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Development of the Town Data Base: Estimates of Exposure Rates and Times of Fallout Arrival Near the Nevada Test Site*

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ABSTRACT

As part of the U.S. Department of Energy's Off-Site Radiation Exposure Review Project, the time of fallout arrival and the H+12 exposure rate were estimated for populated locations in Arizona, California, Nevada, and Utah that were affected by fallout from one or more nuclear tests at the Nevada Test Site. Estimates of exposure rate were derived from measured values recorded before and after each test by fallout monitors in the field. The estimate for a given location was obtained by retrieving from a data base all measurements made in the vicinity, decay-correcting them to H+12, and calculating an average. Estimates were also derived from maps produced after most events that show isopleths of exposure rate and time of fallout arrival. Both sets of isopleths on these maps were digitized, and kriging was used to interpolate values at the nodes of a 10-km grid covering the pattern. The values at any location within the grid were then estimated from the values at the surrounding grid nodes. Estimates of dispersion (standard deviation) were also calculated. The Town Data Base contains the estimates for all combinations of location and nuclear event for which the estimated mean H+12 exposure rate was greater than three times background. A listing of the data base is included as an appendix. The information was used by other project task groups to estimate the radiation dose that off-site populations and individuals may have received as a result of exposure to fallout from Nevada nuclear tests.

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I. INTRODUCTION

The Nevada Test Site (NTS) has been used as a testing area for nuclear weapons since 1951. More than 100 above-ground nuclear tests took place there before the Limited Test Ban Treaty banned atmospheric testing in 1963, and many of those tests, as well as a few subsurface tests, released radioactivity that was detected off-site (that is, beyond the boundaries of the NTS and the adjacent Nellis Air Force Range).

Protecting the public from exposure to radioactive fallout was a primary factor in choosing a remote desert location such as the NTS for nuclear testing, and it has always been an important element of the testing program. Radiation levels were (and still are) monitored routinely during and after every nuclear test. Before each atmospheric test, monitors were stationed on highways and in towns downwind of the NTS to record radiation levels in the hours before and after detonation. Other monitors in aircraft tracked the fallout cloud visually and with instruments until it dispersed. Occasionally residents were warned to stay indoors during passage of a fallout cloud, but the measured amounts of radiation were generally below the levels then considered hazardous to human health.

Nevertheless, public concerns about the effects of NTS fallout has continued at various levels since testing began. In the late 1970s, publicity about the number of leukemia cases in observers of the 1957 SMOKY test led to numerous claims against the government seeking compensation for health problems that might have been caused by fallout. In response to these claims and to many inquiries from Congress and the general public, the U.S. Department of Energy began the Off-Site Radiation Exposure Review Project (ORERP) in 1979.

The ORERP had two objectives. The first was to collect and organize at one central location all available documents and data pertaining to fallout in the off-site area and make this information accessible to the public. This objective was met through the development of the Coordination and Information Center, an archive of more than 250,000 documents on off-site fallout and related subjects.

The second objective was to reevaluate the radiation dose that off-site residents received from nuclear testing at the NTS, based on their age, occupation, and place of residence. The dose evaluation required the collective scientific expertise of several Department of Energy laboratories and contractors, which were assigned various tasks as follows:

- Data Collection – to identify and collect historical fallout measurements and other information necessary for dose evaluation (Reynolds Electrical & Engineering Co., Inc., History Associates, Inc., and Holmes and Narver, Inc.).
- Fallout Verification – to create computer files containing the historical fallout data (Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency [EPA-EMSL]) and to reevaluate fallout patterns (Weather Service Nuclear Support Office [WSNSO], National Oceanic and Atmospheric Administration).
- Data Analysis – to provide data analysis, quality assurance, and statistical support to the other task groups (Desert Research Institute, University and Community College System of Nevada).
- Pathway Analysis – to develop models for the transport of radionuclides from their deposition on the ground to ingestion by humans (Colorado State University).

- Internal Dose – to develop estimates of organ doses resulting from ingestion and inhalation of fallout radionuclides (Lawrence Livermore National Laboratory).
- External Dose – to develop estimates of organ doses resulting from fallout radionuclides external to the body (Los Alamos National Laboratory).

The general role of the first three task groups was to provide information required as input to computer models developed by the last three task groups. The computer models could then be used to produce an estimate of radiation dose to populations or individuals based on information about residence and lifestyle histories. The original intent was to formalize this process into an Individual Dose Assessment model that would be available to the public. Reduced funding in the later years of the ORERP left the model incomplete; instead, the completed modules remain in the custody of the separate task groups to be activated as needed.

The work of the ORERP was overseen by an independent panel of physicians and scientists, the Dose Assessment Advisory Group, that met regularly to review the methods and results of the task groups. Additional information about the scope and methods of the ORERP can be found in Friesen (1985) and Church *et al.* (1990).

The goal of the dose assessment effort was to be able to estimate the radiation dose received by any person living in an area where fallout from the NTS was deposited. More than 70 nuclear events at the NTS caused off-site fallout, and more than 300 populated areas in Nevada and neighboring states received fallout from at least one event. To get results that were as accurate as possible, the radiation dose had to be calculated separately for each combination of event and populated area.

Ideally, the dose calculations would be based on the total external radiation exposure and the levels of radiation in the air, food, and water consumed by residents of the affected areas in the days and weeks after an event. Unfortunately, few such measurements were made in the 1950s, the decade in which most fallout from the NTS occurred. What was measured on a routine basis was the rate of external exposure to gamma radiation. The ORERP scientists therefore decided to base their calculations on the large amount of historical data on exposure rates in the off-site region.

Most of the historical data are not in a form that can be used directly in the ORERP dose-estimation models. Instead, the data were used to estimate two intermediate quantities for every location that was affected by a given event: the time that the fallout cloud arrived and the exposure rate 12 hours after detonation. Such estimates were made for every nuclear event that resulted in measured off-site fallout and for every populated location that might have received fallout from at least one event. The estimates for locations that received a discernible amount of fallout from an event were entered into the Town Data Base for use in dose calculations.

The original focus of the dose evaluation was on the area considered to be most heavily affected by NTS fallout: Clark, Esmeralda, Lincoln, and Nye counties in Nevada and Washington County in Utah. The Town Data Base contains the estimates of arrival time and exposure rate for locations in this area, the Phase I region. Later, the ORERP scientists addressed the possibility that significant exposure might have occurred farther downwind from the NTS, and defined a Phase II region surrounding the Phase I region (Figure 1). The County Data Base contains the estimates for the Phase II region. It is similar in format to the Town Data Base although the methods used to create it were completely different (Beck and Anspaugh, 1991).

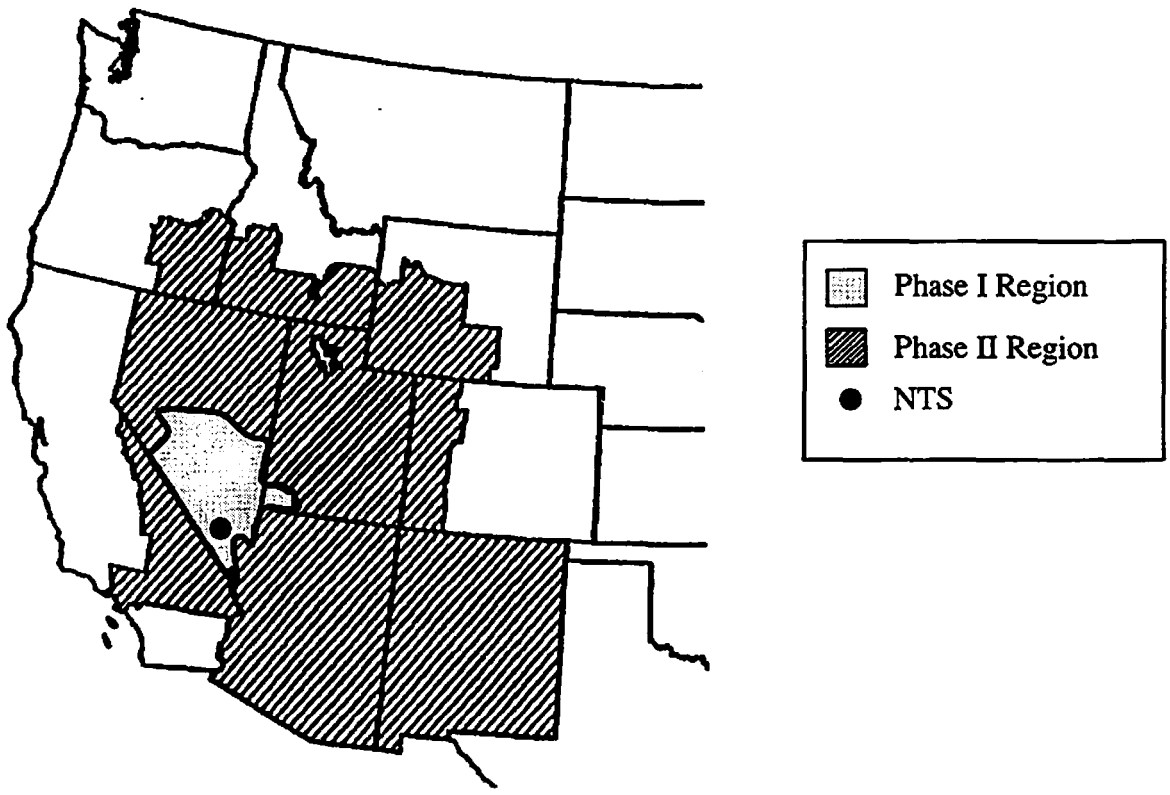


Figure 1. The ORERP Phase I and Phase II regions (adapted from Beck and Anspaugh, 1991).

This report describes in detail the methods used to create the Town Data Base. Its primary purpose is to document the process for scientists who may need to understand exactly how the estimates were derived. We recognize, however, that the subject of NTS fallout is of some interest to people outside the scientific community. We have therefore tried to provide in Section 2 more background information and a general outline of the estimation process at a level that can be understood by readers with a limited scientific background. Sections 3 and 4 cover the technical aspects of how the estimates were produced. Section 5 describes the computer programs used to create the estimates and the thorough review and quality assurance assessment given to the estimates before they were included in the data base. Finally, Section 6 describes the contents of the Town Data Base and provides some summary statistics. A complete listing of the estimates in the Town Data Base, sorted by location and event, is included in the appendices.

2. OVERVIEW OF THE METHODOLOGY

2.1 BACKGROUND

A full explanation of how doses are calculated from exposure rates is beyond the scope of this report. For present purposes, it suffices to note that one important quantity in the calculations is the total exposure to gamma radiation at a given location resulting from a given event. The traditional unit of exposure, in the technical sense of the word, is the roentgen (R). In recent years the roentgen has been replaced by a new unit, coulomb/kg (= 3,876 R), but in keeping with the historical context of the data, we will use roentgens (more precisely, thousandths of a roentgen, mR) in this report.

Relatively few direct measurements of exposure were made during the period of atmospheric testing. The instruments used by the radiation monitors measured the exposure rate, usually in milliroentgens per hour (mR/h). If the exposure rate is constant, the exposure can be calculated by multiplying the exposure rate by the duration of exposure. However, when a fallout cloud moves over a location, the exposure rate is constantly changing. It is at some background level until the fallout cloud arrives, then increases rapidly as the cloud passes over. Once the cloud has moved on, the exposure rate begins to decrease as a result of radioactive decay and, to a lesser extent, weathering of the radioactive particles into the soil. A graphical profile of exposure rate as a function of time typically has the form shown in Figure 2.

The exposure can be calculated from an exposure rate profile: It is the area under the curve from the time the fallout cloud arrives until the exposure rate returns to the background level. Once again, however, only in a few instances were enough data collected at one location for an exposure rate profile to be drawn. Usually an approximate profile, indicated by a dashed line in Figure 2, has to be used. The approximate profile is one that would result from an instantaneous arrival of fallout. If the time of fallout arrival (TA) is defined so the area under the true profile before TA (area A in Figure 2) is equal to the area between the true and approximate profiles after TA (area B), the exposures computed from the two profiles are equal.

Drawing an approximate profile requires three pieces of information: the time of fallout arrival, the exposure rate at one point in time after fallout arrival, and a function describing the decay of exposure rate over time. Determining these three quantities was therefore a crucial part of the dose evaluation project. This report describes how values were produced for two of these quantities, the time of fallout arrival and the exposure rate. (The third quantity, the decay function, received much attention in the early days of the ORERP. The initial calculations used a "$t^{-1.2}$ power curve" model based on earlier fallout studies. That model was determined to be too inaccurate (Anspaugh, 1981), although it was still used as an approximation in some situations. A more accurate decay function, the "sum of 11 exponentials" model, was later developed from the data of Hicks (1981) by the External Dose task group (Henderson and Smale, 1990).)

In principle, a measurement of exposure rate at any time after fallout arrival could be used in determining an exposure rate profile. However, the dose calculations are greatly simplified if the same point in time is used for all the profiles. The reference time chosen was 12 hours after detonation (H+12). This choice allowed comparison of the ORERP results with those of earlier studies, most of which also used H+12 values. Unless otherwise noted, all references to calculated exposure rates mean the value at H+12.

At this point, a complication arises because neither the time of fallout arrival nor the H+12 exposure rate can be determined with absolute certainty. For example, the use of different kinds of

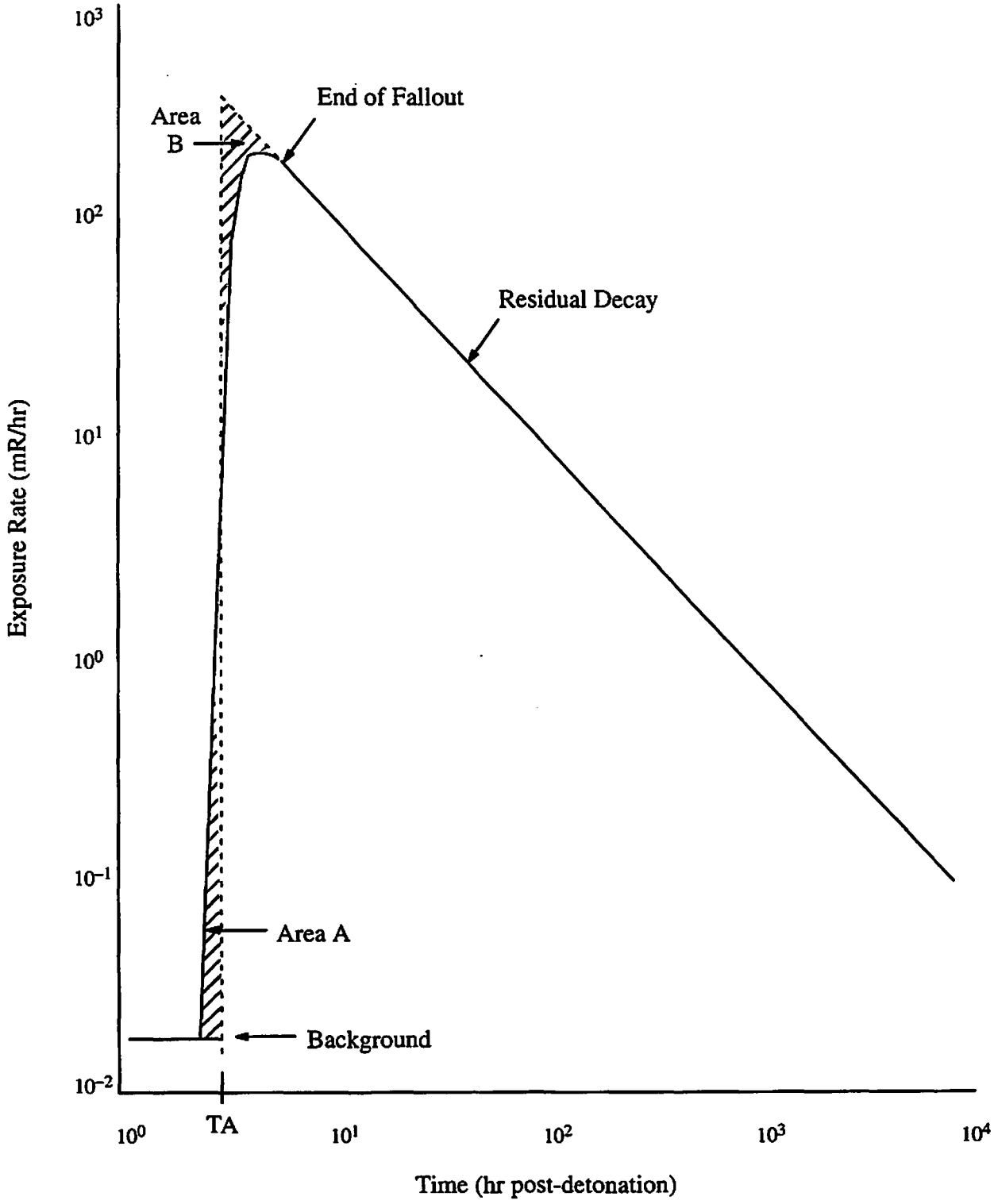


Figure 2. Typical form of an exposure rate profile.

monitoring instruments, small-scale variations in weather conditions, and numerous other factors will cause variation in the measurements of exposure rate even after they are all decay-corrected to H+12. The best that can be done is to compute an average value, which presumably will be close to the "true" value but which will always be accompanied by some degree of uncertainty.

Such uncertainties in the values of the input parameters will result in uncertainty in any calculated doses. The computer models used to calculate dose take these uncertainties into account, and compute a most probable dose or range of doses rather than a single definitive value. To enable the uncertainty in the calculated values of arrival time and exposure rate to be incorporated into the final dose estimates, the estimates of both quantities were assumed to have a particular probability distribution with some mean (a measure of central tendency) and standard deviation (a measure of dispersion about the mean). The estimates of time of fallout arrival were assumed to have a normal distribution, characterized by the arithmetic mean X_T and standard deviation S_T. The estimates of exposure rate were assumed to have a lognormal distribution, characterized by the geometric mean X_E and geometric standard deviation S_E.

The task at hand can therefore be summarized as follows: To estimate, from historical data on fallout deposition, the mean and standard deviation of the time of fallout arrival and the (geometric) mean and standard deviation of the H+12 exposure rate for every populated area near the NTS that received fallout from an NTS event.

2.2 SOURCES OF DATA

Two major sources of information on fallout deposition were available: survey meter readings taken by monitors in the field and published maps showing patterns of fallout distribution.

The largest single body of data was the set of some 119,000 radiation measurements taken before and after each of more than 200 nuclear events by monitors who were trained in fallout survey techniques. Typically, monitors were stationed at numerous locations in towns and along roads, especially in the projected trajectory of fallout. They used portable instruments such as geiger counters and ion chambers to measure, for the most part, the external gamma exposure rate at three feet (1 m) above the ground. As the measurements were taken, the monitors recorded on log sheets the time and place, the instrument type, the gross radiation reading and a previously determined background level, and comments about the measurements or weather conditions. The logs were later evaluated along with other data to determine the extent of the fallout deposition and maximum readings, to prepare maps showing the distribution of fallout, and to estimate external exposures to residents of the affected areas. The results were usually written up as off-site surveillance or radiation safety reports, such as the ones by Collison (1953) and Placak (1962).

In the 1980s, the log sheets were retrieved from storage and and the information in them was evaluated and computerized by EPA-EMSL. The resulting data file, the Survey Meter Data Base, is described in Grossman and Thompson (1993).

Fallout patterns were produced for 77 events in the 1950s and 1960s, primarily by the U.S. Weather Bureau. The patterns were based on the survey meter readings and the prevailing weather conditions at the time of the event. Most of the fallout patterns show isopleths of both exposure rate (H+12, usually) and time of fallout arrival. An example is shown in Figure 3. As part of the ORERP, the WSNSO reanalyzed the patterns for 11 events using additional data (Quinn, 1990).

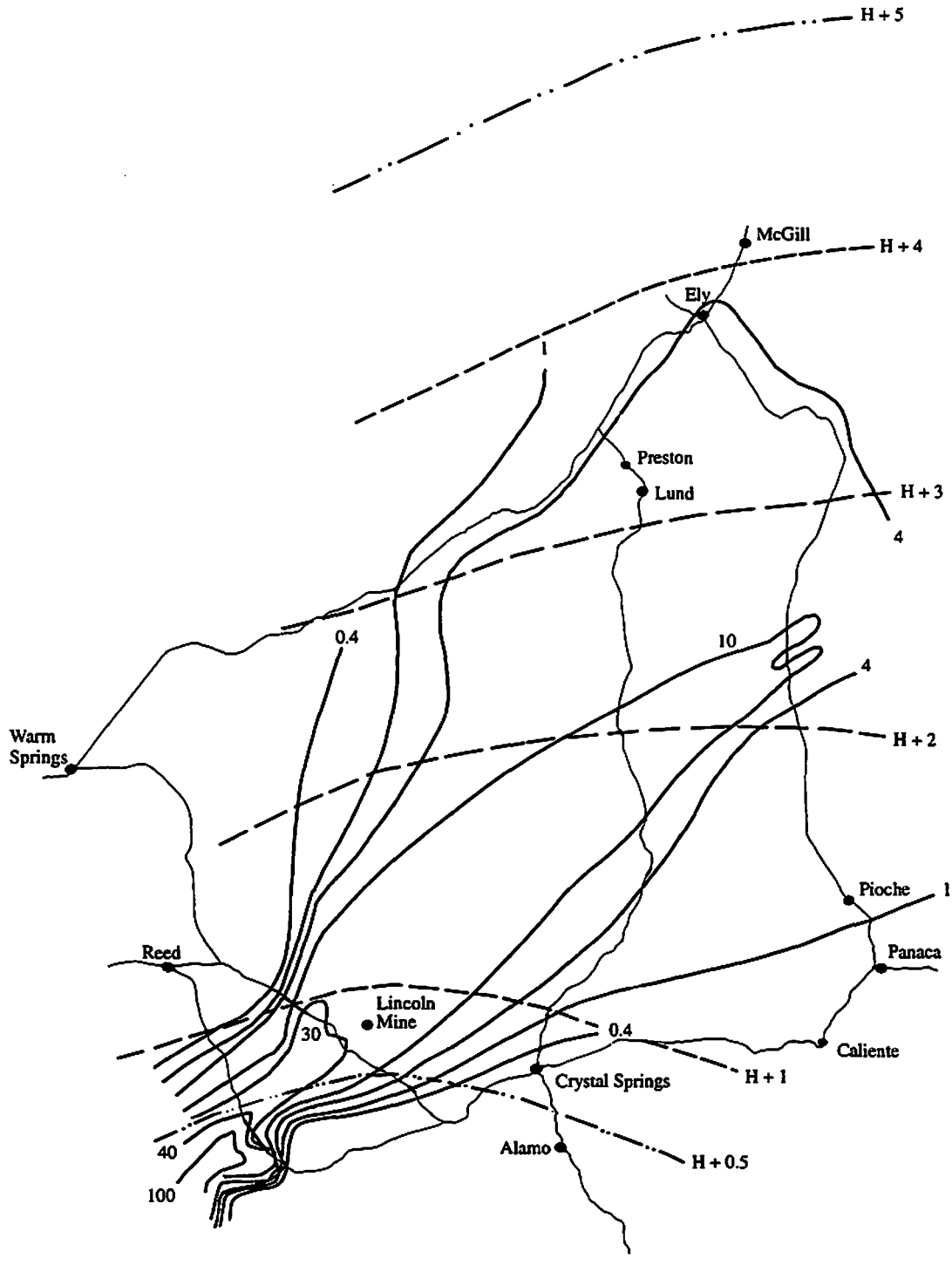


Figure 3. Isopleths of H+12 exposure rate (mR/hr; solid lines) and time of fallout arrival (H+hours; dashed lines) from event EASY. The H+0.5 and H+5 isopleths were added to the original map to aid in interpolation (see Section 3.1). Redrawn and modified from Quinn *et al.* (1986).

2.3 MAKING THE ESTIMATES

At the start of the ORERP, a committee developed a list of 604 sites in Nevada, Utah, Arizona, and California that were considered populated areas and might have been affected by nuclear events at the NTS (Appendix A). All the sites were used in making and reviewing estimates, although not all of them are represented in the Town Data Base.

Estimates were produced separately from the survey meter data and the fallout patterns. If estimates for a given location and event were obtained from both sources, they were compared at the end of the process to determine which would be placed in the data base. Figure 4 shows a generalized flow diagram of the estimation process.

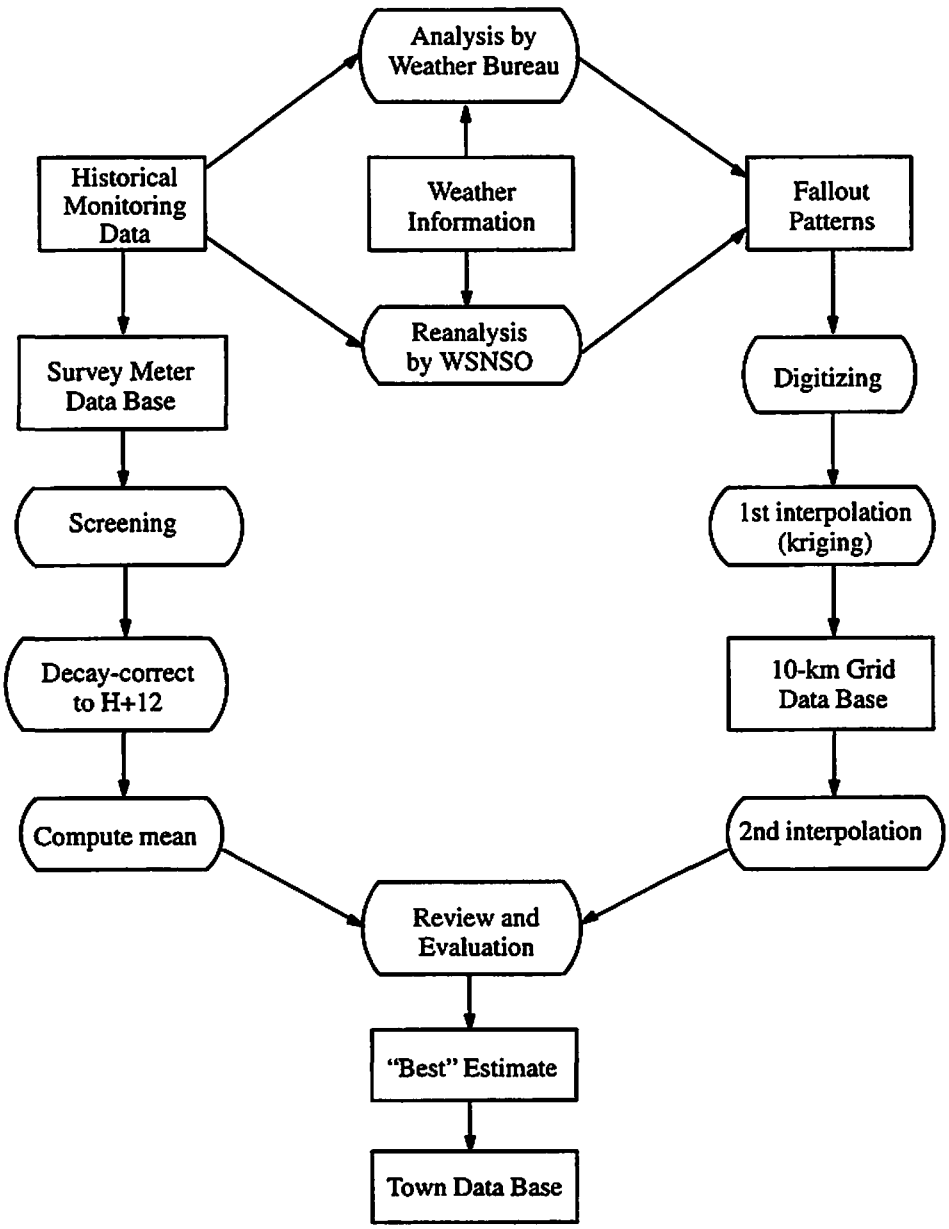


Figure 4. Generalized flow diagram of the estimation process.

The first step in producing estimates from the fallout patterns was to digitize the isopleths, that is, convert the lines on the maps into a numerical form that could be used by computer programs. Next, an interpolation method called "kriging" was used to estimate both arrival time and exposure rate at the nodes of a square grid of points 10 km apart that covered the area of the isopleths on the fallout pattern. The collection of estimates at the grid nodes for all 77 events is called the 10-km Grid Data Base. The values of X_E and X_T for any location were then interpolated from the estimates at the grid nodes surrounding the location, using a distance-weighted formula that gives greater importance to the values at the nodes closer to the location.

Because the survey meter data provide relatively little information about the time of fallout arrival, the X_T values derived from the fallout patterns are the primary source of arrival time estimates in the Town Data Base. On the other hand, the survey meter data are the primary source of exposure rate estimates because they do not smooth the data as the fallout patterns do and because they provide a better representation of the dispersion.

Estimates for a given location were calculated from the survey meter data by first retrieving from the Survey Meter Data Base all measurements made within 2.5 km of the location. From these measurements were selected all those that were measurements of γ radiation taken 1 m above the ground, taken at or after the estimated arrival time (X_T), and considered usable (non-suspect) for dose calculations. A background value was then subtracted from each selected measurement, and the net value was decay-corrected to H+12. An arithmetic mean and standard deviation were calculated and these were transformed, if possible, to a geometric mean and standard deviation.

Once estimates were created from both the fallout patterns and the survey meter data, an extensive and thorough review was performed. The objective of the review was to confirm the estimates with other available information, to resolve any apparent anomalies, and to select the locations with discernible amounts of fallout for inclusion in the Town Data Base.

2.4 THE TOWN DATA BASE

The Town Data Base contains the location and event information and parameter estimates for 1,910 combinations of location and nuclear event. It has at least one record for each of 74 events and each of 353 locations. Appendix B describes the format of the data base, while Appendix C contains a listing of the records.

The first version of the Town Data Base was created in 1985. Over the next few years, the data base was revised several times to incorporate different methods of calculation, improved analytical and review processes, and updated versions of the input data bases. The methods described in this report were used to create the fourth and final version. Version 4.0 of the Town Data Base was distributed to ORERP scientists in October 1989; it was followed by version 4.1 in February 1990. A final check of the data base was made in 1992 and 1993 to ensure that all decisions were properly documented and that the estimates reflected the final decisions. The last revision of the data base, version 4.2, includes a few minor changes resulting from this final check. These changes are noted on the listing in Appendix C.

3. ESTIMATES FROM FALLOUT PATTERNS

3.1 FALLOUT PATTERNS

One important source of data for the estimates was the set of fallout patterns produced in the 1950s and 1960s to help assess the spread and the levels of fallout produced by each nuclear event. These patterns were hand-drawn isopleths developed from survey meter readings and information on the prevailing weather systems at the time of the event. Many of them were published in Nagler and Telegadas (1956), Goeke (1958), and Telegadas and Nagler (1960). Patterns from events conducted after 1958 have apparently not been published, but they can be obtained from the Coordination and Information Center at the address given at the end of the References.

The exposure rate patterns for most events were produced from survey meter readings that were normalized to H+12. For some events where fallout did not extend far off the NTS, the exposure rates were normalized to H+1. When the H+1 isopleths were digitized, the exposure rate values were converted to H+12 using the $t^{-1.2}$ model:

$$ER(12) = ER(t) \cdot (12/t)^{-1.2} \qquad (1)$$

where t is the number of hours from detonation for the value on the map. For example, if the exposure rate is 0.4 mR/hr on an H+1-hour map, the value at H+12 is

$$ER(12) = 0.4(12/1)^{-1.2} = 0.4(0.05) = 0.02 \text{ mR/hr.}$$

Most fallout patterns also included isopleths of the time of fallout arrival. The exact meaning of this quantity was a subject of much discussion in the early stages of the ORERP. In general terms, the arrival time is the time, in hours after detonation, that the fallout cloud from a given nuclear event arrived at a given location. Several more precise or quantitative definitions can be given, and at least four possibilities were considered (Miller, 1982):

- the time when a substantial part of the fallout reached the ground (used by the Weather Bureau in creating original fallout patterns);
- the time when a time-of-arrival detector recorded a value 2 mR/hr above background (such detectors were used during Operation Plumbbob in 1957);
- the time of the maximum rate of fallout (used by the WSNSO in their reanalysis of fallout patterns); and
- the time that equalizes the two shaded areas A and B in Figure 2 so the area under the approximate curve is the same as the area under the true curve (Kennedy, 1981).

Values of time of fallout arrival derived using these definitions typically differ by 15 to 30 minutes down the center of a pattern and perhaps up to an hour near the outer edges. Such differences are considered small relative to the precision with which arrival time can be estimated. For the purposes of this report, the time of fallout arrival is defined as the quantity represented by the arrival time isopleths on the fallout patterns.

Arrival times were determined by examining profiles of exposure rate versus time where data were available. Where there were no profiles, winds-aloft data were analyzed to estimate the time

that fallout particles would have arrived at a location. These arrival times were plotted on the fallout pattern map and isopleths were drawn to them.

Seventy-five fallout maps were located, giving patterns for 77 events which may have produced discernible fallout off-site (U. S. Department of Energy, 1989). (One map has patterns for both the SOCORRO and WRANGELL events, while another has patterns for SANFORD and DE BACA.) The names of all 77 events are included in Table 4 in Section 6. Ground monitoring data were taken before, during, and after many other nuclear events for which fallout patterns were not produced because the levels of exposure rate off the NTS were low.

In the early 1980s, the fallout patterns for 11 events (ANNIE, BADGER, BEE, BOLTZMANN, EASY, HARRY, NANCY, SIMON, SMALL BOY, SMOKY, and ZUCCHINI) were reanalyzed by the WSNSO using ground monitoring data, information about prevailing weather systems, and aerial survey data (Quinn, 1986a, 1986b, 1987; Quinn *et al.*, 1981, 1982, 1984, 1986; Steadman, 1988; Steadman *et al.*, 1983a, 1983b, 1984a, 1984b). The methods used were similar to those for the original analyses, though the survey meter data were more carefully assessed and questionable values were adjusted or discarded before the calculations were performed. For these 11 events, the revised patterns were used instead of the original patterns to produce estimates. The WSNSO also reviewed available information to provide isopleths of the time of fallout arrival for a few events which did not have arrival time isopleths on the original fallout pattern.

3.2 DIGITIZING AND INTERPOLATING

Estimates were obtained from each fallout pattern through a three-step process. First, the isopleths were digitized to convert them into a numerical form. Next, the digitized data were used along with an interpolation program to estimate values on a 10-km square grid of points covering the fallout pattern. Finally, the grid estimates were used to interpolate values at the locations of interest within the grid. The first two steps are described in this section, and the third step is described in Section 3.3.

Digitizing was the method chosen to computerize the information from the hand-drawn exposure rate and arrival time isopleths. The procedure involved placing the fallout pattern on a digitizing pad and tracing each isopleth with a special pen that recorded the X and Y coordinates of the pen's location and the isopleth level whenever a button was pressed. The spacing of digitized points along the isopleths varied, with straight segments having fewer points than sharply curved segments. When the procedure was complete, each isopleth was represented in a computer file by a set of records, each containing the isopleth level and the coordinates of a point on that isopleth. Two such files were created for each pattern, one with the exposure rate isopleths, the other with the arrival time isopleths. After the digitizing was completed, every digitized pattern was plotted and compared with the original pattern to check for errors and to verify that the digitized version adequately represented the isopleths.

Early attempts to interpolate from the digitized arrival time data gave poor results in regions near the lowest and highest isopleths. To help provide more realistic interpolated values in these regions, two extra isopleths were drawn and digitized along with the original isopleths. One was drawn about midway between the end of the exposure rate isopleths nearest to the point of detonation and the first arrival time isopleth. This isopleth was given a value equal to half the value of the first arrival time isopleth. The second was drawn at the other end of the pattern, beyond the last arrival time isopleth at about the spacing of the previous two. This new isopleth was given a value equal

to one more than the largest arrival time isopleth level. Figure 3 shows the two additional isopleths drawn for event EASY.

Also, the interpolation program estimates a value at each grid node from the nearest eight data points. To ensure having enough data in the area of each node, additional points were added between digitized points on each exposure rate isopleth. For isopleths greater than or equal to 40 mR/hr, the maximum distance between digitized points was no more than 1 km and for isopleths less than 40 mR/hr, the maximum distance was no more than 2 km. Addition of points to the digitized isopleths of arrival time was not necessary because the isopleths were relatively straight.

All 75 historical fallout patterns were digitized in 1980 and 1981. Revised patterns were digitized as they were produced by the WSNSO.

The second step in obtaining estimates from the fallout patterns was using the digitized data to create a grid of equally spaced points, each having an estimate of exposure rate and time of fallout arrival. Some consideration was given at first to using a grid of points 5 km apart. Eventually, it was decided that interpolating to such a fine grid with such sparse data would be attempting to create more precision than existed in the fallout patterns. Instead, a 10-km by 10-km grid was selected. In examining the distance between isopleth lines, especially the ones for exposure rate, it was found that gradients were usually steep only in the region near the NTS, where there were very few locations of interest. The remainder of a pattern contained gradients that were less steep, so that estimates on a 10-km grid covering the pattern could reflect the gradients well.

The grid origin was the same for all events: 37° north latitude and 116° west longitude, a location near Yucca Lake on the NTS. Figure 5 shows an example of the 10-km grid overlying the pattern of event EASY.

Two methods were used to interpolate from the digitized fallout patterns to the 10-km grid. The modified Shepard's method (Foley, 1981) was initially preferred because it was easier to use. However, it did not give acceptable estimates in regions where values were changing rapidly. Early in 1982, kriging was adopted as the method for creating the 10-km grid estimates.

Kriging is an estimation method first developed by statisticians in the mining industry. It differs from classical spatial estimation methods in that it uses the correlation between values measured at a set of locations to estimate the value at an unmeasured location. In the present context, the measured locations are the digitized points on the isopleths, while the unmeasured locations are the nodes of the 10-km grid. Kriging has some optimal properties from a statistical standpoint, and it provides an estimate of the uncertainty in the interpolated values (the kriging error). A discussion of kriging is beyond the scope of this report. Journel and Huijbregts (1978), David (1977), and Delfiner and Delhomme (1975) provide good explanations of the technique.

Kriging was carried out by first running each file of digitized data for an event through a computer program called GAMMA (Chiles, 1975) to compute the sample variogram, a function that expresses the spatial correlation of the data in terms of the distance between the observed values. The output from GAMMA was used to estimate the parameters defining the kriging model. The corresponding file of digitized points and these parameters were then input to the computer program BLUEPACK (Delfiner *et al.*, 1976) to produce a set of kriged estimates at each node of the 10-km grid. BLUEPACK produces estimates on a rectangular grid of points specified by the user rather than on a grid in the shape of the fallout pattern. To provide estimates for exposure rate and arrival time

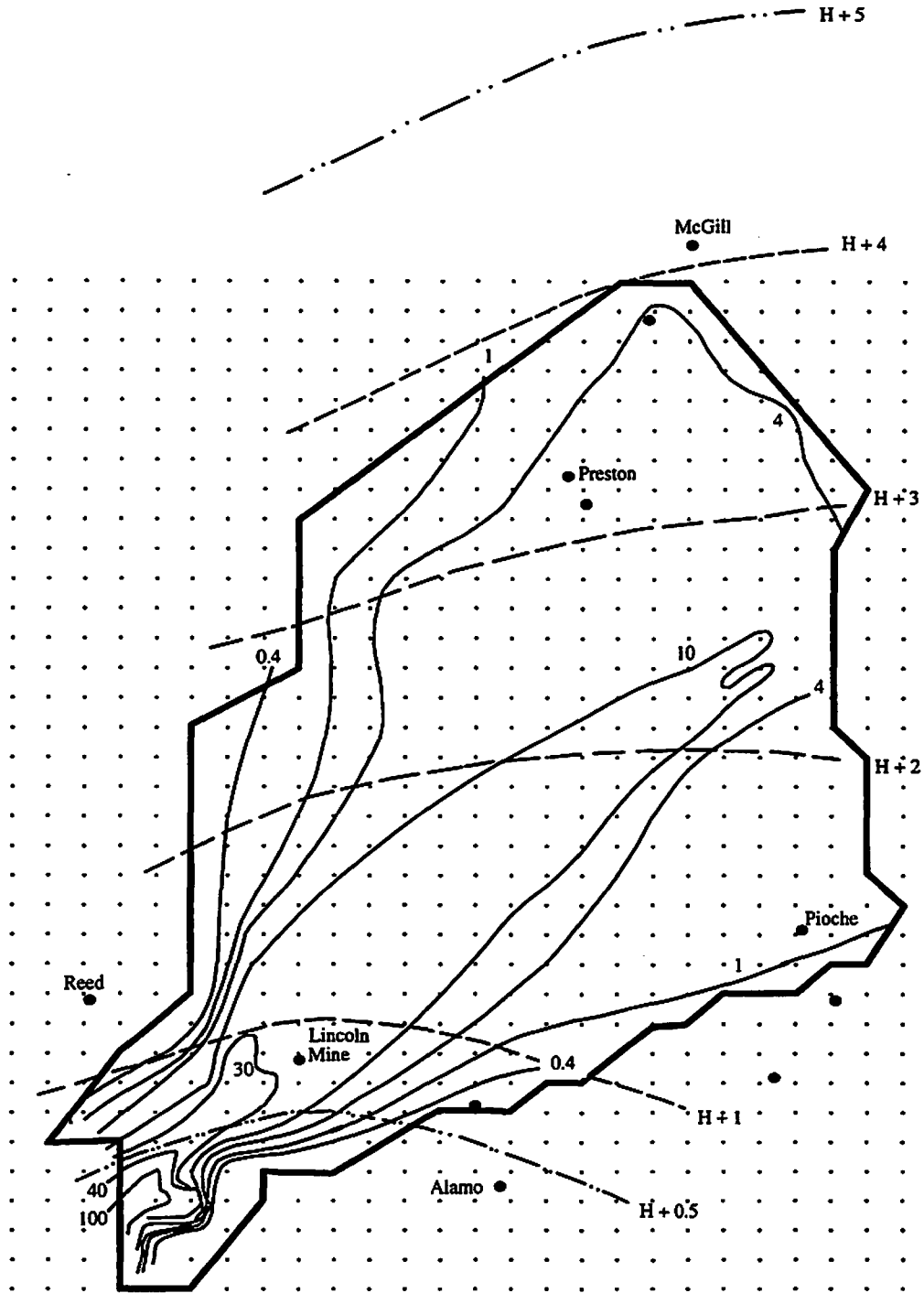


Figure 5. Points of the 10-km grid superimposed on the fallout pattern from event EASY. The solid black line encloses the grid points considered usable for calculating estimates.

over the same area, the bounds of the rectangle for a given event were chosen to give the closest fit to the exposure rate isopleths. The grid overlay in Figure 5 is an example of the rectangle fit to a pattern.

Comparison of the grid estimates to the original isopleths showed that kriging performed well in interpolating to the grid nodes in the areas bounded by the actual data. Because the kriging estimates outside of these areas did not always reflect the expected decrease of exposure rate with distance from the NTS, a flagging procedure was developed to differentiate grid points. The grid nodes that most closely enclosed the exposure rate isopleths and all the nodes within that enclosure were flagged as nodes that were usable for estimation. Thus the set of grid estimates used in further calculations for an event was determined by the exposure rate isopleths. The same nodes were flagged for the arrival time estimates even though the isopleths for arrival time generally extended beyond those for exposure rate. In a few cases, estimates of exposure rate at nodes on the boundaries or in the center of the pattern did not change consistently with the gradient or had large kriging errors. These nodes were not flagged and were not used in further calculations for that event.

Figure 5 shows the grid points for event EASY that were flagged as usable for subsequent estimation. Figure 6 is a subset of the grid of exposure rate values showing an example of the interpolated fit.

The exposure rate and arrival time estimates for all nodes (flagged and unflagged) in the rectangle of the 10-km grid surrounding the isopleths for each event were combined to form the 10-km Grid Data Base. These rectangles cover the most current sets of isopleths for all 77 events with fallout patterns. Each record in the data base contains the values at a node for a given event. The fields associated with each node include the event name, the distance of the node from the grid origin in the north-south and east-west directions, the kriging estimates and kriging errors of exposure rate and arrival time, and the usability flag.

The grid estimates for event BANEBERRY required special treatment because the isopleths on the fallout pattern were in units of net infinite external gamma exposure (mR) rather than mR/hr as on the other maps. The isopleths were digitized and estimates were produced at the grid points using the mR units. Each grid estimate was then transformed to an estimate of H+12 exposure rate with the equations

$$E = \int_{T}^{\infty} ER(1)t^{-1.2}dt$$

$$ER(1) = (E/5)T^{0.2}$$

$$ER(12) = ER(1)(12)^{-1.2}.$$

Here E is the interpolated exposure and T is the interpolated arrival time at the grid point. The first equation expresses the exposure as a function of the exposure rate at H+1 and time; the second follows from the first by integrating and solving for $ER(1)$; the third decay-corrects the exposure rate to H+12 using equation (1).

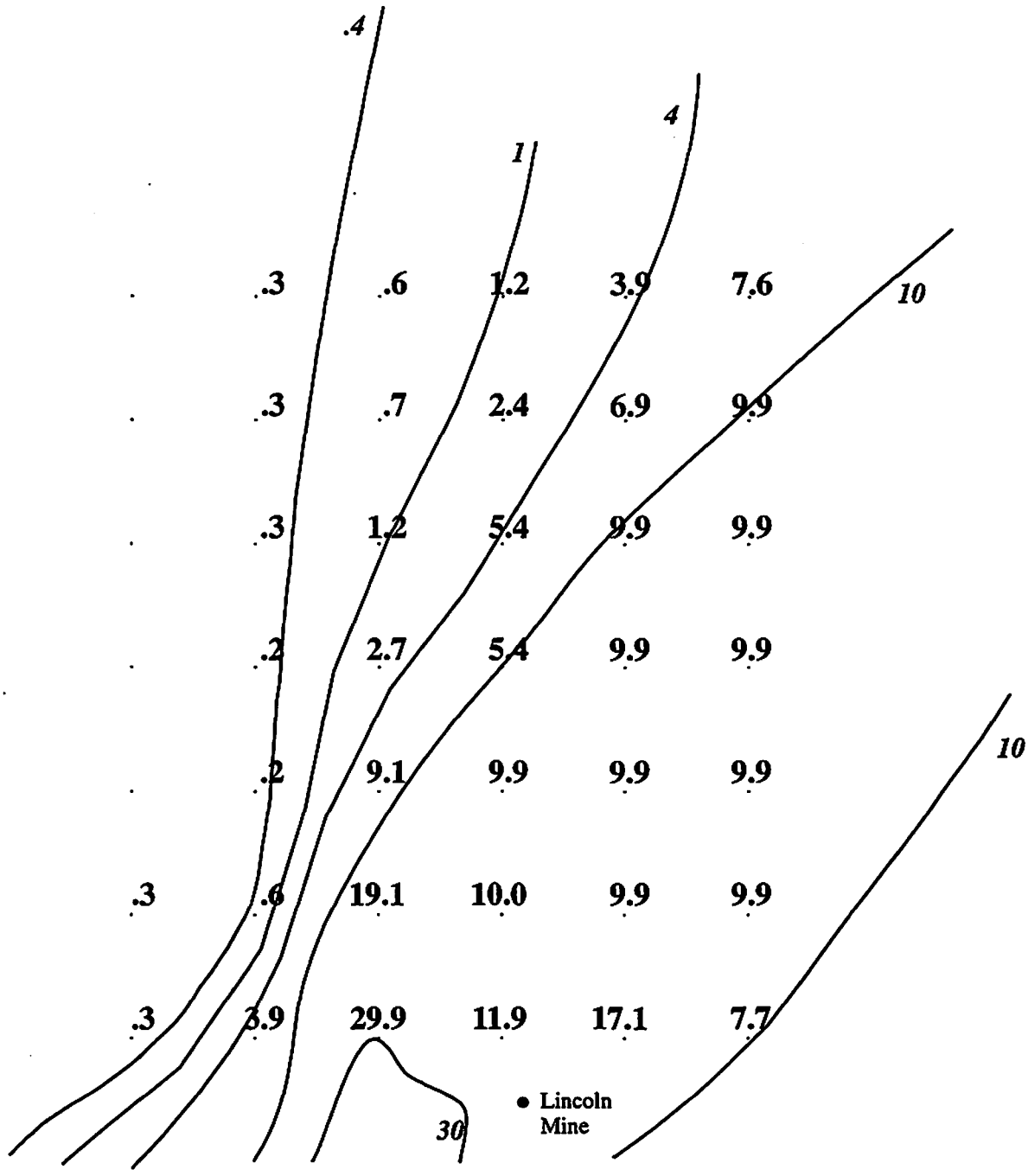


Figure 6. Part of the EASY fallout pattern showing the interpolated exposure rates (mR/hr) at the 10-km grid points.

3.3 CALCULATING THE ESTIMATES

The third part of the process was to calculate estimates for populated locations using the 10-km Grid Data Base.

3.3.1 Estimates of the Mean

A second interpolation scheme was developed to produce estimates of X_E and X_T for any location within one of the squares of the 10-km grid. Because of the flagging process, a location could fall into a grid square with anywhere from 0 to 4 usable grid points. An estimate was made only if there were two or more usable grid points surrounding the location.

Consider first the estimate of the geometric mean of the exposure rate estimates at location L, $X_E(L)$. Let ER_i be the estimated exposure rate at the ith corner of the square surrounding L, and let D_i be the Euclidean distance from L to the ith corner. The estimate of $X_E(L)$ is then calculated as

$$X_E(L) = \exp\left[\sum_{i=1}^{n} K_i \ln(ER_i)\right], \tag{2}$$

where K_i is the distance-weight associated with ER_i, that is,

$$K_i = (1/D_i)/\sum_{j=1}^{n}(1/D_j), \tag{3}$$

and $n = 2, 3,$ or 4 depending on the number of usable grid points. K_i is inversely related to the distance of the location from the ith corner.

The estimate of the (arithmetic) mean arrival time, $X_T(L)$, is calculated similarly, using normal values instead of logarithms:

$$X_T(L) = \sum_{i=1}^{n} K_i T_i, \tag{4}$$

where T_i is the estimated time of fallout arrival at the ith corner.

As an example, consider the estimation of exposure rate for Leeds, Utah, from event HARRY. The data for the four surrounding grid points from the 10-km Grid Data Base (distance east and north of the grid origin and interpolated exposure rate), as well as the calculated distance D from Leeds (232 km east and 25.1 km north of the origin) and the weight K, are listed below:

Point on Grid	east (km)	north (km)	ER (mR/hr)	D (km)	K
upper left	230	30	69	5.3	.323
upper right	240	30	38	9.4	.184
lower left	230	20	39	5.5	.311
lower right	240	20	49	9.5	.182

Using $n = 4$ in equation (2),

$$X_E(\text{Event HARRY at Leeds}) = \exp [0.323 \ln(69)+0.184 \ln(38)+0.311 \ln(39)+0.182 \ln(49)]$$

$$= \exp (3.89) = 49 \text{ mR/hr.}$$

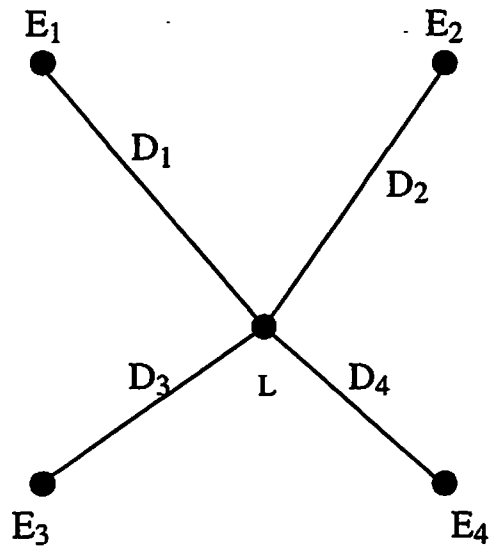
The above equations were used if the exposure rate values at all four corners of the square surrounding a location were flagged usable, as in Figure 7(a). Four points were not always available for an estimate, especially for locations near the borders of the exposure rate isopleths. If only three of the four points were flagged as usable, as in Figure 7(b), the weights K_i were based only on the distances from those three corners. When three or four values were available, an estimate could be made for a location anywhere within the square. When only two of the four corners were flagged as usable, as in Figure 7(c), an estimate of X_E was calculated only if the two usable corners were adjacent and if the location fell exactly on the line connecting these corners.

For any of the cases in Figure 7, X_E was calculated from equations (2) and (3) and X_T was calculated from equations (3) and (4) by changing the value of n appropriately. These are the only situations for which X_E was calculated. No estimate was calculated if fewer than two of the grid points were usable.

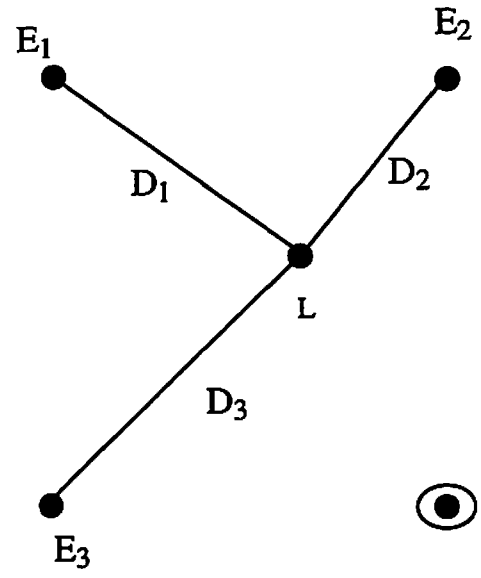
Sometimes X_E could be estimated from the survey meter data (as described in Section 4) for a location outside the flagged area. A value of X_T for those locations was estimated by extending the curvature of the existing arrival time isopleths manually and interpolating by eye. These subjective estimates were made to either the nearest half hour or hour depending on the density of the isopleths and the distance of the location from the isopleths.

The SMALL BOY event posed a special situation because there were only three isopleths for arrival time (5, 10, and 15 hours), but the isopleths for exposure rate extended well past the 15-hour isopleth. Kriging creates grid estimates using available data and thus the X_T values at grid points where no isopleths existed had a maximum value of 15 hr and a minimum value of 5 hr. To develop X_T values more consistent with the probable passage of the cloud, approximate isopleths were drawn for one-hour increments between the H+5 and H+15 isopleths. The approximate one-hour distance between isopleths was then used to create isopleths beyond 15 hours. The X_T value for a location outside the published isopleths was then estimated visually from these additional isopleths.

Sometimes a value of X_E could be estimated from survey meter data for an event for which there was no fallout pattern and thus no isopleths from which to estimate X_T. In such cases, an attempt was made to determine a value of X_T from the survey meter data (possible if a series of measurements was made at the same location) or from contemporary reports that summarized those data.



(a) 4 usable values



(b) 3 usable values

(c) 2 usable values

Figure 7. Situations where estimates can be calculated from the 10-km grid. L is the location for which estimates are to be made; the E_i are values interpolated from a fallout pattern at the grid nodes; and D_i is the distance from node i to L. Values at circled grid nodes are not used in the calculation.

3.3.2 Estimates of Dispersion

The kriging error associated with the estimate of exposure rate or arrival time at each node of the 10-km grid is a measure of precision of the estimate rather than a measure of dispersion for the statistical distribution of the estimate. Although values of S_E and S_T were interpolated from the kriging error, these values were not used as dispersion estimates. The estimates of both X_E and S_E produced directly from the survey-meter measurements were deemed to better reflect the exposure rate distribution than the estimates produced from the fallout patterns. Thus, the S_E for a location where X_E could be estimated only from the fallout pattern for an event was based, if possible, on survey meter data from nearby locations.

The procedure was carried out after the data in the Survey Meter Data Base had been used to estimate X_E and S_E for as many locations as possible, as described in the next section. For a given location L for which X_E could not be estimated from the survey meter data but could be estimated from the fallout pattern, all locations within 12 km of L that did have an X_E value based on the survey meter data were selected. From the S_E values for those locations, a pooled dispersion estimate $S_E(L)$ was calculated as

$$S_E(L) = \exp\left[\sqrt{\sum_{i=1}^{m} \frac{\ln^2 S_i}{m}}\right], \tag{5}$$

where S_i is the ith S_E value and m is the number of usable S_E values. These calculations did not include any S_E based on only one measurement. A default S_E value of 1.4 was assigned to locations for which either no S_E based on survey meter data was available or the available S_E values were all based on only one measurement. This default value was the median value of all the S_E values based on more than one measurement from the Survey Meter Data Base and used in the Town Data Base (the range of these values was 1.0 to 4.3). The default S_E value represents a combination of variability from different instruments and variability from other sources of error present in the measurements taken at the locations.

To develop an estimate of dispersion for the distribution of time of fallout arrival, information was obtained from the scientists at the WSNSO about the variability found in their reanalysis of the fallout patterns for 11 events. For situations with simple meteorology, where the winds did not change much with time or distance, differences of 15 to 30 minutes were found between meteorologically derived fallout times and those obtained from profiles of exposure rate versus time. For situations with more complex meteorologic conditions, the differences were about an hour or more. In either case, the differences increased as the distance from the point of detonation increased. Because this is equivalent to an increase in the dispersion as the time from detonation increases, the dispersion estimate S_T was made a function of time.

In most cases when X_T was estimated from the 10-km grid (that is, the location was within the flagged area of the fallout pattern), or when the location was just outside the isopleths where X_T was easily determined, S_T was set equal to 0.1 X_T. For a location outside an event's isopleths where X_T was estimated by manually extending the isopleths, S_T was set equal to 0.15 X_T. These formulas are somewhat generalized and subjective, but they provide a feasible alternative to the extensive analysis of data that would be required to obtain more accurate dispersion estimates for each event. Most time of arrival values are in a range of from 3 to 10 hours, so the estimated dispersions are of the same order of magnitude as the differences typically found in the WSNSO reanalyses (V. E. Quinn, Weather Service Nuclear Support Office, personal communication, 1987).

4. ESTIMATES FROM SURVEY METER DATA

4.1 THE SURVEY METER DATA

The other major source of data for estimating exposure rate was the measurements of external gamma exposure rate taken by monitors in the field and later retrieved and entered into the Survey Meter Data Base. During fallout monitoring, collecting data was less important than ensuring public safety, and the intense scrutiny that the data have undergone in the last decade was not anticipated when the monitors were given instructions for taking measurements. More than 30 years have passed since much of the information was collected, making it difficult to detect or correct errors without some subjective interpretation. Even though the original data are not without errors or uncertainties, they are the best field measurement data available.

Initially, attempts were made to use the survey meter data with interpolants such as bicubic splines and kriging to create estimates on the 10-km grid. It was felt that the estimates would be more rigorous and defensible if they were generated directly from actual measurements. However, because the data were taken primarily along roads and in towns, there were large areas in which no measurements were made (see Figure 8). As a result, the estimates produced by the interpolants were often inconsistent with the original data. The fallout patterns proved to be a better source of data for the interpolant estimation because data existed throughout the area of interest and because weather conditions were taken into account when the patterns were produced. On the other hand, the survey meter measurements probably provide the most accurate picture of the radiological condition in a given populated area at a given time. Therefore, X_E and S_E estimates created from survey meter measurements are usually given more credence than those derived from a fallout pattern.

4.2 SELECTING THE MEASUREMENTS

To estimate X_E and S_E, the Survey Meter Data Base was first searched for all measurements within 2.5 km of the location of interest. Those measurements were screened to eliminate the ones that were not suitable for use in the estimation. The initial screening retained only measurements that were readings of γ radiation taken 1 m above the ground, outside any vehicle or building, and at or after the estimated X_T for the location. (Most estimates of X_T were interpolated from the 10-km grid, but some were obtained by manually extending the isopleths or from reports or survey meter data (Section 3.3.1). In some cases, an X_T value based on reports or survey meter data was used in place of one derived from the fallout patterns to give a more consistent estimate of X_E. See also the description of the estimation and review process in Section 5.)

Other measurements were rejected because they were considered unusable for dose calculations. The data in the Survey Meter Data Base were examined carefully when the data base was created, and some measurements were noted at that time as being suspect. The WSNSO scientists also reviewed the data for 11 events to determine which were the most reliable for reanalyzing the fallout patterns. Those data were flagged in the Survey Meter Data Base to be used for the individual exposure rate estimates as well. The WSNSO was later asked to review the remaining data for those events and assess whether each measurement was reliable enough for use in estimate calculations. Some data were rejected for use as a result of that assessment.

Another problem encountered with some of the survey meter data was due to the difficulty inherent in measuring low levels of radiation. Because of the random nature of radioactive decay,

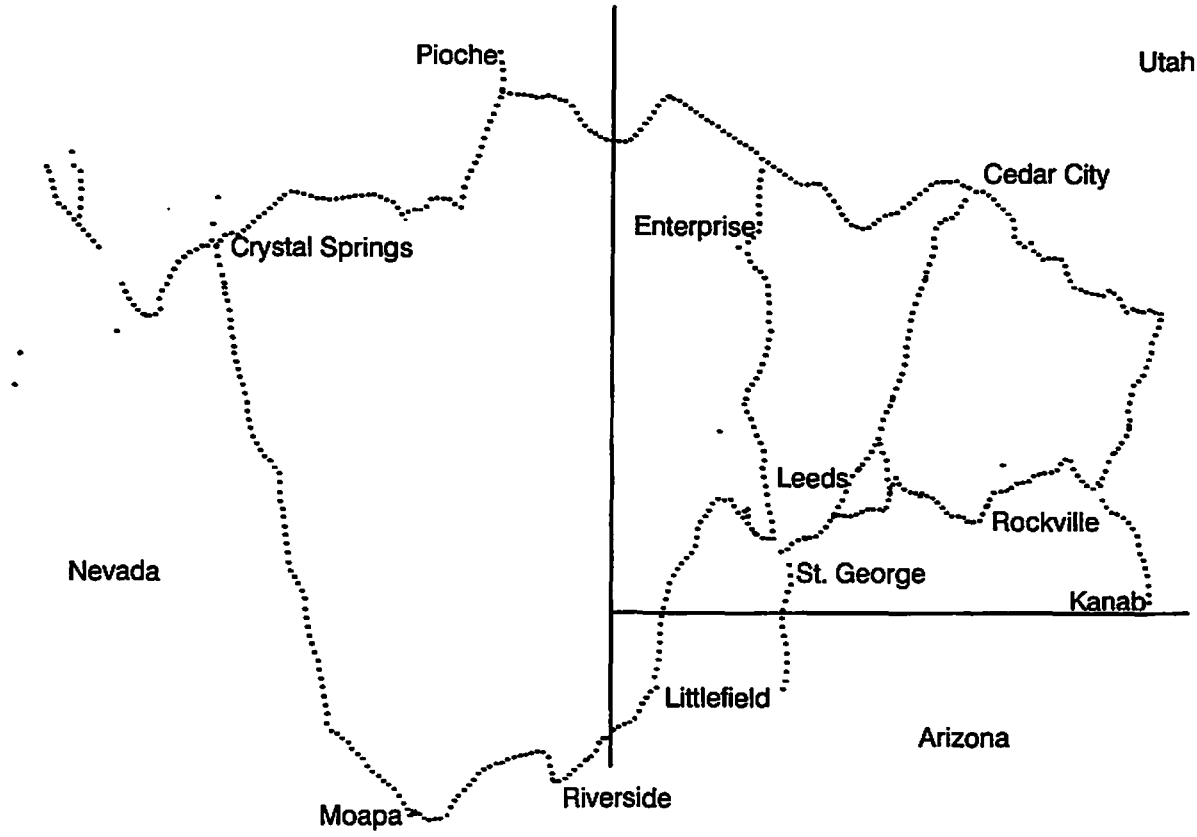


Figure 8. Locations at which survey meter data were collected for event HARRY (see also Quinn *et al.*, 1981).

the number of gamma rays emitted will vary from one time interval to another. If the average number is small, the amount of variation will be relatively large, causing a relatively large uncertainty in the measured value. In general, the radiation level has to be at least twice as high as the natural background level to be detectable with the kinds of instruments used by the fallout monitors. Thus it was not always clear whether low values in the Survey Meter Data Base represented low levels of fallout or just variations in the measurement of the background level.

This problem was compounded if the low measurement had been made several days after the event. Although in theory the fallout will eventually decay to an arbitrarily low level, in practice the radiation level will never be less than the natural background. If a reading that is mostly background is decay-corrected back several days to H+12, an inflated value will be obtained. For example, if an exposure rate 0.02 mR/hr above background was recorded at H+60, the value normalized to H+12 using equation (1) would be:

$$ER(12) = 0.02(12/60)^{-1.2} = 0.02(6.90) = 0.14 \text{ mR/hr.}$$

If the measurement was taken at H+100, the H+12 normalized value would be

$$ER(12) = 0.02(12/100)^{-1.2} = 0.02(12.730) = 0.25 \text{ mR/hr.}$$

Such normalized values are not very reliable because the 0.02 mR/hr may represent just an unusually high reading of the background level rather than actual fallout. In addition, if such values were much greater than other normalized measurements for that location taken at earlier times (for example, if all other H+12 values were less than 0.04 mR/hr), both the X_E and S_E estimates would be higher than expected. If the estimates did not agree with other sources of information (reports, fallout maps, estimates for nearby locations), the data were reviewed and measurements may have been excluded from further use. Measurements were excluded for this reason only if they were taken more than 60 hours past detonation and had low net exposure rate values, on the order of 3 times background or less.

The problems arising from measured values near the background level were identified during the first attempts to create the Town Data Base. After much discussion among the ORERP's task group leaders and scientific advisors failed to reach a resolution, the project leaders mandated an interim solution in ORERP Project Directive No. 10. Although most of the specified procedures were later made obsolete by changes in the Survey Meter Data Base and in estimation methods, the directive is reproduced in Appendix D for the sake of completeness.

4.3 CALCULATING THE ESTIMATES

Once a set of usable measurements had been selected, a net exposure rate,

$$N = \text{gross value} - \text{background value},$$

was calculated for each one. The monitors did not always record a background value for a measurement. If no background value was given in the Survey Meter Data Base, a default background value for an event was used. The normal background rate for each event processed was 0.02 mR/hr except for event HARRY. The reanalysis of the HARRY fallout pattern event by the WSNSO suggested that its normal background level was 0.05 mR/hr (Quinn *et al.*, 1981).

In the WSNSO reanalyses of the 11 events, some survey meter measurements were found to be inconsistent with other supporting information. These measurements were annotated in the WSNSO reports with either correction factors (0.5 to 100) or an indication of their reliability (for example, Steadman *et al.*, 1983b). These same adjustments were applied to the net values before further calculations were made.

The next step was to decay-correct each net value to its value at H+12 using a sum of 11 time-dependent exponential functions. The decay factor df is

$$df = \sum_{i=1}^{11} a_i \exp(-b_i t), \tag{6}$$

where t is the time (hr) from event occurrence until the measurement was taken and a_i and b_i are coefficients defining the exponential functions. Values of these coefficients for the various events

were provided by R.W. Henderson of Los Alamos National Laboratory. The decay-corrected value was then calculated as

$$ER(12) = N/df. \tag{7}$$

The last step was to calculate the geometric mean X_E and standard deviation S_E from the net exposure rate values. The usual method would involve taking the logarithm of each value and computing the statistics of the logarithms. In many instances, however, the calculated net exposure rate measurement was equal to 0, so this method could not be used. Several alternatives were evaluated, including discarding the zero values or adding a small amount to each measurement before taking logarithms. Finally, a calculation procedure was developed based on the method of moments (Freund, 1971).

The first step was to compute the arithmetic mean and variance of the untransformed data by the usual formulas:

$$X_H = \sum_{i=1}^{m} ER_i/m \tag{8}$$

and

$$S_H^2 = \sum_{i=1}^{m} \frac{(ER_i - X_H)^2}{m-1}, \tag{9}$$

where ER_i is the ith value of $ER(12)$ and m is the number of usable $ER(12)$ values for the location. These sample moments were then equated to their theoretical values (Aitchison and Brown, 1957):

$$\begin{aligned} X_H &= \exp(X_l + S_l^2/2) \\ S_H^2 &= \exp(2X_l + S_l^2)[\exp(S_l^2) - 1]. \end{aligned} \tag{10}$$

Solving (10) for X_l and S_l^2 leads to

$$S_l^2 = \ln[(S_H/X_H)^2 + 1], \text{ the variance of the log-transformed measurements, and} \tag{11}$$

$$X_l = \ln(X_H) - S_l^2/2, \text{ the mean of the log-transformed measurements.} \tag{12}$$

Finally,

$$X_E(L) = \exp(X_l), \text{ the geometric mean, and} \tag{13}$$

$$S_E(L) = \exp(S_l), \text{ the geometric standard deviation.} \tag{14}$$

As an example, consider the usable survey meter data for event HARRY from Leeds, Utah. The number of hours from the time of the event (5:05 a.m. on 5/19/53), the net exposure rate value, and the H+12 exposure rate calculated from (7) are given below:

Hours	N (mR/hr)	$ER(12)$ (mR/hr)
6.0	59.95	25.7
14.2	31.95	38.2
35.9	5.95	21.2
108.3	4.20	47.0

Using these data, equations (8) through (12) give values of:

$$X_H = 33.0 \qquad S_H = 11.8 \qquad X_l = 3.44 \qquad S_l^2 = 0.121$$

Then

$$X_E \text{ (Event HARRY at Leeds)} = \exp(X_l) = 31 \text{ mR/hr}$$

and

$$S_E \text{ (Event HARRY at Leeds)} = \exp(S_l) = 1.4.$$

If there was only one measurement taken for a location, the X_E value was equal to the value of H calculated in equation (7). No value of S_E could be calculated, so the default dispersion value of 1.4 (Section 3.3.2) was assigned to S_E.

5. CREATING AND REVIEWING THE ESTIMATES

5.1 CREATING THE ESTIMATES

The estimates described in Sections 3 and 4 were calculated with a series of computer programs collectively called FATHER (Fallout Arrival Time and H+12 Exposure Rate). A flowchart of the FATHER procedure is given in Figure 9. The description here is not a full documentation of the procedure, but it should provide enough of the general details to enable the following discussion of the estimate review process to be understood.

The first step of the procedure (program RETOFF) compared the latitude and longitude of a location with the bounds of the 10-km grid rectangle for each event. If the location was within the grid rectangle, the program created estimates of the four parameters X_E, S_E, X_T, and S_T for that location and event and wrote the estimates to a record called an "I" record. If the location was within the flagged area of usable 10-km grid values, the estimates of X_E and X_T were calculated as described in Section 3.3. The values of S_E and S_T were interpolated from the kriging errors; they were later replaced with better estimates of dispersion during the review. If the location was outside the flagged area (but still within the grid rectangle), all four estimates were given an unrealistically large value of 10,000. A report was generated for each I record created to describe the grid values and distance weights used for the estimates.

If the location was outside the grid rectangle for all events in the 10-km Grid Data Base, a special record was created to make sure that the Survey Meter Data Base was checked for data from that location.

Program PRE checked each location against the Survey Meter Data Base to see if survey meter data existed for a given event. If so, an internal record was created for the next program. If an I record existed for the location and event, the X_T value was included in the internal record. If not, the X_T value was set to zero.

Program POS extracted the data for the location and event from the Survey Meter Data Base. Any data from within 2.5 km of the location were included without regard as to their usability for further calculations.

Program H12 looked at the resulting set of survey meter data and culled those that were less than X_T or were otherwise unusable (Section 4.2). For each remaining measurement, the program calculated the net exposure rate, decay-corrected it using the 11-term exponential coefficients for the event, and calculated the geometric mean and standard deviation, if possible (Section 4.3). An "R" record was generated for each location and event for which there is at least one measurement (usable or not) in the Survey Meter Data Base. The DETAILS report describes the records extracted, whether or not they were used, all calculations, and any comments from those records.

Finally, the REPORT program sorted the I and R records so all records for a given location and event were contiguous in the output file EXPOS. The complete set of estimates in the EXPOS file was then subjected to the review process.

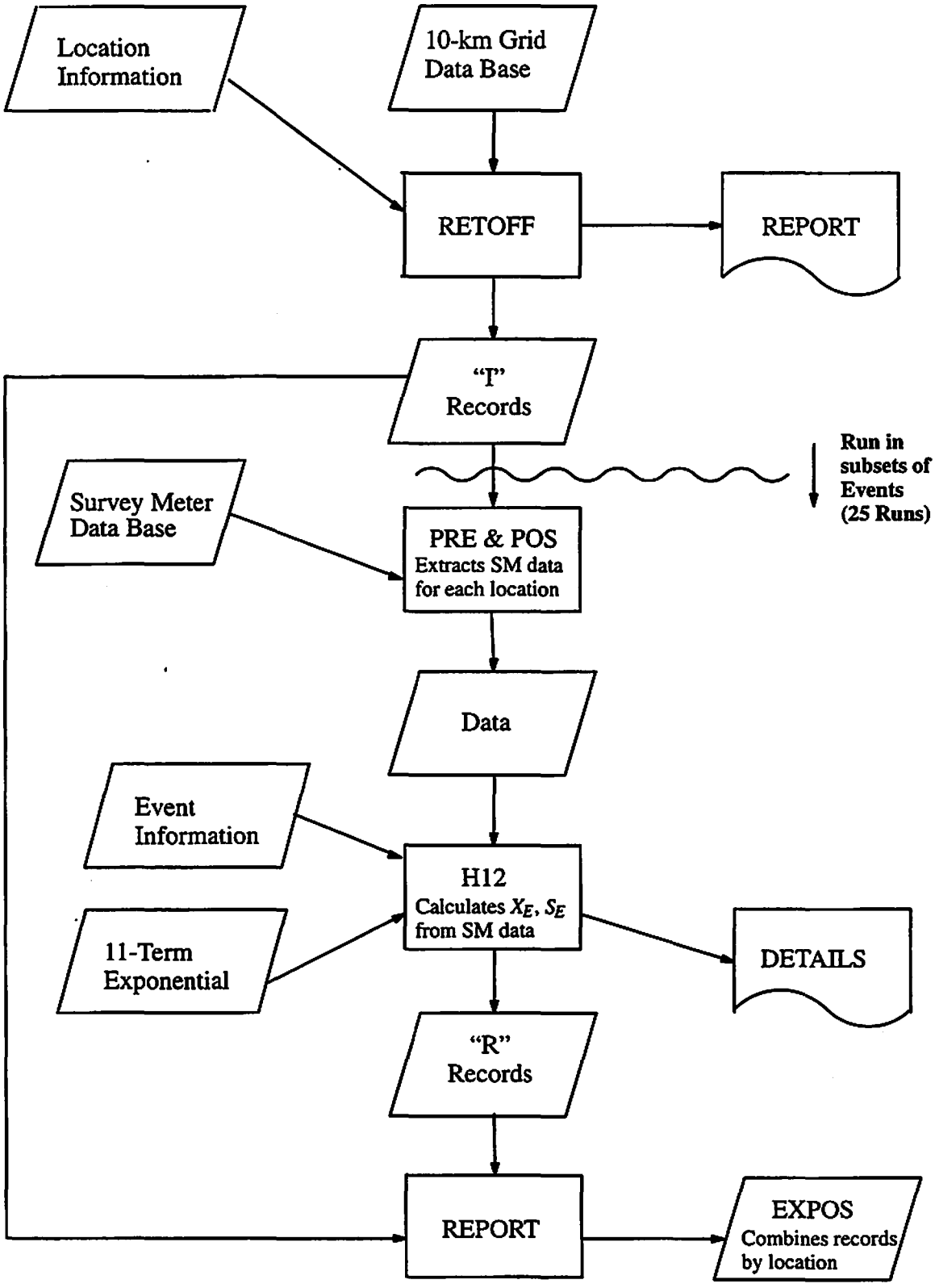


Figure 9. Flow diagram of the FATHER procedure.

5.2 REVIEWING THE ESTIMATES

5.2.1 Basic Philosophy

More than 9,000 sets of estimates were generated by the FATHER procedure, but not all of them could be used in dose calculations. Often estimates were made from both the 10-km grid and the survey meter data, and one or the other had to be chosen. Other estimates were considered questionable for one of several reasons. Thus, it was important to review the estimates and select the ones suitable for inclusion in the Town Data Base.

The most important criterion for including estimates in the data base was based on the concept of discernible fallout. As noted in Section 4.2, low levels of exposure rate are difficult to measure accurately. Discussions of this topic led to the decision to include in the Town Data Base only those estimates of geometric mean exposure rate X_E that equaled or exceeded "discernible fallout." The definition of discernible fallout was taken to be three times the default background exposure rate for an event, that is, 0.15 mR/hr for event HARRY and 0.06 mR/hr for all other events.

For estimates that exceeded the level of discernible fallout, a hierarchy of information sources was established to determine which estimates would be used. Estimates of exposure rate calculated from the survey meter data were considered preferable because they were based on actual measurements made in the vicinity of the location of interest. Such estimates had the highest priority unless they were found to be inconsistent with estimates from other sources. Estimates based on the fallout patterns had second highest priority. Estimates from reports or other sources had lower priority and were only used if estimates calculated from the survey meter data were suspect. Estimates of time of fallout arrival were taken primarily from the fallout patterns and secondarily from reports or other sources.

The basic objective of the review was to ensure that the chosen estimates were "best" in the sense of being most consistent with the available sources of information. The process basically compared a location's estimates as produced in the FATHER runs with the fallout patterns and with estimates from nearby locations. Several secondary sources of information were also used to support the decisions made about the estimates. One source was the collection of off-site surveillance and radiological safety reports prepared after each event. These reports often contained information about the maximum exposure rate and the time of fallout arrival at several sites in the path of the cloud. They also provided commentary about unusual conditions.

Another important source of information for some locations was the County Data Base (Beck and Anspaugh, 1991). Although the Town Data Base was created to contain estimates for the Phase I region, many of the locations run through the estimation process described here were in the Phase II region. The resulting estimates for those locations were used as supplementary information in developing the County Data Base. Conversely, estimates from the County Data Base based on other sources of information were used to help resolve questions on the Town Data Base estimates. In fact, the estimates for fallout in Las Vegas from events APPLE-1, POST, SANFORD, and SOCORRO were produced by the methods used in Phase II. The fallout patterns for those events do not include Las Vegas, and survey meter data were not collected there because the city was upwind when the events were conducted. However, the gummed film data used for the County Data Base show that some fallout from those events did reach Las Vegas. To avoid giving an impression to the contrary, Beck and Anspaugh provided the necessary estimates for inclusion in the Town Data Base.

During the review, it was important to recognize that the data were 30 to 40 years old and might contain errors which could not be resolved. Even the considerable review of data for the final version of the Survey Meter Data Base could not preclude errors in interpretation because of the lack of clarity of the information on the logs or the tedium of the encoding task. Although these were the best data available for the task, they do have limitations, and it is thus all the more important to consider uncertainty along with the actual estimate when the dose calculations are being made.

Any anomalies in the estimates or questions that could not be resolved were reviewed by the ORERP's Scientific Director, Dr. Lynn R. Anspaugh of Lawrence Livermore National Laboratory. Dr. Anspaugh's extensive background in the area of estimating radiation exposures, especially in connection with work at the NTS, provided additional insights into these questions. His directions for the assessment of a location's estimate were considered final.

5.2.2 The Review Process

The initial steps of the review were computerized to prevent having to check each estimate by hand, and to increase consistency and reduce subjectivity in the judgments to be made. The computer programs used several criteria to identify anomalies as potential indicators of errors that were not previously caught or of situations that had not been expected to influence the estimates. The purpose was to identify for review those estimates that met one or more of these criteria.

The first step in the review occurred during the FATHER procedure in program H12. After that program had calculated X_E and S_E values from the survey meter data, it assigned a case letter to each estimate. (Here and in the rest of this section, the word "estimate" refers collectively to the four estimated values X_E, S_E, X_T, and S_T.) The case letters provided an easy way to describe the estimate with respect to how many measurements were available, how many of them had net values of zero, whether or not the estimated X_E was greater than discernible fallout, and so forth. The various cases are described in Table 1. In assigning the case letter, both the arithmetic and geometric mean of the data were examined, though only the geometric mean was actually used in an estimate. Also, note that an estimate was produced even if there were no usable survey meter data (Case A) to differentiate from the case where there were no data at all. The case letters were included in the printouts and records of the FATHER procedure and served as easy-to-recognize flags in the review.

The review process continued once all the estimates were created through FATHER. A flow diagram of the next steps is shown in Figure 10.

The first program in the post-FATHER procedure was DECCMB, which structured the estimates in the format of the Town Data Base. It also assigned a decision type and a tentative use code to each estimate. The decision type was based on the position of the location relative to the 10-km grid rectangle and flagged area (see Figure 5) and the case letter assigned to estimates of X_E from the survey meter data. The various decision types are defined in Table 2. They basically describe the existence and kinds of estimates available from both major sources for a given location. If a location had a record from both the 10-km grid (I record) and the survey meter data (R record), each record was given the same decision type. The distribution of decision types from the initial FATHER run is also shown in Table 2.

The result of DECCMB was a set of potential records for the Town Data Base, with many locations having two records (I and R). The rest of the review process eliminated the records whose estimates did not meet various criteria. The use code assigned by DECCMB was a preliminary judgment as to whether the record should be used, but was subject to change upon further review.

Table 1. Case Letters Assigned to Estimates from Survey Meter Data

Case Letter	# of measurements[a] Total	N=0	N>0	Relationship of mean to DF[b]	X_E	S_E	Use
A	0	–	–	–	–999	–999	No
B	1	0	1	< DF	GM[c]	0	No
C	1	0	1	≥ DF	GM	1	Yes
D	n	n	0	–	0	0	No
E	p	0	p	< DF	GM	0	No
F	p	0	p	≥ DF	GM	GSD[d]	Yes
G	n	m	n–m	< DF	GM	0	No
H	n	m	n–m	≥ DF	GM	GSD	Yes
I	n	0	n	AM ≥ DF[e] 0 < GM < DF	GM	0	No
J	n	m	n–m	AM ≥ DF 0 < GM < DF	GM	0	No

[a]N – Net value for measurement = gross value – background value; p ≥ 2, n ≥ 1, m > 0
[b]DF – Discernible Fallout
[c]GM – Geometric Mean
[d]GSD – Geometric Standard Deviation
[e]AM – Arithmetic Mean

Table 2. Definitions of Decision Types

Decision Type	Location Relative to 10-km Grid	X_E Estimate from Survey Meter Data	Record Types	# of Locations
1	inside flagged area	none	I	881
2	inside flagged area	≥ DF[a]	I,R	801
3	inside flagged area	< DF	I,R	202
4	outside grid rectangle	< DF	R	2133
5	inside grid rectangle, outside flagged area	none	I	2073
6	inside grid rectangle, outside flagged area	< DF	I,R	680
7	inside grid rectangle, outside flagged area	≥ DF	I,R	256
8	outside grid rectangle	≥ DF	R	181
				7207

[a]DF – Discernible Fallout

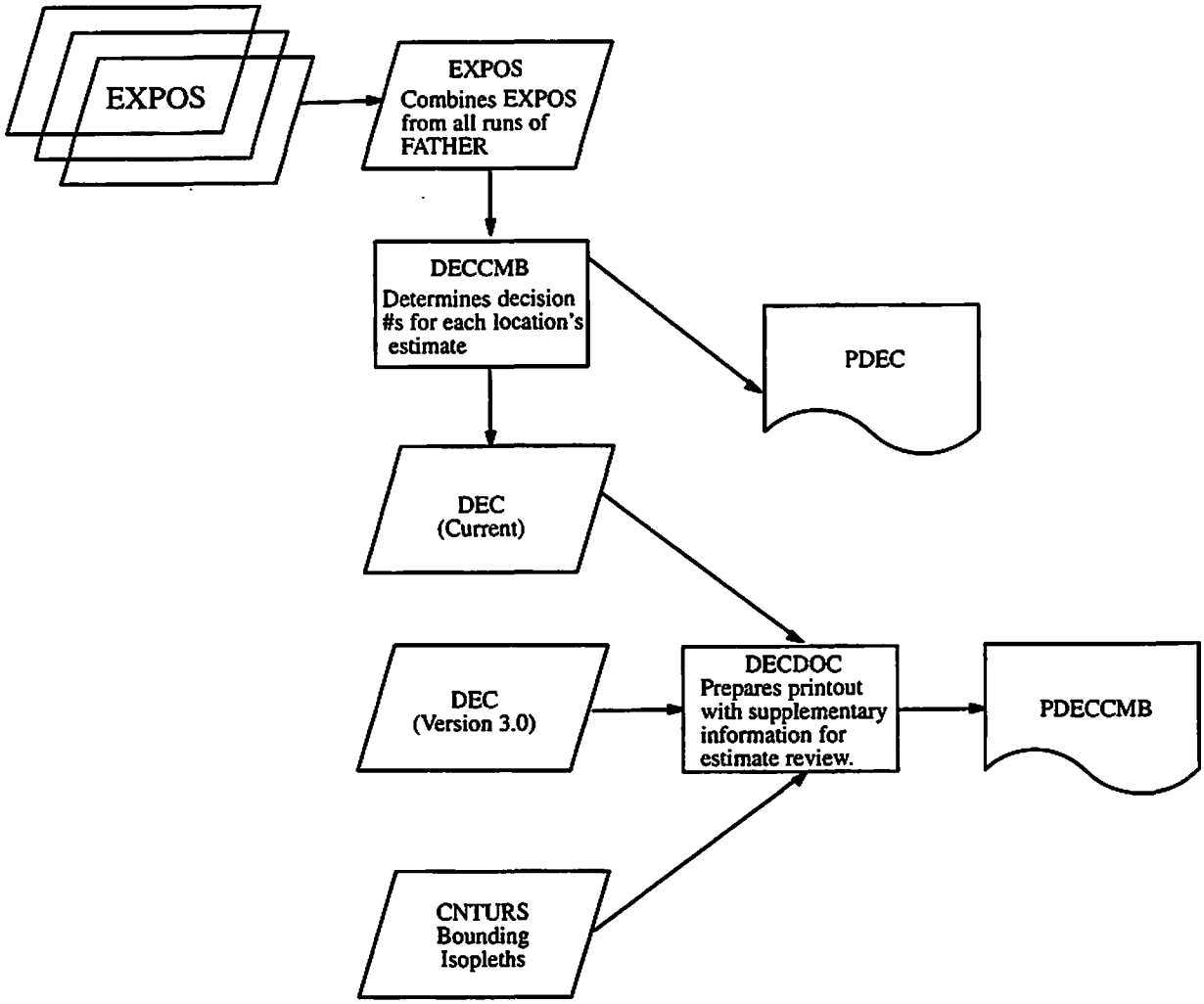


Figure 10. Flow diagram of the post-FATHER procedure leading to the PDECCMB printout for reviewing the estimates.

The next step was to process the estimates through program DECDOC, which produced one of the primary printouts (PDECCMB) used in the review process. The input to DECDOC included the bounding isopleths (the levels of the upper and lower isopleths of both exposure rate and arrival time that bounded a location) for each location within the flagged area of an event (file CNTURS). The DECDOC program also extracted the estimates from the previous FATHER run for comparison to those from the current run. The PDECCMB printout included, for every location, all estimates from both the 10-km grid and the survey meter data from the previous and current runs of FATHER, the decision type for each estimate, and the bounding isopleth levels.

DECDOC also determined whether an X_E or X_T value was more than 25 percent outside either of its bounding isopleth levels. For example, if a location fell between the 1 mR/hr and 4 mR/hr exposure rate isopleths, the X_E value would be compared to 0.75 mR/hr and 5.0 mR/hr. If it was outside those bounds, that is, if it was smaller than the lower value or larger than the higher value,

the printout would so indicate. This check on the isopleth bounds was one of the criteria used to identify estimates for review.

At this point, enough information and processing of estimates had been produced to begin the detailed review. The protocol identified criteria for whether the estimates for a location would or would not be reviewed. The primary estimate reviewed for a location was the one with highest priority (Section 5.2.1). If there were both an I and an R record for a location, the non-primary estimate would be reviewed as supporting information for a perceived anomaly.

Given the effort put into creating and reviewing the estimates, it was important to track, for potential historical review, decisions made about changes to estimates or their inclusion in the Town Data Base. If a location's estimate was to be reviewed, or if the results of the FATHER run were changed for any reason, a Decision Tracking Sheet (Figure 11) was filled out. This sheet tracked, with handwritten notes, the reason for the review, steps that were taken, pertinent information gleaned from other information sources, decisions made, and changes made to the estimate records. Entries were dated and initialed by the person making the entry. Some 1,300 Decision Tracking Sheets were produced during creation of the data base. The sheets and the checking printout (PDECCMB) have been archived in folders by event to document every estimate in the Town Data Base.

5.2.3 Criteria for Review

The estimate for a location was reviewed if any of the following conditions occurred:

- The estimate of X_E or X_T was more than 25 percent outside the bounding isopleth.
- The estimate of X_E was at or above the level of discernible fallout, but the location was outside the flagged area on the fallout pattern.
- The estimate of S_E was 2.0 or greater, indicating an unusual amount of variability in the data.
- The estimate of X_T was less than 0.75 hr or greater than or equal to 30 hr.

The following paragraphs give details concerning the review of estimates from the two sources.

Estimates from the 10-km grid were considered usable if they were consistent with other information sources. The situation that most often caused these estimates to be checked was that they were more than 25 percent outside the bounding isopleths for a location on the fallout map. In some cases the X_T value fell within these bounds but the X_E estimate from the survey meter data, which depends on X_T, was anomalous.

There are two main reasons why an estimate from the 10-km grid might seem anomalous. First, the isopleths may have been very close so that more than one isopleth level fell between the grid nodes which were 10 km apart (an example is the region near the grid node with a value of .6 in Figure 6). This meant that the gradient of the isopleths was very steep and information provided to the interpolant forced it to create node estimates that had a wide range of values in a small area. Second, a node along the edge that represented an upturn in the gradient may have been mistakenly flagged for use. A node with a higher than usual kriging error for X_E, which should have been flagged as unusable, may also not have been caught.

In either case, the values at the nodes were compared to the isopleth levels. In the first case, this was a verification of the situation and a change was made only if the criteria for flagging a node's

Town Data Base – 1989

Decision Tracking Sheet

DTS #_____

Event Name:_____ Event #_____ Event Subset_____

Location Name:_____ Ctrl #_____ Run #_____

Original Decision #:_____ Case, if applicable:_____

Original Reviewer:_____ Date: _____

Reason for Review:_____

Use the remainder of this sheet and the next to describe what was checked, what was found, what was done in response to that and what decisions were made. Please reference computer file names for reruns and printout #s used as reference or obtained as output from a rerun. Date and initial your comments here. The DTS #, final decision and estimates should be marked on the PDECCMB listing. Copies of pages from printouts or other supporting documents can be attached to make the explanations easier to understand. Please mark each of these sheets with the DTS # and a letter for reference purposes.

Town Data Base – 1989

Decision Tracking Sheet

DTS #_____ Event #_____ Ctrl # _____

Pg 2

Figure 11. The Decision Tracking Sheet used to document the review of the estimates.

usability had not been adhered to. If the flags were changed, the affected estimates were rerun. There were only two incidents in the whole review where flags were changed. If the flags were not changed, the estimates were left as is and the review process was documented on the Decision Tracking Sheet.

When estimates from the survey meter data were selected for review, all pertinent sources of information were considered in attempting to resolve the potential anomaly: original logs or reports, encoding of data, estimates from the County Data Base, estimates from nearby locations, and whether X_T was from the 10-km grid or from a visual estimate. The possible causes of anomalies and the steps taken to try to resolve them included the following:

1. Data that were suspect because of conditions noted on the logs or because of the encoding of the data.

   Steps: Correct the erroneous data or flag the data as not usable and rerun the estimate.

2. Circumstances such as weather conditions noted in reports or logs.

   Step: Determine whether to use the estimate based on the effect of the circumstances. For example, high winds might cause resuspension of fallout and an unusually high exposure rate well after the time of fallout arrival.

3. A measurement less than the discernible fallout level was taken more than 60 hours after the event.

   Step: Rerun the estimate excluding the measurement.

4. X_T was too low based on the distribution of exposure rate values (that is, measurements taken before the fallout cloud arrived were included in the estimate of X_E so that either X_E was outside the isopleth bounds or S_E exceeded 2.0).

   Steps: If X_T was estimated from the 10-km grid, check the values at the grid nodes. If they are consistent with the isopleths, multiply X_T by 1.1 and rerun the X_E estimate. If X_T was not estimated from the grid or the first step still leaves an anomaly, review the distribution of the available measurements or review reports to create a new estimate of X_T and rerun the estimate.

5. Closeness of the isopleths indicated a steep gradient in a small area.

   Steps: Confirm the variability of the measurements with respect to their distance from the location and the gradient represented on the fallout pattern. Identify measurements for further review and rerun the estimate if necessary.

6. Possible residual fallout from an earlier event.

   Steps: Look at events that occurred within 75 days earlier that have an X_E value greater than the X_E value in review. Decay-correct any such previous values to H+12 on the day of the current event, and compare each decay-corrected previous value to the current value:

If a previous value is within an order of magnitude of the current value, consider the current value to represent fallout from the previous event and do not use it.

If a previous value is much lower than the current value, subtract the decay-corrected value for the previous event from the value for the current event, and use the difference as the new value of $X_{\dot{E}}$. Set S_E to the default value of 1.4.

If a previous value is much higher than the current value, consider the current value as representing the fallout level from the previous event, based on review of other information sources.

If an apparent anomaly was not resolved with steps from the review described above, the estimate was reviewed by the ORERP's Scientific Director. The final decision about whether to include the estimate in the TDB was based on his judgment.

6. THE TOWN DATA BASE

The Town Data Base includes the following information for 1,910 combinations of populated location and nuclear event where the estimated mean H+12 exposure rate exceeded the level of discernible fallout:

Location:	control number, state, county, township, location name, Universal Transverse Mercator coordinates, latitude, longitude
Event:	name, date
Parameter Estimates:	X_E, S_E, X_T, S_T
Other:	source of estimate, date of FATHER run, number of points, decision type, use code

The format of the records in the data base is given in Appendix B. Appendix C contains a list of the estimates in the Town Data Base sorted by state, county, and location. The number of events for which a location has an estimate differs from one location to another because of the varied paths taken by the fallout from the events and the places where survey meter measurements were taken.

The 604 locations in Arizona, California, Nevada, and Utah for which we attempted to make estimates are shown on Figure 12. Of these locations, the 353 shown on Figure 13 have at least one estimate in the Town Data Base. Table 3 gives a breakdown of those locations by county. The remaining locations did not receive a discernible amount of fallout from any NTS event.

Of the 77 nuclear events for which fallout patterns were available, 67 have an estimate for at least one location in the Town Data Base. We were able to make at least one estimate for 7 additional events from the survey meter data, so the total number of events represented in the data base is 74. Survey meter data exist for 70 of those events. Table 4 lists all the events used in creating the Town Data Base along with the number of locations with estimates for those events.

The Town Data Base represents the culmination of a 13-year effort by the Desert Research Institute staff to produce the best possible estimates of exposure rate and time of fallout arrival locations near the NTS from the available historical data. This effort included the development of the estimation methods, the quality assessment of relevant input data bases, and a detailed review of the estimates. At the close of this task, these estimates have been used by the ORERP External Dose, Pathway Analysis, and Internal Dose task groups to produce estimates of radiation dose. The methodology used to create the Town Data Base can be used to generate estimates for other locations with relative ease. All the programs, data, and documentation for the data base have been archived at the Coordination and Information Center for future use if the need arises.

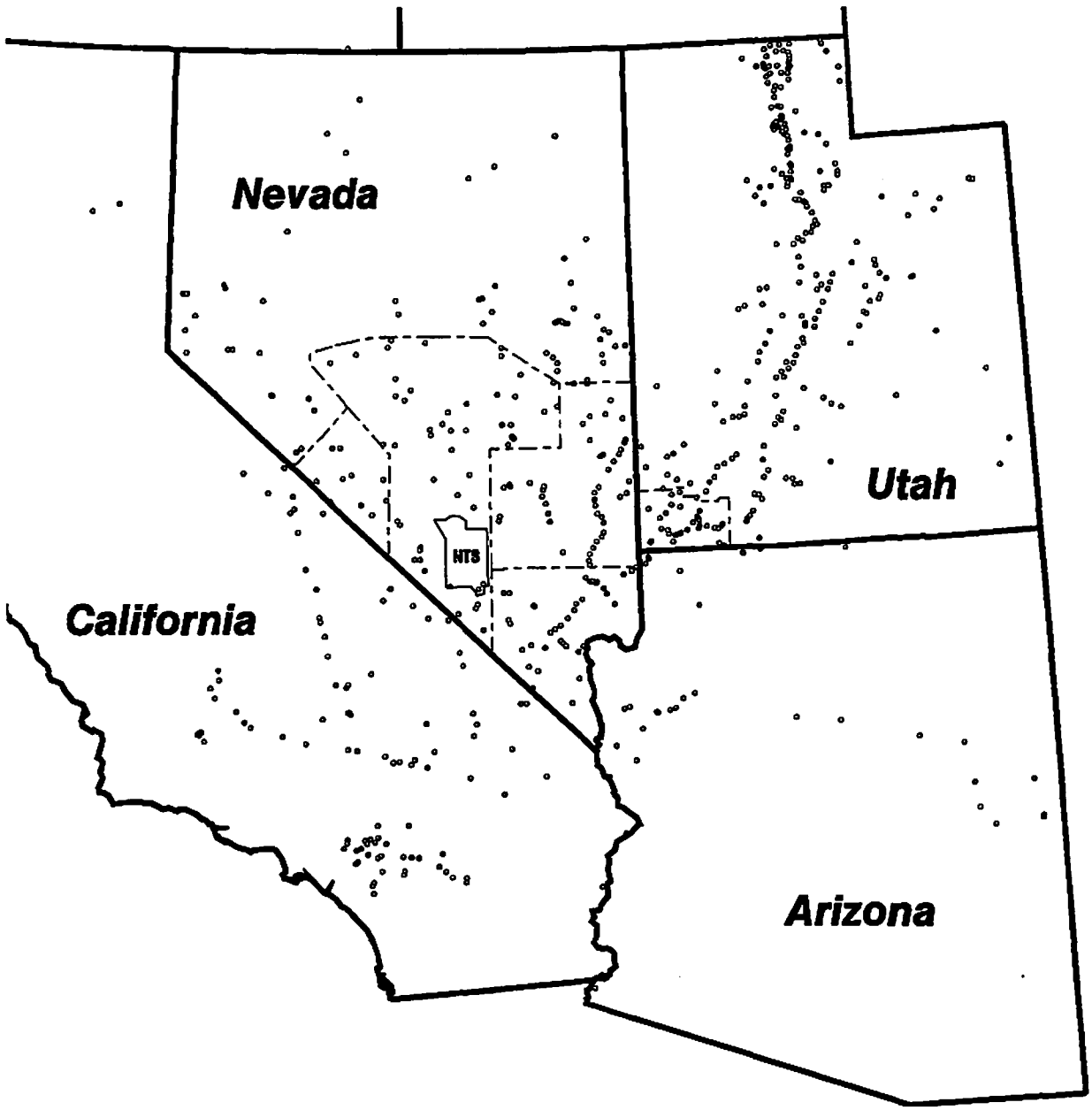


Figure 12. Locations for which estimates were attempted. The dashed lines outline the five counties in the ORERP Phase I region.

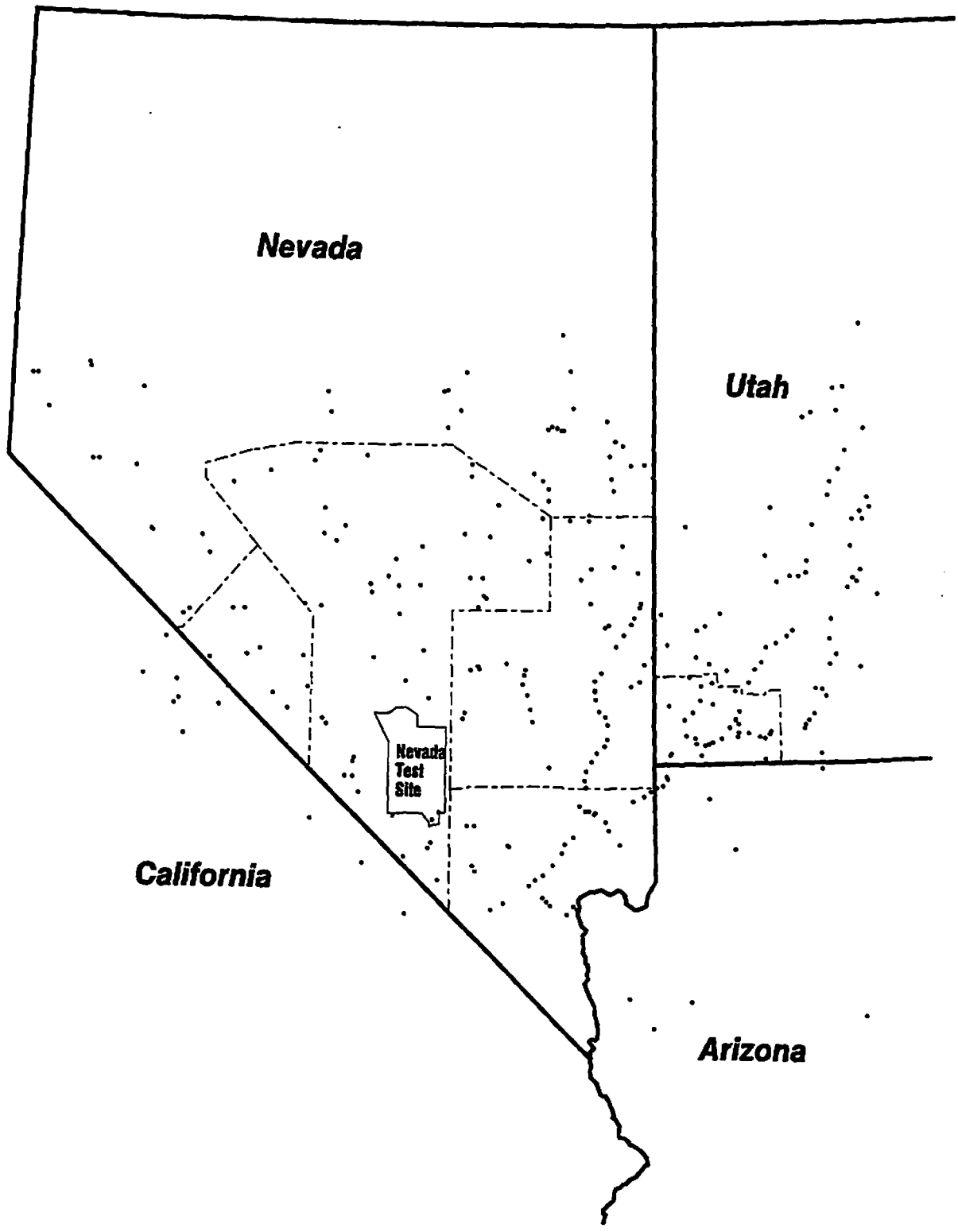


Figure 13. Locations for which the Town Data Base contains estimates.

Table 3. Distribution of Locations Used to Create the Town Data Base

State	County	# Locations Attempted	# Locations in Town Data Base
Arizona	Apache	4	0
	Coconino	4	2
	Mohave	27	12
	Navajo	4	0
	Yuma	4	0
		43	14
California	Inyo	17	7
	Kern	21	0
	Lassen	2	0
	Mono	5	4
	Riverside	24	0
	San Bernardino	32	0
		101	11
Nevada	Churchill	1	1
	Clark	39	33
	Douglas	1	0
	Elko	3	1
	Esmeralda	9	9
	Eureka	3	3
	Humboldt	4	0
	Lander	2	2
	Lincoln	47	47
	Lyon	3	3
	Mineral	7	7
	Nye	52	52
	Ormsby (Carson City)	1	0
	Pershing	1	0
	Storey	1	1
	Washoe	3	3
	White Pine	23	23
		200	185
Utah	Beaver	6	6
	Box Elder	18	0
	Cache	19	0
	Carbon	8	6
	Daggett	1	0
	Davis	16	0
	Duchesne	5	5
	Emery	8	5
	Garfield	10	6
	Grand	1	0

Table 3. (continued.)

State	County	# Locations Attempted	# Locations in Town Data Base
Utah	Iron	16	16
	Juab	4	4
	Kane	8	8
	Millard	14	14
	Morgan	1	0
	Piute	5	5
	Rich	5	0
	Salt Lake	11	0
	San Juan	2	0
	San Pete	13	13
	Sevier	11	8
	Summit	6	4
	Tooele	5	0
	Uintah	2	0
	Utah	15	7
	Wasatch	4	4
	Washington	32	32
	Wayne	4	0
	Weber	10	0
		260	143

Table 4. Events Used to Create the Town Data Base

Event	Date	# of Locations AZ	CA	NV	UT	Total
Operation Jangle						
SUGAR	11/19/51	0	0	40	0	40
UNCLE	11/29/51	0	0	45	0	45
Operation Tumbler–Snapper						
CHARLIE[a]	04/22/52	0	0	1	0	1
DOG[a]	05/01/52	0	0	4	0	4
EASY	05/07/52	0	0	34	0	34
FOX	05/25/52	0	0	33	33	66
GEORGE	06/01/52	0	0	27	0	27
HOW	06/05/52	0	0	27	0	27
Operation Upshot Knothole						
ANNIE	03/17/53	4	0	11	25	40
NANCY	03/24/53	0	0	42	0	42
RUTH[b]	03/31/53	0	0	0	0	0
DIXIE[a]	04/06/53	0	0	0	1	1
RAY	04/11/53	0	0	1	0	1
BADGER	04/18/53	5	0	19	0	24
SIMON	04/25/53	5	0	32	18	55
HARRY	05/19/53	7	0	31	47	85
GRABLE	05/25/53	0	0	28	0	28
CLIMAX	06/04/53	1	0	15	0	16
Operation Teapot						
MOTH	02/22/55	0	0	3	0	3
TESLA	03/01/55	2	0	18	24	44
TURK	03/07/55	0	0	66	6	72
HORNET	03/12/55	4	0	28	2	34
BEE	03/22/55	1	0	10	0	11
ESS	03/23/55	4	0	15	2	21
APPLE–1	03/29/55	0	0	28	27	55
POST	04/09/55	0	0	18	0	18
MET	04/15/55	0	0	19	26	45
APPLE–2	05/05/55	0	0	56	20	76
ZUCCHINI	05/15/55	4	0	21	33	58
Operation Plumbbob						
BOLTZMANN	05/28/57	0	1	48	0	49
WILSON	06/18/57	0	1	21	0	22
PRISCILLA	06/24/57	1	0	20	44	65
HOOD	07/05/57	0	0	33	17	50
DIABLO	07/15/57	0	0	49	1	50
JOHN[a]	07/19/57	0	0	1	1	2
KEPLER	07/24/57	0	8	24	0	32
OWENS	07/25/57	0	0	41	0	41
STOKES	08/07/57	0	0	1	0	1
SHASTA	08/18/57	0	0	39	0	39
DOPPLER	08/23/57	0	0	26	0	26
FRANKLIN PRIME	08/30/57	0	0	1	0	1
SMOKY	08/31/57	4	0	29	62	95
GALILEO	09/02/57	0	0	21	0	21
WHEELER[a]	09/06/57	0	1	11	0	12
COULOMB–B	09/06/57	0	0	7	0	7
FIZEAU	09/14/57	0	0	12	0	12

Table 4. (continued.)

Event	Date	# of Locations AZ	CA	NV	UT	Total
NEWTON	09/16/57	0	0	16	3	19
WHITNEY	09/23/57	0	5	34	0	39
MORGAN	10/07/57	0	0	7	25	32
Operation Hardtack II						
OTERO[b]	09/12/58	0	0	0	0	0
EDDY	09/19/58	0	0	5	0	5
MORA[b]	09/29/58	0	0	0	0	0
HIDALGO	10/05/58	0	0	4	0	4
QUAY	10/10/58	0	2	5	0	7
LEA	10/13/58	0	0	11	0	11
HAMILTON[b]	10/15/58	0	0	0	0	0
DONA ANA[b]	10/16/58	0	0	0	0	0
VESTA	10/17/58	0	0	1	0	1
RIO ARRIBA	10/18/58	0	0	9	0	9
SOCORRO	10/22/58	0	0	1	0	1
WRANGELL	10/22/58	0	0	2	0	2
CATRON[b]	10/24/58	0	0	0	0	0
DE BACA[b]	10/26/58	0	0	0	0	0
SANFORD	10/26/58	0	0	2	0	2
CHAVEZ[b]	10/27/58	0	0	0	0	0
HUMBOLDT[b]	10/29/58	0	0	0	0	0
SANTA FE[b]	10/29/58	0	0	0	0	0
Operation Nougat						
ANTLER[a]	09/15/61	0	0	2	0	2
DANNY BOY	03/05/62	0	0	3	0	3
PLATTE	04/14/62	0	0	10	0	10
EEL	05/19/62	0	0	2	0	2
DES MOINES	06/13/62	0	0	11	0	11
Operation Storax						
SEDAN	07/06/62	0	0	31	0	31
Operation Sunbeam						
JOHNIE BOY	07/11/62	0	0	11	0	11
SMALL BOY	07/14/62	0	0	31	72	103
Operation Storax						
BANDICOOT	10/19/62	0	1	15	0	16
Operation Niblick						
PIKE	03/13/64	0	0	2	0	2
Operation Whetstone						
SULKY[a]	12/18/64	0	0	1	0	1
PALANQUIN	04/14/65	0	0	13	0	13
Operation Flintlock						
PIN STRIPE	04/25/66	0	0	6	0	6
Operation Crosstie						
CABRIOLET	01/26/68	0	0	3	0	3
BUGGY	03/12/68	0	0	2	0	2
Operation Bowline						
SCHOONER	12/08/68	0	0	43	7	50
Operation Emery						
BANEBERRY	12/18/70	0	0	14	0	14

Notes:
[a]No fallout pattern was published (7 events)
[b]A fallout pattern was published, but no estimates of discernible fallout could be made (10 events)

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Note: Copies of documents with a CIC number may be obtained through the Coordination and Information Center, REECo, P.O. Box 98521, Las Vegas, NV 89193-8521. The documents are also available for public examination at 3084 South Highland Drive in Las Vegas.

APPENDIX A

LOCATIONS CONSIDERED FOR THE TOWN DATA BASE

Table A-1 is an alphabetical list (by state, county, township, and location name) of the 604 locations for which we attempted to estimate exposure rate and time of arrival for at least one event. The 353 locations for which the estimates were considered usable for dose calculation (and which therefore have at least one record in the Town Data Base) are in **bold.**

Geographical positions are given by both Universal Transverse Mercator (UTM) coordinates and latitude-longitude. The UTM coordinates (Richardus and Adler, 1972) are given in a shortened form that was used in developing the Survey Meter Data Base because it could be determined with relative ease from 1:250,000 scale topographic maps produced by the U.S. Geological Survey. For example, the coordinates for Corn Creek in Clark County, Nevada (map NJ 11-12), are given as 11SPL4833, which is interpreted as follows:

11S	is the Grid Zone designation
PL	identifies the 100,000-m square
48	denotes 48,000 m east from the SW corner of square PL
33	denotes 33,000 m north from the SW corner of square PL

UTM coordinates are not useful for calculating the distance between two locations because intermediate conversions are necessary and because a discontinuity in the UTM system occurs between Nevada and Utah. They were therefore converted to latitude and longitude in decimal format before being used in the estimation programs.

The control number is an identifier used in the estimation programs.

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
ARIZONA						
Apache	McNary	McNary	12SXN0570	34.073	109.856	473
	Round Valley	Eagar	12SXN5874	34.111	109.290	477
		Springerville	12SXN5876	34.133	109.285	478
	St. Johns	St. Johns	12SXP5019	34.499	109.371	480
Coconino	Coconino	Flagstaff	12SVP4195	35.193	111.653	484
	Kaibab	**Fredonia**	12SUR6489	36.934	112.532	486
	Reservation	Page	12SVR5885	36.907	111.477	488
	Williams	**Williams**	12SUQ9201	35.243	112.192	490
Mohave	Kingman North	Catherine Ranger Sta.	11SQK2301	35.224	114.555	693
		Chloride	11SQK5422	35.406	114.208	694
		Grasshopper Junction	11SQK4820	35.389	114.275	696
		Hackberry	12STQ5317	35.362	113.723	697
		Kingman	11SQJ6898	35.186	114.062	493
		Lake Mohave	11SQK1229	35.479	114.668	699
		Peach Springs	12STQ8134	35.522	113.420	703
		Truxton	12STQ6829	35.474	113.562	706
		Valentine	12STQ5919	35.382	113.658	707
		Walapai	12STQ3915	35.341	113.877	708
		Willow Beach	11SQK1171	35.857	114.668	710
	Kingman South	Bullhead City	11SQJ2192	35.144	114.579	692
		Davis Dam	11SQJ2295	35.170	114.567	695
		Oatman	11SQJ3979	35.022	114.385	702
		Topock	11SQJ3145	34.718	114.482	705
		Warm Springs	12STQ3816	35.350	113.888	709
		Yucca	11SQJ6163	34.873	114.150	712
	Mohave North	**Beaver Dam**	12STR3988	36.899	113.934	690
		Big Bend Ranch	12STR3681	36.835	113.965	691
		Colorado City	12SUR2495	36.981	112.983	715
		Hughes Ranch	11SQL6680	36.825	114.023	698
		Kaibab Indian Reservation	12SUR4585	36.895	112.745	927
		Littlefield	12STR4086	36.881	113.922	700
		Moccasin	12SUR4486	36.904	112.756	718
		Mount Trumbull	12STR9231	36.398	113.324	701
		Short Creek	12SUR2395	36.981	112.994	704
		Wolf Hole	12STR7370	36.745	113.548	711
Navajo	Little Colorado	Holbrook	12SWP7663	34.903	110.173	501
		Winslow	12SWP2773	34.996	110.709	502
	Snowflake	Show Low	12SWN8990	34.254	110.029	505
		Snowflake	12SWP8519	34.506	110.079	506
Yuma	Parker	Parker	12SQH5082	34.150	114.288	509
	Somerton	Somerton	11SQG1408	32.596	114.708	511
	Yuma East	Yuma	11SQG2222	32.725	114.623	514
	Yuma West	West Yuma	11SQG2022	32.725	114.633	516

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
CALIFORNIA						
Inyo	Bishop	**Bishop**	11SLM7736	37.359	118.394	519
		Laws	11SLM8140	37.396	118.350	738
	Death Valley	Death Valley Junction	11SNL5217	36.293	116.426	727
		Emigrant Springs Rang. Sta.	11SML8039	36.493	117.228	729
		Furnace Creek	11SNL1333	36.439	116.860	732
		Ryan	11SNL3019	36.312	116.671	753
		Shoshone	11SNK6581	35.968	116.284	754
		Stove Pipe Wells	11SML8852	36.610	117.139	757
		Tecopa	11SNK6967	35.842	116.241	758
	Independence	**Big Pine**	11SLM8514	37.162	118.300	717
		Deep Springs	11SMM1336	37.363	117.988	728
		Independence	11SLL9373	36.794	118.204	734
	Lone Pine	Carago	11SML0820	36.317	118.030	722
		Little Lake	11SMK1877	35.931	117.914	740
		Lone Pine	11SML0551	36.597	118.067	523
		Olancha	11SML0915	36.272	118.018	749
		South Haiwee	11SMK1499	36.129	117.961	756
Kern	Arvin–Lamont	Arvin	11SLJ3397	35.199	118.839	526
		Lamont	11SLK2603	35.252	118.918	527
	Bakersfield	Bakersfield	11SLK1715	35.358	119.019	529
	Delano	Delano	11SKK9761	35.769	119.251	535
	East Kern	Boron	11SMJ4173	34.995	117.651	719
		Cantil	11SMK1207	35.299	117.973	721
		China Lake	11SMK4145	35.644	117.657	724
		Inyokern	11SMK2745	35.643	117.811	735
		Johannesburg	11SMK4314	35.364	117.632	736
		Mojave	11SLJ9379	35.045	118.178	537
		Randsburg	11SMK4114	35.364	117.654	750
	McFarland–Delano Rur.	McFarland	11SKK9850	35.670	119.237	542
	Ridgecrest	Ridgecrest	11SMK3942	35.617	117.679	538
	Shafter	Shafter	11SKK9330	35.489	119.287	546
	Tehachapi	Tehachapi	11SLJ6887	35.114	118.453	548
	Wasco	Wasco	11SKK8841	35.587	119.345	550
	Westside	Ford City	11SKJ7892	35.143	119.442	552
		Maricopa	11SKJ8182	35.054	119.406	553
		South Taft	11SKJ7689	35.116	119.463	554
		Taft	11SKJ7692	35.143	119.464	555
		Taft Heights	11SKJ7490	35.124	119.485	556
Lassen	Susanville	Susanville	10TFV9976	40.408	120.660	562
	Westwood	Westwood	10TFV7066	40.324	121.004	564
Mono	Mono South	**Benton**	11SLM7086	37.809	118.482	716
		Chalfant	11SLM7954	37.522	118.374	723

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		Crest View	11SLM2580	37.747	118.991	725
		Oasis	11SMM2049	37.481	117.910	748
		Tom's Place	11SLM5258	37.554	118.681	759
Riverside	Alvord	Home Gardens	11SMH5248	33.878	117.520	570
	Cathedral Cty–Palm Dsrt	Cathedral City	11SNH4937	33.779	116.464	572
		Palm Desert	11SNH5730	33.721	116.387	573
	Coachella Valley	Coachella	11SNH7327	33.677	116.217	576
		Indio	11SNH7131	33.720	116.214	577
	Corona	Corona	11SMH5047	33.859	117.545	579
	Desert Hot Springs	Desert Hot Springs	11SNH4658	33.961	116.500	581
	Edgemont–Sunnymead	Edgemont	11SMH7454	33.920	117.277	583
		Sunnymead	11SMH7855	33.940	117.242	584
	Elsinore Valley	Elsinore	11SMH7026	33.668	117.326	586
		Lakeland Village	11SMH6822	33.638	117.343	587
	Hemet–San Jacinto	Hemet	11SNH0434	33.747	116.971	589
		Hemet East	11SNH0534	33.747	116.971	590
		San Jacinto	11SNH0438	33.783	116.957	591
	Jurupa	Glen Avon Heights	11SMH5365	34.011	117.483	595
		Mira Loma	11SMH5162	33.994	117.535	596
	Norco	Norco	11SMH5054	33.560	117.330	600
	Palm Springs	Palm Springs	11SNH4343	33.830	116.544	602
	Palo Verde	Blythe	11SQH2321	33.610	114.595	604
	Perris Valley	Perris	11SMH7938	33.782	117.227	606
	Riverside	Riverside	11SMH6055	33.953	117.395	608
	San Gorgonio Pass	Banning	11SNH0954	33.925	116.875	610
		Beaumont	11SNH0454	33.929	116.976	611
		Cabazon	11SNH1953	33.917	116.786	612
San Bernardino	Arrowhead	Crestline	11SMH7388	34.241	117.284	619
	Big Bear	Big Bear Lake	11SNH0788	34.243	116.910	623
	Chino	Chino	11SMH3664	34.012	117.688	625
	Colton	Colton	11SMH6870	34.073	117.312	627
	Fontana	Fontana	11SMH6072	34.092	117.434	632
	Mojave Valley	Barstow	11SMJ9860	34.879	117.027	621
		Daggett	11SNJ1157	34.852	116.885	726
		Four Corners	11SMJ5172	34.986	117.542	731
		Hinkley	11SMJ8266	34.933	117.202	733
		Lenwood	11SMJ9159	34.870	117.103	639
		Manix	11SNJ3771	34.978	116.600	743

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		Yermo	11SNJ1562	34.897	116.841	762
	Montclair	Montclair	11SMH3670	34.060	117.410	641
	Needles	Essex	11SPJ6145	34.731	115.246	730
		Needles	11SQJ1857	34.829	114.621	644
	Newberry–Baker	Baker	11SNK8402	35.254	116.082	714
		Kelso	11SPJ2375	35.007	115.657	737
		Ludlow	11SNJ7743	34.723	116.164	742
		Mountain Pass	11SPK3325	35.456	115.539	745
		Newberry	11SNJ2954	34.825	116.688	747
		Wheaton Springs	11SPK3925	35.456	115.473	761
		Zzyzx Springs	11SNJ8189	35.137	116.116	763
	Ontario	Ontario	11SMH4070	34.063	117.650	647
	Red Mountain–Trona	Camp Irwin	11SNK2802	35.258	116.697	720
		Red Mountain	11SMK4412	35.346	117.621	751
		Silver Lake	11SNK8014	35.363	116.124	755
		Trona	11SMK6757	35.753	117.370	653
	Redlands	Redlands	11SMH8367	34.061	117.181	650
	Rialto	Rialto	11SMH6674	34.106	117.369	655
	San Bernardino	San Bernardino	11SMH7576	34.121	117.276	658
	Twenty Nine Palms/ Morongo Valley	Amboy	11SPJ1525	34.557	115.751	713
	Upland	Upland	11SMH4073	34.097	117.647	664
NEVADA						
Churchill	New River	**Fallon**	11SLP4771	39.472	118.784	5
Clark	Bunkerville	**Bunkerville**	11SQL5673	36.765	114.137	789
	Goodsprings	Goodsprings	11SPK4266	35.825	115.433	822
		Pop's Oasis	11SPK5261	35.778	115.323	870
		State Line	11SPK4642	35.608	115.393	894
	Henderson	**Henderson**	11SPK8289	36.025	114.985	10
	Las Vegas	**Apex**	11SPL8420	36.304	114.956	768
		Arden	11SPK5987	36.011	115.241	2005
		Blue Diamond	11SPK4490	36.041	115.407	781
		Bonanza Boy Scout Camp	11SPL1918	36.297	115.680	783
		Cactus Springs	11SPL1448	36.568	115.731	791
		Charleston Lodge	11SPL2114	36.260	115.658	795
		Corn Creek	11SPL4833	36.428	115.354	801
		Desert Game Refuge	11SPL4734	36.437	115.365	957
		Dry Lake	11SPL9336	36.447	114.852	810
		Garnet	11SPL9129	36.384	114.876	816
		Indian Springs	11SPL2048	36.567	115.664	830
		Las Vegas (Junct US 91+US93)	11SPL6504	36.164	115.171	12
		Mountain Springs	11SPK3485	35.997	115.518	2004
		Nellis Air Force Base	11SPL7612	36.234	115.047	858

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		North Las Vegas	11SPL7008	36.199	115.114	13
		Pittman	11SPK7992	36.053	115.018	868
		Whitney	11SPK7695	36.081	115.050	910
	Logandale	**Logandale**	11SQL2553	36.593	114.490	845
	Mesquite	**Mesquite**	11SQL6177	36.800	114.080	851
		Riverside	11SQL4769	36.732	114.239	876
	Moapa	**Crystal**	11SQL0041	36.490	114.772	804
		Farrier	11SQL0979	36.831	114.662	958
		Glendale	11SQL1760	36.658	114.577	819
		Moapa	11SQL1261	36.668	114.633	854
		Moapa Indian Reservation	11SQL0961	36.669	114.666	855
		Searls Ranch	11SQL1659	36.649	114.589	887
		Warm Springs Ranch	11SQL0465	36.706	114.721	907
	Nelson	**Boulder City**	11SPK9683	35.969	114.831	18
		Hoover Dam	11SQK0487	36.003	114.742	827
		Lake Mead Base	11SQK0189	36.022	114.774	836
		Nelson	11SPK9753	35.698	114.828	859
	Overton	**Overton**	11SQL2847	36.538	114.458	862
		Overton Beach	11SQL3736	36.437	114.361	2006
	Searchlight	Searchlight	11SPK8926	35.456	114.922	886
Douglas	East Fork	Gardnerville–Minden	11SKP6214	38.939	119.751	41
Elko	Township 5	Carlin	11TNR7507	40.707	116.118	30
		Elko	11TPR0420	40.821	115.772	31
	Township 6	Wells	11TPR7153	41.107	114.969	33
Esmeralda	Dist. 1, Goldfield	**Goldfield**	11SMM8073	37.701	117.232	820
	Dist. 2, Silver Peak	**Nivloc Mine**	11SMM3574	37.708	117.743	860
		Silver Peak	11SMM4578	37.744	117.629	891
	Dist. 3, Fishlake	**Dyer**	11SMM0571	37.678	118.082	932
	Dist. 4, Lida	**Lida**	11SMM5645	37.448	117.503	841
		Lida Junction	11SMM8450	37.494	117.186	842
	Dist. 5, Gold Point	**Gold Point**	11SMM6834	37.349	117.366	821
	Dist. 6, Millers	**Blair Junction**	11SMN3208	38.014	117.780	2013
		Coaldale	11SMN2308	38.013	117.882	799
Eureka	Eureka	**Eureka**	11SNP9074	39.508	115.958	792
		Fish Creek Ranch	11SNP9146	39.255	115.951	814
		Ruby Hill Mine	11SNP8773	39.499	115.993	882
Humboldt	Gold Run	Gold Run	11TMR1856	41.148	117.983	226
	McDermitt	McDermitt	11TMS4149	41.988	117.718	250
	Paradise Valley	Paradise Valley	11TMR5593	41.484	117.545	382

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
	Union	Winnemucca	11TMR3935	40.961	117.730	53
Lander	Austin	**Austin**	11SMP9471	39.485	117.075	772
		Laboard Ranch	11SMP9756	39.350	117.040	835
Lincoln	Alamo	**Alamo**	11SPM6336	37.353	115.165	767
		Ash Springs	11SPM6047	37.453	115.196	770
		Buckhorn Ranch	11SPM6527	37.272	115.144	788
		Crystal Springs	11SPM5655	37.526	115.240	846
		Dodge Constr. Camp	11SPM1465	37.622	115.713	808
		Groom Mine	11SPM1033	37.334	115.763	823
		Hiko	11SPM5762	37.589	115.227	825
		Lincoln Mine	11SPM2166	37.630	115.634	843
		Southpaw Mine	11SPM4370	37.663	115.384	892
		Tempiute	11SPM2068	37.648	115.645	2010
		Watertown	11SPM0928	37.289	115.775	908
		Whipple Ranch	11SPM5866	37.624	115.215	909
	Caliente	**Acoma**	11SQM5059	37.541	114.176	765
		Ballow Ranch	11SQM1451	37.478	114.585	2015
		Barclay	11SQM4355	37.507	114.256	775
		Boyd	11SQM1545	37.424	114.575	786
		Butler Ranch	11SPL7993	36.963	114.994	790
		Caliente	11SQM1965	37.603	114.524	60
		Carp	11SQM2310	37.107	114.496	793
		Cloud	11SQM2515	37.151	114.472	798
		Crestline	11SQM5372	37.657	114.137	803
		Elgin	11sQM1836	37.342	114.544	773
		Etna	11SQM1459	37.550	114.583	785
		Galt	11SQL1398	37.001	114.611	815
		Hoya	11SQL0991	36.939	114.658	828
		Kyle	11SQM2332	37.305	114.489	834
		Leith	11SQM2526	37.250	114.468	840
		Rox	11SQL0884	36.876	114.671	881
		Stine	11SQM1452	37.487	114.585	896
		Vigo	11SQM1705	37.063	114.564	904
	Panaca	**Panaca**	11SQM3085	37.780	114.394	865
	Pioche	**Atlanta**	11SQN3361	38.464	114.335	771
		Bristol Silver Mine	11SQN0917	38.074	114.623	787
		Caselton Mine	11SQM2199	37.909	114.491	794
		Cole & Dolan Ranch	11SQN2745	38.321	114.409	800
		Delmue	11SQM3694	37.860	114.323	806
		Donahue Ranch	11SQN4641	38.280	114.193	809
		Geyser Maintenance Sta.	11SQN0679	38.633	114.639	817
		Geyser Ranch	11SQN0683	38.669	114.637	818
		Hollinger's Ranch	11SQN4918	38.073	114.167	826
		Pioche	11SQN2401	37.926	114.457	867
		Pony Springs	11SQN0943	38.308	114.615	869
		Rose Valley	11SQN4202	37.930	114.252	879
		Seven L. Ranch	11SQN4815	38.046	114.179	888
		Steward R. Ranch	11SQN0135	38.238	114.709	895
		Urretias Ranch	11SPN9179	38.636	114.811	902
		Ursine	11SQN4407	37.975	114.227	903
Lyon	Fernley	**Fernley**	11SLP0586	39.598	119.276	594
	Mason Valley	**Weed Heights**	11SLP0817	38.978	119.222	67
		Yerington	11SLP1317	38.979	119.164	68

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
Mineral	Hawthorne	**Babbitt**	11SLN5666	38.528	118.657	73
		Hawthorne	11SLN5765	38.519	118.646	74
	Luning	**Luning**	11SLN9762	38.497	118.186	847
	Mina	**Basalt**	11SLN8807	38.001	118.281	777
		Mina	11SMN0349	38.381	118.116	853
		Montgomery Pass	11SLN8303	37.964	118.337	744
	Schurz	**Schurz**	11SLP4313	38.949	118.817	885
Nye	Beatty	**Amargosa Hot Springs (Hicks)**	11SNL2195	36.998	116.769	760
		Ash Meadows	11SNL6324	36.356	116.303	769
		Beatty	11SNL2184	36.899	116.769	778
		Carrara	11SNL2672	36.790	116.714	2007
		Desert Rock	11SNL8652	36.606	116.044	807
		Johnnie	11SNL8331	36.417	116.079	832
		Lathrop Wells	11SNL5455	36.636	116.401	838
		Mercury	11SNL9158	36.660	115.987	850
		Pahrump	11SNL9107	36.200	115.993	863
		Pahrump Mining Co.	11SNL8535	36.453	116.057	864
		Rhyolite	11SNL1584	36.899	116.837	877
		Sarcobatus	11SMM9923	37.250	117.016	884
		Scotty's Junction	11SMM9627	37.286	117.050	954
		Springdale	11SNL2298	37.025	116.758	893
	Gabbs	**Gabbs**	11SMP2102	38.860	117.916	83
	Manhattan	**Belmont**	11SNN1171	38.584	116.879	780
		Manhattan	11SMN9465	38.530	117.074	849
		Parmon's Ranch	11SNN0460	38.485	116.959	866
	Round Mountain	**Bond Ranch**	11SMP8927	39.089	117.132	784
		Millett	11SMP8519	39.017	117.179	852
		Potts	11SNP2724	39.062	116.693	871
		Round Mountain	11SMN9484	38.701	117.074	880
	Tonopah	**A & B Mine**	11SNN4634	38.250	116.480	764
		Adam's Ranch	11SPN6980	38.649	115.063	766
		Adaven (Sharps)	11SPN2321	38.125	115.602	889
		Bardoli Ranch	11SPN2234	38.243	115.611	776
		Belew Ranch	11SPN2321	38.125	115.602	779
		Blue Eagle School	11SPN2765	38.521	115.548	782
		Clark's Station	11SNN3322	38.142	116.629	797
		Currant	11SPN3389	38.737	115.475	805
		Duckwater	11SPP1110	38.929	115.725	811
		Fallini Ranch	11SNN7228	38.194	116.183	813
		Indian Creek Ranch	11SPP1119	39.010	115.723	829
		Ione	11SMP5011	38.943	117.582	831
		Johnnies Water	11SNM8143	37.427	116.090	2011
		Lockes	11SPN0767	38.542	115.777	844
		M & M Mine	11SNN4634	38.250	116.480	848
		Mellan	11SNM3673	37.700	116.597	2008
		Moon River Ranch	11SPN5948	38.363	115.185	856
		Nyala Ranch	11SPN1234	38.244	115.725	861
		Rattlesnake Maint. Sta.	11SNN7357	38.455	116.169	873
		Reed	11SNM7679	37.752	116.142	874

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		Reveille Mill	11SNN5606	37.997	116.367	875
		Standard (Goldreed)	11SNM6256	37.546	116.303	955
		Stone Cabin Ranch	11SNN3228	38.196	116.640	897
		Sunnyside	11SPN7354	38.414	115.024	898
		Tonopah	11SMN8012	38.052	117.233	87
		Tonopah Airport	11SMN9311	38.044	117.085	900
		Tybo	11SNN5247	38.367	116.410	2009
		Uhalde Ranch	11SPN2519	38.107	115.579	901
		Walch Pine Creek Ranch	11SPN1912	38.045	115.649	905
		Warm Springs	11SNN5527	38.186	116.377	906
Ormsby (Carson City)	Carson	**Carson City**	11SKP6139	39.164	119.772	90
Pershing	Lake	**Lovelock**	11TLQ7448	40.170	118.485	94
Storey	Virginia City	**Virginia City**	11SKP7255	39.311	119.650	633
Washoe	Reno	**Reno**	11SKP5980	39.533	119.809	102
	Sparks	**Sparks**	11SKP6380	39.534	119.763	105
	Wadsworth	**Wadsworth**	11SLP0489	39.625	119.289	959
White Pine	Township 1, Ely	**East Ely**	11SPP8446	39.241	114.873	110
		Ely	11SPP8246	39.241	114.896	111
		Kimberly	11SPP7147	39.252	115.024	833
		Lane City	11SPP7848	39.260	114.942	837
		McGill	11SPP9163	39.392	114.787	112
		Ruth	11SPP7449	39.270	114.988	883
		Warm Springs North	11SPP8891	39.645	114.814	956
	Township 2, Hamilton	**Eldorado**	11SPP0159	39.372	115.833	739
	Township 3, Preston	**Cove**	11SPP6113	38.948	115.147	802
		Preston	11SPP6808	38.902	115.068	872
	Township 4, Lund	**Gubler Ranch**	11SPN7393	38.766	115.014	824
		Lund	11SPP7302	38.847	115.012	103
	Township 5, Cherry Crk	**Cherry Creek**	11SPQ8118	39.890	114.888	796
	Township 6, Muncy	**Lages Station**	11TQQ0338	40.080	114.600	45
	Township 7, Osceola	**Baker**	11SQP4922	39.009	114.130	774
		D-X Ranch	11SQP2539	39.168	114.401	812
		Eldridge Ranch (Mt.Wheeler Inn)	11SQP3136	39.140	114.333	746
		Lehman Caves	11SQP3821	39.003	114.257	839
		Mounts Ranch	11SQP2128	39.070	114.451	857
		Rogers Ranch	11SQP1854	39.305	114.477	878
		Shoshone	11SQP2502	38.835	114.413	890
		Swalow Ranch	11SQP2311	38.917	114.433	899
	Township 8, Neward	**Eldridge Ranch (N of Eureka)**	11SPP0588	39.632	115.782	741
UTAH						
Beaver	Beaver	**Adamsville**	12SUT4335	38.246	112.799	911
		Beaver	12SUT5637	38.266	112.651	122

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		Greenville	12SUT5035	38.247	112.719	923
		Manderfield	12SUT5746	38.348	112.642	931
	Milford–Minersville	**Milford**	12SUT2451	38.387	113.020	124
		Minersville	12SUT3231	38.208	112.924	125
Boxelder	Bear River	Bear River City	12TVB0607	41.606	112.134	128
		Bothwell	12TUB9519	41.713	112.268	129
		Corinne	12TVB0700	41.543	112.120	130
		Elwood	12TVB0516	41.687	112.147	131
		Fielding	12TVB0729	41.804	112.125	132
		Garland	12TVB0321	41.732	112.172	133
		Tremonton	12TVB0318	41.705	112.171	134
	Benchland	Deweyville	12TVB0918	41.705	112.099	136
		Honeyville	12TVB1010	41.634	112.086	137
	Brigham City	Brigham City	12TVA1596	41.508	112.024	139
		Mantua	12TVA2194	41.491	111.952	140
		Perry	12TVA1391	41.463	112.047	141
		Willard	12TVA1384	41.400	112.046	142
	Howell–Snowville	Howell	12TUB8028	41.792	112.450	144
		Plymouth	12TVB0537	41.876	112.150	145
		Portage	12TUB9748	41.974	112.249	146
		Snowville	12TUB5847	41.959	112.719	147
	West Box Elder	Yost	12TTB8948	41.953	113.551	149
Cache	Hyrum	Hyrum	12TVB2909	41.626	111.858	152
		Nibley	12TVB3014	41.672	111.846	153
		Paradise	12TVB3002	41.563	111.845	154
	Lewiston	Clarkston	12TVB1241	41.913	112.067	156
		Cornish	12TVB2147	41.968	111.959	157
		Lewiston	12TVB2947	41.969	111.862	158
		Richmond	12TVB3341	41.915	111.813	159
		Trenton	12TVB2241	41.914	111.946	160
	Logan	Logan	12TVB3121	41.735	111.835	162
		Millville	12TVB3115	41.681	111.835	163
		North Logan	12TVB3224	41.762	111.824	164
		Providence	12TVB3217	41.699	111.823	165
		River Heights	12TVB3119	41.717	111.835	166
	Smithfield	Amalga	12TVB2634	41.851	111.897	168
		Hyde Park	12TVB3228	41.798	111.824	169
		Newton	12TVB1834	41.851	111.993	170
		Smithfield	12TVB3132	41.834	111.837	171
	Wellsville	Mendon	12TVB1818	41.706	111.991	173
		Wellsville	12TVB2210	41.635	111.942	174
Carbon	Helper	**Castle Gate**	12SWU1198	39.729	110.877	177
		Helper	12SWU1292	39.675	110.865	178
	Price	**Hiawatha**	12SVU9970	39.476	111.017	180
		Price	12SWU1683	39.593	110.819	181

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		Wellington	12SWU2377	39.539	110.738	182
	Scofield	**Scofield**	12SVU8697	39.720	111.169	184
	Sunnyside	Dragerton	12SWU5077	39.538	110.423	186
		Sunnyside	12SWU5278	39.547	110.400	187
Daggett	Daggett	Manila	12TXA0737	40.974	109.734	190
Davis	North Davis	Clearfield	12TVA1551	41.103	112.018	193
		Clinton	12TVA1054	41.129	112.078	194
		East Layton	12TVA2348	41.076	111.922	195
		Fruit Heights	12TVA2441	41.014	111.909	196
		Kaysville	12TVA2143	41.031	111.945	197
		Layton	12TVA1946	41.058	111.969	198
		South Weber	12TVA2253	41.121	111.935	199
		Sunset	12TVA1453	41.121	112.030	200
		Syracuse	12TVA1049	41.084	112.077	201
		West Point	12TVA0952	41.111	112.089	202
	South Davis	**Bountiful**	12TVA2626	40.879	111.884	204
		Centerville	12TVA2629	40.906	111.884	205
		Farmington	12TVA2536	40.969	111.897	206
		North Salt Lake	12TVA2321	40.833	111.919	207
		West Bountiful	12TVA2427	40.887	111.908	208
		Woods Cross	12TVA2425	40.869	111.907	209
Duchesne	Altamont	**Altamont**	12TWV6168	40.357	110.287	212
	Duchesne	**Duchesne**	12TWV5145	40.151	110.407	214
	Myton	**Myton**	12TWV8050	40.194	110.066	216
	Roosevelt	Roosevelt	12TWV8761	40.292	109.982	218
	Tabiona	**Tabiona**	12TWV2467	40.350	110.723	220
Emery	Castle Dale–Huntington	Castle Dale	12SVU9840	39.206	111.028	223
		Cleveland	12SWU1355	39.341	110.854	224
		Elmo	12SWU1559	39.377	110.831	225
		Huntington	12SWU0353	39.323	110.971	227
		Orangeville	12SVU9542	39.224	111.063	228
	Emery–Ferron	**Emery**	12SVU7808	38.917	111.259	230
		Ferron	12SVU8927	39.089	111.132	231
	Green River	Green River	12SWU7316	38.987	110.162	233
Garfield	Escalante	Escalante	12SVS4780	37.763	111.607	236
	Panguitch	**Bear Valley Junction**	12SUT7502	37.954	112.428	913
		Hatch	12SUS7368	37.647	112.445	239
		Hillsdale	12SUS7875	37.711	112.389	928
		Panguitch	12SUS7387	37.818	112.448	240
	Tropic	**Antimony**	12SVT1219	38.111	112.009	242
		Bryce Canyon	12SUS9765	37.623	112.172	917
		Cannonville	12SVS0658	37.561	112.069	243

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
		Henrieville	12SVS1258	37.562	112.002	244
		Tropic	12SVS0464	37.615	112.093	245
Grand	Moab	Moab	12SXT2671	38.575	109.559	248
Iron	Beryl–Newcastle	**Beryl**	12STS6797	37.887	113.655	914
		Beryl Junction	12STS6677	37.707	113.660	915
		Hamlin Valley	12STT3910	37.997	113.977	926
		Lund	12STT8609	38.000	113.442	930
		Modena	12STS4387	37.791	113.924	933
		Newcastle	12STS7671	37.656	113.544	936
		Uvada	11SQM6078	37.709	114.056	943
		Zane	12STT7400	37.916	113.576	947
	Cedar City	**Cedar City**	12SUS1871	37.665	113.069	254
		Colombia Mine	12STS9066	37.614	113.384	963
		Enoch	12SUS2282	37.765	113.026	921
		Hamilton Fort	12SUS1266	37.619	113.135	925
		Kanarraville	12SUS0756	37.528	113.189	255
	Parowan	**Paragonah**	12SUS4494	37.877	112.779	257
		Parowan	12SUS3990	37.840	112.835	258
		Summit	12SUS3085	37.793	112.936	942
Juab	Eureka	**Eureka**	12SVV0423	39.949	112.129	261
	Nephi	**Levan**	12SVU2679	39.554	111.867	263
		Mona	12SVV2707	39.807	111.858	264
		Nephi	12SVU2996	39.708	111.834	265
Kane	Kanab	**Kanab**	12SUS6401	37.042	112.534	269
	Orderville	**Alton**	12SUS6944	37.430	112.486	271
		Duck Creek Forest Camp	12SUS6150	37.483	112.577	920
		Glendale	12SUS5931	37.312	112.596	272
		Long Valley Junction	12SUS6649	37.475	112.521	929
		Mount Carmel	12SUS5223	37.239	112.674	934
		Mount Carmel Junction	12SUS5120	37.211	112.684	935
		Orderville	12SUS5526	37.266	112.640	273
Millard	Delta	**Delta**	12SUU6457	39.349	112.584	276
		Hinckley	12SUU5754	39.320	112.664	277
		Leamington	12SUU9076	39.523	112.285	278
		Lynndyl	12SUU8275	39.513	112.378	279
	Fillmore	**Black Rock**	12SUT2987	38.712	112.972	916
		Cove Fort	12SUT6273	38.592	112.590	918
		Fillmore	12SUU8414	38.964	112.344	281
		Kanosh	12SUT7595	38.792	112.445	282
		Meadow	12SUU7705	38.882	112.423	283
	Garrison–Sevier Lake	**Desert Range Exper. Sta.**	12STT6175	38.588	113.749	919
		Garrison	11SQP5613	38.926	114.052	922
	Scipio	**Holden**	12SUU9028	39.091	112.277	286
		Oak City	12SUU8458	39.360	112.352	287
		Scipio	12SVU0544	39.237	112.106	288

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
Morgan	Morgan	Morgan City	12TVA4343	41.033	111.684	291
Piute	Circleville	**Circleville**	12SUT8925	38.163	112.272	294
		Junction	12SUT9332	38.226	112.228	295
		Kingston	12SUT9629	38.200	112.193	296
		Piute Indian Reservation	12SUT9938	38.281	112.160	937
	Marysvale	**Marysvale**	12SUT9256	38.443	112.243	298
Rich	Garden City–Laketown	Garden City	12TVB6743	41.935	111.404	301
		Laketown	12TVB7330	41.818	111.331	302
		Pickleville	12TVB6839	41.899	111.391	303
	Randolph–Woodruff	Randolph	12TVB8512	41.657	111.186	305
		Woodruff	12TVA8696	41.512	111.173	306
Salt Lake	Bingham	Bingham Canyon	12TVV0288	40.534	112.163	309
	Jordan	Riverton	12TVV2086	40.518	111.950	315
		South Jordan	12TVV2190	40.554	111.938	316
		West Jordan	12TVV2095	40.599	111.951	317
	Magna	Kearns	12TVA1500	40.643	112.011	319
		Magna	12TVA0706	40.697	112.106	320
	Midvale	Midvale	12TVV2495	40.599	111.904	322
		Sandy City	12tVV2593	40.581	111.892	323
	Salt Lake City	Salt Lake City	12TVA2510	40.734	111.894	325
	South Salt Lake	Murray	12TVA2502	40.662	111.893	327
		South Salt Lake	12TVA2608	40.716	111.882	328
Sanjuan	Blanding	Blanding	12SXS3465	37.619	109.487	331
	Monticello	Monticello	12SXS4693	37.870	109.345	333
Sanpete	Gunnison	**Centerfield**	12SVU2931	39.122	111.827	337
		Fayette	12TVU2642	39.221	111.863	338
		Gunnison	12SVU2934	39.149	111.827	339
	Manti	**Ephraim**	12SVU5056	39.349	111.586	341
		Manti	12SVU4546	39.258	111.643	342
		Mayfield	12TVU3929	39.105	111.711	343
		Sterling	12TVU4038	39.186	111.700	344
	Mount Pleasant–Moroni	**Fairview**	12SVU6386	39.620	111.436	346
		Fountain Green	12SVU4586	39.619	111.646	347
		Moroni	12SVU5075	39.520	111.587	348
		Mount Pleasant	12SVU6077	39.539	111.471	349
		Spring City	12SVU5770	39.475	111.505	350
		Wales	12SVU4570	39.475	111.645	351
Sevier	Koosharem	Koosharem	12SVT2362	38.500	111.888	354
	Monroe	**Elsinore**	12SVT0082	38.678	112.155	356
		Joseph	12SUT9476	38.623	112.223	357
		Monroe	12SVT0276	38.624	112.131	358

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
	Richfield	**Annabella**	12SVT0885	38.706	112.063	360
		Glenwood	12SVT1491	38.760	111.995	361
		Richfield	12SVT0692	38.769	112.087	362
		Sigurd	12SVT1699	38.833	111.973	363
	Salina	**Aurora**	12SVU1908	38.914	111.940	365
		Redmond	12SVU2517	38.996	111.871	366
		Salina	12SVU2612	38.951	111.859	367
Summit	Coalville	Coalville	12TVA6629	40.908	111.409	370
		Henefer	12TVA5840	41.007	111.505	371
	Kamas	**Francis**	12TVV7695	40.602	111.289	373
		Kamas	12TVV7699	40.638	111.289	374
		Oakley	12TVA7407	40.710	111.313	375
	Park City	**Park City**	12TVA5700	40.647	111.514	377
Tooele	Dugway–Wendover	Wendover	11TQR5013	40.727	114.045	380
	Onaqui	Ophir	12TUV9369	40.362	112.266	383
	Tooele–Grantsville	Grantsville	12TUV7695	40.593	112.471	385
		Stockton	12TUV8478	40.441	112.373	386
		Tooele	12TUV9087	40.523	112.304	387
Uintah	Vernal	Maeser	12TXV8021	39.917	108.899	393
		Vernal	12TXV7925	40.458	109.531	394
Utah	American Fork	Alpine	12TVV3478	40.447	111.784	398
		American Fork	12TVV3270	40.375	111.806	399
	Goshen	Genola	12SVV2828	39.996	111.849	401
		Goshen	12SVV2322	39.941	111.907	402
	Lehi	Lehi	12TVV2871	40.383	111.854	404
	Orem	**Orem**	12TVV4062	40.303	111.711	406
	Payson–Salem	Payson	12TVV3733	40.042	111.744	408
		Salem	12TVV4334	40.051	111.674	409
		Santaquin	12SVV3325	39.969	111.790	410
	Pleasant Grove	Lindon	12TVV3966	40.339	111.724	412
		Pleasant Grove	12TVV3768	40.357	111.747	413
	Provo	**Provo**	12TVV4555	40.241	111.652	415
	Spanish Fork	**Spanish Fork**	12TVV4540	40.105	111.651	417
	Springville–Mapleton	**Mapleton**	12TVV5042	40.124	111.592	419
		Springville	12TVV4846	40.160	111.616	420
Wasatch	Heber	**Charleston**	12TVV6079	40.458	111.477	423
		Heber City	12TVV6584	40.503	111.418	424
		Midway	12TVV6084	40.503	111.477	425
	Strawberry Valley	**Soldier Summit**	12TVV9319	39.918	111.087	428

County	Township	Location Name	UTM	Lat (°N)	Long (°W)	Ctrl #
Washington	Enterprise	**Central**	12STS6844	37.410	113.626	431
		Enterprise	12STS6062	37.571	113.723	432
		Mountain Meadow	12STS6955	37.510	113.619	2014
		Pine Valley	12STS7841	37.386	113.513	961
		Pinto	12STS7857	37.530	113.518	965
	Hurricane	**Anderson Junction**	12STS9628	37.273	113.306	912
		Grafton	12SUS1515	37.160	113.089	2001
		Hilldale	12SUR1998	37.007	113.039	2012
		Hurricane	12STS9716	37.165	113.291	434
		Laverkin	12STS9819	37.192	113.281	435
		Leeds	12STS9123	37.227	113.361	436
		New Harmony	12STS9650	37.471	113.312	437
		Pintura	12STS9935	37.337	113.274	938
		Rockville	12SUS1914	37.152	113.043	939
		Springdale	12SUS2317	37.179	112.999	438
		Toquerville	12STS9825	37.246	113.283	439
		Vic's Place	12STS9629	37.282	113.306	945
		Virgin	12SUS0618	37.185	113.191	440
		Zion Lodge	12SUS2419	37.198	112.988	948
	St. George	**Bloomington**	12STS6803	37.041	113.614	2000
		Castle Cliff	12STS4405	37.053	113.884	962
		Goldstrike	12STS4341	37.377	113.908	964
		Gunlock	12STS5530	37.281	113.769	924
		Harrisburg Junction	12STS8415	37.153	113.437	2002
		Ivins	12STS6316	37.157	113.674	442
		Middleton	12STS7411	37.115	113.549	2003
		Santa Clara	12STS6412	37.121	113.661	444
		Shivwits	12STS5618	37.173	113.753	941
		St. George	12STS7110	37.105	113.582	443
		Veyo	12STS6235	37.328	113.691	944
		Vic's Service Station	12STS4304	37.044	113.895	946
		Washington	12STS7712	37.125	113.515	445
Wayne	Hanksville	Hanksville	12SWT2547	38.368	110.719	752
	Loa	Bicknell	12SVT5243	38.331	111.554	449
		Loa	12SVT4450	38.393	111.646	450
		Torrey	12SVT6339	38.295	111.428	451
Weber	Ogden	Ogden	12TVA1963	41.211	111.972	454
	Ogden Valley	Huntsville	12TVA3567	41.249	111.781	456
	Weber North	North Ogden	12TVA1973	41.301	111.973	458
		Plain City	12TVA0973	41.300	112.092	459
		Pleasant View	12TVA1674	41.310	112.009	460
	Weber Southeast	South Ogden	12TVA2061	41.193	111.959	462
		Uintah	12TVA2254	41.130	111.935	463
		Washington Terrace	12TVA1859	41.175	111.983	464
	Weber Southwest	Riverdale	12TVA1357	41.157	112.042	466
		Roy	12TVA1357	41.157	112.042	467

APPENDIX B

RECORD FORMAT FOR THE TOWN DATA BASE

This is the basic format for the Town Data Base. Each set of three 132-character records contains all the information for an estimate.

Descriptor	Comment	Columns	# Characters
Record 1			
	Blank	1	1
CNTRL	Location control # from REECO	2-5	4
	Blank	6	1
EVENT	Event name (1st 10 characters)	7-16	10
	Blank	17	1
ORIG	Origin of estimate I = 10-km Grid Data Base; R = Survey Meter Data Base; X = County Data Base	18	1
	Blank	19	1
RECNO	Record Number – "1"	20	1
	Blank	21	1
N	Counter from FATHER runs	22-27	6
	Blank	28	1
YYMMDD	Event date (year, month, day)	29-34	6
	Blank	35	1
STATE	State abbreviation	36-37	2
	Blank	38	1
COUNTY	County name for Location	39-65	27
PHASE	Blank if location is in Phase I region, "+" if not	66	1
RUN	DRI run number	67-68	2
	Blank	69	1
TWNSHIP	Township name for Location	70-99	30
	Blank	100	1
LOCALE	Name for Location	101-130	30
DEC[a]	Decision #	131-132	2

Descriptor	Comment	Columns	# Characters
Record 2			
	Blank	1	1
CNTRL	Location control # from REECO	2-5	4
	Blank	6	1
EVENT	Event name (1st 10 characters)	7-16	10
	Blank	17	1
ORIG	Origin of estimate I = 10-km Grid Data Base; R = Survey Meter Data Base; X = County Data Base	18	1
	Blank	19	1
RECNO	Record Number – "2"	20	1
	Blank	21	1
UTM	UTM Coordinate for Location	22-30	9
H12	X_E Estimate (1PE10.1)	31-40	10
	Blank	41	1
H12D	S_E Estimate (1PE10.2)	42-51	10
	Blank	51 52	1
TA	X_T Estimate (1PE10.1)	53-62	10
	Blank	63	1
TAD	S_T Estimate (1PE10.1)	64-73	10
	Blank	74-75	2
DATE	Date of FATHER run (YY/MM/DD)	76-83	8
	Blank	84	1
TIME	Time of FATHER run	85-92	8
	Blank	93-94	2
NP	Number of points used in estimate	95-98	4
	Blank	99	1
USE	Usability code for estimate (Y – yes; D – yes but no population)	100	1
	Blank	101	1
EVNUM	Event number	102-104	3
	Blank	105	1
RUN	DRI Subset # for Location	106-107	2
	Blank	108-130	23
DEC[a]	Decision #	131-132	2

Descriptor	Comment	Columns	# Characters
Record 3			
	Blank	1	1
CNTRL	Location control # from REECO	2-5	4
	Blank	6	1
EVENT	Event name (1st 10 characters)	7-16	10
	Blank	17	1
ORIG	Origin of estimate I = 10-km Grid Data Base; R = Survey Meter Data Base; X = County Data Base	18	1
	Blank	19	1
RECNO	Record Number – "3"	20	1
	Blank	21	1
ZSMX	Sum of H+12 values used, if SMDB data only(1PE11.3)	22-32	11
	Blank	33	1
ZSMX2	Sum of H+12 values squared, if SMDB data only(1PE11.3)	34-44	11
	Blank	45	1
NAMEAN	Arithmetic mean of H+12 values, SMDB data only (1PE11.3)	46-56	11
	Blank	57	1
NASIG	Arithmetic std deviation of H+12 values, SMDB data only(1PE11.3)	58-68	11
	Blank	69	1
CASE[b]	Case code (If ORIG = R, A thru J; if ORIG = I, Z.)	70	1
	Blank	71	1
LONG	Longitude for Location	72-80	9
	Blank	81	1
LAT	Latitude for Location	82-89	8
	Blank	90	1
EVENT	Event name (full 20 characters)	91-110	20
	Blank	111-130	20
DEC[a]	Decision #	131-132	2

Notes:

a. Determined by program DECCMB (Section 5.2.2)

b. Determined by program H12 (Section 5.1)

APPENDIX C

SELECTED INFORMATION FROM THE TOWN DATA BASE, VERSION 4.2

Listed below are the estimates of exposure rate and time of fallout arrival for each location and event in the Town Data Base. The variable names are defined in Appendix B. An asterisk by an event name indicates that some values have been changed from the previous version of the data base.

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
690	AZ	BEAVER DAM	ANNIE	530317	0.28	1.21	3.43	0.34	3	I
690	AZ	BEAVER DAM	ESS	550323	0.76	1.00	9.48	0.95	1	R
690	AZ	BEAVER DAM	HARRY	530519	21.82	1.19	2.79	0.28	6	R
690	AZ	BEAVER DAM	HORNET	550312	0.18	1.77	9.50	0.95	3	R
690	AZ	BEAVER DAM	SIMON	530425	1.53	1.55	10.41	1.04	2	R
690	AZ	BEAVER DAM	SMOKY	570831	2.94	2.14	9.00	1.35	6	R
690	AZ	BEAVER DAM	ZUCCHINI	550515	2.97	1.40	3.49	0.35	4	I
691	AZ	BIG BEND RANCH	ANNIE	530317	0.07	1.21	3.39	0.34	2	R
691	AZ	BIG BEND RANCH	ESS	550323	0.82	1.87	9.15	0.91	4	I
691	AZ	BIG BEND RANCH	HARRY	530519	15.13	1.45	2.77	0.28	2	R
691	AZ	BIG BEND RANCH	SIMON	530425	9.19	1.35	8.83	0.88	4	R
691	AZ	BIG BEND RANCH	SMOKY	570831	4.48	2.01	6.15	0.62	4	I
691	AZ	BIG BEND RANCH	ZUCCHINI	550515	5.92	1.00	3.48	0.35	1	R
715	AZ	COLORADO CITY	HARRY	530519	53.53	1.40	4.07	0.41	3	I
715	AZ	COLORADO CITY	TESLA	550301	0.32	1.40	11.85	1.18	4	I
486	AZ	FREDONIA	HARRY	530519	40.50	1.40	4.57	0.46	4	I
696	AZ	GRASSHOPPER JUNCTION	BADGER	530418	0.37	1.00	5.00	0.75	1	R
697	AZ	HACKBERRY	BADGER	530418	0.25	1.00	5.50	0.55	1	R
698	AZ	HUGHES RANCH	ANNIE	530317	0.11	2.88	3.25	0.32	4	I
698	AZ	HUGHES RANCH	ESS	550323	0.89	1.87	9.01	0.90	4	I
698	AZ	HUGHES RANCH	HARRY	530519	19.38	1.83	2.72	0.27	4	R
698	AZ	HUGHES RANCH	HORNET	550312	0.06	1.00	9.00	0.90	1	R
698	AZ	HUGHES RANCH	PRISCILLA	570624	0.07	1.00	10.00	1.50	1	R
698	AZ	HUGHES RANCH	SIMON	530425	19.29	1.11	8.67	0.87	3	R
698	AZ	HUGHES RANCH	SMOKY	570831	0.58	1.95	5.86	0.59	2	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
698	AZ	HUGHES RANCH	ZUCCHINI	550515	2.06	1.00	3.39	0.34	1	R
493	AZ	KINGMAN	BADGER	530418	0.25	1.01	5.50	0.82	2	R
700	AZ	LITTLEFIELD	ANNIE	530317	0.21	1.21	3.47	0.35	3.	I
700	AZ	LITTLEFIELD	ESS	550323	0.76	1.00	9.52	0.95	1	R
700	AZ	LITTLEFIELD	HARRY	530519	22.18	1.17	2.80	0.28	7	R
700	AZ	LITTLEFIELD	HORNET	550312	0.29	1.00	9.50	0.95	2	R
700	AZ	LITTLEFIELD	SIMON	530425	1.53	1.55	10.24	1.02	2	R
700	AZ	LITTLEFIELD	SMOKY	570831	2.64	2.10	8.00	1.20	4	R
700	AZ	LITTLEFIELD	ZUCCHINI	550515	2.60	1.40	3.54	0.35	4	I
701	AZ	MOUNT TRUMBULL	BADGER	530418	8.82	1.40	4.00	0.40	4	I
701	AZ	MOUNT TRUMBULL	CLIMAX	530604	4.00	1.40	8.27	0.83	4	I
701	AZ	MOUNT TRUMBULL	SIMON	530425	39.78	1.40	6.84	0.68	4	I
704	AZ	SHORT CREEK	HARRY	530519	54.10	1.40	4.05	0.41	3	I
704	AZ	SHORT CREEK	TESLA	550301	0.33	1.40	11.83	1.18	4	I
490	AZ	WILLIAMS	BADGER	530418	0.10	1.00	7.50	1.13	1	R
710	AZ	WILLOW BEACH	BEE	550322	0.44	1.40	4.00	0.40	4	I
711	AZ	WOLF HOLE	HORNET	550312	0.09	1.00	11.00	1.65	1	R
716	CA	BENTON	KEPLER	570724	1.03	1.40	13.68	1.37	4	I
716	CA	BENTON	WHITNEY	570923	0.38	1.00	13.70	2.06	2	R
717	CA	BIG PINE	BOLTZMANN	570528	0.12	1.00	60.00	9.00	1	R
717	CA	BIG PINE	KEPLER	570724	0.52	1.40	11.70	1.17	3	I
519	CA	BISHOP	KEPLER	570724	1.01	1.40	12.04	1.20	4	I
519	CA	BISHOP	WHITNEY	570923	0.34	1.00	12.50	1.88	1	R
723	CA	CHALFANT	KEPLER	570724	1.04	1.40	12.61	1.26	4	I
723	CA	CHALFANT	WHITNEY	570923	0.34	1.00	12.70	1.90	1	R
728	CA	DEEP SPRINGS	KEPLER	570724	0.63	1.40	10.12	1.01	4	I
738	CA	LAWS	KEPLER	570724	1.06	1.40	12.14	1.21	4	I
738	CA	LAWS	WHITNEY	570923	0.28	1.00	12.00	1.80	1	R
748	CA	OASIS	KEPLER	570724	0.73	1.21	9.66	0.97	3	R
748	CA	OASIS	WHEELER	570906	0.09	1.00	15.00	2.25	1	R
748	CA	OASIS	WHITNEY	570923	0.89	1.11	10.00	1.00	3	R
753	CA	RYAN	QUAY	581010	0.10	1.40	4.94	0.49	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
754	CA	SHOSHONE	BANDICOOT	621019	0.09	1.72	5.36	0.80	4	R
757	CA	STOVEPIPE WELLS	QUAY	581010	0.07	2.85	5.10	0.51	2	R
757	CA	STOVEPIPE WELLS	WILSON	570618	0.37	1.00	10.50	1.58	2	R
759	CA	TOM'S PLACE	KEPLER	570724	0.50	1.40	13.49	1.35	3	I
764	NV	A & B MINE	APPLE-2	550505	0.88	2.37	4.76	0.48	4	I
764	NV	A & B MINE	BANEBERRY	701218	0.15	1.61	8.08	0.81	4	I
764	NV	A & B MINE	BOLTZMANN	570528	63.54	1.31	4.38	0.44	3	R
764	NV	A & B MINE	GALILEO	570902	2.68	1.27	12.00	1.20	4	R
764	NV	A & B MINE	GEORGE	520601	0.45	1.40	5.56	0.56	4	I
764	NV	A & B MINE	HOW	520605	8.99	1.35	4.00	0.40	4	I
764	NV	A & B MINE	JOHNIE BOY	620711	0.11	1.62	2.57	0.26	9	R
764	NV	A & B MINE	LEA	581013	0.12	1.52	11.00	1.10	4	I
764	NV	A & B MINE	OWENS	570725	0.21	1.00	4.50	0.45	1	R
764	NV	A & B MINE	PALANQUIN	650414	0.20	2.37	8.16	0.82	4	I
764	NV	A & B MINE	SCHOONER	681208	0.06	1.66	4.02	0.40	4	I
764	NV	A & B MINE	SUGAR	511119	0.44	1.40	2.00	0.20	4	I
764	NV	A & B MINE	TURK	550307	0.44	1.24	10.77	1.08	3	I
765	NV	ACOMA	APPLE-1	550329	3.19	1.40	4.00	0.40	4	I
765	NV	ACOMA	FOX	520525	1.17	1.40	9.09	0.91	4	I
765	NV	ACOMA	HARRY	530519	11.99	1.40	3.61	0.36	4	I
765	NV	ACOMA	MET	550415	46.63	1.40	4.00	0.40	4	I
765	NV	ACOMA	MORGAN	571007	0.10	1.40	3.16	0.32	3	I
765	NV	ACOMA	PRISCILLA	570624	1.00	1.40	7.29	0.73	3	I
765	NV	ACOMA	SIMON	530425	1.00	1.40	13.77	1.38	4	I
766	NV	ADAM'S RANCH	APPLE-2	550505	0.71	1.40	6.17	0.62	4	I
766	NV	ADAM'S RANCH	DIABLO	570715	6.32	1.00	11.21	1.12	1	R
766	NV	ADAM'S RANCH	DOPPLER	570823	0.53	1.40	9.29	0.93	4	I
766	NV	ADAM'S RANCH	EASY	520507	5.65	1.40	2.84	0.28	3	I
766	NV	ADAM'S RANCH	GRABLE	530525	0.94	1.40	3.00	0.30	4	I
766	NV	ADAM'S RANCH	HOOD	570705	0.17	1.07	7.00	0.70	4	R
766	NV	ADAM'S RANCH	NANCY	530324	3.21	1.22	5.36	0.54	2	R
766	NV	ADAM'S RANCH	OWENS	570725	0.11	1.40	5.29	0.53	4	I
766	NV	ADAM'S RANCH	SCHOONER	681208	0.33	1.00	6.27	0.63	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
766	NV	ADAM'S RANCH	SEDAN	620706	0.74	1.40	6.98	0.70	4	I
766	NV	ADAM'S RANCH	TURK	550307	1.79	1.40	13.20	1.32	4	I
766	NV	ADAM'S RANCH	UNCLE	511129	0.97	1.40	6.00	0.60	4	I
889	NV	ADAVEN (SHARPS)	APPLE-2	550505	4.20	1.00	3.95	0.40	1	R
889	NV	ADAVEN (SHARPS)	DIABLO	570715	6.11	1.19	7.62	0.76	19	R
889	NV	ADAVEN (SHARPS)	EASY	520507	3.04	1.40	2.00	0.20	4	I
889	NV	ADAVEN (SHARPS)	GEORGE	520601	0.91	1.40	2.00	0.20	4	I
889	NV	ADAVEN (SHARPS)	GRABLE	530525	0.75	1.40	2.00	0.20	4	I
889	NV	ADAVEN (SHARPS)	HOOD	570705	0.19	1.00	4.47	0.45	1	R
889	NV	ADAVEN (SHARPS)	NANCY	530324	7.08	1.06	3.78	0.38	2	R
889	NV	ADAVEN (SHARPS)	OWENS	570725	0.31	1.02	4.00	0.40	2	R
889	NV	ADAVEN (SHARPS)	PLATTE	620414	0.53	1.00	4.78	0.48	1	R
889	NV	ADAVEN (SHARPS)	RIO ARRIBA	581018	0.29	1.00	5.50	0.82	1	R
889	NV	ADAVEN (SHARPS)	SCHOONER	681208	0.98	1.65	3.97	0.40	15	R
889	NV	ADAVEN (SHARPS)	SEDAN	620706	2.45	1.28	4.09	0.41	5	R
889	NV	ADAVEN (SHARPS)	SHASTA	570818	0.32	1.43	7.00	0.70	3	R
889	NV	ADAVEN (SHARPS)	SUGAR	511119	4.00	1.40	2.00	0.20	4	I
889	NV	ADAVEN (SHARPS)	TURK	550307	8.60	1.40	11.08	1.11	4	I
889	NV	ADAVEN (SHARPS)	UNCLE	511129	2.44	1.40	3.85	0.38	4	I
767	NV	ALAMO	APPLE-1	550329	15.83	1.33	2.00	0.20	40	R
767	NV	ALAMO	DOG	520501	0.07	1.23	3.00	0.45	4	R
767	NV	ALAMO	FOX	520525	0.25	1.24	5.00	0.50	3	R
767	NV	ALAMO	HARRY	530519	1.15	1.56	2.01	0.20	17	R
767	NV	ALAMO	HORNET	550312	0.53	1.40	5.64	0.56	4	I
767	NV	ALAMO	MET	550415	0.66	1.66	3.00	0.30	13	R
767	NV	ALAMO	POST	550409	0.40	1.40	10.00	1.00	3	I
767	NV	ALAMO	PRISCILLA	570624	0.19	1.74	6.25	0.63	25	R
767	NV	ALAMO	SIMON	530425	0.14	1.00	13.00	1.95	1	R
767	NV	ALAMO	SMALL BOY	620714	0.43	1.62	5.75	0.86	24	R
767	NV	ALAMO	TESLA	550301	0.14	1.44	5.12	0.51	4	R
767	NV	ALAMO	WILSON	570618	0.07	1.16	9.50	1.42	2	R
760	NV	AMARGOSA HOT SPRINGS	COULOMB-B	570906	0.85	1.40	6.01	0.60	4	I
760	NV	AMARGOSA HOT SPRINGS	QUAY	581010	0.07	2.34	3.87	0.39	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
760	NV	AMARGOSA HOT SPRINGS	WILSON	570618	0.44	1.67	6.59	0.66	4	I
768	NV	APEX	BADGER	530418	2.26	1.56	2.72	0.27	8	R
768	NV	APEX	CLIMAX	530604	0.43	2.13	6.36	0.64	4	I
768	NV	APEX	ESS	550323	0.16	1.00	4.50	0.45	1	R
768	NV	APEX	ZUCCHINI	550515	0.38	1.18	3.66	0.37	4	I
769	NV	ASH MEADOWS	BANDICOOT	621019	0.19	1.86	3.42	0.34	8	R
770	NV	ASH SPRINGS	APPLE-1	550329	5.00	1.43	2.11	0.21	21	R
770	NV	ASH SPRINGS	DOG	520501	0.07	1.00	3.00	0.45	1	R
770	NV	ASH SPRINGS	FOX	520525	0.78	2.13	5.41	0.54	4	I
770	NV	ASH SPRINGS	HARRY	530519	2.34	2.11	2.30	0.23	4	R
770	NV	ASH SPRINGS	HIDALGO	581005	0.11	1.40	8.22	0.82	4	I
770	NV	ASH SPRINGS	MET	550415	0.18	1.85	4.00	0.40	2	R
770	NV	ASH SPRINGS	PIN STRIPE	660425	0.09	1.73	3.87	0.39	311	R
770	NV	ASH SPRINGS	PRISCILLA	570624	0.06	1.94	7.00	1.05	3	R
770	NV	ASH SPRINGS	SMALL BOY	620714	0.09	1.78	4.96	0.50	8	R
770	NV	ASH SPRINGS	TESLA	550301	0.83	1.44	6.00	0.60	4	I
770	NV	ASH SPRINGS	WILSON	570618	0.25	1.88	9.20	1.38	3	R
771	NV	ATLANTA	DIABLO	570715	3.33	1.40	12.23	1.22	4	I
771	NV	ATLANTA	DOPPLER	570823	0.11	1.40	7.35	0.73	4	I
771	NV	ATLANTA	FOX	520525	0.43	1.40	11.93	1.19	4	I
771	NV	ATLANTA	GRABLE	530525	0.40	1.40	2.22	0.22	3	I
771	NV	ATLANTA	HOOD	570705	0.18	1.40	8.00	0.80	4	I
771	NV	ATLANTA	NEWTON	570916	0.10	1.40	4.66	0.47	4	I
771	NV	ATLANTA	SCHOONER	681208	0.27	1.40	7.47	0.75	4	I
771	NV	ATLANTA	SMALL BOY	620714	0.10	1.40	14.53	1.45	3	I
771	NV	ATLANTA	TURK	550307	0.74	1.40	14.48	1.45	4	I
772	NV	AUSTIN	BOLTZMANN	570528	3.72	1.34	7.72	0.77	7	R
772	NV	AUSTIN	SHASTA	570818	0.33	1.00	8.00	1.20	1	R
73	NV	BABBITT	KEPLER	570724	1.92	1.40	15.00	1.50	4	I
73	NV	BABBITT	WHITNEY	570923	1.00	1.40	15.32	1.53	4	I
774	NV	BAKER	APPLE-2	550505	2.92	1.00	9.18	0.92	1	R
774	NV	BAKER	DIABLO	570715	2.46	1.18	15.05	1.50	4	R
774	NV	BAKER	HOOD	570705	0.24	1.00	9.00	0.90	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
774	NV	BAKER	JOHN	570719	0.93	1.00	14.00	2.10	2	R
774	NV	BAKER	NEWTON	570916	0.11	1.40	5.91	0.59	4	I
774	NV	BAKER	TURK	550307	1.89	1.00	15.70	1.57	1	R
2015	NV	BALLOW RANCH	APPLE–1	550329	1.79	2.08	3.65	0.37	3	R
2015	NV	BALLOW RANCH	FOX	520525	1.02	1.40	7.54	0.75	4	I
2015	NV	BALLOW RANCH	HARRY	530519	6.07	1.40	3.03	0.30	4	I
2015	NV	BALLOW RANCH	HORNET	550312	0.56	1.40	8.18	0.82	4	I
2015	NV	BALLOW RANCH	MET	550415	6.23	1.56	4.00	0.40	3	R
2015	NV	BALLOW RANCH	PRISCILLA	570624	0.30	1.61	7.00	0.70	3	R
2015	NV	BALLOW RANCH	SIMON	530425	0.75	1.40	12.37	1.24	4	I
2015	NV	BALLOW RANCH	SMALL BOY*	620714	0.18	1.15	9.00	1.35	2	R
2015	NV	BALLOW RANCH	SMOKY	570831	0.09	1.00	9.00	1.35	1	R
775	NV	BARCLAY	APPLE–1	550329	2.24	1.40	4.00	0.40	4	I
775	NV	BARCLAY	FOX	520525	0.93	1.40	8.77	0.88	4	I
775	NV	BARCLAY	HARRY	530519	12.85	1.40	3.43	0.34	4	I
775	NV	BARCLAY	MET	550415	15.82	1.40	4.00	0.40	4	I
775	NV	BARCLAY	MORGAN	571007	0.10	1.40	3.18	0.32	3	I
775	NV	BARCLAY	PRISCILLA	570624	1.00	1.40	7.10	0.71	3	I
775	NV	BARCLAY	SIMON	530425	1.00	1.40	13.42	1.34	4	I
776	NV	BARDOLI RANCH	APPLE–2	550505	9.43	1.02	3.87	0.39	2	R
776	NV	BARDOLI RANCH	DES MOINES	620613	0.39	1.09	2.83	0.28	2	R
776	NV	BARDOLI RANCH	DIABLO	570715	1.11	1.40	8.13	0.81	4	I
776	NV	BARDOLI RANCH	EASY	520507	1.78	1.40	2.00	0.20	4	I
776	NV	BARDOLI RANCH	GEORGE	520601	1.25	1.40	2.21	0.22	4	I
776	NV	BARDOLI RANCH	GRABLE	530525	0.60	1.40	2.37	0.24	4	I
776	NV	BARDOLI RANCH	HOOD	570705	0.36	1.46	5.00	0.50	3	R
776	NV	BARDOLI RANCH	NANCY	530324	2.35	1.40	4.11	0.41	4	I
776	NV	BARDOLI RANCH	OWENS	570725	0.78	1.31	4.16	0.42	3	R
776	NV	BARDOLI RANCH	PLATTE	620414	0.55	1.03	4.97	0.50	2	R
776	NV	BARDOLI RANCH	RIO ARRIBA	581018	0.24	1.00	5.50	0.82	1	R
776	NV	BARDOLI RANCH	SCHOONER	681208	0.25	1.92	4.23	0.42	16	R
776	NV	BARDOLI RANCH	SEDAN	620706	2.51	1.34	4.53	0.45	6	R
776	NV	BARDOLI RANCH	SHASTA	570818	4.07	1.00	7.50	0.75	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
776	NV	BARDOLI RANCH	SUGAR	511119	4.73	1.40	2.00	0.20	4	I
776	NV	BARDOLI RANCH	TURK	550307	8.75	1.40	11.22	1.12	4	I
776	NV	BARDOLI RANCH	UNCLE	511129	1.25	1.40	4.00	0.40	4	I
777	NV	BASALT	BOLTZMANN	570528	3.48	1.00	7.00	1.05	1	R
777	NV	BASALT	KEPLER	570724	2.21	1.40	13.85	1.38	4	I
777	NV	BASALT	WHEELER	570906	0.09	1.75	12.00	1.80	2	R
777	NV	BASALT	WHITNEY	570923	0.30	1.00	12.30	1.23	1	R
778	NV	BEATTY	COULOMB-B	570906	0.66	1.40	5.76	0.58	4	I
778	NV	BEATTY	QUAY	581010	0.13	2.34	3.94	0.39	11	R
778	NV	BEATTY	WHITNEY	570923	0.52	1.00	12.10	1.82	1	R
778	NV	BEATTY	WILSON	570618	0.64	1.67	7.06	0.71	5	R
779	NV	BELEW RANCH	APPLE-2	550505	4.20	1.00	3.95	0.40	1	R
779	NV	BELEW RANCH	DIABLO	570715	6.11	1.19	7.62	0.76	19	R
779	NV	BELEW RANCH	EASY	520507	3.04	1.40	2.00	0.20	4	I
779	NV	BELEW RANCH	GEORGE	520601	0.91	1.40	2.00	0.20	4	I
779	NV	BELEW RANCH	GRABLE	530525	0.75	1.40	2.00	0.20	4	I
779	NV	BELEW RANCH	HOOD	570705	0.19	1.00	4.47	0.45	1	R
779	NV	BELEW RANCH	NANCY	530324	7.08	1.06	3.78	0.38	2	R
779	NV	BELEW RANCH	OWENS	570725	0.31	1.02	4.00	0.40	2	R
779	NV	BELEW RANCH	PLATTE	620414	0.53	1.00	4.78	0.48	1	R
779	NV	BELEW RANCH	RIO ARRIBA	581018	0.29	1.00	5.50	0.82	1	R
779	NV	BELEW RANCH	SCHOONER	681208	0.98	1.65	3.97	0.40	15	R
779	NV	BELEW RANCH	SEDAN	620706	2.45	1.28	4.09	0.41	5	R
779	NV	BELEW RANCH	SHASTA	570818	0.32	1.43	7.00	0.70	3	R
779	NV	BELEW RANCH	SUGAR	511119	4.00	1.40	2.00	0.20	4	I
779	NV	BELEW RANCH	TURK	550307	8.60	1.40	11.08	1.11	4	I
779	NV	BELEW RANCH	UNCLE	511129	2.44	1.40	3.85	0.38	4	I
780	NV	BELMONT	BOLTZMANN	570528	15.70	1.13	5.31	0.53	12	R
780	NV	BELMONT	HOW	520605	0.67	1.40	6.00	0.60	4	I
780	NV	BELMONT	PALANQUIN	650414	0.25	1.00	9.00	0.90	1	R
780	NV	BELMONT	SCHOONER	681208	0.14	1.00	5.00	0.75	1	R
780	NV	BELMONT	WHITNEY	570923	0.76	1.00	9.60	1.44	1	R
2013	NV	BLAIR JUNCTION	FIZEAU	570914	0.15	1.21	9.00	0.90	2	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
2013	NV	BLAIR JUNCTION	KEPLER	570724	8.54	1.00	12.20	1.22	1	R
2013	NV	BLAIR JUNCTION	WHEELER	570906	0.15	1.00	12.00	1.80	1	R
2013	NV	BLAIR JUNCTION	WHITNEY	570923	5.04	1.11	11.55	1.15	6	R
781	NV	BLUE DIAMOND	BANDICOOT	621019	0.17	1.00	5.00	0.50	1	R
782	NV	BLUE EAGLE SCHOOL	APPLE-2	550505	6.37	1.40	4.65	0.47	4	I
782	NV	BLUE EAGLE SCHOOL	DES MOINES	620613	1.25	1.75	3.49	0.35	8	R
782	NV	BLUE EAGLE SCHOOL	DIABLO	570715	0.98	1.40	9.71	0.97	3	I
782	NV	BLUE EAGLE SCHOOL	EASY	520507	1.99	1.40	2.90	0.29	4	I
782	NV	BLUE EAGLE SCHOOL	GEORGE	520601	1.41	1.40	3.00	0.30	4	I
782	NV	BLUE EAGLE SCHOOL	HOOD	570705	0.83	1.06	6.00	0.60	2	R
782	NV	BLUE EAGLE SCHOOL	HOW	520605	0.89	1.40	3.79	0.38	4	I
782	NV	BLUE EAGLE SCHOOL	NANCY	530324	1.02	1.40	4.86	0.49	4	I
782	NV	BLUE EAGLE SCHOOL	OWENS	570725	2.32	2.74	5.00	0.50	2	R
782	NV	BLUE EAGLE SCHOOL	PLATTE	620414	0.08	1.40	6.09	0.61	4	I
782	NV	BLUE EAGLE SCHOOL	SEDAN	620706	1.10	1.21	5.80	0.58	2	R
782	NV	BLUE EAGLE SCHOOL	SHASTA	570818	1.15	1.40	8.69	0.87	4	I
782	NV	BLUE EAGLE SCHOOL	SUGAR	511119	1.28	1.40	2.74	0.27	4	I
782	NV	BLUE EAGLE SCHOOL	TURK	550307	5.37	1.40	12.00	1.20	4	I
782	NV	BLUE EAGLE SCHOOL	UNCLE	511129	0.69	1.40	5.00	0.50	4	I
783	NV	BONANZA BOY SCOUT CA	POST	550409	0.40	1.40	13.74	1.37	4	I
784	NV	BOND RANCH	BOLTZMANN	570528	9.97	1.15	6.69	0.67	4	I
18	NV	BOULDER CITY	BADGER	530418	0.15	1.66	3.42	0.34	2	R
18	NV	BOULDER CITY	BEE	550322	1.49	1.66	3.87	0.39	8	R
786	NV	BOYD	APPLE-1	550329	0.68	1.69	3.50	0.35	3	R
786	NV	BOYD	FOX	520525	0.49	1.40	7.26	0.73	4	I
786	NV	BOYD	HARRY	530519	10.74	1.40	2.93	0.29	4	I
786	NV	BOYD	HORNET	550312	0.47	1.40	8.00	0.80	4	I
786	NV	BOYD	MET	550415	18.82	1.55	3.59	0.36	6	R
786	NV	BOYD	MORGAN	571007	0.12	1.40	3.00	0.30	3	I
786	NV	BOYD	PRISCILLA	570624	0.51	1.19	6.66	0.67	2	R
786	NV	BOYD	SIMON	530425	0.94	1.40	11.88	1.19	4	I
786	NV	BOYD	SMALL BOY	620714	0.10	2.11	8.15	1.22	3	I
786	NV	BOYD	SMOKY	570831	0.10	1.00	9.00	1.35	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
787	NV	BRISTOL SILVER MINE	DIABLO	570715	0.87	1.40	9.67	0.97	3	I
787	NV	BRISTOL SILVER MINE	EASY	520507	2.15	1.40	2.00	0.20	4	I
787	NV	BRISTOL SILVER MINE	EDDY	580919	0.06	1.40	6.72	0.67	4	I
787	NV	BRISTOL SILVER MINE	FOX	520525	2.90	1.40	9.92	0.99	4	I
787	NV	BRISTOL SILVER MINE	HOOD	570705	0.10	1.40	6.00	0.60	3	I
787	NV	BRISTOL SILVER MINE	NEWTON	570916	0.10	1.40	3.56	0.36	4	I
787	NV	BRISTOL SILVER MINE	SMALL BOY	620714	0.17	1.40	10.01	1.00	4	I
787	NV	BRISTOL SILVER MINE	TURK	550307	0.42	1.40	13.09	1.31	4	I
787	NV	BRISTOL SILVER MINE	WILSON	570618	0.50	1.40	14.00	2.10	4	I
788	NV	BUCKHORN RANCH	APPLE-1	550329	0.08	1.60	2.00	0.20	6	R
788	NV	BUCKHORN RANCH	DOG	520501	0.10	1.39	3.00	0.45	3	R
788	NV	BUCKHORN RANCH	HARRY	530519	13.43	1.00	1.93	0.19	1	R
788	NV	BUCKHORN RANCH	HORNET	550312	0.71	1.40	5.60	0.56	4	I
788	NV	BUCKHORN RANCH	MET	550415	15.15	1.80	3.00	0.30	7	R
788	NV	BUCKHORN RANCH	POST	550409	0.40	1.40	10.00	1.00	3	I
788	NV	BUCKHORN RANCH	PRISCILLA	570624	0.51	1.86	5.85	0.58	3	R
788	NV	BUCKHORN RANCH	SIMON	530425	0.34	1.33	7.97	0.80	2	R
788	NV	BUCKHORN RANCH	SMALL BOY	620714	1.74	1.27	4.67	0.47	5	R
788	NV	BUCKHORN RANCH	TESLA	550301	0.55	1.00	5.08	0.51	1	R
788	NV	BUCKHORN RANCH	WILSON	570618	0.50	1.16	23.00	3.45	3	I
789	NV	BUNKERVILLE	ANNIE	530317	0.09	4.42	3.00	0.30	3	I
789	NV	BUNKERVILLE	ESS	550323	0.13	1.00	8.43	0.84	1	R
789	NV	BUNKERVILLE	HARRY	530519	1.71	1.82	2.47	0.25	6	R
789	NV	BUNKERVILLE	HORNET	550312	0.50	1.09	8.22	0.82	4	R
789	NV	BUNKERVILLE	PRISCILLA	570624	0.24	1.00	10.00	1.50	1	R
789	NV	BUNKERVILLE	SIMON	530425	96.49	1.37	5.88	0.59	11	R
789	NV	BUNKERVILLE	SMOKY	570831	3.33	1.00	6.47	0.65	1	R
789	NV	BUNKERVILLE	ZUCCHINI	550515	2.17	1.38	3.34	0.33	4	I
790	NV	BUTLER RANCH	ANNIE	530317	17.61	1.40	2.01	0.20	3	I
790	NV	BUTLER RANCH	ESS	550323	0.99	1.40	5.00	0.50	4	I
790	NV	BUTLER RANCH	HARRY	530519	74.37	1.40	1.40	0.14	4	I
790	NV	BUTLER RANCH	HORNET	550312	0.76	1.27	5.55	0.55	3	R
790	NV	BUTLER RANCH	MET	550415	0.58	1.00	2.00	0.20	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
790	NV	BUTLER RANCH	MORGAN	571007	1.05	1.00	3.79	0.38	1	R
790	NV	BUTLER RANCH	PRISCILLA	570624	0.29	1.00	4.20	0.42	1	R
790	NV	BUTLER RANCH	SIMON	530425	19.20	1.40	2.99	0.30	4	I
790	NV	BUTLER RANCH	SMOKY	570831	99.15	1.15	3.77	0.38	8	R
790	NV	BUTLER RANCH	TESLA	550301	1.10	1.40	4.00	0.40	4	I
790	NV	BUTLER RANCH	TURK	550307	0.91	1.40	9.06	0.91	4	I
790	NV	BUTLER RANCH	ZUCCHINI	550515	1.46	1.40	1.69	0.17	4	I
791	NV	CACTUS SPRINGS	BADGER	530418	0.08	2.30	1.58	0.16	5	R
791	NV	CACTUS SPRINGS	BANDICOOT	621019	0.14	2.00	3.00	0.30	12	R
791	NV	CACTUS SPRINGS	CHARLIE	520422	0.09	1.40	7.00	1.05	2	R
791	NV	CACTUS SPRINGS	CLIMAX	530604	0.06	1.00	4.50	0.45	1	R
791	NV	CACTUS SPRINGS	PIKE	640313	0.29	1.87	2.45	0.25	87	R
791	NV	CACTUS SPRINGS	POST	550409	0.37	1.00	10.00	1.00	1	R
791	NV	CACTUS SPRINGS	SMOKY	570831	0.26	1.00	9.00	1.35	1	R
60	NV	CALIENTE	APPLE-1	550329	2.54	1.44	4.00	0.40	22	R
60	NV	CALIENTE	FOX	520525	4.74	1.14	8.09	0.81	18	R
60	NV	CALIENTE	HARRY	530519	1.49	1.71	3.19	0.32	6	R
60	NV	CALIENTE	HIDALGO	581005	0.08	1.40	14.45	1.45	4	I
60	NV	CALIENTE	HORNET	550312	0.09	1.45	8.78	0.88	17	R
60	NV	CALIENTE	MET	550415	3.14	1.43	4.00	0.40	19	R
60	NV	CALIENTE	SIMON	530425	0.47	1.03	13.15	1.32	2	R
60	NV	CALIENTE	SMALL BOY	620714	0.19	1.41	9.32	0.93	17	R
793	NV	CARP	HARRY	530519	88.37	1.40	2.35	0.23	4	I
793	NV	CARP	HORNET	550312	0.16	2.04	8.50	0.85	2	R
793	NV	CARP	PRISCILLA	570624	2.82	1.32	5.91	0.59	12	R
793	NV	CARP	SIMON	530425	2.38	1.40	8.99	0.90	4	I
793	NV	CARP	SMALL BOY	620714	0.08	2.64	7.00	1.05	8	R
793	NV	CARP	SMOKY	570831	1.06	1.64	7.00	1.05	10	R
793	NV	CARP	TESLA	550301	0.54	1.80	6.14	0.61	2	R
2007	NV	CARRARA	COULOMB-B	570906	0.30	1.40	5.40	0.54	4	I
2007	NV	CARRARA	QUAY	581010	0.27	1.17	3.92	0.39	7	R
2007	NV	CARRARA	WILSON	570618	0.50	1.40	13.00	1.95	3	I
794	NV	CASELTON MINE	APPLE-1	550329	0.52	1.19	4.00	0.40	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
794	NV	CASELTON MINE	FOX	520525	11.57	1.31	9.62	0.96	4	I
794	NV	CASELTON MINE	NEWTON	570916	0.10	1.40	3.48	0.35	4	I
794	NV	CASELTON MINE	SMALL BOY	620714	0.18	1.31	10.26	1.03	4	I
795	NV	CHARLESTON LODGE	BADGER	530418	0.28	1.00	2.50	0.25	1	R
795	NV	CHARLESTON LODGE	POST	550409	0.40	1.40	14.53	1.45	4	I
796	NV	CHERRY CREEK	APPLE-2	550505	0.64	1.40	9.77	0.98	4	I
796	NV	CHERRY CREEK	BOLTZMANN	570528	0.12	1.00	13.00	1.95	1	R
796	NV	CHERRY CREEK	HOW	520605	0.40	1.40	8.00	0.80	3	I
796	NV	CHERRY CREEK	OWENS	570725	0.99	1.40	11.76	1.18	4	I
796	NV	CHERRY CREEK	SUGAR	511119	0.94	1.40	5.00	0.50	4	I
796	NV	CHERRY CREEK	UNCLE	511129	0.40	1.40	8.00	0.80	4	I
797	NV	CLARK'S STATION	APPLE-2	550505	0.41	1.00	4.87	0.49	1	R
797	NV	CLARK'S STATION	BANEBERRY	701218	0.17	1.70	7.55	0.75	14	R
797	NV	CLARK'S STATION	BOLTZMANN	570528	8.45	1.38	4.12	0.41	39	R
797	NV	CLARK'S STATION	CABRIOLET	680126	0.16	2.50	2.39	0.24	56	R
797	NV	CLARK'S STATION	FIZEAU	570914	0.64	2.45	7.88	0.79	2	R
797	NV	CLARK'S STATION	GALILEO	570902	2.41	1.00	11.78	1.18	1	R
797	NV	CLARK'S STATION	HOW	520605	12.41	1.34	4.00	0.40	8	R
797	NV	CLARK'S STATION	PALANQUIN	650414	0.39	1.76	6.89	0.69	62	R
797	NV	CLARK'S STATION	SCHOONER	681208	0.72	1.81	3.93	0.39	14	R
797	NV	CLARK'S STATION	SUGAR	511119	0.40	1.40	2.00	0.20	3	I
797	NV	CLARK'S STATION	TURK	550307	0.45	1.01	10.28	1.03	4	R
798	NV	CLOUD	HARRY	530519	82.51	1.40	2.42	0.24	4	I
798	NV	CLOUD	MORGAN	571007	0.23	1.00	4.62	0.46	1	R
798	NV	CLOUD	PRISCILLA	570624	5.49	1.11	5.92	0.59	9	R
798	NV	CLOUD	SIMON	530425	2.22	1.40	9.46	0.95	4	I
798	NV	CLOUD	SMOKY	570831	1.89	1.64	3.99	0.40	4	I
798	NV	CLOUD	TESLA	550301	3.47	1.80	6.27	0.63	4	I
799	NV	COALDALE	KEPLER	570724	10.33	1.00	12.28	1.23	2	R
799	NV	COALDALE	WHEELER	570906	0.18	1.00	12.00	1.80	2	R
799	NV	COALDALE	WHITNEY	570923	4.83	1.32	11.65	1.16	8	R
800	NV	COLE & DOLAN RANCH	DIABLO	570715	2.07	1.40	11.26	1.13	4	I
800	NV	COLE & DOLAN RANCH	DOPPLER	570823	0.10	1.40	6.44	0.64	3	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
800	NV	COLE & DOLAN RANCH	EDDY	580919	0.09	1.40	7.26	0.73	4	I
800	NV	COLE & DOLAN RANCH	FOX	520525	0.93	1.40	11.18	1.12	4	I
800	NV	COLE & DOLAN RANCH	HOOD	570705	0.11	1.40	7.20	0.72	4	I
800	NV	COLE & DOLAN RANCH	NEWTON	570916	0.10	1.40	4.25	0.42	4	I
800	NV	COLE & DOLAN RANCH	SCHOONER	681208	1.43	1.00	6.97	0.70	1	R
800	NV	COLE & DOLAN RANCH	SMALL BOY	620714	0.11	1.40	11.84	1.78	4	I
800	NV	COLE & DOLAN RANCH	TURK	550307	0.58	1.40	14.03	1.40	4	I
800	NV	COLE & DOLAN RANCH	WILSON	570618	0.50	1.40	12.00	1.80	4	I
801	NV	CORN CREEK	BADGER	530418	1.68	1.40	2.03	0.20	4	I
801	NV	CORN CREEK	BEE	550322	2.87	1.39	2.01	0.20	3	R
801	NV	CORN CREEK	PRISCILLA	570624	0.27	1.00	7.00	1.05	1	R
801	NV	CORN CREEK	TURK	550307	0.21	1.00	7.00	1.05	1	R
802	NV	COVE	APPLE–2	550505	4.07	1.40	6.47	0.65	4	I
802	NV	COVE	BOLTZMANN	570528	0.10	1.48	7.00	1.05	3	R
802	NV	COVE	DES MOINES	620613	0.07	1.40	4.79	0.48	4	I
802	NV	COVE	DIABLO	570715	1.62	1.00	12.34	1.23	1	R
802	NV	COVE	DOPPLER	570823	0.97	1.40	11.51	1.15	4	I
802	NV	COVE	EASY	520507	2.85	1.02	3.38	0.34	2	R
802	NV	COVE	NANCY	530324	1.29	1.36	6.18	0.62	4	R
802	NV	COVE	OWENS	570725	0.96	1.00	6.51	0.65	1	R
802	NV	COVE	RIO ARRIBA	581018	0.08	1.21	4.00	0.40	4	R
802	NV	COVE	SCHOONER	681208	0.13	1.00	6.83	0.68	1	R
802	NV	COVE	SEDAN	620706	1.11	1.92	7.94	0.79	2	R
802	NV	COVE	SHASTA	570818	1.70	1.00	11.51	1.15	1	R
802	NV	COVE	SUGAR	511119	0.76	1.40	3.21	0.32	4	I
802	NV	COVE	TURK	550307	2.26	1.14	13.87	1.39	4	I
802	NV	COVE	UNCLE	511129	1.00	1.40	6.62	0.66	4	I
803	NV	CRESTLINE	APPLE–1	550329	3.32	1.40	4.47	0.45	4	I
803	NV	CRESTLINE	FOX	520525	3.86	1.40	9.73	0.97	4	I
803	NV	CRESTLINE	HARRY	530519	6.01	1.40	3.74	0.37	4	I
803	NV	CRESTLINE	MET	550415	5.77	1.00	4.00	0.40	1	R
803	NV	CRESTLINE	SIMON	530425	0.95	1.40	14.69	1.47	4	I
803	NV	CRESTLINE	SMALL BOY	620714	0.09	1.46	12.00	1.80	5	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
804	NV	CRYSTAL	BADGER	530418	34.36	1.98	2.47	0.25	39	R
804	NV	CRYSTAL	CLIMAX	530604	2.32	1.99	5.27	0.53	7	R
804	NV	CRYSTAL	MOTH	550222	0.29	1.72	3.50	0.52	3	R
804	NV	CRYSTAL	POST	550409	0.07	1.00	18.00	1.80	1	R
804	NV	CRYSTAL	ZUCCHINI	550515	1.55	1.32	3.17	0.32	9	R
846	NV	CRYSTAL SPRINGS	APPLE–1	550329	2.13	1.52	2.42	0.24	17	R
846	NV	CRYSTAL SPRINGS	DIABLO	570715	0.89	1.80	5.87	0.59	16	R
846	NV	CRYSTAL SPRINGS	DOG	520501	0.06	1.29	3.00	0.45	3	R
846	NV	CRYSTAL SPRINGS	FOX	520525	4.35	2.13	5.59	0.56	12	R
846	NV	CRYSTAL SPRINGS	GALILEO	570902	0.12	1.00	18.00	2.70	1	R
846	NV	CRYSTAL SPRINGS	HARRY	530519	1.20	1.40	2.31	0.23	7	R
846	NV	CRYSTAL SPRINGS	HIDALGO	581005	0.08	1.40	8.84	0.88	4	I
846	NV	CRYSTAL SPRINGS	MET	550415	0.22	1.11	4.00	0.40	2	R
846	NV	CRYSTAL SPRINGS	PIN STRIPE	660425	0.16	1.83	3.91	0.39	40	R
846	NV	CRYSTAL SPRINGS	TESLA	550301	1.11	1.40	5.84	0.58	4	I
846	NV	CRYSTAL SPRINGS	UNCLE	511129	0.43	1.40	2.81	0.28	3	I
846	NV	CRYSTAL SPRINGS	WILSON	570618	0.62	1.37	12.98	1.95	4	R
805	NV	CURRANT	APPLE–2	550505	2.99	1.47	5.44	0.54	3	R
805	NV	CURRANT	BOLTZMANN	570528	0.16	1.00	6.50	0.98	1	R
805	NV	CURRANT	DES MOINES	620613	1.61	1.46	4.09	0.41	12	R
805	NV	CURRANT	DIABLO	570715	1.41	1.26	11.00	1.10	6	R
805	NV	CURRANT	DOPPLER	570823	0.16	1.40	10.48	1.05	4	I
805	NV	CURRANT	EASY	520507	2.64	1.00	3.20	0.32	1	R
805	NV	CURRANT	GALILEO	570902	0.30	1.00	24.00	3.60	1	R
805	NV	CURRANT	GEORGE	520601	0.87	1.40	3.26	0.33	4	I
805	NV	CURRANT	GRABLE	530525	0.12	1.56	4.00	0.40	4	R
805	NV	CURRANT	HOOD	570705	0.16	1.00	10.00	1.50	1	R
805	NV	CURRANT	HOW	520605	1.19	1.03	4.36	0.44	2	R
805	NV	CURRANT	NANCY	530324	0.78	1.49	5.64	0.56	3	R
805	NV	CURRANT	OWENS	570725	1.09	1.37	6.00	0.60	16	R
805	NV	CURRANT	PLATTE	620414	0.09	1.40	7.91	0.79	4	I
805	NV	CURRANT	SEDAN	620706	1.14	1.22	6.91	0.69	8	R
805	NV	CURRANT	SHASTA	570818	2.81	1.33	10.36	1.04	2	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
805	NV	CURRANT	SUGAR	511119	1.00	1.40	3.00	0.30	4	I
805	NV	CURRANT	TURK	550307	2.00	1.39	12.89	1.29	3	R
805	NV	CURRANT	UNCLE	511129	0.60	1.40	6.00	0.60	4	I
812	NV	D–X RANCH	APPLE–2	550505	1.39	1.69	8.43	0.84	4	I
812	NV	D–X RANCH	DIABLO	570715	3.54	1.16	14.90	1.49	4	I
812	NV	D–X RANCH	DOPPLER	570823	0.37	1.40	12.72	1.27	4	I
812	NV	D–X RANCH	GRABLE	530525	0.40	1.40	3.00	0.30	3	I
812	NV	D–X RANCH	HOOD	570705	0.12	1.40	9.00	0.90	4	I
812	NV	D–X RANCH	NANCY	530324	1.45	1.40	6.64	0.66	4	I
812	NV	D–X RANCH	OWENS	570725	0.07	1.40	7.00	0.70	3	I
812	NV	D–X RANCH	SCHOONER	681208	0.08	1.57	9.00	0.90	2	R
812	NV	D–X RANCH	UNCLE	511129	0.40	1.40	7.49	0.75	4	I
806	NV	DELMUE	APPLE–1	550329	0.82	1.48	4.00	0.40	4	I
806	NV	DELMUE	FOX	520525	10.64	1.40	9.79	0.98	4	I
806	NV	DELMUE	HARRY	530519	1.28	1.68	4.01	0.40	4	I
806	NV	DELMUE	MET	550415	0.80	2.36	4.89	0.49	4	I
806	NV	DELMUE	SMALL BOY	620714	0.12	1.73	10.98	1.10	4	I
957	NV	DESERT GAME REFUGE	BADGER	530418	1.74	1.40	2.03	0.20	4	I
957	NV	DESERT GAME REFUGE	BEE	550322	2.44	1.05	2.01	0.20	2	R
957	NV	DESERT GAME REFUGE	PRISCILLA	570624	0.27	1.00	7.00	1.05	1	R
807	NV	DESERT ROCK	POST	550409	1.58	1.28	8.84	0.88	4	R
808	NV	DODGE CONSTRUCTION C	DIABLO	570715	39.30	1.35	4.89	0.49	39	R
808	NV	DODGE CONSTRUCTION C	GALILEO	570902	1.05	1.00	14.00	2.10	1	R
808	NV	DODGE CONSTRUCTION C	HOOD	570705	0.63	1.19	2.00	0.20	19	R
808	NV	DODGE CONSTRUCTION C	OWENS	570725	0.37	1.59	2.10	0.31	11	R
808	NV	DODGE CONSTRUCTION C	SHASTA	570818	0.11	1.39	5.50	0.82	2	R
809	NV	DONAHUE RANCH	FOX	520525	1.44	1.40	11.59	1.16	4	I
809	NV	DONAHUE RANCH	NEWTON	570916	0.10	1.40	4.54	0.45	4	I
809	NV	DONAHUE RANCH	SCHOONER	681208	0.06	1.40	7.51	0.75	4	I
809	NV	DONAHUE RANCH	SMALL BOY	620714	0.11	1.40	13.41	2.01	4	I
809	NV	DONAHUE RANCH	TURK	550307	0.48	1.40	14.40	1.44	4	I
809	NV	DONAHUE RANCH	WILSON	570618	0.50	1.40	15.00	2.25	4	I
810	NV	DRY LAKE	BADGER	530418	8.49	2.83	2.58	0.26	25	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
810	NV	DRY LAKE	CLIMAX	530604	0.83	1.99	5.63	0.56	6	R
810	NV	DRY LAKE	HORNET	550312	0.12	1.40	6.00	0.60	1	R
810	NV	DRY LAKE	MOTH	550222	5.34	2.03	3.50	0.52	14	R
810	NV	DRY LAKE	ZUCCHINI	550515	1.43	1.48	3.30	0.33	10	R
811	NV	DUCKWATER	APPLE-2	550505	9.14	1.14	5.59	0.56	2	R
811	NV	DUCKWATER	DES MOINES	620613	0.37	1.00	4.43	0.44	1	R
811	NV	DUCKWATER	GALILEO	570902	0.88	1.00	23.00	3.45	1	R
811	NV	DUCKWATER	GEORGE	520601	6.80	1.40	4.12	0.41	4	I
811	NV	DUCKWATER	HOW	520605	1.32	1.40	5.00	0.50	4	I
811	NV	DUCKWATER	NANCY	530324	0.52	1.40	6.34	0.63	4	I
811	NV	DUCKWATER	OWENS	570725	0.57	1.00	7.00	0.70	1	R
811	NV	DUCKWATER	SEDAN	620706	0.75	1.00	7.58	0.76	1	R
811	NV	DUCKWATER	SHASTA	570818	3.84	1.00	11.00	1.10	1	R
811	NV	DUCKWATER	SUGAR	511119	1.00	1.40	3.00	0.30	4	I
811	NV	DUCKWATER	TURK	550307	1.40	1.40	12.92	1.29	4	I
932	NV	DYER	KEPLER	570724	1.19	1.40	11.53	1.15	4	I
932	NV	DYER	WHITNEY	570923	0.19	1.18	10.97	1.10	2	R
110	NV	EAST ELY	APPLE-2	550505	3.12	1.63	7.46	0.75	9	R
110	NV	EAST ELY	DIABLO	570715	1.16	1.77	14.27	1.43	20	R
110	NV	EAST ELY	DOPPLER	570823	0.48	1.20	13.63	1.36	4	R
110	NV	EAST ELY	EASY	520507	4.65	1.12	3.94	0.39	4	R
110	NV	EAST ELY	NANCY	530324	1.00	1.41	6.85	0.69	19	R
110	NV	EAST ELY	OWENS	570725	0.34	1.47	7.80	0.78	5	R
110	NV	EAST ELY	SEDAN	620706	0.68	1.11	10.00	1.50	7	R
110	NV	EAST ELY	SHASTA	570818	3.07	1.55	12.83	1.28	11	R
110	NV	EAST ELY	SUGAR	511119	0.44	1.40	4.00	0.40	4	I
110	NV	EAST ELY	TURK	550307	1.37	1.65	14.55	1.46	9	R
110	NV	EAST ELY	UNCLE	511129	0.53	1.40	7.00	0.70	4	I
739	NV	EL DORADO	APPLE-2	550505	1.81	1.17	6.65	0.66	3	R
739	NV	EL DORADO	BOLTZMANN	570528	0.59	1.92	8.08	0.81	2	R
739	NV	EL DORADO	DES MOINES	620613	0.07	1.00	5.50	0.55	1	R
739	NV	EL DORADO	GEORGE	520601	0.73	1.00	6.00	0.60	1	R
739	NV	EL DORADO	HOW	520605	1.13	1.40	7.00	0.70	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
739	NV	EL DORADO	OWENS	570725	1.06	1.05	8.10	0.81	2	R
739	NV	EL DORADO	SEDAN	620706	0.40	1.17	9.50	1.42	2	R
739	NV	EL DORADO	SHASTA	570818	4.76	1.11	12.64	1.26	4	R
739	NV	EL DORADO	SUGAR	511119	1.14	1.40	4.00	0.40	4.	I
739	NV	EL DORADO	TURK	550307	0.06	1.00	14.00	1.40	1	R
746	NV	ELDRIDGE RANCH (MT.W	APPLE–2	550505	3.43	1.69	8.69	0.87	2	R
746	NV	ELDRIDGE RANCH (MT.W	DIABLO	570715	2.38	1.00	15.04	1.50	2	R
746	NV	ELDRIDGE RANCH (MT.W	GRABLE	530525	0.40	1.40	3.00	0.30	3	I
746	NV	ELDRIDGE RANCH (MT.W	HOOD	570705	0.13	1.40	9.00	0.90	4	I
746	NV	ELDRIDGE RANCH (MT.W	NANCY	530324	1.92	1.40	6.56	0.66	4	I
746	NV	ELDRIDGE RANCH (MT.W	NEWTON	570916	0.10	1.40	6.00	0.60	3	I
746	NV	ELDRIDGE RANCH (MT.W	SCHOONER	681208	0.06	1.32	9.00	0.90	2	R
746	NV	ELDRIDGE RANCH (MT.W	TURK	550307	0.52	1.40	15.49	1.55	3	I
746	NV	ELDRIDGE RANCH (MT.W	UNCLE	511129	0.40	1.40	7.76	0.78	4	I
741	NV	ELDRIDGE RANCH (NO.	APPLE–2	550505	0.56	1.40	7.66	0.77	4	I
741	NV	ELDRIDGE RANCH (NO.	GEORGE	520601	3.78	1.40	6.28	0.63	4	I
741	NV	ELDRIDGE RANCH (NO.	HOW	520605	1.00	1.40	7.34	0.73	4	I
741	NV	ELDRIDGE RANCH (NO.	OWENS	570725	1.26	1.40	9.00	0.90	4	I
741	NV	ELDRIDGE RANCH (NO.	SHASTA	570818	5.00	1.40	13.45	1.35	4	I
741	NV	ELDRIDGE RANCH (NO.	SUGAR	511119	1.04	1.40	5.00	0.50	4	I
773	NV	ELGIN	APPLE–1	550329	0.39	1.84	3.68	0.37	3	R
773	NV	ELGIN	HARRY	530519	21.61	1.40	2.76	0.28	4	I
773	NV	ELGIN	HORNET	550312	0.41	1.40	7.91	0.79	3	I
773	NV	ELGIN	MET	550415	47.47	1.32	3.00	0.30	5	R
773	NV	ELGIN	PRISCILLA	570624	1.20	1.62	6.35	0.64	12	R
773	NV	ELGIN	SIMON	530425	1.00	1.40	11.25	1.13	4	I
773	NV	ELGIN	SMALL BOY	620714	0.08	2.11	8.09	1.21	14	R
773	NV	ELGIN	SMOKY	570831	0.14	1.00	9.00	1.35	1	R
773	NV	ELGIN	TESLA	550301	0.62	1.40	6.86	0.69	4	I
31	NV	ELKO	GEORGE	520601	1.55	1.27	9.50	1.42	4	R
111	NV	ELY	APPLE–2	550505	3.12	1.63	7.43	0.74	9	R
111	NV	ELY	DIABLO	570715	1.22	1.70	14.24	1.42	23	R
111	NV	ELY	DOPPLER	570823	0.48	1.20	13.62	1.36	4	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
111	NV	ELY	EASY	520507	4.65	1.12	3.95	0.39	4	R
111	NV	ELY	NANCY	530324	0.92	1.49	6.85	0.69	21	R
111	NV	ELY	OWENS	570725	0.34	1.47	7.82	0.78	5	R
111	NV	ELY	SEDAN	620706	0.68	1.11	10.00	1.50	8	R
111	NV	ELY	SHASTA	570818	3.08	1.52	12.83	1.28	12	R
111	NV	ELY	SUGAR	511119	0.46	1.40	4.00	0.40	4	I
111	NV	ELY	TURK	550307	1.18	1.80	14.52	1.45	10	R
111	NV	ELY	UNCLE	511129	0.53	1.40	7.00	0.70	4	I
785	NV	ETNA	APPLE-1	550329	6.37	1.01	4.00	0.40	2	R
785	NV	ETNA	FOX	520525	2.93	1.14	7.88	0.79	4	I
785	NV	ETNA	HARRY	530519	3.07	1.71	3.14	0.31	4	I
785	NV	ETNA	HIDALGO	581005	0.07	1.40	14.15	1.41	4	I
785	NV	ETNA	HORNET	550312	0.62	1.45	8.52	0.85	4	I
785	NV	ETNA	MET	550415	6.42	1.60	4.00	0.40	3	R
785	NV	ETNA	SIMON	530425	0.49	1.03	12.90	1.29	4	I
785	NV	ETNA	SMALL BOY	620714	0.36	1.00	8.96	1.34	1	R
785	NV	ETNA	SMOKY	570831	0.09	1.00	9.00	1.35	1	R
792	NV	EUREKA	APPLE-2	550505	0.57	1.00	7.05	0.70	1	R
792	NV	EUREKA	BOLTZMANN	570528	0.94	1.22	8.39	0.84	3	R
792	NV	EUREKA	GEORGE	520601	2.63	1.00	6.47	0.65	1	R
792	NV	EUREKA	HOW	520605	1.00	1.40	7.00	0.70	4	I
792	NV	EUREKA	OWENS	570725	0.42	1.64	8.11	0.81	5	R
792	NV	EUREKA	SCHOONER	681208	0.06	1.40	13.00	1.95	2	R
792	NV	EUREKA	SHASTA	570818	5.82	1.53	12.90	1.29	10	R
792	NV	EUREKA	SUGAR	511119	1.24	1.40	4.00	0.40	4	I
813	NV	FALLINI RANCH	ANTLER	610915	0.06	2.53	4.00	0.60	2	R
813	NV	FALLINI RANCH	APPLE-2	550505	4.08	1.05	3.79	0.38	4	R
813	NV	FALLINI RANCH	BANEBERRY	701218	0.12	1.79	8.23	0.82	19	R
813	NV	FALLINI RANCH	EEL	620519	0.11	1.64	2.50	0.25	5	R
813	NV	FALLINI RANCH	GALILEO	570902	1.43	1.12	12.08	1.21	2	R
813	NV	FALLINI RANCH	GEORGE	520601	1.45	1.40	4.08	0.41	4	I
813	NV	FALLINI RANCH	HOW	520605	1.58	1.40	3.19	0.32	4	I
813	NV	FALLINI RANCH	JOHNIE BOY	620711	1.00	1.40	2.64	0.26	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
813	NV	FALLINI RANCH	LEA	581013	0.34	1.00	10.78	1.08	2	R
813	NV	FALLINI RANCH	NANCY	530324	0.20	1.00	4.25	0.43	1	R
813	NV	FALLINI RANCH	OWENS	570725	0.60	1.00	4.18	0.42	1	R
813	NV	FALLINI RANCH	SCHOONER	681208	0.13	2.20	4.03	0.40	170	R
813	NV	FALLINI RANCH	SEDAN	620706	1.04	1.74	4.68	0.47	18	R
813	NV	FALLINI RANCH	SHASTA	570818	14.94	1.25	5.34	0.53	11	R
813	NV	FALLINI RANCH	SUGAR	511119	1.09	1.40	2.00	0.20	4	I
813	NV	FALLINI RANCH	TURK	550307	6.73	1.40	10.43	1.04	4	I
813	NV	FALLINI RANCH	UNCLE	511129	0.40	1.40	3.21	0.32	3	I
813	NV	FALLINI RANCH	WHITNEY	570923	0.08	1.40	11.00	1.65	2	R
5	NV	FALLON	BOLTZMANN	570528	3.69	1.32	11.78	1.18	10	R
5	NV	FALLON	KEPLER	570724	1.45	1.40	15.00	1.50	4	I
958	NV	FARRIER	ANNIE	530317	4.32	1.40	2.73	0.27	4	I
958	NV	FARRIER	ESS	550323	1.03	1.40	6.27	0.63	4	I
958	NV	FARRIER	HARRY	530519	4.76	1.40	1.71	0.17	4	I
958	NV	FARRIER	HORNET	550312	4.06	1.40	6.79	0.68	4	I
958	NV	FARRIER	SIMON	530425	17.81	1.40	3.91	0.39	4	I
958	NV	FARRIER	SMALL BOY	620714	0.11	1.00	5.00	0.50	1	R
958	NV	FARRIER	SMOKY	570831	2.13	1.21	5.34	0.53	8	R
958	NV	FARRIER	TURK	550307	0.42	1.40	9.91	0.99	3	I
958	NV	FARRIER	ZUCCHINI	550515	4.34	1.40	2.34	0.23	4	I
594	NV	FERNLEY	BOLTZMANN	570528	3.13	1.00	13.00	1.30	1	R
814	NV	FISH CREEK RANCH	APPLE-2	550505	2.96	1.17	6.25	0.63	2	R
814	NV	FISH CREEK RANCH	BOLTZMANN	570528	0.77	1.40	7.43	0.74	4	I
814	NV	FISH CREEK RANCH	GEORGE	520601	2.19	1.40	5.85	0.58	4	I
814	NV	FISH CREEK RANCH	HOW	520605	1.46	1.40	6.40	0.64	4	I
814	NV	FISH CREEK RANCH	LEA	581013	0.07	1.40	13.00	1.30	4	I
814	NV	FISH CREEK RANCH	OWENS	570725	1.05	1.40	7.28	0.73	4	I
814	NV	FISH CREEK RANCH	SEDAN	620706	0.51	1.40	8.00	0.80	3	I
814	NV	FISH CREEK RANCH	SHASTA	570818	3.43	1.39	11.83	1.18	3	R
814	NV	FISH CREEK RANCH	SUGAR	511119	1.23	1.40	4.00	0.40	4	I
83	NV	GABBS	BOLTZMANN	570528	1.31	1.40	7.38	0.74	4	I
83	NV	GABBS	KEPLER	570724	5.17	1.40	15.00	1.50	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
83	NV	GABBS	WHITNEY	570923	1.01	1.40	16.55	1.65	4	I
815	NV	GALT	ANNIE	530317	13.96	1.40	2.13	0.21	4	I
815	NV	GALT	ESS	550323	0.69	1.40	6.78	0.68	3	I
815	NV	GALT	HARRY	530519	76.37	1.40	2.01	0.20	4	I
815	NV	GALT	HORNET	550312	0.68	1.40	7.05	0.71	4	I
815	NV	GALT	PRISCILLA	570624	1.28	1.40	5.78	0.58	4	I
815	NV	GALT	SIMON	530425	3.53	1.40	6.56	0.66	4	I
815	NV	GALT	SMOKY	570831	83.93	1.38	4.34	0.43	11	R
815	NV	GALT	TESLA	550301	0.91	1.80	5.35	0.53	2	R
815	NV	GALT	TURK	550307	0.46	1.40	10.12	1.01	3	I
816	NV	GARNET	BADGER	530418	2.93	1.62	2.86	0.29	12	R
816	NV	GARNET	CLIMAX	530604	0.43	2.13	5.91	0.59	3	R
816	NV	GARNET	MOTH	550222	2.56	2.75	2.00	0.20	12	R
816	NV	GARNET	ZUCCHINI	550515	1.55	1.18	3.41	0.34	7	R
817	NV	GEYSER MAINTENANCE S	APPLE-2	550505	1.12	1.18	7.50	0.75	3	R
817	NV	GEYSER MAINTENANCE S	DIABLO	570715	4.24	1.63	12.10	1.21	2	R
817	NV	GEYSER MAINTENANCE S	DOPPLER	570823	0.43	1.67	8.76	0.88	3	R
817	NV	GEYSER MAINTENANCE S	EASY	520507	7.89	1.00	2.72	0.27	1	R
817	NV	GEYSER MAINTENANCE S	GRABLE	530525	0.31	1.16	2.14	0.21	2	R
817	NV	GEYSER MAINTENANCE S	HOOD	570705	0.32	1.12	7.81	0.78	5	R
817	NV	GEYSER MAINTENANCE S	NANCY	530324	7.83	1.61	5.44	0.54	8	R
817	NV	GEYSER MAINTENANCE S	SCHOONER	681208	0.54	1.61	7.08	0.71	222	R
817	NV	GEYSER MAINTENANCE S	SEDAN	620706	0.52	1.40	7.63	0.76	3	I
817	NV	GEYSER MAINTENANCE S	SMALL BOY	620714	0.08	1.38	12.00	1.80	3	R
817	NV	GEYSER MAINTENANCE S	TURK	550307	1.00	1.40	14.10	1.41	4	I
817	NV	GEYSER MAINTENANCE S	UNCLE	511129	0.40	1.40	6.14	0.61	4	I
818	NV	GEYSER RANCH	APPLE-2	550505	0.92	1.00	7.50	0.75	2	R
818	NV	GEYSER RANCH	DIABLO	570715	5.35	1.61	12.16	1.22	4	R
818	NV	GEYSER RANCH	DOPPLER	570823	0.88	1.67	8.85	0.89	4	I
818	NV	GEYSER RANCH	EASY	520507	7.89	1.00	2.80	0.28	1	R
818	NV	GEYSER RANCH	GRABLE	530525	0.28	1.20	2.25	0.23	3	R
818	NV	GEYSER RANCH	HOOD	570705	0.26	1.00	7.80	0.78	1	R
818	NV	GEYSER RANCH	NANCY	530324	17.72	1.24	5.48	0.55	8	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
818	NV	GEYSER RANCH	SCHOONER	681208	0.20	1.84	7.10	0.71	5	R
818	NV	GEYSER RANCH	SEDAN	620706	0.52	1.40	7.70	0.77	3	I
818	NV	GEYSER RANCH	SMALL BOY	620714	0.06	1.28	11.88	1.78	3	R
818	NV	GEYSER RANCH	TURK	550307	1.00	1.40	14.11	1.41	4	I
818	NV	GEYSER RANCH	UNCLE	511129	0.40	1.40	6.28	0.63	4	I
819	NV	GLENDALE	CLIMAX	530604	0.51	1.65	4.64	0.46	8	R
819	NV	GLENDALE	ESS	550323	0.49	2.01	6.42	0.64	3	R
819	NV	GLENDALE	HORNET	550312	2.26	1.94	7.00	0.70	10	R
819	NV	GLENDALE	SIMON	530425	0.08	1.00	4.25	0.43	1	R
819	NV	GLENDALE	SMOKY	570831	1.89	1.12	7.90	0.79	2	R
819	NV	GLENDALE	ZUCCHINI	550515	5.49	1.48	2.94	0.29	8	R
821	NV	GOLD POINT	KEPLER	570724	1.85	1.40	7.17	0.72	4	I
821	NV	GOLD POINT	TURK	550307	2.33	1.40	10.18	1.02	4	I
821	NV	GOLD POINT	WHEELER	570906	0.19	1.02	8.00	1.20	2	R
820	NV	GOLDFIELD	BOLTZMANN	570528	0.19	2.35	5.00	0.50	3	R
820	NV	GOLDFIELD	KEPLER	570724	0.44	1.00	8.68	0.87	1	R
820	NV	GOLDFIELD	SANFORD	581026	0.35	1.34	14.00	1.40	7	R
820	NV	GOLDFIELD	WHEELER	570906	0.16	3.36	6.00	0.90	5	R
820	NV	GOLDFIELD	WHITNEY	570923	9.76	1.26	9.18	0.92	19	R
823	NV	GROOM MINE	APPLE-1	550329	0.71	1.61	1.06	0.11	4	R
823	NV	GROOM MINE	BANDICOOT	621019	0.06	1.40	1.27	0.13	4	I
823	NV	GROOM MINE	DIABLO	570715	22.91	2.17	3.52	0.35	4	I
823	NV	GROOM MINE	DOPPLER	570823	0.10	1.40	1.20	0.12	4	I
823	NV	GROOM MINE	FOX	520525	23.41	1.29	2.57	0.26	38	R
823	NV	GROOM MINE	GEORGE	520601	0.88	2.09	1.00	0.10	2	R
823	NV	GROOM MINE	GRABLE	530525	0.09	1.91	1.00	0.10	41	R
823	NV	GROOM MINE	HARRY	530519	5.13	1.31	1.20	0.18	41	R
823	NV	GROOM MINE	NEWTON	570916	0.21	1.40	1.00	0.10	4	I
823	NV	GROOM MINE	PIN STRIPE	660425	0.12	1.40	2.30	0.23	4	I
823	NV	GROOM MINE	POST	550409	0.18	1.00	5.06	0.51	1	R
823	NV	GROOM MINE	RIO ARRIBA	581018	0.28	1.40	1.00	0.10	4	I
823	NV	GROOM MINE	SIMON	530425	0.07	1.00	7.00	1.05	1	R
823	NV	GROOM MINE	SUGAR	511119	0.43	1.40	1.00	0.10	3	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
823	NV	GROOM MINE	TESLA	550301	0.41	1.40	3.05	0.30	4	I
823	NV	GROOM MINE	UNCLE	511129	1.16	1.40	1.00	0.10	4	I
823	NV	GROOM MINE	WHITNEY	570923	1.76	1.40	1.34	0.13	3	I
823	NV	GROOM MINE	WILSON	570618	0.35	1.35	5.37	0.54	12.	R
823	NV	GROOM MINE	WRANGELL	581022	0.07	1.40	4.04	0.40	4	I
824	NV	GUBLER RANCH	APPLE-2	550505	1.37	1.38	6.43	0.64	4	I
824	NV	GUBLER RANCH	DIABLO	570715	5.25	1.05	11.76	1.18	2	R
824	NV	GUBLER RANCH	DOPPLER	570823	0.95	1.40	10.11	1.01	4	I
824	NV	GUBLER RANCH	EASY	520507	4.75	1.40	3.00	0.30	4	I
824	NV	GUBLER RANCH	GRABLE	530525	0.67	1.70	3.00	0.30	4	I
824	NV	GUBLER RANCH	HOOD	570705	0.11	1.23	7.12	0.71	2	R
824	NV	GUBLER RANCH	NANCY	530324	2.31	1.32	5.67	0.57	2	R
824	NV	GUBLER RANCH	OWENS	570725	0.19	1.30	6.00	0.60	4	I
824	NV	GUBLER RANCH	SCHOONER	681208	0.68	1.00	6.62	0.66	1	R
824	NV	GUBLER RANCH	SEDAN	620706	1.10	1.00	7.45	0.75	1	R
824	NV	GUBLER RANCH	TURK	550307	1.64	1.40	13.65	1.37	4	I
824	NV	GUBLER RANCH	UNCLE	511129	1.00	1.40	6.00	0.60	4	I
74	NV	HAWTHORNE	BOLTZMANN	570528	3.74	1.00	9.00	0.90	1	R
74	NV	HAWTHORNE	KEPLER	570724	1.95	1.40	15.00	1.50	4	I
74	NV	HAWTHORNE	WHITNEY	570923	1.00	1.40	15.25	1.52	4	I
10	NV	HENDERSON	BADGER	530418	0.59	1.80	3.00	0.30	4	I
10	NV	HENDERSON	BEE	550322	0.07	2.03	3.54	0.35	6	R
825	NV	HIKO	APPLE-1	550329	0.88	1.47	2.81	0.28	6	R
825	NV	HIKO	BANDICOOT	621019	0.07	1.00	3.00	0.30	1	R
825	NV	HIKO	DIABLO	570715	1.04	1.22	6.09	0.61	5	R
825	NV	HIKO	EASY	520507	0.74	1.40	0.76	0.08	4	I
825	NV	HIKO	FOX	520525	16.83	1.00	6.02	0.60	1	R
825	NV	HIKO	HARRY	530519	2.16	1.23	2.49	0.25	4	R
825	NV	HIKO	MET	550415	0.09	1.46	4.50	0.45	2	R
825	NV	HIKO	PIN STRIPE	660425	0.15	1.64	4.19	0.42	74	R
825	NV	HIKO	TESLA	550301	0.78	1.40	6.00	0.60	4	I
825	NV	HIKO	TURK	550307	0.44	1.40	10.31	1.03	3	I
825	NV	HIKO	UNCLE	511129	0.48	1.40	3.00	0.30	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
825	NV	HIKO	WILSON	570618	0.16	1.32	7.50	0.75	3	R
826	NV	HOLLINGER'S RANCH	FOX	520525	7.06	1.40	10.88	1.09	4	I
826	NV	HOLLINGER'S RANCH	NEWTON	570916	0.10	1.40	4.19	0.42	3	I
826	NV	HOLLINGER'S RANCH	SMALL BOY	620714	0.12	1.40	12.51	1.88	4.	I
827	NV	HOOVER DAM	BADGER	530418	0.76	1.00	3.50	0.35	2	R
827	NV	HOOVER DAM	BEE	550322	0.28	1.01	3.98	0.40	2	R
828	NV	HOYA	ANNIE	530317	10.83	1.40	2.30	0.23	4	I
828	NV	HOYA	ESS	550323	0.85	1.40	6.37	0.64	4	I
828	NV	HOYA	HARRY	530519	44.26	1.40	1.80	0.18	4	I
828	NV	HOYA	HORNET	550312	2.36	1.40	6.91	0.69	4	I
828	NV	HOYA	SIMON	530425	4.74	1.40	4.45	0.45	4	I
828	NV	HOYA	SMOKY	570831	29.35	1.90	4.68	0.47	8	R
828	NV	HOYA	TESLA	550301	1.35	1.73	5.00	0.50	2	R
828	NV	HOYA	TURK	550307	0.51	1.40	10.09	1.01	4	I
828	NV	HOYA	ZUCCHINI	550515	1.05	1.40	2.08	0.21	4	I
829	NV	INDIAN CREEK RANCH	APPLE-2	550505	8.57	1.30	5.84	0.58	4	R
829	NV	INDIAN CREEK RANCH	DES MOINES	620613	0.08	1.00	4.66	0.47	1	R
829	NV	INDIAN CREEK RANCH	GEORGE	520601	6.76	1.40	4.57	0.46	4	I
829	NV	INDIAN CREEK RANCH	HOW	520605	1.31	1.40	5.36	0.54	4	I
829	NV	INDIAN CREEK RANCH	NANCY	530324	0.71	1.00	6.59	0.66	1	R
829	NV	INDIAN CREEK RANCH	OWENS	570725	1.00	1.40	7.16	0.72	4	I
829	NV	INDIAN CREEK RANCH	SEDAN	620706	0.68	1.40	7.89	0.79	4	I
829	NV	INDIAN CREEK RANCH	SHASTA	570818	4.15	1.00	11.27	1.13	1	R
829	NV	INDIAN CREEK RANCH	SUGAR	511119	1.00	1.40	3.36	0.34	4	I
829	NV	INDIAN CREEK RANCH	TURK	550307	0.85	1.40	13.10	1.31	4	I
830	NV	INDIAN SPRINGS	PIKE	640313	0.07	1.54	2.55	0.25	30	R
830	NV	INDIAN SPRINGS	POST	550409	0.15	1.00	10.00	1.00	1	R
830	NV	INDIAN SPRINGS	SMOKY	570831	0.20	1.25	9.00	1.35	4	R
830	NV	INDIAN SPRINGS	ZUCCHINI	550515	0.11	1.00	2.50	0.25	1	R
831	NV	IONE	BOLTZMANN	570528	2.80	1.40	6.90	0.69	4	I
831	NV	IONE	KEPLER	570724	0.74	1.40	15.00	1.50	4	I
831	NV	IONE	WHITNEY	570923	1.36	1.40	16.81	1.68	4	I
832	NV	JOHNNIE	BANDICOOT	621019	0.67	1.38	2.96	0.30	14	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
832	NV	JOHNNIE	POST	550409	0.32	1.40	11.61	1.16	3	I
832	NV	JOHNNIE	RAY	530411	0.06	1.00	2.25	0.22	1	R
2011	NV	JOHNNIES WATER	APPLE-1	550329	0.41	1.40	1.71	0.17	4	I
2011	NV	JOHNNIES WATER	APPLE-2	550505	39.81	1.40	1.23	0.12	4	I
2011	NV	JOHNNIES WATER	BANDICOOT	621019	0.48	1.40	1.42	0.14	4	I
2011	NV	JOHNNIES WATER	BANEBERRY	701218	0.74	1.40	6.00	0.60	4	I
2011	NV	JOHNNIES WATER	BOLTZMANN	570528	2.80	1.40	1.13	0.11	3	I
2011	NV	JOHNNIES WATER	DES MOINES	620613	32.44	1.40	0.50	0.05	4	I
2011	NV	JOHNNIES WATER	DIABLO*	570715	(deleted)					
2011	NV	JOHNNIES WATER	EASY	520507	9.47	1.40	0.63	0.06	4	I
2011	NV	JOHNNIES WATER	EEL	620519	2.27	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	FOX	520525	9.25	1.00	4.38	0.44	1	R
2011	NV	JOHNNIES WATER	FRANKLIN P	570830	0.12	1.40	1.65	0.17	3	I
2011	NV	JOHNNIES WATER	GEORGE	520601	9.41	1.40	1.53	0.15	4	I
2011	NV	JOHNNIES WATER	GRABLE	530525	0.51	1.40	1.00	0.10	3	I
2011	NV	JOHNNIES WATER	HOOD	570705	0.12	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	HOW	520605	6.84	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	LEA	581013	0.16	1.40	3.34	0.33	4	I
2011	NV	JOHNNIES WATER	NANCY	530324	14.78	1.40	1.26	0.13	4	I
2011	NV	JOHNNIES WATER	OWENS	570725	0.21	1.40	1.64	0.16	4	I
2011	NV	JOHNNIES WATER	PLATTE	620414	0.98	1.40	1.05	0.10	4	I
2011	NV	JOHNNIES WATER	POST	550409	0.08	1.40	4.42	0.44	3	I
2011	NV	JOHNNIES WATER	RIO ARRIBA	581018	0.07	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	SEDAN	620706	3.77	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	SHASTA	570818	15.30	1.13	1.83	0.18	3	R
2011	NV	JOHNNIES WATER	STOKES	570807	0.10	1.40	0.92	0.09	4	I
2011	NV	JOHNNIES WATER	SUGAR	511119	8.11	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	TURK	550307	13.84	1.40	6.51	0.65	4	I
2011	NV	JOHNNIES WATER	UNCLE	511129	10.27	1.40	1.00	0.10	4	I
2011	NV	JOHNNIES WATER	VESTA	581017	0.08	1.40	2.46	0.25	4	I
2011	NV	JOHNNIES WATER	WHITNEY	570923	7.98	1.40	2.73	0.27	4	I
2011	NV	JOHNNIES WATER	WILSON	570618	0.53	1.40	7.00	1.05	4	I
833	NV	KIMBERLY	APPLE-2	550505	4.00	1.63	7.18	0.72	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
833	NV	KIMBERLY	DIABLO	570715	0.76	1.26	13.97	1.40	6	R
833	NV	KIMBERLY	DOPPLER	570823	0.82	1.46	13.68	1.37	4	I
833	NV	KIMBERLY	EASY	520507	4.01	1.12	4.00	0.40	3	I
833	NV	KIMBERLY	NANCY	530324	0.54	1.49	6.90	0.69	4	I
833	NV	KIMBERLY	OWENS	570725	0.33	1.00	8.00	0.80	1	R
833	NV	KIMBERLY	SHASTA	570818	1.58	1.52	12.85	1.28	4	I
833	NV	KIMBERLY	SUGAR	511119	0.74	1.40	4.00	0.40	4	I
833	NV	KIMBERLY	TURK	550307	1.04	1.80	14.32	1.43	4	I
833	NV	KIMBERLY	UNCLE	511129	0.45	1.40	7.00	0.70	4	I
834	NV	KYLE	APPLE-1	550329	0.20	1.84	4.00	0.40	4	I
834	NV	KYLE	HARRY	530519	30.57	1.40	2.78	0.28	4	I
834	NV	KYLE	MET	550415	1.91	3.11	3.00	0.30	6	R
834	NV	KYLE	MORGAN	571007	0.56	1.40	3.30	0.33	4	I
834	NV	KYLE	PRISCILLA	570624	2.45	1.04	6.25	0.62	4	R
834	NV	KYLE	SIMON	530425	1.07	1.40	11.45	1.14	4	I
834	NV	KYLE	SMALL BOY	620714	0.15	1.00	8.00	1.20	1	R
834	NV	KYLE	SMOKY	570831	0.10	1.00	9.00	1.35	1	R
834	NV	KYLE	TESLA	550301	0.79	1.40	7.10	0.71	4	I
835	NV	LABOARD RANCH	BOLTZMANN	570528	8.93	1.40	7.15	0.72	4	I
45	NV	LAGES STATION	OWENS	570725	0.87	1.40	13.00	1.30	4	I
836	NV	LAKE MEAD BASE	BADGER	530418	0.78	1.43	3.22	0.32	4	I
836	NV	LAKE MEAD BASE	BEE	550322	0.45	1.43	3.89	0.39	3	I
837	NV	LANE CITY	APPLE-2	550505	3.95	1.63	7.39	0.74	4	I
837	NV	LANE CITY	DIABLO	570715	1.48	1.00	14.29	1.43	2	R
837	NV	LANE CITY	DOPPLER	570823	1.78	1.66	13.92	1.39	2	R
837	NV	LANE CITY	EASY	520507	4.01	1.12	3.99	0.40	4	I
837	NV	LANE CITY	NANCY	530324	0.53	1.45	6.92	0.69	4	I
837	NV	LANE CITY	OWENS	570725	0.49	1.58	7.97	0.80	4	I
837	NV	LANE CITY	SEDAN	620706	0.65	1.00	10.00	1.50	1	R
837	NV	LANE CITY	SHASTA	570818	1.45	1.54	12.96	1.30	4	I
837	NV	LANE CITY	SUGAR	511119	0.53	1.40	4.00	0.40	4	I
837	NV	LANE CITY	TURK	550307	1.00	1.73	14.56	1.46	4	I
837	NV	LANE CITY	UNCLE	511129	0.49	1.40	7.00	0.70	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
12	NV	LAS VEGAS (JUNCTION	APPLE–1	550329	0.33	1.40	18.00	2.70	1	X
12	NV	LAS VEGAS (JUNCTION	BADGER	530418	0.09	3.44	2.91	0.29	20	R
12	NV	LAS VEGAS (JUNCTION	BANDICOOT	621019	0.08	1.00	5.00	0.75	1	R
12	NV	LAS VEGAS (JUNCTION	BEE	550322	0.58	2.79	2.93	0.29	57	R
12	NV	LAS VEGAS (JUNCTION	HORNET*	550312	0.47	1.00	5.50	0.55	1	R
12	NV	LAS VEGAS (JUNCTION	POST	550409	0.12	1.40	18.00	2.70	1	X
12	NV	LAS VEGAS (JUNCTION	SANFORD	581026	0.20	1.40	24.00	3.60	1	X
12	NV	LAS VEGAS (JUNCTION	SOCORRO	581022	0.19	1.40	24.00	3.60	1	X
838	NV	LATHROP WELLS	BANDICOOT	621019	0.17	2.82	2.50	0.25	22	R
838	NV	LATHROP WELLS	POST	550409	0.66	1.00	9.81	0.98	1	R
838	NV	LATHROP WELLS	QUAY	581010	0.06	1.50	3.06	0.31	10	R
838	NV	LATHROP WELLS	SIMON	530425	0.10	1.40	5.02	0.50	4	I
838	NV	LATHROP WELLS	WHITNEY	570923	0.40	1.00	10.00	1.50	1	R
838	NV	LATHROP WELLS	WILSON	570618	0.41	1.02	12.00	1.80	3	R
839	NV	LEHMAN CAVES	APPLE–2	550505	1.01	1.40	8.67	0.87	4	I
839	NV	LEHMAN CAVES	DIABLO	570715	4.81	1.18	14.59	1.46	4	I
839	NV	LEHMAN CAVES	DOPPLER	570823	0.11	1.40	11.18	1.12	4	I
839	NV	LEHMAN CAVES	HOOD	570705	0.42	1.40	8.95	0.89	4	I
839	NV	LEHMAN CAVES	NANCY	530324	5.97	1.40	6.14	0.61	4	I
839	NV	LEHMAN CAVES	NEWTON	570916	0.10	1.40	5.74	0.57	4	I
839	NV	LEHMAN CAVES	TURK	550307	0.95	1.40	15.34	1.53	4	I
839	NV	LEHMAN CAVES	UNCLE	511129	0.40	1.40	7.11	0.71	4	I
840	NV	LEITH	HARRY	530519	51.32	1.40	2.63	0.26	4	I
840	NV	LEITH	MORGAN	571007	0.10	1.00	3.89	0.39	1	R
840	NV	LEITH	PRISCILLA	570624	2.87	1.00	5.96	0.60	2	R
840	NV	LEITH	SIMON	530425	1.42	1.40	10.75	1.08	4	I
840	NV	LEITH	SMALL BOY	620714	0.22	1.47	8.00	1.20	2	R
840	NV	LEITH	SMOKY	570831	0.38	2.41	9.00	1.35	2	R
840	NV	LEITH	TESLA	550301	1.73	1.40	6.81	0.68	4	I
841	NV	LIDA	KEPLER	570724	3.35	1.01	8.00	0.80	2	R
841	NV	LIDA	WHEELER	570906	0.13	1.56	9.00	1.35	2	R
841	NV	LIDA	WHITNEY	570923	2.18	1.40	9.00	1.35	3	R
842	NV	LIDA JUNCTION	GALILEO	570902	0.09	1.40	17.00	2.55	3	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
842	NV	LIDA JUNCTION	KEPLER	570724	9.59	1.13	6.84	0.68	3	R
842	NV	LIDA JUNCTION	WHEELER	570906	0.13	1.83	7.00	1.05	9	R
842	NV	LIDA JUNCTION	WHITNEY	570923	0.61	2.48	7.98	0.80	8	R
843	NV	LINCOLN MINE	APPLE-1	550329	0.15	1.35	2.07	0.21	13	R
843	NV	LINCOLN MINE	APPLE-2	550505	0.15	2.60	2.00	0.20	4	R
843	NV	LINCOLN MINE	DIABLO	570715	12.03	1.80	5.08	0.51	44	R
843	NV	LINCOLN MINE	EASY	520507	11.89	1.50	0.75	0.07	103	R
843	NV	LINCOLN MINE	FOX	520525	1.01	1.21	5.72	0.57	4	R
843	NV	LINCOLN MINE	GRABLE	530525	0.41	1.49	1.00	0.10	37	R
843	NV	LINCOLN MINE	HOOD	570705	0.47	1.56	2.00	0.20	17	R
843	NV	LINCOLN MINE	HOW*	520605	(deleted)					
843	NV	LINCOLN MINE	NANCY	530324	28.80	1.56	1.75	0.17	120	R
843	NV	LINCOLN MINE	POST	550409	0.08	1.85	11.00	1.10	5	R
843	NV	LINCOLN MINE	SHASTA	570818	0.18	1.37	10.00	1.50	2	R
843	NV	LINCOLN MINE	TURK	550307	0.72	1.32	9.10	0.91	9	R
843	NV	LINCOLN MINE	UNCLE	511129	10.71	1.40	2.00	0.20	4	I
844	NV	LOCKES	APPLE-2	550505	13.71	1.08	4.87	0.49	7	R
844	NV	LOCKES	BOLTZMANN	570528	0.17	1.00	6.00	0.90	1	R
844	NV	LOCKES	DES MOINES	620613	0.45	1.21	3.46	0.35	3	R
844	NV	LOCKES	DIABLO	570715	0.80	2.07	10.00	1.00	2	R
844	NV	LOCKES	GALILEO	570902	1.59	1.00	20.00	3.00	2	R
844	NV	LOCKES	GEORGE	520601	9.62	1.53	3.17	0.32	4	R
844	NV	LOCKES	GRABLE	530525	0.21	1.00	4.00	0.40	1	R
844	NV	LOCKES	HOW	520605	1.23	1.25	4.00	0.40	2	R
844	NV	LOCKES	JOHNIE BOY	620711	0.36	2.32	3.64	0.36	2	R
844	NV	LOCKES	NANCY	530324	0.81	1.40	5.03	0.50	4	I
844	NV	LOCKES	OWENS	570725	0.89	1.07	5.13	0.51	2	R
844	NV	LOCKES	SCHOONER	681208	0.31	1.33	8.00	1.20	44	R
844	NV	LOCKES	SEDAN	620706	1.81	1.74	5.83	0.58	11	R
844	NV	LOCKES	SHASTA	570818	3.87	1.18	8.07	0.81	7	R
844	NV	LOCKES	SUGAR	511119	1.22	1.40	3.00	0.30	4	I
844	NV	LOCKES	TURK	550307	4.87	1.59	12.00	1.20	7	R
844	NV	LOCKES	UNCLE	511129	0.44	1.40	5.00	0.50	3	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
845	NV	LOGANDALE	BADGER	530418	0.13	2.11	3.00	0.30	3	R
845	NV	LOGANDALE	CLIMAX	530604	0.67	1.15	5.15	0.51	3	R
845	NV	LOGANDALE	HORNET	550312	0.25	1.75	7.00	0.70	3	R
845	NV	LOGANDALE	SMOKY	570831	0.69	1.52	8.76	0.88	3	R
845	NV	LOGANDALE	ZUCCHINI	550515	5.56	1.22	3.27	0.33	2	R
103	NV	LUND	APPLE-2	550505	5.44	1.38	6.57	0.66	3	R
103	NV	LUND	BOLTZMANN	570528	0.10	1.47	7.00	1.05	2	R
103	NV	LUND	DIABLO	570715	3.72	1.30	12.13	1.21	9	R
103	NV	LUND	EASY	520507	4.31	1.40	3.09	0.31	4	I
103	NV	LUND	GRABLE	530525	0.10	1.70	3.00	0.30	2	R
103	NV	LUND	HOOD	570705	0.12	1.49	7.58	0.76	4	R
103	NV	LUND	NANCY	530324	1.62	1.36	5.90	0.59	8	R
103	NV	LUND	OWENS	570725	0.28	1.30	6.00	0.60	2	R
103	NV	LUND	SCHOONER	681208	0.49	1.22	9.80	1.47	91	R
103	NV	LUND	SEDAN	620706	1.43	1.40	7.80	0.78	10	R
103	NV	LUND	SHASTA	570818	3.87	1.00	11.00	1.10	1	R
103	NV	LUND	SUGAR	511119	0.42	1.40	3.00	0.30	3	I
103	NV	LUND	TURK	550307	3.32	1.00	13.88	1.39	1	R
103	NV	LUND	UNCLE	511129	1.00	1.40	6.34	0.63	4	I
847	NV	LUNING	BOLTZMANN	570528	0.63	1.40	7.14	0.71	3	I
847	NV	LUNING	FIZEAU	570914	0.53	1.39	9.08	0.91	5	R
847	NV	LUNING	KEPLER	570724	5.52	1.40	15.00	1.50	4	I
847	NV	LUNING	WHITNEY	570923	4.03	1.40	14.60	1.46	4	I
848	NV	M & M MINE	APPLE-2	550505	0.88	2.37	4.76	0.48	4	I
848	NV	M & M MINE	BANEBERRY	701218	0.15	1.61	8.08	0.81	4	I
848	NV	M & M MINE	BOLTZMANN	570528	63.54	1.31	4.38	0.44	3	R
848	NV	M & M MINE	GALILEO	570902	2.68	1.27	12.00	1.20	4	R
848	NV	M & M MINE	GEORGE	520601	0.45	1.40	5.56	0.56	4	I
848	NV	M & M MINE	HOW	520605	8.99	1.35	4.00	0.40	4	I
848	NV	M & M MINE	JOHNIE BOY	620711	0.11	1.62	2.57	0.26	9	R
848	NV	M & M MINE	LEA	581013	0.12	1.52	11.00	1.10	4	I
848	NV	M & M MINE	OWENS	570725	0.21	1.00	4.50	0.45	1	R
848	NV	M & M MINE	PALANQUIN	650414	0.20	2.37	8.16	0.82	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
848	NV	M & M MINE	SCHOONER	681208	0.06	1.66	4.02	0.40	4	I
848	NV	M & M MINE	SUGAR	511119	0.44	1.40	2.00	0.20	4	I
848	NV	M & M MINE	TURK	550307	0.44	1.24	10.77	1.08	3	I
849	NV	MANHATTAN	BOLTZMANN	570528	1.89	1.29	5.35	0.53	9	R
849	NV	MANHATTAN	FIZEAU	570914	0.57	1.25	8.42	0.84	2	R
849	NV	MANHATTAN	PALANQUIN	650414	0.16	1.00	9.01	0.90	1	R
849	NV	MANHATTAN	SCHOONER	681208	0.27	1.61	4.50	0.68	2	R
849	NV	MANHATTAN	WHITNEY	570923	0.78	1.40	13.69	1.37	4	I
112	NV	MCGILL	APPLE-2	550505	2.68	2.05	8.10	0.81	4	I
112	NV	MCGILL	DIABLO	570715	0.90	1.24	15.37	1.54	6	R
112	NV	MCGILL	DOPPLER	570823	0.52	1.40	14.00	1.40	4	I
112	NV	MCGILL	NANCY	530324	0.44	1.40	7.28	0.73	4	I
112	NV	MCGILL	OWENS	570725	0.25	1.52	8.62	0.86	2	R
112	NV	MCGILL	SCHOONER	681208	0.15	1.00	9.00	1.35	1	R
112	NV	MCGILL	SHASTA	570818	1.45	1.40	13.46	1.35	4	I
112	NV	MCGILL	SUGAR	511119	0.40	1.40	4.00	0.40	3	I
112	NV	MCGILL	TURK	550307	0.59	1.00	15.03	1.50	1	R
112	NV	MCGILL	UNCLE	511129	0.42	1.40	7.84	0.78	4	I
2008	NV	MELLAN	APPLE-2	550505	1.61	1.40	4.01	0.40	4	I
2008	NV	MELLAN	BANEBERRY	701218	1.24	1.40	6.63	0.66	4	I
2008	NV	MELLAN	BOLTZMANN	570528	0.37	1.35	2.76	0.28	5	R
2008	NV	MELLAN	CABRIOLET	680126	0.24	1.40	1.16	0.12	4	I
2008	NV	MELLAN	DANNY BOY	620305	0.06	1.98	2.00	0.20	12	R
2008	NV	MELLAN	FIZEAU	570914	11.43	1.91	4.27	0.43	14	R
2008	NV	MELLAN	GALILEO	570902	2.95	1.67	6.43	0.64	7	R
2008	NV	MELLAN	HOW	520605	2.61	1.40	3.00	0.30	4	I
2008	NV	MELLAN	JOHNIE BOY	620711	0.15	2.85	1.33	0.13	2	R
2008	NV	MELLAN	PALANQUIN	650414	0.71	1.40	4.25	0.43	4	I
2008	NV	MELLAN	SCHOONER	681208	5.54	1.40	1.72	0.17	4	I
2008	NV	MELLAN	TURK	550307	19.06	1.40	7.11	0.71	4	I
2008	NV	MELLAN	WHEELER	570906	1.16	1.00	3.50	0.52	1	R
2008	NV	MELLAN	WHITNEY	570923	7.68	1.40	8.55	0.85	4	I
850	NV	MERCURY	BANDICOOT	621019	0.23	1.71	1.87	0.19	76	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
850	NV	MERCURY	POST	550409	1.23	1.14	7.67	0.77	3	R
850	NV	MERCURY	SIMON	530425	0.10	1.00	5.00	0.75	1	R
850	NV	MERCURY	WHEELER	570906	0.07	1.00	1.00	0.15	1	R
850	NV	MERCURY	WILSON	570618	0.21	1.00	13.50	2.03	2	R
851	NV	MESQUITE	ANNIE	530317	0.09	4.42	3.00	0.30	16	R
851	NV	MESQUITE	CLIMAX	530604	0.40	1.00	5.50	0.55	1	R
851	NV	MESQUITE	ESS	550323	0.24	1.87	8.59	0.86	2	R
851	NV	MESQUITE	HARRY	530519	6.68	1.41	2.57	0.26	15	R
851	NV	MESQUITE	HORNET	550312	0.24	1.77	8.26	0.83	6	R
851	NV	MESQUITE	SIMON	530425	31.00	1.65	6.65	0.67	21	R
851	NV	MESQUITE	SMOKY	570831	1.43	1.84	6.20	0.62	4	R
851	NV	MESQUITE	ZUCCHINI	550515	1.61	1.99	3.34	0.33	11	R
852	NV	MILLETT	BOLTZMANN	570528	10.71	1.15	6.57	0.66	4	R
852	NV	MILLETT	SCHOONER	681208	0.08	1.31	5.00	0.75	2	R
853	NV	MINA	BOLTZMANN	570528	1.20	2.55	7.00	0.70	2	R
853	NV	MINA	KEPLER	570724	5.47	1.40	15.00	1.50	4	I
853	NV	MINA	WHEELER	570906	0.19	1.00	12.00	1.80	1	R
853	NV	MINA	WHITNEY	570923	0.59	1.00	13.92	1.39	1	R
854	NV	MOAPA	CLIMAX	530604	0.67	1.00	4.57	0.46	1	R
854	NV	MOAPA	ESS	550323	1.18	1.00	6.30	0.63	1	R
854	NV	MOAPA	HORNET	550312	2.04	1.61	7.00	0.70	5	R
854	NV	MOAPA	PRISCILLA	570624	0.17	1.00	9.00	1.35	1	R
854	NV	MOAPA	SMOKY	570831	1.43	1.30	7.86	0.79	4	R
854	NV	MOAPA	ZUCCHINI	550515	6.87	1.47	2.91	0.29	3	R
855	NV	MOAPA INDIAN RES.	ANNIE	530317	0.13	1.00	3.00	0.30	1	R
855	NV	MOAPA INDIAN RES.	CLIMAX	530604	1.13	1.90	4.39	0.44	4	I
855	NV	MOAPA INDIAN RES.	ESS	550323	0.49	2.01	6.00	0.60	4	I
855	NV	MOAPA INDIAN RES.	HORNET	550312	1.29	1.60	6.66	0.67	5	R
855	NV	MOAPA INDIAN RES.	SMOKY	570831	1.15	1.00	7.78	0.78	1	R
855	NV	MOAPA INDIAN RES.	ZUCCHINI	550515	13.60	1.00	2.81	0.28	1	R
744	NV	MONTGOMERY PASS	BOLTZMANN	570528	3.49	1.00	7.00	1.05	1	R
744	NV	MONTGOMERY PASS	KEPLER	570724	1.79	1.40	13.77	1.38	4	I
744	NV	MONTGOMERY PASS	WHITNEY	570923	0.31	1.00	12.28	1.23	2	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
856	NV	MOON RIVER RANCH	APPLE–2	550505	0.50	1.40	5.22	0.52	3	I
856	NV	MOON RIVER RANCH	DIABLO	570715	5.75	1.40	9.61	0.96	4	I
856	NV	MOON RIVER RANCH	EASY	520507	9.97	1.40	2.12	0.21	4	I
856	NV	MOON RIVER RANCH	GRABLE	530525	0.98	1.40	2.00	0.20	4	I
856	NV	MOON RIVER RANCH	HOOD	570705	0.50	1.40	6.00	0.60	4	I
856	NV	MOON RIVER RANCH	NANCY	530324	5.45	1.40	4.45	0.45	4	I
856	NV	MOON RIVER RANCH	OWENS	570725	0.16	1.00	4.50	0.45	1	R
856	NV	MOON RIVER RANCH	RIO ARRIBA	581018	0.08	1.40	3.00	0.30	4	I
856	NV	MOON RIVER RANCH	SCHOONER	681208	1.02	1.34	6.50	0.98	19	R
856	NV	MOON RIVER RANCH	SEDAN	620706	1.13	1.22	5.61	0.56	21	R
856	NV	MOON RIVER RANCH	TURK	550307	2.47	1.40	12.63	1.26	4	I
856	NV	MOON RIVER RANCH	UNCLE	511129	1.40	1.40	5.00	0.50	4	I
2004	NV	MOUNTAIN SPRINGS	BANDICOOT	621019	0.17	1.36	5.00	0.50	2	R
2004	NV	MOUNTAIN SPRINGS	POST	550409	0.40	1.40	18.00	1.80	3	I
857	NV	MOUNTS RANCH	APPLE–2	550505	1.15	1.40	8.15	0.82	4	I
857	NV	MOUNTS RANCH	DIABLO	570715	2.64	1.16	14.35	1.43	4	R
857	NV	MOUNTS RANCH	DOPPLER	570823	0.32	1.40	11.70	1.17	4	I
857	NV	MOUNTS RANCH	GRABLE	530525	0.40	1.40	3.00	0.30	3	I
857	NV	MOUNTS RANCH	HOOD	570705	0.24	1.40	8.77	0.88	4	I
857	NV	MOUNTS RANCH	NANCY	530324	2.71	1.40	6.40	0.64	4	I
857	NV	MOUNTS RANCH	TURK	550307	0.57	1.40	15.05	1.50	4	I
857	NV	MOUNTS RANCH	UNCLE	511129	0.40	1.40	7.00	0.70	4	I
858	NV	NELLIS AIR FORCE BAS	BADGER	530418	0.34	1.70	2.82	0.28	19	R
858	NV	NELLIS AIR FORCE BAS	HORNET	550312	0.20	1.00	5.50	0.82	1	R
858	NV	NELLIS AIR FORCE BAS	ZUCCHINI	550515	0.09	1.00	4.00	0.40	1	R
860	NV	NIVLOC MINE	KEPLER	570724	3.46	1.40	9.27	0.93	4	I
860	NV	NIVLOC MINE	WHITNEY	570923	2.23	1.20	10.04	1.00	4	I
13	NV	NORTH LAS VEGAS	BADGER	530418	0.25	1.64	2.83	0.28	4	R
13	NV	NORTH LAS VEGAS	BEE	550322	0.77	2.79	2.93	0.29	4	I
13	NV	NORTH LAS VEGAS	CLIMAX	530604	0.13	1.00	7.00	0.70	1	R
861	NV	NYALA RANCH	APPLE–2	550505	8.06	1.00	3.65	0.37	1	R
861	NV	NYALA RANCH	DES MOINES	620613	2.79	1.81	2.75	0.28	21	R
861	NV	NYALA RANCH	DIABLO	570715	0.93	1.40	8.04	0.80	3	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
861	NV	NYALA RANCH	EASY	520507	0.77	1.40	2.00	0.20	4	I
861	NV	NYALA RANCH	GEORGE	520601	5.57	1.40	2.62	0.26	4	I
861	NV	NYALA RANCH	GRABLE	530525	0.45	1.40	2.83	0.28	4	I
861	NV	NYALA RANCH	HOW	520605	0.46	1.40	2.76	0.28	3.	I
861	NV	NYALA RANCH	NANCY	530324	1.37	1.40	4.13	0.41	4	I
861	NV	NYALA RANCH	OWENS	570725	1.19	1.00	4.48	0.45	1	R
861	NV	NYALA RANCH	PLATTE	620414	0.71	1.14	4.90	0.49	4	R
861	NV	NYALA RANCH	RIO ARRIBA	581018	0.26	1.00	5.50	0.82	1	R
861	NV	NYALA RANCH	SCHOONER	681208	0.53	1.49	8.50	1.27	74	R
861	NV	NYALA RANCH	SEDAN	620706	3.79	1.58	4.45	0.44	10	R
861	NV	NYALA RANCH	SHASTA	570818	1.73	1.59	7.00	0.70	6	R
861	NV	NYALA RANCH	SUGAR	511119	9.16	1.40	2.00	0.20	4	I
861	NV	NYALA RANCH	TURK	550307	10.00	1.40	11.00	1.10	4	I
861	NV	NYALA RANCH	UNCLE	511129	0.90	1.40	4.00	0.40	4	I
862	NV	OVERTON	BADGER	530418	0.20	2.69	10.00	1.50	4	R
862	NV	OVERTON	CLIMAX	530604	3.38	1.44	5.53	0.55	24	R
862	NV	OVERTON	SMOKY	570831	0.22	1.18	10.00	1.00	2	R
862	NV	OVERTON	ZUCCHINI	550515	5.47	1.63	3.53	0.35	4	R
2006	NV	OVERTON BEACH	CLIMAX	530604	3.02	1.00	6.19	0.62	1	R
2006	NV	OVERTON BEACH	HORNET	550312	0.85	1.40	7.83	0.78	4	I
2006	NV	OVERTON BEACH	ZUCCHINI	550515	0.54	1.40	3.89	0.39	3	I
863	NV	PAHRUMP	BANDICOOT	621019	0.36	1.04	5.00	0.75	3	R
863	NV	PAHRUMP	POST	550409	0.09	1.00	6.00	0.60	1	R
864	NV	PAHRUMP MINING COMPA	BANDICOOT	621019	0.60	1.00	2.91	0.29	1	R
864	NV	PAHRUMP MINING COMPA	POST	550409	0.33	1.40	11.65	1.16	3	I
865	NV	PANACA	APPLE-1	550329	1.09	1.48	4.00	0.40	5	R
865	NV	PANACA	FOX	520525	9.31	1.40	9.39	0.94	4	I
865	NV	PANACA	HARRY	530519	1.30	1.68	3.81	0.38	5	R
865	NV	PANACA	MET	550415	0.46	2.36	4.53	0.45	9	R
865	NV	PANACA	SIMON	530425	0.30	1.00	14.77	1.48	1	R
865	NV	PANACA	SMALL BOY	620714	0.18	1.73	10.57	1.06	18	R
865	NV	PANACA	SMOKY	570831	0.85	1.00	3.00	0.45	1	R
866	NV	PARMON'S RANCH	BOLTZMANN	570528	2.97	1.00	5.17	0.52	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
866	NV	PARMON'S RANCH	FIZEAU	570914	0.17	1.82	9.00	0.90	3	R
866	NV	PARMON'S RANCH	HOW	520605	0.41	1.40	6.00	0.60	4	I
866	NV	PARMON'S RANCH	PALANQUIN	650414	0.18	1.84	9.00	0.90	6	R
866	NV	PARMON'S RANCH	SCHOONER	681208	0.14	1.00	4.50	0.68	1	R
866	NV	PARMON'S RANCH	WHITNEY	570923	0.89	1.00	13.50	1.35	1	R
867	NV	PIOCHE	APPLE-1	550329	0.39	1.19	4.00	0.40	3	R
867	NV	PIOCHE	DIABLO	570715	0.37	1.00	10.00	1.00	1	R
867	NV	PIOCHE	EASY	520507	1.60	1.39	1.50	0.15	12	R
867	NV	PIOCHE	FOX	520525	12.46	1.31	9.78	0.98	11	R
867	NV	PIOCHE	NEWTON*	570916	0.10	1.24	3.58	0.36	4	I
867	NV	PIOCHE	SIMON	530425	0.30	1.00	16.00	1.60	1	R
867	NV	PIOCHE	SMALL BOY	620714	0.17	1.31	10.48	1.05	9	R
867	NV	PIOCHE	TURK	550307	0.15	1.92	13.50	1.35	3	R
867	NV	PIOCHE	WILSON	570618	0.08	2.19	12.40	1.86	17	R
868	NV	PITTMAN	BADGER	530418	1.81	1.00	3.00	0.30	1	R
868	NV	PITTMAN	BEE	550322	0.19	1.00	3.35	0.33	2	R
869	NV	PONY SPRINGS	DIABLO	570715	7.32	1.32	10.79	1.08	2	R
869	NV	PONY SPRINGS	EASY	520507	2.08	1.66	2.00	0.20	5	R
869	NV	PONY SPRINGS	FOX	520525	0.72	1.40	10.90	1.09	4	I
869	NV	PONY SPRINGS	GRABLE	530525	0.06	1.96	2.00	0.20	2	R
869	NV	PONY SPRINGS	HOOD	570705	0.09	1.00	7.00	0.70	1	R
869	NV	PONY SPRINGS	NEWTON*	570916	0.10	1.46	4.01	0.40	4	I
869	NV	PONY SPRINGS	SCHOONER	681208	1.46	1.25	6.60	0.66	4	R
869	NV	PONY SPRINGS	SMALL BOY	620714	0.12	1.13	10.25	1.02	3	R
869	NV	PONY SPRINGS	TURK	550307	0.68	1.40	13.68	1.37	4	I
869	NV	PONY SPRINGS	WILSON	570618	0.50	1.40	10.23	1.02	3	I
871	NV	POTTS	BOLTZMANN	570528	2.57	1.40	6.41	0.64	4	I
871	NV	POTTS	HOW	520605	1.03	1.40	7.00	0.70	4	I
871	NV	POTTS	SHASTA	570818	0.95	1.40	6.74	0.67	4	I
872	NV	PRESTON	APPLE-2	550505	5.81	1.00	6.54	0.65	1	R
872	NV	PRESTON	BOLTZMANN	570528	0.11	1.33	7.00	1.05	2	R
872	NV	PRESTON	DIABLO	570715	2.99	1.38	12.24	1.22	5	R
872	NV	PRESTON	DOPPLER	570823	1.00	1.40	11.03	1.10	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
872	NV	PRESTON	EASY	520507	4.01	1.02	3.24	0.32	4	I
872	NV	PRESTON	GRABLE	530525	0.10	1.75	3.00	0.30	2	R
872	NV	PRESTON	HOOD	570705	0.14	1.00	8.00	0.80	1	R
872	NV	PRESTON	NANCY	530324	1.21	1.19	6.05	0.60	6.	R
872	NV	PRESTON	OWENS	570725	0.86	1.92	6.03	0.60	2	R
872	NV	PRESTON	SEDAN	620706	1.26	1.00	7.95	0.79	1	R
872	NV	PRESTON	SHASTA	570818	3.96	1.00	11.03	1.10	1	R
872	NV	PRESTON	SUGAR	511119	0.48	1.40	3.03	0.30	4	I
872	NV	PRESTON	TURK	550307	2.39	1.14	14.00	1.40	2	R
872	NV	PRESTON	UNCLE	511129	1.00	1.40	6.53	0.65	4	I
873	NV	RATTLESNAKE MAINTENA	APPLE-2	550505	6.69	1.20	4.58	0.46	6	R
873	NV	RATTLESNAKE MAINTENA	BANEBERRY	701218	0.24	1.00	12.42	1.24	1	R
873	NV	RATTLESNAKE MAINTENA	GALILEO	570902	1.00	1.40	12.00	1.20	3	I
873	NV	RATTLESNAKE MAINTENA	GEORGE	520601	1.86	1.00	4.57	0.46	1	R
873	NV	RATTLESNAKE MAINTENA	HOW	520605	1.62	1.08	4.08	0.41	2	R
873	NV	RATTLESNAKE MAINTENA	JOHNIE BOY	620711	1.09	1.27	3.39	0.34	2	R
873	NV	RATTLESNAKE MAINTENA	LEA	581013	0.17	1.00	12.06	1.21	2	R
873	NV	RATTLESNAKE MAINTENA	NANCY	530324	0.16	1.00	5.00	0.50	1	R
873	NV	RATTLESNAKE MAINTENA	OWENS	570725	0.25	1.00	5.00	0.50	1	R
873	NV	RATTLESNAKE MAINTENA	SEDAN	620706	0.10	1.74	5.50	0.55	4	R
873	NV	RATTLESNAKE MAINTENA	SHASTA	570818	11.59	1.27	6.34	0.63	12	R
873	NV	RATTLESNAKE MAINTENA	SUGAR	511119	0.72	1.40	2.33	0.23	4	I
873	NV	RATTLESNAKE MAINTENA	TURK	550307	1.03	1.00	11.50	1.15	1	R
874	NV	REED	ANTLER	610915	0.19	3.13	1.25	0.19	12	R
874	NV	REED	APPLE-2	550505	56.17	1.00	2.27	0.23	1	R
874	NV	REED	BANEBERRY	701218	0.38	1.53	6.01	0.60	7	R
874	NV	REED	BOLTZMANN	570528	1.22	1.33	2.59	0.26	4	I
874	NV	REED	DIABLO	570715	3.83	1.40	5.16	0.52	4	I
874	NV	REED	EASY	520507	0.12	1.04	2.00	0.30	2	R
874	NV	REED	FIZEAU	570914	1.45	1.40	8.00	0.80	2	R
874	NV	REED	FOX	520525	3.24	1.00	8.00	0.80	1	R
874	NV	REED	GALILEO	570902	7.25	1.50	11.56	1.16	14	R
874	NV	REED	GEORGE	520601	0.72	1.00	2.80	0.28	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
874	NV	REED	HOW	520605	3.16	1.06	1.80	0.18	3	R
874	NV	REED	JOHNIE BOY*	620711	0.07	1.09	1.62	0.16	6	R
874	NV	REED	LEA	581013	0.21	1.82	7.38	0.74	9	R
874	NV	REED	NANCY	530324	4.49	1.40	2.86	0.29	4	I
874	NV	REED	OWENS	570725	0.25	1.31	3.00	0.30	2	R
874	NV	REED	PALANQUIN	650414	0.21	1.00	6.00	0.60	2	R
874	NV	REED	PLATTE	620414	0.11	2.28	2.45	0.25	11	R
874	NV	REED	SCHOONER	681208	4.41	1.00	2.15	0.21	1	R
874	NV	REED	SHASTA	570818	58.71	1.39	3.36	0.34	17	R
874	NV	REED	SUGAR	511119	0.86	1.40	1.00	0.10	4	I
874	NV	REED	TURK	550307	12.02	1.40	8.10	0.81	4	I
874	NV	REED	UNCLE	511129	0.91	1.40	2.00	0.20	4	I
874	NV	REED	WRANGELL	581022	0.09	1.40	4.91	0.49	4	I
102	NV	RENO	BOLTZMANN	570528	3.94	1.00	14.76	1.48	1	R
875	NV	REVEILLE MILL	BANEBERRY	701218	0.40	1.40	6.66	0.67	4	I
875	NV	REVEILLE MILL	BOLTZMANN	570528	55.49	1.76	3.65	0.37	10	R
875	NV	REVEILLE MILL	GALILEO	570902	5.24	1.40	11.84	1.18	4	I
875	NV	REVEILLE MILL	JOHNIE BOY	620711	0.61	1.99	2.09	0.21	58	R
875	NV	REVEILLE MILL	LEA	581013	0.54	1.40	9.79	0.98	4	I
875	NV	REVEILLE MILL	PALANQUIN	650414	0.15	1.40	7.09	0.71	4	I
875	NV	REVEILLE MILL	SCHOONER	681208	0.36	1.40	3.28	0.33	4	I
875	NV	REVEILLE MILL	SHASTA	570818	9.85	1.15	3.04	0.30	6	R
877	NV	RHYOLITE	COULOMB-B	570906	0.56	1.40	6.43	0.64	4	I
877	NV	RHYOLITE	QUAY	581010	0.25	2.34	4.23	0.42	4	I
877	NV	RHYOLITE	WILSON	570618	0.31	1.00	5.60	0.84	1	R
876	NV	RIVERSIDE	ANNIE	530317	0.07	1.40	3.00	0.30	4	I
876	NV	RIVERSIDE	ESS	550323	0.13	1.00	7.97	0.80	1	R
876	NV	RIVERSIDE	HARRY	530519	0.70	1.00	2.21	0.22	1	R
876	NV	RIVERSIDE	HORNET	550312	1.10	1.16	8.00	0.80	4	R
876	NV	RIVERSIDE	SIMON	530425	175.60	1.29	5.16	0.52	16	R
876	NV	RIVERSIDE	SMOKY	570831	2.94	1.40	6.36	0.64	4	I
876	NV	RIVERSIDE	ZUCCHINI	550515	2.39	1.58	3.19	0.32	4	I
878	NV	ROGERS RANCH	APPLE-2	550505	2.22	1.40	8.68	0.87	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
878	NV	ROGERS RANCH	DIABLO	570715	1.82	1.40	15.58	1.56	4	I
878	NV	ROGERS RANCH	DOPPLER	570823	0.99	1.40	13.69	1.37	4	I
878	NV	ROGERS RANCH	HOOD	570705	0.10	1.40	9.00	0.90	3	I
878	NV	ROGERS RANCH	NANCY	530324	0.67	1.40	6.91	0.69	4	I
878	NV	ROGERS RANCH	OWENS	570725	0.14	1.40	8.00	0.80	4	I
878	NV	ROGERS RANCH	UNCLE	511129	0.40	1.40	8.00	0.80	4	I
879	NV	ROSE VALLEY	APPLE-1	550329	0.34	1.40	4.35	0.43	4	I
879	NV	ROSE VALLEY	FOX	520525	10.79	1.40	10.29	1.03	4	I
879	NV	ROSE VALLEY	MET	550415	0.36	1.40	5.00	0.50	4	I
879	NV	ROSE VALLEY	SMALL BOY	620714	0.12	1.40	11.72	1.76	4	I
880	NV	ROUND MOUNTAIN	BOLTZMANN	570528	4.83	1.00	5.76	0.58	1	R
880	NV	ROUND MOUNTAIN	SCHOONER	681208	0.13	1.00	8.50	1.27	1	R
880	NV	ROUND MOUNTAIN	WHEELER	570906	0.12	1.00	10.00	1.50	1	R
880	NV	ROUND MOUNTAIN	WHITNEY	570923	0.65	1.40	14.62	1.46	3	I
881	NV	ROX	ANNIE	530317	5.61	1.40	2.59	0.26	4	I
881	NV	ROX	ESS	550323	1.02	1.40	6.25	0.62	4	I
881	NV	ROX	HARRY	530519	11.19	1.40	1.71	0.17	4	I
881	NV	ROX	HORNET	550312	4.15	1.40	6.72	0.67	4	I
881	NV	ROX	SIMON	530425	11.19	1.40	3.83	0.38	4	I
881	NV	ROX	SMALL BOY	620714	0.08	1.00	5.00	0.50	1	R
881	NV	ROX	SMOKY	570831	4.05	1.40	5.14	0.51	8	R
881	NV	ROX	TESLA	550301	0.71	1.83	5.00	0.50	5	R
881	NV	ROX	TURK	550307	0.42	1.40	9.97	1.00	3	I
881	NV	ROX	ZUCCHINI	550515	2.90	1.40	2.23	0.22	4	I
882	NV	RUBY HILL MINE	APPLE-2	550505	0.57	1.00	7.09	0.71	1	R
882	NV	RUBY HILL MINE	BOLTZMANN	570528	0.94	1.22	8.32	0.83	3	R
882	NV	RUBY HILL MINE	GEORGE	520601	2.63	1.00	6.77	0.68	1	R
882	NV	RUBY HILL MINE	HOW	520605	1.00	1.40	7.00	0.70	2	I
882	NV	RUBY HILL MINE	OWENS	570725	0.48	1.59	8.00	0.80	6	R
882	NV	RUBY HILL MINE	SCHOONER	681208	0.06	1.40	13.00	1.95	2	R
882	NV	RUBY HILL MINE	SHASTA	570818	6.22	1.54	12.82	1.28	11	R
882	NV	RUBY HILL MINE	SUGAR	511119	1.23	1.40	4.00	0.40	2	I
883	NV	RUTH	APPLE-2	550505	3.78	1.63	7.38	0.74	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
883	NV	RUTH	DES MOINES	620613	0.20	1.00	6.00	0.60	1	R
883	NV	RUTH	DIABLO	570715	0.97	1.40	14.50	1.45	7	R
883	NV	RUTH	DOPPLER	570823	1.25	1.00	14.00	1.40	1	R
883	NV	RUTH	NANCY	530324	0.48	1.45	7.05	0.70	4	I
883	NV	RUTH	OWENS	570725	0.25	1.79	8.31	0.83	4	R
883	NV	RUTH	SEDAN	620706	0.98	1.29	10.00	1.50	4	R
883	NV	RUTH	SHASTA	570818	2.87	1.00	13.00	1.30	1	R
883	NV	RUTH	SUGAR	511119	0.70	1.40	4.00	0.40	4	I
883	NV	RUTH	TURK	550307	1.31	1.00	14.58	1.46	1	R
883	NV	RUTH	UNCLE	511129	0.44	1.40	7.00	0.70	4	I
884	NV	SARCOBATUS	COULOMB-B	570906	0.11	1.40	8.45	0.85	4	I
884	NV	SARCOBATUS	GALILEO	570902	0.17	1.00	16.00	2.40	1	R
884	NV	SARCOBATUS	KEPLER	570724	0.17	1.00	6.00	0.60	1	R
884	NV	SARCOBATUS	WHITNEY	570923	0.11	1.05	10.00	1.50	2	R
885	NV	SCHURZ	BOLTZMANN	570528	2.60	1.47	10.67	1.07	3	R
885	NV	SCHURZ	FIZEAU	570914	1.00	1.40	9.14	0.91	4	I
885	NV	SCHURZ	KEPLER	570724	2.01	1.40	15.02	1.50	4	I
885	NV	SCHURZ	WHITNEY	570923	1.00	1.40	17.91	1.79	4	I
954	NV	SCOTTYS JUNCTION	BOLTZMANN	570528	0.29	1.00	4.00	0.60	1	R
954	NV	SCOTTYS JUNCTION	COULOMB-B	570906	0.08	2.00	8.50	1.27	5	R
954	NV	SCOTTYS JUNCTION	GALILEO	570902	0.17	1.00	16.00	2.40	1	R
954	NV	SCOTTYS JUNCTION	KEPLER	570724	0.54	1.00	6.24	0.62	1	R
954	NV	SCOTTYS JUNCTION	WHITNEY	570923	0.11	1.00	10.00	1.50	1	R
887	NV	SEARLS RANCH	CLIMAX	530604	0.52	1.57	4.63	0.46	10	R
887	NV	SEARLS RANCH	ESS	550323	0.49	2.01	6.39	0.64	3	R
887	NV	SEARLS RANCH	HORNET	550312	2.26	1.94	7.00	0.70	10	R
887	NV	SEARLS RANCH	SIMON	530425	0.08	1.00	4.25	0.43	1	R
887	NV	SEARLS RANCH	SMOKY	570831	1.89	1.12	7.94	0.79	2	R
887	NV	SEARLS RANCH	ZUCCHINI	550515	5.69	1.43	2.94	0.29	9	R
888	NV	SEVEN L. RANCH	FOX	520525	7.89	1.40	10.77	1.08	4	I
888	NV	SEVEN L. RANCH	NEWTON	570916	0.10	1.40	4.13	0.41	3	I
888	NV	SEVEN L. RANCH	SMALL BOY	620714	0.12	1.40	12.31	1.85	4	I
890	NV	SHOSHONE	APPLE-2	550505	0.63	1.40	7.95	0.80	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
890	NV	SHOSHONE	DIABLO	570715	4.99	1.40	13.47	1.35	4	I
890	NV	SHOSHONE	DOPPLER	570823	0.28	1.40	10.18	1.02	4	I
890	NV	SHOSHONE	EASY	520507	4.01	1.40	3.00	0.30	3	I
890	NV	SHOSHONE	HOOD	570705	0.50	1.40	8.00	0.80	4	I
890	NV	SHOSHONE	NANCY	530324	4.66	1.40	5.94	0.59	4	I
890	NV	SHOSHONE	NEWTON	570916	0.10	1.40	5.21	0.52	3	I
890	NV	SHOSHONE	TURK	550307	1.00	1.40	14.82	1.48	4	I
890	NV	SHOSHONE	UNCLE	511129	0.40	1.40	7.00	0.70	4	I
891	NV	SILVER PEAK	FIZEAU	570914	0.10	1.00	7.00	1.05	1	R
891	NV	SILVER PEAK	KEPLER	570724	7.65	1.00	9.34	0.93	1	R
891	NV	SILVER PEAK	WHITNEY	570923	3.68	1.20	10.17	1.02	4	R
892	NV	SOUTH PAW MINE	APPLE-1	550329	0.54	1.40	3.00	0.30	4	I
892	NV	SOUTH PAW MINE	DIABLO	570715	12.45	1.11	5.98	0.60	3	R
892	NV	SOUTH PAW MINE	EASY	520507	6.22	1.40	0.91	0.09	4	I
892	NV	SOUTH PAW MINE	FOX	520525	1.19	1.40	6.32	0.63	4	I
892	NV	SOUTH PAW MINE	GRABLE	530525	0.44	1.40	1.00	0.10	3	I
892	NV	SOUTH PAW MINE	NEWTON	570916	0.11	1.40	1.84	0.18	3	I
892	NV	SOUTH PAW MINE	PIN STRIPE	660425	0.10	1.40	4.21	0.42	3	I
892	NV	SOUTH PAW MINE	TURK	550307	1.09	1.40	10.17	1.02	4	I
892	NV	SOUTH PAW MINE	UNCLE	511129	1.72	1.40	2.86	0.29	4	I
892	NV	SOUTH PAW MINE	WILSON	570618	1.00	1.40	7.25	0.72	4	I
105	NV	SPARKS	BOLTZMANN	570528	2.86	1.98	14.68	1.47	3	R
893	NV	SPRINGDALE	COULOMB-B	570906	0.66	1.40	6.08	0.61	4	I
893	NV	SPRINGDALE	TURK	550307	0.48	1.40	4.98	0.50	3	I
955	NV	STANDARD (GOLD REED)	APPLE-2	550505	29.29	1.40	2.27	0.23	4	I
955	NV	STANDARD (GOLD REED)	BANEBERRY	701218	4.46	1.00	6.00	0.60	1	R
955	NV	STANDARD (GOLD REED)	BOLTZMANN	570528	69.28	1.59	1.80	0.18	10	R
955	NV	STANDARD (GOLD REED)	BUGGY	680312	0.08	2.59	1.58	0.16	5	R
955	NV	STANDARD (GOLD REED)	FIZEAU	570914	2.83	1.18	5.11	0.51	5	R
955	NV	STANDARD (GOLD REED)	GALILEO	570902	9.47	1.55	5.64	0.56	10	R
955	NV	STANDARD (GOLD REED)	GEORGE	520601	0.41	1.40	2.90	0.29	4	I
955	NV	STANDARD (GOLD REED)	HOW	520605	18.04	1.40	1.76	0.18	4	I
955	NV	STANDARD (GOLD REED)	JOHNIE BOY	620711	4.78	1.96	1.31	0.13	5	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
955	NV	STANDARD (GOLD REED)	LEA	581013	0.84	1.16	5.45	0.54	5	R
955	NV	STANDARD (GOLD REED)	NANCY	530324	1.97	1.40	2.37	0.24	4	I
955	NV	STANDARD (GOLD REED)	PALANQUIN	650414	0.06	1.40	3.93	0.39	3	I
955	NV	STANDARD (GOLD REED)	SCHOONER	681208	0.15	1.40	1.18	0.12	4	I
955	NV	STANDARD (GOLD REED)	SHASTA	570818	134.70	1.57	1.72	0.17	18	R
955	NV	STANDARD (GOLD REED)	SUGAR	511119	0.41	1.40	1.00	0.10	4	I
955	NV	STANDARD (GOLD REED)	SULKY	641218	0.28	2.24	2.20	0.33	138	R
955	NV	STANDARD (GOLD REED)	TURK	550307	30.58	1.40	6.61	0.66	4	I
955	NV	STANDARD (GOLD REED)	UNCLE	511129	0.46	1.40	1.53	0.15	4	I
955	NV	STANDARD (GOLD REED)	WHITNEY	570923	0.16	1.00	6.07	0.61	1	R
895	NV	STEWARD R. RANCH	DIABLO	570715	6.77	1.32	10.14	1.01	4	I
895	NV	STEWARD R. RANCH	DOPPLER	570823	0.11	1.40	6.00	0.60	4	I
895	NV	STEWARD R. RANCH	EASY	520507	2.56	1.40	2.00	0.20	4	I
895	NV	STEWARD R. RANCH	EDDY	580919	0.11	1.40	6.58	0.66	4	I
895	NV	STEWARD R. RANCH	FOX	520525	0.82	1.40	10.45	1.04	4	I
895	NV	STEWARD R. RANCH	GRABLE	530525	0.40	1.96	2.00	0.20	3	I
895	NV	STEWARD R. RANCH	HOOD	570705	0.28	1.40	6.49	0.65	4	I
895	NV	STEWARD R. RANCH	NEWTON	570916	0.10	1.40	3.74	0.37	4	I
895	NV	STEWARD R. RANCH	SCHOONER	681208	0.16	1.25	6.17	0.62	4	I
895	NV	STEWARD R. RANCH	SMALL BOY	620714	0.10	1.13	10.08	1.01	4	I
895	NV	STEWARD R. RANCH	TURK	550307	0.71	1.40	13.26	1.33	4	I
895	NV	STEWARD R. RANCH	WILSON	570618	0.50	1.40	10.83	1.08	3	I
896	NV	STINE	APPLE-1	550329	2.34	1.83	3.69	0.37	4	R
896	NV	STINE	FOX	520525	1.08	1.40	7.56	0.76	4	I
896	NV	STINE	HARRY	530519	5.89	1.40	3.03	0.30	4	I
896	NV	STINE	HORNET	550312	0.57	1.40	8.20	0.82	4	I
896	NV	STINE	MET	550415	6.79	1.65	4.00	0.40	2	R
896	NV	STINE	PRISCILLA	570624	0.15	1.85	8.00	0.80	3	R
896	NV	STINE	SIMON	530425	0.73	1.40	12.40	1.24	4	I
896	NV	STINE	SMALL BOY	620714	0.18	1.15	8.00	1.20	2	R
896	NV	STINE	SMOKY	570831	0.09	1.00	9.00	1.35	1	R
897	NV	STONE CABIN RANCH	APPLE-2	550505	0.49	1.40	4.98	0.50	4	I
897	NV	STONE CABIN RANCH	BANEBERRY	701218	0.32	1.26	7.81	0.78	43	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
897	NV	STONE CABIN RANCH	BOLTZMANN	570528	7.43	1.21	4.30	0.43	5	R
897	NV	STONE CABIN RANCH	CABRIOLET	680126	0.48	1.94	2.59	0.26	42	R
897	NV	STONE CABIN RANCH	DANNY BOY	620305	0.07	2.41	2.82	0.28	2	R
897	NV	STONE CABIN RANCH	GALILEO	570902	2.00	1.00	10.00	1.00	1.	R
897	NV	STONE CABIN RANCH	HOW	520605	8.17	1.34	4.19	0.42	4	I
897	NV	STONE CABIN RANCH	PALANQUIN	650414	0.34	2.35	7.26	0.73	246	R
897	NV	STONE CABIN RANCH	SCHOONER	681208	0.57	1.49	4.05	0.40	57	R
897	NV	STONE CABIN RANCH	SHASTA	570818	0.08	1.00	3.00	0.30	1	R
897	NV	STONE CABIN RANCH	SUGAR	511119	0.40	1.40	2.00	0.20	4	I
898	NV	SUNNYSIDE	APPLE-2	550505	0.07	1.91	5.50	0.55	7	R
898	NV	SUNNYSIDE	DIABLO	570715	8.40	1.08	10.14	1.01	3	R
898	NV	SUNNYSIDE	EASY	520507	9.97	1.40	2.00	0.20	4	I
898	NV	SUNNYSIDE	EDDY	580919	0.07	1.40	6.86	0.69	4	I
898	NV	SUNNYSIDE	GRABLE	530525	0.75	1.40	2.00	0.20	4	I
898	NV	SUNNYSIDE	HOOD	570705	0.27	1.07	6.26	0.63	4	R
898	NV	SUNNYSIDE	NANCY	530324	11.78	1.00	4.67	0.47	1	R
898	NV	SUNNYSIDE	SCHOONER	681208	0.75	1.21	5.78	0.58	18	R
898	NV	SUNNYSIDE	SEDAN	620706	0.37	1.69	5.99	0.60	3	R
898	NV	SUNNYSIDE	TURK	550307	1.59	1.40	13.00	1.30	4	I
898	NV	SUNNYSIDE	UNCLE	511129	0.89	1.40	5.26	0.53	4	I
899	NV	SWALOW RANCH	APPLE-2	550505	0.81	1.40	8.02	0.80	4	I
899	NV	SWALOW RANCH	DIABLO	570715	5.17	1.40	13.83	1.38	4	I
899	NV	SWALOW RANCH	DOPPLER	570823	0.27	1.40	10.66	1.07	4	I
899	NV	SWALOW RANCH	HOOD	570705	0.50	1.40	8.09	0.81	4	I
899	NV	SWALOW RANCH	NANCY	530324	6.79	1.40	6.10	0.61	4	I
899	NV	SWALOW RANCH	TURK	550307	0.97	1.40	14.91	1.49	4	I
899	NV	SWALOW RANCH	UNCLE	511129	0.40	1.40	7.00	0.70	4	I
2010	NV	TEMPIUTE	APPLE-1	550329	0.16	1.26	2.50	0.25	9	R
2010	NV	TEMPIUTE	APPLE-2	550505	0.17	2.85	2.30	0.34	2	R
2010	NV	TEMPIUTE	DIABLO	570715	12.82	1.73	5.27	0.53	43	R
2010	NV	TEMPIUTE	EASY	520507	11.85	1.45	0.86	0.09	100	R
2010	NV	TEMPIUTE	EDDY	580919	0.14	2.97	5.00	0.50	12	R
2010	NV	TEMPIUTE	FOX	520525	1.08	1.19	6.06	0.61	3	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
2010	NV	TEMPIUTE	GRABLE	530525	0.43	1.49	1.00	0.10	39	R
2010	NV	TEMPIUTE	HOOD	570705	0.49	1.56	2.24	0.22	18	R
2010	NV	TEMPIUTE	NANCY	530324	35.86	1.38	1.89	0.19	116	R
2010	NV	TEMPIUTE	RIO ARRIBA	581018	0.35	1.40	2.00	0.20	4.	I
2010	NV	TEMPIUTE	SCHOONER	681208	0.63	1.00	3.00	0.30	1	R
2010	NV	TEMPIUTE	SEDAN	620706	0.25	3.30	3.00	0.45	9	R
2010	NV	TEMPIUTE	SHASTA	570818	0.24	1.00	10.00	1.50	1	R
2010	NV	TEMPIUTE	SUGAR	511119	0.46	1.40	1.00	0.10	3	I
2010	NV	TEMPIUTE	TURK	550307	0.69	1.63	9.26	0.93	2	R
2010	NV	TEMPIUTE	UNCLE	511129	12.20	1.40	2.06	0.21	4	I
87	NV	TONOPAH	BANEBERRY	701218	0.07	1.71	14.69	1.47	8	R
87	NV	TONOPAH	BOLTZMANN	570528	0.49	1.69	4.83	0.48	24	R
87	NV	TONOPAH	FIZEAU	570914	3.92	1.78	5.64	0.56	68	R
87	NV	TONOPAH	GALILEO	570902	0.15	1.56	15.00	2.25	3	R
87	NV	TONOPAH	KEPLER	570724	0.28	1.18	12.42	1.24	3	R
87	NV	TONOPAH	WHITNEY	570923	11.69	1.50	11.30	1.13	26	R
900	NV	TONOPAH AIRPORT	BOLTZMANN	570528	0.38	1.00	4.54	0.45	1	R
900	NV	TONOPAH AIRPORT	FIZEAU	570914	4.50	1.40	5.44	0.54	4	I
900	NV	TONOPAH AIRPORT	WHITNEY	570923	4.62	1.00	11.19	1.12	1	R
2009	NV	TYBO	APPLE–2	550505	1.28	1.40	4.89	0.49	4	I
2009	NV	TYBO	BANEBERRY	701218	0.16	1.40	10.51	1.05	4	I
2009	NV	TYBO	BOLTZMANN	570528	3.38	1.40	4.86	0.49	4	I
2009	NV	TYBO	GALILEO	570902	1.20	1.40	12.00	1.20	4	I
2009	NV	TYBO	GEORGE	520601	0.69	1.40	5.61	0.56	4	I
2009	NV	TYBO	HOW	520605	6.73	1.40	4.17	0.42	4	I
2009	NV	TYBO	JOHNIE BOY	620711	0.07	1.40	3.20	0.32	4	I
2009	NV	TYBO	LEA	581013	0.12	1.40	11.76	1.18	4	I
2009	NV	TYBO	PALANQUIN	650414	0.15	1.40	9.00	0.90	4	I
2009	NV	TYBO	SUGAR	511119	0.42	1.40	2.19	0.22	4	I
901	NV	UHALDE RANCH	APPLE–2	550505	5.09	1.40	3.59	0.36	4	I
901	NV	UHALDE RANCH	DIABLO	570715	5.92	1.24	7.59	0.76	22	R
901	NV	UHALDE RANCH	EASY	520507	3.67	1.40	2.00	0.20	4	I
901	NV	UHALDE RANCH	GEORGE	520601	0.75	1.40	2.00	0.20	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
901	NV	UHALDE RANCH	GRABLE	530525	0.80	1.40	2.00	0.20	4	I
901	NV	UHALDE RANCH	HOOD	570705	0.09	2.14	4.36	0.44	2	R
901	NV	UHALDE RANCH	NANCY	530324	7.39	1.00	3.75	0.37	1	R
901	NV	UHALDE RANCH	OWENS	570725	0.23	1.24	4.00	0.40	3	R
901	NV	UHALDE RANCH	PLATTE	620414	0.56	1.00	4.78	0.48	1	R
901	NV	UHALDE RANCH	SCHOONER	681208	1.27	1.37	3.97	0.40	32	R
901	NV	UHALDE RANCH	SEDAN	620706	2.38	1.16	4.06	0.41	4	R
901	NV	UHALDE RANCH	SHASTA	570818	0.15	2.13	7.00	0.70	2	R
901	NV	UHALDE RANCH	SUGAR	511119	3.09	1.40	2.00	0.20	4	I
901	NV	UHALDE RANCH	TURK	550307	8.23	1.40	11.07	1.11	4	I
901	NV	UHALDE RANCH	UNCLE	511129	2.76	1.40	3.87	0.39	4	I
902	NV	URRETIAS RANCH	APPLE-2	550505	0.44	1.40	6.70	0.67	3	I
902	NV	URRETIAS RANCH	DIABLO	570715	10.17	1.40	11.73	1.17	4	I
902	NV	URRETIAS RANCH	DOPPLER	570823	1.00	1.40	9.08	0.91	4	I
902	NV	URRETIAS RANCH	EASY	520507	9.49	1.40	2.76	0.28	4	I
902	NV	URRETIAS RANCH	GRABLE	530525	0.57	1.40	2.57	0.26	4	I
902	NV	URRETIAS RANCH	HOOD	570705	0.50	1.40	7.12	0.71	4	I
902	NV	URRETIAS RANCH	NANCY	530324	9.57	1.40	5.33	0.53	4	I
902	NV	URRETIAS RANCH	SCHOONER	681208	0.08	1.40	6.78	0.68	4	I
902	NV	URRETIAS RANCH	SEDAN	620706	0.56	1.40	7.30	0.73	4	I
902	NV	URRETIAS RANCH	TURK	550307	1.00	1.40	13.84	1.38	4	I
902	NV	URRETIAS RANCH	UNCLE	511129	0.60	1.40	6.00	0.60	4	I
903	NV	URSINE	APPLE-1	550329	0.24	1.00	4.46	0.45	1	R
903	NV	URSINE	FOX	520525	10.60	1.40	10.41	1.04	4	I
903	NV	URSINE	SMALL BOY	620714	0.12	1.40	11.87	1.78	4	I
903	NV	URSINE	TESLA	550301	0.06	1.00	11.50	1.73	1	R
903	NV	URSINE	TURK	550307	0.31	1.00	14.00	2.10	1	R
904	NV	VIGO	ANNIE	530317	7.42	1.40	2.09	0.21	4	I
904	NV	VIGO	ESS	550323	0.57	1.40	7.02	0.70	3	I
904	NV	VIGO	HARRY	530519	83.74	1.40	2.10	0.21	4	I
904	NV	VIGO	HORNET	550312	0.52	1.40	7.18	0.72	4	I
904	NV	VIGO	PRISCILLA	570624	1.00	1.00	6.84	1.03	1	R
904	NV	VIGO	SIMON	530425	3.00	1.40	7.36	0.74	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
904	NV	VIGO	SMOKY	570831	4.17	3.30	4.20	0.42	5	R
904	NV	VIGO	TESLA	550301	4.83	1.80	5.72	0.57	4	I
904	NV	VIGO	TURK	550307	0.43	1.40	10.05	1.00	3	I
633	NV	VIRGINIA CITY	BOLTZMANN	570528	0.66	1.40	13.92	1.39	4	I
959	NV	WADSWORTH	BOLTZMANN	570528	3.12	1.00	14.00	1.40	1	R
905	NV	WALCH PINE CREEK RAN	APPLE–2	550505	4.68	1.40	3.23	0.32	4	I
905	NV	WALCH PINE CREEK RAN	DIABLO	570715	1.47	1.21	7.20	0.72	4	I
905	NV	WALCH PINE CREEK RAN	EASY	520507	4.63	1.40	2.00	0.20	4	I
905	NV	WALCH PINE CREEK RAN	GEORGE	520601	0.96	1.40	2.00	0.20	4	I
905	NV	WALCH PINE CREEK RAN	GRABLE	530525	0.82	1.40	2.00	0.20	4	I
905	NV	WALCH PINE CREEK RAN	HOOD	570705	0.49	2.14	4.00	0.40	4	I
905	NV	WALCH PINE CREEK RAN	NANCY	530324	8.65	1.06	3.53	0.35	4	I
905	NV	WALCH PINE CREEK RAN	OWENS	570725	0.42	1.13	3.54	0.35	4	I
905	NV	WALCH PINE CREEK RAN	PLATTE	620414	0.33	1.40	4.44	0.44	4	I
905	NV	WALCH PINE CREEK RAN	SCHOONER	681208	2.52	1.28	3.75	0.37	7	R
905	NV	WALCH PINE CREEK RAN	SEDAN	620706	1.78	1.01	3.72	0.37	2	R
905	NV	WALCH PINE CREEK RAN	SHASTA	570818	0.11	1.00	7.00	0.70	1	R
905	NV	WALCH PINE CREEK RAN	SUGAR	511119	3.33	1.40	2.00	0.20	4	I
905	NV	WALCH PINE CREEK RAN	TURK	550307	8.72	1.40	10.85	1.09	4	I
905	NV	WALCH PINE CREEK RAN	UNCLE	511129	4.13	1.40	3.34	0.33	4	I
906	NV	WARM SPRINGS	APPLE–2	550505	0.39	2.37	4.31	0.43	2	R
906	NV	WARM SPRINGS	BANEBERRY	701218	0.13	1.61	8.06	0.81	47	R
906	NV	WARM SPRINGS	BOLTZMANN	570528	2.26	2.21	4.31	0.43	34	R
906	NV	WARM SPRINGS	BUGGY	680312	0.13	2.39	4.50	0.68	180	R
906	NV	WARM SPRINGS	DANNY BOY	620305	0.06	2.01	2.79	0.28	18	R
906	NV	WARM SPRINGS	GALILEO	570902	2.24	1.09	12.00	1.20	5	R
906	NV	WARM SPRINGS	GEORGE	520601	2.54	1.00	5.08	0.51	1	R
906	NV	WARM SPRINGS	HOW	520605	2.69	1.35	4.00	0.40	4	R
906	NV	WARM SPRINGS	JOHNIE BOY	620711	0.25	1.80	4.50	0.68	10	R
906	NV	WARM SPRINGS	LEA	581013	0.31	1.52	10.83	1.08	3	R
906	NV	WARM SPRINGS	NANCY	530324	0.68	1.95	4.26	0.43	8	R
906	NV	WARM SPRINGS	OWENS	570725	0.07	1.68	4.50	0.45	3	R
906	NV	WARM SPRINGS	PALANQUIN	650414	0.25	2.37	8.59	0.86	17	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
906	NV	WARM SPRINGS	SCHOONER	681208	0.13	1.66	8.60	0.86	67	R
906	NV	WARM SPRINGS	SHASTA	570818	0.55	2.44	6.00	0.90	13	R
906	NV	WARM SPRINGS	SUGAR	511119	0.59	1.40	2.00	0.20	4	I
906	NV	WARM SPRINGS	TURK	550307	4.47	1.24	10.49	1.05	2	R
906	NV	WARM SPRINGS	WHITNEY	570923	0.20	1.00	13.00	1.95	1	R
956	NV	WARM SPRINGS NORTH	APPLE-2	550505	1.36	1.40	9.05	0.91	4	I
956	NV	WARM SPRINGS NORTH	DOPPLER	570823	0.11	1.40	14.00	1.40	4	I
956	NV	WARM SPRINGS NORTH	OWENS	570725	0.42	1.40	10.29	1.03	4	I
956	NV	WARM SPRINGS NORTH	SUGAR	511119	0.51	1.40	5.00	0.50	4	I
956	NV	WARM SPRINGS NORTH	UNCLE	511129	0.40	1.40	8.00	0.80	4	I
907	NV	WARM SPRINGS RANCH	ANNIE	530317	2.65	1.61	3.00	0.30	3	R
907	NV	WARM SPRINGS RANCH	BANDICOOT	621019	0.08	1.00	2.00	0.20	1	R
907	NV	WARM SPRINGS RANCH	CLIMAX	530604	0.25	2.42	4.21	0.42	2	R
907	NV	WARM SPRINGS RANCH	ESS	550323	0.58	1.40	5.91	0.59	4	I
907	NV	WARM SPRINGS RANCH	HORNET	550312	4.20	1.01	6.39	0.64	2	R
907	NV	WARM SPRINGS RANCH	SIMON	530425	1.40	1.62	4.07	0.41	9	R
907	NV	WARM SPRINGS RANCH	SMOKY	570831	1.44	1.34	7.41	0.74	3	R
907	NV	WARM SPRINGS RANCH	ZUCCHINI	550515	9.00	1.20	2.70	0.27	8	R
908	NV	WATERTOWN	BANDICOOT	621019	0.17	1.40	1.12	0.11	4	I
908	NV	WATERTOWN	DIABLO	570715	13.02	2.17	3.00	0.30	83	R
908	NV	WATERTOWN	DOPPLER	570823	0.10	1.40	1.07	0.11	3	I
908	NV	WATERTOWN	SMOKY	570831	0.21	1.04	2.30	0.34	2	R
908	NV	WATERTOWN	WHITNEY	570923	0.09	1.00	1.09	0.11	1	R
908	NV	WATERTOWN	WILSON	570618	0.77	2.61	5.22	0.52	44	R
67	NV	WEED HEIGHTS	KEPLER	570724	0.73	1.40	15.00	1.50	4	I
909	NV	WHIPPLE RANCH	APPLE-1	550329	1.67	1.50	2.91	0.29	4	I
909	NV	WHIPPLE RANCH	DIABLO	570715	2.03	1.83	6.21	0.62	14	R
909	NV	WHIPPLE RANCH	EASY	520507	0.83	1.40	0.86	0.09	4	I
909	NV	WHIPPLE RANCH	FOX	520525	4.53	1.00	6.19	0.62	1	R
909	NV	WHIPPLE RANCH	HARRY	530519	1.35	1.32	2.62	0.26	4	I
909	NV	WHIPPLE RANCH	PIN STRIPE	660425	0.11	1.81	4.34	0.43	8	R
909	NV	WHIPPLE RANCH	SCHOONER	681208	0.06	1.00	4.00	0.40	1	R
909	NV	WHIPPLE RANCH	SHASTA	570818	0.43	1.61	28.50	4.28	3	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
909	NV	WHIPPLE RANCH	TESLA	550301	0.75	1.40	6.00	0.60	4	I
909	NV	WHIPPLE RANCH	TURK	550307	0.42	1.40	10.48	1.05	3	I
909	NV	WHIPPLE RANCH	UNCLE	511129	0.45	1.40	3.00	0.30	4	I
910	NV	WHITNEY	BADGER	530418	1.08	1.80	3.00	0.30	4	R
910	NV	WHITNEY	BEE	550322	0.49	1.35	3.26	0.33	3	R
68	NV	YERINGTON	KEPLER	570724	0.85	1.40	15.00	1.50	4	I
911	UT	ADAMSVILLE	FOX	520525	2.12	1.40	14.18	1.42	4	I
911	UT	ADAMSVILLE	MET	550415	5.01	1.00	5.92	0.59	1	R
911	UT	ADAMSVILLE	SMALL BOY	620714	0.09	1.16	20.00	3.00	6	R
911	UT	ADAMSVILLE	SMOKY	570831	0.08	1.02	8.00	1.20	2	R
911	UT	ADAMSVILLE	TURK	550307	0.36	1.00	17.00	2.55	1	R
212	UT	ALTAMONT	SMALL BOY	620714	0.55	1.40	40.00	6.00	4	I
271	UT	ALTON	APPLE-1	550329	0.60	1.00	7.00	0.70	1	R
271	UT	ALTON	HARRY	530519	14.45	1.92	5.41	0.54	4	I
271	UT	ALTON	MORGAN	571007	0.12	1.40	11.50	1.15	4	I
271	UT	ALTON	PRISCILLA	570624	0.76	1.00	10.00	1.00	1	R
912	UT	ANDERSON JUNCTION	ANNIE	530317	0.19	1.35	3.14	0.31	2	R
912	UT	ANDERSON JUNCTION	HARRY	530519	33.30	1.37	4.20	0.42	4	R
912	UT	ANDERSON JUNCTION	MORGAN	571007	0.54	1.28	8.61	0.86	3	R
912	UT	ANDERSON JUNCTION	PRISCILLA	570624	1.48	1.47	9.30	0.93	7	R
912	UT	ANDERSON JUNCTION	SMOKY	570831	15.41	1.19	6.28	0.63	7	R
912	UT	ANDERSON JUNCTION	TESLA	550301	1.05	1.42	12.15	1.22	4	I
912	UT	ANDERSON JUNCTION	ZUCCHINI	550515	1.16	1.00	4.08	0.41	1	R
360	UT	ANNABELLA	APPLE-2	550505	0.46	1.40	13.29	1.33	4	I
242	UT	ANTIMONY	FOX	520525	1.19	1.40	15.00	1.50	4	I
242	UT	ANTIMONY	SMOKY	570831	10.00	1.40	12.26	1.23	4	I
365	UT	AURORA	SMALL BOY	620714	0.10	1.00	27.00	4.05	1	R
913	UT	BEAR VALLEY JUNCTION	FOX	520525	1.37	1.40	14.78	1.48	4	I
913	UT	BEAR VALLEY JUNCTION	MET	550415	0.37	1.40	5.00	0.50	3	I
913	UT	BEAR VALLEY JUNCTION	SMOKY	570831	11.52	1.45	12.07	1.21	9	R
122	UT	BEAVER	FOX	520525	1.58	1.40	14.66	1.47	4	I
122	UT	BEAVER	MET	550415	5.91	1.35	5.97	0.60	3	R
122	UT	BEAVER	SMOKY	570831	0.08	1.14	9.00	0.90	6	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
914	UT	BERYL	APPLE–1	550329	0.54	1.40	5.25	0.52	4	I
914	UT	BERYL	FOX	520525	5.67	1.40	11.59	1.16	4	I
914	UT	BERYL	MET	550415	3.13	1.36	4.64	0.46	4	R
914	UT	BERYL	SMALL BOY	620714	0.10	1.40	14.72	1.47	3	I
914	UT	BERYL	SMOKY	570831	0.54	1.00	4.50	0.68	1	R
915	UT	BERYL JUNCTION	APPLE–1	550329	1.62	1.52	5.00	0.50	6	R
915	UT	BERYL JUNCTION	FOX	520525	1.82	1.40	11.10	1.11	4	I
915	UT	BERYL JUNCTION	HARRY	530519	4.65	1.27	4.39	0.44	3	R
915	UT	BERYL JUNCTION	MET	550415	13.12	1.81	4.00	0.40	7	R
915	UT	BERYL JUNCTION	SMALL BOY	620714	0.06	2.09	15.00	1.50	13	R
915	UT	BERYL JUNCTION	SMOKY	570831	0.91	1.00	4.50	0.68	1	R
916	UT	BLACK ROCK	APPLE–2	550505	0.50	1.40	11.56	1.16	4	I
916	UT	BLACK ROCK	MET	550415	0.25	1.40	7.52	0.75	3	I
916	UT	BLACK ROCK	SCHOONER	681208	0.10	1.00	11.50	1.15	2	R
916	UT	BLACK ROCK	SMALL BOY	620714	0.08	1.00	21.00	3.15	3	R
916	UT	BLACK ROCK	TURK	550307	0.40	1.40	16.21	1.62	4	I
2000	UT	BLOOMINGTON	ANNIE	530317	3.79	1.76	3.55	0.36	4	I
2000	UT	BLOOMINGTON	HARRY	530519	47.21	1.56	3.65	0.37	4	I
2000	UT	BLOOMINGTON	SMOKY	570831	1.90	1.00	7.70	0.77	1	R
2000	UT	BLOOMINGTON	TESLA	550301	2.24	1.08	9.52	0.95	3	I
2000	UT	BLOOMINGTON	ZUCCHINI	550515	1.35	2.30	3.88	0.39	4	I
917	UT	BRYCE CANYON	MORGAN	571007	0.10	1.40	11.86	1.19	3	I
917	UT	BRYCE CANYON	SMOKY	570831	0.28	1.00	14.00	2.10	1	R
962	UT	CASTLE CLIFF	ANNIE	530317	1.01	1.00	3.08	0.31	1	R
962	UT	CASTLE CLIFF	ESS	550323	0.73	1.00	9.88	0.99	1	R
962	UT	CASTLE CLIFF	HARRY	530519	11.55	1.86	3.08	0.31	6	R
962	UT	CASTLE CLIFF	HORNET	550312	0.17	1.40	10.00	1.50	1	R
962	UT	CASTLE CLIFF	PRISCILLA	570624	0.09	2.66	9.00	0.90	2	R
962	UT	CASTLE CLIFF	SIMON	530425	1.41	1.00	12.28	1.23	1	R
962	UT	CASTLE CLIFF	SMOKY	570831	25.56	1.25	4.76	0.48	21	R
962	UT	CASTLE CLIFF	TESLA	550301	2.02	1.14	8.21	0.82	4	R
962	UT	CASTLE CLIFF	ZUCCHINI	550515	1.19	1.00	3.25	0.33	1	R
177	UT	CASTLE GATE	SMALL BOY	620714	0.78	1.00	35.00	5.25	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
254	UT	CEDAR CITY	APPLE–1	550329	1.19	1.47	6.00	0.60	3	R
254	UT	CEDAR CITY	FOX	520525	0.63	1.40	12.68	1.27	4	I
254	UT	CEDAR CITY	HARRY	530519	5.65	1.49	5.07	0.51	4	R
254	UT	CEDAR CITY	PRISCILLA	570624	0.26	1.78	12.00	1.80	6	R
254	UT	CEDAR CITY	SMOKY	570831	1.99	1.58	5.95	0.59	16	R
254	UT	CEDAR CITY	ZUCCHINI	550515	2.33	1.13	4.20	0.42	9	R
337	UT	CENTERFIELD	SMALL BOY	620714	0.10	1.40	28.00	4.20	4	I
431	UT	CENTRAL	APPLE–1	550329	0.21	1.00	5.13	0.51	1	R
431	UT	CENTRAL	HARRY	530519	39.44	1.05	3.96	0.40	2	R
431	UT	CENTRAL	MORGAN	571007	0.19	1.00	5.94	0.59	1	R
431	UT	CENTRAL	PRISCILLA	570624	1.88	1.14	7.18	0.72	6	R
431	UT	CENTRAL	SIMON	530425	1.00	1.40	14.81	1.48	4	I
431	UT	CENTRAL	SMALL BOY	620714	0.20	2.19	14.00	2.10	4	R
431	UT	CENTRAL	SMOKY	570831	3.37	1.29	4.68	0.47	11	R
431	UT	CENTRAL	TESLA	550301	0.32	1.40	11.19	1.12	4	I
431	UT	CENTRAL	ZUCCHINI	550515	0.53	1.00	3.33	0.33	1	R
423	UT	CHARLESTON	SMALL BOY	620714	0.11	1.40	35.00	5.25	4	I
294	UT	CIRCLEVILLE	FOX	520525	1.59	1.40	15.00	1.50	4	I
294	UT	CIRCLEVILLE	MET	550415	1.29	1.40	5.67	0.57	4	I
294	UT	CIRCLEVILLE	SMOKY	570831	3.82	1.42	12.09	1.21	10	R
224	UT	CLEVELAND	SMALL BOY	620714	0.15	1.40	35.00	5.25	4	I
963	UT	COLOMBIA MINE	APPLE–1	550329	0.77	1.00	6.00	0.60	1	R
963	UT	COLOMBIA MINE	FOX	520525	0.61	1.40	11.68	1.17	4	I
963	UT	COLOMBIA MINE	HARRY	530519	9.95	1.40	4.65	0.47	4	I
963	UT	COLOMBIA MINE	MORGAN	571007	0.10	1.40	5.49	0.55	4	I
963	UT	COLOMBIA MINE	PRISCILLA	570624	1.00	1.40	11.46	1.15	4	I
963	UT	COLOMBIA MINE	ZUCCHINI	550515	1.03	1.40	3.79	0.38	4	I
918	UT	COVE FORT	APPLE–2	550505	0.42	1.40	12.20	1.22	4	I
918	UT	COVE FORT	MET	550415	0.87	1.00	7.54	0.75	1	R
918	UT	COVE FORT	SMALL BOY	620714	0.11	2.10	22.00	3.30	5	R
276	UT	DELTA	APPLE–2	550505	1.03	1.40	13.79	1.38	4	I
276	UT	DELTA	HOOD	570705	0.13	1.00	11.64	1.16	1	R
276	UT	DELTA	SCHOONER	681208	0.15	1.32	13.00	1.30	15	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
919	UT	DESERT RANGE EXPERIM	APPLE–2	550505	0.42	1.40	9.39	0.94	4	I
919	UT	DESERT RANGE EXPERIM	NEWTON	570916	0.10	1.40	5.62	0.56	4	I
919	UT	DESERT RANGE EXPERIM	SCHOONER	681208	0.12	1.40	9.03	0.90	4	I
919	UT	DESERT RANGE EXPERIM	SMALL BOY	620714	0.10	1.40	15.00	1.50	3	I
919	UT	DESERT RANGE EXPERIM	TURK	550307	0.71	1.00	15.78	1.58	1	R
214	UT	DUCHESNE	SMALL BOY	620714	0.49	1.40	39.00	5.85	4	I
920	UT	DUCK CREEK FOREST CA	APPLE–1	550329	0.71	1.40	7.00	0.70	4	I
920	UT	DUCK CREEK FOREST CA	HARRY	530519	12.30	1.92	5.36	0.54	4	I
920	UT	DUCK CREEK FOREST CA	MORGAN	571007	0.17	1.40	10.41	1.04	4	I
920	UT	DUCK CREEK FOREST CA	PRISCILLA	570624	0.65	1.00	10.12	1.01	1	R
225	UT	ELMO	SMALL BOY	620714	0.14	1.40	35.00	5.25	4	I
356	UT	ELSINORE	APPLE–2	550505	0.45	1.40	13.20	1.32	4	I
230	UT	EMERY	SMALL BOY	620714	0.07	1.56	31.00	4.65	2	R
921	UT	ENOCH	APPLE–1	550329	0.63	1.47	6.00	0.60	4	I
921	UT	ENOCH	FOX	520525	1.15	1.40	12.87	1.29	4	I
921	UT	ENOCH	PRISCILLA	570624	0.13	1.27	12.00	1.80	2	R
921	UT	ENOCH	SMALL BOY	620714	0.09	1.17	18.00	2.70	3	R
921	UT	ENOCH	SMOKY	570831	0.48	1.19	10.00	1.50	3	R
921	UT	ENOCH	ZUCCHINI	550515	2.15	1.00	4.21	0.42	1	R
432	UT	ENTERPRISE	APPLE–1	550329	3.99	1.32	5.00	0.50	2	R
432	UT	ENTERPRISE	FOX	520525	0.82	1.40	10.59	1.06	4	I
432	UT	ENTERPRISE	HARRY	530519	8.39	1.58	4.04	0.40	4	R
432	UT	ENTERPRISE	PRISCILLA	570624	0.74	1.74	8.91	0.89	3	R
432	UT	ENTERPRISE	SIMON	530425	1.00	1.40	15.49	1.55	4	I
432	UT	ENTERPRISE	SMALL BOY	620714	0.16	2.98	14.00	1.40	7	R
432	UT	ENTERPRISE	SMOKY	570831	0.66	1.34	4.50	0.45	3	R
341	UT	EPHRAIM	HOOD	570705	0.10	1.00	14.50	1.45	1	R
341	UT	EPHRAIM	SMALL BOY	620714	0.13	1.40	30.00	4.50	4	I
261	UT	EUREKA	SCHOONER	681208	0.12	1.41	15.50	2.33	2	R
346	UT	FAIRVIEW	SMALL BOY	620714	0.28	1.40	32.00	4.80	4	I
338	UT	FAYETTE	HOOD	570705	0.10	1.40	13.35	1.34	4	I
338	UT	FAYETTE	SMALL BOY	620714	0.11	1.40	28.00	4.20	4	I
231	UT	FERRON	SMALL BOY	620714	0.10	1.00	32.00	4.80	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
281	UT	FILLMORE	APPLE–2	550505	0.67	1.40	13.25	1.33	4	I
281	UT	FILLMORE	HOOD	570705	0.14	1.93	12.50	1.25	2	R
281	UT	FILLMORE	SMALL BOY	620714	0.22	1.41	25.00	3.75	4	R
347	UT	FOUNTAIN GREEN	SMALL BOY	620714	0.18	1.40	31.00	4.65	4	I
373	UT	FRANCIS	SMALL BOY	620714	0.11	1.40	37.00	5.55	4	I
922	UT	GARRISON	APPLE–2	550505	1.81	1.00	9.22	0.92	1	R
922	UT	GARRISON	DIABLO	570715	2.04	1.22	14.83	1.48	4	R
922	UT	GARRISON	HOOD	570705	0.30	1.17	9.00	0.90	6	R
922	UT	GARRISON	JOHN	570719	0.75	1.00	14.00	2.10	1	R
922	UT	GARRISON	SCHOONER	681208	0.11	1.73	9.00	0.90	12	R
922	UT	GARRISON	TURK	550307	1.78	1.69	15.66	1.57	2	R
272	UT	GLENDALE	APPLE–1	550329	0.59	1.00	7.00	0.70	2	R
272	UT	GLENDALE	HARRY	530519	24.28	1.75	5.05	0.51	2	R
272	UT	GLENDALE	MORGAN	571007	0.18	1.40	11.61	1.16	4	I
272	UT	GLENDALE	PRISCILLA	570624	2.37	1.24	10.22	1.02	15	R
272	UT	GLENDALE	SMOKY	570831	0.53	1.87	11.50	1.15	2	R
964	UT	GOLDSTRIKE	APPLE–1	550329	0.25	1.40	5.00	0.50	4	I
964	UT	GOLDSTRIKE	FOX	520525	0.31	1.40	9.61	0.96	3	I
964	UT	GOLDSTRIKE	HARRY	530519	42.59	1.40	3.65	0.36	4	I
964	UT	GOLDSTRIKE	MORGAN	571007	0.57	1.40	4.99	0.50	4	I
964	UT	GOLDSTRIKE	PRISCILLA	570624	3.19	1.40	6.96	0.70	4	I
964	UT	GOLDSTRIKE	SIMON	530425	1.00	1.40	13.87	1.39	4	I
964	UT	GOLDSTRIKE	SMOKY	570831	1.41	1.40	4.20	0.42	4	I
2001	UT	GRAFTON	ANNIE	530317	16.58	1.47	3.82	0.38	5	R
2001	UT	GRAFTON	HARRY	530519	43.66	1.39	4.17	0.42	4	I
2001	UT	GRAFTON	PRISCILLA	570624	0.11	1.00	11.00	1.10	1	R
2001	UT	GRAFTON	SMOKY	570831	2.11	1.00	9.11	0.91	1	R
923	UT	GREENVILLE	FOX	520525	2.01	1.40	14.41	1.44	4	I
923	UT	GREENVILLE	MET	550415	7.39	1.35	5.84	0.58	4	I
923	UT	GREENVILLE	SMALL BOY	620714	0.08	1.66	21.00	3.15	3	R
923	UT	GREENVILLE	SMOKY	570831	0.08	1.00	8.00	1.20	1	R
923	UT	GREENVILLE	TURK	550307	0.35	1.00	17.00	2.55	1	R
924	UT	GUNLOCK	HARRY	530519	70.48	1.27	3.76	0.38	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
924	UT	GUNLOCK	MORGAN	571007	0.41	1.15	6.49	0.65	4	I
924	UT	GUNLOCK	PRISCILLA	570624	1.67	1.22	7.16	0.72	7	R
924	UT	GUNLOCK	SIMON	530425	1.00	1.40	13.84	1.38	4	I
924	UT	GUNLOCK	SMOKY	570831	5.83	1.10	4.48	0.45	2	R
924	UT	GUNLOCK	TESLA	550301	0.25	1.00	10.03	1.00	1	R
339	UT	GUNNISON	HOOD	570705	0.13	1.00	13.50	1.35	1	R
339	UT	GUNNISON	SMALL BOY	620714	0.10	1.40	28.00	4.20	4	I
925	UT	HAMILTON FORT	APPLE–1	550329	2.67	1.17	6.00	0.60	3	R
925	UT	HAMILTON FORT	FOX	520525	0.46	1.40	12.45	1.25	4	I
925	UT	HAMILTON FORT	HARRY	530519	11.58	1.15	4.96	0.50	3	R
925	UT	HAMILTON FORT	PRISCILLA	570624	0.36	1.69	11.11	1.11	3	R
925	UT	HAMILTON FORT	SMOKY	570831	4.83	1.22	5.94	0.59	10	R
925	UT	HAMILTON FORT	ZUCCHINI	550515	1.77	1.52	4.09	0.41	2	R
926	UT	HAMLIN VALLEY	FOX	520525	9.15	1.40	11.18	1.12	4	I
926	UT	HAMLIN VALLEY	MET	550415	0.60	1.40	5.00	0.50	3	I
926	UT	HAMLIN VALLEY	SMALL BOY*	620714	0.21	1.18	13.48	1.35	6	R
2002	UT	HARRISBURG JCT.	ANNIE	530317	7.66	1.74	3.38	0.34	2	R
2002	UT	HARRISBURG JCT.	HARRY	530519	45.34	1.34	3.87	0.39	7	R
2002	UT	HARRISBURG JCT.	PRISCILLA	570624	0.35	1.83	10.50	1.05	3	R
2002	UT	HARRISBURG JCT.	SIMON	530425	1.00	1.40	13.84	1.38	3	I
2002	UT	HARRISBURG JCT.	SMOKY	570831	5.53	1.35	7.55	0.75	12	R
2002	UT	HARRISBURG JCT.	TESLA	550301	0.33	1.00	11.00	1.10	1	R
2002	UT	HARRISBURG JCT.	ZUCCHINI	550515	1.10	1.40	4.02	0.40	4	I
239	UT	HATCH	PRISCILLA	570624	0.33	1.00	12.00	1.20	1	R
239	UT	HATCH	SMOKY	570831	1.22	1.22	11.89	1.19	3	R
424	UT	HEBER CITY	SMALL BOY	620714	0.11	1.40	36.00	5.40	4	I
178	UT	HELPER	SMALL BOY	620714	0.18	1.40	35.00	5.25	4	I
180	UT	HIAWATHA	SMALL BOY	620714	0.54	1.40	34.00	5.10	4	I
2012	UT	HILLDALE	ANNIE	530317	0.15	1.40	4.42	0.44	4	I
2012	UT	HILLDALE	HARRY	530519	64.70	1.40	4.08	0.41	4	I
2012	UT	HILLDALE	TESLA	550301	0.75	1.40	11.92	1.19	4	I
928	UT	HILLSDALE	SMOKY	570831	3.05	1.20	11.91	1.19	4	R
277	UT	HINCKLEY	APPLE–2	550505	1.03	1.40	13.58	1.36	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
277	UT	HINCKLEY	HOOD	570705	0.13	1.40	11.25	1.13	4	I
277	UT	HINCKLEY	NEWTON	570916	0.10	1.40	8.00	0.80	3	I
277	UT	HINCKLEY	SCHOONER	681208	0.11	1.14	12.83	1.28	8	R
286	UT	HOLDEN	APPLE-2	550505	0.79	1.40	13.65	1.37	4	I
286	UT	HOLDEN	HOOD	570705	0.35	2.05	12.00	1.20	3	R
286	UT	HOLDEN	SMALL BOY	620714	0.13	1.59	26.00	3.90	4	R
227	UT	HUNTINGTON	SMALL BOY	620714	0.24	1.40	34.00	5.10	4	I
434	UT	HURRICANE	ANNIE	530317	10.25	1.91	3.54	0.35	7	R
434	UT	HURRICANE	HARRY	530519	76.06	1.15	4.01	0.40	6	R
434	UT	HURRICANE	PRISCILLA	570624	0.31	1.00	11.00	1.65	1	R
434	UT	HURRICANE	SMOKY	570831	2.52	1.00	11.00	1.65	1	R
434	UT	HURRICANE	TESLA	550301	1.65	1.00	11.00	1.10	1	R
434	UT	HURRICANE	ZUCCHINI	550515	0.62	1.40	4.23	0.42	4	I
442	UT	IVINS	ANNIE	530317	39.08	1.00	3.10	0.31	1	R
442	UT	IVINS	HARRY	530519	36.17	1.26	3.70	0.37	6	R
442	UT	IVINS	PRISCILLA	570624	0.11	1.00	9.00	0.90	1	R
442	UT	IVINS	SIMON	530425	1.00	1.40	13.36	1.34	4	I
442	UT	IVINS	SMOKY	570831	12.41	1.25	5.43	0.54	13	R
442	UT	IVINS	TESLA	550301	2.86	1.42	9.80	0.98	4	I
442	UT	IVINS	ZUCCHINI	550515	1.41	1.00	3.57	0.36	1	R
357	UT	JOSEPH	APPLE-2	550505	0.42	1.40	12.87	1.29	4	I
357	UT	JOSEPH	MET	550415	2.72	1.40	7.68	0.77	4	I
295	UT	JUNCTION	FOX	520525	1.23	1.40	15.00	1.50	4	I
295	UT	JUNCTION	MET	550415	2.05	1.40	6.00	0.60	4	I
295	UT	JUNCTION	SMOKY	570831	1.32	1.00	12.11	1.21	1	R
374	UT	KAMAS	SMALL BOY	620714	0.11	1.40	37.00	5.55	4	I
269	UT	KANAB	HARRY	530519	40.82	1.00	4.76	0.48	1	R
269	UT	KANAB	PRISCILLA	570624	0.09	1.00	12.00	1.80	2	R
255	UT	KANARRAVILLE	APPLE-1	550329	2.25	1.93	6.00	0.60	3	R
255	UT	KANARRAVILLE	HARRY	530519	21.58	1.26	4.73	0.47	3	R
255	UT	KANARRAVILLE	PRISCILLA	570624	0.44	1.70	10.79	1.08	6	R
255	UT	KANARRAVILLE	SMOKY	570831	14.27	1.11	5.80	0.58	9	R
255	UT	KANARRAVILLE	TESLA	550301	0.54	1.82	13.84	1.38	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
255	UT	KANARRAVILLE	ZUCCHINI	550515	1.92	1.00	4.00	0.40	1	R
282	UT	KANOSH	APPLE–2	550505	0.52	1.40	12.78	1.28	4	I
282	UT	KANOSH	HOOD	570705	0.07	1.65	12.00	1.20	2	R
282	UT	KANOSH	MET	550415	0.53	1.40	8.64	0.86	4	I
282	UT	KANOSH	SMALL BOY	620714	0.10	1.00	24.00	3.60	4	I
296	UT	KINGSTON	FOX	520525	1.24	1.40	15.00	1.50	4	I
296	UT	KINGSTON	MET	550415	1.36	1.40	6.00	0.60	4	I
296	UT	KINGSTON	SMOKY	570831	8.93	1.42	12.04	1.20	4	I
435	UT	LA VERKIN	ANNIE	530317	1.77	1.62	3.42	0.34	3	R
435	UT	LA VERKIN	HARRY	530519	65.32	1.32	4.08	0.41	8	R
435	UT	LA VERKIN	MORGAN	571007	0.14	1.24	9.69	0.97	4	I
435	UT	LA VERKIN	PRISCILLA	570624	0.40	1.48	10.23	1.02	3	R
435	UT	LA VERKIN	SMOKY	570831	2.53	1.00	11.00	1.65	2	R
435	UT	LA VERKIN	TESLA	550301	1.66	1.00	11.64	1.16	2	R
435	UT	LA VERKIN	ZUCCHINI	550515	0.73	1.40	4.20	0.42	4	I
278	UT	LEAMINGTON	APPLE–2	550505	1.03	1.40	14.84	1.48	3	I
278	UT	LEAMINGTON	HOOD	570705	0.10	1.40	12.00	1.20	4	I
436	UT	LEEDS	ANNIE	530317	2.04	1.57	3.27	0.33	4	I
436	UT	LEEDS	HARRY	530519	31.10	1.41	4.07	0.41	4	R
436	UT	LEEDS	MORGAN	571007	0.70	1.17	9.14	0.91	2	R
436	UT	LEEDS	PRISCILLA	570624	1.36	1.92	9.84	0.98	2	R
436	UT	LEEDS	SMOKY	570831	16.56	1.13	6.80	0.68	8	R
436	UT	LEEDS	TESLA	550301	1.16	1.51	11.62	1.16	3	I
436	UT	LEEDS	ZUCCHINI	550515	1.00	1.40	4.08	0.41	4	I
263	UT	LEVAN	HOOD	570705	0.19	1.00	13.50	1.35	1	R
263	UT	LEVAN	SMALL BOY	620714	0.11	1.40	29.00	4.35	4	I
929	UT	LONG VALLEY JUNCTION	APPLE–1	550329	0.62	1.40	7.00	0.70	4	I
929	UT	LONG VALLEY JUNCTION	HARRY	530519	21.81	1.92	5.50	0.55	2	R
929	UT	LONG VALLEY JUNCTION	MORGAN	571007	0.12	1.40	10.93	1.09	4	I
929	UT	LONG VALLEY JUNCTION	PRISCILLA	570624	0.77	1.47	10.14	1.01	2	R
929	UT	LONG VALLEY JUNCTION	SMOKY	570831	0.26	1.12	12.00	1.20	3	R
930	UT	LUND	FOX	520525	5.64	1.40	12.47	1.25	4	I
930	UT	LUND	MET	550415	5.61	1.24	5.00	0.50	5	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
279	UT	LYNNDYL	APPLE–2	550505	1.05	1.40	14.77	1.48	4	I
279	UT	LYNNDYL	HOOD	570705	0.10	1.40	12.00	1.20	4	I
279	UT	LYNNDYL	NEWTON	570916	0.10	1.40	8.00	0.80	3	I
279	UT	LYNNDYL	SCHOONER	681208	0.29	1.24	13.00	1.30	3	R
931	UT	MANDERFIELD	FOX	520525	0.98	1.40	14.96	1.50	4	I
931	UT	MANDERFIELD	MET	550415	2.41	1.00	6.00	0.60	1	R
931	UT	MANDERFIELD	SMALL BOY	620714	0.08	1.00	21.00	3.15	3	R
931	UT	MANDERFIELD	SMOKY	570831	0.07	1.28	10.00	1.50	5	R
342	UT	MANTI	HOOD	570705	0.07	1.31	14.00	1.40	2	R
342	UT	MANTI	SMALL BOY	620714	0.12	1.40	30.00	4.50	4	I
419	UT	MAPLETON	SMALL BOY	620714	0.27	2.19	33.00	4.95	4	R
298	UT	MARYSVALE	FOX	520525	0.41	1.40	15.00	1.50	4	I
298	UT	MARYSVALE	MET	550415	7.39	1.40	6.68	0.67	4	I
298	UT	MARYSVALE	SMOKY	570831	0.16	1.51	12.03	1.20	4	R
343	UT	MAYFIELD	SMALL BOY	620714	0.10	1.40	29.00	4.35	4	I
283	UT	MEADOW	APPLE–2	550505	0.60	1.40	12.95	1.29	4	I
283	UT	MEADOW	HOOD	570705	0.10	1.35	12.00	1.20	2	R
283	UT	MEADOW	SMALL BOY*	620714	0.17	1.00	24.00	3.60	2	R
2003	UT	MIDDLETON	ANNIE	530317	11.95	2.10	3.30	0.33	2	R
2003	UT	MIDDLETON	HARRY	530519	39.47	1.92	3.80	0.38	5	R
2003	UT	MIDDLETON	PRISCILLA	570624	0.07	1.45	10.00	1.00	2	R
2003	UT	MIDDLETON	SIMON	530425	1.00	1.40	13.49	1.35	4	I
2003	UT	MIDDLETON	SMOKY	570831	5.37	1.81	7.00	0.70	4	R
2003	UT	MIDDLETON	TESLA	550301	2.46	1.68	10.31	1.03	3	I
2003	UT	MIDDLETON	ZUCCHINI	550515	1.31	2.30	3.86	0.39	4	I
425	UT	MIDWAY	SMALL BOY	620714	0.10	1.40	35.00	5.25	4	I
124	UT	MILFORD	APPLE–2	550505	0.12	1.00	11.00	1.65	1	R
124	UT	MILFORD	FOX	520525	0.86	1.40	14.05	1.40	4	I
124	UT	MILFORD	MET	550415	2.37	1.34	6.39	0.64	3	R
124	UT	MILFORD	TURK	550307	0.13	1.00	16.10	1.61	1	R
125	UT	MINERSVILLE	FOX	520525	2.71	1.40	13.96	1.40	4	I
125	UT	MINERSVILLE	MET	550415	5.14	1.08	6.00	0.60	3	R
933	UT	MODENA	APPLE–1	550329	0.87	1.16	5.00	0.50	2	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
933	UT	MODENA	FOX	520525	5.85	1.40	10.70	1.07	4	I
933	UT	MODENA	HARRY	530519	3.34	1.00	4.20	0.42	1	R
933	UT	MODENA	MET	550415	1.07	1.43	4.00	0.40	3	R
933	UT	MODENA	SIMON	530425	0.99	1.40	16.44	1.64	4	I
933	UT	MODENA	SMALL BOY	620714	0.17	1.38	13.31	2.00	7	R
933	UT	MODENA	SMOKY	570831	0.57	1.00	4.00	0.60	1	R
264	UT	MONA	SMALL BOY	620714	0.11	1.40	31.00	4.65	4	I
358	UT	MONROE	APPLE-2	550505	0.42	1.40	13.12	1.31	4	I
358	UT	MONROE	MET	550415	2.72	1.40	7.58	0.76	3	I
348	UT	MORONI	SMALL BOY	620714	0.14	1.40	31.00	4.65	4	I
934	UT	MOUNT CARMEL	APPLE-1	550329	0.15	1.00	7.00	0.70	1	R
934	UT	MOUNT CARMEL	HARRY	530519	17.30	1.40	4.88	0.49	5	R
934	UT	MOUNT CARMEL	MORGAN	571007	0.13	1.40	11.83	1.18	4	I
934	UT	MOUNT CARMEL	PRISCILLA	570624	0.52	1.81	11.00	1.10	8	R
934	UT	MOUNT CARMEL	SMOKY	570831	0.44	1.69	11.00	1.10	2	R
935	UT	MOUNT CARMEL JUNCTIO	ANNIE	530317	2.38	1.73	4.00	0.40	2	R
935	UT	MOUNT CARMEL JUNCTIO	APPLE-1	550329	0.15	1.00	7.00	0.70	1	R
935	UT	MOUNT CARMEL JUNCTIO	HARRY	530519	27.58	1.55	4.84	0.48	5	R
935	UT	MOUNT CARMEL JUNCTIO	MORGAN	571007	0.12	1.40	11.90	1.19	4	I
935	UT	MOUNT CARMEL JUNCTIO	PRISCILLA	570624	0.22	1.39	11.00	1.10	5	R
935	UT	MOUNT CARMEL JUNCTIO	SMOKY	570831	0.27	1.00	11.00	1.10	1	R
349	UT	MOUNT PLEASANT	SMALL BOY	620714	0.22	1.40	32.00	4.80	4	I
2014	UT	MOUNTAIN MEADOW	APPLE-1	550329	1.81	1.32	5.00	0.50	4	I
2014	UT	MOUNTAIN MEADOW	FOX	520525	0.42	1.40	10.77	1.08	4	I
2014	UT	MOUNTAIN MEADOW	HARRY	530519	25.81	1.28	4.10	0.41	3	R
2014	UT	MOUNTAIN MEADOW	MORGAN	571007	0.19	1.40	5.16	0.52	4	I
2014	UT	MOUNTAIN MEADOW	PRISCILLA	570624	1.92	1.50	7.93	0.79	4	I
2014	UT	MOUNTAIN MEADOW	SIMON	530425	1.00	1.40	15.46	1.55	4	I
2014	UT	MOUNTAIN MEADOW	SMALL BOY*	620714	0.22	2.24	14.00	2.10	4	R
2014	UT	MOUNTAIN MEADOW	SMOKY	570831	1.02	1.00	4.65	0.46	1	R
2014	UT	MOUNTAIN MEADOW	ZUCCHINI	550515	0.55	1.38	3.25	0.33	2	R
216	UT	MYTON	SMALL BOY	620714	0.31	1.40	41.00	6.15	4	I
265	UT	NEPHI	SMALL BOY	620714	0.11	1.40	30.00	4.50	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
437	UT	NEW HARMONY	APPLE-1	550329	1.52	1.13	6.00	0.60	5	R
437	UT	NEW HARMONY	MORGAN	571007	0.28	1.40	6.81	0.68	4	I
437	UT	NEW HARMONY	PRISCILLA	570624	1.00	1.40	9.82	0.98	4	I
437	UT	NEW HARMONY	SMOKY	570831	12.10	1.40	5.45	0.54	4	I
437	UT	NEW HARMONY	TESLA	550301	0.50	1.40	13.23	1.32	3	I
437	UT	NEW HARMONY	ZUCCHINI	550515	1.04	1.40	3.95	0.39	4	I
936	UT	NEWCASTLE	APPLE-1	550329	3.95	1.32	5.48	0.55	2	R
936	UT	NEWCASTLE	FOX	520525	1.18	1.40	11.37	1.14	4	I
936	UT	NEWCASTLE	HARRY	530519	6.51	1.27	4.51	0.45	4	I
936	UT	NEWCASTLE	PRISCILLA	570624	0.39	1.36	12.00	1.20	5	R
936	UT	NEWCASTLE	SMOKY	570831	0.72	1.00	4.75	0.47	1	R
936	UT	NEWCASTLE	ZUCCHINI	550515	0.15	1.40	3.46	0.35	3	I
287	UT	OAK CITY	APPLE-2	550505	1.01	1.40	14.40	1.44	4	I
287	UT	OAK CITY	HOOD	570705	0.20	1.95	12.00	1.20	2	R
375	UT	OAKLEY	SMALL BOY	620714	0.11	1.40	37.00	5.55	4	I
273	UT	ORDERVILLE	APPLE-1	550329	0.59	1.00	7.00	0.70	1	R
273	UT	ORDERVILLE	HARRY	530519	23.47	1.80	4.91	0.49	4	R
273	UT	ORDERVILLE	MORGAN	571007	0.12	1.40	11.86	1.19	4	I
273	UT	ORDERVILLE	PRISCILLA	570624	0.83	1.42	10.50	1.05	5	R
273	UT	ORDERVILLE	SMOKY	570831	0.46	1.95	11.50	1.15	3	R
406	UT	OREM	SMALL BOY	620714	0.10	1.40	33.00	4.95	3	I
240	UT	PANGUITCH	FOX	520525	0.77	1.40	14.46	1.45	4	I
240	UT	PANGUITCH	SMOKY	570831	15.58	1.14	11.92	1.19	7	R
257	UT	PARAGONAH	FOX	520525	1.50	1.40	13.84	1.38	4	I
257	UT	PARAGONAH	MET	550415	0.44	1.00	5.00	0.50	1	R
257	UT	PARAGONAH	SMOKY	570831	0.35	1.17	10.00	1.50	3	R
257	UT	PARAGONAH	ZUCCHINI	550515	4.49	1.00	5.00	0.50	1	R
377	UT	PARK CITY	SMALL BOY	620714	0.10	1.40	36.00	5.40	3	I
258	UT	PAROWAN	FOX	520525	1.49	1.40	13.58	1.36	4	I
258	UT	PAROWAN	MET	550415	0.10	1.00	5.00	0.50	1	R
258	UT	PAROWAN	SMALL BOY	620714	0.06	1.24	19.00	2.85	3	R
258	UT	PAROWAN	SMOKY	570831	0.41	1.00	10.50	1.58	1	R
258	UT	PAROWAN	ZUCCHINI	550515	5.30	1.00	4.68	0.47	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
961	UT	PINE VALLEY	APPLE-1	550329	0.44	1.40	5.76	0.58	4	I
961	UT	PINE VALLEY	HARRY	530519	43.93	1.05	4.06	0.41	4	I
961	UT	PINE VALLEY	MORGAN	571007	0.50	1.40	6.73	0.67	4	I
961	UT	PINE VALLEY	PRISCILLA	570624	4.17	1.14	7.71	0.77	4.	I
961	UT	PINE VALLEY	SIMON	530425	1.00	1.40	14.97	1.50	3	I
961	UT	PINE VALLEY	SMOKY	570831	10.06	1.29	4.90	0.49	4	I
961	UT	PINE VALLEY	TESLA	550301	0.47	1.40	11.78	1.18	4	I
961	UT	PINE VALLEY	ZUCCHINI	550515	1.19	1.40	3.63	0.36	4	I
965	UT	PINTO	APPLE-1	550329	2.02	1.40	5.67	0.57	4	I
965	UT	PINTO	FOX	520525	0.39	1.40	11.11	1.11	4	I
965	UT	PINTO	HARRY	530519	20.24	1.28	4.24	0.42	4	I
965	UT	PINTO	MORGAN	571007	0.16	1.40	5.45	0.55	4	I
965	UT	PINTO	PRISCILLA	570624	1.39	1.40	8.83	0.88	4	I
965	UT	PINTO	SMOKY	570831	2.54	1.40	4.80	0.48	4	I
965	UT	PINTO	ZUCCHINI	550515	1.00	1.38	3.55	0.35	4	I
938	UT	PINTURA	ANNIE	530317	0.83	1.00	3.06	0.31	2	R
938	UT	PINTURA	APPLE-1	550329	0.24	2.71	6.00	0.60	2	R
938	UT	PINTURA	HARRY	530519	25.98	1.23	4.27	0.43	4	R
938	UT	PINTURA	MORGAN	571007	0.35	1.27	8.27	0.83	2	R
938	UT	PINTURA	PRISCILLA	570624	1.46	1.50	9.03	0.90	19	R
938	UT	PINTURA	SMOKY	570831	17.25	1.18	6.06	0.61	9	R
938	UT	PINTURA	TESLA	550301	0.98	1.42	12.52	1.25	4	I
938	UT	PINTURA	ZUCCHINI	550515	1.58	1.00	4.07	0.41	1	R
937	UT	PIUTE INDIAN RESERVA	FOX	520525	0.83	1.40	15.00	1.50	4	I
937	UT	PIUTE INDIAN RESERVA	MET	550415	3.24	1.40	6.00	0.60	4	I
937	UT	PIUTE INDIAN RESERVA	SMOKY	570831	4.94	1.40	12.10	1.21	4	I
181	UT	PRICE	SMALL BOY	620714	0.12	1.40	35.00	5.25	4	I
415	UT	PROVO	SMALL BOY	620714	0.10	1.40	33.00	4.95	4	I
366	UT	REDMOND	SMALL BOY	620714	0.10	1.40	28.00	4.20	4	I
362	UT	RICHFIELD	APPLE-2	550505	0.49	1.40	13.39	1.34	4	I
939	UT	ROCKVILLE	ANNIE	530317	16.13	1.57	3.94	0.39	4	R
939	UT	ROCKVILLE	HARRY	530519	42.31	1.38	4.23	0.42	3	R
939	UT	ROCKVILLE	PRISCILLA	570624	0.14	1.00	11.00	1.10	1	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
939	UT	ROCKVILLE	SMOKY	570831	2.12	1.00	9.50	0.95	1	R
218	UT	ROOSEVELT	SMALL BOY	620714	0.47	1.40	42.00	6.30	4	I
409	UT	SALEM	SMALL BOY	620714	0.12	2.19	32.00	4.80	4	I
367	UT	SALINA	SMALL BOY	620714	0.17	1.22	28.00	4.20	2	R
444	UT	SANTA CLARA	ANNIE	530317	13.95	1.17	3.15	0.32	4	R
444	UT	SANTA CLARA	HARRY	530519	41.77	1.15	3.67	0.37	5	R
444	UT	SANTA CLARA	PRISCILLA	570624	0.37	1.98	9.00	0.90	3	R
444	UT	SANTA CLARA	SIMON	530425	1.00	1.40	13.28	1.33	4	I
444	UT	SANTA CLARA	SMOKY	570831	9.76	1.31	5.63	0.56	17	R
444	UT	SANTA CLARA	TESLA	550301	4.97	1.08	9.75	0.97	4	R
444	UT	SANTA CLARA	ZUCCHINI	550515	0.22	2.30	3.61	0.36	2	R
410	UT	SANTAQUIN	SMALL BOY	620714	0.10	1.40	32.00	4.80	3	I
288	UT	SCIPIO	APPLE-2	550505	0.86	1.40	14.33	1.43	4	I
288	UT	SCIPIO	HOOD	570705	0.10	1.40	13.00	1.30	4	I
288	UT	SCIPIO	SMALL BOY	620714	0.17	1.00	27.00	4.05	1	R
184	UT	SCOFIELD	SMALL BOY	620714	0.33	1.40	34.00	5.10	4	I
941	UT	SHIVWITS	ANNIE	530317	25.26	2.65	3.03	0.30	7	R
941	UT	SHIVWITS	HARRY	530519	33.42	1.62	3.58	0.36	4	R
941	UT	SHIVWITS	PRISCILLA	570624	0.23	1.80	8.00	0.80	11	R
941	UT	SHIVWITS	SIMON	530425	1.03	1.40	13.21	1.32	4	I
941	UT	SHIVWITS	SMOKY	570831	28.97	1.28	4.71	0.47	22	R
941	UT	SHIVWITS	TESLA	550301	0.82	1.64	9.53	0.95	2	R
941	UT	SHIVWITS	ZUCCHINI	550515	0.97	1.10	3.37	0.34	2	R
428	UT	SOLDIER SUMMIT	SMALL BOY	620714	0.93	1.32	35.00	5.25	2	R
417	UT	SPANISH FORK	SMALL BOY	620714	0.11	2.19	33.00	4.95	4	I
350	UT	SPRING CITY	HOOD	570705	0.12	1.07	15.00	2.25	2	R
350	UT	SPRING CITY	SMALL BOY	620714	0.17	1.40	31.00	4.65	4	I
438	UT	SPRINGDALE	ANNIE	530317	7.59	2.00	3.96	0.40	3	R
438	UT	SPRINGDALE	HARRY	530519	51.42	1.42	4.26	0.43	3	R
438	UT	SPRINGDALE	PRISCILLA	570624	0.10	1.00	11.00	1.65	2	R
438	UT	SPRINGDALE	SMOKY	570831	1.83	1.23	9.50	0.95	2	R
420	UT	SPRINGVILLE	SMALL BOY	620714	0.12	2.19	33.00	4.95	4	I
443	UT	ST. GEORGE	ANNIE	530317	6.85	1.85	3.29	0.33	45	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
443	UT	ST. GEORGE	DIXIE	530406	0.17	1.40	9.00	1.35	2	R
443	UT	ST. GEORGE	HARRY	530519	63.64	1.48	3.77	0.38	54	R
443	UT	ST. GEORGE	PRISCILLA	570624	0.26	2.56	10.00	1.00	3	R
443	UT	ST. GEORGE	SIMON	530425	0.89	1.00	13.41	1.34	1	R
443	UT	ST. GEORGE	SMOKY	570831	6.43	1.67	6.78	0.68	15	R
443	UT	ST. GEORGE	TESLA	550301	2.95	1.68	10.18	1.02	3	I
443	UT	ST. GEORGE	ZUCCHINI	550515	1.59	2.30	3.82	0.38	4	I
344	UT	STERLING	SMALL BOY	620714	0.11	1.40	29.00	4.35	4	I
942	UT	SUMMIT	APPLE-1	550329	0.42	1.40	6.00	0.60	4	I
942	UT	SUMMIT	FOX	520525	1.12	1.40	13.16	1.32	4	I
942	UT	SUMMIT	SMOKY	570831	0.36	1.10	10.00	1.50	2	R
942	UT	SUMMIT	ZUCCHINI	550515	3.24	1.40	4.42	0.44	4	I
220	UT	TABIONA	SMALL BOY	620714	1.04	1.15	38.00	5.70	2	R
439	UT	TOQUERVILLE	ANNIE	530317	0.19	1.35	3.28	0.33	2	R
439	UT	TOQUERVILLE	HARRY	530519	38.52	1.00	4.13	0.41	1	R
439	UT	TOQUERVILLE	MORGAN	571007	0.29	1.25	9.18	0.92	4	I
439	UT	TOQUERVILLE	PRISCILLA	570624	0.97	1.15	9.92	0.99	3	R
439	UT	TOQUERVILLE	SMOKY	570831	4.37	1.00	6.83	0.68	1	R
439	UT	TOQUERVILLE	TESLA	550301	0.98	1.80	11.84	1.18	3	R
439	UT	TOQUERVILLE	ZUCCHINI	550515	1.33	1.00	4.13	0.41	1	R
943	UT	UVADA	APPLE-1	550329	2.40	1.40	4.86	0.49	4	I
943	UT	UVADA	FOX	520525	4.74	1.40	10.02	1.00	4	I
943	UT	UVADA	HARRY	530519	4.83	1.00	3.86	0.39	1	R
943	UT	UVADA	MET	550415	2.94	1.50	4.00	0.40	4	R
943	UT	UVADA	SIMON	530425	0.98	1.40	15.12	1.51	4	I
944	UT	VEYO	ANNIE	530317	0.16	2.85	2.50	0.38	2	R
944	UT	VEYO	APPLE-1	550329	0.19	1.00	5.50	0.55	1	R
944	UT	VEYO	HARRY	530519	46.69	1.27	3.85	0.38	8	R
944	UT	VEYO	MORGAN	571007	0.43	1.15	6.72	0.67	2	R
944	UT	VEYO	PRISCILLA	570624	3.96	1.25	7.30	0.73	20	R
944	UT	VEYO	SIMON	530425	1.00	1.40	14.21	1.42	4	I
944	UT	VEYO	SMALL BOY	620714	0.08	1.82	14.00	2.10	7	R
944	UT	VEYO	SMOKY	570831	7.38	1.26	4.66	0.47	15	R

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
944	UT	VEYO	TESLA	550301	0.57	1.40	10.63	1.06	4	I
944	UT	VEYO	ZUCCHINI	550515	0.27	1.00	3.50	0.35	2	R
945	UT	VIC'S PLACE	ANNIE	530317	0.19	1.35	3.13	0.31	2	R
945	UT	VIC'S PLACE	HARRY	530519	33.30	1.37	4.20	0.42	4	R
945	UT	VIC'S PLACE	MORGAN	571007	0.54	1.28	8.58	0.86	3	R
945	UT	VIC'S PLACE	PRISCILLA	570624	1.83	1.30	9.26	0.93	6	R
945	UT	VIC'S PLACE	SMOKY	570831	15.93	1.20	6.26	0.63	8	R
945	UT	VIC'S PLACE	TESLA	550301	1.04	1.42	12.17	1.22	4	I
945	UT	VIC'S PLACE	ZUCCHINI	550515	1.16	1.00	4.08	0.41	1	R
946	UT	VIC'S SERVICE STATIO	ANNIE	530317	1.01	1.00	3.09	0.31	1	R
946	UT	VIC'S SERVICE STATIO	ESS	550323	0.73	1.00	9.85	0.98	1	R
946	UT	VIC'S SERVICE STATIO	HARRY	530519	16.97	1.50	3.07	0.31	6	R
946	UT	VIC'S SERVICE STATIO	HORNET	550312	0.11	1.40	10.00	1.50	2	R
946	UT	VIC'S SERVICE STATIO	SIMON	530425	1.41	1.00	12.23	1.22	1	R
946	UT	VIC'S SERVICE STATIO	SMOKY	570831	27.13	1.11	4.77	0.48	20	R
946	UT	VIC'S SERVICE STATIO	TESLA	550301	2.23	1.05	8.14	0.81	2	R
946	UT	VIC'S SERVICE STATIO	ZUCCHINI	550515	1.19	1.00	3.25	0.32	1	R
440	UT	VIRGIN	ANNIE	530317	1.71	1.26	3.54	0.35	2	R
440	UT	VIRGIN	HARRY	530519	30.42	1.21	4.21	0.42	3	R
440	UT	VIRGIN	MORGAN	571007	0.16	1.40	10.02	1.00	4	I
440	UT	VIRGIN	PRISCILLA	570624	0.18	1.00	10.17	1.02	1	R
440	UT	VIRGIN	SMOKY	570831	2.08	1.00	7.99	0.80	1	R
440	UT	VIRGIN	ZUCCHINI	550515	0.32	1.40	4.40	0.44	4	I
351	UT	WALES	SMALL BOY	620714	0.14	1.40	31.00	4.65	4	I
445	UT	WASHINGTON	ANNIE	530317	33.56	1.00	3.31	0.33	1	R
445	UT	WASHINGTON	HARRY	530519	39.38	1.25	3.81	0.38	7	R
445	UT	WASHINGTON	PRISCILLA	570624	0.09	1.94	10.00	1.00	4	R
445	UT	WASHINGTON	SIMON	530425	1.00	1.40	13.53	1.35	4	I
445	UT	WASHINGTON	SMOKY	570831	2.33	1.65	7.13	0.71	6	R
445	UT	WASHINGTON	TESLA	550301	2.01	2.07	10.45	1.04	3	R
445	UT	WASHINGTON	ZUCCHINI	550515	3.01	1.00	3.89	0.39	1	R
182	UT	WELLINGTON	SMALL BOY	620714	0.11	1.40	36.00	5.40	4	I
947	UT	ZANE	FOX	520525	5.87	1.40	11.94	1.19	4	I

Cntrl	State	Locale	Event	YYMMDD	H12	H12D	TA	TAD	NP	Orig
947	UT	ZANE	MET	550415	5.03	1.01	5.00	0.50	2	R
947	UT	ZANE	SMALL BOY	620714	0.10	1.40	15.02	1.50	3	I
948	UT	ZION LODGE	ANNIE	530317	4.64	1.80	3.86	0.39	2	R
948	UT	ZION LODGE	HARRY	530519	41.36	1.51	4.43	0.44	5	R
948	UT	ZION LODGE	MORGAN	571007	0.18	1.40	10.75	1.08	4	I
948	UT	ZION LODGE	PRISCILLA	570624	0.13	1.39	10.50	1.05	4	R
948	UT	ZION LODGE	SMOKY	570831	1.95	1.18	12.00	1.80	3	R

APPENDIX D

ORERP PROJECT DIRECTIVE NO. 10

One of 11 project directives of the ORERP, Project Directive No. 10 was issued after discussions with the Dose Assessment Advisory Group in October 1985. Its purpose was to provide interim guidance for dealing with survey-meter readings that were either very low or were made a long time (several days) after the event. The directive is reproduced on the following two pages.

At the time Project Directive No. 10 was issued, the estimation procedure included a weighting scheme based on the time (H+hours) of each measurement. This scheme was subsequently abandoned, making the rules stated in the directive obsolete. As described in the text, the geometric mean and standard deviation were calculated using the arithmetic mean and standard deviation as an intermediate step, whether or not there were net values of 0. Estimates were always calculated, but they were not included in the final version of the Town Data Base if X_E was less than the discernible fallout level. Some measurements were excluded from the calculations if their net value was less than the discernible fallout level, they were taken more than 60 hours after detonation and the net values, decayed to H+12, created an X_E that was inconsistent with other measurements for that location.

PROJECT DIRECTIVE NO. 10:

METHOD OF DEALING WITH "INSIGNIFICANT" EXTERNAL GAMMA EXPOSURE-RATE MEASUREMENTS AND THOSE MADE SEVERAL DAYS AFTER THE EVENT

BACKGROUND AND GOAL

The purpose of this directive is to describe a method of dealing with external gamma-exposure-rate measurements that are part of the "Survey-Meter Data Base" and which present one or both of two problems. They are either so low that there is legitimate question whether they are distinguishable from "background" due to radiation from natural background, or they were made so long after the event that the required extrapolation back to H + 12 h makes a very low value appear to be large, even if it might be only a background value.

Our previously used methods of dealing with these problems have caused significant difficulty. These methods have consisted of subtracting a background value (0.02 mR/h, if not otherwise specified) from the measured value, extrapolating the measured value to H + 12 h by use of the 11-term exponential relationship, calculating a weighted geometric mean, and a weighted geometric standard deviation. Trouble has arisen particularly when this has resulted in some "zero" values, which makes the usual methods of calculation of geometric means and standard deviations unusable. Attempts to deal with this problem by developing other estimation methods have not been satisfactory, particularly for the calculation of a geometric standard deviation. In addition, these attempts have been very time consuming and are delaying the completion of the "town data base."

Another specific problem concerns the extrapolation of very low measured values back to H + 12 h when the measurements were made as long as 10 days after the event. This has been reasonably resolved by the use of a weighting factor that is one over the square of the decay correction factor.

These problems were discussed with the Dose Assessment Advisory Group (DAAG) in October 1985. One member of the DAAG recommended that measurements less than 4 times background should be discarded as insignificant and resulting in unmeasurable doses and that measurements made more than 4 days after the event should also be discarded. This proposed solution may be too severe in eliminating potentially usable information. Thus, we are reluctant to implement it without exploring the consequences.

However, we cannot afford to delay the completion of the "town data base" and the directives that follow are interim guidance intended to facilitate completion of the "town data base" and to explore the consequences of following the proposed recommendation.

DIRECTIVES

1. All measurements of external gamma-exposure rate will be treated in the previous way by subtracting a suitable background from the measured value.
2. If, for a particular location, none of the resulting values are 0, the weighted geometric mean of the values will be calculated in the usual way. If the weighted geometric mean is less than 0.06 mR/h, no attempt will be made to calculate a geometric standard deviation and it will be specified as "0."

If the weighted geometric mean is more than 0.06 mR/h, the weighted geometric standard deviation will be calculated in the usual way.

3. If, for a particular location, one or more of the resulting values are 0, the weighted arithmetic mean will be calculated. If the weighted arithmetic mean is less than 0.06 mR/h, no attempt will be made to calculate an arithmetic standard deviation, a geometric mean, or a geometric standard deviation, and the geometric standard deviation will be specified as "0." If the weighted arithmetic mean is more than 0.06 mR/h, the weighted arithmetic standard deviation will be calculated and the geometric mean and the geometric standard deviation will be calculated from these arithmetic values.
4. No measurements will be rejected because of time post detonation. This is because the weighting scheme now used gives very little weight to measurements at late times.

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Bruce W. Church
Project Manager

Note: Original contains actual signatures

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