

SWRHL-38r

OFF-SITE SURVEILLANCE ACTIVITIES OF THE
SOUTHWESTERN RADIOLOGICAL HEALTH LABORATORY
from July through December 1966

by the
Southwestern Radiological Health Laboratory
Department of Health, Education, and Welfare
Public Health Service
National Center for Radiological Health

December 1968

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Understanding (No. SF 54 373)
for the
U. S. ATOMIC ENERGY COMMISSION

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ABSTRACT

The Southwestern Radiological Health Laboratory of the Public Health Service performed off-site radiological surveillance for ten announced events during the period from July through December 1966. This surveillance is conducted in the public areas surrounding the Nevada Test Site under a Memorandum of Understanding with the U. S. Atomic Energy Commission. No reactor experiments were conducted during this time.

During the six-months period there was one event, Derringer, conducted on September 12, 1966, which released radioactive effluent that was detected only in an unpopulated location off the Nevada Test Site. Also during this period an underground test, Project Sterling, was conducted in Mississippi on December 3, 1966 as part of the Vela Uniform program. No radioactivity attributable to this detonation was detected in the off-site area.

Analysis of all sampling and surveillance performed during the six-month period indicates that the safety criteria established by the Atomic Energy Commission for the off-site population were not exceeded.

TABLE OF CONTENTS

ABSTRACT	i
TABLE OF CONTENTS	ii
LIST OF FIGURES AND TABLE	iii
I. INTRODUCTION	1
II. OPERATIONAL PROCEDURES	2
A. Ground Monitoring	2
B. Exposure Rate Recorders	2
C. Aerial Cloud Tracking	3
D. Air Sampling	3
E. Milk and Water Sampling	3
F. Vegetation Sampling	6
G. Dosimetry	6
H. Community Relations	7
I. Medical and Veterinarian Services	7
J. Bioenvironmental Research	7
III. ANALYTICAL PROCEDURES	9
IV. RESULTS	12
V. CONCLUSIONS	14
APPENDIX	
DISTRIBUTION	

LIST OF FIGURES AND TABLE

Figure 1. Air Surveillance Network Stations in Nevada	4
Figure 2. Air Surveillance Network Stations Other than Nevada.	5
Table 1. Threshold detectability at time of count of several radionuclides in various samples (90% confidence level).	10

I. INTRODUCTION

During the period July through December 1966, ten announced underground nuclear tests were conducted by the U. S. Atomic Energy Commission at their Nevada Test Site as a part of Operation Latchkey. In addition, Project Sterling was conducted underground in Mississippi as part of the Vela Uniform program. The Public Health Service conducted a program of radiological environmental surveillance of the off-site area for the Safety Evaluation Division of the AEC's Nevada Operations Office under a Memorandum of Understanding between the U. S. Atomic Energy Commission (AEC) and the Public Health Service (PHS).

The Southwestern Radiological Health Laboratory (SWRHL) conducted this program of radiological monitoring and environmental sampling in the off-site areas surrounding the restricted area enclosed within the Nevada Test Site, NRDS, and the Nellis Air Force Range. The overall complex of the Nevada Test Site (NTS) and the Nellis Air Force Range includes the Nuclear Rocket Development Station (NRDS) and the Tonopah Test Range (TTR) and for simplicity will be called the test range complex throughout this report. Although routine sampling and monitoring was done within a 300-mile radius around the test range complex, surveillance was extended as necessary to provide adequate coverage.

This report describes the methods and equipment used and summarizes the data collected during the six-month period.

II. OPERATIONAL PROCEDURES

A. Ground Monitoring

Prior to each event, mobile monitoring teams were deployed in the off-site area to locations most likely to be affected by a release of radioactive material. If a release did occur, the teams conducted a ground monitoring program directed from the AEC Control Point headquarters via two-way radio communications. Ground monitoring continued until activity levels essentially returned to background.

Each monitor was equipped with an Eberline E-500B, a Precision Model 111 Standard "Scintillator", and a Victoreen Radector Model No. AGB-50B-SR. The Eberline E-500B has a range of 0 to 200 milliroentgens per hour (mR/hr) beta-gamma detection in four scales with an external halogen filled GM tube and a 0 to 2000 mR/hr range gamma detection from an internal Anton 302 GM tube. The Precision Model 111 Standard "Scintillator" was used primarily as an indicator of the presence of low levels of radioactivity since it provides a range of 0 to 5 mR/hr in six scales. The Radector has a range of 0.05 to 50,000 mR/hr over two logarithmic scales. This instrument has an inert gas ionization chamber as the detector. These instruments are accurate to $\pm 20\%$ as calibrated with ^{137}Cs .

B. Exposure Rate Recorders

To supplement the ground monitoring program, Eberline RM-11 exposure rate recorders were utilized to document cloud passage at fixed locations, thereby allowing mobile monitoring teams to

continue following the release as it moved through the off-site area. These recorders have a Geiger tube detector and operate on 110V AC. They have a 0.01 to 100 mR/hr range and are calibrated to $\pm 20\%$ with a ^{137}Cs source. Gamma exposure rate is recorded on a 30-hour strip chart.

C. Aerial Cloud Tracking

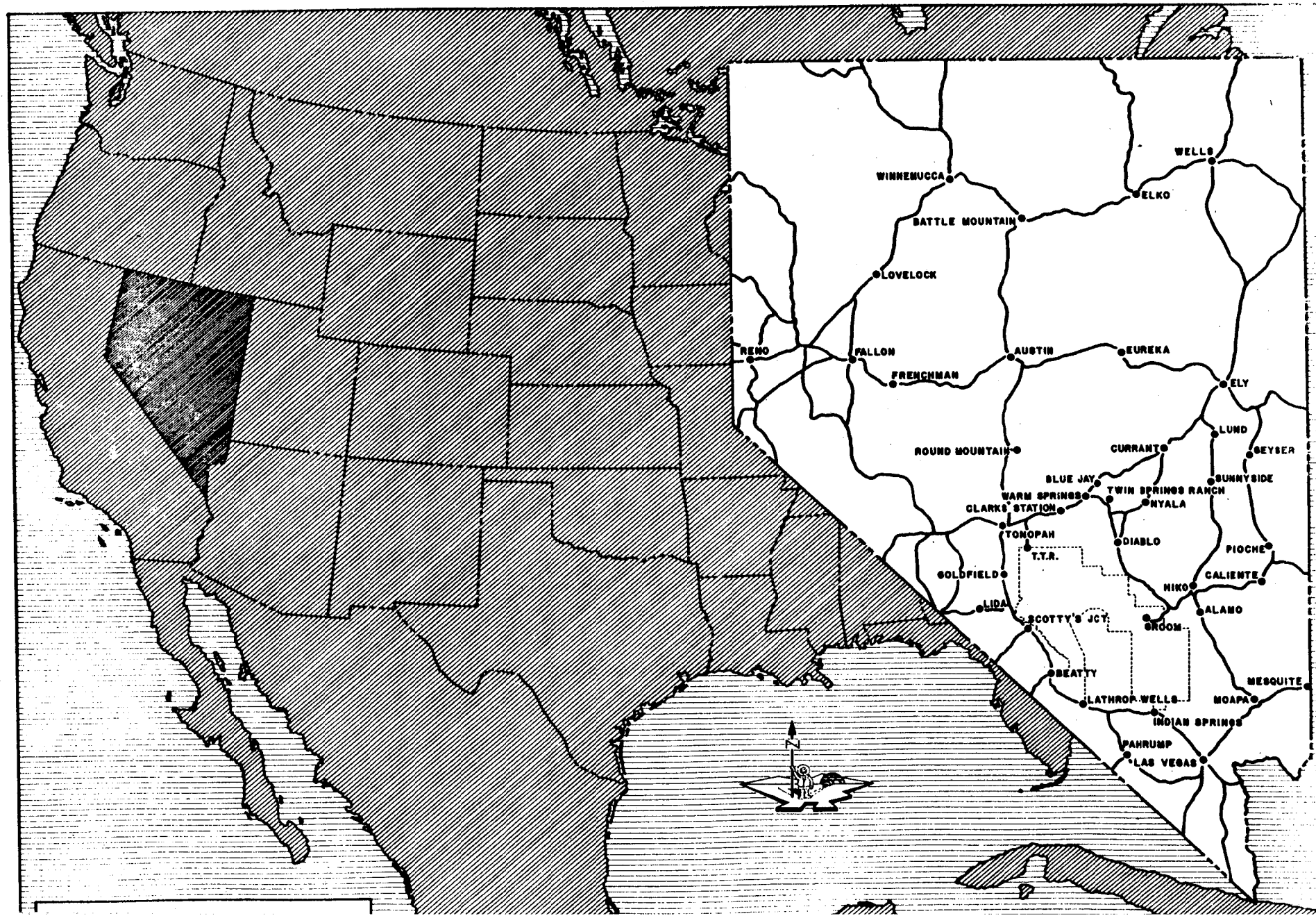
An Air Force U3-A aircraft with pilot and two Public Health Service monitors equipped with portable instruments identical to those of the ground monitors was used to track the effluent to assist in positioning ground monitors. Public Health Service cloud sampling aircraft were also used as aids in cloud tracking.

D. Air Sampling

During this six-month period the SWRHL Air Surveillance Network consisted of 108 stations operating in every state west of the Mississippi except Montana and North Dakota. See Figures 1 and 2. The air sampler used in the Air Surveillance Network is a Gelman "Tempest". The "Tempest" Air Sampler consists of a Gast Model 1550 vacuum pump driven by a 1/2 horsepower electric motor. The pump runs at 1440 rpm with an approximate flow rate of 10 cfm. The sampler uses a 4-inch diameter Whatman 541 filter paper. An MSA, Part No. 46727, charcoal cartridge can be added as necessary. The total volume of air sampled is calculated from an average vacuum reading and the total sampling time.

E. Milk and Water Sampling

The previously established milk sampling program from both



commercial dairies and private producers continued throughout the six-month period. See Appendix A. About 30 sources were routinely sampled during this period, many on a monthly basis. A total of 100 samples were collected from these locations. In the event of cloud passage over a specific area, intensified sampling within the area was conducted to document changes in activity.

Water samples were collected on a routine basis. Water sampling is increased when a release occurs; however, because there was only one slight release during this period, only one non-routine sample was collected. Both potable and non-potable water supplies were sampled routinely. During this period 330 water samples were collected from about 70 sources.

F. Vegetation Sampling

Normally, vegetation samples were collected only in the event of a release of radioactive material and analyzed for gross gamma radioactivity to delineate the fallout pattern.

G. Dosimetry

Approximately 150 residents in the off-site area wore film badges throughout this period. These film badges were changed each month and were processed by the Radiological Sciences Department of Reynolds Electrical and Engineering Company, Inc. In addition, 65 film badge stations, each with five badges, were located around the test range complex to provide more complete coverage. These badges were also exchanged monthly. The badge used is made of Du Pont type 555 film. The gamma exposure, as determined from this film, is accurate to $\pm 50\%$ in the 30 to 100 mR range and $\pm 10\%$ in the 100 to 2000 mR range.

Approximately 20 of the 65 stations were each equipped with three CaF₂, EG&G Model TL-12 Thermoluminescent Dosimeters (TLD)

which were exchanged monthly with the film badges. The TLD's have a low energy photon response cutoff at 50 keV and are independent of energy in the range from 50 keV to several MeV. According to past TLD data, a reading at 10 mR above the previous month's background constitutes a detectable exposure.

H. Community Relations

Frequent contacts with the off-site population, schools and civic groups provided the opportunity to explain the role of the Public Health Service in support of the programs of the Atomic Energy Commission. As a result of favorable community relations, a number of off-site residents took part in the environmental sampling program; all routine air sampling stations except Las Vegas were operated by local citizens, and many people volunteered to wear film badge dosimeters.

I. Medical and Veterinarian Services

A Public Health Service medical officer was available in the event any cases of a medical nature arose as a result of the test series. No such cases were brought to the attention of the PHS. Veterinarian services were provided by PHS Veterinarians. Liaison was maintained with livestock producers in the area and the program of wildlife and cattle investigation was continued. Semiannual slaughter of cattle from the NTS herd and the Knoll Creek and Delamar Valley herds was accomplished in cooperation with the University of Nevada. Specimens from these animals were analyzed for radionuclide content.

J. Bioenvironmental Research

Another program of the Southwestern Radiological Health Laboratory

is bioenvironmental research. The mission of this program, in part, is to investigate the inter-relationships among the levels of radionuclide contamination of air, soil, water, vegetation and milk. The results from this program are published in separate reports.

III. ANALYTICAL PROCEDURES

All air sample prefilters and charcoal cartridges were returned to the Southwestern Radiological Health Laboratory in Las Vegas for radiological analyses. Prefilters were counted for gross beta activity in a Beckman "Wide Beta" low background (6 ± 1 cpm beta) proportional system which has an efficiency of approximately 45% for 0.54 MeV betas. After an initial count, if no significant activity was detected, the prefilters were counted at 5 and 12 days after collection. If significant fission product activity was indicated by the first count, prefilters were recounted a minimum of three times in the first 48 hours following collection. Results are then extrapolated to the end of the collection period by use of a decay constant empirically determined for each individual sample.

Selected prefilters and all charcoal cartridges were analyzed for gamma isotopes by placing them directly on a 4- by 4-inch NaI(Tl) crystal coupled to a TMC Model 404C gamma pulse height analyzer viewing energies from 0 to 2 MeV.

Detection capability of the system as shown in Table 1 is an empirical estimate obtained from previous data collected under the following conditions:

- a. Count time in days after fissioning as indicated by footnotes.
- b. Prefilters collect unfractionated fission products resulting in a complex spectrum.
- c. MSA charcoal predominately collects gaseous fission products (primarily iodines).

- d. An eight isotope matrix is employed for computation and isotopes other than those examined are present in amounts which are small relative to those eight.
- e. Natural activity on air samples is approximately five times system background.

Table 1. Threshold detectability at time of count of several radionuclides in various samples (90% confidence level).

Sample Type	pCi					Length of Count	Notes
	¹³¹ I	¹³² Te-I	¹³³ I	¹³⁵ I	¹⁴⁰ Ba-La		
Whatman No. 541	500	1000	500	1000	500	10 min.	1
	200	--	200	--	200	10 min.	2
MSA Charcoal	200	400	200	400	200	10 min.	1
	100	--	100	--	100	10 min.	2
3.5 liter water* (pCi/l)	20	40-50	20-30	40-50	20	40 min.	4
3.5 liter milk* (pCi/l)	20		20-30		20	40 min.	3

*Counted in 3.5 liter inverted well (Marinelli) aluminum beakers.

1 - counted at less than 3 days after formation.

2 - counted at 3 days or more after formation.

3 - with ¹³⁷Cs ≤ 100 pCi/l.

4 - assuming insignificant amounts of other nuclides, and all given isotopes at about detection limits to approximately 10 times the lower limit.

Although the minimum detectable levels for water samples involve the limitations listed in (d) above, the situation is usually simplified by having no background other than that of the system. For a sample containing all of the isotopes of iodine, the error term on threshold values at the 95% confidence level is approximately equal to ± 50%.

Biological discrimination limits the number of isotopes present in a milk sample. Under normal sampling procedures, this discrimination coupled with the short physical half-life will tend to eliminate ¹³²I and ¹³⁵I from the sample by the time it is counted. At the 95% confidence level reported values for milk are ± 10 pCi/l or 10% at

the time of count whichever is greater for a 40-minute count.

After any release of activity from the NTS, milk samples are collected from dairies (processing plants), producing dairy farms, and farms producing milk for their own consumption. Each sample is counted for 40 minutes. No attempt is made to recount samples giving low positive values. The lower limit of detection for gamma emitters in milk samples is 20 picocuries per liter (pCi/l) at the time of count, and all results below that value are reported as < 20 pCi/l.

All liquid samples are counted in 3.5 liter inverted well aluminum beakers which are placed on top of a 4- by 4-inch NaI(Tl) crystal coupled to a 400-channel gamma pulse height analyzer. Overall detection efficiency for the 0.364 MeV photopeak of ^{131}I is 6.4%. A matrix technique is employed to compute the interference due to the presence of other isotopes. The input to this matrix is variable, allowing for the simultaneous determination of any eight nuclides for which detection efficiencies and interference factors have been obtained. Actual computation is performed by an IBM 1620 computer.

Water samples are analyzed for gross beta activity by slowly evaporating an aliquot to dryness in a 2-inch diameter stainless steel planchet and counting the beta activity in a low background counter.

IV. RESULTS

Only one of the ten announced detonations at the Nevada Test Site resulted in a release of radioactive effluent which was detected off-site. This was the Derringer Event of September 12, 1966.

The only positive indication of Derringer effluent off-site was by ground monitoring. Two readings slightly above background were detected. Both radiation intensities were measured on a Model 111 "Scintillator" and were less than twice background. The readings were measured at 1115 PDT at Hancock Summit on Highway 25 and at 1120 PDT, 10 miles southeast of Coyote Summit on Highway 25. Both of these locations are unpopulated. None of the Eberline RM-11 continuous exposure rate recorders located in areas off the Nevada Test Site showed a reading above background.

Thirty air samples were collected for this event. None of these samples showed an increase in gross beta activity and no fresh fission products were detectable on the Whatman 541 filter or the MSA charcoal cartridge. Other samples collected included five milk samples, one water sample, and nine vegetation samples. Short-lived fresh fission products were not detectable in any of these samples.

All milk samples collected during this period are listed in the Appendix. The Project Sterling underground test conducted in Mississippi on December 3, 1966, did not release radioactivity to the atmosphere.

One additional event of interest during this period was the Greeley

Event, an underground nuclear detonation conducted at 0730 hours PST on December 20, 1966, in the Pahute Mesa area of the AEC's Nevada Test Site. Although a release of radioactive effluent was not expected following this detonation, the Public Health Service provided additional personnel for ground motion studies because the Greeley device was of relatively large yield and ground motion was anticipated as far as 75 miles from ground zero.

Seventy-five personnel from the Southwestern Radiological Health Laboratory participated in the surveillance activities for this event. Community information centers were established in Tonopah, Goldfield, Beatty, and Alamo in order to inform the members of these communities of the exact time of the detonation and what degree of motion could be expected. PHS personnel were also available to answer questions in Ely, Caliente, Pioche, and Las Vegas.

All active mines in the vicinity of the Nevada Test Site were located and mining personnel were advised not to be underground at the time of the detonation.

No release of radioactive effluent occurred as a result of this detonation, either initially or in the follow-up operations. No damage to off-site structures from ground motion was reported to any of the community information centers.

V. CONCLUSIONS

Results obtained through environmental radiation surveillance during this period indicate that no individual in the off-site area received an exposure, resulting from Nevada Test Site operations, which exceeded the guides established by the AEC and/or recommended by the FRC and the NCRP.

APPENDIX A

Milk sample results for the six-months period.

Note:

The first line of each sample listing gives the location of the sample source, the identification number assigned to the sample when it arrives at the laboratory, and the date the sample was collected. The remaining lines show the isotopes present in the sample in units of picocuries per liter, except for calcium and potassium which are given in units of grams per liter.

Routinely, analysis is made for the following eight isotopes: ^{144}Ce , ^{131}I , ^{106}Ru , ^{137}Cs , ^{95}Zr , ^{54}Mn , ^{40}K , and ^{140}Ba . These isotopes are listed only when they are present in detectable quantities. When samples are collected for particular events, analysis is generally done for ^{133}I in place of ^{106}Ru .

The isotopes which are processed by radiochemistry methods -- Ca, ^{89}Sr , ^{90}Sr --are listed if radiochemistry is performed.

For values less than a specified minimum sensitivity, the following notations are used:

"B" for values less than 5 pCi/l

"D" for values less than 0.1 pCi/l

Some of the values are listed in exponential form:

$3.0\text{E}01 = 3.0 \times 10^1 = 30$; $5.5\text{E}02 = 5.5 \times 10^2 = 550$, etc.

CALIFORNIA MILK- JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

BARSTOW CALIFORNIA HILL DAIRY 137CS=3.0E01 K=1.4	AM 51027002904912010893 07 14 66 7390006 89SR=8 90SR=2
BARSTOW CALIFORNIA HILLS DAIRY 137CS=1.0E01 K=1.2	AM 51027002904913011047 08 23 66 8390006 89SR=8 90SR=4
BARSTOW CALIFORNIA HILLS DAIRY 137CS=5.0E00 K=1.2	AM 51027002904912011197 09 15 66 8390006 89SR=8 90SR=2
BARSTOW CALIFORNIA HILLS DAIRY K=1.4 89SR=8	AM 51027002904912011289 10 20 66 8390006 90SR=0.2
BARSTOW CALIFORNIA HILLS DAIRY K=1.2 89SR=8	AM 51027002904912020084 11 23 66 8390006 90SR=0.9
BARSTOW CALIFORNIA HILLS DAIRY 137CS=3.50E01 K=1.0	AM 51027002904912020139 12 14 66 8390006 89SR=8 90SR=0
BIG PINE CALIFORNIA SIMMONS DAIRY 137CS=2.5E01 K=1.3	AM 51036502704912010894 07 15 66 8290022 89SR=8 90SR=4
BISHOP CALIFORNIA SIERRA FARMS 137CS=2.0E01 K=1.2	AM 51037002704913011053 08 25 66 8290021 89SR=8 90SR=5
BISHOP CALIFORNIA SIERRA FARMS 137CS=1.0E01 K=1.3	AM 51037002704912011196 09 15 66 8290021 89SR=8 90SR=8
BISHOP CALIFORNIA SIERRA FARMS K=1.3 89SR=8	AM 51037002704912011303 10 19 66 8290021 90SR=3.9
BISHOP CALIFORNIA SIERRA FARMS K=1.3 89SR=8	PM 51037002704912020082 11 22 66 8290021 90SR=7.2

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

CALIFORNIA MILK- JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

BISHOP CALIFORNIA SIERRA FARMS 137CS=1.50E01 K=1.4	AM 51037002704912020140 12 14 66 8290021 89SR=8 90SR=7.0
BISHOP CALIFORNIA SIERRA FARMS 137CS=1.50E01 K=1.3	AM 51037002704912010904 07 15 66 8290026 89SR=5 90SR=6
LONE PINE CALIFORNIA LONE PINE DAIRY 137CS=4.5E01 K=1.2	AM 51185502704912010896 07 14 66 8390023 89SR=8 90SR=3
LONE PINE CALIFORNIA LONE PINE DAIRY 137CS=4.0E01 K=1.2	AM 51185502704912011045 08 24 66 8390023 89SR=8 90SR=5
LONE PINE CALIFORNIA LONE PINE DAIRY 137CS=8 K=1.2	51185502704912011193 09 15 66 8390023 89SR=8 90SR=3
LONE PINE CALIFORNIA LONE PINE DAIRY 137CS=5.00E00 K=1.2	AM 51185502704912011313 10 20 66 8290023 89SR=8 90SR=1.4
LONE PINE CALIFORNIA LONE PINE DAIRY 137CS=1.00E01 K=1.4	PM 51185502704912020083 11 22 66 8390023 89SR=8 90SR=4.0
LONE PINE CALIFORNIA LONE PINE DAIRY 137CS=5.00E00 K=1.3	AM 51185502704912020138 12 14 66 8390023 89SR=8 90SR=2.8
OLANCHA CALIFORNIA HAYHURST RANCH 137CS=1.0E01 K=1.3	AM 51237502704913010890 07 14 66 6370020 89SR=5 90SR=1
OLANCHA CALIFORNIA HAYHURST RANCH 137CS=5.0E00 K=1.4	AM 51237502704913011051 08 24 66 6370020 89SR=8 90SR=3
OLANCHA CALIFORNIA HAYHURST RANCH 137CS=1.0E01 K=1.3	AM 51237502704913011200 09 15 66 6370020 89SR=8 90SR=4

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

CALIFORNIA MILK- JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

OLANCHA CALIFORNIA HAYHURST RANCH AM 51237502704913011323 10 20 66 6370020
K=1.3 89SR=B 90SR=1.5

OLANCHA CALIFORNIA AM 51237502704913020085 11 23 66 6370020
131I=5.00E01 137CS=5.00E00 K=1.2 89SR=B
90SR=2.1

OLANCHA CALIFORNIA HAYHURST RANCH AM 51237502704913020137 12 14 66 6370020
137CS=1.00E01 K=1.2 89SR=5 90SR=3.8

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

Appendix A(continued)

PAGE 3

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

ALAMO NEVADA 137CS=2.5E01 K=1.2	52014001727912010895 07 14 66 3900049 89SR=5 90SR=1
ALAMO NEVADA STEWART DAIRY 137CS=2.0E01 K=1.3	AM 51014001727912010900 07 15 66 3900078 89SR=5 90SR=2
ALAMO NEVADA STEWART DAIRY 137CS=1.0E01 K=1.2	AM 51014001727912011035 08 18 66 8430078 89SR=8 90SR=3
ALAMO NEVADA M K STEWART DAIRY K=1.6 SR89=8	AM 52014001727912011185 09 13 66 3400078 SR90=3
ALAMO NEVADA M K STEWART DAIRY K=1.5 SR89=8	AM 52014001727912011176 09 15 66 3400078 SR90=2
ALAMO NEVADA STEWART DAIRY GAMMA SPECTRUM 90SR=4.1	AM 51014001727912011280 10 13 66 5400078 NEGLIGIBLE 89SR=8
ALAMO NEVADA STEWART DAIRY 137CS=5.00E00 K=1.2	AM 51014001727912020043 11 16 66 1400078 89SR=8 90SR=4.3
ALAMO NEVADA STEWART DAIRY 137CS=1.0E01 K=1.5	AM 51014001727912020161 12 22 66 1400078 89SR=8 90SR=2.6
ALAMO NEVADA L LEE DAIRY K=1.3 SR89=5	AM 52014001727912010851 07 01 66 079 SR90=12
ALAMO NEVADA L LEE DAIRY 137CS=2.0E01 K=1.6	AM 52014001727912010869 07 07 66 SR89=8 SR90=2
ALAMO NEVADA L LEE DAIRY 137CS=2.5E01 K=1.2	52014001727912010895 07 14 66 3900079 89SR=5 90SR=1

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK--JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

ALAMO NEVADA L LEE DAIRY 137CS=1.0E01 K=1.4	AM 52014001727912010952 07 22 66 89SR=8 90SR=4	079
ALAMO NEVADA L LEE DAIRY 137CS=1.0E01 K=1.3	AM 52014001727912010962 07 27 66 89SR=8 90SR=3	079
ALAMO NEVADA L LEE DAIRY 137CS=1.0E01 K=1.2	AM 52014001727912010966 08 03 66 89SR=8 90SR=2	079
ALAMO NEVADA WRIGHT DAIRY 137CS=1.0E01 K=1.5	AM 51014001727912010932 07 20 66 89SR=8 90SR=1	080
AUSTIN NEVADA YOUNG RANCH 137CS=2.5E01 K=1.3	AM 51018701527913010979 08 04 66 4700010 89SR=8 90SR=5	
AUSTIN NEVADA YOUNG RANCH 137CS=5.0E00 K=1.6	PM 51018701527913011111 08 31 66 1700010 89SR=8 90SR=7	
AUSTIN NEVADA YOUNG RANCH 137CS=1.5E01 K=1.6	AM 51018701527913011251 09 28 66 4700010 89SR=8 90SR=7	
AUSTIN NEVADA YOUNG RANCH 137CS=5.0E00 K=1.5	51018701527913020028 11 03 66 1700010 89SR=8 90SR=7.6	
AUSTIN NEVADA YOUNG RANCH 137CS=2.00E01 K=1.4	AM 51018701527913020116 12 01 66 0900010 89SR=8 90SR=12.2	
AUSTIN NEVADA GIVENS RANCH 1311=3.0E01 137CS=2.5E01 90SR=9	AM 51018701527913010960 07 21 66 8390071 K=1.7 89SR=5	
AUSTIN NEVADA GIVENS RANCH 137CS=3.5E01 K=1.3	AM 51018701527913010980 08 03 66 4300071 89SR=8 90SR=12	

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

BAKER NEVADA E J CUMMINGS K=1.5 SR89=5	AM 53020403327913010871 07 05 66 SR90=3	124
BAKER NEVADA BAKER RANCH 1311=2.0E01 K=1.5	AM 53020403327913010828 07 01 66 89SR=5 90SR=5	135
CALIENTE NEVADA YOUNG RANCH 1311=6.0E01 137CS=1.0E01 90SR=2	PM 51030401727913010926 07 19 66 K=1.4 89SR=B	067
CALIENTE NEVADA YOUNG RANCH K=1.3 89SR=B	51030401727913011026 08 18 66 1400067 90SR=1	
CALIENTE NEVADA YOUNG RANCH GAMMA SPECTRUM 90SR=2	PM 51030401727913011175 09 14 66 1400067 NEGLIGIBLE 89SR=B	
CALIENTE NEVADA YOUNG RANCH 137CS=5.0E00 K=1.3	PM 51030401727913011272 10 10 66 1400067 89SR=0 90SR=1.8	
CALIENTE NEVADA YOUNG RANCH K=1.1 89SR=B	PM 51030401727913020044 11 16 66 1400067 90SR=1.1	
CALIENTE NEVADA YOUNG RANCH K=1.3 89SR=B	PM 51030401727913020156 12 21 66 1400067 90SR=2.3	
CURRENT NEVADA BLUE EAGLE RANCH 137CS=3.5E01 K=1.6	51038602327913011067 08 24 66 099 89SR=B 90SR=4	
CURRENT NEVADA BLUE EAGLE RANCH 137CS=3.5E01 K=1.4	51038602327912023271 11 21 66 099 89SR=B 90SR=11.9	
CURRENT NEVADA BLUE EAGLE RANCH 137CS=5.5E01 K=1.5	PM 51038602327913020187 12 19 66 4930099 89SR=B 90SR=10.6	

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

DUCKWATER NEVADA HALSTEAD RANCH 137CS=1.5E01 K=1.2	AM 51048002327913010946 07 19 66 89SR=5 90SR=7	105
DUCKWATER NEVADA HALSTEAD RANCH 137CS=1.5E01 K=1.7	PM 51048002327913011052 08 23 66 89SR=B 90SR=4	4900105
DUCKWATER NEVADA HALSTEAD RANCH 137CS=5.0E01 K=1.4	PM 51048002327913011235 09 20 66 89SR=B 90SR=5	2900105
DUCKWATER NEVADA HALSTEAD RANCH 137CS=1.0E01 K=1.3	PM 51048002327913011311 10 18 66 89SR=B 90SR=1.8	4900105
DUCKWATER NEVADA BLUE EAGLE RANCH K=1.4 89SR=5.5	PM 51048002327912011287 10 19 66 90SR=4.2	105
DUCKWATER NEVADA HALSTEAD RANCH K=1.1 89SR=B	AM 51048002327913020128 11 18 66 90SR=4.8	1200105
DUCKWATER NEVADA HALSTEAD RANCH 103RU=3.0E01 137CS=1.5E01 90SR=5.0	PM 51048002327913020193 12 19 66 K=1.4 89SR=B	3200105
EUREKA NEVADA WILLOWS RANCH 137CS=5.0E00 K=1.4	AM 51058601127913010959 07 21 66 89SR=B 90SR=4	8390003
EUREKA NEVADA WILLOWS RANCH 137CS=1.5E01 K=1.3	AM 51058601127913010978 08 04 66 89SR=B 90SR=D	1300003
EUREKA NEVADA WILLOWS RANCH 137CS=5.0E00 K=1.4	51058601127913011109 08 30 66 89SR=B 90SR=4	8390003
EUREKA NEVADA WILLOWS RANCH 137CS=5.0E00 K=1.3	AM 51058601127913011301 10 20 66 89SR=B 90SR=D	8390003

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

HIKO NEVADA DAVIS RANCH 137CS=3.0E01 K=1.5	AM 52083401727913010870 07 05 66 031 89SR=5 90SR=3
HIKO NEVADA DAVIS RANCH 137CS=3.0E01 140BA=3.0E01 90SR=3	PM 52083401727913010892 07 12 66 3900031 K=1.3 89SR=5
HIKO NEVADA DAVIS RANCH 131I=7.0E01 137CS=2.5E01 90SR=4	PM 52083401727913010929 07 18 66 031 K=1.4 89SR=5
HIKO NEVADA DAVIS RANCH 137CS=2.5E01 K=1.4	PM 52083401727913010961 07 26 66 031 89SR=B 90SR=4
HIKO NEVADA DAVIS RANCH 137CS=1.0E01 K=1.1	PM 52083401727913010965 08 03 66 031 89SR=B 90SR=2
HIKO NEVADA SCHOFIELD DAIRY 137CS=1.0E01 K=1.4	AM 51083401727912010897 07 14 66 3900057 89SR=B 90SR=2
HIKO NEVADA SCHOFIELD DAIRY 137CS=1.0E01 K=1.3	AM 51083401727912011033 08 18 66 3400057 89SR=B 90SR=2
HIKO NEVADA SCHOFIELD DAIRY 137CS=1.0E01 K=1.4	AM 52083401727912011189 09 13 66 3900057 SR89=B SR90=3
HIKO NEVADA SCHOFIELD DAIRY K=1.6 SR89=B	AM 52083401727912011173 09 15 66 3400057 SR90=3
HIKO NEVADA SCHOFIELD DAIRY GAMMA SPECTRUM 90SR=3.0	AM 51083401727912011274 10 13 66 5400057 NEGLIGIBLE 89SR=B

NOTE-->LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK--JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

HIKO NEVADA SCHOFIELD DAIRY 137CS=1.00E01 K=1.3	AM 51083401727912020049 11 16 66 1400057 89SR=8 90SR=2.1
HIKO NEVADA SCHOFIELD DAIRY K=1.4 89SR=B	AM 51083401727912020151 12 22 66 1400057 90SR=3.5
LAS VEGAS NEVADA ANDERSON DAIRY GAMMA SPECTRUM 90SR=3	AM 51120700327911010883 07 06 66 302 NEGLIGIBLE 89SR=8
LAS VEGAS NEVADA ANDERSON DAIRY 137CS=5.00E00 K=1.3	AM 51120700327911020014 11 02 66 0000302 89SR=8 90SR=4.5
LAS VEGAS NEVADA ARDEN DAIRY 137CS=5.00E00 K=1.4	AM 51120700327911010862 07 06 66 303 89SR=5 90SR=4
LAS VEGAS NEVADA ARDEN DAIRY 137CS=5.00E00 K=1.1	AM 51120700327911020015 11 02 66 0000303 89SR=8 90SR=5.0
LATHROP WELLS NEVADA DANSBY RANCH 137CS=1.3E01 K=1.3	51120902327913011066 08 30 66 5300065 89SR=5 90SR=1
LATHROP WELLS NEVADA DANSBY RANCH K=1.1 89SR=8	PM 51120902327913020184 12 27 66 5300065 90SR=0.3
LOGANDALE NEVADA VEGAS VALLEY DAIRY 137CS=5.00E00 K=1.4	AM 51125200327912010902 07 13 66 0000301 89SR=5 90SR=1
LOGANDALE NEVADA VEGAS VALLEY FARMS 137CS=2.0E01 K=1.4	AM 51125200327912011016 08 17 66 301 89SR=8 90SR=6
LOGANDALE NEVADA VEGAS VALLEY DAIRY K=1.4 89SR=8	AM 51125200327912011143 09 09 66 0000301 90SR=4

NOTE-->LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK--JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

LOGANDALE NEVADA VEGAS VALLEY FARMS 137CS=1.0E01 K=1.3	AM 51125200327911011336 10 25 66 0000301 89SR=B 90SR=4.6
LOGANDALE NEVADA VEGAS VALLEY FARMS 137CS=5.00E00 K=1.2	AM 51125200327912020086 11 28 66 0000301 89SR=B 90SR=2.6
LOGANDALE NEVADA VEGAS VALLEY DAIRY 137CS=1.5E01 K=1.3	AM 51125200327912020163 12 29 66 0001301 89SR=B 90SR=1.7
LUND NEVADA 137CS=1.0E01 K=1.3	51128503327912023469 12 22 66 009 89SR=B 90SR=2.8
LUND NEVADA MCKENZIE DAIRY 137CS=2.5E01 K=1.5	51128503327912010873 07 08 66 077 89SR=B 90SR=3
LUND NEVADA MCKENZIE DAIRY 137CS=2.0E01 K=1.5	51128503327912010889 07 14 66 077 89SR=5 90SR=5
LUND NEVADA MCKENZIE DAIRY 137CS=1.0E01 K=1.4	51128503327912010958 07 22 66 077 89SR=B 90SR=3
LUND NEVADA MCKENZIE DAIRY GAMMA SPECTRUM 90SR=2	51128503327912010963 07 29 66 077 NEGLIGIBLE 89SR=B
LUND NEVADA MCKENZIE DAIRY 137CS=1.0E01 K=1.3	51128503327912010993 08 08 66 077 89SR=B 90SR=3
LUND NEVADA MCKENZIE DAIRY 137CS=2.0E01 K=1.2	51128503327912011039 08 18 66 077 89SR=B 90SR=4
LUND NEVADA MCKENZIE DAIRY 137CS=5.0E00 K=1.4	51128503327912011065 08 30 66 077 89SR=B 90SR=4

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK--JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

LUND NEVADA MCKENZIE DAIRY 137CS=2.5E01 K=1.4	51128503327912011116 09 05 66 89SR=B 90SR=3	077
LUND NEVADA MCKENZIE DAIRY 137CS=5.00E00 K=1.4	51128503327912011147 09 12 66 89SR=B 90SR=4	077
LUND NEVADA MCKENZIE DAIRY 137CS=1.5E01 K=1.3	51128503327912011190 09 17 66 89SR=15 90SR=3	077
LUND NEVADA MCKENZIE DAIRY 137CS=1.5E01 K=1.4	51128503327912011242 09 30 66 89SR=B 90SR=3	077
LUND NEVADA MCKENZIE DAIRY 137CS=1.0E01 K=1.5	51128503327912011268 10 06 66 89SR=B 90SR=2	077
LUND NEVADA MCKENZIE DAIRY 137CS=1.00E01 K=1.4	51128503327912011286 10 19 66 89SR=B 90SR=3.6	077
LUND NEVADA MCKENZIE DAIRY 137CS=5.0E00 K=1.2	51128503327912011335 10 26 66 89SR=B 90SR=4.0	077
LUND NEVADA MCKENZIE DAIRY 137CS=5.0E00 K=1.3	51128503327911023111 11 07 66 89SR=B 90SR=3.8	077
LUND NEVADA MCKENZIE DAIRY K=1.4 89SR=B	51128503327912023247 11 16 66 90SR=2.8	077
LUND NEVADA MCKENZIE DAIRY K=1.3 89SR=B	51128503327912023310 11 29 66 90SR=4.7	077
LUND NEVADA MCKENZIE DAIRY 137CS=5.0E00 K=1.3	51128503327911023394 12 12 66 89SR=B 90SR=3.1	077

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

LUND NEVADA MCKENZIE DAIRY K=1.3	89SR=1	51128503327912023507 12 30 66	077
		90SR=1.8	
MANHATTEN NEVADA PEAVINE RANCH 137CS=1.5E01	K=1.4	PM 51130502327913010977 08 03 66	4700002
		89SR=B	90SR=2
MANHATTEN NEVADA PEAVINE RANCH 137CS=5.0E00	K=1.3	AM 51130502327913011105 08 31 66	6390002
		89SR=B	90SR=3
MANHATTEN NEVADA PEAVINE RANCH 137CS=1.0E01	K=1.2	PM 51130502327913011253 09 27 66	6390002
		89SR=B	90SR=4
MANHATTEN NEVADA PEAVINE RANCH 137CS=5.0E00	K=1.2	51130502327913020027 11 03 66	6200002
		89SR=B	90SR=2.9
MESQUITE NEVADA HUGHES BROS DAIRY 137CS=1.5E01	K=1.4	AM 51131600327912010891 07 13 66	6410062
		89SR=B	90SR=5
MESQUITE NEVADA HUGHES BROS DAIRY 137CS=5.0E00	K=1.3	AM 51131600327912011018 08 17 66	062
		89SR=B	90SR=3
MESQUITE NEVADA HUGHES BROS DAIRY K=1.5	89SR=B	51131600327912011144 09 07 66	6490062
		90SR=2	
MESQUITE NEVADA HUGHES BROS DAIRY K=1.2	89SR=B	AM 51131600327912011337 10 26 66	6990062
		90SR=2.0	
MESQUITE NEVADA HUGHES BROS DAIRY 137CS=5.0E00	K=1.3	PM 51131600327912020105 11 30 66	5910062
		89SR=B	90SR=4.7
MESQUITE NEVADA HUGHES BROS DAIRY 137CS=1.00E01	K=1.5	AM 51131600327912020141 12 18 66	9090062
		89SR=B	90SR=1.6

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK—JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

MOAPA NEVADA SEARLES DAIRY 137CS=1.0E01 K=1.0	AM 51135000327912010927 07 20 66 071 89SR=B 90SR=3
MOAPA NEVADA SEARLES DAIRY 137CS=2.0E01 K=1.2	AM 51135000327912011030 08 19 66 5900071 89SR=B 90SR=3
MOAPA NEVADA SEARLES RANCH 137CS=2.0E01 K=1.2	AM 51135000327913011342 10 28 66 1400071 89SR=B 90SR=3.1
NYALA NEVADA SHARP RANCH 137CS=6.5E01 K=1.2	AM 51149002327913010901 07 14 66 2300054 89SR=B 90SR=11
NYALA NEVADA SHARP RANCH 137CS=5.0E01 K=1.2	AM 51149002327913010995 08 10 66 4300054 89SR=B 90SR=8
NYALA NEVADA SHARP RANCH 137CS=1.5E01 K=1.5	AM 52149002327913011172 09 15 66 054 SR89=B SR90=8
NYALA NEVADA SHARP RANCH 137CS=5.0E01 K=1.6	PM 51149002327913011262 10 05 66 054 89SR=B 90SR=11
NYALA NEVADA SHARP RANCH 1311=1.00E01 137CS=4.50E01 90SR=7.2	AM 51149002327913020136 12 07 66 1300054 K=1.3 89SR=B
PAHRUMP NEVADA ISHMAEL RANCH K=1.3 89SR=B	AM 51160202327913020185 12 30 66 5300076 90SR=2.5
PIOCHE NEVADA HORLACHER RANCH 137CS=2.0E01 K=1.2	AM 51163502327913010899 07 14 66 1900075 89SR=10 90SR=4
PIOCHE NEVADA HORLACHER RANCH 137CS=3.0E01 K=1.4	AM 51163501727913011029 08 17 66 1400075 89SR=B 90SR=5

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

PIOCHE NEVADA HORLACHER RANCH 137CS=1.5 K=1.0	AM 51163501727913011273 10 12 66 1400075 89SR=B 90SR=4.4
PIOCHE NEVADA HORLACHER RANCH 137CS=5.00E00 K=1.10	AM 51163501727913020051 11 16 66 1400075 89SR=B 90SR=8.3
PIOCHE NEVADA HORLACHER RANCH 137CS=2.5E01 K=1.4	AM 51163501727913020154 12 23 66 1400075 89SR=6 90SR=4.8
PIOCHE NEVADA HORLACHER RANCH 137CS=2.0E00 K=1.3	AM 51163501727913011187 09 14 66 0751400 89SR=B 90SR=6
SHOSHONE NEVADA KIRKEBY RANCH 131I=6.0E01 137CS=2.5E01 90SR=10	51192500327913010956 07 23 66 106 K=1.6 89SR=B
SHOSHONE NEVADA KIRKEBY RANCH 137CS=1.5E01 K=1.5	AM 51192500327913011234 09 22 66 1300106 89SR=B 90SR=4
SHOSHONE NEVADA KIRKEBY RANCH 137CS=1.00E01 K=1.3	AM 51192500327913011328 10 20 66 1900106 89SR=B 90SR=1.5
SHOSHONE NEVADA KIRKEBY RANCH K=1.1 89SR=B	51192500327913020126 11 17 66 0900106 90SR=1.5
SHOSHONE NEVADA KIRKEBY RANCH 137CS=5.0E01 K=1.7	AM 53192500327913010831 07 01 66 144 SR89=B SR90=9
SPRINGDALE NEVADA PEACOCK RANCH K=1.3 89SR=5	AM 51196402327913020073 11 16 66 5700174 90SR=1.5
TONOPAH NEVADA SHARPS RANCH K=1.5 89SR=B	AM 51205502327913011145 09 08 66 5430131 90SR=15

NOTE-->LT(X) DENOTES A RESULT LESS THAN X.

NEVADA MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

WINNEMUCCA NEVADA

K=1.1

89SR=B

PM 51233501327912023184 11 10 66

90SR=2.9

WINNEMUCCA NEVADA

K=1.2

89SR=B

PM 51233501327912023180 11 08 66

90SR=4.7

WINNEMUCCA NEVADA P MARCUERQUIAGO

I37CS=2.5E01

K=1.3

51233501327912023183 11 09 66

89SR=B

90SR=5.4

WINNEMUCCA NEVADA 3V DAIRY

K=1.2

89SR=B

51233501327912023182 11 10 66

90SR=3.6

NOTE--<LT(X) DENOTES A RESULT LESS THAN X.

Appendix A(continued)

PAGE 15

UTAH MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

GARRISON UTAH GONDERS RANCH 137CS=1.50E01 K=1.5	PM 51070602743813011232 09 20 66 1900006 89SR=B 90SR=7
GARRISON UTAH GONDERS RANCH 137CS=1.50E01 K=1.5	PM 51070602743813011332 10 19 66 1900006 89SR=B 90SR=1.9
GARRISON UTAH GONDERS RANCH 137CS=1.50E01 K=1.4	PM 51070602743813020127 11 17 66 1900006 89SR=B 90SR=5.5
NEW CASTLE UTAH NEW CASTLE DAIRY 137CS=1.0E01 K=1.4	AM 51141802143812010903 07 14 66 6410001 89SR=5 90SR=4
NEW CASTLE UTAH NEW CASTLE DAIRY 137CS=1.0E01 K=1.2	AM 51141802143812011017 08 17 66 001 89SR=B 90SR=5
NEW CASTLE UTAH NEW CASTLE DAIRY 137CS=1.0 K=1.4	AM 51141802143812011142 09 08 66 6470001 89SR=B 90SR=3
NEW CASTLE UTAH NEW CASTLE DAIRY 137CS=1.0E01 K=1.3	AM 51141802143812011338 10 26 66 9990001 89SR=B 90SR=4.6
NEW CASTLE UTAH NEW CASTLE DAIRY 137CS=1.00E01 K=1.2	51141802143812020101 12 01 66 0010001 89SR=B 90SR=4.1
NEW CASTLE UTAH NEW CASTLE DAIRY 137CS=5.0E00 K=1.2	AM 51141802143812020145 12 17 66 6470001 89SR=B 90SR=2.3
MT PLEASANT UTAH BROOKLAWN CREAMERY 137CS=2.0E01 K=1.6	AM 53135803943812010859 07 01 66 264 SR89=10 SR90=9
MT PLEASANT UTAH BROOKLAWN CREAMERY K=1.4 SR89=10	AM 53135803943812010860 07 02 66 264 SR90=12

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

Appendix A(continued)

PAGE 16

UTAH MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

MT PLEASANT UTAH BROOKLAWN CREAMERY K=1.4 89SR=15	AM 53135803943812010868 07 03 66 90SR=9	264
MT PLEASANT UTAH BROOKLAWN CREAMERY K=1.3 89SR=15	AM 53135803943812010867 07 04 66 90SR=10	264
MT PLEASANT UTAH BROOKLAWN CREAMERY 137CS=2.0E01 K=1.3	AM 53135803943812010866 07 05 66 SR89=10 SR90=11	264
OGDEN UTAH MAPLE LEAF DAIRY 137CS=2.0E01 K=1.1	AM 53152105743812010857 07 01 66 SR89=5 SR90=10	262
OGDEN UTAH MAPLE LEAF DAIRY K=1.4 SR89=8	AM 53152105743812010856 07 02 66 SR90=12	262
OGDEN UTAH MAPLE LEAF DAIRY K=1.6 89SR=5	53152105743812010863 07 05 66 90SR=9	262
OGDEN UTAH MAPLE LEAF DAIRY 137CS=2.0E01 K=1.5	AM 53152105743812010865 07 06 66 89SR=8 90SR=10	262
ST GEORGE UTAH COX DAIRY 137CS=1.5E01 K=1.4	AM 51190005343812010898 07 15 66 89SR=8 90SR=4	4414001
ST GEORGE UTAH COX DAIRY 137CS=1.0E01 K=1.4	51190005343812010964 07 29 66 89SR=5 90SR=5	001
ST GEORGE UTAH COX DAIRY 137CS=5.0E00 K=1.4	51190005343812010976 08 06 66 89SR=8 90SR=3	001
ST GEORGE UTAH COX DAIRY 137CS=1.0E01 K=1.3	51190005343812010994 08 12 66 89SR=8 90SR=5	001

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

UTAH MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

ST GEORGE UTAH COX DAIRY 137CS=1.0E01 K=1.3	51190005343812011040 08 19 66 89SR=B 90SR=5	001
ST GEORGE UTAH COX DAIRY 137CS=1.5E01 K=1.3	51190005343811011044 08 26 66 89SR=B 90SR=3	001
ST GEORGE UTAH COX DAIRY 137CS=1.5E01 K=1.3	51190005343812011101 09 02 66 89SR=B 90SR=3	8400001
ST GEORGE UTAH COX DAIRY K=1.2 89SR=B	AM 51190005343812011146 09 12 66 90SR=8	6494001
ST GEORGE UTAH COX DAIRY K=1.3 89SR=B	51190005343812011243 09 30 66 90SR=6	001
ST GEORGE UTAH COX DAIRY 137CS=1.5E01 K=1.3	51190005343812011267 10 07 66 89SR=B 90SR=6	001
ST GEORGE UTAH COX DAIRY K=1.3 89SR=B	51190005343812011288 10 21 66 90SR=3.2	001
ST GEORGE UTAH COX DAIRY 137CS=5.0E00 K=1.3	51190005343812011339 10 28 66 89SR=B 90SR=4.0	001
ST GEORGE UTAH COX DAIRY 137CS=1.00E01 K=1.4	51190005343812023293 11 25 66 89SR=B 90SR=3.9	001
ST GEORGE UTAH COX DAIRY 137CS=5.0E00 K=1.4	51190005343812023415 12 16 66 89SR=B 90SR=4.0	001
ST GEORGE UTAH COX DAIRY 137CS=1.0E01 K=1.4	51190005343811023475 12 23 66 89SR=2 90SR=3.2	001

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

UTAH MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

ST GEORGE UTAH 137CS=1.5E01	K=1.3	51190005343812010854 89SR=5	07 01 66 90SR=3	004
ST GEORGE UTAH 137CS=1.5E01	K=1.1	51190005343812010957 89SR=B	07 22 66 90SR=5	004
ST GEORGE UTAH COX DAIRY 137CS=2.5E01	K=1.3	51190005343812011191 89SR=B	09 16 66 90SR=6	004
ST GEORGE UTAH COX DAIRY 137CS=1.0E01	K=1.2	51190005343812011231 89SR=B	09 23 66 90SR=4	004
ST GEORGE UTAH 137CS=5.0E00	K=1.4	51190005343811011285 89SR=B	10 14 66 90SR=3.5	004
ST GEORGE UTAH 137CS=1.0E01	K=1.3	51190005343811023025 89SR=B	11 03 66 90SR=3.9	004
ST GEORGE UTAH 137CS=1.5E01	K=1.4	51190005343811023198 89SR=B	11 11 66 90SR=5.4	004
ST GEORGE UTAH 137CS=1.00E01	K=1.3	51190005343811023262 89SR=B	11 18 66 90SR=3.7	004
ST GEORGE UTAH 137CS=1.00E01	K=1.3	51190005343811023325 89SR=B	12 02 66 90SR=2.5	004
ST GEORGE UTAH 137CS=1.00E01	K=1.4	51190005343812023366 89SR=B	12 09 66 90SR=3.5	004
ST GEORGE UTAH 137CS=1.0E01	K=1.4	51190005343812023505 89SR=B	12 30 66 90SR=4.3	004

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

UTAH MILK-JULY 01, 1966 TO DECEMBER 30, 1966

COLLECTED

SMITHFIELD UTAH K=1.6	89SR=10	53194300543812010875 07 05 66 90SR=11	
SMITHFIELD UTAH 137CS=5.0E00	K=1.6	53194300543812010876 07 06 66 89SR=5 90SR=11	
SMITHFIELD UTAH 137CS=1.0E01	K=1.6	53194300543812010874 07 07 66 SR89=5 SR90=11	
SMITHFIELD UTAH CACHE VALLEY DAIRY 137CS=3.0E01	K=1.5	AM 53194300543812010866 07 01 66 SR89=8 SR90=13	261
SMITHFIELD UTAH CACHE VALLEY DAIRY 137CS=2.5E01	K=1.4	AM 53194300543812010861 07 02 66 SR89=15 SR90=10	261

NOTE--LT(X) DENOTES A RESULT LESS THAN X.

Appendix A(continued)

PAGE 20

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