Summary Report on New Mexico State Election Data
by Ellen Theisen and Warren Stewart

We have collected and examined a great deal of data concerning the November 2, 2004 Presidential Election in New Mexico. The observations we have made cast serious doubt on the accuracy of the certified results. The sources for the data used in this report are detailed in an end note.

- Excessively high numbers of undervotes (ballots with no vote recorded for president) suggest that thousands of votes may have been lost due to machine malfunctions.

- Certified results show many precincts reporting more votes than ballots cast, especially in absentee voting. Each of these 2,087 phantom votes is an explicable anomaly.

- Hundreds of precincts reported zero undervotes, that is, the unlikely situation that every single voter cast a vote for president, cast it correctly, and had the vote counted by the machines.

- High undervote rates correlate with high percentages of Hispanic or Native American voters, suggesting that machines function differently in minority areas.

Undervote & Phantom Vote Overview

Undervotes occur when ballots report no vote for a particular. They are determined by subtracting the total number of votes in that race 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 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 type (early, 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 are more reasonable.

Undervotes 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%

Eight different machine types were used in the New Mexico election. Undervote rates are significantly different for the different machine types, with excessive rates reported for the two push-button Direct Record Electronic (DRE) machines (the Shouptronic and Advantage).

Undervotes by Machine Type

Machine Type	Total Undervotes	Total Ballots Cast	Undervote Rate
Optech (All 4 types)	1,850	290,818	0.64%
Sequoia Edge	849	14,3803	0.59%
ES&S iVotronic	186	19,671	0.95%
Danaher Shouptronic	10,409	21,2965	4.89%
Sequoia Advantage	5,703	10,8044	5.28%

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

While Sequoia Advantage DREs were used in both early voting and on election, 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%. 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).

Overall the 32 precincts had an undervote rate of 14.72% (10,796 ballots cast, 9216 presidential votes, 1589 undervotes) — a presidential vote for fewer than 1 in every 7 voters.

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 all ballots cast in a precinct, the undervote rate for that precinct is zero. Since New Mexico has an excessively high undervote rate, one would expect undervote rates of zero 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 zero 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

Voting Type	Precincts			Ballots Cast by Voting Type	
	With Zero UV	Total in State	% with 0-UV	In 0-UVPrecincts	% of Total
Early Voting	651	1,397	46.60%	85,531	36.19%
Election Day	126	1,397	9.02%	22,336	5.83%
Absentee	747	1,429 *	52.27%	75,408	48.33%

The high rate of zero undervotes for all voting types statewide 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%.

It is notable that zero-undervote rates vary significantly by the type of machines used in the precinct AND by the voting type. The following table shows the varying zero-undervote rates by machine and voting type.

Zero-undervote Rates by Machine Type and Voting Type

Machine	Precincts		
	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	19.98%
Absentee Voting			
Optech (All 4 types)	747	1429	52.27%

Particularly troubling is the fact that the Sequoia machines reported much high instances of zero-undervotes in early voting than on election day. This suggests the possibility that some machines may have been programmed with a default candidate choice in early voting; when a voter chose not to vote for president, the default candidate would be awarded the vote.

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* Overseas absentee ballots in each county are tracked as a separate precinct number.

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 explicable anomaly. New Mexico reported a total of 2,087 phantom votes in a total of 250 precincts. That is, 17.49% of the precincts reported anomalies that remain unexplained. The number of phantom votes is equivalent to more than a third of the margin between the two leading presidential candidates.

The vast majority of phantom votes (1528) were reported from optical scan machines. Reported phantom votes for the machine types for each voting type are summarized in the following table.

Phantom Votes by Machine Type and Voting Type

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

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. 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.

Phantom votes occurred on paperless machines as well. 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).

While the analysis of high undervote rates, zero-undervote rates, and demographic discrepancies suggest 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.

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[*] Errata. The initial version of this report mistakenly reported this value as 1649.

Ethnicity and Undervotes

Undervote rates reflect a direct correlation to the ethnicity of a precinct. Precincts with Native American and Hispanic pluralities recorded disproportionately in the undervote totals. 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.)

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.

Undervote Rates by Voting Type in Precincts with an Ethnic Plurality

Ethnicity (50+%)	Early Voting	Election Day	Absentee	Total
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%
Statewide	-0.70%	-4.46%	-1.49%	-2.72%

Undervote Rates by Machine Types in Precincts with an Ethnic Plurality of 75+%

Ethnicity (75+%)	Early Voting	Election Day	Absentee	Total
Native American	-3.04%	-8.51%	-0.74%	-6.79%
Hispanic	-1.01%	-7.13%	-1.52%	-4.63%
Anglo	-0.24%	-2.66%	-0.50%	-1.56%

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 DREs as is shown clearly in the table below. The only machines to show a rate above the statewide average of 2.72% were the Push-Button DREs.

Undervote Rates by Machine Types in Precincts with an Ethnic Plurality

	Touchscreen		Push Button DRE		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%
Statewide	-0.95%	-0.84%	-4.93%	-5.28%	-0.57%

Conclusions

The New Mexico Secretary of State certified inaccurate presidential election results.

- The excessively high undervote rate in hundreds of precincts strongly supports that conclusion.
- The excessively high zero-undervote rate — along side the high overall undervote rate — adds to the evidence.
- The variance in undervote rates according to the racial make up of precincts is a further indication.
- The presence of over 2,000 phantom votes is incontrovertible proof.

In spite of the fact that the certified results are inaccurate, the Governor, the Secretary of State, and the Supreme Court raised insurmountable barriers to block the request of the Green and Libertarian parties for a recount of the ballots.

Therefore, we have no way of knowing which presidential candidate truly won the electoral votes of New Mexico.

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).