Summary Report on New Mexico State Election Data

by Ellen Theisen and Warren Stewart

We have collected and examined the canvass report of the November 2, 2004 Presidential Election in New Mexico, as well as other relevant data.[1] The results of our analysis cast serious doubt on the accuracy of the certified results.

- New Mexico led the nation with the highest rate of presidential undervotes (ballots with no vote reported for president). A comparison of presidential undervotes with undervotes in down-ticket contests suggests that a significant number of votes may not have been counted.
- Although only 41% of the state's voters cast their ballots on push-button electronic voting machines, these machines accounted for 77% of the presidential undervotes, raising doubts about their accuracy.
- In spite of the high statewide undervote rate, over half of the precincts reported zero presidential undervotes in early, election day, and/or absentee voting. This unlikely phenomenon raises the possibility of programming irregularities, administrative errors, or failure to follow proper canvassing procedures.
- Certified results show hundreds of precincts reporting phantom votes (more votes recorded than ballots cast). Each of the more than 10,000 phantom votes in the canvass report is an inexplicable anomaly.
- Strikingly higher undervote rates were reported in precincts with predominately Hispanic or Native American populations. These findings are noteworthy and demand further study.

This report identifies a pattern of stunning errors and severe irregularities in the election data. Until the paper ballots are examined and the electronic voting data verified, the canvass report certified by the State of New Mexico cannot be regarded as an accurate reflection of the will of the people.

Undervote & Phantom Vote Overview

Undervotes occur when ballots report no vote in a particular contest. They are determined by subtracting the total number of votes in that contest from the number of ballots cast. Small numbers of undervotes are common, but undervote rates over 2% (one out of every 50 voters) are generally considered high enough to warrant investigation. Phantom votes are found when the number of votes is higher than the number of ballots cast (more votes than voters).

An analysis of New Mexico data shows high numbers of both undervotes and phantom votes. However, the extent of both is understated in the summary state totals. This is because, when statewide data gives the total ballots cast and the total votes for president, phantom votes reported at the precinct level are canceled out by undervotes reported in other precincts and, at the same time, reduce the number of perceived undervotes.

For example, if one precinct had 20 phantom votes and a different precinct had 30 undervotes, the sum of both precinct totals would indicate 10 undervotes. The phantom votes would be hidden and the undervotes reduced by a number equivalent to the number of phantom votes. By

analyzing the totals of smaller reporting units (such as precincts), it is possible to detect phantom votes that would otherwise disappear and, at the same time, to obtain a more accurate calculation of undervotes. Breaking the precincts into even smaller reporting units by voting type (early, election day, and absentee) provides even more precision in detecting phantom votes and calculating undervotes.

Since the certification of New Mexico's election results on November 23, concern has been expressed over the publicized presidential undervote rate of 2.45% (18,997 of 775,301 ballots). This number is actually inaccurate due to the phenomenon of phantom votes. An analysis of the precinct results by voting type reveals 2,087 phantom votes and shows that the statewide undervote rate is larger than previously thought— 2.72% (21,084 undervotes). If voting-type results were broken down even further, for example into electronic voting machine totals, it is possible that even more phantom votes and an even higher undervote rate would be detected.

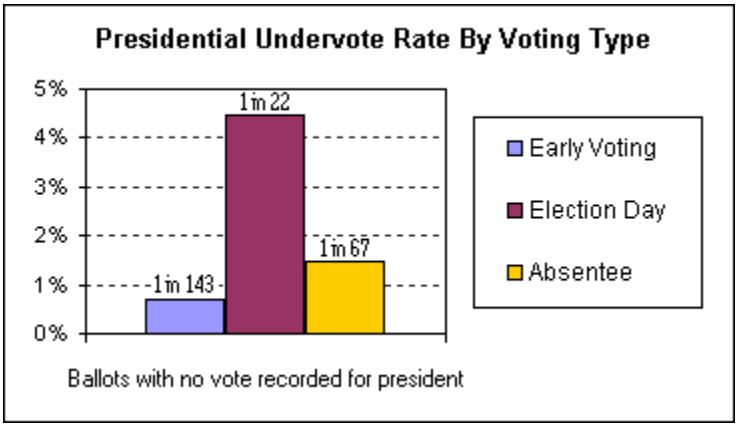
Undervotes

New Mexico's excessive undervote rate suggests the possibility that some election equipment may have failed to record presidential votes. By analyzing the undervote rates of different voting types (early voting, election day, and absentee) in each precinct and the rates of different machine types, we attempted to determine whether there are any factors that correspond to the larger concentrations of undervotes.

The following table shows that the undervote rates are significantly different for the three voting types, with very high rates reported for election day, while the rates for early voting and absentee voting were significantly lower.

Undervote Rates by Voting Type

Voting Type	Total Undervotes	Total Ballots Cast	Undervote Rate
Early Voting	1,664	236,340	0.70%
Election Day	17,095	382,941	4.46%
Absentee	2,325	156,020	1.49%
Total	**21,084**	**775,301**	**2.72%**

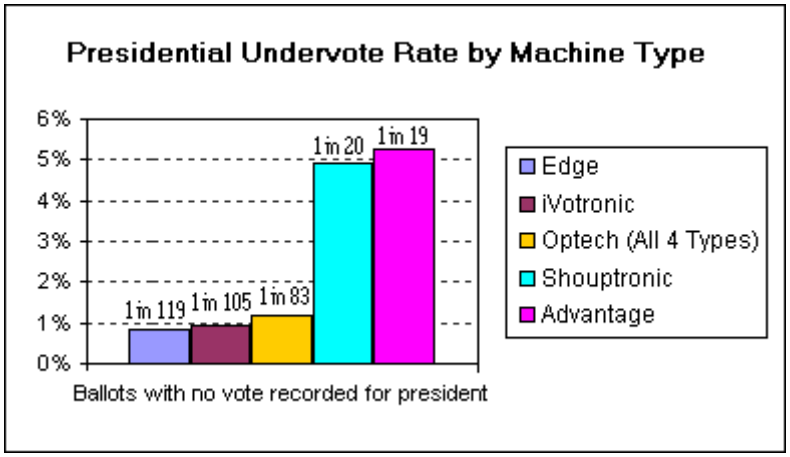


Eight different types of machines were used in the New Mexico election: two electronic touch screen voting machines (Sequoia Edge and ES&S iVotronic); two electronic push-button voting machines (Danaher Shouptronic and Sequoia Advantage); and four optical scan machines that tabulate votes from paper ballots. Undervote rates are significantly different for the different machine types, with excessive rates reported for the two electronic push-button machines.

Undervote Rates by Machine Type

Machine Type	Total Undervotes	Total Ballots Cast	Undervote Rate
Optech (All 4 types)	3,499	290,818	1.20%
Sequoia Edge	1,204	143,803	0.84%
ES&S iVotronic	186	19,671	0.95%
Danaher Shouptronic	10,491	212,965	4.93%
Sequoia Advantage	5,704	108,044	5.28%
Total	**21,084**	**775,301**	**2.72%**

The data indicates an alarming relationship between undervote rates and machine types. It is unlikely one out of 20 that voters using push-button voting machines did not vote for president while only one out of 150 voters casting paper ballots chose no presidential candidate. The cause of this discrepancy demands investigation.



While Sequoia Advantage push-button machines were used in both early voting and on election day, inexplicably their undervote rate was much smaller in early voting. Unquestionably, the high zero-undervote rate (discussed later) registered on these machines during early voting lowered the undervote rate.

Particularly alarming are the 32 precincts statewide that reported undervote rates above 10%. Overall these precincts had an undervote rate of 14.72% (10,796 ballots cast, 9,216 presidential votes, 1,589 undervotes) — a presidential vote for fewer than 1 in every 7 voters.

Precincts that recorded presidential votes for fewer than 1 in every 10 voters are found in 11 of the state's 33 counties: McKinley (9 precincts), Bernalillo and Taos (5 each), Dona Ana (3),

Cibola, San Miguel, Sandoval and Santa Fe (2 each), and Colfax and Mora (1 each). Noteworthy are:

- Dona Ana County's 207 overseas absentee ballots, none of which recorded a presidential vote, resulting in an undervote rate of 100%.
- Dona Ana County Precinct 60 with a 36.69% undervote rate (169 ballots cast, 107 presidential votes, 62 undervotes).
- Bernalillo County Precinct 436 with a 20.03% rate (594 ballots, 475 votes, 119 undervotes).
- Bernalillo County Precinct 14 with a 16.38% rate (702 ballots, 587 votes, 115 undervotes).
- McKinley County Precinct 30 with a 16.07% rate (591 ballots, 496 votes, 95 undervotes).

Ninety-one precincts statewide reported election-day undervote rates over 10% for an overall undervote rate of 12.65% (20,589 ballots cast, 17,984 presidential votes, 2605 undervotes.) Undervote rates indicating that 1 in 8 ballots cast in a precinct recorded no presidential vote would be troubling in itself but the issue is only magnified when considered together with the phenomenon of zero-undervote rates in many precincts.

Zero Undervotes

When a presidential vote is recorded for every ballot cast in a precinct, the undervote rate for that precinct is zero. Since New Mexico has an excessively high undervote rate, one would expect zero-undervote situations to be rare. However, when the precincts are broken down into voting types (early, election day, and absentee), startling levels of zero undervotes show up.

For example, over half the precincts reported no presidential undervotes on absentee ballots. This indicates that in 747 precincts throughout the state, not one absentee voter declined to vote for president, not one of the 54,919 absentee voters in those precincts marked their choice incorrectly, and not one of the machines missed reading a mark beside a presidential candidate's name.

Zero-undervote Rates by Voting Type

	Precinct Voting Types*		**Ballots Cast by Voting Type**		
Voting Type	**With No UV**	**% with No-UV**	**In 0-UVPrecincts**	**Total**	**% of Total**
Early Voting	651	45.60%	85,531	236,340	36.19%
Election Day	126	8.82%	22,336	382,941	5.83%
Absentee	747	52.27%	75,408	156,020	48.33%
Total	**1524**	**35.55%**	**183,275**	**775,301**	**23.64%**

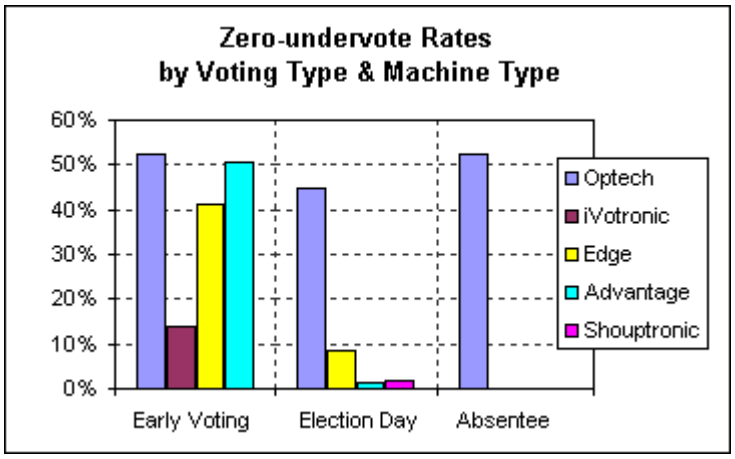
* 1429 precincts, each with early voting, election day, and absentee voting types.

The high rate of voting types reporting no presidential undervotes means that all 21,084 undervotes were reported in voting situations representing only 592,026 ballots cast, so the overall undervote rate for those ballots was 3.55% (1 in 28 ballots did not record a vote for president).

It is notable that the reports of zero presidential undervotes correspond with the type of machines used in the precinct AND by the voting type. The following table illustrates the correspondence.

Zero-undervotes Reported, by Machine Type and Voting Type

	Precincts		
Machine	**With Zero UV**	**Using This Machine**	**%Precincts with 0-UV**
Early Voting			
Optech (All 4 types)	276	528	52.27%
iVotronic	10	72	13.89%
Sequoia Edge	314	695	41.18%
Sequoia Advantage	51	102	50.50%
Election Day			
Optech (All 4 types)	101	226	44.69%
Sequoia Edge	6	71	8.45%
Sequoia Advantage	4	342	1.17%
Shouptronic	15	758	1.98%
Absentee Voting			
Optech (All 4 types)	747	1,429	52.27%



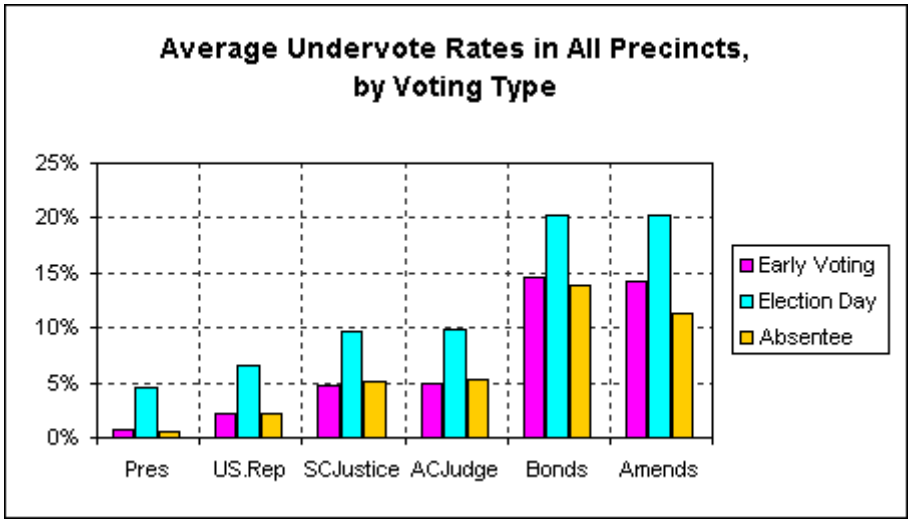
Particularly troubling is the fact that the push-button voting machines reported much higher instances of zero-undervotes in early voting than on election day. This suggests the disturbing possibility that some machines were operating differently in early voting than they were on election day.

Undervote Rates: Presidential Contest vs. Down-Ticket Contests

New Mexico Secretary of State Rebecca Vigil-Giron has explained presidential undervotes by speculating that "some voters are just not concerned with the presidential race."[2] The data does not support this interpretation.

If the high presidential undervote rate were an indication of voters who were unconcerned about the presidential race, one would expect lower undervote rates for other contests, since, presumably, all voters made the effort to cast a ballot in order to vote for some candidate or issue. However, the data shows that the undervote rates for down-ticket contests were higher than presidential undervote rates 99.6% of the time, confirming the intuitive expectation that most voter interest is focused on the top contest of the ballot.

The following chart shows that undervote rates increased further down the ballot in all three voting types. We examined the data for the 10 down ticket contests that appeared on all ballots in all counties. They included: U.S. Representative, Supreme Court Justice, Judge of the Appellate Court, four Bond Questions (represented as an average), and three Constitutional Amendments (also averaged). We did no in-depth analysis of contests that did not appear on all ballots.



If high presidential undervote rates indicate voters' lack of interest in the presidential contest, one would expect the undervote rates in down-ticket contests to remain constant regardless of the presidential undervote rate, but they do not. Our analysis suggests that many of the undervotes in New Mexico may represent uncounted ballots, with no vote reported for any candidate or issue.

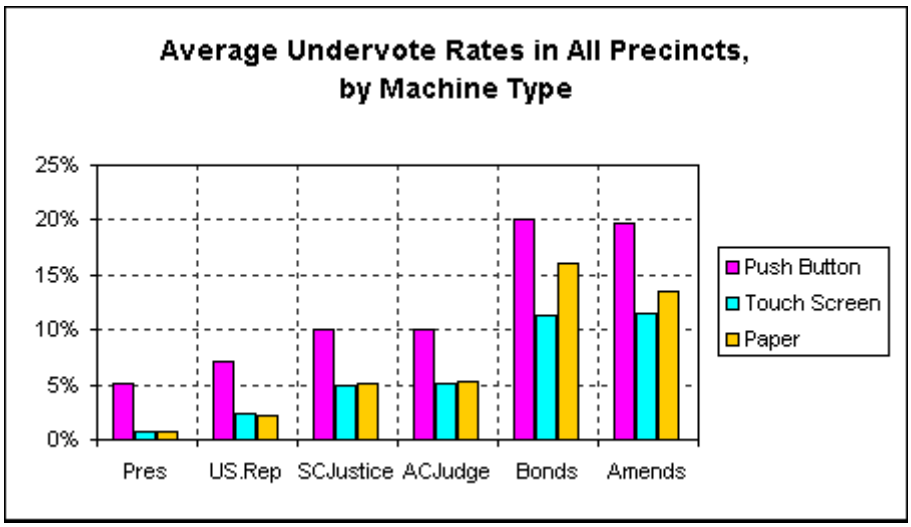
Using the large sample of presidential zero-undervote situations, we determined the normative down-ticket undervote rates. A comparison of those rates to down-ticket rates in situations where there were presidential undervotes shows that the down-ticket rates increase at a constant amount relative to the presidential rates — within 0.65% in every contest examined.

The following table shows that the increase in down-ticket undervote rates parallels the increase in the presidential rates. (Since phantom votes mask the undervote rate, reporting units showing phantom votes were not considered in this analysis.)

Down-Ticket Undervote (UV) Rates Compared with Presidential Undervote Rates

	President	US Rep	SC Justice	AP Judge	Bonds	Amends
UV Rates in Voting Types with Undervotes for President (576,975 Ballots)	3.65%	5.35%	8.21%	8.29%	17.54%	17.35%
UV Rates in Voting Types with No Undervotes for President (151,795 Ballots)	0.00%	1.79%	4.94%	5.28%	14.37%	14.27%
Increase in UV Rate	**3.65%**	**3.56%**	**3.27%**	**3.00%**	**3.17%**	**3.08%**

An examination of presidential and down-ticket rates by machine type supports this suggestion and further indicates a strong relationship between high-undervote rates and the type of voting machine used.

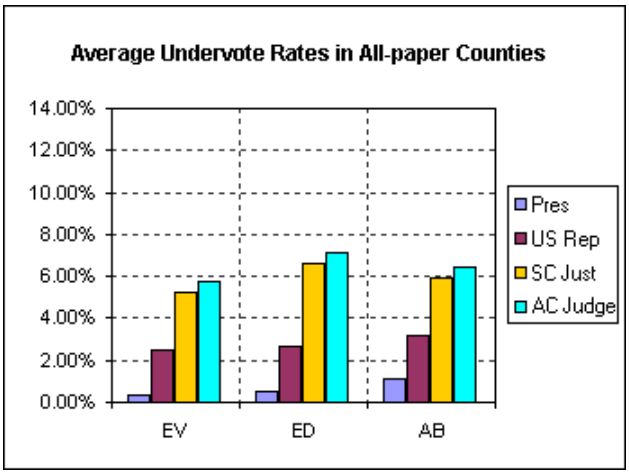


Undervote Rates of Push-Button Machines

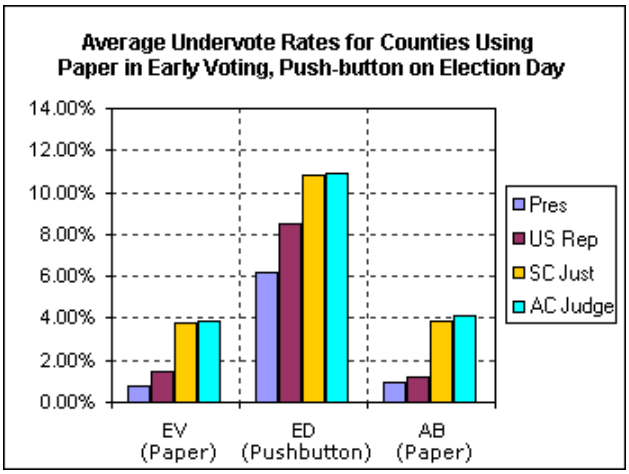
The highest undervote rates were reported for voters using push-button machines — higher than those voting on touch screens, and much higher than those voting on paper ballots. Since 82% of election-day ballots were cast on push-button machines, it makes sense that election day would report the highest undervote rates of the three voting types (refer back to the chart on page 6).

Comparing the undervote rates in early voting (EV), election day voting (ED), and absentee voting (AB) confirms that the use of push-buttons voting machines was significant predictor of high undervote rates. In the following series of charts undervote rates are shown for the votes for President, U.S. Representative, State Supreme Court Justice, and Appellate Court Judge.

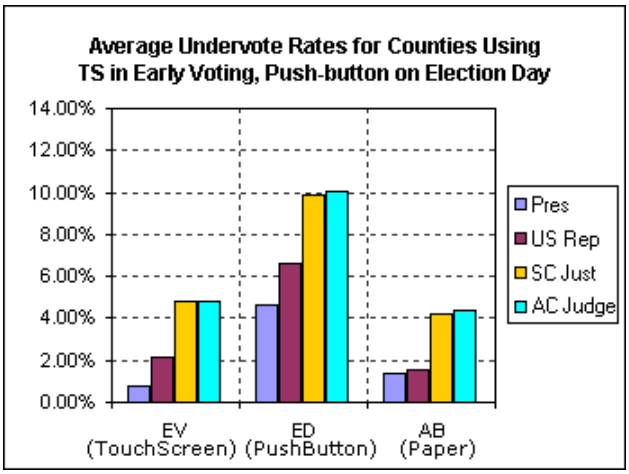
1) Counties using paper ballots for all voting showed little difference in undervote rates among the three voting types.



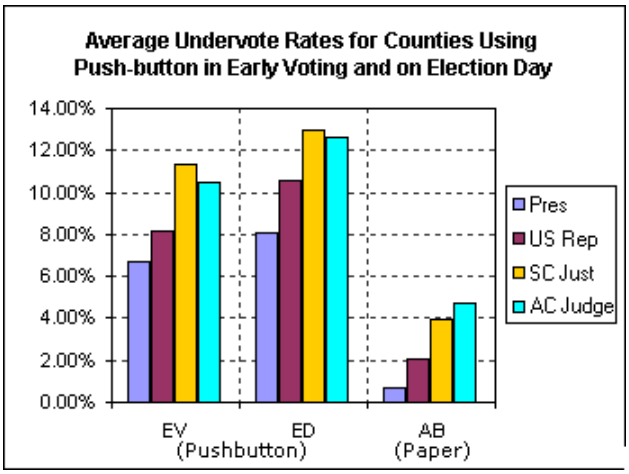
2) Counties using paper ballots for early voting and push button machines for election day showed a significantly higher rate of election day undervotes.



3) Touch screen machines used in early voting did not meet the high undervote rates of the push-button machines.



4) When push button machines were used in early voting and on election day, as they were in McKinley County, both early and election-day voting reported excessively high undervote rates.



This analysis of undervote rates strongly suggests that push-button voting machines may have lost entire ballots in the New Mexico general election — as paperless electronic voting machines are known to have done in other elections in other states. The small remaining doubt about the oddly distributed undervote rate in New Mexico could be resolved by examining the ballot images produced by the push-button and touch-screen machines and hand-counting the optical scan ballots.

Phantom Votes

There is no acceptable explanation for the presence of phantom votes, which appear when there are more votes reported than the number of ballots cast. When they occur in reports, such votes are referred to as phantom votes. While some voters choose not to vote for president and therefore a small percentage of undervotes are to be expected, even a single phantom vote is an inexplicable anomaly. New Mexico reported 2,087 phantom votes for president in a total of 250 precincts (17.49%).

For example, Dona Ana Precinct 106 reported 107 absentee ballots and 325 votes for president. Taos County reported no overseas absentee ballots, yet 54 overseas absentee votes for president. Bernalillo County Precinct 512 reported 166 absentee ballots and 318 presidential votes. In each of these cases, paper ballots are available, yet these phantom votes were certified.

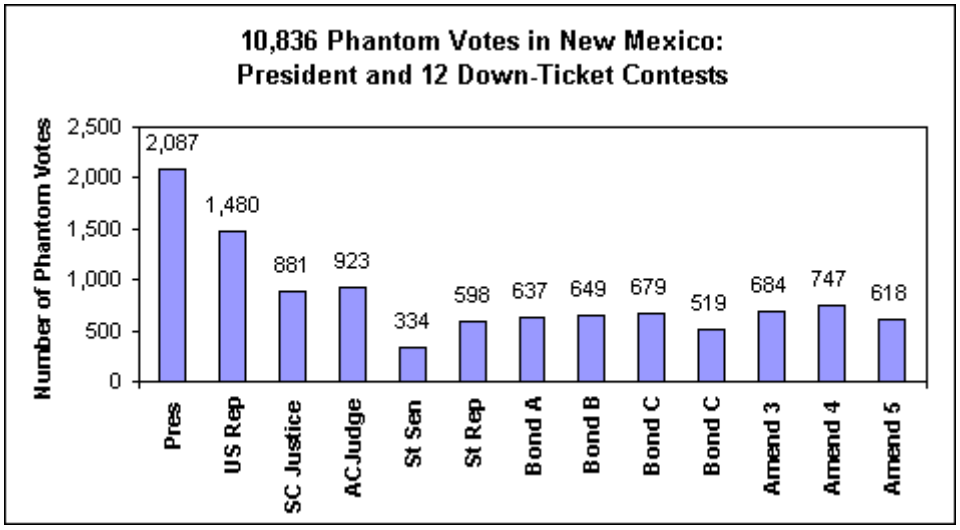
Though the vast majority of phantom votes (1528) were reported from optical scan machines, phantom votes also occurred on paperless machines. In early voting, large numbers of phantom votes were reported in Bernalillo County Precincts 558 and 559, both of which used the Sequoia Edge. Precinct 558 reported 141 phantom votes (79% more votes than ballots cast) and Precinct 559 reported 130 (56% more votes than ballots).

Reported phantom votes for the machine types for each voting type are summarized in the following table.

Presidential Phantom Votes by Machine Type and Voting Type

Voting Type	Early Voting		Election Day		Absentee Voting		Totals	
Machine Type	**Votes**	**Precincts**	**Votes**	**Precincts**	**Votes**	**Precincts**	**Votes**	**Precincts**
Optech (All 4 types)	121	46	0	0	1528	186	1649	232
ES&S iVotronic	0	0	-	-	-	-	0	0
Sequoia Edge	355	23	0	0	-	-	355	23
Sequoia Advantage	1	1	0	0	-	-	1	1
Danaher Shouptronic	-	-	82	2	-	-	82	2
Totals	**477**	**70**	**82**	**2**	**1528**	**186**	**2087**	**258**

Phantom votes also appear in down-ticket contests, often, though not always, in the same precincts as presidential phantom votes. In addition to the 2,087 presidential phantom votes, we found 8,749 in the 12 other contests that appeared on all ballots statewide. Thus, the certified canvass report reveals a total of at least 10,836 phantom votes.



The large number of the phantom votes in the certified election results demands reexamination of both the ballots and the audit information, particularly in those precincts with high numbers of phantom votes.

Ethnicity and Undervotes

Undervote rates reflect a direct correlation to the ethnicity of a precinct. Precincts with Native American and Hispanic pluralities recorded disproportionately high undervote rates. On Election Day, Native American plurality precincts reported an 8.26% undervote rate (27,847 ballots, 25,547 votes, 2300 undervotes), or 1 in 12. Hispanic plurality precincts reported an undervote rate of 5.69% (121,139 ballots, 114,329 votes, 6890 undervotes), well above the statewide

average of 2.72%. Meanwhile plurality Anglo precincts on election day were only slightly above the state average with an undervote rate of 3.14% (191,449 ballots, 185,434 votes, 6017 undervotes.)

Undervote Rates by Ethnicity and Voting Type

	Early Voting	Election Day	Absentee	Total
Ethnic Plurality				
Native American	2.95%	8.26%	0.66%	6.79%
Hispanic	0.80%	5.69%	1.43%	3.57%
Anglo	0.29%	3.14%	0.38%	1.88%
No Ethnic Plurality				
Mixed	0.72%	4.44%	3.33%	3.02%
Statewide	0.70%	4.46%	1.49%	2.72%

The trend described is even more pronounced in precincts that are overwhelmingly dominated (over 75%) by Native American and Hispanic populations, at 8.51% and 7.13% respectively, while precincts with over 75% Anglo populations reported a 2.66% undervote rate, slightly below the state average. While rates in early and absentee voting are lower across the state, the disparity between the relatively low undervote rates in Anglo precincts and the unusually high Native American and Hispanic precincts can still be observed. This information is summarized in the tables below.

Despite this consistency of the trend for greater undervote rates in Hispanic and Native American precincts, the undervotes are nevertheless closely linked with certain machine types, specifically the push-button electronic voting machines, as is shown clearly in the following table. The only machines to show a rate above the statewide average of 2.72% were the push-button machines.

Undervote Rates by Machine Types in Precincts with an Ethnic Plurality

	Touchscreen		Push Button		Op-Scan
Ethnicity (50+%)	**ES&S iVotronic**	**Sequoia Edge**	**Danaher Shouptronic**	**Sequoia Advantage**	**Optech (All 4 types)**
Native American	1.41%	0.64%	7.64%	8.82%	0.63%
Hispanic	NA	0.90%	7.36%	5.56%	0.24%
Anglo	0.80%	0.76%	3.51%	3.59%	0.49%
Mixed	1.02%	1.05%	4.75%	4.54%	2.33%
Statewide	0.95%	0.84%	4.93%	5.28%	0.57%

Conclusions

While the analysis of high undervote rates, zero-undervote rates, and demographic discrepancies suggests the possibility of machine malfunctions and tabulation errors that may have impacted the election results, the high number of phantom votes are undeniable evidence of the inaccuracy of the New Mexico presidential totals, evidence that leaves the outcome in question.

This report shows that the presidential election results certified by the New Mexico Canvassing Board on November 23, 2004 contains severe and widespread inaccuracies. Therefore, it is necessary to conduct a thorough and accurate recount in order to determine which presidential candidate truly won the electoral votes of New Mexico.

---

[1] **Sources**

The data used for this report was derived from several sources. All data concerning the 2004 election results is drawn from the Certified results contained in the Access file General_04.mdb provided by the New Mexico Bureau of Elections.

The demographic data was drawn from the New Mexico State Legislature website (http://legis.state.nm.us/lcs/redmapsfinal.asp) and is based on 2000 census data.

The registration data is drawn from the Bureau of Elections website, http://web.state.nm.us/AVRS/PRECINDX.HTM.

Information about voting technology was drawn from the Secretary of State of New Mexico's website (www.sos.state.nm.us/Election/VotingMachines.html) and confirmed by telephone with each of the County Clerk's offices in the state, many of which also provided information about the number of machines used on election day in each precinct.

Election Incident reports were drawn from the Vote Protect website (https://voteprotect.org/index.php?display=EIRExportMapState&state=New+Mexico).

[2] **2004 vote count smoother, still some problems.** Scripps Howard News Service. December 22, 2004. By Thomas Hargrove. http://www.knoxstudio.com/shns/story.cfm?pk=MISCOUNT-FINAL-12-22-04&cat=AN