it was accessed.

Figure 22 - EMS Server (5.11-CO) Webcache Log File Content Before - II

Container_18 [Table ID = 39, 25 Columns]			
EntryId	ContainerId	Url	AccessedTime
① 1	18	:2021051820210519: emsadmin@file:///F:/Logs	132658341190420467
② 2	18	:2021051820210519: emsadmin@Host: This PC	132658341190576330
③ 3	18	:2021051820210519: emsadmin@file:///F:/	132658341190732829
④ 4	18	:2021051820210519: emsadmin@file:///F:/Logs/5_18_21.evtx	132658341410603691
⑤ 5	18	:2021051820210519: emsadmin@file:///emsserver/nas/2020%20Mesa%20County%20General/Results/Tabulator00004/Batch2003/1_1_4_2003_DETAIL.DVD.txt	132658342689478943
⑥ 6	18	:2021051820210519: emsadmin@Host: emsserver	132658342689478943
⑦ 7	18	:2021051820210519: emsadmin@file:///emsserver/nas/2020%20Mesa%20County%20General/Results/Tabulator00004/Batch2003/Images/00004_02003_00001.tif	132658342760262058

In addition, the above log file entry seems to show several interesting files (a windows 'evtx' log file being opened from an external attached USB flash drive, and a ballot detail file and even a ballot image from Batch 2003 being opened from a Network Attached Storage device)

Without a forensic Before image prior to a Dominion 'Update', this type of potentially critically-important forensic information could be, and likely would be, lost forever.

## Server SQL Server Management Studio (SSMS) Log Files Overwritten

**Purpose:** These log files track the installation of the SQL Server Management Studio, which is used to get into the back-end of the election databases.

**Figure 23 - EMS Server (5.11-CO) SSMS Log Files Before**

**Figure 24 - EMS Server (5.13) SSMS Log Files After**

## Server CBS Log Files Overwritten

**Purpose:** These Log Files contain detailed information about installed updates. They could contain evidence of changes to the server that would cause decertification of the system.

Figure 25 - EMS Server (5.11-CO) CBS Log Files Before

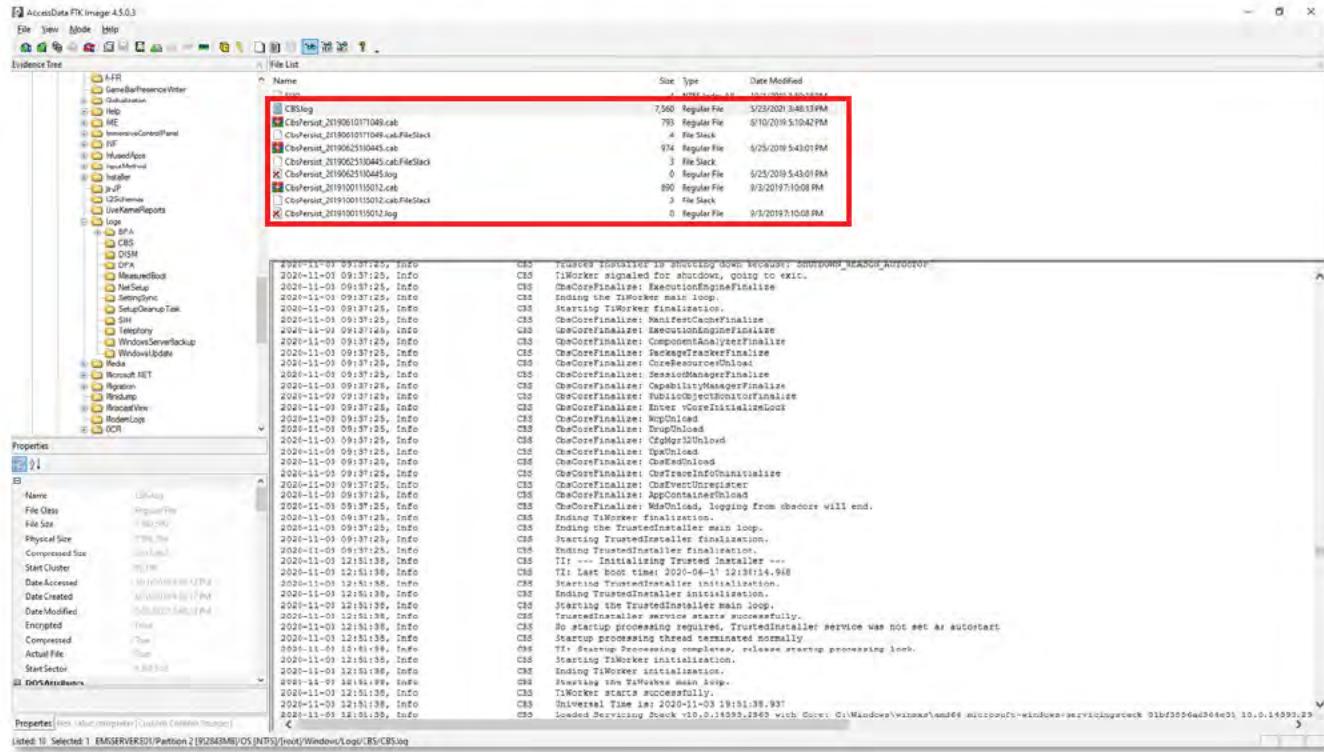
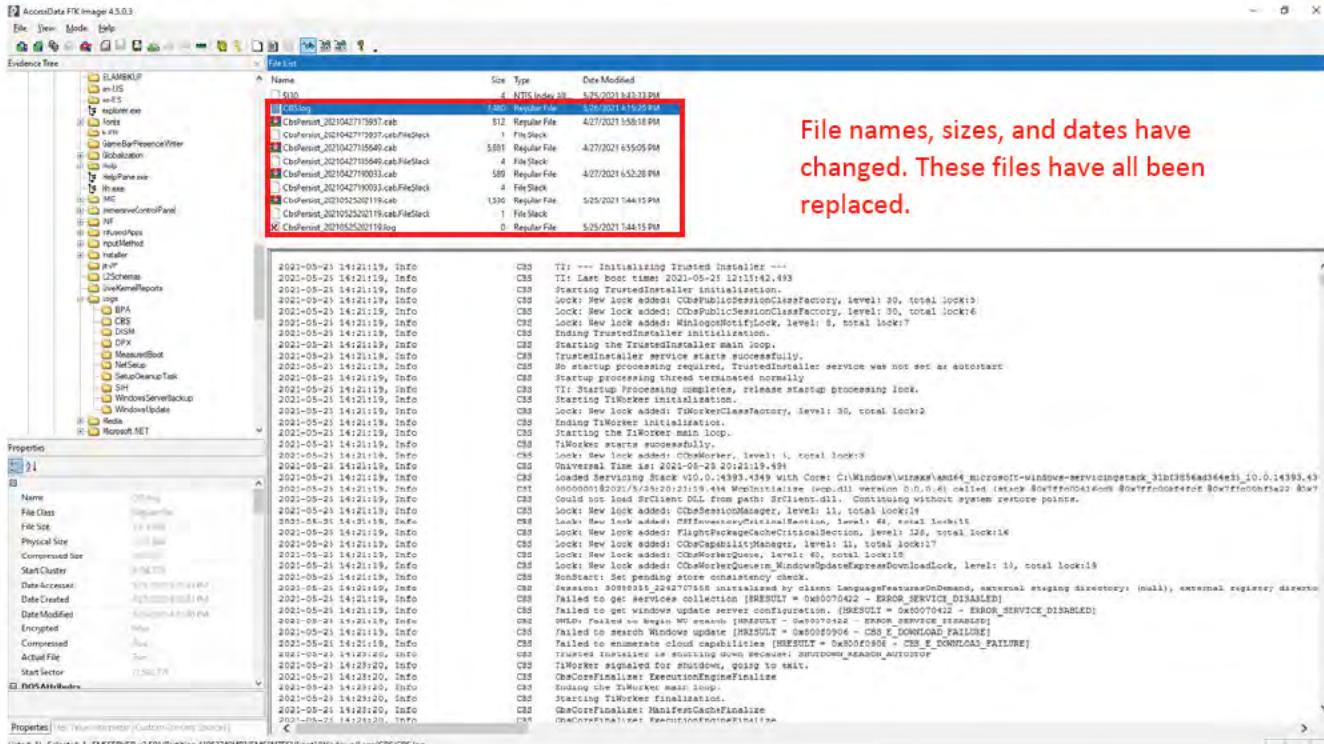


Figure 26 - EMS Server (5.13) CBS Log Files After



## Server Election Databases Missing

**Purpose:** This folder holds all the databases (votes, information regarding batches, when they were processed, how many were processed, who they were processed by, and much more). There are also multiple extra databases that contain information regarding ballot adjudication.

**Figure 27 - EMS Server (5.11-CO) Election Databases Before**

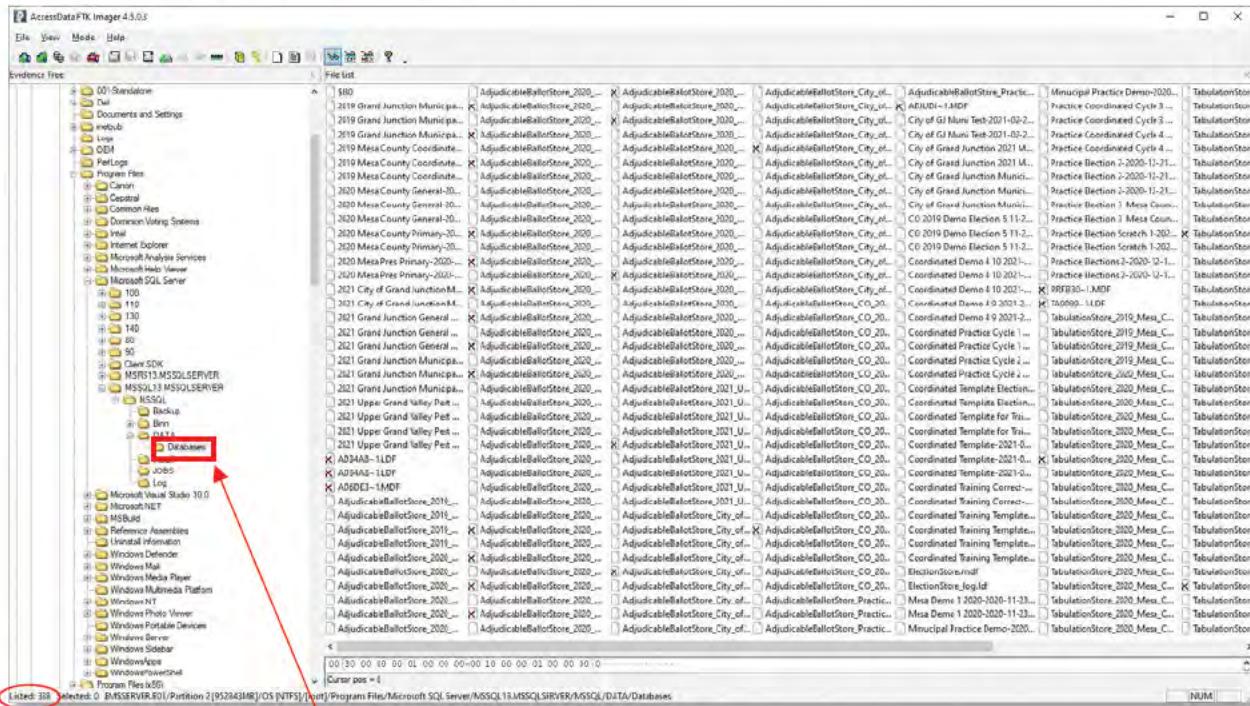
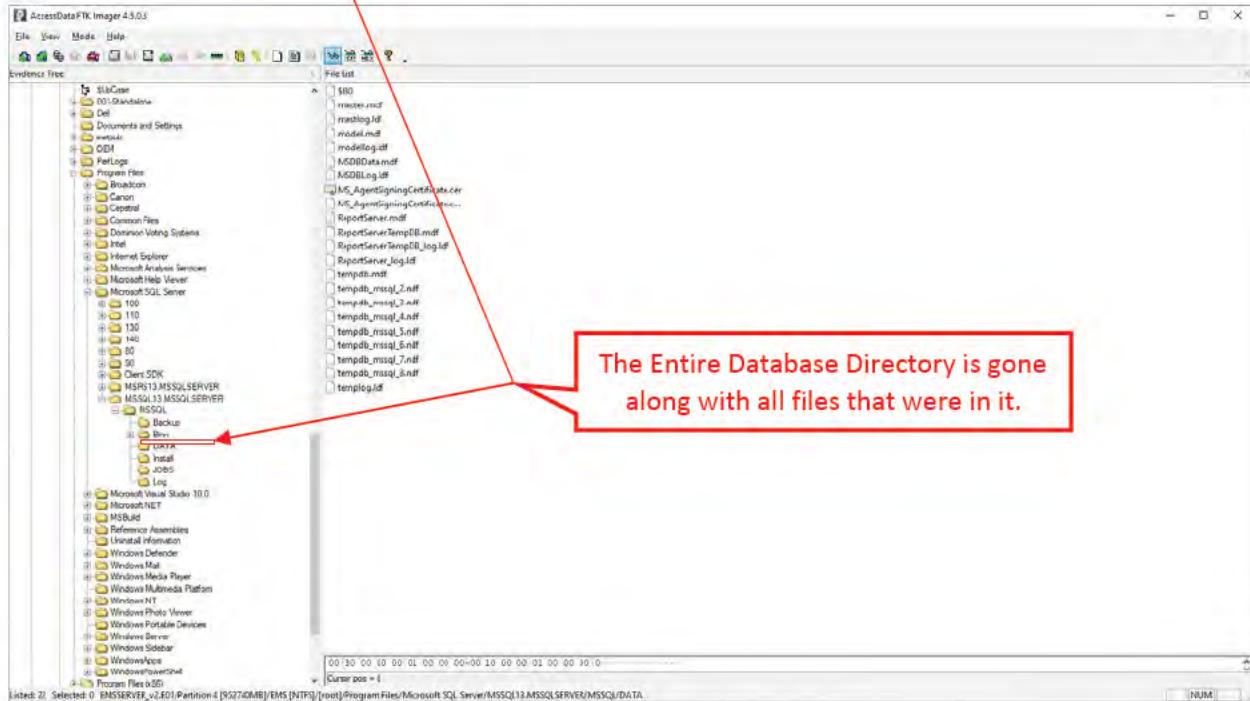


Figure 28 - EMS Server (5.13) Election Databases After

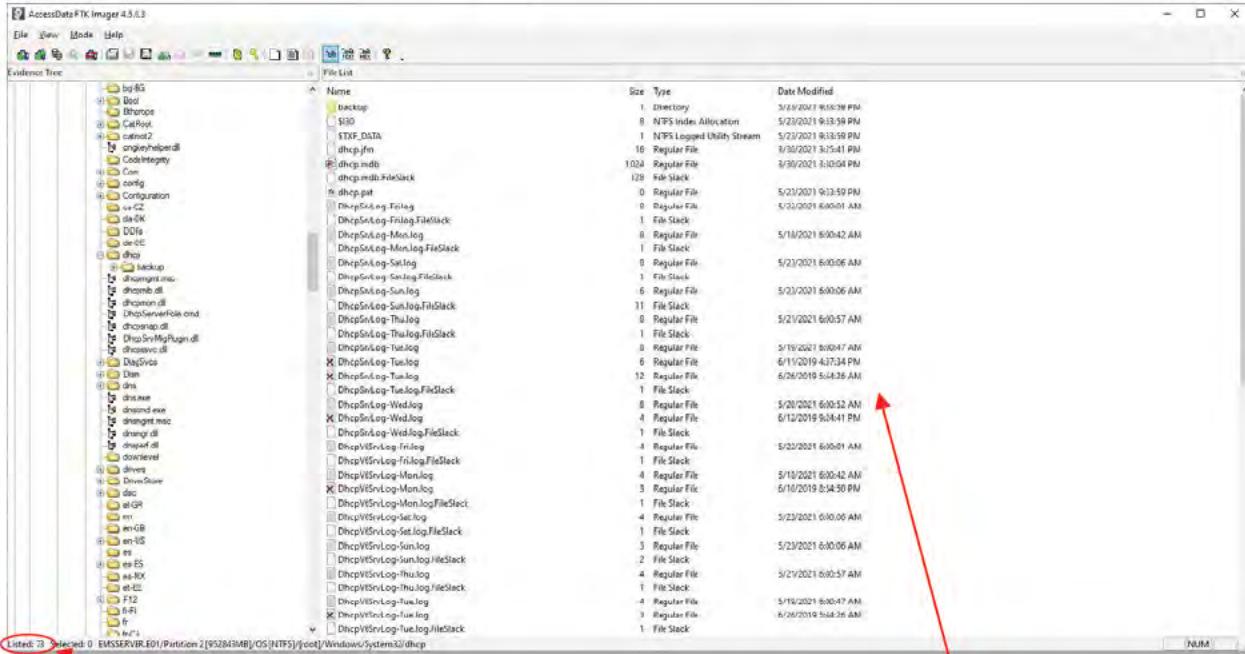


## Server DHCP Log Files Missing/Overwritten

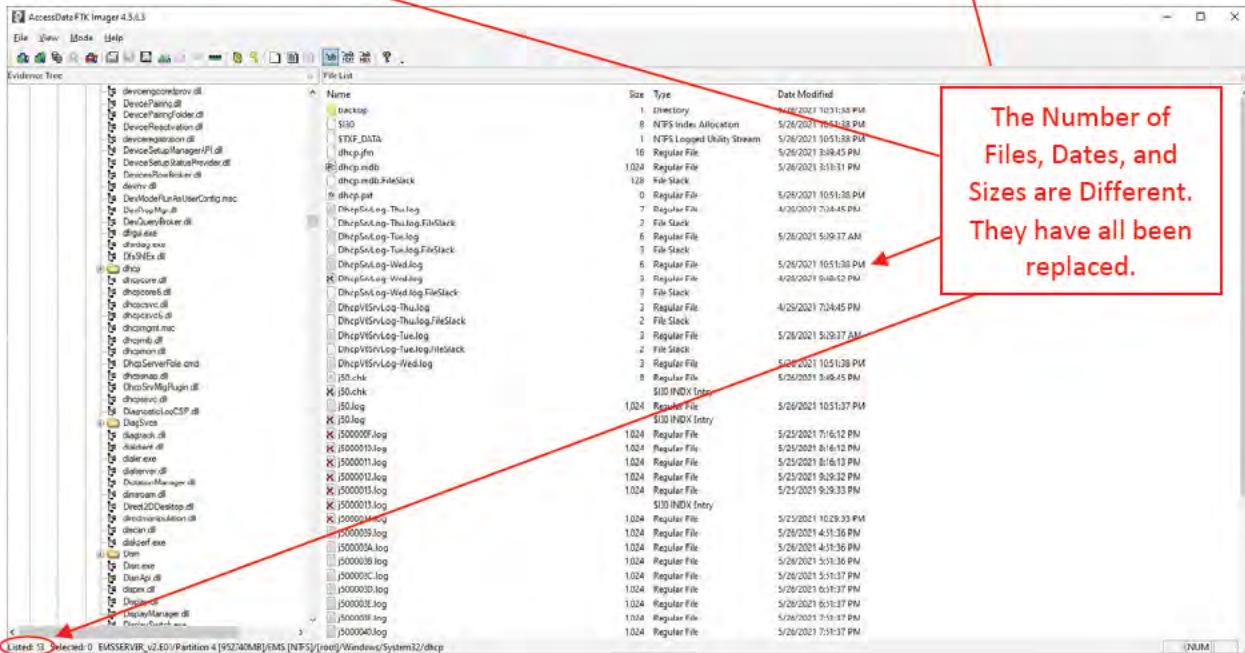
EXHIBIT 6, Page 31

**Purpose:** DHCP Log Files can show evidence regarding computers or other devices being connected to the network.

**Figure 29 - EMS Server (5.11-CO) DHCP Log Files Before**



**Figure 30 - EMS Server (5.13) DHCP Log Files After**



The Number of  
Files, Dates, and  
Sizes are Different.  
They have all been  
replaced.

## Server Event Logs Missing/Overwritten

**Purpose:** These Dominion Log Files keep track of election/project-related activity. The Windows Server event logs outside the red box keep track of much of the activity on the server.

Figure 31 - EMS Server (5.11-CO) Event Logs Before

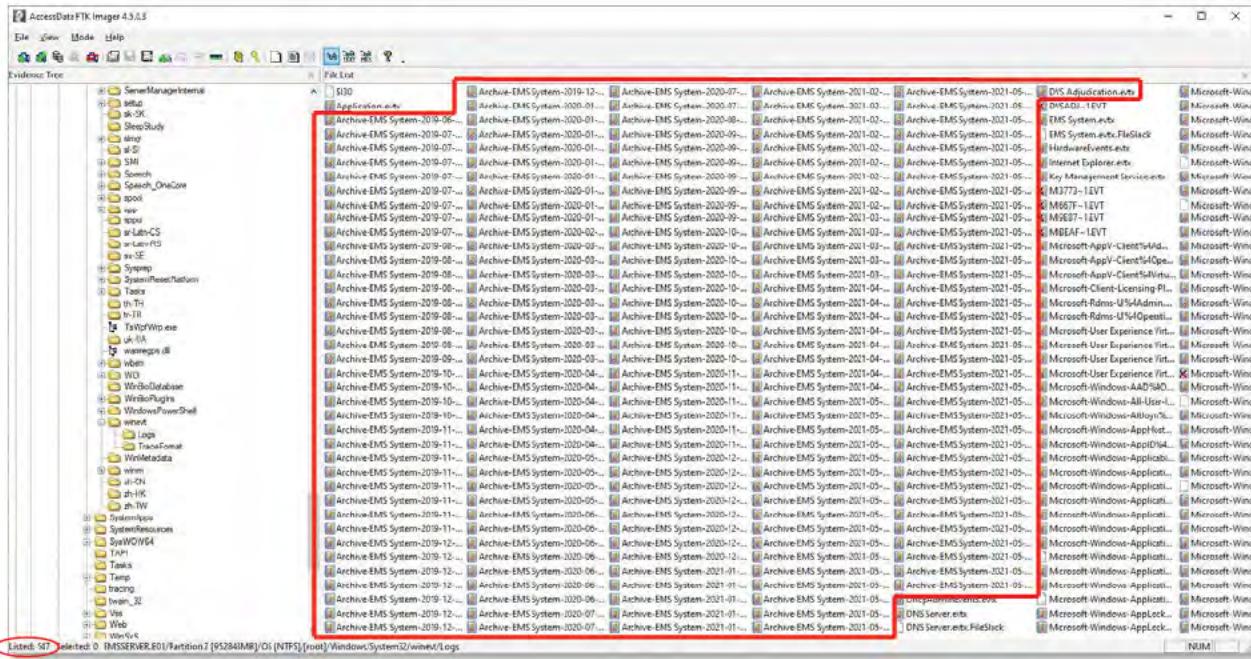


Figure 32 - EMS Server (5.13) Event Logs After

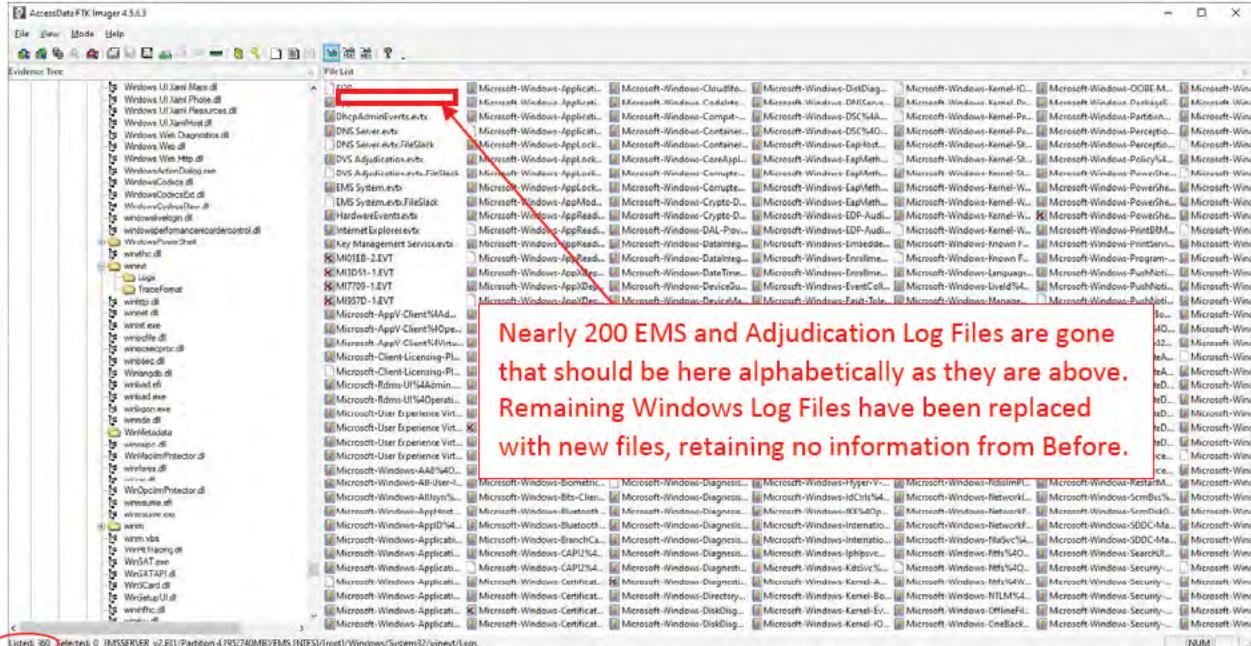


EXHIBIT 6, Page 33

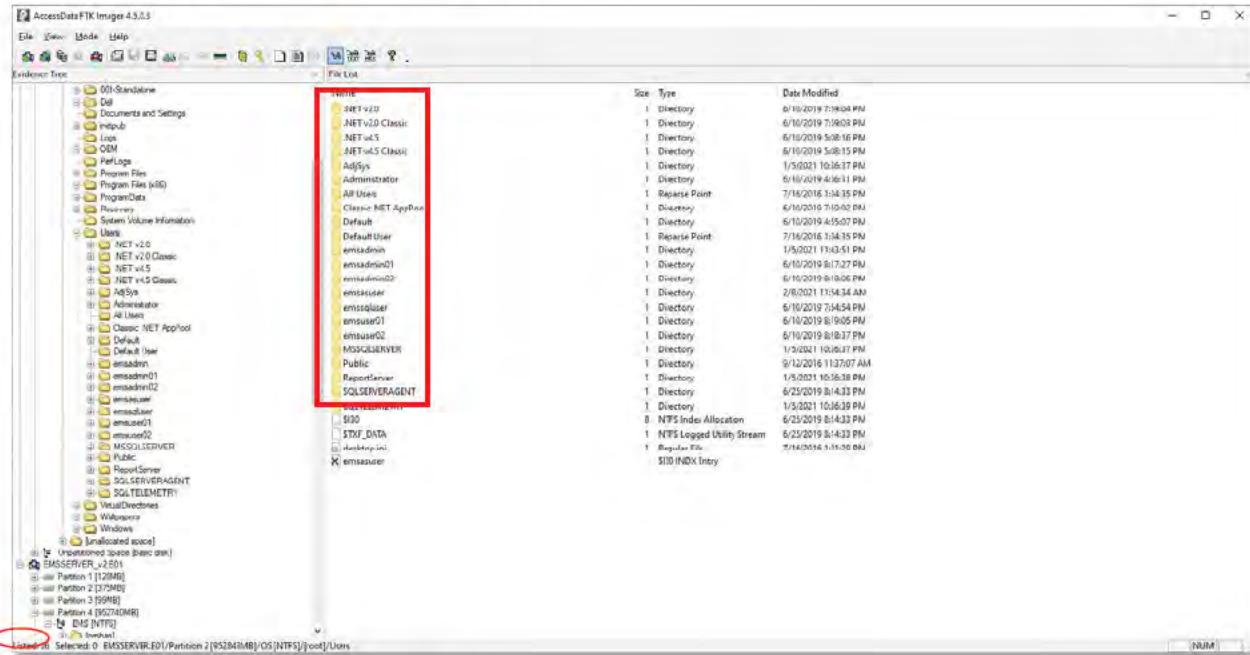
Below are some screen shots of the kind of Election-Related information (such as cast vote records, audit marks, image retrievals, result file loads, etc.) in the EMS Archive Logs that are missing After the Dominion Update:

**Figure 33 - Examples of Election Data Missing After Update**

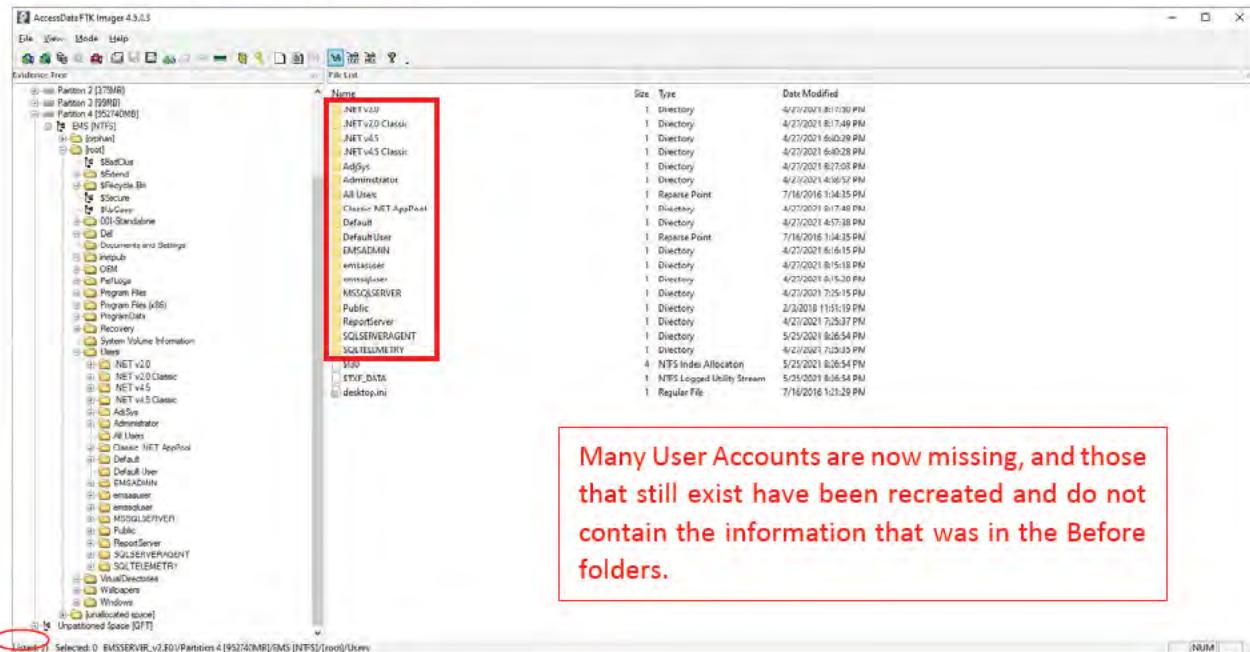
## Server System Users are Missing

**Purpose:** These folders store the information for each user account on the server.

Figure 34 - EMS Server (5.11-CO) System Users Before



**Figure 35 - EMS Server (5.13) System Users After**

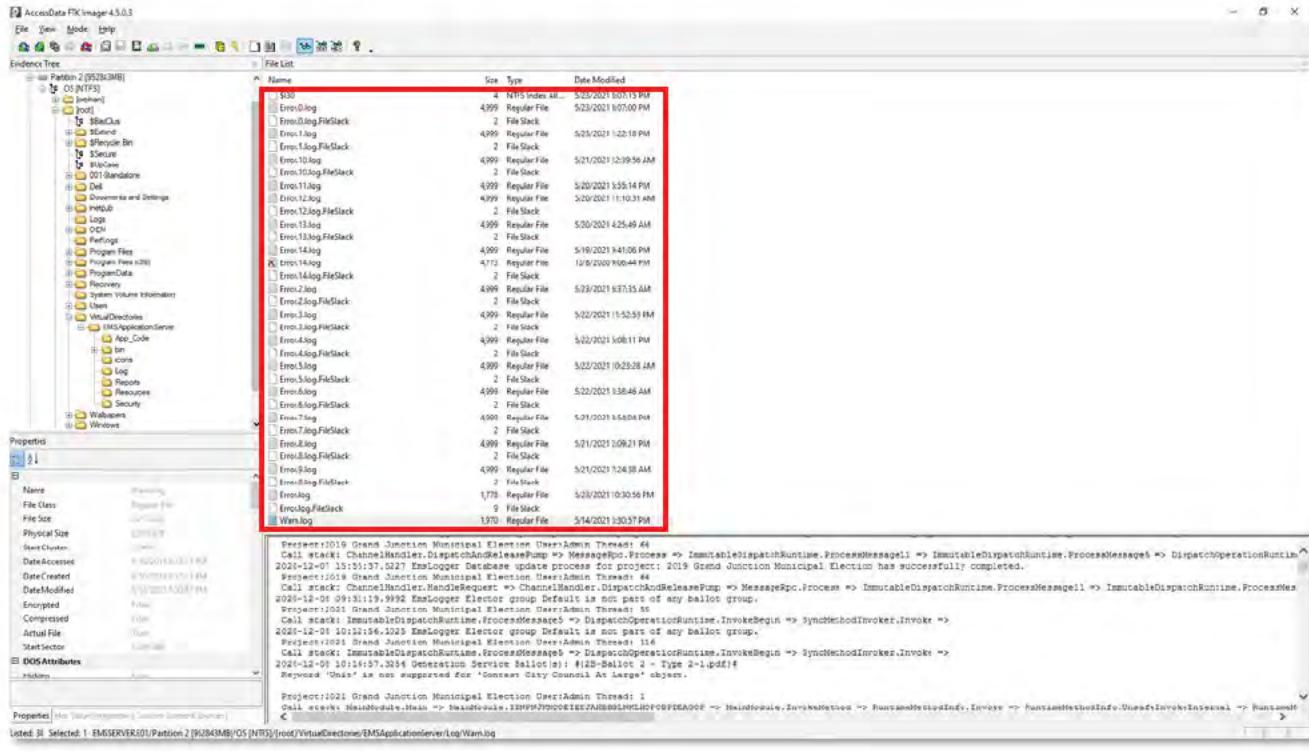


Many User Accounts are now missing, and those that still exist have been recreated and do not contain the information that was in the Before folders.

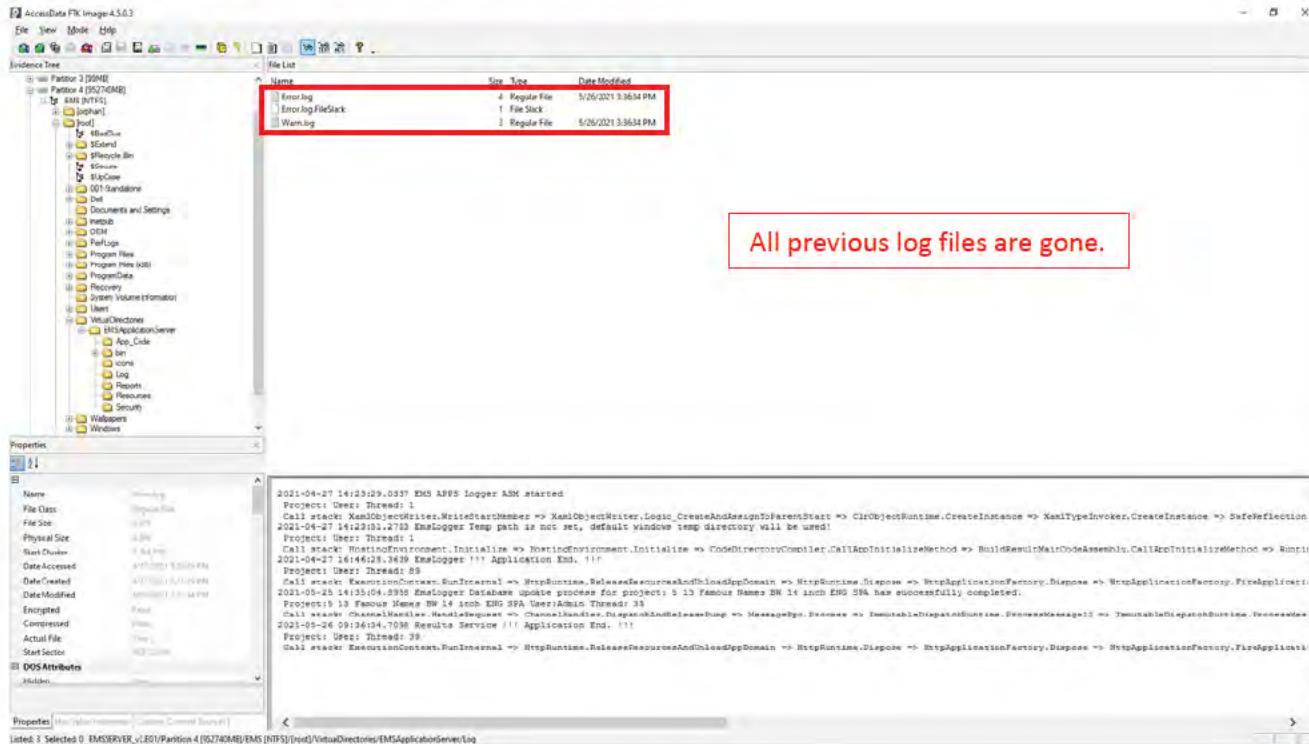
## Server Virtual Directories Log Files Missing

**Purpose:** These are the Log Files that contain information, warnings, and errors relating to the Website Server as the server processes election projects that have been set up.

**Figure 36 - EMS Server (5.11-CO) Virtual Directory Log Files Before**



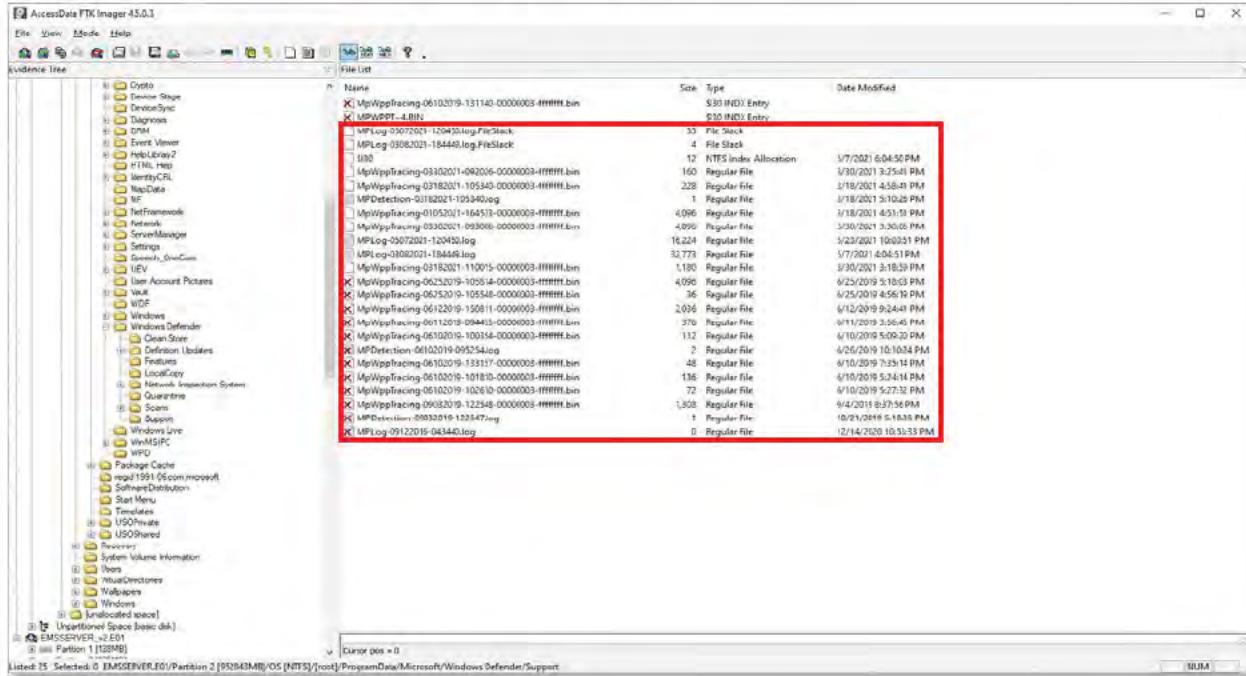
**Figure 37 - EMS Server (5.13) Virtual Directory Log Files After**



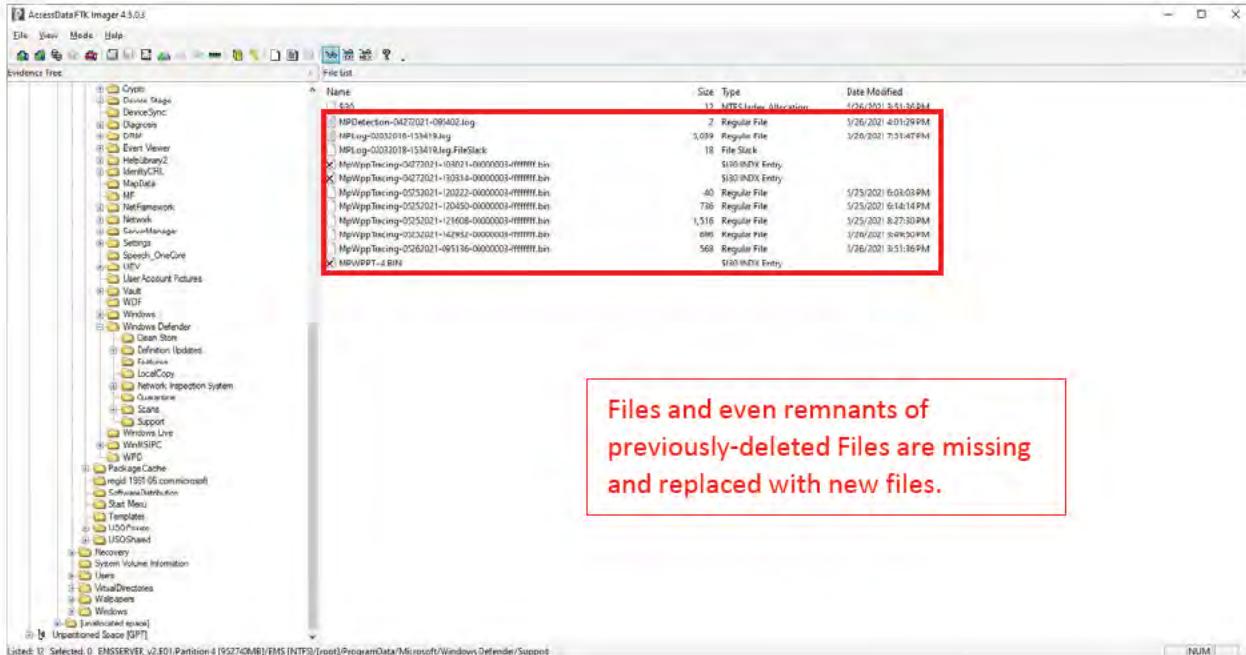
## Server Windows Defender Log Files Missing/Overwritten

**Purpose:** These log files keep track of the activity of the built-in Anti-Virus software.

**Figure 38 - EMS Server (5.11-CO) Windows Defender Log Files Before Dominion Update:**



**Figure 39 - EMS Server (5.13) Windows Defender Log Files After**



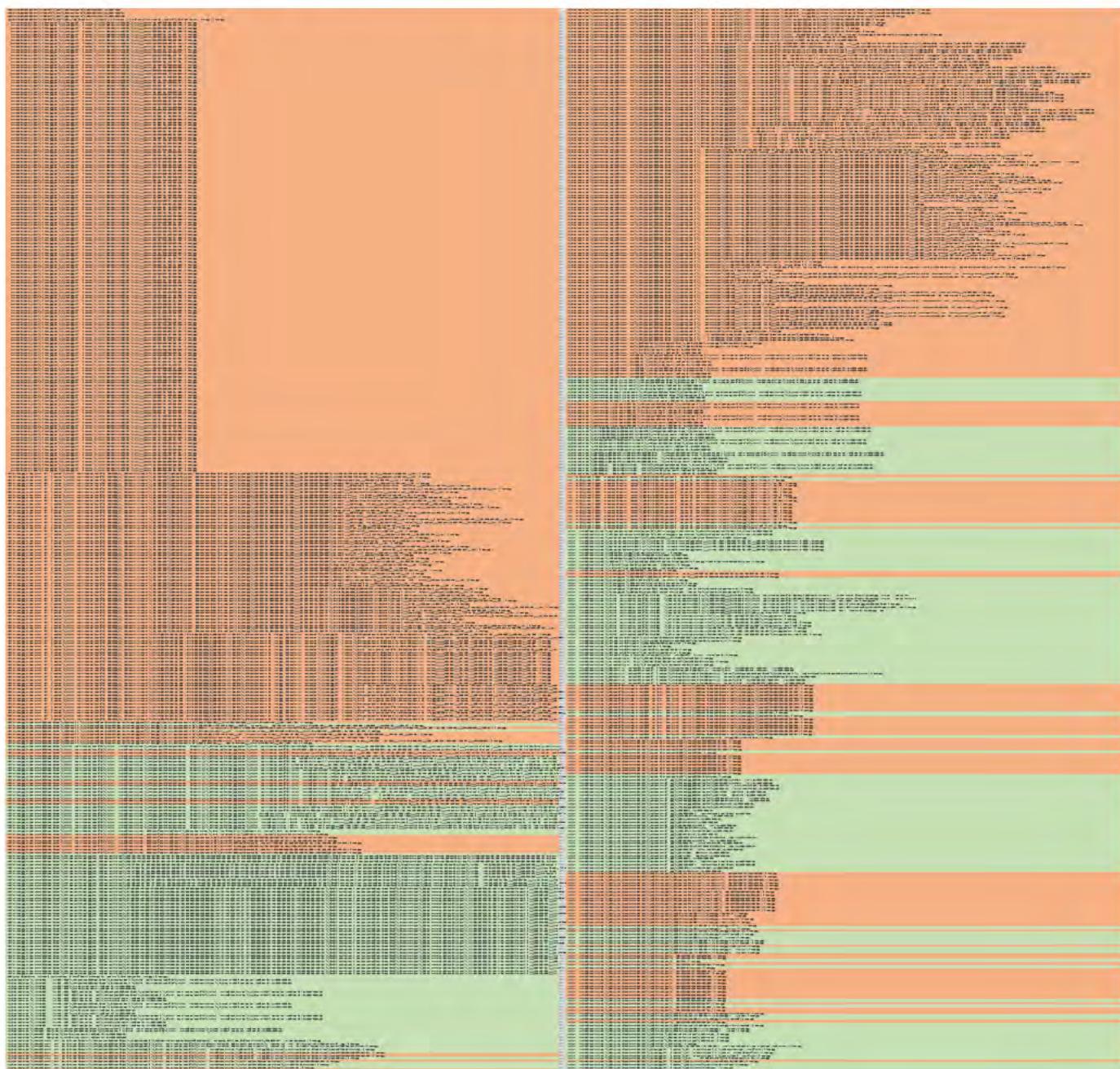
Server List of .log files in Before Image that were Deleted.

This list that follows this paragraph is a comparison of the Before and After forensic images of the Mesa County EMS Server. It is a comparative list of files that were deleted – either deliberately erased or overwritten with disregard for the preservation of these files, some of which contain ELECTION RELATED data.

Each line in the image below is the full path listing to each one of the 807 files that end with the word ".log" found on the EMS Server before the Dominion update was applied.

The Color code shows what happened to them After Dominion's update. Of all the files on the server Before the update – files highlighted in Green are still present on the server after the update, while files highlighted in light red have been overwritten and are deleted and not present in the image taken After the update.

Figure 40 - EMS Server Before/After .log File Comparison List



Users\Administrator\AppData\Local\Microsoft\Windows\WebCache\V0100002J.log	Windows\System32\LogFiles\Sum\Apitmp.log
Users\Administrator\AppData\Local\Microsoft\Windows\WebCache\V010000AJ.log	Windows\System32\LogFiles\Sum\Svc00167.log
Users\Administrator\AppData\Local\Microsoft\Windows\WebCache\V010000CJ.log	Windows\System32\LogFiles\Sum\Svc00168.log
Users\Administrator\AppData\Local\Microsoft\Windows\usrClass.dat.LOG1	Windows\System32\LogFiles\Sum\Sci.log
Users\Administrator\AppData\Local\Microsoft\Windows\usrClass.dat.LOG2	Windows\System32\Microsoft\Protect\Recovery\Recovery.dat.LOG1
Users\Administrator\AppData\Local\Packages\Microsoft.AAD.BrokerPlugin_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\Microsoft\Protect\Recovery\Recovery.dat.LOG2
Users\Administrator\AppData\Local\Packages\Microsoft.AAD.BrokerPlugin_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\System32\Microsoft\Protect\Recovery\Recovery.dat.LOG1
Users\Administrator\AppData\Local\Packages\Microsoft.AccountsControl_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\Microsoft\Protect\Recovery\Recovery.dat.LOG2
Users\Administrator\AppData\Local\Packages\Microsoft.AccountsControl_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\System32\MSI\Store\Machine\SCHEMA.DAT.LOG1
Users\Administrator\AppData\Local\Packages\Microsoft.BioEnrollment_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\MSI\Store\Machine\SCHEMA.DAT.LOG2
Users\Administrator\AppData\Local\Packages\Microsoft.BioEnrollment_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\System32\Sysprep\Parther\VE\setupact.log
Users\Administrator\AppData\Local\Packages\Microsoft.LockApp_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\Sysprep\Parther\VE\setuperr.log
Users\Administrator\AppData\Local\Packages\Microsoft.LockApp_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\System32\Sysprep\Parther\VE\setuperr.log
Users\Administrator\AppData\Local\Packages\Microsoft.LockApp_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\Sysprep\Parther\VE\setupact.log
Users\Administrator\AppData\Local\Packages\Microsoft.LockApp_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\Windows\UI.Logon
Users\Administrator\AppData\Local\Packages\Microsoft.LockApp_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\System32\Windows\UI.PrintDialog
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.AssignedAccessLockApp_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\System32\Windows\CloudExperienceHost_cw5n1h2txyewy\Settings\settings.dat.LOG1
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.AssignedAccessLockApp_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\System32\Windows\CloudExperienceHost_cw5n1h2txyewy\Settings\settings.dat.LOG2
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.AssignedAccessLockApp_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\Temp\pksetup-20190625-113536-0.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.AssignedAccessLockApp_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\Temp\pksetup-20190626-162623-0.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.Cortana_cw5n1h2txyewy\ACTemp\StructuredQuery.log	Windows\Temp\MpCmdRun.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.Cortana_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\Temp\sl\config.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.Cortana_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\Temp\ASPMETSetup_00000.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.SecondaryTitleExperience_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\Temp\ASPMETSetup_00001.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.SecondaryTitleExperience_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\WinSxS\amd64_microsoft-windows-com-dtc-runtime_31bf3856ad364e35_10.0.14393.0_none_46c76e6076b59fe9\MSDTC.LOG
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.Shell\Experience\host_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\WinSxS\amd64_tspart\webpart_31bf3856ad364e35_10.0.14393.0_none_620a5da1064dcfc0\allusers_tsxa.log
Users\Administrator\AppData\Local\Packages\Microsoft.Windows.Shell\Experience\host_cw5n1h2txyewy\Settings\settings.dat.LOG2	Windows\WindowsUpdate.log
Users\Administrator\AppData\Local\Packages\Microsoft.XboxGameCallableUI_cw5n1h2txyewy\Settings\settings.dat.LOG1	Windows\WindowsUpdate.log
Users\Administrator\AppData\Local\Packages\Microsoft.XboxGameCallableUI_cw5n1h2txyewy\Settings\settings.dat.LOG2	Lost Files\5007CCF.log
Users\Administrator\AppData\Local\Packages\Windows.ImmersiveControlPanel_cw5n1h2txyewy\Settings\settings.dat.LOG1	Lost Files\5007CD0.log
Users\Administrator\AppData\Local\Packages\Windows.ImmersiveControlPanel_cw5n1h2txyewy\Settings\settings.dat.LOG2	Lost Files\5007CD1.log
Users\Administrator\AppData\Local\Packages\Windows.MiracastView_cw5n1h2txyewy\Settings\settings.dat.LOG1	Lost Files\5007CD2.log
Users\Administrator\AppData\Local\Packages\Windows.MiracastView_cw5n1h2txyewy\Settings\settings.dat.LOG2	Lost Files\5007CD0.log
Users\Administrator\AppData\Local\Packages\Windows.PrintDialog_cw5n1h2txyewy\Settings\settings.dat.LOG1	Lost Files\5007CD1.log
Users\Administrator\AppData\Local\Packages\Windows.PrintDialog_cw5n1h2txyewy\Settings\settings.dat.LOG2	Lost Files\5007CCD.log
Users\Administrator\AppData\Local\Temp\MpSigStub.log	Lost Files\5007CD1.log
Users\Administrator\AppData\Local\Temp\VmSetup.log	Lost Files\5007CD2.log
Users\Administrator\AppData\Local\Temp\VmSetup.log	Lost Files\500002F.log
Users\Administrator\AppData\Local\Temp\VmSetup.log	Lost Files\5000030.log
Users\Administrator\AppData\Local\Temp\VmSetup.log	Lost Files\5000031.log
Users\Administrator\ntuser.dat.LOG1	Lost Files\5000032.log
Users\Administrator\ntuser.dat.LOG2	Lost Files\5000033.log
Users\Default\NTUSER.DAT.LOG2	Lost Files\5000034.log
Users\Default\NTUSER.DAT.LOG1	Lost Files\5000035.log
Users\jmsadmin\AppBarData\Local\ConnectedDevicesPlatform\CDP\Traces.log	Lost Files\5000036.log
Users\jmsadmin\AppBarData\Local\Microsoft\Internet Explorer\eduit\init\UserConfig.log	Lost Files\5000037.log
Users\jmsadmin\AppBarData\Local\Microsoft\Internet Explorer\eduit\init\ClearIconCache.log	Lost Files\5000038.log
Users\jmsadmin\AppBarData\Local\Microsoft\Server Management Studio\14.0\ComponentModelCache\Microsoft.VisualStudio.Default.cat	Lost Files\5000039.log
Users\jmsadmin\AppBarData\Local\Microsoft\Windows\SettingSync\metastore\edbttmp.log	Lost Files\500003A.log

## Significant Number of Logfiles Missing

The dataset from which this spreadsheet was created was extracted from the EnCase images of the original evidence on the hard drives of the EMS Server and had a traceable chain of custody. While the images above are too small to be readable, the entire content of this list is reproduced in Appendix A.

Of the original 807 ".log" files on the EMS Server before Dominion's update, only 302 remain, and 505 ".log" files have been deleted or overwritten.

Of the files *that remain*, the forensic examination has not yet verified whether the content of these files (which have the same filename and Path – e.g., in the same directories) is unchanged. The files that have been deleted DO include files that constitute Election Records and are subject to Federal and State data retention laws.

This list is only 807 files, and the text size is so small that the content is barely readable. The list of files has been broken down into small subsets because the number of files on the entire server totals 363,321 files, many of which are provided by Microsoft as part of the Windows Server 2016 operating system and its associated application programs and are not Election Related and do not contain actual Election Data.

## List of .evtx Event Log Files deleted

Figure 41 - EMS Server (5.11-CO) List of .evtx Event Log Files Before

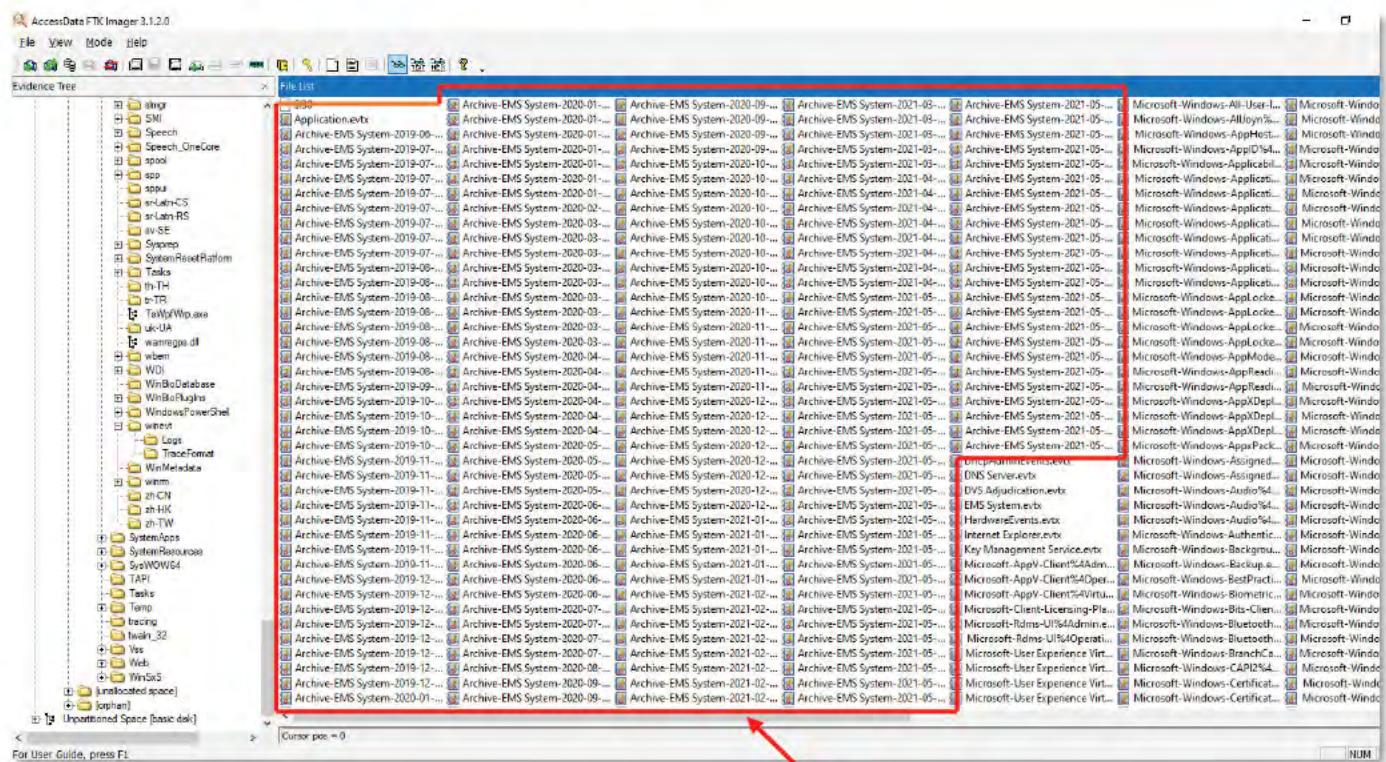
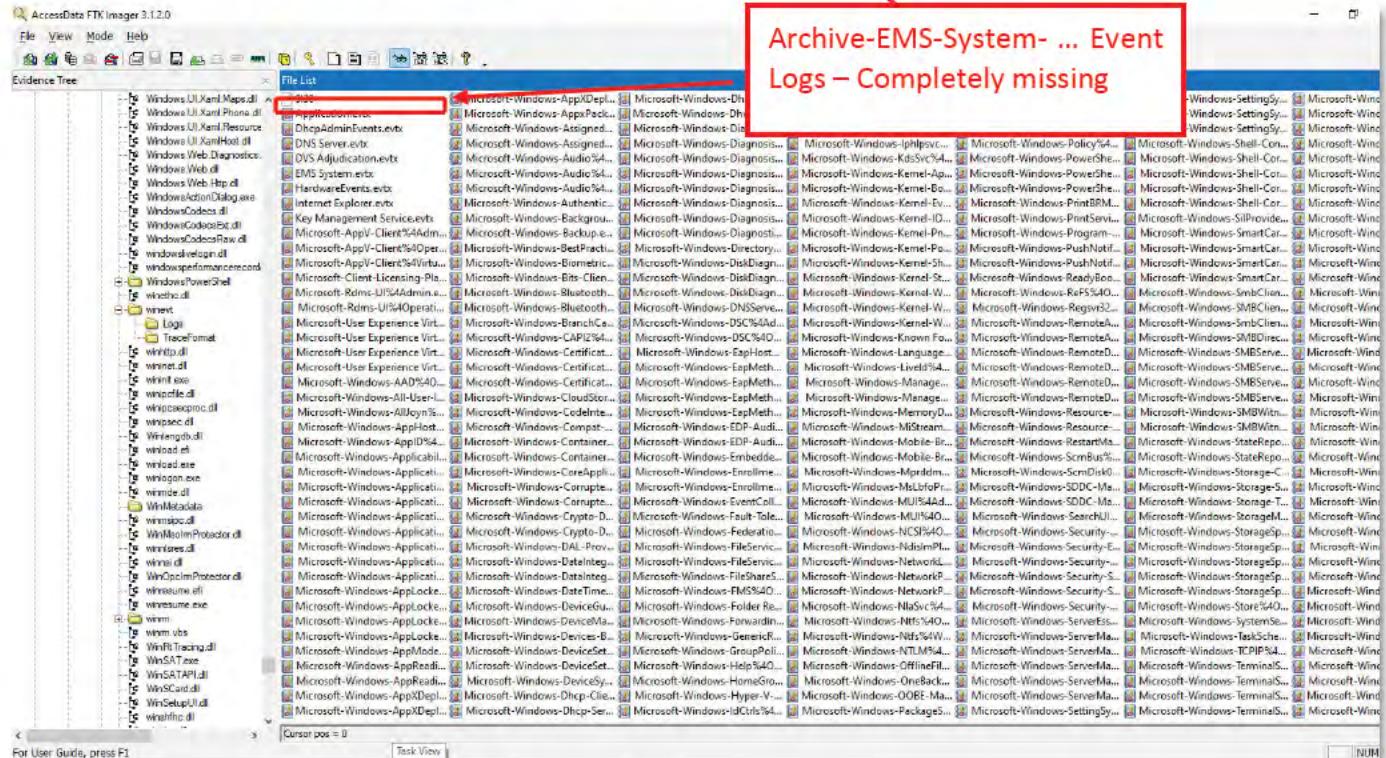


Figure 42 - EMS Server (5.13) List of .evtx Event Log Files After



This list that follows this paragraph is a comparison of the Before and After forensic images of the Mesa County EMS Server. It is a comparative list of files that were deleted – either deliberately erased or overwritten with disregard for the preservation of these files, some of which contain ELECTION RELATED data. A readable list is in Appendix C.

Each line in the image below is the full path listing (e.g., comparison of file names, not content) to each one of the 580 files that end with the word ".evtx" found on the EMS Server before the Dominion update was applied. 190 Event Log Files were deleted.

The Color code shows their status After Dominion's update. Of all the files on the server Before the update – files highlighted in Green are still present (although possibly changed) on the server after the update, while files highlighted in light red have been overwritten and are deleted and not present in the image After the update.

Logs\Microsoft-Windows-Kernel-WHEA%4Errors.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-TaskScheduler%4
Logs\Key Management Service.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-VDRVROOT%4Op
Logs\Application.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-VHDMP-Operatio
Logs\HardwareEvents.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppXDeployment
Logs\Internet Explorer.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppXDeployment
Logs\Microsoft-Client-Licensing-Platform%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-International%40
Logs\Microsoft-Windows-Application-Experience%4Program-Compatibility-Assistant.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-MUI%4Operation
Logs\Microsoft-Windows-AppModel-Runtime%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-MUI%4Admin.evt
Logs\Microsoft-Windows-AppReadiness%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Firewal
Logs\Microsoft-Windows-AppXDeployment%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Iphlpsvc%4Opera
Logs\Microsoft-Windows-AppXDeploymentServer%4Restricted.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WMI-Activity%4C
Logs\Microsoft-Windows-CodeIntegrity%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppReadiness%4
Logs\Microsoft-Windows-Containers-Wcifs%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppReadiness%40
Logs\Microsoft-Windows-Containers-Wcnfs%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ApplicationResou
Logs\Microsoft-Windows-DeviceManagement-Enterprise-Diagnostics-Provider%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Client-Licensing-Platform%4
Logs\Microsoft-Windows-Crypto-DPAPI%4BackUpKeySvc.evtx	Windows\System32\winevt\Logs\System.evtx
Logs\Microsoft-Windows-Crypto-DPAPI%4Operational.evtx	Windows\System32\winevt\Logs\Application.evtx
Logs\Microsoft-Windows-DeviceSetupManager%4Admin.evtx	Windows\System32\winevt\Logs\Security.evtx
Logs\Microsoft-Windows-DeviceSetupManager%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Dhcpv6-Client%4
Logs\Microsoft-Windows-ApplicationResourceManagementSystem%4Operational.evtx	Windows\System32\winevt\Logs\Windows PowerShell.evtx
Logs\Microsoft-Windows-Dhcp-Client%4Admin.evtx	Windows\System32\winevt\Logs\Key Management Service.evtx
Logs\Microsoft-Windows-Dhcpv6-Client%4Admin.evtx	Windows\System32\winevt\Logs\Internet Explorer.evtx
Logs\Microsoft-Windows-Hyper-V-Guest-Drivers%4Admin.evtx	Windows\System32\winevt\Logs\HardwareEvents.evtx
Logs\Microsoft-Windows-International%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Wcmsvc%4Opera
Logs\Microsoft-Windows-AppReadiness%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Application-Exper
Logs\Microsoft-Windows-Kernel-Boot%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Program-Compat
Logs\Microsoft-Windows-Kernel-IO%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Dhcp-Client%4Ad
Logs\Microsoft-Windows-Kernel-EventTracing%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-TerminalServices-
Logs\Microsoft-Windows-Kernel-Power%4Thermal-Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-TerminalServices-
Logs\Microsoft-Windows-Kernel-ShimEngine%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WinRM%4Operat
Logs\Microsoft-Windows-Kernel-StoreMgr%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Windows Defend
Logs\Microsoft-Windows-AppXDeploymentServer%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Windows Defend
Logs\Microsoft-Windows-Kernel-WHEA%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-UserPnp%4Device
Logs\Microsoft-Windows-Known Folders API Service.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-UserPnp%4Actio
Logs\Microsoft-Windows-Lived%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DeviceManageme
Logs\Microsoft-Windows-MUI%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-Power%4
Logs\Microsoft-Windows-GroupPolicy%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-Boot%4Op
Logs\Microsoft-Windows-MUI%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-StateRepository%
Logs\Microsoft-Windows-NCI%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-StateRepository%
Logs\Microsoft-Windows-NetworkProfile%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-Pn%4Cor
Logs\Microsoft-Windows-Ntfs%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-ShimEngin
Logs\Microsoft-Windows-Ntfs%4WHC.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Ntfs%4Operat
Logs\Microsoft-Windows-Program-Compatibility-Assistant%4CompatAfterUpgrade.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Ntfs%4WHC.evtx
Logs\Microsoft-Windows-RemoteDesktopServices-RdpCoreTS%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-VolumeSnapshot-
Logs\Microsoft-Windows-SettingSync%4Debug.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-IO%4Oper
Logs\Microsoft-Windows-RemoteDesktopServices-RdpCoreTS%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CodeIntegrity%4C
Logs\Microsoft-Windows-Kernel-PnP%4Configuration.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-WHEA%4E
Logs\Microsoft-Windows-SettingSync%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-WHEA%4C
Logs\Microsoft-Windows-Shell-Core%4ActionCenter.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Firewal
Logs\Microsoft-Windows-Shell-Core%4AppDefaults.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-NCSI%4Operat
Logs\Microsoft-Windows-Shell-Core%4LogonTasksChannel.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WinInet-Config%
Logs\Microsoft-Windows-Shell-Core%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Crypto-DPAPI%4C
Logs\Microsoft-Windows-SmbClient%4Connectivity.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Crypto-DPAPI%4E
Logs\Microsoft-Windows-SMBClient%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DeviceSetupMan
Logs\Microsoft-Windows-SmbClient%4Security.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DeviceSetupMan
Logs\Microsoft-Windows-SMBServer%4Audit.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Containers-Wcifs
Logs\Microsoft-Windows-SMBServer%4Connectivity.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Containers-Wcnfs
Logs\Microsoft-Windows-SMBServer%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-GroupPolicy%4O

Logs\Microsoft-Windows-SMBServer%4Security.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-User Profile Servi
Logs\Microsoft-Windows-SMBWitnessClient%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Livelid%4Operati
Logs\Microsoft-Windows-SMBWitnessClient%4Informational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-SMBClient%4Oper
Logs\Microsoft-Windows-StateRepository%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-SmbClient%4Con
Logs\Microsoft-Windows-StateRepository%4Restricted.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-SmbClient%4Secu
Logs\Microsoft-Windows-TaskScheduler%4Maintenance.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Winlogon%4Oper
Logs\Microsoft-Windows-TerminalServices-LocalSessionManager%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-SettingSync%64Oper
Logs\Microsoft-Windows-TerminalServices-LocalSessionManager%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-SettingSync%4De
Logs\Microsoft-Windows-TerminalServices-RemoteConnectionManager%4Admin.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DateTimeControl
Logs\Microsoft-Windows-TerminalServices-RemoteConnectionManager%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Known Folders A
Logs\Microsoft-Windows-Store%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Shell-Core%64Acti
Logs\Microsoft-Windows-UniversalTelemetryClient%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Shell-Core%4Oper
Logs\Microsoft-Windows-User Profile Service%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Shell-Core%4App
Logs\Microsoft-Windows-UserPnp%4ActionCenter.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Shell-Core%4Log
Logs\Microsoft-Windows-UserPnp%4DeviceInstall.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppDeployment
Logs\Microsoft-Windows-VolumeSnapshot-Driver%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppModel-Runti
Logs\Microsoft-Windows-Wcmsvc%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ServerManager-D
Logs\Microsoft-Windows-Windows Defender%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Store%4Operatio
Logs\Microsoft-Windows-Windows Defender%4WHC.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-PushNotification
Logs\Microsoft-Windows-Windows Firewall With Advanced Security%4ConnectionSecurity.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-PushNotification
Logs\Microsoft-Windows-WinINet-Config%4ProxyConfigChanged.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-TWinUI%4Operat
Logs\Microsoft-Windows-Winlogon%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Application-Expe
Logs\Microsoft-Windows-WinRM%4Operational.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Application-Expe
Logs\Setup.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Application-Expe
Logs\Windows PowerShell.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Security-SPP-UX
Logs\Microsoft-Windows-Windows Firewall With Advanced Security%4Firewall.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-BackgroundTaskI
Logs\System.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ServerManager-N
Logs\Security.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ServerManager-N
Windows\System32\winevt\Logs\Setup.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Forwarding%4Op
Windows\System32\winevt\Logs\Archive-EMS System-2020-02-27-12-21-20-622.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ServerManager-N
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-11-20-46-32-189.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Resource-Exhaus
Windows\System32\winevt\Logs\Archive-EMS System-2019-06-30-13-45-03-347.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DataIntegrityScan
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-08-02-26-04-899.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DataIntegrityScan
Windows\System32\winevt\Logs\Archive-EMS System-2019-10-30-19-26-37-188.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-Schedu
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-04-08-05-33-867.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-HomeGroup Con
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-30-16-29-10-602.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Shell-ConnectedA
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-15-15-07-04-381.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-StorageSpaces-M
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-02-02-52-11-569.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-DPS%4
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-19-00-10-16-214.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Storage-ClassPnP
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-26-22-08-42-827.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-RestartManager%
Windows\System32\winevt\Logs\Archive-EMS System-2020-12-11-22-05-26-089.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-PLA%4
Windows\System32\winevt\Logs\Archive-EMS System-2021-02-23-04-20-21-835.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CAPI2964Operati
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-26-12-11-25-223.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WindowsUpdate
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-15-07-09-24-325.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-NlaSvc%4Operati
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-04-04-35-23-707.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-PowerShell%4Op
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-07-21-05-41-859.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-PowerShell%4Ad
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-18-19-18-33-633.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-PCW%
Windows\System32\winevt\Logs\Archive-EMS System-2021-02-09-23-20-20-681.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Storage-Storport
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-07-22-53-09-400.evtx	Windows\System32\winevt\Logs\Microsoft-EMS System.evtx
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-19-09-05-03-069.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Application Serv
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-19-03-17-30-918.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Application Serv
Windows\System32\winevt\Logs\Archive-EMS System-2019-10-02-11-09-22-083.evtx	Windows\System32\winevt\Logs\Microsoft-Dvs Adjudication.evtx
Windows\System32\winevt\Logs\Archive-EMS System-2021-02-09-15-51-43-896.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CloudStorageWiz
Windows\System32\winevt\Logs\Archive-EMS System-2021-02-09-19-15-04-259.evtx	Windows\System32\winevt\Logs\Microsoft-AppV-Client%4Admin.evtx
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-28-04-14-53-545.evtx	Windows\System32\winevt\Logs\Microsoft-AppV-Client%4Operational
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-06-04-10-43-774.evtx	Windows\System32\winevt\Logs\Microsoft-AppV-Client%4Virtual Appli
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-24-00-59-56-063.evtx	Windows\System32\winevt\Logs\Microsoft-Rdms-UI%4Admin.evtx
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-08-17-03-22-249.evtx	Windows\System32\winevt\Logs\Microsoft-Rdms-UI%4Operational.evt
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-10-09-23-03-203.evtx	Windows\System32\winevt\Logs\Microsoft-User Experience Virtualizat
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-06-16-37-56-482.evtx	Windows\System32\winevt\Logs\Microsoft-User Experience Virtualizat
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-02-15-06-36-405.evtx	Windows\System32\winevt\Logs\Microsoft-User Experience Virtualizat
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-07-05-51-17-641.evtx	Windows\System32\winevt\Logs\Microsoft-User Experience Virtualizat
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-06-07-29-506.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AAD%4Operati
Windows\System32\winevt\Logs\Archive-EMS System-2019-10-27-06-12-01-889.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-All-User-Install-A
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-14-02-20-35-061.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AllJoyn%4Operat
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-16-20-09-20-723.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppHost%4Admi
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-26-09-07-58-407.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppID%4Operati
Windows\System32\winevt\Logs\Archive-EMS System-2020-07-08-10-16-08-709.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ApplicabilityEngi
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-26-06-16-16-735.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppLocker%4EXE
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-21-16-36-38-559.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppLocker%4MS
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-03-08-53-17-828.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppLocker%4Pac
Windows\System32\winevt\Logs\Archive-EMS System-2019-10-23-15-37-23-347.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppLocker%4Pac
Windows\System32\winevt\Logs\Archive-EMS System-2020-11-13-00-00-07-540.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AppPackaging%
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-21-03-24-37-573.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AssignedAccess%
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-15-03-21-17-842.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-AssignedAccessB
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-10-01-06-03-529.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Audio%4Capture

Windows\System32\winevt\Logs\Archive-EMS System-2019-11-25-05-09-12-916.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Audio%4Operati
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-22-13-12-21-043.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Audio%4Playbac
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-06-08-21-993.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Authentication U
Windows\System32\winevt\Logs\Archive-EMS System-2020-11-05-17-16-37-197.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Backup.evtx
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-16-23-08-11-827.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-BestPractices%4
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-17-01-19-18-484.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Biometrics%4Op
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-21-01-39-07-647.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Bits-Client%4Ope
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-04-12-10-17-214.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Bluetooth-BthLE
Windows\System32\winevt\Logs\Archive-EMS System-2020-07-12-02-56-47-489.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Bluetooth-MTPE
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-21-07-26-54-297.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-BranchCachesME
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-04-03-42-737.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CertificateService
Windows\System32\winevt\Logs\Archive-EMS System-2020-11-16-16-31-58-059.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CertificateService
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-21-12-09-41-781.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CertificateService
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-28-14-04-05-771.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Compat-Appraise
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-12-22-02-14-487.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CoreApplication9
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-13-08-15-49-770.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CorruptedFileRec
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-17-19-10-01-322.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-CorruptedFileRec
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-05-14-13-33-324.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DAL-Provider%4C
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-14-13-10-56-695.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DeviceGuard%4C
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-28-22-08-50-835.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Devices-Backgro
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-17-11-04-36-787.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DeviceSync%4Op
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-05-00-03-39-390.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-Scripte
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-12-10-03-10-333.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-Scripte
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-19-20-40-41-039.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnosis-Scripte
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-24-11-15-42-872.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Diagnostics-Ntw
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-18-17-48-53-388.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DirectoryServices
Windows\System32\winevt\Logs\Archive-EMS System-2020-11-09-10-14-15-715.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DiskDiagnostic%
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-31-11-01-47-908.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DiskDiagnosticDa
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-27-08-29-08-399.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DiskDiagnosticRe
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-14-23-29-04-158.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DSC%4Admin.evt
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-24-21-04-12-832.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-DSC%4Operation
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-21-04-04-25-803.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EapHost%4Opera
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-01-07-03-50-651.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EapMethods-Ras
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-14-18-29-08-151.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EapMethods-Ras
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-11-21-02-29-740.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EapMethods-Sim
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-03-11-39-19-283.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EapMethods-Ttl
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-19-20-02-44-037.evtx	Windows\System32\winevt\Logs\Microsoft-EDP-Audit-Regul
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-28-20-58-32-283.evtx	Windows\System32\winevt\Logs\Microsoft-EDP-Audit-TCB%
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-16-03-02-57-774.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EmbeddedAppLa
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-01-21-14-15-340.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EnrollmentPolicy
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-13-08-12-31-149.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EnrollmentWebS
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-22-17-12-11-701.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-EventCollector%4
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-16-05-45-04-636.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Fault-Tolerant-Hi
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-05-12-32-06-091.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-FederationServic
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-26-13-42-04-162.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-FileServices-Serv
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-16-14-59-42-045.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-FileServices-Serv
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-23-13-23-46-471.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-FileShareShadow
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-18-23-53-08-392.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-FMS%4Operatior
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-21-13-14-26-512.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Folder Redirectio
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-27-17-59-53-690.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-NdisImplPlatform%
Windows\System32\winevt\Logs\Archive-EMS System-2020-11-20-09-29-41-350.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-GenericRoaming'
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-20-07-59-19-878.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Help%4Operatio
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-31-02-47-11-038.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Hyper-V-Guest-D
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-29-23-11-26-924.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-IdCtrls%4Operati
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-09-05-29-49-411.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-IKE%4Operat
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-26-06-11-56-096.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-International-Reg
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-23-00-00-39-858.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-KdsSvc%4Operat
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-14-18-58-50-004.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-ApphelpC
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-28-08-06-44-934.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-EventTrac
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-11-14-07-34-718.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Kernel-WDI%4Op
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-15-07-27-29-016.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-LanguagePackSet
Windows\System32\winevt\Logs\Archive-EMS System-2020-07-04-17-16-43-223.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ManagementToc
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-24-22-45-04-435.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-ManagementToc
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-20-18-16-33-823.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-MemoryDiagnosi
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-18-12-49-02-987.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-MiStreamProvide
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-13-08-24-43-079.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Mobile-Broadbar
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-22-12-08-49-154.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Mobile-Broadbar
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-02-15-24-619.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Mprddm%4Oper
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-22-17-53-50-782.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-MsLbfoProvider%
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-11-17-12-21-460.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-NetworkLocation
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-18-20-12-44-811.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-NetworkProvider
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-02-14-34-04-967.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-NTLM%4Operati
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-07-10-51-04-386.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-OfflineFiles%4Op
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-11-05-09-09-286.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-OneBackup%4De
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-31-12-27-41-741.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-OOBE-Machine-I
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-22-20-55-04-936.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-PackageStateRoa



Windows\System32\winevt\Logs\Microsoft-Windows-DNSServer%4Audit.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Wired-AutoConfig%4
Windows\System32\winevt\Logs\Archive-EMS System-2019-08-10-23-29-48-856.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-Workplace Join%4Ad
Windows\System32\winevt\Logs\Archive-EMS System-2019-08-18-12-10-49-482.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WPD-ClassInstaller%4
Windows\System32\winevt\Logs\Archive-EMS System-2019-09-02-13-32-58-546.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WPD-CompositeClass
Windows\System32\winevt\Logs\Archive-EMS System-2019-08-29-19-12-25-021.evtx	Windows\System32\winevt\Logs\Microsoft-Windows-WPD-MTPClassDriver
Windows\System32\winevt\Logs\Microsoft-Windows-SMBServer%4Audit.evtx	Windows\System32\winevt\Logs\SMSApi.evtx

## Analysis Summary

Analysis of the Mesa County Dominion Voting Systems EMS server identified that extensive deletion of both election data and election-related data, comprising election records which must and should have been preserved under Federal and Colorado law, has occurred either as a result of or coincident with the vendor's and CO Secretary of State's modification of the system from version 5.11-CO to 5.13. This deleted data is critical to any effort to reconstruct events taking place on the voting systems, and to determine if unauthorized access or operation of the voting systems took place.

Furthermore, the EMS server application logging functions are configured to "Overwrite events as needed" if arbitrarily-selected file storage sizes are exceeded, which could predictably and likely has resulted in the systematic, automated deletion of logfile content comprising election-related data.

This systemic deletion of logfile data requires additional investigation.

## CONCLUSION

This forensic examination found that significant election record preservation requirements under the 2002 VSS and Federal and state law HAVE NOT BEEN MET and further that destruction of Election-Related Data, specifically critical logfiles, has occurred. This destruction is not incidental or minor but is *highly significant*.

These findings have been demonstrated in this report and evidence has been presented demonstrating *conclusively to both computer systems experts as well as legal professionals and the general public at large* that the facts in these findings support the conclusions that:

- 1) Election-related data and election data explicitly required to be preserved, as described in the 2002 VSS criteria referenced in this section, HAS BEEN DESTROYED IN VIOLATION OF THE LAW, and
- 2) The specific configuration settings of the server examined lead to the understanding that Certification Requirements for Voting Systems have likely not been met despite this system having been certified and thereby approved for use in Colorado by the Colorado Secretary of State.

Further investigation is required to determine the full scope of non-compliance with legal mandates for voting systems and election records, and whether the non-compliance is deliberate or simply negligent.

## APPENDIX A. DELETED ".LOG" FILES AFTER DOMINION TRUSTED BUILD UPDATE

Deleted files are highlighted in light red. Files highlighted in green are still present in the server image.

inetpub\logs\LogFiles\W3SVC1\u\_ex210406.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200903.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191021.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191101.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex201028.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191025.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191023.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200522.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191126.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200819.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191028.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210104.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191022.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200625.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210211.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex201008.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191114.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200826.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210223.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210224.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210205.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210318.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200520.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex201208.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210407.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191030.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191031.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191106.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191105.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191029.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191104.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200730.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210512.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex201103.log

inetpub\logs\LogFiles\W3SVC1\u\_ex191107.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex191115.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200929.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200930.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200813.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex210523.log  
inetpub\logs\LogFiles\W3SVC1\u\_ex200127.log  
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Windows\assembly\NativeImages\_v4.0.30319\_64\System.IO.Log  
Windows\debug\sammui.log  
Windows\debug\PASSWD.LOG  
Windows\debug\NetSetup.LOG  
Windows\DELL\UpdatePackage\log\BrcmSetup.log  
Windows\INF\setupapi.dev.log  
Windows\INF\setupapi.setup.log  
Windows\Logs\CMS\CMS.log  
Windows\Logs\CMS\CMSPersist\_20191001155012.log  
Windows\Logs\CMS\CMSPersist\_20190625180445.log  
Windows\Logs\DISM\dism.log  
Windows\Logs\DPX\setupact.log  
Windows\Logs\DPX\setuperr.log  
Windows\Logs\SetupCleanupTask\setuperr.log  
Windows\Logs\SetupCleanupTask\setupact.log  
Windows\Microsoft.NET\assembly\GAC\_MSIL\Microsoft.SqlServer.TransferLoginsTask  
Windows\Microsoft.NET\assembly\GAC\_MSIL\Microsoft.SqlServer.TransferLoginsTaskUI  
Windows\Microsoft.NET\assembly\GAC\_MSIL\Microsoft.VisualStudio.Dialogs  
Windows\Microsoft.NET\assembly\GAC\_MSIL\Microsoft.VisualStudio.ImageCatalog  
Windows\Microsoft.NET\assembly\GAC\_MSIL\Microsoft.VisualStudio.ProductKeyDialog  
Windows\Microsoft.NET\assembly\GAC\_MSIL\Microsoft.VisualStudio.Text.Logic  
Windows\Microsoft.NET\assembly\GAC\_MSIL\System.IO.Log  
Windows\Microsoft.NET\Framework\v2.0.50727\ngen.log  
Windows\Microsoft.NET\Framework\v4.0.30319\ngen.log  
Windows\Microsoft.NET\Framework\v4.0.30319\ngen.old.log  
Windows\Microsoft.NET\Framework\v4.0.30319\ngen.old.log  
Windows\Microsoft.NET\Framework64\v2.0.50727\ngen.log  
Windows\Microsoft.NET\Framework64\v4.0.30319\ngen.log

Windows\Microsoft.NET\Framework64\v4.0.30319\ngen.old.log  
Windows\Panther\UnattendGC\setupact.log  
Windows\Panther\UnattendGC\setuperr.log  
Windows\Panther\DDACLSys.log  
Windows\Panther\cbs.log  
Windows\Panther\setupact.log  
Windows\Panther\setuperr.log  
Windows\Performance\WinSAT\winsat.log  
Windows\security\database\edb.log  
Windows\security\database\edbtmp.log  
Windows\security\logs\scssetup.log  
Windows\ServiceProfiles\LocalService\NTUSER.DAT.LOG1  
Windows\ServiceProfiles\LocalService\NTUSER.DAT.LOG2  
Windows\ServiceProfiles\NetworkService\AppData\Local\Temp\MpCmdRun.log  
Windows\ServiceProfiles\NetworkService\debug\NetSetup.LOG  
Windows\ServiceProfiles\NetworkService\NTUSER.DAT.LOG2  
Windows\ServiceProfiles\NetworkService\NTUSER.DAT.LOG1  
Windows\SoftwareDistribution\DataStore\Logs\edb00222.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00227.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00223.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00224.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00225.log  
Windows\SoftwareDistribution\DataStore\Logs\edb0022A.log  
Windows\SoftwareDistribution\DataStore\Logs\edb0022C.log  
Windows\SoftwareDistribution\DataStore\Logs\edb0022D.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00230.log  
Windows\SoftwareDistribution\DataStore\Logs\edb.log  
Windows\SoftwareDistribution\DataStore\Logs\edbtmp.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00226.log  
Windows\SoftwareDistribution\DataStore\Logs\edb0022B.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00228.log  
Windows\SoftwareDistribution\DataStore\Logs\edb00229.log  
Windows\SoftwareDistribution\DataStore\Logs\edb0022E.log  
Windows\SoftwareDistribution\DataStore\Logs\edb0022F.log

Windows\SoftwareDistribution\ReportingEvents.log
Windows\System32\catroot2\edb00018.log
Windows\System32\catroot2\edb0001B.log
Windows\System32\catroot2\edb0001C.log
Windows\System32\catroot2\edb0001D.log
Windows\System32\catroot2\edb.log
Windows\System32\catroot2\edb00013.log
Windows\System32\catroot2\edb00014.log
Windows\System32\catroot2\edb00015.log
Windows\System32\catroot2\edb00016.log
Windows\System32\catroot2\edb00017.log
Windows\System32\catroot2\edb00019.log
Windows\System32\catroot2\edb0001A.log
Windows\System32\catroot2\edbtmp.log
Windows\System32\config\RegBack\SECURITY.LOG1
Windows\System32\config\RegBack\SECURITY.LOG2
Windows\System32\config\RegBack\SOFTWARE.LOG1
Windows\System32\config\RegBack\SOFTWARE.LOG2
Windows\System32\config\RegBack\SYSTEM.LOG1
Windows\System32\config\RegBack\SYSTEM.LOG2
Windows\System32\config\RegBack\DEFAULT.LOG1
Windows\System32\config\RegBack\DEFAULT.LOG2
Windows\System32\config\RegBack\SAM.LOG1
Windows\System32\config\RegBack\SAM.LOG2
Windows\System32\config\BBI.LOG1
Windows\System32\config\BCD-Template.LOG
Windows\System32\config\DEFAULT.LOG2
Windows\System32\config\ELAM.LOG1
Windows\System32\config\SAM.LOG2
Windows\System32\config\SECURITY.LOG2
Windows\System32\config\DEFAULT.LOG1
Windows\System32\config\DRIVERS.LOG1
Windows\System32\config\SAM.LOG1
Windows\System32\config\COMPONENTS.LOG2
Windows\System32\config\SECURITY.LOG1

## APPENDIX B. SUPPORTING DOCUMENTATION: FILE DETAILS AND HASH SETS FOR SCREENSHOTS

The files below provide integrity data for the graphic screenshots in this document. Each comma-separated-variable (csv) file listed here contain the file name with its full path (e.g., directory structure) and message digest hash values (MD5 and SHA1 algorithms). Due to the length of the data contained in these files, they are provided in a compact disc (CD) addendum to this report.

 Windows Defender Before.csv	 Windows Defender After.csv	 WebCache Before.csv	 WebCache After.csv	 Virtual Directories Before.csv	 Virtual Directories After.csv
 SSMS Install Log Before.csv	 SSMS Install Log After.csv	 SQLServer Logs Before.csv	 SQLServer Logs After.csv	 SQLServer Installation Logs Bef	 SQLServer Installation Logs Aft
 Iinetpub Before.csv	 Iinetpub After.csv	 Event Logs Before.csv	 Event Logs After.csv	 DHCP Before.csv	 DHCP After.csv
 Dell Server Update Logs Before.csv	 Dell Server Update Logs After.csv	 Databases Before.csv	 CBS Logs Before.csv	 CBS Logs After.csv	

## APPENDIX C. MICROSOFT EVENT LOG FILES

Files in this list were ALL present in the EMS Server Before image. Files listed in RED were deleted or overwritten. Significantly, from their filenames alone, they are OBVIOUSLY Election-Related Records, "Archive-EMS-System-..."

Logs\Microsoft-Windows-Kernel-WHEA%4Errors.evtx  
Logs\Key Management Service.evtx  
Logs\Application.evtx  
Logs\HardwareEvents.evtx  
Logs\Internet Explorer.evtx  
Logs\Microsoft-Client-Licensing-Platform%4Admin.evtx  
Logs\Microsoft-Windows-Application-Experience%4Program-Compatibility-Assistant.evtx  
Logs\Microsoft-Windows-AppModel-Runtime%4Admin.evtx  
Logs\Microsoft-Windows-AppReadiness%4Admin.evtx  
Logs\Microsoft-Windows-AppXDeployment%4Operational.evtx  
Logs\Microsoft-Windows-AppXDeploymentServer%4Restricted.evtx  
Logs\Microsoft-Windows-CodeIntegrity%4Operational.evtx  
Logs\Microsoft-Windows-Containers-Wcifs%4Operational.evtx  
Logs\Microsoft-Windows-Containers-Wcnfs%4Operational.evtx  
Logs\Microsoft-Windows-DeviceManagement-Enterprise-Diagnostics-Provider%4Admin.evtx  
Logs\Microsoft-Windows-Crypto-DPAPI%4BackUpKeySvc.evtx  
Logs\Microsoft-Windows-Crypto-DPAPI%4Operational.evtx  
Logs\Microsoft-Windows-DeviceSetupManager%4Admin.evtx  
Logs\Microsoft-Windows-DeviceSetupManager%4Operational.evtx  
Logs\Microsoft-Windows-ApplicationResourceManagementSystem%4Operational.evtx  
Logs\Microsoft-Windows-Dhcp-Client%4Admin.evtx  
Logs\Microsoft-Windows-Dhcpv6-Client%4Admin.evtx  
Logs\Microsoft-Windows-Hyper-V-Guest-Drivers%4Admin.evtx  
Logs\Microsoft-Windows-International%4Operational.evtx  
Logs\Microsoft-Windows-AppReadiness%4Operational.evtx  
Logs\Microsoft-Windows-Kernel-Boot%4Operational.evtx  
Logs\Microsoft-Windows-Kernel-IO%4Operational.evtx  
Logs\Microsoft-Windows-Kernel-EventTracing%4Admin.evtx  
Logs\Microsoft-Windows-Kernel-Power%4Thermal-Operational.evtx  
Logs\Microsoft-Windows-Kernel-ShimEngine%4Operational.evtx  
Logs\Microsoft-Windows-Kernel-StoreMgr%4Operational.evtx  
Logs\Microsoft-Windows-AppXDeploymentServer%4Operational.evtx  
Logs\Microsoft-Windows-Kernel-WHEA%4Operational.evtx  
Logs\Microsoft-Windows-Known Folders API Service.evtx  
Logs\Microsoft-Windows-Liveld%4Operational.evtx  
Logs\Microsoft-Windows-MUI%4Admin.evtx  
Logs\Microsoft-Windows-GroupPolicy%4Operational.evtx  
Logs\Microsoft-Windows-MUI%4Operational.evtx  
Logs\Microsoft-Windows-NCSI%4Operational.evtx  
Logs\Microsoft-Windows-NetworkProfile%4Operational.evtx

Logs\Microsoft-Windows-Ntfs%4Operational.evtx  
Logs\Microsoft-Windows-Ntfs%4WHC.evtx  
Logs\Microsoft-Windows-Program-Compatibility-Assistant%4CompatAfterUpgrade.evtx  
Logs\Microsoft-Windows-RemoteDesktopServices-RdpCoreTS%4Admin.evtx  
Logs\Microsoft-Windows-SettingSync%4Debug.evtx  
Logs\Microsoft-Windows-RemoteDesktopServices-RdpCoreTS%4Operational.evtx  
Logs\Microsoft-Windows-Kernel-PnP%4Configuration.evtx  
Logs\Microsoft-Windows-SettingSync%4Operational.evtx  
Logs\Microsoft-Windows-Shell-Core%4ActionCenter.evtx  
Logs\Microsoft-Windows-Shell-Core%4AppDefaults.evtx  
Logs\Microsoft-Windows-Shell-Core%4LogonTasksChannel.evtx  
Logs\Microsoft-Windows-Shell-Core%4Operational.evtx  
Logs\Microsoft-Windows-SmbClient%4Connectivity.evtx  
Logs\Microsoft-Windows-SMBClient%4Operational.evtx  
Logs\Microsoft-Windows-SmbClient%4Security.evtx  
Logs\Microsoft-Windows-SMBServer%4Audit.evtx  
Logs\Microsoft-Windows-SMBServer%4Connectivity.evtx  
Logs\Microsoft-Windows-SMBServer%4Operational.evtx  
Logs\Microsoft-Windows-SMBServer%4Security.evtx  
Logs\Microsoft-Windows-SMBWitnessClient%4Admin.evtx  
Logs\Microsoft-Windows-SMBWitnessClient%4Informational.evtx  
Logs\Microsoft-Windows-StateRepository%4Operational.evtx  
Logs\Microsoft-Windows-StateRepository%4Restricted.evtx  
Logs\Microsoft-Windows-TaskScheduler%4Maintenance.evtx  
Logs\Microsoft-Windows-TerminalServices-LocalSessionManager%4Admin.evtx  
Logs\Microsoft-Windows-TerminalServices-LocalSessionManager%4Operational.evtx  
Logs\Microsoft-Windows-TerminalServices-RemoteConnectionManager%4Admin.evtx  
Logs\Microsoft-Windows-TerminalServices-RemoteConnectionManager%4Operational.evtx  
Logs\Microsoft-Windows-Store%4Operational.evtx  
Logs\Microsoft-Windows-UniversalTelemetryClient%4Operational.evtx  
Logs\Microsoft-Windows-User Profile Service%4Operational.evtx  
Logs\Microsoft-Windows-UserPnp%4ActionCenter.evtx  
Logs\Microsoft-Windows-UserPnp%4DeviceInstall.evtx  
Logs\Microsoft-Windows-VolumeSnapshot-Driver%4Operational.evtx  
Logs\Microsoft-Windows-Wcmsvc%4Operational.evtx  
Logs\Microsoft-Windows-Windows Defender%4Operational.evtx  
Logs\Microsoft-Windows-Windows Defender%4WHC.evtx  
Logs\Microsoft-Windows-Windows Firewall With Advanced Security%4ConnectionSecurity.evtx  
Logs\Microsoft-Windows-WinINet-Config%4ProxyConfigChanged.evtx  
Logs\Microsoft-Windows-Winlogon%4Operational.evtx  
Logs\Microsoft-Windows-WinRM%4Operational.evtx  
Logs\Setup.evtx  
Logs\Windows PowerShell.evtx

Logs\Microsoft-Windows-Windows Firewall With Advanced Security%4Firewall.evtx  
Logs\Microsoft-Windows-WMI-Activity%4Operational.evtx  
Logs\System.evtx  
Logs\Security.evtx  
Windows\System32\winevt\Logs\Setup.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-02-27-12-21-20-622.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-11-20-46-32-189.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-06-30-13-45-03-347.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-08-02-26-04-899.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-10-30-19-26-37-188.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-04-08-05-33-867.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-30-16-29-10-602.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-15-15-07-04-381.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-02-02-52-11-569.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-19-00-10-16-214.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-07-26-22-08-42-827.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-12-11-22-05-26-089.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-02-23-04-20-21-835.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-26-12-11-25-223.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2021-05-19-09-05-03-069.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-19-03-17-30-918.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-10-02-11-09-22-083.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2021-04-28-04-14-58-545.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2020-03-24-00-59-56-063.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-08-17-03-22-249.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-10-09-23-03-203.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-11-06-16-37-56-482.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2019-11-14-02-20-35-061.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2021-05-14-13-10-56-695.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2021-04-24-11-15-42-872.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2020-01-27-08-29-08-399.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-14-23-29-04-158.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-24-21-04-12-832.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2019-12-21-04-04-25-803.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-01-07-03-50-651.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2020-10-28-20-58-32-283.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-16-03-02-57-774.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-01-21-14-15-340.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-13-08-12-31-149.evtx  
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Windows\System32\winevt\Logs\Archive-EMS System-2021-05-16-05-45-04-636.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-05-12-32-06-091.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-26-13-42-04-162.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-16-14-59-42-045.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-23-13-23-46-471.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-18-23-53-08-392.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-21-13-14-26-512.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-27-17-59-53-690.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-11-20-09-29-41-350.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-20-07-59-19-878.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-01-31-02-47-11-038.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-29-23-11-26-924.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-03-09-05-29-49-411.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-01-26-06-11-56-096.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-23-00-00-39-858.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-05-14-18-58-50-004.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-28-08-06-44-934.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-04-11-14-07-34-718.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-05-15-07-27-29-016.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-07-04-17-16-43-223.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-06-24-22-45-04-435.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-20-18-16-33-823.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-10-18-12-49-02-987.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-04-13-08-24-43-079.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2020-09-22-12-08-49-154.evtx  
Windows\System32\winevt\Logs\Archive-EMS System-2021-03-30-02-15-24-619.evtx  
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## APPENDIX E. 2002 VOTING SYSTEMS STANDARDS (VSS)

The 2002 VSS explicitly states:

"2.2.4.1 Common Standards

To ensure system integrity, all system shall:

...

g. Record and report the date and time of normal and abnormal events;

h. Maintain a permanent record of all original audit data that cannot be modified or overridden but may be augmented by designated authorized officials in order to adjust for errors or omissions (e.g. during the canvassing process.)

i. Detect and record every event, including the occurrence of an error condition that the system cannot overcome, and time-dependent or programmed events that occur without the intervention of the voter or a polling place operator; and

J. Include built-in measurement, self-test, and diagnostic software and hardware for detecting and reporting the system's status and degree of operability.

Furthermore, in 2.2.5.3, COTS (Commercial Off-The-Shelf) General Purpose Computer System Requirements, the 2002 VSS states:

Further requirements must be applied to COTS operating systems to ensure completeness and integrity of audit data for election software. These operating systems are capable of executing multiple application programs simultaneously. These systems include both servers and workstations (or "PCs"), including the many varieties of UNIX and Linux, and those offered by Microsoft and Apple. Election software running on these COTS systems is vulnerable to unintended effects from other user sessions, applications, and utilities, executing on the same platform at the same time as the election software.

"Simultaneous processes" of concern include unauthorized network connections, unplanned user logins, and unintended execution or termination of operating system processes. An unauthorized network connection or unplanned user login can host unintended processes and user actions, such as the termination of operating system audit, the termination of election software processes, or the deletion of election software audit and logging data. The execution of an operating system process could be a full system scan at a time when that process would adversely affect the election software processes. Operating system processes improperly terminated could be system audit or malicious code detection.

To counter these vulnerabilities, three operating system protections are required on all such systems on which election software is hosted.

First, authentication shall be configured on the local terminal (display screen and keyboard) and on all external connection devices ("network cards" and "ports"). This ensures that only authorized and identified users affect the system while election software is running.

Second, operating system audit shall be enabled for all session openings and closings, for all connection openings and closings, for all process executions and terminations, and for the alteration or deletion of any memory or file object. This ensures the accuracy and completeness of election data stored on the system. It also ensures the existence of an audit record of any person or process altering or deleting system data or election data.

Third, the system shall be configured to execute only intended and necessary processes during the execution of election software. The system shall also be configured to halt election software processes upon the termination of any critical system process (such as system audit) during the execution of election software.

And, in 4.3 Data and Document Retention, the 2002 VSS states:

All systems shall:

- a. Maintain the integrity of voting and audit data during an election, and for at least 22 months thereafter, a time sufficient in which to resolve most contested elections and support other activities related to the reconstruction and investigation of a contested election; and
- b. Protect against the failure of any data input or storage device at a location controlled by the jurisdiction or its contractors, and against any attempt at improper data entry or retrieval.

And the 2002 VSS states, in 4.4.3 In-Process Audit Records:

In-process audit records document system operations during diagnostic routines and the casting and tallying of ballots. At a minimum, the in-process audit records shall contain:

- a. Machine generated error and exception messages to demonstrate successful recovery. Examples include, but are not necessarily limited to:
  - 1) The source and disposition of system interrupts resulting in entry into exception handling routines;
  - 2) All messages generated by exception handlers;
  - 3) The identification code and number of occurrences for each hardware and software error or failure;
  - 4) Notification of system login or access errors, file access errors, and physical violations of security as they occur, and a summary record of these events after processing;
  - 5) Other exception events such as power failures, failure of critical hardware components, data transmission errors, or other type of operating anomaly;
- b. Critical system status messages other than informational messages displayed by the system during the course of normal operations. These items include, but are not limited to: Diagnostic and status messages upon startup;
  - 2) The "zero totals" check conducted before opening the polling place or counting a precinct centrally;
  - 3) For paper-based systems, the initiation or termination of card reader and communications equipment operation; and
  - 4) For DRE machines at controlled voting locations, the event (and time, if available) of activating and casting each ballot (i.e., each voter's transaction as an event). This data can be compared with the publiccounter for reconciliation purposes;
- c. Non-critical status messages that are generated by the machine's data quality monitor or by software and hardware condition monitors; and
- d. System generated log of all normal process activity and system events that require operator intervention, so that each operator access can be monitored and access sequence can be constructed.

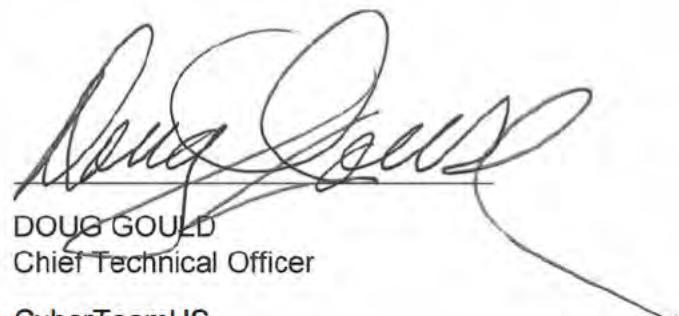
And section 6.5.5, Shared Operating Environment, in the the 2002 VSS states:

Ballot recording and vote counting can be performed in either a dedicated or nondedicated environment. If ballot recording and vote counting operations are performed in an environment that is shared with other data processing functions, both hardware and software features shall be present to protect the integrity of vote counting and of vote data. Systems that use a shared operating environment shall:

- a. Use security procedures and logging records to control access to system functions;
- b. Partition or compartmentalize voting system functions from other concurrent functions at least logically, and preferably physically as well;:
- c. Controlled system access by means of passwords, and restriction of account access to necessary functions only; and
- d. Have capabilities in place to control the flow of information, precluding data leakage through shared system resources.

The foregoing Forensic Examination and Report was prepared by me and I am responsible for its content.

This 15th day of September, 2021.



DOUG GOULD  
Chief Technical Officer  
CyberTeamUS

# Doug Gould Biography

**Doug Gould is an expert in Cyber Security with more than 40 years' experience in the field. Doug retired from AT&T after 31 years, where he served as Chief Cyber Security Strategist. He currently serves as Chief Technical Officer at CyberTeamUS.**

DATE FILED: September 17, 2021 11:36 PM

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CASE NUMBER: 2021CV30214



Doug began at AT&T with Bell Laboratories, serving in the Semiconductor Laser Development department and later in the Bell Lab's Security Group, as a delegate to the Bell Labs' Unix Systems

Subcommittee, was an early pioneer in the field of Computer Forensics and won a Bell Labs Innovation Award. At AT&T he designed the security architecture for one of the largest states in the US, consulted with cabinets of the nations' largest corporations and designed the first healthcare network fully compliant with Healthcare Information Exchange standards. Outside AT&T, he has overseen security for a US Government Agency and has solved major cases for the FBI and Secret Service; he has served as an Officer of the Court as a forensic expert and has been an expert witness in landmark cybersecurity cases. He designed security architectures for DoD networks including some of the most sensitive areas of the Government. Doug has owned and led several professional services firms in the Information Security field. He served on the NC Council for Entrepreneurial Development and has consulted with many companies about the complex integration of business and technology.

Doug is the past president of Eastern North Carolina InfraGard, the public-private partnership between the nation's critical infrastructure operators and the US Intelligence community.

Doug's background is at the Master's level in Electrical Engineering, Computer Science, Computer Security and Business Administration.

He is a subject matter expert in:

- Strategic Enterprise Security
- Security Architecture & Design (including network Micro-Segmentation)
- Security Governance
- Risk Management

- Security Device Technologies (Firewalls, IDS/IPS, DLP, SIEMs, Encryption, VPNs, Unified Threat Management, etc., Enterprise, Remote and Cloud)
- Information Forensics (Computer & Network Forensics)
- Public Key Infrastructures
- Identity and Access Management
- Authentication, Authorization and Access Control (incl Biometrics)
- Regulatory Compliance
- Physical Security (Threat Assessment/Risk Analysis, TSCM, Access Control, Counterterrorism & Counterintelligence, facility and site protection)
- Business Continuity & Disaster Recovery Planning
- Response & Recovery Strategy
- Threat Intelligence
- Intelligence Analysis

Doug served as Chief Information Security Officer at the World Institute for Security Enhancement, has written advanced security courses, developed advanced security methodologies and has taught government, private sector professionals and law enforcement agents information security, computer forensics, advanced computer forensic sciences and Technical Surveillance Countermeasures (TSCM).

Doug holds numerous certifications in security including the CISSP and Certified Anti-Terrorism Specialist (CAS), as well as numerous instructor certifications in security.

Doug currently serves as Chief Technical Officer at CyberTeamUS.

He is a Vietnam-era US Navy Veteran where he worked in Electronic Warfare and Electronic Intelligence.

Doug is an invited conference speaker.

EXHIBIT

G

# Doug Gould Forensic Addendum

## Major Forensic Cases

- 1986 – Disclosure of National Security Information  
Discovered a leak of highly classified information and was able to identify the perpetrator within a group of 15 people. The FBI and US Naval Investigative Service brought this to resolution.
- Early 1990's – US Secret Service investigation, "Mothers of Doom" hacker case  
At USSS Evidence Lab, in response to a request for assistance from USS SA Jack Lewis, performed evidence recovery and identified 800 pages of evidence, invalidating immunity of a suspect's testimony in a proffer session.
- Late 1990's – Interpath, a North Carolina Internet Service Provider (ISP)  
This ISP was a tier-1 (top level) provider infected with Stacheldraht malware. Investigated the live (running) server and identified that all evidence on disc had been deleted. The only remaining evidence was a running program in memory, which was recovered. This case changed the Best Practice in Forensics – no longer is the first step necessarily removing the power. Had that been done no evidence would remain in this case.
- Late 1990's – As senior security administrator for the US EPA, investigated a complaint from the White House of computer intrusions and discovered an international attack involving 4 countries. Wrote monitoring and tracking software to capture the perpetrator online, brought together the FBI, Royal Canadian Mounted Police (RCMP), Scotland Yard and Deutsche Bundespost in a live investigation tracking the intruder resulting in an arrest in Germany.
- South Carolina – A Public Works supervisor accused of violation of county policy was fired and brought countersuit. Forensic investigation recovered 4 3" thick binders of evidence showing sexual misconduct. Countersuit dismissed.
- Discovered Al Qaida attack plans targeting US Soil. Working with the FBI, the perpetrator, who was a foreign citizen in the US. Arrest made within 48 hours and the attack was thwarted.
- Mid-2000's – Florida vs. Rabinowicz – in a case where possession of contraband was the only element of proof, stipulated that the contraband was authentic and present. I proved forensically that the defendant was not technically in possession of the evidence and that evidence was planted. Qualified as an expert witness and provided expert testimony in this case.
- Mid-2000's – Identified a leak of national security from Oak Ridge National Laboratory involving chemical weapon information using forensic analysis and was able to identify the perpetrator. DSS responded and resolved the case.
- Mid-2000's – Investigated sabotage of a health industry contractor. The systems administrator had been fired and sabotaged the system. Solved the case and the administrator went to prison.

## Instructor of Forensics

- Taught Forensics and Advance Forensic Techniques to State Law Enforcement, Military and major corporate customers at the World Institute for Security Enhancement.
- Taught Technical Surveillance Countermeasures (TSCM) course for government and industry at the World Institute for Security Enhancement.
- Wrote the entire course and taught the entire CISSP curriculum at Able Information Systems.

## COLORADO SECRETARY OF STATE

[8 CCR 1505-1]  
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## ELECTION RULES

## Rules as Adopted - Redline

June 17, 2021

(Additions to the current rules are reflected in SMALL CAPS and deletions from current rules are shown in ~~stricken~~ type. *Publication instructions/notes* may be included):

*Current 8 CCR 1505-1 is amended as follows:*

*Amendments to Rule 20.5.4 including New Rules 20.5.4(a) and 20.5.4(e):*

20.5.4 ~~Non-county employee access~~—VOTING SYSTEM ACCESS SECURITY

- (A) EXCEPT FOR VOTERS USING A VOTING SYSTEM COMPONENT TO VOTE DURING AN ELECTION, COUNTY CLERKS MAY NOT ALLOW ANY PERSON TO ACCESS ANY COMPONENT OF A COUNTY'S VOTING SYSTEM UNLESS THAT PERSON HAS PASSED THE BACKGROUND CHECK REQUIRED BY THIS OR ANY OTHER RULE OR LAW, IS PERFORMING A TASK PERMITTED BY THE COUNTY CLERK OR THE OFFICE OF THE SECRETARY OF STATE UNDER STATUTE OR RULE, AND IS:
  - (1) AN EMPLOYEE OF THE COUNTY CLERK;
  - (2) APPOINTED AS AN ELECTION JUDGE BY THE COUNTY CLERK IN ACCORDANCE WITH ARTICLE 6 OF TITLE 1, C.R.S.;
  - (3) AN EMPLOYEE OF THE VOTING SYSTEM PROVIDER FOR THE COUNTY'S VOTING SYSTEM; OR
  - (4) AN EMPLOYEE OR DESIGNEE OF THE SECRETARY OF STATE.
- (a)(b) All ~~vendors~~ VOTING SYSTEM PROVIDER EMPLOYEES who conduct work on any component of a county's voting system must ~~conduct~~ COMPLETE a criminal background check ~~on each employee~~ prior to the employee's work with the voting system. The ~~vendor~~ PROVIDER must affirm that the check was conducted in writing to the Secretary of State prior to the employee conducting any work. Any person convicted of an election offense or an offense with an element of fraud is prohibited from working on any component of a county's voting system.
- (b)-(c) All Secretary of State staff who conduct work on any component of a county's voting system must undergo a criminal background check prior to the staff's work with the voting system.
- (D) Any person convicted of an election offense or an offense with an element of fraud is prohibited from working on any component of a county's voting system.

(E) ANY VIOLATION OF RULE 20 MAY RESULT IN THE PROHIBITION OR LIMITATION ON THE USE OF, AS WELL AS DECERTIFICATION OF, A COUNTY'S VOTING SYSTEM OR COMPONENTS IN ACCORDANCE WITH SECTION 1-5-621, C.R.S., AND RULE 21.7.3.

*Amendments to Rule 21.7.3. Specifically, a portion of former Rule 21.7.3 is re-codified as New Rule 21.7.3(a). Additionally, the Secretary adopts New Rules 21.7.3(b-e) and 21.7.4.*

21.7.3 ~~If any voting system provider, provides for use, installs, or causes to be installed an uncertified and decertified voting system or component, the Secretary of State may suspend use of the component or the voting system. THE SECRETARY OF STATE MAY INVESTIGATE A COMPLAINT FILED BY ANY PERSON, AND, UPON ANY FINDINGS AS OUTLINED IN (A) THROUGH (E) BELOW, MAY PROHIBIT, LIMIT OR DECERTIFY USE OF A VOTING SYSTEM, IN WHOLE OR IN PART. AN INVESTIGATION BY THE OFFICE OF THE SECRETARY OF STATE MAY INCLUDE, BUT IS NOT LIMITED TO, THE REVIEW OR INSPECTION OF THE VOTING SYSTEM COMPONENT AT ISSUE.~~

(A) ANY PERSON INSTALLED ANY UNCERTIFIED OR DECERTIFIED VOTING SYSTEM COMPONENT;

(B) A COUNTY BREAKS THE CHAIN-OF-CUSTODY FOR ANY COMPONENT OF A VOTING SYSTEM BY ALLOWING ANY INDIVIDUAL NOT AUTHORIZED BY RULE 20.5.4 ACCESS TO THAT COMPONENT;

(C) A COUNTY SUBMITS AN INCIDENT REPORT REGARDING A COMPONENT OF A VOTING SYSTEM AND THE SECRETARY OF STATE FINDS THAT THE CHAIN-OF-CUSTODY CANNOT BE REESTABLISHED SECURELY;

(D) A COMPONENT OF A VOTING SYSTEM EXPERIENCES REPEATED HARDWARE FAILURES OR MALFUNCTIONS OF A SIMILAR NATURE; OR

(E) THE SECRETARY DETERMINES THAT THE INTEGRITY OR SECURITY OF A VOTING SYSTEM COMPONENT CANNOT BE VERIFIED AND THAT CHAIN-OF-CUSTODY CANNOT BE REESTABLISHED SECURELY.

21.7.4 THE SECRETARY OF STATE WILL NOTIFY A COUNTY OF THE PROHIBITION OR LIMITATION ON USE OR DECERTIFICATION OF A COMPONENT OF A VOTING SYSTEM UNDER RULE 21.7.3 AND THE COUNTY MUST IMMEDIATELY CEASE USING THAT COMPONENT.

*[Not shown: current Rule 21.7.4 is renumbered as Rule 21.7.5]*

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**Conversation**



DATE FILED: November 19, 2021 10:14 PM

FILING ID: A3D9A19A24908

CASE NUMBER: 2021CV33691

**Jena Griswold**

@JenaGriswold

My office just issued rules prohibiting sham election audits in the State of Colorado. We will not risk the state's election security nor perpetuate The Big Lie. Fraudits have no place in Colorado. [sos.state.co.us/pubs/newsRoom/](http://sos.state.co.us/pubs/newsRoom/)

# The Value of a Trusted Crowd of Ethical Hackers for Election Security

DATE FILED: November 19, 2021 10:14 PM  
 FILING ID: A3D9A19A24908  
 CASE NUMBER: 2021-CV-3691

A closer look at the critical role that managed crowdsourced security testing can play in securing the technologies that underpin American democracy

In the summer of 2020, soon after red team researchers from a managed network of ethical hackers [began examining the State of Colorado's voter registration website](#) for potential vulnerabilities, they spotted something alarming. Problems with the website's CAPTCHA challenge, a common first line of defense online, could have opened up the site to a distributed denial of service (DDOS) attack or created a gateway for further malicious activity during an already challenging year for election officials nationwide.

"They found bugs in how we implemented CAPTCHA that no other testers had ever discovered," said Trevor Timmons, CIO for the Secretary of State of Colorado. The state had previously worked with traditional pen testing firms to evaluate online election systems and related websites. "That was jarring to say the least, but we wouldn't have found it if we didn't have the best ethical hackers working with us to ensure we've done everything possible—and haven't overlooked any part of our system—to keep the election process safe and secure."

The state worked with the red team network through a pro-bono [Secure the Election Initiative](#) designed so states could take advantage of a managed network of ethical hackers and gain critical security insights ahead of the election. Researchers who approach security with an adversarial mindset have become incredibly powerful resources for Global 2000 corporations, the Department of Defense, international financial institutions and the biggest healthcare organizations.

In total, the red team network discovered seven vulnerabilities in Colorado's election-related systems as well as the Secretary of State's official website. Colorado patched all of them well ahead of Election Day using the detailed reports they received in real time from the provider's Crowdsourced Security Platform.

Crowdsourced security testing provides a rigorous, adversarial perspective on the security of assets. It differs from Vulnerability Disclosure Programs (VDP) in the level of testing quality and controls that it provides. A managed crowdsourced testing platform will recruit the top security researchers, vet them based on their technical abilities and background, and incentivize them to find vulnerabilities in systems using their offensive skill sets. The adversarial testing activity is carried out through a smart platform designed to accelerate the time it takes researchers to find flaws, all while providing customers with control, visibility, and advanced analytics.

On the other hand, VDPs offer a "see something, say something" approach by allowing anyone on the internet to report a vulnerability. Still, VDP is a critical ingredient of a robust security testing strategy for providing a mechanism through which people can report potential security issues and for getting additional eyes on a digital asset. However, if not managed carefully, a VDP can also burden an organization if they are not prepared. Reports submitted through VDPs are often false positives and numerous, requiring a lot of time to sift through and find any valid vulnerabilities.

**Figure 1: Differences in Crowdsourced Security Models**

	Vulnerability Disclosure Program	Crowdsourced Security Testing Platform Used by Colorado
<b>People</b>	<ul style="list-style-type: none"> <li>Open to anyone on the internet</li> </ul>	<ul style="list-style-type: none"> <li>Vetted crowd, monitored through the platform</li> </ul>
<b>Process</b>	<ul style="list-style-type: none"> <li>Submit a report through a portal</li> </ul>	<ul style="list-style-type: none"> <li>Incentive-driven testing and compliance</li> <li>User has power to stop/start testing</li> <li>Legal protection</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Smart scanning technology enables researchers and accelerates findings</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>High volume of submissions with varying quality</li> </ul>	<ul style="list-style-type: none"> <li>High-quality, triaged vulnerability and assessment reports</li> <li>Real-time analytics for rapid response</li> </ul>

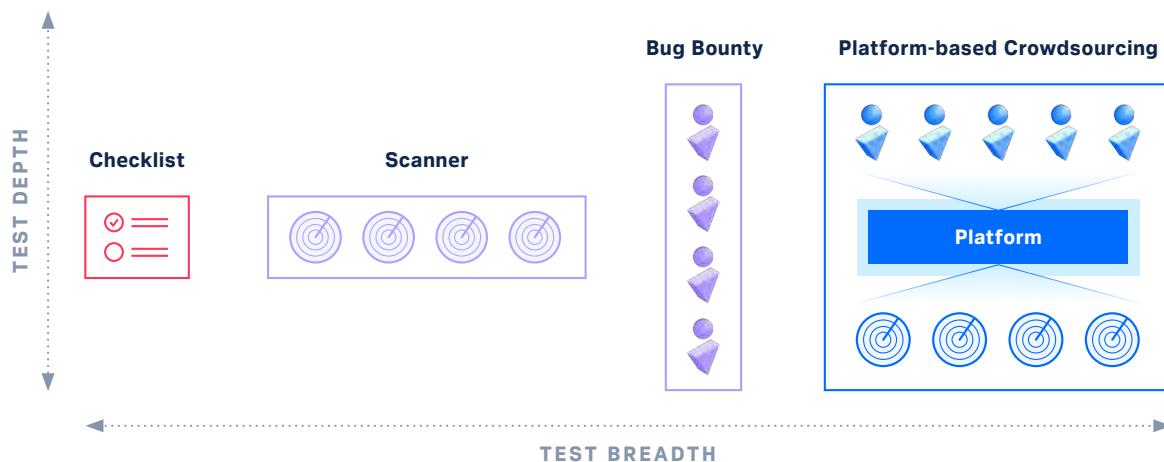
**Before starting a VDP, states should consider:**

- Are resources available to triage all submissions and remediate valid vulnerabilities? Triage and remediation resources are critical for prioritizing key issues.
- Are integrations with development and automation tools available to help save time and stay on track?
- Their willingness to include all internet-connected assets in the VDP to maximize coverage.

For anyone looking to start a crowdsourced security program, Dr. Mark Kuhr, a former U.S. National Security Agency technical director and CTO of a leading crowdsourced security platform, recommends starting with a managed crowdsourced penetration test. “Starting with a controlled, targeted test by a select group of security researchers that we know are highly skilled and highly trustworthy can help identify and patch the critical vulnerabilities before the public sees them,” Kuhr explains. “Once an attack surface has been hardened through crowdsourced

penetration testing, we then recommend layering in a vulnerability disclosure program and continuous testing and scanning through the platform.”

Crowdsourced security testing has been recommended by the [DoD](#), the [White House](#), and [the U.S. Senate](#) as a best practice. Traditional penetration testing can fall short in modern digital environments. The static testing team, point-in-time testing cadence, and checklist-driven approach cannot scale to the magnitude of today’s pervasive and persistent threat.

**Figure 2: Differences in Security Testing Models**

Voting equipment vendors have also adopted crowdsourced testing to test election-related hardware. In August 2020, [during the Black Hat USA cybersecurity conference](#), one of the largest U.S. election vendors announced a partnership with the same crowdsourced platform with which Colorado partnered to test its newest electronic poll book. That development was hailed as a breakthrough in the relationship between election vendors and independent election security researchers. At the time, [Wired Magazine wrote](#) that the collaboration showed the beginning of a new partnership between security researchers and election vendors.

The crowdsourced security testing platform allowed the election equipment vendor to utilize top security researchers through a managed and private engagement. The research also helped the vendor prioritize any vulnerabilities the red team discovered through rigorous testing. The election equipment provider chose not to publicly reveal vulnerabilities discovered during testing. The process allowed them to “learn about and fix potential security issues before malicious hackers find them,” wrote Wired, which also noted “the

company plans to run additional crowdsourced penetration tests with [the crowdsourced security platform] on other products as well.”

The recent SolarWinds Orion hack calls for a more adversarial mindset when it comes to security testing. In that assault on thousands of organizations, nation-state hackers were not only able to enter victims’ systems through a software update, they successfully expanded across networks to access incredibly sensitive government and industry data. Testing such as the kind performed by a crowdsourced security platform can help harden internal assets against these types of “lateral movement” attacks.

“The crowd needs to be a critical part of any good cybersecurity strategy,” said Kuhr. “An adversarial model of crowdsourced penetration testing is about as close as an organization can get to testing systems against a real adversary. This approach is designed to harness the collective brainpower of the world’s best ethical hackers when it comes to finding and fixing the most critical vulnerabilities and other weaknesses that can leave organizations dangerously vulnerable.”

### About the Author

Synack, the most trusted crowdsourced security testing platform, delivers smarter penetration testing to security teams. The platform provides continuous testing and actionable results to today’s organizations that need a scalable, efficient way to test their attack surfaces. Synack’s crowdsourced penetration testing is powered by the world’s most skilled and trusted ethical hackers and augmented by AI-enabled technology to give customers the best of human intelligence and machine intelligence. Headquartered in Silicon Valley with regional offices around the world, Synack protects leading global banks, federal agencies, DoD classified assets, and more than \$1 trillion in Global 2000 revenue. A 4-time CNBC Disruptor 50 company, Synack was founded in 2013 by former NSA security experts Jay Kaplan, CEO, and Dr. Mark Kuhr, CTO.

For more information, please visit [www.synack.com](http://www.synack.com).

CORA REQUEST DATED July 7, 2021

To: CORA Custodian  
1700 Broadway, Suite 200  
Denver, CO 80290

DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

Sent via email to [CORA@sos.state.co.us](mailto:CORA@sos.state.co.us)

Send to: [maureenwestlaw@protonmail.com](mailto:maureenwestlaw@protonmail.com)

Phone: 720.270.0488

Per 24-72-203(3), C.R.S., it is expected that this CORA request will be responded to within (3) working days of receipt of this request.

I request that you make available for inspection and copying the following public records. The information can also be emailed to: [maureenwestlaw@protonmail.com](mailto:maureenwestlaw@protonmail.com)

**CORA Request No. 1:** Documents related to the June 17, 2021 Emergency Rules 20.5.4(b); Rule 20.5.4(c) and (d) and Rule 21. 7.5 regarding:

1. public concern about purported “forensic audits”;
2. public support for “forensic audits”;
3. audits conducted by unknown and unverified third parties in Colorado;
4. audits conducted by unknown and unverified third parties nationwide;
5. audits conducted by unknown parties in Colorado;
6. audits conducted by unverified parties in Colorado; and
7. rapid increase of purported “forensic audits.”

This CORA Request No. 1 is for all records and communications (both written and verbal) which shall include but not be limited to written email communications, letters, text messages, phone communications and/or records of such communications of Secretary of State Jena Griswold, (“SOS”), SOS Election Security Team members, SOS Election Division employees, Judd Choate and/or Judd Choate’s staff, Trevor Timmons and/or Trevor Timmons’ staff, major political parties, voting system providers and Colorado citizen(s). This record request is for the time period between April 1, 2021 and date of submission (July 7, 2021).

**CORA Request No. 2:** Documents related to the June 17, 2021 Emergency Rules 20.5.4(b); Rule 20.5.4(c) and (d) and Rule 21. 7.5 regarding:

1. security of Colorado’s voting systems;
2. integrity of Colorado’s voting systems;

3. public confidence in Colorado voting systems;
4. security of Colorado elections;
5. integrity of Colorado elections; and
6. public confidence in Colorado elections.

This CORA Request No. 2 is for all records and communications (both written and verbal) which shall include but not be limited to written email communications, letters, text messages, phone communications and/or records of such communications of Secretary of State Jena Griswold, ("SOS"), SOS Election Security Team members, SOS Election Division employees, Judd Choate and/or Judd Choate's staff, Trevor Timmons and/or Trevor Timmons' staff, major political parties, voting system providers, and Colorado citizen(s). This record request is for the time period between April 1, 2021 and date of submission (July 7, 2021).

**CORA Request No. 3:** Documents related to the June 17, 2021 Emergency Rules 20.5.4(b); Rule 20.5.4(c) and (d) and Rule 21. 7.5 regarding:

1. uniform conduct of election.

This CORA Request No. 3 is for all records and communications (both written and verbal) which shall include but not be limited to written email communications, letters, text messages, phone communications and/or records of such communications of Secretary of State Jena Griswold, ("SOS"), SOS Election Security Team members, SOS Election Division employees, Judd Choate and/or Judd Choate's staff, Trevor Timmons and/or Trevor Timmons' staff, major political parties, voting system providers and Colorado citizen(s). This record request is for the time period between April 1, 2021 and date of submission (July 7, 2021).

**COLORADO SECRETARY OF STATE**

[8 CCR 1505-1]  
DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

**ELECTIONS RULES**

**Rules as Adopted - Redline**

**August 26, 2021**

(Additions to the current rules are reflected in SMALL CAPS and deletions from current rules are shown in ~~stricken type~~. *Publication instructions/notes* may be included):

*Amendments to 8 CCR 1505-1 follow:*

*Amendments to Rule 1, concerning definitions, including repeal of Rules 1.1.19, 1.1.25(b), 1.1.48 and necessary renumbering:*

*[No changes to current Rules 1.1 through 1.1.18]*

~~1.1.19 “Direct Recording Electronic voting device” (DRE) means a voting device that visually displays or audibly presents a ballot and records an elector’s votes directly into electronic storage media.~~

*[Not shown: renumbering current Rules 1.1.20 through 1.1.25 to Rules 1.1.19 through 1.1.24]*

~~1.1.26-1.1.25 “Electronic ballot” means a non-paper ballot such as on a touch screen or through audio feedback. After a voter casts an electronic ballot, the voter’s choices must be:~~

- ~~(a) M~~Marked and printed on a paper ballot for subsequent counting by a ballot scanner; or
- ~~(b) Digitally recorded and counted by the touch screen device, commonly referred to as a Direct Recording Electronic (DRE) device.~~

*[Not shown: renumbering current Rules 1.1.27 through 1.1.34 to Rules 1.1.26 through 1.1.33]*

~~1.1.35 1.1.34 “Qualified political organization” means an organization that has placed a candidate for congressional or state office on the ballot in a congressional vacancy or general election, whose officers have filed proof of organization with the Secretary of State, and that continues to meet the requirements of Rules 3.3 and 3.4. [Baer v. Meyer, 728 F.2d 471 (10th Cir. 1984)]~~

*[Not shown: renumbering current Rules 1.1.36 through 1.1.47 to Rules 1.1.35 through 1.1.46]*

~~1.1.48 “VVPAT” has the same meaning as in section 1-1-104(50.6), C.R.S.~~

*[Not shown: renumbering current Rules 1.1.49 through 1.1.51 to Rules 1.1.47 through 1.1.49]*

*Amendments to Rules 2.12 concerning voter registration confidentiality including New Rule 2.12.3, and technical edits:*

2.12.1 Information about an agency's name and location for an application completed at a voter registration agency or driver's license office is confidential. [52 USC § 20504(e)(2)(D)(iii)]

*[No changes to Rule 2.12.2]*

2.12.3 BEFORE PRECINCT CAUCUSES, THE SECRETARY OF STATE WILL PROVIDE TO EACH MAJOR STATE POLITICAL PARTY A LIST OF CONFIDENTIAL VOTERS, WHICH INCLUDES ONLY THE INFORMATION NECESSARY TO DETERMINE ELIGIBILITY. THE LIST WILL ONLY BE PROVIDED IF THE MAJOR PARTY AGREES IN WRITING TO LIMIT AND PROTECT THAT DATA IN ACCORDANCE WITH SECRETARY OF STATE REQUIREMENTS. THIS RULE DOES NOT APPLY TO RECORDS HELD CONFIDENTIAL AS PART OF THE ADDRESS CONFIDENTIALITY PROGRAM.

*[Not shown, renumbering Rule 2.12.3 to Rule 2.12.4]*

*Amendments to Rule 2.13.2 concerning list maintenance under section 8 of the National Voter Registration Act of 1993:*

2.13.2 In accordance with section 1-2-605(7), C.R.S., no later than 90 days following a General Election, the ~~county clerk in each county must~~ DEPARTMENT OF STATE, WORKING IN CONJUNCTION WITH COUNTY CLERKS, WILL cancel the registrations of electors:

- (a) Whose records have been marked "Inactive – returned mail", "Inactive – undeliverable ballot", or "Inactive – NCOA"; AND
- (b) Who have been mailed a confirmation card; and
- (c) Who have ~~since~~ THEREAFTER failed to vote in two consecutive general elections.

*New Rule 2.13.3, amendments to current Rule 2.13.3, repeal of 2.13.5, and necessary renumbering:*

2.13.3 THE SECRETARY OF STATE WILL NOTIFY EACH COUNTY OF THE RECORDS CANCELLED IN THAT COUNTY UNDER SECTION 1-2-605(7), C.R.S. ONCE THE CANCELLATION IS COMPLETE.

2.13.3-2.13.4 The county must process all records designated for ~~cancelation~~ CANCELLATION by the Secretary of State:

- (A) ~~within~~ WITHIN 21 days of receipt; AND
- (B) BEFORE THE COUNTY MAILED BALLOTS THROUGHOUT THE ELECTION.

2.13.4-2.13.5 The county must process and mail all confirmation cards using SCORE so that the elector's voter registration record audit log shows the date on which the county printed or extracted the confirmation card.

2.13.5 ~~To the extent a county has records of confirmation cards it has generated and sent outside of SCORE, the county must retain these records as election records under section 1-7-802, C.R.S.~~

*[No changes to current Rules 2.14 through 2.15.6]*

*New Rule 2.15.7 concerning voter registration records and data:*

2.15.7 IF A COUNTY RECEIVES INFORMATION FROM A JURISDICTION OUTSIDE OF COLORADO INDICATING THAT A COLORADO VOTER MAY HAVE VOTED IN MORE THAN ONE STATE IN THE SAME ELECTION, THE COUNTY MUST SEND THAT INFORMATION TO THE SECRETARY OF STATE'S OFFICE FOR POTENTIAL INVESTIGATION AND PROSECUTION.

*[No changes to current Rules 2.16 and 2.17]*

*Amendments to Rules 2.18 and 2.19:*

2.18 If an unaffiliated elector indicates a political party ballot preference at any time up to and including the ~~twenty-ninth~~ TWENTY-SECOND day before a primary election, the county clerk must record the selection in SCORE and mail only the ballot of that political party to the elector in the upcoming primary election. An elector's political party ballot preference is only effective for a single primary election even if there is more than one primary election in a single year.

~~2.19 Registration of electors who are confined in a county jail or detention facility~~

~~2.19.1 Before each election, the county clerk must make efforts to coordinate with the sheriff or his or her designee at each county jail or detention center in the county to provide confined eligible individuals an opportunity to register to vote. To assist state institutions of higher education comply with the requirements of section 1-2-213.5(1)(C), C.R.S., the department of state will provide the Colorado department of higher education with a template communication for enrolled students.~~

*Amendments to Rule 6.1.3 concerning appointment of election judges:*

6.1.3 If a major political party fails to provide an adequate list of election judges by the 60th day before election day, the county clerk ~~must notify the Secretary of State. The county clerk~~ may consider a supplemental list from a major political party ~~after the 60-day deadline~~.

*Amendments to Rule 6.8 concerning signature verification judge training:*

6.8 A signature verification judge must complete a training course conducted by the county clerk at least once per election cycle. The COUNTY CLERK MUST USE THE SECRETARY OF STATE ~~must provide or approve the training content~~ PROVIDED TRAINING OR PROVIDE THEIR OWN TRAINING. IF THE COUNTY CLERK PROVIDES THEIR OWN TRAINING, IT MUST BE APPROVED BY THE SECRETARY OF STATE BEFORE ITS FIRST USE.

*Amendments to Rule 7.1.1 concerning election plans:*

7.1.1 The county clerk must submit an election plan to the Secretary of State no later than ~~120~~ 110 days before every election. The county clerk must submit with the election plan all information required by section 1-7.5-105 (1.3), C.R.S.

*Amendments to Rules 7.2.6, and 7.2.7:*

7.2.6 Each mail ballot return envelope may include the following statement: "I am voluntarily giving my ballot to (name and address) for delivery on my behalf." IF THE COUNTY CLERK INCLUDES THIS STATEMENT ON THEIR RETURN ENVELOPES THEY MUST INCLUDE AN EXPLANATION IN THEIR VOTER INSTRUCTIONS THAT THE VOTER IS NOT REQUIRED TO FILL THIS STATEMENT OUT TO RETURN THEIR BALLOT. If the voter leaves the fillable portion of the statement blank, the county clerk must accept the ballot for counting if it is otherwise valid.

7.2.7 ~~Where practicable, the~~ A county THAT USES A VENDOR TO MAIL BALLOTS must print the elector's full name under or near the self-affirmation signature line on each ballot return

envelope. If not practicable for some or all ballot return envelopes, the county must explain why in its election plan.

*Amendments to Rule 7.2.9:*

7.2.9 The mail ballot packet required under sections 1-4-101(2)(b) and 1-4-1203(4)(c), C.R.S. must contain only the ballots of each participating major political party unless a major party's presidential primary election has been ~~cancelled~~ CANCELLED under section 1-4-1203(5), C.R.S.

*Amendments to Rule 7.2.14 update a cross-reference:*

7.2.14 The mail ballot return envelope for each unaffiliated voter in a primary election may provide a means for the county to determine, before opening the envelope, which party's primary election ballot the elector returned. If the mail ballot return envelope does not provide such a means, or the county cannot determine which party's ballot the elector returned before opening the envelope, the county must follow the process outlined in Rule 7.5.15-7.4.15. The county's determination under this Rule may not rely solely on a voter's self-reported selection (for example, a checkbox).

*New Rule 7.2.17:*

7.2.17 PRINT VENDORS MAY OVERLAY A 2-D BARCODE FOR PURPOSES OF MAILING AND INSERTION PROVIDED THAT IT ONLY CONTAINS THE PRECINCT NUMBER AND BALLOT STYLE NAME AND THE INFORMATION IN THE BARCODE IS NOT TRACEABLE TO ANY INDIVIDUAL VOTER.

*Rules 7.3.2 through 7.3.5 concerning emergency ballot transmission are repealed:*

7.3.2 ~~Ballots sent by electronic transmission must include all races, ballot issues, and questions for which the elector is eligible to vote. The ballot must be legible to avoid possible misinterpretations of the elector's intended choice because of poor transmission of the document.~~

7.3.3 The electronic transmission must include:

- (a) ~~The county clerk's contact information including mailing address, email address, phone, and fax number;~~
- (b) ~~A notice that the ballot may not be duplicated for any other elector;~~
- (c) ~~Instructions for completing and returning the ballot;~~
- (d) ~~A notice regarding the ballot return deadline;~~
- (e) ~~Information regarding how the elector may verify that his or her ballot has been received by the county clerk;~~
- (f) ~~Any other information deemed necessary by the Secretary of State or the county clerk; and~~
- (g) ~~The ballot packet must be in text format on 8 1/2" x 11" white paper and must include:~~
- (1) ~~An electronic transmission coversheet to protect voter privacy;~~

- (2) The unvoted ballot;
- (3) The electronic transmission ballot instructions; and
- (4) The self-affirmation required by section 1-7.5-107(3)(b.5), C.R.S.

7.3.4 The county clerk must maintain a log of each ballot sent by electronic transmission. The county clerk must retain the log as part of the official election record along with any other electronic transmission records. The log must include:

- (a) The name of the voter;
- (b) The fax number or email address to which the ballot was transmitted (as applicable);
- (c) The date the ballot packet was transmitted and received; and
- (d) The initials of the employee transmitting and receiving the ballot.

7.3.5 If the county clerk transmits a ballot packet to an elector by fax and the transmission is unsuccessful, the county clerk must attempt to fax the ballot at least two more times.

*New Rule 7.3.2, 7.3.3 and subsequent renumbering:*

7.3.2 VOTERS WHO REQUEST AN EMERGENCY BALLOT BE SENT TO THEM ELECTRONICALLY MUST BE DIRECTED BY THE COUNTY CLERK TO THE ONLINE BALLOT DELIVERY SYSTEM MAINTAINED BY THE SECRETARY OF STATE TO RECEIVE THEIR BALLOT ELECTRONICALLY. THE SECRETARY OF STATE WILL MAINTAIN INFORMATION REGARDING EMERGENCY BALLOTS ACCESSED USING THE ONLINE BALLOT DELIVERY SYSTEM.

7.3.3 THE COUNTY CLERK MAY SEND AN EMERGENCY BALLOT AND ALL MATERIALS PROVIDED IN THE ONLINE BALLOT DELIVERY SYSTEM BY OTHER MEANS, INCLUDING BY FAX OR IN-PERSON THROUGH AN AUTHORIZED REPRESENTATIVE WHO PRESENTS A WRITTEN STATEMENT FROM THE VOTER, IF THE VOTER REQUESTS THAT METHOD OF DELIVERY.

7.3.6-7.3.4 Upon receipt of the ballot, election judges must verify the signature on the affidavit under Rule 7.8-7.7. After the signature on the affidavit has been verified, a bipartisan team of election judges must duplicate the ballot following the procedures outlined in Rule 18. Duplicating judges must not reveal how the elector has cast his or her ballot.

*Rule 7.4 is repealed:*

7.4 The county clerk must make efforts to coordinate with the sheriff or his or her designee at each county jail or detention center to facilitate voting for all confined eligible electors.

7.4.1 The county clerk must describe the following in its election plan:

- (a) How the county clerk will provide each county jail or detention center voter information materials consistent with materials provided to non-confined eligible electors, including at a minimum a list of acceptable forms of identification under section 1-1-104(19.5), C.R.S., and the information required by sections 1-40-124.5 and 1-40-125, C.R.S.

(b) ~~The process by which the county clerk and the sheriff or his or her designee will facilitate voter registration, and delivery and retrieval of mail ballots for confined eligible electors.~~

*Rule 7.5 is renumbered and amended as follows:*

**7.5-7.4 Receipt and processing of ballots**

**7.5.1-7.4.1** The county clerk must adequately light all drop box locations and use a video security surveillance recording system as defined in Rule 1.1.45-1.1.44 to monitor each location.

*[No changes to (a) through (e)]*

*[Not shown: renumbering Current Rules 7.5.2 through 7.5.9 to Rules 7.4.2 through 7.4.9]*

*Amendments to Rule 7.5.10:*

**7.5.10-7.4.10** If the county clerk discovers a violation of section 1-7.5-107(4)(b), C.R.S., prohibiting any person from receiving more than 10 ballots in addition to his or her own in any election, the county clerk must refer the information to the District Attorney AND RECEIVE THE BALLOTS DELIVERED BY THAT PERSON.

*[Not shown: renumbering Current Rules 7.5.11 through 7.5.14 to Rules 7.4.11 through 7.4.14]*

*Amendments to Rules 7.5.15 and 7.5.16:*

**7.5.15-7.4.15** ~~Unaffiliated voters in a primary election.~~ If an election judge is unable to determine, before opening the envelope, which party's ballot ~~the~~ AN UNAFFILIATED elector returned as outlined in Rule 7.2.9, the county must separate the elector's ballot from the envelope in the following manner:

- (a) An election judge must remove the ballot from the mail ballot return envelope and pass it to a bipartisan team of judges without allowing the team of judges to determine the identity of the elector.
- (b) The bipartisan team of election judges must review the ballot and audibly report to the first election judge which political party's election the elector voted in.
- (c) The first election judge must record in SCORE which political party's election the elector voted in, or document the proper party information for later recording in SCORE.

**7.5.16-7.4.16** If an unaffiliated elector returns more than one ballot in a primary election, a bipartisan team of election judges must review the ballots to determine the elector's intent in accordance with the Secretary of State's Voter Intent Guide.

- (a) If the bipartisan team determines the elector voted in only one party's primary election, the election judge with access to the envelope must record the party chosen in SCORE under Rule 7.5.15(e)-7.4.5(c) and the ballot must be counted. The county must retain any unvoted ballot as an election record.
- (b) If the bipartisan team determines the elector voted in more than one party's primary election, or returned only blank ballots, the county must reject the ballots,

not count them, and retain them in the mail ballot return envelope as an election record.

*Rule 7.6 is renumbered and condensed to remove standalone sub-rule:*

7.6-7.5 Ballot returned in unofficial envelope. 7.6.1 — If the county timely receives a mail ballot from an eligible elector in an envelope that is missing or lacks the correct self-affirmation, the county must contact the elector by mail and by electronic mail, if available, within three calendar days of receiving the ballot but no later than two calendar days after election day. The county must use the letter and affidavit prescribed by the Secretary of State and keep a copy as part of the official election record. If the county receives the completed affidavit no later than the eighth day after election day, the county must count the ballot. A county that receives a ballot from a voter with a disability covered under section 1-5-706, C.R.S., in an unofficial envelope must accept the ballot for processing if the envelope also contains a signed application from the voter.

*Amendments to Rule 7.7 including renumbering:*

7.7-7.6 Mail ballot cure procedures

7.7.1-7.6.1 ~~If a mail or provisional ballot return envelope lacks a signature, or a ballot from a voter with a disability covered under section 1-5-706, C.R.S. is returned without an application, or is returned with an application that is not signed, the county clerk must follow the procedures for discrepant signatures outlined in section 1-7.5-107.3(2)(a), C.R.S., except EXCEPT as provided in Rule 7.7.4-7.6.4, THE COUNTY CLERK MUST FOLLOW THE PROCEDURES FOR DISCREPANT SIGNATURES OUTLINED IN SECTION 1-7.5-107.3(2)(A), C.R.S., IF:~~

- (A) A MAIL BALLOT RETURN ENVELOPE LACKS A SIGNATURE;
- (B) A PROVISIONAL BALLOT RETURN ENVELOPE LACKS A SIGNATURE;
- (C) A BALLOT FROM A VOTER WITH A DISABILITY COVERED UNDER SECTION 1-5-706, C.R.S., IS RETURNED WITHOUT AN APPLICATION; OR
- (D) A BALLOT FROM A VOTER WITH A DISABILITY COVERED UNDER SECTION 1-5-706, C.R.S., IS RETURNED WITH AN APPLICATION THAT IS NOT SIGNED AND DOES NOT INCLUDE A COPY OF AN ACCEPTABLE FORM OF IDENTIFICATION AS DEFINED BY SECTION 1-1-104(19.5), C.R.S.

7.7.2-7.6.2 The county clerk must use the letter and form prescribed by the Secretary of State and keep a copy as part of the official election record.

7.7.3-7.6.3 If the county clerk uses any means in addition to mail or electronic mail to contact any elector regarding a missing or discrepant signature or missing ID, he or she must attempt to contact all similarly situated electors whose registration records have the same type of contact information.

7.7.4-7.6.4 If an elector fails to cure a missing signature, the county clerk need not send a copy of the mail ballot return envelope to the district attorney for investigation.

~~[Sections 1-7.5-107.3 and 1-8.5-105(3)(a), C.R.S.]~~

7.7.5-7.6.5 The county clerk must accept any completed cure form for a missing or discrepant signature, or a missing ID, that the county receives by 11:59 pm MT on the eighth day after the election.

*Amendments to Rule 7.8 including renumbering:***7.8-7.7 Signature verification procedures**

**7.8.1-7.7.1** WHEN REVIEWING SIGNATURES THROUGH THE USE OF SIGNATURE VERIFICATION JUDGES, A single election judge ~~may~~ MUST conduct the first level of signature verification.

*[Not shown: renumbering Current Rules 7.8.2 through 7.8.8 to Rules 7.7.2 through 7.7.8]*

*Amendment to Rule 7.8.9, including renumbering:*

**7.8.9-7.7.9** The election official must use the letter and the signature verification form approved by the Secretary of State. (~~Section 1-7.5-107.3(2)(a), C.R.S.~~)

*[Not shown: renumbering Current Rule 7.8.10 to Rule 7.7.10]*

*Amendments to Rule 7.8.11 including renumbering and New Rules 7.7.11(a)(2)(b) and 7.7.11(b)(5):*

**7.8.11-7.7.11** Use of automated Signature Verification Devices under section 1-7.5-107.3(5)(b), C.R.S.

- (a) The county clerk must test Signature Verification Devices before use in an election BY FOLLOWING THE PROCEDURES IN THIS RULE.
  - (1) The testing must verify the accuracy of the device and ensure that the device will not accept a signature that a reasonably trained election judge would reject.
  - (2) The county must pull and test ~~a minimum of~~ AT LEAST THE FIRST 150 ballot envelopes received in the election and conduct an audit of the machine-verified signatures.
  - (A) A team of bipartisan election officials must manually review the signatures identified on the Automated Signature Recognition report following the procedures in section 1-7.5-107.3, C.R.S., and this Rule.
  - (B) IF BOTH ELECTION JUDGES AGREE THAT A SIGNATURE ACCEPTED BY THE DEVICE WOULD NOT HAVE BEEN ACCEPTED IF REVIEWED BY ELECTION JUDGES, THE COUNTY MUST IMMEDIATELY CEASE USE OF AUTOMATED SIGNATURE VERIFICATION AND NOTIFY THE SECRETARY OF STATE. THE COUNTY CLERK MUST NOT RESUME USE UNTIL THE SECRETARY OF STATE AND THE COUNTY HAVE WORKED IN COORDINATION TO IDENTIFY THE ISSUE AND IMPLEMENT A SOLUTION.
  - (B)-(C) The election judges conducting the audit must sign and date the Automated Signature Recognition Report and the report must be maintained with all other election records under section 1-7-802, C.R.S.
- (b) The county must conduct a regular audit of each Signature Verification Device during its use.

- (1) The county must pull a random sampling of at least ~~one~~ FIVE in every ~~fifty~~ ONE HUNDRED machine-verified signatures daily.
- (2) A team of bipartisan election judges must manually review the signatures identified on the Automated Signature Recognition report following the procedures in section 1-7.5-107.3, C.R.S., and this Rule.
- (3) The election judges conducting the audit must sign and date the Automated Signature Recognition Report and the report must be maintained with all other election records under section 1-7-802, C.R.S.
- (4) If ~~the device fails the audit~~ BOTH ELECTION JUDGES AGREE THAT A SIGNATURE ACCEPTED BY THE DEVICE WOULD NOT HAVE BEEN ACCEPTED IF REVIEWED BY ELECTION JUDGES, the county must immediately cease use of automated signature verification and notify the Secretary of State. The Secretary of State and the county must work in coordination to identify the issue and implement a solution.
- (5) NO LATER THAN 90 DAYS AFTER ELECTION DAY, THE COUNTY CLERK MUST PROVIDE TO THE SECRETARY OF STATE A REPORT OF THE BALLOTS AUDITED UNDER THIS RULE ON THE FORM APPROVED BY THE SECRETARY OF STATE.

(c) The county must operate the device on a secure network.

- (1) The county may connect the device to the county network only for maintenance and support.
- (2) The device must be secured by the county firewall.
- (3) The county must maintain a maintenance and support log that includes the name of the person providing maintenance or support, the date and time the device was accessed, and the specific reason for access.

*[Not shown: renumbering Current Rules 7.8.12 and 7.8.13 as Rules 7.7.12 and 7.7.13]*

*Amendments to Rule 7.9 including renumbering and repeal of Rule 7.9.1(d):*

#### 7.9-7.8 Voter service and polling centers

7.9.1-7.8.1 The county clerk must designate and open the minimum number of voter service and polling centers as required in section 1-5-102.9, C.R.S., for a general election and section 1-7.5-107(4.5), C.R.S., for all other elections.

- (a) For a general election, the minimum number of voter service and polling centers must be open beginning 15 days before election day during the following hours:
  - (1) In a county described in section 1-5-102.9 (1)(a)(I) or (1)(a)(II), C.R.S., voter service and polling centers must be open from 8 A.M. to 5 P.M. Monday through Friday, and the second Saturday.
  - (2) In all other counties, voter service and polling centers must be open during normal business hours, which means at least eight hours per day Monday through Friday, and at least four hours continuously on the second Saturday.

- (b) For any primary or November coordinated election, the minimum number of voter service and polling centers must be open beginning 8 days before election day during normal business hours, which means at least eight hours Monday through Friday, and at least four hours continuously on Saturday.
- (c) All voter service and polling centers must be open from 7:00 a.m. through 7:00 p.m. on election day.
- (d) ~~The county clerk must provide all services outlined in section 1-5-102.9, C.R.S., at every designated voter service and polling center.~~
- (e)(d) Signage at each voter service and polling center must indicate that it is a violation of law for any person to collect more than ten ballots for delivery in any election.

**7.9.2-7.8.2** Voter service and polling center materials include sufficient computer stations for SCORE access, HAVA information, ~~a voting demonstration display, a signature card table, signature cards, paper ballots, voting booths or DREs, a provisional voting area, and a ballot box.~~

**7.9.3-7.8.3** In order to assist applicants and electors efficiently, a county clerk must configure voter service and polling centers with sufficient election judges, WebSCORE work stations, voting equipment, and sufficient numbers of mail and in-person ballots that can be tabulated by the county's voting system without further duplication, and other supplies. A county may satisfy this Rule by providing a sufficient number of ballot marking devices or ballot on demand printers.

**7.9.4-7.8.4** Except for voters with disabilities, the maximum allowable time in a voting booth is 15 minutes if there are voters waiting. The Secretary of State may order additional time based on the length of the ballot. ~~[Section 1-7-115, C.R.S.]~~

*[Not shown: renumbering Current Rules 7.9.5 through 7.9.8 to Rules 7.8.5 through 7.8.8]*

**7.9.9-7.8.9** Each county must report its WAIT TIME DATA results to the Secretary of State no later than 30 days after the election.

*[Not shown: renumbering Current Rules 7.9.10 and 7.9.11 to Rules 7.8.10 and 7.8.11]*

*[Not shown: renumbering Current Rules 7.10 and 7.11 to Rules 7.9 and 7.10]*

*Amendments to Rule 7.12:*

**7.12-7.11** At each Voter Service and Polling Center, election judges and, if appropriate, election staff, must:

**7.12.1-7.11.1** Provide all services outlined in 1-5-102.9, C.R.S., INCLUDING PROVIDING BLANK CURE FORMS AND COLLECTING COMPLETED CURE FORMS FOR VOTERS WHO WISH TO CURE THEIR BALLOT IN ACCORDANCE WITH SECTIONS 1-2-502.5 (4)(C), 1-7.5-107 (3.5)(D), OR 1-7.5-107.3 (1.5), C.R.S.; and

**7.12.2-7.11.2** Use WebSCORE to register voters; update existing voter registrations; issue and replace mail ballots; and issue, spoil, and replace in-person ballots.

*[Not shown: renumbering current Rules 7.13 through 7.17 as Rules 7.12 through 7.16]*

*Rule 8.6.1(b) concerning removal of watchers is amended to update a cross reference:*

(b) Violated any of the limitations outlined in Rule 8.15 8.14;

*Rule 8.7.4 concerning watchers is amended to update a cross-reference:*

8.7.4 Watchers must remain outside the immediate voting area while an elector is voting. The six-foot limit in Rule 4.1.34-1.1.30 applies only to voting.

*Amendments to Rule 8.10.2(a)(4):*

8.10.2 Watchers must be permitted access that would allow them to attest to the accuracy of election-related activities. This includes personal visual access at a reasonable proximity to read documents, writings or electronic screens and reasonable proximity to hear election-related discussions between election judges and electors.

(a) Election activities include:

- (1) Setup and breakdown of Voter Service and Polling Centers.
- (2) Voter check-in and registration activities.
- (3) Ballot receipt and processing.
- (4) Signature verification of mail ballot envelopes ~~at close enough distance to challenge the signature.~~
- (5) Ballot duplication.
- (6) Ballot tabulation.
- (7) The logic and accuracy test and post-election audit.
- (8) Provisional ballot processing.
- (9) UOCAVA ballot processing.
- (10) Canvass.
- (11) Recount.

(b) Witness and verify means to personally observe actions of election officials in each step of the conduct of an election.

*Rule 8.13 is repealed:*

8.13 ~~During initial signature review by an election judge, the county clerk may allow a watcher to escalate ballot envelope signatures for secondary review by a bipartisan team of election judges.~~

*[Not shown: current Rule 8.14 is renumbered as Rule 8.13]*

*Amendments to Rules 8.15 and 8.16 including renumbering and New Rule 8.14.12:*

8.15-8.14 ~~A watcher may not:~~ A COUNTY CLERK MUST REVOKE THE CERTIFICATE OF A WATCHER WHO:

8.15.1-8.14.1 Personally ~~interrupt~~ INTERRUPTS or ~~disrupt~~ DISRUPTS the processing, verification, and counting of any ballots or any other stage of the election, ~~except as permitted by the county clerk under Rule 8.13.~~ INCLUDING LODGING REPEATED CHALLENGES OF VOTERS OR MAIL BALLOTS ON BASES THAT ARE NOT AUTHORIZED BY STATUTE OR THESE RULES AFTER BEING ADVISED THAT SUCH BASES ARE NOT AUTHORIZED.

8.15.2-8.14.2 ~~Write~~ WRITES down any ballot numbers or any other personally identifying information about the electors.

8.15.3-8.14.3 ~~Touch~~ TOUCHES or ~~handle~~ HANDLES the official signature cards, ballots, mail ballot envelopes, provisional ballot envelopes, voting or counting machines, or machine components.

8.15.4-8.14.4 ~~Interfere~~ INTERFERES with the orderly conduct of any election process, including issuance of ballots, receiving of ballots, and voting or counting of ballots.

8.15.5-8.14.5 ~~Interact~~ COMMUNICATES with election judges ~~ABOUT THAT JUDGE'S DUTIES WHILE THAT ELECTION JUDGE IS CURRENTLY ON DUTY, UNLESS THE JUDGE IS THE other than a designated watcher contact except as permitted by the county clerk under Rule 8.13.~~

8.15.6-8.14.6 ~~Use~~ USES a mobile phone or other electronic device to make or receive ~~a call~~ AN AUDIO OR VIDEO COMMUNICATION in any polling location or other place election activities are conducted.

8.15.7-8.14.7 ~~Use~~ USES any electronic device to take or record pictures, video, or audio in any polling location or other place election activities are conducted.

8.15.8-8.14.8 ~~Unless otherwise approved by the county clerk, have~~ HAS in ~~his or her~~ THEIR OPEN AND VISIBLE possession any mobile phone or other electronic device while watching election activities where voters' confidential or personally identifiable information is within view.

8.15.9-8.14.9 ~~Attempt~~ ATTEMPTS to determine how any elector voted.

8.15.10-8.14.10 ~~Disclose~~ DISCLOSES or ~~record~~ RECORDS any confidential voter information as defined in section 24-72-204(8), C.R.S., that he or she may observe.

8.15.11-8.14.11 ~~Disclose~~ DISCLOSES any results before the polls have closed.

8.14.12 ATTEMPTS TO INTIMIDATE OR INTERFERE WITH AN ELECTION JUDGE OR OTHER ELECTION OFFICIALS DURING THE DISCHARGE OF THAT JUDGE OR OFFICIAL'S DUTIES.

8.16-8.15 ~~Unless the county clerk has established another process, if~~ IF a watcher disputes a decision made by an election judge or alleges a discrepancy, the watcher must alert the designated watcher contact.

*[Not shown: current Rules 8.17 and 8.18 are renumbered as Rules 8.16 and 8.17]*

*Amendments to Rule 9.1.1 concerning challenging an in-person voter:*

9.1.1 Under Section 1-9-201, C.R.S., an election official, watcher, or eligible elector of the precinct may challenge an elector's right to vote. A person whose eligibility is challenged while voting in-person, must be offered a regular ballot by an election judge if the person ~~satisfactorily~~ answers the applicable challenge questions CONFIRMING THEIR ELIGIBILITY AS specified in section 1-9-203, C.R.S., and this Rule. If the person challenged provides

~~unsatisfactory answers or~~ refuses to answer the challenge questions OR DOES NOT OTHERWISE CONFIRM THEIR ELIGIBILITY, an election judge must offer the person a provisional ballot.

*Amendments to Rule 9.2 including New Rules 9.2.1, 9.2.2(a)(1-4), 9.2.2(b)(1-4), 9.2.3, 9.2.4; Repeal of current Rule 9.2.2; and necessary renumbering:*

9.2 Challenging a mail ballot voter

9.2.1 CHALLENGES OF A MAIL BALLOT MUST BE MADE IN WRITING ON THE FORM APPROVED FOR USE BY THE SECRETARY OF STATE AND MUST INCLUDE ALL INFORMATION REQUIRED ON THE FORM. ONCE FILLED OUT, THE CHALLENGE MUST BE DELIVERED TO A PERSON DESIGNATED BY THE COUNTY CLERK WHO DID NOT MAKE THE CHALLENGE. THE PERSON DESIGNATED BY THE COUNTY CLERK TO RECEIVE THE CHALLENGE FORM MUST ATTACH THE CHALLENGE FORM TO THE MAIL BALLOT BEING CHALLENGED AND PROCESS THE CHALLENGE IN ACCORDANCE WITH THIS RULE 9.

~~9.2.1-9.2.2~~ If an individual challenges a mail ballot ~~under section 1-9-207, C.R.S.,~~ FORGERY OF A DECEASED PERSON'S SIGNATURE ON THE MAIL BALLOT ENVELOPE OR FOR SUBMISSION OF MULTIPLE BALLOTS BY THE SAME VOTER FOR THE SAME ELECTION, the election judge must forward the ballot to two other election judges of different political party affiliations DESIGNATED BY THE COUNTY CLERK who must JOINTLY review the elector's eligibility to vote. AT THEIR REQUEST, THE ELECTION JUDGES MAY RECEIVE ASSISTANCE IN MAKING THEIR ELIGIBILITY DETERMINATION FROM COUNTY CLERK STAFF. A CHALLENGE FOR SUBMISSION OF MULTIPLE BALLOTS UNDER THIS RULE DOES NOT APPLY TO AN UNAFFILIATED VOTER WHO RETURNS MORE THAN ONE PARTY'S BALLOT.

(a) If both election judges determine the elector is not eligible ~~under section 1-9-207, C.R.S., the judges must follow the procedures in section 1-7.5-107.3(2), C.R.S.~~ MAIL BALLOT SHOULD NOT BE COUNTED BECAUSE THEY BELIEVE IT CONTAINS A FORGERY OF A DECEASED PERSON'S SIGNATURE ON THE MAIL BALLOT ENVELOPE, OR THEY BELIEVE IT IS ONE OF MULTIPLE BALLOTS CAST BY THE SAME VOTER FOR THE SAME ELECTION, THEN THE FOLLOWING STEPS MUST BE TAKEN BY THE COUNTY CLERK:

- (1) THE COUNTY CLERK MUST SEND TO THE CHALLENGED VOTER:
  - (A) NOTIFICATION THAT THEIR BALLOT HAS BEEN CHALLENGED;
  - (B) A COPY OF THE CHALLENGE FORM;
  - (C) A FORM FOR THE ELIGIBLE ELECTOR TO RETURN CONFIRMING THAT THE ELECTOR RETURNED THEIR MAIL BALLOT OR DID NOT RETURN MORE THAN ONE MAIL BALLOT AS APPLICABLE;
  - (D) INSTRUCTIONS TO THE ELIGIBLE ELECTOR TO RETURN A COPY OF THE ELECTOR'S IDENTIFICATION AS DEFINED IN SECTION 1-1-104 (19.5); C.R.S., AND
  - (E) NOTIFICATION TO THE ELIGIBLE ELECTOR THAT THE CHALLENGE AND ELECTOR'S RESPONSE MUST BE REFERRED TO THE DISTRICT ATTORNEY UNDER SECTION 1-9-209, C.R.S.
- (2) NOTIFICATION OF THE CHALLENGE MUST BE SENT WITHIN THREE DAYS AFTER THE CHALLENGE HAS BEEN MADE, BUT NO LATER THAN TWO DAYS AFTER ELECTION DAY.

(3) THE CHALLENGED BALLOT MUST BE COUNTED IF THE BALLOT IS OTHERWISE VALID AND THE COUNTY CLERK RECEIVES THE FORM FROM THE ELIGIBLE ELECTOR WITHIN EIGHT DAYS AFTER ELECTION DAY, INCLUDING:

(A) A STATEMENT THAT THE ELECTOR RETURNED A MAIL BALLOT TO THE COUNTY CLERK AND RECORDER OR DID NOT VOTE MORE THAN ONCE IN AN ELECTION AS APPLICABLE; AND

(B) A COPY OF THE ELECTOR'S IDENTIFICATION AS DEFINED IN SECTION 1-104 (19.5), C.R.S.

(4) IF THE COUNTY CLERK RECEIVES A FORM INDICATING THAT THE ELECTOR DID NOT RETURN A BALLOT TO THE COUNTY CLERK, OR IF THE ELIGIBLE ELECTOR DOES NOT RETURN THE FORM WITHIN EIGHT DAYS AFTER ELECTION DAY, THE SELF-AFFIRMATION ON THE RETURN ENVELOPE MUST BE CATEGORIZED AS INCORRECT, AND THE BALLOT MAY NOT BE COUNTED.

(b) If both election judges determine the elector is eligible and that elector's signature is valid, CHALLENGE SHOULD BE REJECTED, THEN THE COUNTY CLERK must count the elector's ballot IF IT IS OTHERWISE VALID. UNLESS THE CHALLENGE IS WITHDRAWN, THE COUNTY CLERK MUST SEND THE CHALLENGED VOTER:

(1) A COPY OF THE CHALLENGE ALONG WITH NOTIFICATION THAT THE CHALLENGE WAS REJECTED;

(2) NOTIFICATION THAT THE BALLOT WAS COUNTED;

(3) INSTRUCTIONS TO THE ELECTOR ALLOWING THEM TO OTHERWISE RESPOND TO THE CHALLENGE; AND

(4) NOTIFICATION THAT THE CHALLENGE AND ELECTOR'S RESPONSE MUST BE REFERRED TO THE DISTRICT ATTORNEY UNDER SECTION 1-9-209, C.R.S.

9.2.2 Unless the challenge is withdrawn, the county clerk must notify a voter whose ballot was challenged. The notification must include a copy of the challenge form, the disposition of the ballot, and a statement that the matter will be referred to the district attorney under section 1-9-209, C.R.S. The county clerk must provide a copy of the notification to the challenger upon request.

9.2.3 IF AN INDIVIDUAL CHALLENGES A MAIL BALLOT FOR ANY REASON OTHER THAN FOR FORGERY OF A DECEASED PERSON'S SIGNATURE OR FOR SUBMISSION OF MULTIPLE BALLOTS CAST BY THE SAME VOTER FOR THE SAME ELECTION, THE ELECTION JUDGE MUST FORWARD THE CHALLENGE TO THE COUNTY CLERK AND OTHERWISE PROCESS THE MAIL BALLOT AS NORMAL. UNLESS THE CHALLENGE IS WITHDRAWN, THE COUNTY CLERK MUST SEND THE CHALLENGED VOTER:

(A) A COPY OF THE CHALLENGE;

(B) NOTIFICATION THAT THE BALLOT WAS COUNTED;

(C) INSTRUCTIONS TO THE ELECTOR ALLOWING THEM TO OTHERWISE RESPOND TO THE CHALLENGE; AND

(D) NOTIFICATION THAT THE CHALLENGE AND ELECTOR'S RESPONSE MUST BE REFERRED TO THE DISTRICT ATTORNEY UNDER SECTION 1-9-209, C.R.S.

9.2.4 FOLLOWING THE ELECTION, THE COUNTY CLERK MUST SEND A COPY OF ALL CHALLENGES THAT HAVE NOT BEEN WITHDRAWN, ALONG WITH ANY RESPONSES RECEIVED FROM THE CHALLENGED VOTERS, TO THE DISTRICT ATTORNEY AS REQUIRED BY SECTION 1-9-209, C.R.S.

*Amendments to Rule 10.1.5 concerning precanvass accounting:*

10.1.5 ~~Designated Election Official's disposition of forms~~

- (a) The designated election official must review the Statement of Ballots forms for completion and accuracy.
- (b) ~~If the designated election official or the canvass board discovers a problem with a Statement of Ballots form that cannot be easily resolved, they may contact the election judges for an explanation or correction.~~

*Amendments to Rule 10.2.5 concerning appointment to the Canvass Board:*

10.2.5 ~~Appointment of Canvass Workers.~~ The designated election official may appoint canvass workers to help prepare and conduct the canvass.

*Amendments to Rules 10.3 including repeal of Rule 10.3.3 and necessary renumbering:*

10.3 Duties of the Canvass Board

10.3.1 The canvass board must make its determinations by majority vote in accordance with section 1-10-101.5(1)(c), C.R.S.

10.3.2 The canvass board's ONLY duties are to:

- (a) Conduct the canvass AND CERTIFY THE OFFICIAL ABSTRACT OF VOTES in accordance with section 1-10-101.5, C.R.S., ~~including~~ BY:
  - (1) ~~Account and balance the election and certify the official abstract of votes;~~
  - (2) ~~(1) Reconcile RECONCILING the number of ballots counted to the number of ballots cast; and~~
  - (3) ~~(2) Reconcile RECONCILING the number of ballots cast to the number of voters who voted by reviewing the reconciled detailed ballot logs and Statement of Ballots.~~
- (b) Observe the post-election audit in accordance with section 1-7-514(4), C.R.S., and Election Rule 25.2 or 25.3;
- (c) In coordination with the county clerk, investigate and report discrepancies found in the audit under section 1-7-514(2), C.R.S.; and
- (d) Conduct any recount in accordance with section 1-10.5-107, C.R.S., and this Rule. The canvass board's role in conducting a recount includes selecting ballots for the random test, observing the recounting of ballots, and certifying the results.

~~10.3.3 If the board identifies a discrepancy in a Statement of Ballots form, the board may review the particular ballots at issue to identify, correct, and account for the error.~~

~~10.3.4~~10.3.3 The canvass board may not perform duties typically reserved for election judges WHILE CANVASSING THE RESULTS, including:

- (a) Determining voter intent;
- (b) Evaluating voter eligibility, INCLUDING REVIEWING SIGNATURES THAT HAVE BEEN ACCEPTED OR REJECTED; and
- (c) Requesting new logs or reports that were not created to conduct the election.

~~10.3.5~~10.3.4 ~~Role of Watchers.~~ Watchers appointed under section 1-10-101(1)(a), C.R.S., may observe the board while it performs its duties, subject to Rule 8.

*Amendments to Rule 10.5.1 including repeal of Rules 10.5.1(g) and (h):*

10.5 Procedures for Canvass

10.5.1 The designated election official must provide the following information to the canvass board:

- (a) The name of each candidate, office, and votes received;
- (b) The number or letter of each ballot issue or question and votes received;
- (c) The total number of ballots cast;
- (d) The number of provisional ballots cast, including totals for:
  - (1) Ballots accepted by each code; and
  - (2) Ballots rejected by each code.
- (e) The number of mail ballots cast, including totals for:
  - (1) Ballots accepted; and
  - (2) Ballots rejected by each code.
- (f) The number of in-person ballots counted;
- (g) ~~The number of emergency replacement ballots, including totals for:~~
  - (1) ~~Ballots accepted; and~~
  - (2) ~~Ballots rejected by each code.~~
- (h) ~~The number of ballots returned by voters with a disability covered under section 1-5-706 C.R.S.~~
- (i)-(G) The number of damaged and spoiled ballots.
- (i)-(H) If applicable, the number of ballots cast in each party's primary election, including totals for:

- (1) Ballots accepted in each party's primary election by affiliated and unaffiliated voters; and
- (2) Ballots rejected by each code.

*New Rule 10.6.3 concerning official abstract and reporting to the Secretary of State:*

10.6.3 IF A MAJORITY OF THE CANVASS BOARD VOTES NOT TO CERTIFY THE ABSTRACT OF VOTES CAST OR DOES NOT MAKE A FINAL DETERMINATION BY THE DEADLINE TO CERTIFY THE ABSTRACT OF VOTES CAST, THE COUNTY CLERK MUST FORWARD THE ABSTRACT THAT HAS NOT BEEN CERTIFIED TO THE SECRETARY OF STATE ALONG WITH A REPORT FROM THE CANVASS BOARD DESCRIBING WHY THE ABSTRACT HAS NOT BEEN CERTIFIED. UPON RECEIVING AN ABSTRACT UNDER THIS RULE, OR IF THE COUNTY CLERK DOES NOT PROVIDE THE ABSTRACT TO THE SECRETARY OF STATE BY THE DEADLINE TO CERTIFY THE ABSTRACT OF VOTES CAST, THE SECRETARY OF STATE WILL CONSIDER WHETHER TO CANVASS THE RETURNS UNDER SECTION 1-10-104, C.R.S.

*Amendments to Rule 10.8.2 concerning the Secretary of State's role concerning the canvass board:*

10.8.2 The county clerk or ~~the~~ ANY canvass board MEMBER may request that the Secretary of State provide guidance and support to the canvass board in the exercise of the board's duties.

*Rule 10.12.3, concerning testing recount equipment, is repealed:*

10.12.3 ~~In a county using a voting system certified before January 1, 2016, the county clerk must test the VVPAT records from at least one of the DREs that had votes cast on the ballot styles containing the race or measure being recounted.~~

- (a) ~~A bipartisan team of election judges or staff must manually verify the results of the recounted contest on the machines selected for the test and verify that the tally matches the VVPAT record.~~
- (b) ~~The test is limited to the race or measure that is recounted.~~

*Repeal of Rules 10.13.4 and 10.13.6, concerning counting ballots during a recount, and necessary renumbering:*

10.13.4 ~~To recount ballots using "Ballot Now":~~

- (a) ~~Back up the official election database.~~
- (b) ~~Open Ballot Now with an unused Mobile Ballot Box (MBB) from the election and create a Ballot Now recount database.~~
- (c) ~~Scan and resolve all recount ballots according to this Rule 10.~~
- (d) ~~Save all recount Cast Vote Records to the MBBs after verifying that the number of ballots processed matches the number of votes cast in the recount contest.~~
- (e) ~~Open a new recount election in "Tally" and process the recount MBBs following the tabulation procedures above.~~
- (f) ~~Compare recount results to original results and document any differences.~~

(g) ~~Backup the test database and the official recount database.~~

10.13.5-10.13.4 To recount ballots by hand count.

- (a) If the tabulation of the original count was conducted by hand count, the recount must be conducted by hand count.
- (b) Ballots must be counted in batches of 25 to ensure that the number of ballots recounted matches the number originally counted.
- (c) Votes must be counted by individual hash marks in 25-count sections by two different judges.

~~10.13.6 For tabulation of DREs, if there are no discrepancies in the test under Rule 10.12.3, the county clerk must upload the memory cards.~~

*[Not shown: renumbering Current Rules 10.13.7 and 10.13.8 to Rules 10.13.5 and 10.13.6]*

*Amendments to rules concerning logic and accuracy testing, specifically changes to Rules 11.3.2(d)(2) and (d)(4)(A)(i); repeal of Rule 11.3.2(d)(4)(B); and necessary renumbering:*

- (d) Conducting the Test
  - (1) The county and Testing Board must observe the tabulation of all test ballots, compare the tabulation with the previously retained records of the test vote count, and correct any discrepancies before the device is used in the election.
  - (2) The county must reset the public counter to zero on all devices and present ~~zero tapes or~~ THE summary report to the Testing Board for verification.
  - (3) The county must make an appropriate number of voting devices available and the Testing Board may witness the programming of devices necessary for the test.
  - (4) The Testing Board and designated election official must count the test ballots as follows, as applicable:
    - (A) Ballot Scanners:
      - (i) The Testing Board must test at least one central count ballot scanner ~~and at least one ballot scanner used at a voter service and polling center, if applicable.~~
      - (ii) The Testing Board must randomly select the machines to test.
      - (iii) The Testing Board must count the board and county's test ballot batches separately and generate reports to verify that the machine count is identical to the predetermined tally.
    - (B) DREs:

- (i) The Testing Board must test at least one DRE.
- (ii) The Testing Board must randomly select the machines to test.
- (iii) Each member of the Testing Board must separately cast his or her test ballots on the selected DREs. Each Testing Board member must cast at least one of his or her test ballots using the audio ballot playback and accessible input devices.
- (iv) Each Testing Board member must examine the tabulation tape or report and verify that the DRE results match what the Testing Board member manually marked on his or her test ballots.

~~(C)~~(B) Ballot Marking Devices (BMDs):

- (i) The Testing Board must randomly select and test at least one BMD.
- (ii) At least two members of the Testing Board must use the selected BMD to mark and print at least 25 ballots in the same manner that the testing board member manually marked his or her test ballots. At least two members of the Testing Board must mark at least one of his or her test ballots using the audio ballot playback and accessible input devices.
- (iii) A Testing Board member or county election official must separately scan and tabulate the test ballots marked with and printed from the BMD on one central count or polling location scanner, and generate a results report.
- (iv) Each Testing Board member must verify that the results report generated from the scanner exactly corresponds to the testing board member's tally of the votes on the manually marked paper ballots comprising his or her test ballots.

*Repeal of Rule 11.8.2 and amendments to Rule 11.8.3 including renumbering:*

11.8.2 In the case of electromechanical or electronic voting systems, devices, or related components certified for use in Colorado before January 1, 2016, the Secretary of State will approve a political subdivision's application to purchase, lease, or use the voting system, device, or related component, only if:

- (a) The political subdivision purchased, leased or used the same voting system, device, or related component, before January 1, 2016; and
- (b) The political subdivision's application for approval is limited to the acquisition or use of voting system applications, components or voting devices intended to replace the same or substantially similar applications, devices and components that are damaged, defective or inoperable; and

(c) Approval of the application, and the political subdivision's purchase, lease or use of the voting system components or voting devices, will not materially impair the political subdivision's future fiscal ability to purchase or lease a voting system certified for use in Colorado on or after January 1, 2016.

11.8.3-11.8.2 In the case of electromechanical or electronic voting systems, devices or related components certified for use in Colorado on or after January 1, 2016, the THE Secretary of State will approve a political subdivision's application to purchase, lease, or use the voting system, device, or related component, after considering all relevant factors, including without limitation:

*[No changes to (a) through (q)]*

*[Not shown: renumbering current Rules 11.8.4 through 11.8.8 to Rules 11.8.3 through 11.8.7]*

*Amendments to Rule 11.9 concerning contest order and election night reporting, specifically changes to Rule 11.9.1(b)(3) and repeal of Rule 11.9.1(b)(4):*

- (3) A county using the Dominion, Hart, or Clear Ballot voting system must include and populate the contest sequence number field in its results files to define the order of contests on the ballot as required by this Rule.
- (4) A county using the Premier voting system must include and populate the contest ID field in its results file to define the order of contests as required by this Rule.

*Amendment to rule 11.10.1:*

11.10 Reports or materials required by this Rule may be submitted to the voting systems team:

11.10.1 By delivery to:

Colorado Secretary of State  
Attn: Voting Systems  
1700 Broadway – Suite 200 550  
Denver, CO 80290

*Amendments to Rule 15 concerning preparation, filing, and verification of petitions:*

*Amendments to Rule 15.1:*

15.1 The following requirements apply to candidate, statewide initiative, recall, MINOR PARTY CREATION, and referendum petitions, unless otherwise specified.

15.1.1 Petition template for state petitions

- (a) Petition proponents must use the Secretary of State's fillable .pdf petition template to create their petition format.
- (b) After approval of the petition format as to form, proponents must print all petition sections in accordance with the Secretary of State's petition-printing guidelines.
- (c) Any signature affixed to a petition section that does not conform to the requirements of this Rule 15.1.1 is not valid.

*Current Rule 15.1.1(d) is repealed and replaced by New Rule 15.1.1(d):*

(d) ~~An unaffiliated candidate for the office of President of the United States who is submitting a petition for nomination under Section 1-4-802, C.R.S. must include on the petition the names of registered electors the candidate is nominating as their presidential electors. PETITION PROPONENTS FOR INITIATIVE PETITIONS MUST PROVIDE A WORD VERSION OF THE FINAL TEXT OF THE MEASURE TO THE SECRETARY OF STATE.~~

*Amendments to Rule 15.1.2. Portions of Current Rules 15.4 are amended and re-codified under Rule 15.1.2 as follows:*

#### 15.1.2 PETITION SUBMISSION

(A) ~~The Secretary of State or DEO will not accept or count additional signatures after proponents file the original petition or addendum. THE INITIAL SUBMISSION OF THE PETITION, EVEN IF ADDITIONAL SIGNATURES ARE OFFERED BEFORE THE DEADLINE.~~

~~15.4.3 (B) Staff~~ THE SECRETARY OF STATE OR DEO will inspect each petition section for evidence of disassembly. If it appears that the section was disassembled, the ~~Secretary of State~~ OR DEO will reject all signatures in the section.

~~15.4.6 (C) Staff will count each line with writing on each petition section. For purposes of this Rule, an “entry” means a counted line with writing. At the bottom of each page, staff will write the number of entries on that page and, on the face of each petition section, staff will write the total number entries for that section. THE SECRETARY OF STATE OR DEO WILL CONSIDER ANY SIGNER LINE WITH WRITING ON IT AS A REVIEWABLE LINE, EVEN IF THE LINE IS INCOMPLETE OR PARTIALLY CROSSED OUT.~~

~~15.4.6(a)-(D) Staff~~ THE SECRETARY OF STATE OR DEO will not ~~count~~ REVIEW LINES THAT ARE blank or completely crossed-out lines.

~~(b) Staff will count a line with incomplete writing, a partial cross out, or with what appears on its face to be an invalid signature as an entry.~~

~~15.4.5 (E) If the number of lines SUBMITTED is less than the number of signatures required to certify the measure to ACCESS the ballot, the Secretary of State OR DEO will issue a statement of insufficiency AND WILL NOT REVIEW SIGNER LINES OR APPLY DUPLICATES TO FUTURE CANDIDATE PETITION SUBMISSIONS FOR THE SAME OFFICE OR RECALL PETITIONS OF THE SAME OFFICEHOLDER.~~

(F) THE SECRETARY OF STATE OR DEO WILL REVIEW AND PROCESS CANDIDATE PETITIONS FOR THE SAME OFFICE IN THE ORDER IN WHICH THEY ARE RECEIVED.

*Amendments to Rule 15.1.3(c) concerning circulator affidavit:*

(c) If a state candidate, RECALL PROponent, OR INITIATIVE PROponent is curing a circulator affidavit under section 1-4-912(2), C.R.S., the candidate OR PROponent must use the ~~cure affidavit~~ provided a form APPROVED by the Secretary of State.

*Amendments to Rules 15.1.4(d) and (e) including repeal of Rule 15.1.4(d)(5); New Rules 15.1.4(e)(4), (6), (8), and (9); and necessary renumbering:*

#### 15.1.4 Verifying individual entries

- (a) Staff will check each individual entry against the information contained in SCORE.
- (b) Staff will create and maintain a master record of each accepted and rejected entry, along with the reason code for each rejected entry.
- (c) If an entry does not match the signor's current information in SCORE, staff must check the signor's information in SCORE as of the date the signor signed the petition.
- (d) Secretary of State or DEO staff will reject the entry if:
  - (1) The name on the entry is not in SCORE;
  - (2) The middle initial or middle name on the entry does not match the middle initial or middle name in SCORE;
  - (3) The address on the entry does not match the RESIDENTIAL address in SCORE;
  - (4) ~~The address on the entry is a post office box; THE ENTRY ADDRESS CONTAINS INFORMATION, SUCH AS A NUMBER, APARTMENT NUMBER, OR STREET DIRECTION THAT CONTRADICTS THE SCORE ADDRESS;~~
  - (5) ~~The entry is incomplete;~~
  - (6)-(5) The signer completed the entry before the designated election official approved the petition format;
  - (7)-(6) The signer was not an eligible elector at the time he or she completed the entry;
  - (8)-(7) The signer completed the entry after the date on the circulator affidavit;
  - (9)-(8) Evidence exists that some other person assisted the signer in completing the entry but no statement of assistance accompanies the entry;
  - (10)-(9) The name and signature on the entry is illegible and cannot be verified in SCORE;
  - (11)-(10) The entry is a duplicate of a previously accepted entry on the same petition; or
  - (12)-(11) For a candidate petition where an elector may sign only one petition for the same office, the entry is a duplicate of a previously accepted entry on a ~~previously filed~~ petition THAT WAS DECLARED SUFFICIENT OR INSUFFICIENT AFTER LINES WERE REVIEWED for the same office.
  - (13)-(12) The signer's information appears outside of a numbered signature block on a petition section.
  - (14)-(13) For a candidate petition, the address on the entry does not match the current residential or mailing address for the elector in SCORE.

(e) Secretary of State or DEO staff will accept the NOT USE ANY OF THE FOLLOWING DISCREPANCIES AS THE SOLE REASON TO REJECT AN entry #:

- (1) The name on an entry matches or is substantially similar to the information in SCORE, or if the signature on an entry is a common variant of the name;
- (2) A middle initial or middle name is present on the entry but not in SCORE, or present in SCORE but not on the entry;
- (3) A name suffix is present on the entry but not in SCORE, or present in SCORE but not on the entry; or
- (4) THE PRINTED NAME IS MISSING OR ILLEGIBLE BUT THE SIGNATURE CAN BE READ;
- (4)-(5) The address on the entry is missing an apartment letter or number or a street direction, OR THE ADDRESS ENTRY CONTAINS AN APARTMENT LETTER OR NUMBER OR A STREET DIRECTION THAT IS MISSING IN THE VOTER REGISTRATION RECORD;
- (6) THE COUNTY NAME IS MISSING, ABBREVIATED, OR WRONG;
- (5)-(7) For a candidate petition AND RECALL PETITIONS, the address provided did not match the current residence address information in SCORE, but did match the current mailing address information in SCORE;;
- (8) ON A SIGNER LINE, THE DATE IS MISSING BUT A LINE ABOVE OR BELOW HAS AN ACCEPTABLE DATE; OR
- (9) FOR SECRETARY OF STATE REVIEWED PETITIONS ONLY, THE YEAR OF THE DATE IS MISSING OR WRONG.

*Amendments to Rule 15.2 including New Rules 15.2.1(c), 15.2.1(d)(3), and necessary reorganization and renumbering.*

## 15.2 Petition entity license, registration, filing, and circulation

15.2.1 A petition entity that intends to pay petition circulators must obtain a petition entity license, pay a fee, and register with the Secretary of State before circulating INITIATIVE, CANDIDATE, AND RECALL petitions. The license application must include:

- (a) The petition entity's name, address, telephone number, and email address;
- (b) The designated agent's name; and
- (c) THE NAME OF ALL OWNERS AND CHIEF OFFICERS OF THE ENTITY; AND
- (d) An affirmation that:
  - (1) the THE designated agent has read and understands Article 4, ARTICLE 12, and Article 40 of Title 1, C.R.S.; and
  - (2) THE DESIGNATED AGENT has completed the Secretary of State's circulator training program; AND

(3) THE ENTITY AND NONE OF ITS OWNERS OR CHIEF OFFICERS HAS EVER BEEN FOUND IN A JUDICIAL OR ADMINISTRATIVE HEARING IN COLORADO OR ANY OTHER STATE OF AUTHORIZING OR KNOWINGLY PERMITTING:

- (A) FORGERY OF A REGISTERED ELECTOR'S SIGNATURE;
- (B) CIRCULATION OF A PETITION SECTION, IN WHOLE OR IN PART, BY ANYONE OTHER THAN THE CIRCULATOR;
- (C) USE OF A FALSE CIRCULATOR NAME OR ADDRESS IN A CIRCULATOR AFFIDAVIT;
- (D) PAYMENT OF MONEY OR A THING OF VALUE TO ANY PERSON FOR THE PURPOSE OF INDUCING THE PERSON TO SIGN OR WITHDRAW HIS OR HER NAME FROM A PETITION; OR
- (E) A NOTARY PUBLIC'S NOTARIZATION OF A CIRCULATOR AFFIDAVIT OUTSIDE OF THE PHYSICAL PRESENCE OF THE CIRCULATOR OR WITHOUT THE PRODUCTION OF THE REQUIRED IDENTIFICATION FOR NOTARIZATION OF A PETITION SECTION.

- 15.2.2 Before compensating a circulator, the designated agent must register with the Secretary of State by submitting a signed form that includes a list of the proposed initiatives and/or the candidate or candidate committee's name the petition entity will circulate.
- 15.2.3 If a petition entity fails to register a proposed initiative, RECALL PETITION, or candidate petition over any two-year period, the license expires. The Secretary of State will notify a petition entity that its license has expired within 30 days after the date of expiration.
- 15.2.4 A petition entity may renew an expired license without a fee by submitting a new license application.

*Amendments to Rules 15.3.2 and Repeal of Rule 15.3.3 concerning statewide initiative petition circulation:*

- 15.3.2 The petition circulator must provide a permanent residence address on the circulator affidavit. ~~If the circulator is not a permanent Colorado resident, the circulator must also provide the Colorado address where he or she temporarily lives.~~
  - (a) For purposes of Article 40 of Title 1, C.R.S., and this Rule, a circulator's permanent "residence" or "domicile" means his or her principal or primary home or place of abode in which a circulator's habitation is fixed and to which the circulator, whenever absent, has the present intention of returning after a departure or absence, regardless of the duration of the absence. A permanent "residence" or "domicile" is a permanent building or part of a building and may include a house, condominium, apartment, room in house, or mobile home. Except as provided in paragraph (b) of this Rule, a vacant lot, business address, or post office box is not a permanent "residence" or "domicile". (~~Sections 1-2-102(1)(a)(i) and 1-40-121(1)(b), C.R.S.~~)
  - (b) A homeless circulator must provide the address or location where he or she is living the date the affidavit is signed. The circulator must provide a physical location; a post office box may not be provided.

(c) For the purposes of sections 1-40-106(4)(b), 1-40-111(3)(a), 1-40-121(2)(a), and 1-40-135(2)(c), C.R.S., a circulator's permanent residence address that does not comply with this Rule 15.4.2 is a "false address".

~~15.3.3 Proponents may file a petition or addendum only once, and may not supplement additional signatures after filing the petition or addendum, even if the additional signatures are offered before the deadline to submit the original petition or addendum.~~

*[Current Rule 15.4.3 is amended and re-codified under New Rule 15.1.2(b)]*

~~15.4.4-15.4.3~~ Staff will consecutively number each line on each petition section. For purposes of this Rule, "line" means the block of information that contains the last name, first name, middle initial, county, signing date, street address, city, and signature of a petition signer.

*[Current Rule 15.4.5 is amended and re-codified under New Rule 15.1.2(e)]*

*[Current Rule 15.4.6 is amended and re-codified under New Rules 15.1.2(c) and (d)]*

*Rule 15.6 is repealed:*

~~15.6 Curing insufficient statewide initiative petitions~~

~~15.6.1 If petition proponents submit additional signatures within the permitted time, Secretary of State staff will verify the additional signatures in accordance with this Rule 15.~~

~~15.6.2 If the Secretary of State found the original submission insufficient based on the random sample verification, staff will add the number of additional valid signatures to the number of projected valid signatures in the original submission.~~

~~(a) If the new projected number of valid signatures equals 110% or more of the required signatures, the Secretary of State will issue a statement of sufficiency.~~

~~(b) If the new projected number of valid signatures equals more than 90% but less than 110% of the required signatures, staff will verify all previously submitted signatures. Staff will add the total number of valid signatures in the original petition to the number of additional valid signatures submitted in the addendum in order to determine sufficiency.~~

~~15.6.3 If the initial verification was of every signature, staff will add the number of additional valid signatures to the number of valid signatures in the original submission in order to determine sufficiency.~~

~~15.6.4 Staff will issue a new statement of insufficiency or sufficiency that reports the total number of valid signatures submitted.~~

*[Not shown: renumbering current Rules 15.7 and 15.8 to Rules 15.6 and 15.7]*

*Amendments to Rule 16.2.2, concerning Military and Overseas Voters (UOCAVA) and electronic transmission, including New Rule 16.2.2(a) and necessary renumbering:*

16.2.2 The electronic transmission must include:

(A) DIRECTIONS FOR THE VOTER TO ACCESS THEIR BALLOT AND MATERIALS ONLINE AT THE WEBSITE APPROVED BY THE SECRETARY OF STATE; OR

- (a)-(B) The county clerk's contact information including mailing address, email address, phone, and fax number;
- (b)-(C) A notice that the ballot may not be duplicated for any other elector;
- (c)-(D) Instructions for completing and returning the ballot;
- (d)-(E) A notice regarding the ballot return deadline;
- (e)-(F) Information regarding how the elector may verify that his or her ballot has been received by the county clerk; and
- (f)-(G) Any other information deemed necessary by the Secretary of State or the county clerk.
- (g)-(H) The ballot packet, which must be in text format on 8 1/2" x 11" white paper and must include:
  - (1) An electronic transmission AFFIDAVIT AND coversheet to protect voter privacy;
  - (2) The unvoted ballot; AND
  - (3) The electronic transmission ballot instructions; and
  - (4) ~~The self affirmation required by section 1-8.3-114, C.R.S., and Rule 16.2.3.~~

*Amendments to Rule 16.2.3:*

- 16.2.3 The self-affirmation must include the standard oath required by the Uniformed and Overseas Citizen Voting Act (~~52 U.S.C. sec. 20301(b)(7) and 20302(a)(5)~~), the elector's name, date of birth, signature, and the following statement: I also understand that by returning my voted ballot by electronic transmission, I am voluntarily waiving my right to a secret ballot and that Colorado law requires that I return this ballot by a more secure method, such as mail, if available and feasible. (~~Sections 1-8.3-113 and 1-8.3-114, C.R.S.~~)

*Amendments to Rule 16.2.6 update a cross-reference:*

- 16.2.6 Upon receipt of a voted ballot sent by electronic transmission, the county clerk must verify the elector's signature in accordance with Rule 7.8-7.7. After the affidavit has been verified, a bipartisan team of judges must duplicate the ballot. Duplicating judges must not reveal how the elector voted.

*Part of Rule 16.2.7(b) is repealed:*

- 16.2.7 A military or overseas elector whose registration record is inactive may download an application and ballot using the electronic ballot delivery system.
  - (a) The elector must submit the ballot and application in accordance with the deadlines in section 1-8.3-111 and 1-8.3.113, C.R.S., for the ballot to be counted.

(b) Every county must use the approved electronic delivery system to implement this Rule, except that a county may obtain a waiver. The Secretary will consider the following factors in approving or denying a request for waiver:

- (1) Number of military or overseas electors registered to vote in the county;
- (2) Historical data regarding the number of military and overseas electors who have registered and voted in the county; and
- (3) Staff or other resource limitations.

*[No changes to Rule 17]*

*Amendments to Rule 18.4.1 concerning uniform counting standards for paper ballots:*

18.4 Ballot Duplication

18.4.1 A resolution board must duplicate a voter's choices or selections on a damaged ballot onto a blank ballot of the same ballot style in accordance with Rule 18.4. During the duplication process, and to the extent necessary, the resolution board must also resolve overvotes, write-in votes, and ambiguous markings in accordance with Rule 18.5. During ballot duplication, two additional election judges must observe or review the work of each resolution board. In a partisan election, the observing election judges must be representatives of each major political party.

*Amendments to Rule 20.3.3 concerning county security procedures, specifically general requirements concerning security documentation:*

20.3.3 Only election officials or canvass board members sworn under oath are allowed to handle ballots, which include VVPAT records.

*Amendments to Rule 20.4 including repeal of Rules 20.4.1(a), 20.4.2, 20.4.3, and necessary renumbering:*

20.4 Physical locking mechanisms and seals. The county must record the serial number of every seal on the appropriate chain-of-custody log. Two individuals must verify, and indicate by signing and dating the log, that the seal serial numbers match the logged serial numbers. If a seal is inaccessible and cannot be removed, then it is not necessary to verify that seal serial number.

20.4.1 DREs, BMDs, and Judge's Booth Controllers (JBCs)

- (a) The county must place a seal over a removable card or cartridge that is inserted into the unit, or over the slot or door covering the card or cartridge.
- (b)-(A) The county must place a seal over any data port when the port is not being used, except slots for activation cards.
- (c)-(B) If the county cannot verify the firmware or software hash value (MD5 or SHA-1), the county must seal the DRE or BMD case. To detect unauthorized access, the county must use seals at either the seams of the case or at key entry points such as screw access points.
- (d)-(C) In each voter service and polling center, the county must provide a minimum of one accessible DRE or BMD that complies with section 1-5-704, C.R.S.

20.4.2 Before attaching a VVPAT to a specific voting device, the county must seal the unit after verifying that no votes were cast. At least two election officials must verify that seals are intact before the start of voting, and at the close of voting. VVPAT records must either remain in the VVPAT canister, or be sealed and secured in a suitable device for protecting privacy or as described in Rule 20.13.

20.4.3 ~~Ballot scanners~~

- (a) ~~The county must place a seal over each card or cartridge inserted into the unit, or over any door or slot containing the card or cartridge.~~
- (b) ~~The county must place a seal over each empty card or cartridge slot or door covering the area where the card or cartridge is inserted.~~
- (c) ~~Before the start of voting and after the close of voting, two election officials must visually confirm that all seals are intact and that the seal numbers match those logged in the chain-of custody log.~~

20.4.4-20.4.2 ~~Memory cards and activation ACTIVATION cards~~

- (a) The county must assign and securely affix a permanent unique identifier to each removable card or activation card. The county may use the manufacturer assigned serial number for this purpose.
- (b) The county must handle ~~memory cards~~ and activation cards in a secure manner at all times. The county must transfer and store any card or activation card ~~that is not sealed in a voting machine~~ in a secure container with at least one seal. Upon delivery and receipt, election judges or county personnel must verify, and indicate by signing and dating the chain-of custody log, that all seal numbers match those listed in the log.
- (c) The county must maintain a written or electronic log to record ~~memory card~~ or activation card seals and track seals for each voting unit.
- (d) The county must maintain a complete inventory of ~~memory cards~~ and activation cards, including which VSPC they are assigned to during an election. Before and after a VSPC opens and closes each day, the supervisor judge must verify that all cards issued to the VSPC are present. If at any time the supervisor judge cannot account for all activation cards issued to the VSPC, the supervisor judge or a member of the county election staff must immediately submit an incident report to the Secretary of State under Rule 11.7.

*Amendments to Rule 20.5:*

20.5 Access to secure areas AND VOTING SYSTEMS

*Permanent adoption of amendments to Rule 20.5.4 that were temporarily adopted on June 17:*

20.5.4 Voting system access security

- (a) Except for voters using a voting system component to vote during an election, county clerks may not allow any person to access any component of a county's voting system unless that person has passed the background check required by this or any other rule or law, is performing a task permitted by the county clerk or the Office of the Secretary of State under statute or rule, and is:

- (1) An employee of the county clerk;
- (2) Appointed as an election judge by the county clerk in accordance with Article 6 of Title 1, C.R.S.;
- (3) An employee of the voting system provider for the county's voting system; or
- (4) An employee or designee of the Secretary of State.

- (b) All voting system provider employees who conduct work on any component of a county's voting system must complete a criminal background check prior to the employee's work with the voting system. The provider must affirm that the check was conducted in writing to the Secretary of State prior to the employee conducting any work. Any person convicted of an election offense or an offense with an element of fraud is prohibited from working on any component of a county's voting system.
- (c) All Secretary of State staff who conduct work on any component of a county's voting system must undergo a criminal background check prior to the staff's work with the voting system.
- (d) Any person convicted of an election offense or an offense with an element of fraud is prohibited from working on any component of a county's voting system.
- (e) Any violation of Rule 20 may result in the prohibition or limitation on the use of, as well as decertification of, a county's voting system or components in accordance with section 1-5-621, C.R.S., and Rule 21.7.3.

*Amendments to Rule 20.7:*

20.7 The county must keep all components of the voting system, ballots, servers, workstations, DREs, ballot scanners, BMDs, ~~VVPAT records~~, and video data records in a temperature-controlled storage environment that maintains a minimum temperature of 50 degrees Fahrenheit and a maximum temperature of 90 degrees Fahrenheit. The storage environment must be dry with storage at least four inches above the floor. The county must provide the Secretary of State with a description of the specific environment used for each type of component.

*New Rule 20.9.4 concerning security cameras or other surveillance:*

20.9.4 VIDEO FOOTAGE CREATED UNDER THIS RULE MUST BE MAINTAINED AS AN ELECTION RECORD UNDER SECTION 1-7-802, C.R.S.

*Rule 20.10.4(c), concerning equipment maintenance procedures, is repealed:*

(c) ~~If the maintenance was performed on a DRE, a minimum of five ballots must be cast on the device.~~

*Amendments to Rule 20.11 including repeal of Rule 20.11.2 and necessary renumbering:*

20.11 Transportation of equipment, ~~memory cards~~, ballot boxes, and ballots

20.11.1 The county must submit detailed plans to the Secretary of State before an election regarding the transportation of equipment and ballots both to remote voting sites and back to the central elections office or storage facility. If there is any evidence of possible

tampering with a seal, or if the seal numbers do not match those listed in the chain-of-custody log, the county clerk must be immediately notified and must follow the procedures specific to the incident as described in Rule 20.15. While the method of transportation of equipment may vary, the following standards apply:

- (a) Transportation by county personnel. County personnel must at all times display identification provided by the County. Two employee signatures and date are required at the departure location verifying that the equipment, ~~including memory card or cartridge~~, is sealed to detect tampering. Upon delivery of equipment, at least two election officials must verify, and indicate by signing and dating the chain-of-custody log, that all seals are intact and that the seal numbers match the logged seal numbers.
- (b) Transportation by election judges. Election officials that are receiving equipment must inspect all voting devices and verify the specific seal numbers by signature and date on the chain-of-custody log for the device.
- (c) Transportation by contract. If a county contracts for the delivery of equipment to remote voting locations, each individual delivering equipment must successfully pass a criminal background check. Any person who has been convicted of an election offense or an offense with an element of fraud is prohibited from handling or delivering voting equipment. Two election officials must verify the specific seal numbers by device, sign, and date the chain-of-custody log upon release of the equipment to the individuals delivering the equipment.

~~20.11.2 Standards for transporting voting equipment to and from the voting location:~~

- (a) ~~Required procedures if memory cards or cartridges are removed from voting devices at remote voting locations:~~
  - (1) ~~Before removing a memory card or cartridge, two election officials must inspect and verify that all seals on the device are intact and that the serial numbers on the seals match those listed on the chain-of-custody log. Both election officials must sign and date the chain-of-custody log before breaking the seal.~~
  - (2) ~~Election officials must place the memory cards or cartridges in a sealable transfer case and must seal the case. The election officials must maintain a chain-of-custody log for the transfer case of the memory cards or cartridges.~~
  - (3) ~~Election officials must place new seals over the empty memory card/cartridge slot and do so and document the seal numbers used.~~
  - (4) ~~At least two election officials must accompany the transfer case to the processing location. The election officials who receive the equipment must verify, and indicate by signing and dating the chain-of-custody log, that the seals are intact and seal serial numbers match those listed in the log.~~
  - (5) ~~Election officials transporting secured voting equipment must maintain chain-of-custody logs.~~
- (b) ~~Required procedures if devices are delivered with memory cards/cartridges intact:~~

- (1) ~~Two election officials must verify that all seals are intact at the close of polls. Election judges must sign and date the chain of custody log with such indication.~~
- (2) ~~At least two election officials must accompany the secured equipment to the drop-off location. The person receiving the equipment must verify the seals and sign and date the logs.~~
- (3) ~~Upon confirmation that the seals are intact and bear the correct numbers, election officials must remove and upload the memory cards/cartridges into the central count system.~~
- (4) ~~To secure the equipment, election officials must place a tamper-evident seal over the memory card slot and update the chain of custody log to reflect the new seal numbers.~~

*[Not shown: renumbering Current Rules 20.11.3 and 20.11.4 to Rules 20.11.2 and 20.11.3]*

*Rule 20.13 is repealed:*

~~20.13 Procedures for voter verifiable paper record (VVPAT). The following requirements apply only to DREs with a VVPAT.~~

~~20.13.1 Security. The VVPAT record is considered an official record of the election, in accordance with section 1-5-802, C.R.S.~~

- (a) ~~The housing unit for any VVPAT record to be used in the election must be sealed and secured before any votes are cast for the election. Election officials must attest to the VVPAT record having no votes included on the paper record before the start of voting, and before the installation or replacement of a new VVPAT record. Documentation of the seal numbers must be maintained before voting and at the conclusion of voting.~~
- (b) ~~If a DRE with VVPAT is used at a voter service and polling center, the seal numbers must be recorded at the beginning and end of each voting day.~~
- (c) ~~At the close of the polls, the VVPAT records will be transferred to the election office in the same manner as any paper ballots. In the absence of paper ballots, the VVPAT records will be transferred to the election office in the same manner as memory cards.~~

*Amendments to Rule 20.13.2 include repeal of Rules 20.13.2(c) and 20.13.3 and necessary renumbering:*

~~20.13.2-20.13 Anonymity. The designated election official must implement measures to protect the anonymity of voters choosing to vote on DREs~~

(a) 20.13.1 Measures to protect anonymity include:

- (1)(A) ~~The county may not keep any record indicating the order in which people voted on the BMD DRE, or which VVPAT record is associated with the voter.~~
- (2)(B) ~~When more than one DRE BMD is available at a voting location, the county must, to the extent practicable, allow the voter to choose the DRE BMD they wish to vote on.~~

(b) 20.13.2 The county clerk may not release a report generated from SCORE that includes a date and time stamp that could potentially identify a voter who cast a specific ballot.

(c) ~~At no time may an election official simultaneously access a VVPAT and the list of voters. If the VVPAT record requires inspection, at least two election officials must conduct the examination.~~

(d) 20.13.3 The county must arrange voter service and polling center DREs BMDs in a manner that prevents election officials and other voters from observing how a DRE BMD voter marks or casts their ballot.

~~20.13.3 Storage. The storage of the VVPAT records must be consistent with storage of paper ballots under section 17-802, C.R.S.~~

(a) ~~Individual spools containing VVPAT records must contain the following catalog information affixed to the spool:~~

- (1) ~~Date and name of election;~~
- (2) ~~Name of voting location;~~
- (3) ~~Dates and times of voting;~~
- (4) ~~Machine serial number of DRE associated with the record; and~~
- (5) ~~Number of spools associated with this machine for this election (i.e. "Spool 1 of 1", or "Spool 1 of 2", etc.).~~

(b) ~~Light sensitive storage containers must be used for the 25 month storage period to ensure the integrity of the VVPAT paper record. Containers must be sealed, with record of the seal numbers maintained on file and signed by two election officials.~~

*Amendments to Rule 20.14.2, concerning security training for election officials, include repeal of Rule 20.14.2(d):*

20.14.2 Security training must include the following components:

- (a) Proper application and verification of seals and chain-of-custody logs;
- (b) How to detect tampering with voting equipment, memory cards, or election data on the part of anyone coming in contact with voting equipment, including election officials, vendor personnel, or voters;
- (c) Ensuring privacy in voting booths;
- (d) ~~VVPAT requirements;~~
- (e)-(D) Chain-of-custody requirements for voting equipment, ~~memory~~ ACTIVATION cards, and other election materials;
- (f)-(E) Ballot security;
- (g)-(F) Voter anonymity; and

(h)-(G) Recognition and reporting of security incidents.

*Amendments to Rule 20.15.1(c), including repeal of Rule 20.15.1(c)(3):*

20.15 Remedies

20.15.1 If a seal is broken, or there is another discrepancy, the election official must immediately notify the county, who must remedy the discrepancy as follows:

*[No changes to (a) and (b)]*

- (c) If the evidence indicates that the discrepancy occurred after votes were cast or printed on the device:
  - (1) The county may not continue to use the machine until verification or reinstallation of trusted build and acceptance testing is complete.
  - (2) The election officials must seal the device and securely deliver it to the county.
  - (3) ~~If the device is a DRE or ballot scanner:~~
    - (i) ~~The county must close the election on that device, and perform a complete manual verification of the paper ballots (or VVPAT records) to the summary tape printed on the device that represents the record of votes on the memory card.~~
    - (ii) ~~If the totals do not match then only the paper record will be accepted as the official results for that device. The county must re-seal and secure the device and immediately report the discrepancy to the Secretary of State. The county must not use the device for the remainder of the election unless the trusted build is reinstated.~~
    - (iii) ~~If the totals match, the county may upload the memory card into the election management software at the close of polls.~~
    - (iv) ~~After verifying the totals, the county must secure the paper records and memory card with seals and a chain-of-custody log.~~
  - (4)-(3) The county must verify the trusted build or the Secretary of State must reinstall trusted build. Where the county can display, verify, or print the hash value (MD5 or SHA-1) of the firmware or software, the county must document and verify that the hash value matches the documented alphanumeric string associated with the trusted build for the software or firmware of that device.
  - (5)-(4) The county must complete the necessary seal process and documentation to establish the chain-of-custody for the device ~~and memory card~~.
  - (6)-(5) The county must set the machine to election mode ready for a zero report before resuming voting on the device.

(7)(6) Before certifying election results, the county must conduct a full (all contests) random audit on the device under Rule 25.3 and report results to the Secretary of State. This requirement is in addition to the post-election audit required by Rule 25.2 or 25.3.

*Amendments to Rule 20.19.4, concerning voting systems conditions for use, including repeal of Rules 20.19.4(a) and (c):*

**20.19.4 DREs**

(a) The county's election judges must:

(1) ~~Test the VVPAT printer immediately after changing the VVPAT paper; and~~

(2) ~~Lock and re-seal the VVPAT canister, and make appropriate entries on the VVPAT chain of custody log, before voting resumes on the DRE.~~

(b) At least one DRE BMD in each voter service and polling center must have a backup battery, or be connected to an uninterruptible power supply, sufficient to sustain continuous operation for a minimum of two hours in the event of power loss.

(c) The county must maintain logs indicating administrator function use.

*Rules 20.19.5, 20.20, and 20.21 are repealed:*

**20.19.5 Ballot scanners:**

(a) ~~When issuing ballots, the county must provide in-person voters with a secrecy sleeve sufficient to conceal a voter's marked ballot from others in the polling location, including election officials.~~

(b) ~~The county must record the ballot scanner serial number on all chain of custody logs and reports generated by the device.~~

(c) ~~Each ballot scanner must have a backup battery, or be connected to an uninterruptible power supply sufficient to sustain continuous operation for a minimum of two hours in the event of power loss.~~

(d) ~~The county must maintain logs indicating administrator function use.~~

(e) ~~The county must program each ballot scanner to permit an election judge to override rejection of overvoted ballots that cannot be duplicated in accordance with Rule 18.~~

**20.20 ES&S voting system conditions**

~~20.20.1 If the county must provide language minority assistance under section 203 of the Voting Rights Act (42 U.S.C. §§ 1973 to 1973bb-1), it may not use an ES&S voting system.~~

~~20.20.2 DREs. The county may only use the nine inch screen on the VVPAT.~~

20.20.3 For ballot scanners with a zip disk drive, the county must save the cast vote records for each batch of tabulated ballots to a zip disk. A batch of tabulated ballots may consist of one or more SCORE absentee ballot batches.

20.21 Hart DRE conditions. If a county shortens a lengthy candidate name on the VVPAT, it must provide printed notice of the change to voters at the voter service and polling center.

*Amendments to Rule 21.3.5 concerning Voting System Standards for Certification, specifically application procedures:*

21.3.5 The vendor must identify any material it asserts is exempt from public disclosure under the Colorado Open Records Act, Part 2, Article 72 of Title 24, C.R.S., together with a citation to the specific grounds for exemption before beginning Phase III V of the certification process.

*Amendments to Rule 21.4.1:*

21.4 Voting System Standards

21.4.1 The 2002 Voting Systems Standards are incorporated by reference. Material incorporated by reference in the Election Rules does not include later amendments or editions of the incorporated material. Copies of the material incorporated by reference may be obtained by contacting the Federal Election Commission, 999 E Street NW, Washington, DC, 20463, 800-424-9530. ~~Copies are also available online at [http://www.eac.gov/testing\\_and\\_certification/voluntary\\_voting\\_system\\_guidelines.aspx](http://www.eac.gov/testing_and_certification/voluntary_voting_system_guidelines.aspx).~~

*Amendments to Rule 21.4.5(f) concerning functional requirements:*

(f) All DRE or BMD voting devices must use technology providing visual or auditory ballot display and selection methods used by people with disabilities.

*Amendments to Rule 21.4.11(g) concerning documentation requirements:*

(g) The voting system must include detailed documentation, which includes the location and a description of the content of the audit trail information throughout the system. The audit information applies to:

- (1) Operating Systems (workstation, server, ballot scanner, AND BMD, and DRE);
- (2) Election management system; and
- (3) Election Tabulation Devices – ballot scanner and DRE.

*Amendments to Rule 21.5.1, concerning testing preparation procedures, include: repeal of Rules 21.5.1(b)(4), (b)(6)(A-C), (b)(13) and (b)(16); New Rules 21.5.1(g), (h), and (i):*

21.5.1 Voting system provider demonstration

- (a) The voting system provider must demonstrate the submitted voting system to the Secretary of State ~~prior to any functional testing~~ PRIOR TO CERTIFICATION OF THE VOTING SYSTEM.
- (b) The demonstration period does not have a predetermined agenda for the voting system provider to follow; however, presentations should be prepared to address

and demonstrate the following items as they pertain to each area and use within the voting system, if applicable:

- (1) System overview;
- (2) Verification of complete system matching ~~EAC certification THE APPLICATION FOR CERTIFICATION OF A VOTING SYSTEM;~~
- (3) Ballot definition creation;
- ~~(4) Printing ballots on demand;~~
- ~~(5)~~(4) Hardware diagnostic testing;
- ~~(6)~~(5) Programming election media devices; ~~for various counting methods including:~~
  - (A) ~~Mail ballots;~~
  - (B) ~~In-person ballots;~~ and
  - (C) ~~Provisional ballots;~~
- ~~(7)~~(6) Sealing and securing system devices;
- ~~(8)~~(7) Logic and accuracy testing;
- ~~(9)~~(8) Processing ballots;
- ~~(10)~~(9) Accessible use, INCLUDING A FULL DEMONSTRATION OF ALL FUNCTIONALITY USING ACCESSIBLE VOTER INTERFACE DEVICES AND THE AUDIO BALLOT;
- ~~(11)~~(10) Accumulating results;
- ~~(12)~~(11) Post-election audit;
- ~~(13)~~ ~~Canvass process handling;~~
- ~~(14)~~(12) Audit steps and procedures throughout all processes; AND
- ~~(15)~~ ~~Certification of results;~~ and
- ~~(16)~~(13) Troubleshooting.

(c) At the time of application, the voting system provider must arrange a time with the Secretary of State to access the demonstration room to setup the voting system ~~IF THE DEMONSTRATION IS TO BE IN-PERSON.~~

(d) A maximum of one business day is normally allowed for ~~the~~ A IN-PERSON demonstration. If the voting system provider requests more time for the demonstration or, if the Secretary of State finds that the complexity of the system is such that more time is needed for a demonstration, more time may be granted.

- (e) The AN IN-PERSON demonstration will be open to representatives of the press and the public to the extent allowable. The Secretary of State may limit the number of representatives from each group to accommodate space.
- (f) The Secretary of State will post notice of the fact that the IN-PERSON demonstration will take place in the designated public place for posting such notices for at least seven days prior to the demonstration. The notice must indicate the general time frame during which the demonstration may take place and the manner in which members of the public may obtain specific information about the time and place of the test.
- (G) THE SECRETARY OF STATE MAY ALLOW A VIRTUAL DEMONSTRATION IN LIEU OF THE IN-PERSON DEMONSTRATION. A VIRTUAL DEMONSTRATION MAY BE LIVESTREAMED OR A SUBMITTED VIDEO.
- (H) IF THE SECRETARY OF STATE ALLOWS A LIVESTREAM VIRTUAL DEMONSTRATION IN LIEU OF AN IN-PERSON DEMONSTRATION, THEN THE SECRETARY WILL POST NOTICE OF THE LIVESTREAM DEMONSTRATION AT LEAST SEVEN DAYS PRIOR TO THE DEMONSTRATION. THE NOTICE MUST INDICATE THE TIME AND LINK FOR THE DEMONSTRATION.
- (I) IF THE SECRETARY OF STATE ALLOWS A SUBMITTED VIDEO DEMONSTRATION IN LIEU OF AN IN-PERSON DEMONSTRATION, THEN THE SECRETARY OF STATE WILL POST NOTICE AND PROVIDE A LINK TO THE SUBMITTED VIDEO PRIOR TO CERTIFICATION OF THE VOTING SYSTEM.

*Permanent adoption of amendments to Rule 21.7.3 that were temporarily adopted on June 17:*

21.7.3 The Secretary of State may investigate a complaint filed by any person, and, upon any findings as outlined in (a) through (e) below, may prohibit, limit or decertify use of a voting system, in whole or in part. An investigation by the Office of the Secretary of State may include, but is not limited to, the review or inspection of the voting system component at issue.

- (a) Any person installed any uncertified or decertified voting system component;
- (b) A county breaks the chain-of-custody for any component of a voting system by allowing any individual not authorized by Rule 20.5.4 access to that component;
- (c) A county submits an incident report regarding a component of a voting system and the Secretary of State finds that the chain-of-custody cannot be reestablished securely;
- (d) A component of a voting system experiences repeated hardware failures or malfunctions of a similar nature; or
- (e) The Secretary determines that the integrity or security of a voting system component cannot be verified and that chain-of-custody cannot be reestablished securely.

*Permanent adoption of amendments Rule 21.7.4 that was temporarily adopted on June 17:*

21.7.4 The Secretary of State will notify a county of the prohibition or limitation on use or decertification of a component of a voting system under Rule 21.7.3 and the county must immediately cease using that component.

*Permanent adoption of the renumbering edit (former Rule 21.7.4 is renumbered as Rule 21.7.5) that was temporarily adopted on June 17. Additional proposed revisions follow:*

21.7.5 In accordance with section 1-5-621, C.R.S., the Secretary of State will hold a public hearing to consider the decision to decertify a voting system IF A POLITICAL SUBDIVISION OR PROVIDER OF A VOTING SYSTEM THAT IS DECERTIFIED HAS REQUESTED IN WRITING THAT THE SECRETARY OF STATE RECONSIDER.

*New Rule 21.7.6:*

21.7.6 IF ANY VOTING SYSTEM CURRENTLY CERTIFIED IN COLORADO IS NOT USED BY ANY POLITICAL SUBDIVISION FOR TWO CONSECUTIVE GENERAL ELECTIONS, THE SYSTEM MAY BE DECERTIFIED FOR USE.

*Amendments to Rule 21.10.1 and 21.10.2:*

21.10 Escrow of voting system software and firmware by voting system provider. The voting system provider must meet the requirement for software escrow per the following:

21.10.1 The voting system provider must place in escrow a copy of the election management software, firmware, and supporting documentation being certified with ~~either the Secretary of State or an independent escrow agent~~ approved by the Secretary of State. [Section 1-7-511, C.R.S.]

21.10.2 Within ten days of the voting system provider receiving notification of ~~examination of voting equipment as part of the certification process~~, the voting system provider must arrange for the completion of escrow requirements as indicated by this Rule.

*Amendments to Rule 21.10.12:*

21.10.12 Copies of electronic media and supporting documentation for escrow within the Secretary of State will be sent to:

Colorado Secretary of State  
Attn: Voting Systems  
1700 Broadway – Suite 200 550  
Denver, CO 80290

*Amendments to Rule 23.1.3 concerning the Bipartisan Election Advisory Commission:*

23.1.3 Meetings

(a) The Commission must meet no fewer than three times annually.

(b) The meetings will be held at the office of the Secretary of State, ~~or~~ regional locations throughout the state, OR VIRTUALLY as the Commission determines appropriate.

*[No changes to (c) and (d)]*

*Amendments to Rule 24.3.3 concerning filing presidential elector vacancies:*

24.3.3 Nominees to fill vacancies must be selected in accordance with section 1-4-302 (2), C.R.S. ~~There must be more vacancy nominees than vacancies to be filled.~~

*Amendments to Rule 25.1.7 concerning definitions related to post-election audit:*

25.1.7 "Risk-limiting audit" or "RLA" means a post-election audit of votes on paper ballot cards and VVPAT records, conducted in accordance with section 1-7-515, C.R.S., and Rule 25.2, which has a pre-specified minimum chance of requiring a full hand count if the outcome of a full hand count would differ from the reported tabulation outcome.

*Amendments to Rules 25.2.2(d-i) and (l) concerning preparing for risk limiting audit, including repeal of Rule 25.2.2(d)(2):*

- (d) Ballot manifest. The county must maintain an accurate ballot manifest in a form approved by the Secretary of State and independent of the voting system.
  - (1) ~~In the case of centrally counted paper ballots, the~~ THE ballot manifest must uniquely identify for each tabulated ballot the scanner on which the ballot is scanned, the ballot batch of which the ballot is a part, the number of ballot cards in the batch, and the storage container in which the ballot batch is stored after tabulation. The county must secure and maintain in sealed ballot containers all tabulated ballots in the batches and order they are scanned. The county must maintain and document uninterrupted chain-of-custody for each ballot storage container.
  - (2) ~~In the case of paper ballots scanned on polling location scanners, and electronic ballots cast on DREs, the~~ ballot manifest must uniquely identify the device on which the ballot is cast or tabulated, the number of ballots or ballot cards cast or tabulated on the device, and the storage container or location in which the paper ballots or VVPAT is stored. The county must maintain and document uninterrupted chain-of-custody for each polling location scanner, DRE, and VVPAT, and all ballots cast on an individual polling location scanner or DRE must constitute a single batch.
- (e) RLA tabulation. On the ~~ninth~~ TENTH day after election day, the county must finish tabulating all in-person and accepted mail ballots cast by voters registered in the county. The county may but is not required to include in the RLA tabulation any provisional ballots and property owner ballots that have been verified and accepted on or before the ninth day after election day. Immediately after completing the RLA tabulation, and to the extent permitted by its voting system, the county must also generate and preserve:
  - (1) A summary results report, showing overvotes, undervotes, blank-voted contests, and valid write-in votes;
  - (2) A results file export suitable for uploading to the Secretary of State's election night reporting system; and
  - (3) A CVR export.
- (f) CVR export verification. Counties conducting a comparison audit must verify that:
  - (1) The number of individual CVRs in its CVR export equals the aggregate number of ballot cards reflected in the county's ballot manifest as of the ~~ninth~~ TENTH day after election day; and

- (2) The vote totals for all choices in all ballot contests in the CVR export equals the vote totals in the summary results report for the RLA tabulation.
- (3) After verifying the accuracy of the CVR export, the county must apply a hash value to the CVR export file using the hash value utility provided by the Secretary of State.

(g) Comparison audit uploads. No later than 5:00 p.m. MT on the ~~ninth~~ TENTH day after election day, each county conducting a comparison audit must upload:

- (1) Its verified and hashed ballot manifest, and the ballot manifest's hash value, to the Secretary of State's office;
- (2) Its verified and hashed CVR export, and the CVR export's hash value, to the Secretary of State's office; and
- (3) Its RLA tabulation results export to the Secretary of State's election night reporting system.

(h) Ballot polling audit uploads. No later than 5:00 p.m. MT on the ~~ninth~~ TENTH day after election day, each county conducting a ballot polling audit must submit or upload:

- (1) Its verified and hashed ballot manifest, and the ballot manifest's hash value, by email to the Secretary of State's office;
- (2) Its cumulative tabulation report, by email to the Secretary of State's office; and
- (3) Its RLA tabulation results export to the Secretary of State's election night reporting system.

(i) Random seed. The Secretary of State will convene a public meeting on the ~~tenth~~ THIRTEENTH day after election day to establish a random seed for use with the Secretary of State's RLA tool's pseudo-random number generator based on Philip Stark's online tool, *Pseudo-Random Number Generator using SHA-256*. This material is incorporated by reference in the Election Rules and does not include later amendments or editions. The following material incorporated by reference is posted on the Secretary of State website and available for review by the public during regular business hours at the Colorado Secretary of State's office: *Pseudo-Random Number Generator using SHA-256* available at <https://www.sos.state.co.us/pubs/elections/VotingSystems/riskAuditResources.html>. The Secretary of State will give public notice of the meeting at least seven calendar days in advance. The seed is a number consisting of at least 20 digits, and each digit will be selected in order by sequential rolls of a 10-sided die. The Secretary of State will randomly select members of the public who attend the meeting to take turns rolling the die, and designate one or more staff members to take turns rolling the die in the event that no members of the public attend the meeting. The Secretary of State will publish the seed on the Audit Center immediately after it is established.

*[No changes to (j) and (k)]*

(l) Random selection of ballot cards for audit. The Secretary of State will randomly select the individual ballot cards to audit. The Secretary of State will use a pseudo-random number generator with the seed established under subsection (h) of this Rule to identify individual ballot cards as reflected in the county ballot manifests. The Secretary of State will notify each county of, and publish on the Audit Center, the randomly selected ballot cards that each county must audit no later than 11:59 p.m. MT on the tenth THIRTEENTH day after election day.

*Amendments to Rule 25.2.3(a) concerning conducting the audit:*

(a) ~~The AT LEAST TWO MEMBERS OF DIFFERENT PARTIES OF THE audit board must locate and retrieve, or observe the location and retrieval by county election staff, each OF THE randomly selected ballot card or VVPAT record from the appropriate storage container. The audit board must verify that the seals on the appropriate storage containers are those recorded on the applicable chain-of-custody logs.~~

*[No changes to (a)(1) and (2)]*

*Repeal of Rule 25.3:*

~~25.3 Random Audit. If the Secretary of State waives the requirement to conduct an RLA under section 1-7-515(2)(b), C.R.S., the designated election official must conduct the random audit mandated by sections 1-7-509(1)(b) and 1-7-514, C.R.S., in accordance with this rule.~~

~~25.3.1 Selected voting devices~~

(a) ~~No later than 48 hours after the close of polls on election night, the Secretary of State must notify the designated election official of the voting devices randomly selected for audit, based on the submitted hardware inventory list referred to in Rule 11.2.~~

(b) ~~The Secretary of State will randomly select, from the voting devices used in the election, at least five percent of the central count ballot scanners; at least one ballot scanner used at a polling location; and five percent of DREs.~~

~~25.3.2 The designated election official must appoint an audit board to conduct the post-election audit in accordance with section 1-7-509(1)(c), C.R.S. At least two canvass board members must observe the random audit. The designated election official, members of his or her staff, and other duly appointed election judges, may assist with the audit.~~

~~25.3.3 Number of ballots to audit~~

(a) ~~Paper ballots tabulated on ballot scanners. The board must audit at least 500 ballots or 20 percent of the ballots tabulated on each selected ballot scanner, whichever is less. The board may audit more than the minimum number of ballots required.~~

(b) ~~Electronic ballots tabulated on DREs. The board must audit all ballots tabulated on the selected DREs.~~

~~25.3.4 Conducting the audit~~

(a) ~~Paper ballots tabulated on ballot scanners~~

- (1) If the voting system is capable of generating batch-level tabulation reports for a selected ballot scanner, the board must randomly select a number of ballot batches tabulated on the ballot scanner that, in the aggregate, contain the minimum number of ballots to be audited. The board must manually verify that the votes on the ballots contained in each randomly selected batch match the voting system's tabulation of votes for that batch.
- (2) If the voting system is not capable of generating batch-level tabulation reports for a selected ballot scanner, the board can choose to audit all of the ballots that were tabulated on the selected scanner, or randomly select and rescan the minimum number of ballots to be audited. If the board chooses to rescan the minimum number of ballots, the board also must:
  - (A) Reset the selected ballot scanner's results to zero and generate a zero report;
  - (B) Rescan the randomly selected ballots for audit and generate a tabulation report from the selected ballot scanner; and
  - (C) Manually verify that the votes on the randomly selected ballots match the tabulation report for those ballots generated from the selected ballot scanner.

(b) Ballots tabulated on DREs. The board must examine the VVPAT record of each selected DRE and manually verify that the votes reflected on the VVPAT match the tabulation report.

25.3.5 If the board discovers discrepancies during the audit, the board must:

- (a) Confirm that the manual count of the votes contained in the audited ballots is correct;
- (b) Confirm that the manual count of the votes contained in the audited ballots properly reflects overvotes, stray marks on the ballot, and other indications of voter intent;
- (c) Determine whether any discrepancy is attributable to a damaged ballot; and
- (d) Take any other action necessary in accordance with the canvass board's powers as described in Part 1, Article 10 of Title 1, C.R.S.

25.3.6 The designated election official must report the results of the audit in writing to the Secretary of State by 5:00 p.m. on the last day to canvass. The audit report may be submitted by mail, fax, or email. The audit report must contain:

- (a) The make, model, and serial number of the voting devices audited;
- (b) The number of ballots originally counted on each device or the number of ballots audited;
- (c) The count of the specific contests on the summary report printed at the close of polls and the report generated for the audit;

- (d) The count of the specific contests as manually verified;
- (e) Any other information required by section 1-7-514, C.R.S.; and
- (f) The signatures of the audit board, the canvass board members who observed the audit, and the designated election official.

25.3.7 The designated election official must segregate and seal the materials used during the post-election audit, including all tabulation reports, the audited ballots, and the audit report.

*[Not shown: renumbering Current Rule 25.4 to Rule 25.3]*

*Repeal of Rule 27 placeholder and publication annotation:*

**Rule 27.** **[Emergency rule expired 01/02/2021]**

TO: CORA CUSTODIAN

Pursuant to CORA, I request a complete listing of every IP address that accessed SCORE from January 1, 2018 thru June 1, 2021.

DATE FILED: November 19, 2021 10:14 PM  
FILING ID: A3D9A19A24908  
CASE NUMBER: 2021CV33691

Thanks,

Ana Konduris  
19055 Shadowood Drive,  
Monument, CO 80132  
719 440 0548

PER INSTRUCTIONS ON SOS WEBPAGE –

To request records in possession of the Secretary of State's office, send a detailed, written request by mail or email to:

CORA Custodian  
1700 Broadway, Suite 200  
Denver, CO 80290  
[CORA@sos.state.co.us](mailto:CORA@sos.state.co.us)

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**From:** Kerry Colburn <Kerry.Colburn@SOS.STATE.CO.US> **On Behalf Of** CORA User  
**Sent:** Monday, June 28, 2021 8:46 AM  
**To:** Ana Konduris <ackonduris@gmail.com>  
**Subject:** RE: [EXTERNAL] CORA REQUEST

Good morning Ms. Konduris,

Your responsive document is attached.

Sincerely,

**Kerry Colburn**

Legal and Policy Analyst | Department of State

303.894.2200x6131

[Kerry.Colburn@sos.state.co.us](mailto:Kerry.Colburn@sos.state.co.us)

1700 Broadway, Suite 550

Denver, CO 80290



Source IP

107.77.196.122

107.77.196.127

107.77.196.129

107.77.196.212

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CASE NUMBER: 2021CV33691

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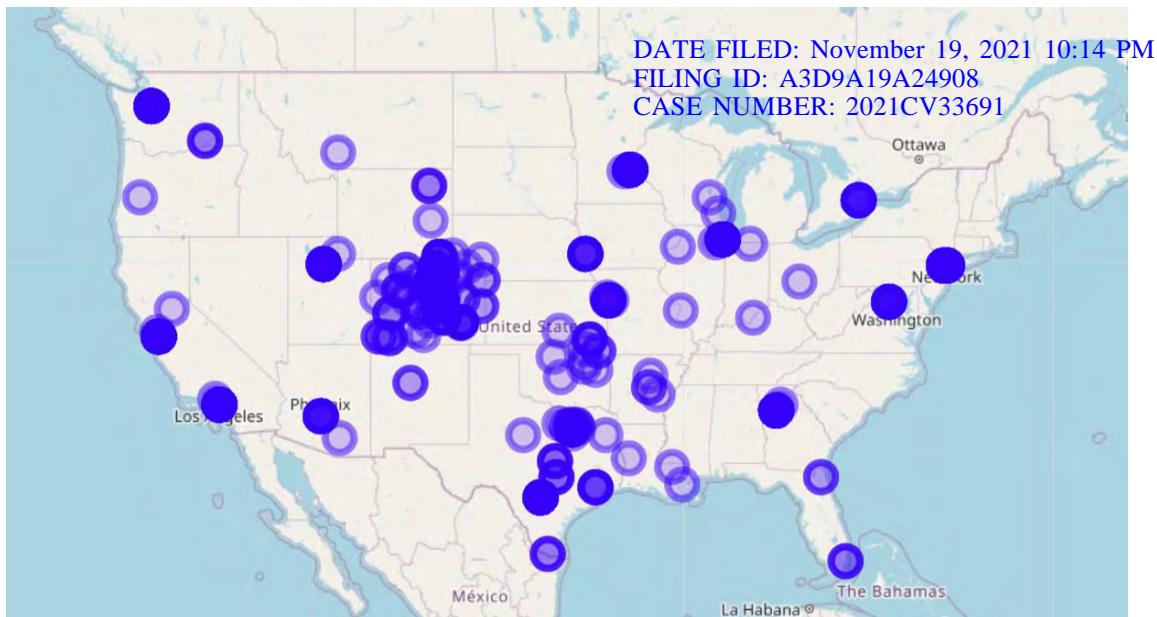
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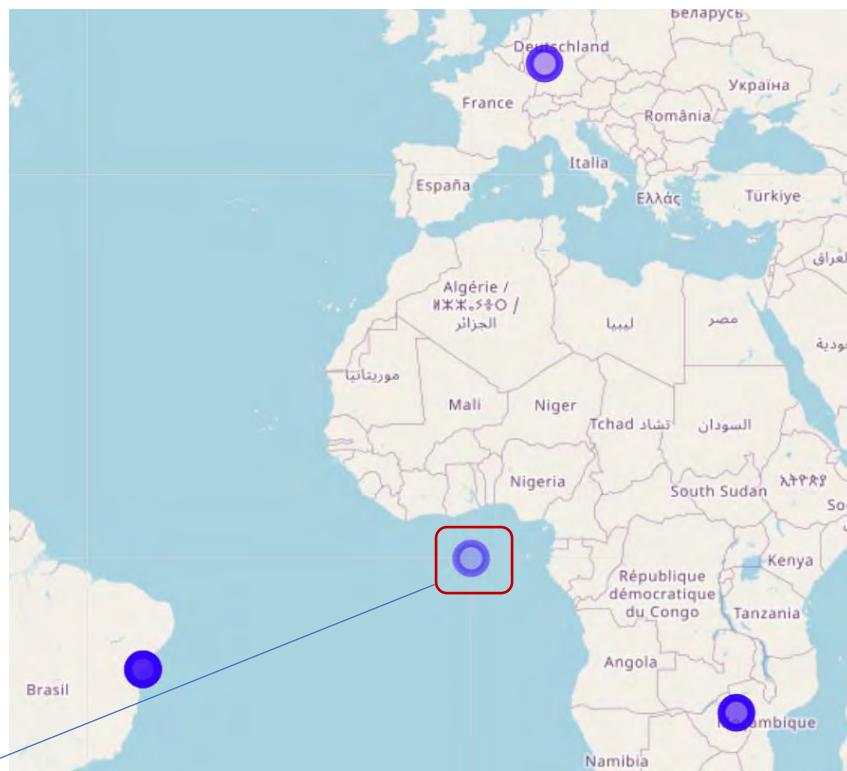
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# COLORADO OFFICE OF THE STATE AUDITOR

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# SA

We Set the Standard for Good Government

## DEPARTMENT OF STATE



NOVEMBER 2015

PERFORMANCE AUDIT

THE MISSION OF THE OFFICE OF THE STATE AUDITOR  
IS TO IMPROVE GOVERNMENT  
FOR THE PEOPLE OF COLORADO

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# OFFICE OF THE STATE AUDITOR



November 20, 2015

DIANNE E. RAY, CPA

STATE AUDITOR

Members of the Legislative Audit Committee:

This report contains the results of a performance audit of the Department of State. This audit was conducted pursuant to Section 2-3-103, C.R.S., which authorizes the State Auditor to conduct audits of all departments, institutions, and agencies of state government. The report presents our findings, conclusions, and recommendations, and the responses of the Department of State.

OFFICE OF THE STATE AUDITOR  
1525 SHERMAN STREET  
7TH FLOOR  
DENVER, COLORADO  
80203

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We planned our audit work to assess the effectiveness of those internal controls that were significant to our audit objectives. Our conclusions on the effectiveness of those controls, as well as specific details about the audit work supporting our findings, conclusions, and recommendations, are described in CHAPTERS 2 and 3 of this report.

During our audit work, we identified certain matters that are not included in this audit report that were reported to the Department's management in a separate confidential report dated November 2015. These matters were considered sensitive to protecting state information technology assets.

In addition, we communicated certain deficiencies in internal control that were not significant to the objectives of the audit to the Department's management in a separate letter dated November 12, 2015.