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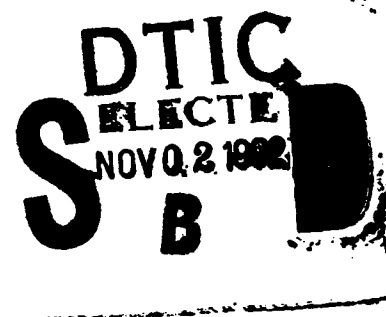
NWC TP 7194

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# Coso Monitoring Program October 1990 Through September 1991

by  
J. H. Monahan  
and  
D. E. Condon  
*Comarco Weapons Support Division  
for the  
Public Works Department*

DECEMBER 1991



NAVAL WEAPONS CENTER  
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## FOREWORD

This report presents the status of the Coso Monitoring Program conducted for the period October 1990 through September 1991 by the Naval Weapons Center (NWC), China Lake, Calif. The investigation, funded under the NWC Coso Geothermal Development Program, is being conducted to provide baseline information on hydrology and surface geothermal activity in the Coso Hot Springs area.

Comarco personnel aided in the successful completion of the 1990-91 Coso Monitoring Program under contract N60530-88-D-0019 for the Public Works Department, NWC.

This report was reviewed for technical accuracy by S. C. Bjornstad.

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Released for publication by  
W. B. PORTER  
*Technical Director*

## NWC Technical Publication 7194

Published by ..... Public Works Department  
Collation ..... Cover, 65 leaves  
First printing ..... 175 copies

| REPORT DOCUMENTATION PAGE  |   |  | Form Approved<br>OMB No. 0704-0188                         |   |
|--|---|--|--|---|
| Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. |   |  |  |   |
| 1. AGENCY USE ONLY (Leave blank)   |   | 2. REPORT DATE<br>December 1991                            |  | 3. REPORT TYPE AND DATES COVERED<br>1 Oct 90 -- 30 Sep 91 |
| 4. TITLE AND SUBTITLE<br>COSO MONITORING PROGRAM,<br>OCTOBER 1990 THROUGH SEPTEMBER 1991   |   |  | 5. FUNDING NUMBERS<br>N60530-88-D-0019                     |   |
| 6. AUTHOR(S)<br>Monahan, J. H., and Condon, D. E.  |   |  |  |   |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>Naval Weapons Center<br>China Lake, CA 93555-6001  |   |  | 8. PERFORMING ORGANIZATION<br>REPORT NUMBER<br>NWC TP 7194 |   |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)  |   |  | 10. SPONSORING/MONITORING<br>AGENCY REPORT NUMBER          |   |
| 11. SUPPLEMENTARY NOTES  |   |  |  |   |
| 12a. DISTRIBUTION/AVAILABILITY STATEMENT<br>A statement; public release; distribution unlimited  |   |  | 12b. DISTRIBUTION CODE                                     |   |
| 13. ABSTRACT (Maximum 200 words)<br><br>(U) The Coso Monitoring Program is a continuing effort in support of the development of the Navy's geothermal resources within the Known Geothermal Resource Area (KGRA). Data are presented on the monitoring of steam flow rates and temperatures, water levels in ponds and wells, water chemistry, and rainfall in the Coso Hot Springs Resort Area. A monthly photographic essay of the mudfields and pools shows the variation of surface water levels throughout the year.  |   |  |  |   |
| 14. SUBJECT TERMS<br>Coso Monitoring Program<br>Environmental Monitoring<br>Geothermal Development   |   |  | 15. NUMBER OF PAGES<br>131                                 |   |
| Steam Flow, Coso Hot Springs<br>Water Analysis<br>Water Level, Coso Hot Springs  |   |  | 16. PRICE CODE   |   |
| Barometric Pressure<br>Ambient Temperature<br>Relative Humidity  |   |  |  |   |
| 17. SECURITY CLASSIFICATION<br>OF REPORT<br>Unclassified   | 18. SECURITY CLASSIFICATION<br>OF THIS PAGE<br>Unclassified | 19. SECURITY CLASSIFICATION<br>OF ABSTRACT<br>Unclassified | 20. LIMITATION OF ABSTRACT<br>SAR                          |   |

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

SECURITY CLASSIFICATION OF THIS PAGE

UNCLASSIFIED

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## ACKNOWLEDGEMENT

The authors would like to acknowledge Kendra Larson, Comarco, Weapons Support Division, for her photographic contributions to this report.

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## INTRODUCTION

The Coso Monitoring Program was initiated in 1978 to gather baseline data on the surface and near-surface geothermal activity at Devils Kitchen and Coso Hot Springs, the main thermal sites within the Coso Known Geothermal Resource Area (Coso KGRA). This report represents the fourteenth year of continual baseline data collection.

Some changes in activity were noted at the thermal sites since the last report, as well as some improvements in data collection efforts. For example, Well 4P-2 stopped geysering on 11 August 1991, and the weather station is now fully operational in a new location. These and other activities will be detailed in the individual site discussions.

The Hewlett-Packard computer and digitizer, which were previously used, have been replaced by an IBM compatible system which is faster, more accurate, more reliable and more serviceable than the previous system. A computer program was written for the Geothermal Program Office by Karen Lucas (Code 2721) that enables the new computer and digitizer to extract recorded data from both the round Barton charts and the weather station strip charts. The data points are picked off each chart at two-hour intervals and two separate files are created: two-hour readings, and daily maximum and minimum readings. To test the accuracy of the program, a random sampling was done on both styles of chart. Forty-eight points were selected from the Barton charts along with 24 points from the strip charts. These were then compared to the computer-selected values at these same points. The value difference was  $\pm 0.65\%$  and  $\pm 0.57\%$ , respectively. This difference is an acceptable degree of accuracy which, when coupled with the convenience of the process, enables us to create several linked data-sets that will be used to better understand the relationship between thermal activity and forces acting upon it.

Monitored sites of the Coso Hot Springs area and type of data collected at each site are presented in Table 1. The location of each site is shown in Figure 1.



TABLE 1. Monitoring Functions and Locations.

| Monitored sites                    | Continuous steam flow | Continuous water level | Period water level | Continuous steam temperature | Period steam temperature | Ambient temperature | Barometric pressure | Relative humidity | Water level photography | Water chemistry |
|------------------------------------|-----------------------|------------------------|--------------------|------------------------------|--------------------------|---------------------|---------------------|-------------------|-------------------------|-----------------|
| Schober's Resort<br>(4A-2, 3)..... | X                     |                        |                    | X                            |                          |                     |                     |                   |                         |                 |
| Well 4H-4.....                     | X                     |                        |                    |                              |                          |                     |                     |                   |                         |                 |
| Well 4H-8.....                     |                       |                        | X <sup>b</sup>     |                              | X                        |                     |                     |                   |                         |                 |
| Well 4P-2.....                     | X                     |                        |                    | X                            |                          |                     |                     |                   |                         |                 |
| Well 4P-1.....                     |                       | X                      |                    |                              | X                        |                     |                     |                   |                         | X               |
| Well 4K-1.....                     |                       |                        | X <sup>b</sup>     |                              | X                        |                     |                     |                   |                         | X               |
| Devils Kitchen.....                | X                     |                        |                    |                              |                          |                     |                     |                   |                         | X               |
| Observation Well<br>No. 1.....     |                       | X <sup>a</sup>         |                    |                              |                          |                     |                     |                   |                         | X               |
| Observation Well<br>No. 2.....     |                       | X <sup>a</sup>         |                    |                              |                          |                     |                     |                   |                         |                 |
| Observation Well<br>No. 3.....     |                       | X <sup>a</sup>         |                    |                              |                          |                     |                     |                   |                         |                 |
| South Pool.....                    |                       | X <sup>a</sup>         |                    |                              | X                        |                     |                     |                   | X                       | X               |
| Weather Station<br>No. 1.....      |                       |                        |                    |                              |                          | X                   | X                   | X                 |                         |                 |

*a.* Weekly monitoring*b.* Less than weekly

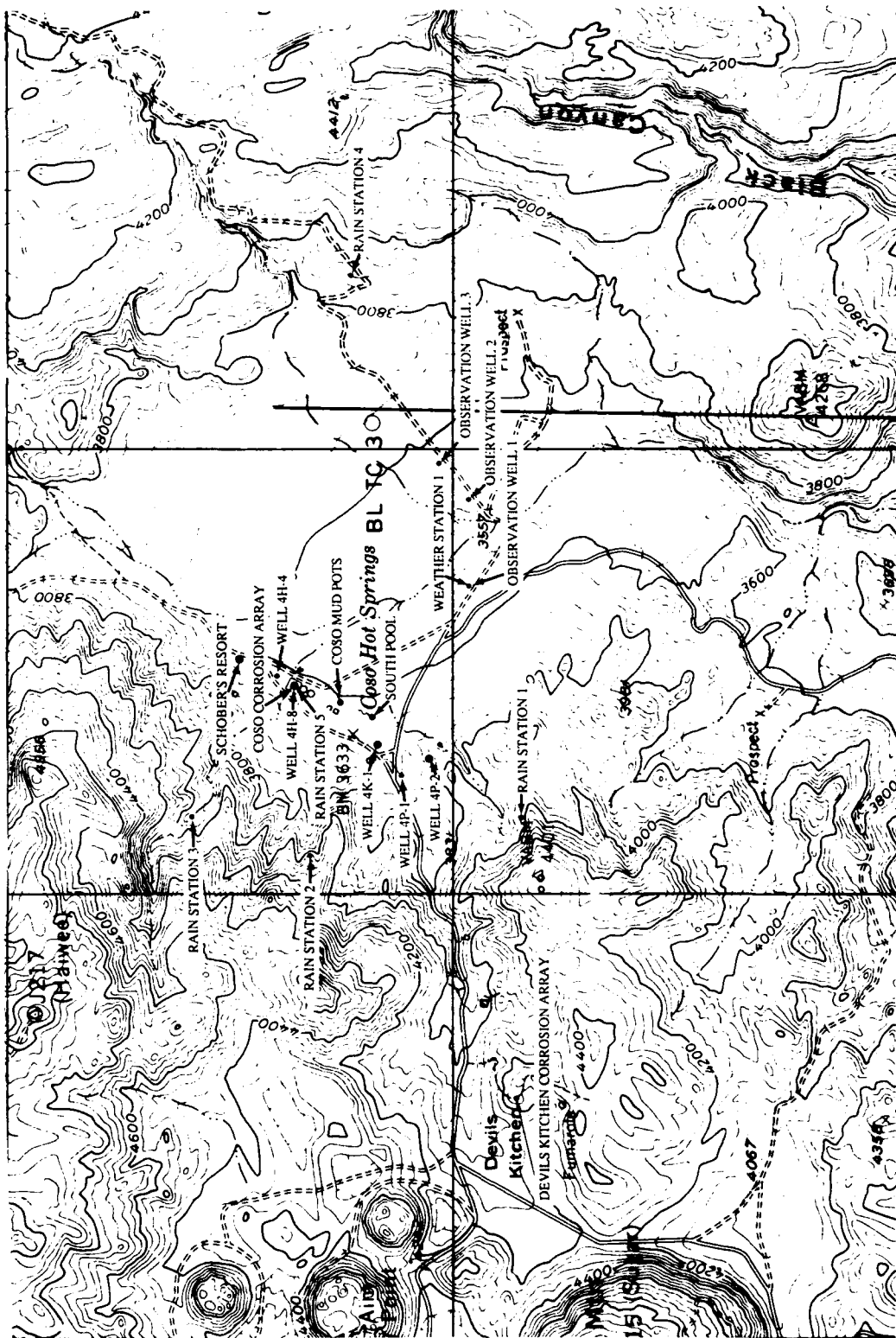


FIGURE 1. Coso Known Geothermal Resource Area Monitoring Sites.

## TEMPERATURE AND STEAM FLOW MONITORING

Steam flow and temperature are measured at four sites in the Coso Hot Springs area. One monitoring site is located within Devils Kitchen and the other stations are located along the Coso Hot Springs-Airport Lake Fault. Temperature data are used as collected, while the steam flow data are converted from graph units to steam flow in pounds per hour. The conversion factors for the steam data are calculated using the standard orifice equation for gas flow. The Barton pressure differential meters and temperature recorders were calibrated during the months of April and May 1991. Periodic manometer readings were taken to ensure the data recorded were accurate.

### DEVILS KITCHEN

Steam flow at Devils Kitchen is monitored using a 25-inch water column Barton pressure differential flow meter and recorder. The conversion factor based on the orifice size is 40.23. Daily high and low steam flow data collected at Devils Kitchen for the period of this report are presented in Appendix A, Table A-1. The mean flow and standard deviations for high and low daily steam flow are presented in Table 2. These data are shown graphically in Figure 2.

TABLE 2. Devils Kitchen Statistical Steam Flow.

| Date                 | High daily flow, lb/h |                    | Low daily flow, lb/h |                    |
|----------------------|-----------------------|--------------------|----------------------|--------------------|
|                      | Mean                  | Standard deviation | Mean                 | Standard deviation |
| 1 Oct 90 - 30 Sep 91 | 361.3                 | 4.8                | 356.4                | 7.3                |

Steam flow has remained consistent since incorporation of the Barton block manifold in January 1989. Except for an unexplainable 2% increase in steam flow, beginning in June 1991, the only other deviations were short term and the result of equipment error. Erroneous data recording has been minimized through frequent equipment checks and annual calibrations as well as monthly manometer reading to verify data accuracy.

### WELL 4P-2

Daily high and low steam flow and steam temperature data for Well 4P-2 are presented in Appendixes A and B, Tables A-2 and B-1. These data are shown graphically in Figures 3 and 4. Yearly mean data and standard deviations are presented for high and low daily steam flow and steam temperature in Tables 3 and 4.

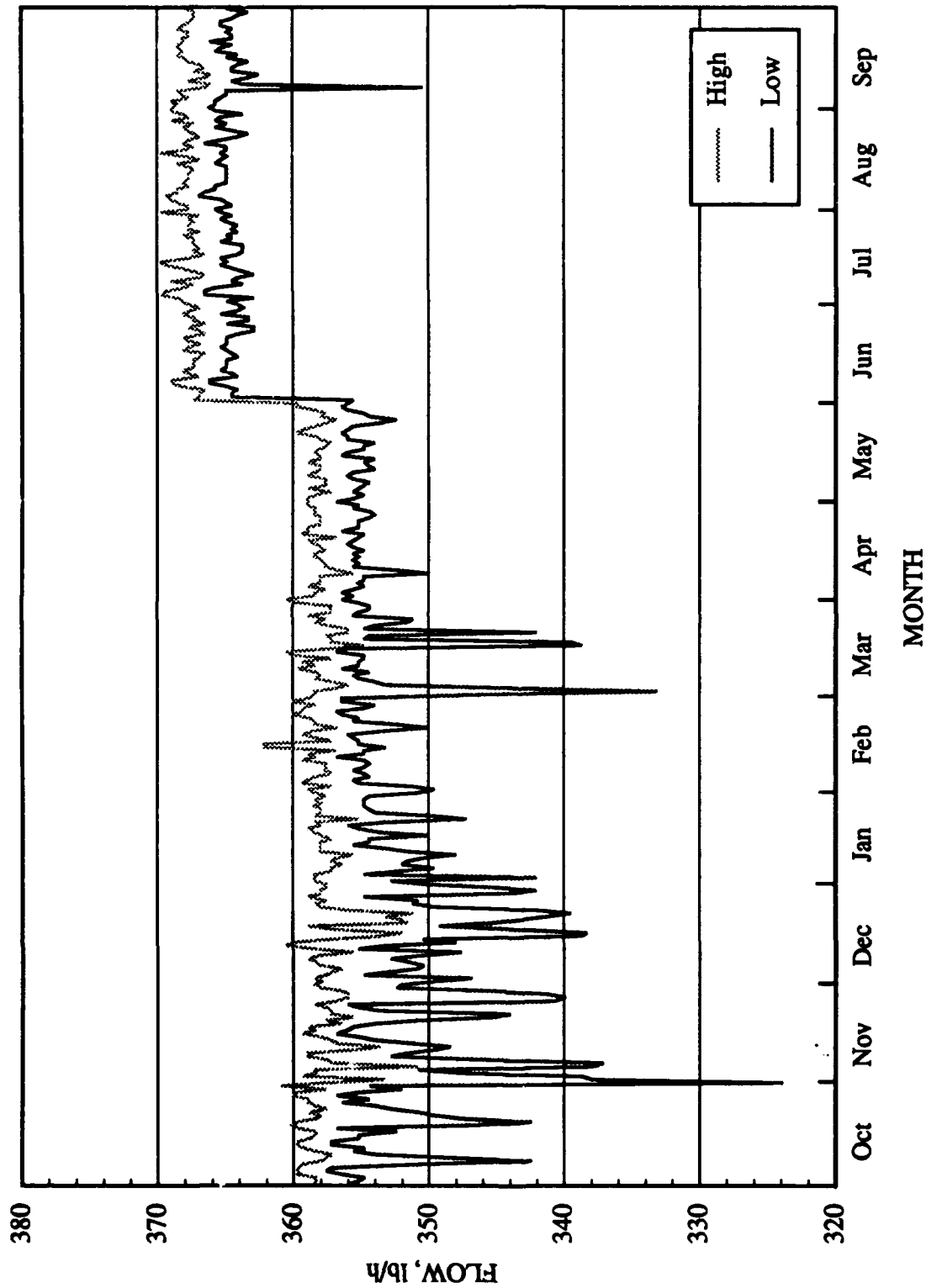


FIGURE 2. Devils Kitchen Steam Flow, 1 October 1990 Through 30 September 1991.

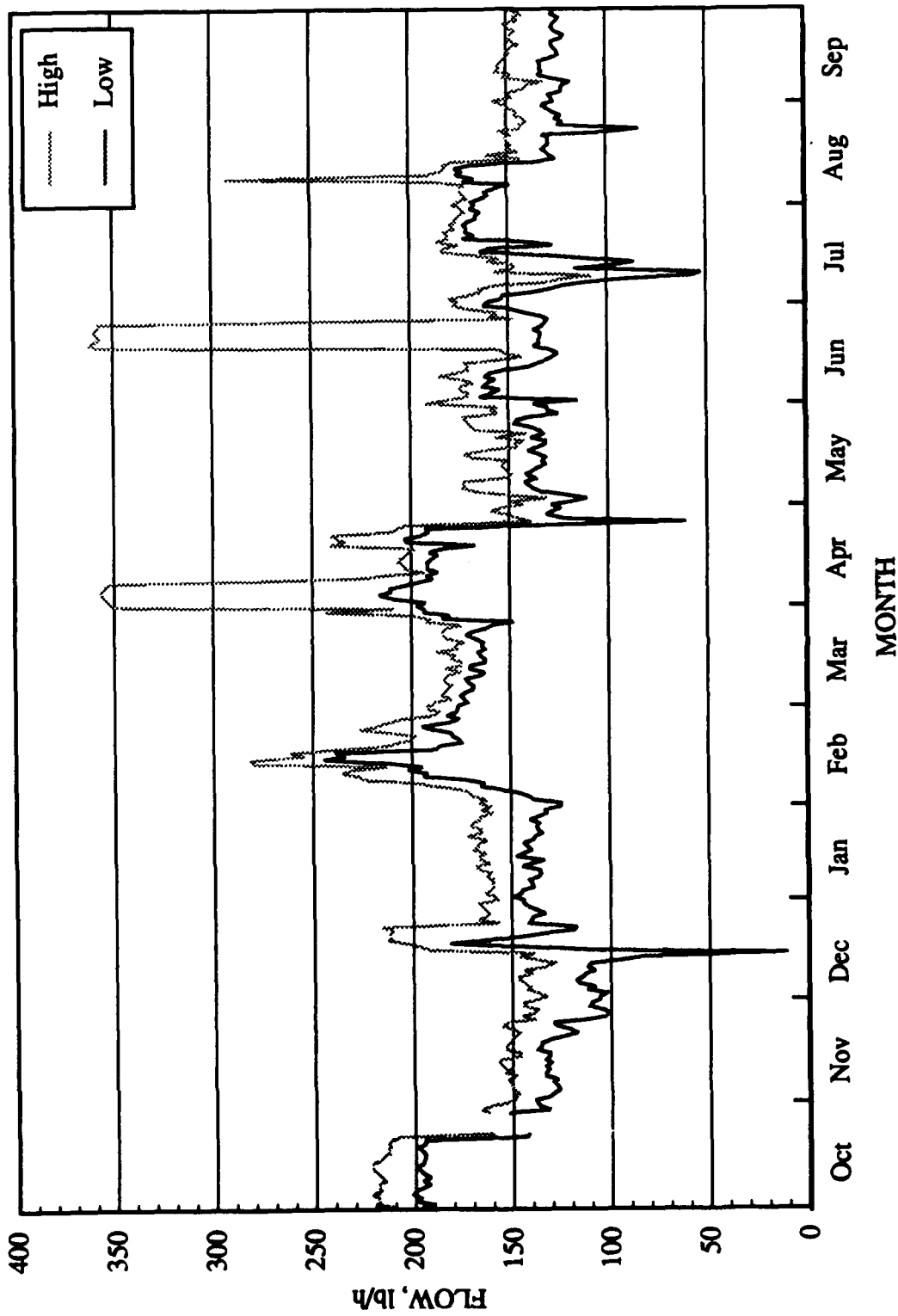


FIGURE 3. Well 4P-2 Steam Flow, 1 October 1990 Through 30 September 1991.

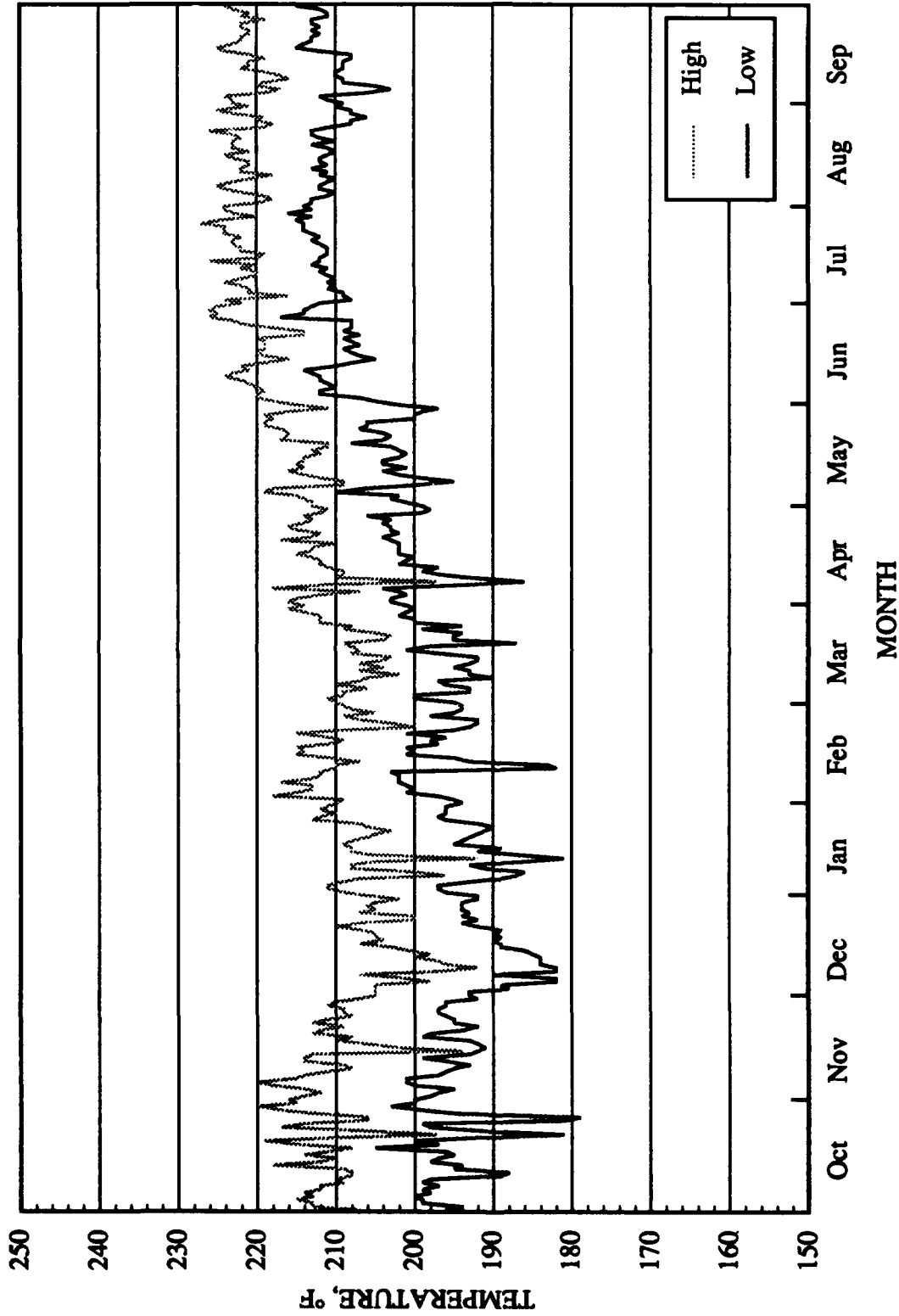


FIGURE 4. Well 4P-2 Steam Temperature, 1 October 1990 Through 30 September 1991.

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TABLE 3. Well 4P-2 Statistical Steam Flow.

| Date                 | High daily flow, lb/h |                    | Low daily flow, lb/h |                    |
|----------------------|-----------------------|--------------------|----------------------|--------------------|
|                      | Mean                  | Standard deviation | Mean                 | Standard deviation |
| 1 Oct 90 - 30 Sep 91 | 180.1                 | 48.1               | 147.1                | 32.9               |

TABLE 4. Well 4P-2 Statistical Steam Temperature.

| Date                 | High daily flow, °F |                    | Low daily flow, °F |                    |
|----------------------|---------------------|--------------------|--------------------|--------------------|
|                      | Mean                | Standard deviation | Mean               | Standard deviation |
| 1 Oct 90 - 30 Sep 91 | 213.6               | 7.1                | 200.9              | 8.6                |

As was stated in NWC TP 7138 (Reference 1), Well 4P-2 began geysering in May 1990. The effect continued with only slight changes until the middle of August 1991, when the geysering ceased. The geysering was normally made up of steam heavily laden with mud, however on 3 June 1991, the initial burst of steam was observed to be followed by geysering water, then a subsequent return to steam. It is suspected that the geyser effect is caused by a blockage of the steam path underground by fluid (condensate mixed with clay). The fluid flows or drains into the steam fracture stopping steam flow to the well bore. Steam pressure builds beneath the fracture until it overcomes the weight of the fluid. The steam then races to the surface, clearing the fractures and ejecting some of the fluids out the well bore. The remaining fluid drains back into the fractures, initiating a repeat of the cycle.

Manometer readings have been attempted on numerous occasions, but the results have been so low that any real accuracy is not feasible. This site is monitored several times a week to note sporadic activity, and to record any changes. Present plans are to discontinue the data recording, but to continue temperature logging and collecting water samples to stay abreast of changes as they occur.

#### WELL 4H-4

The daily steam flow for Well 4H-4 is presented in Appendix A, Table A-3. These data are shown graphically in Figure 5. The mean flow data and standard deviations for the high and low daily steam flow at this site are presented in Table 5.

TABLE 5. Well 4H-4 Statistical Steam Flow.

| Date                 | High daily flow, lb/h |                    | Low daily flow, lb/h |                    |
|----------------------|-----------------------|--------------------|----------------------|--------------------|
|                      | Mean                  | Standard deviation | Mean                 | Standard deviation |
| 1 Oct 90 - 30 Sep 91 | 178.5                 | 16.4               | 170.3                | 18.5               |

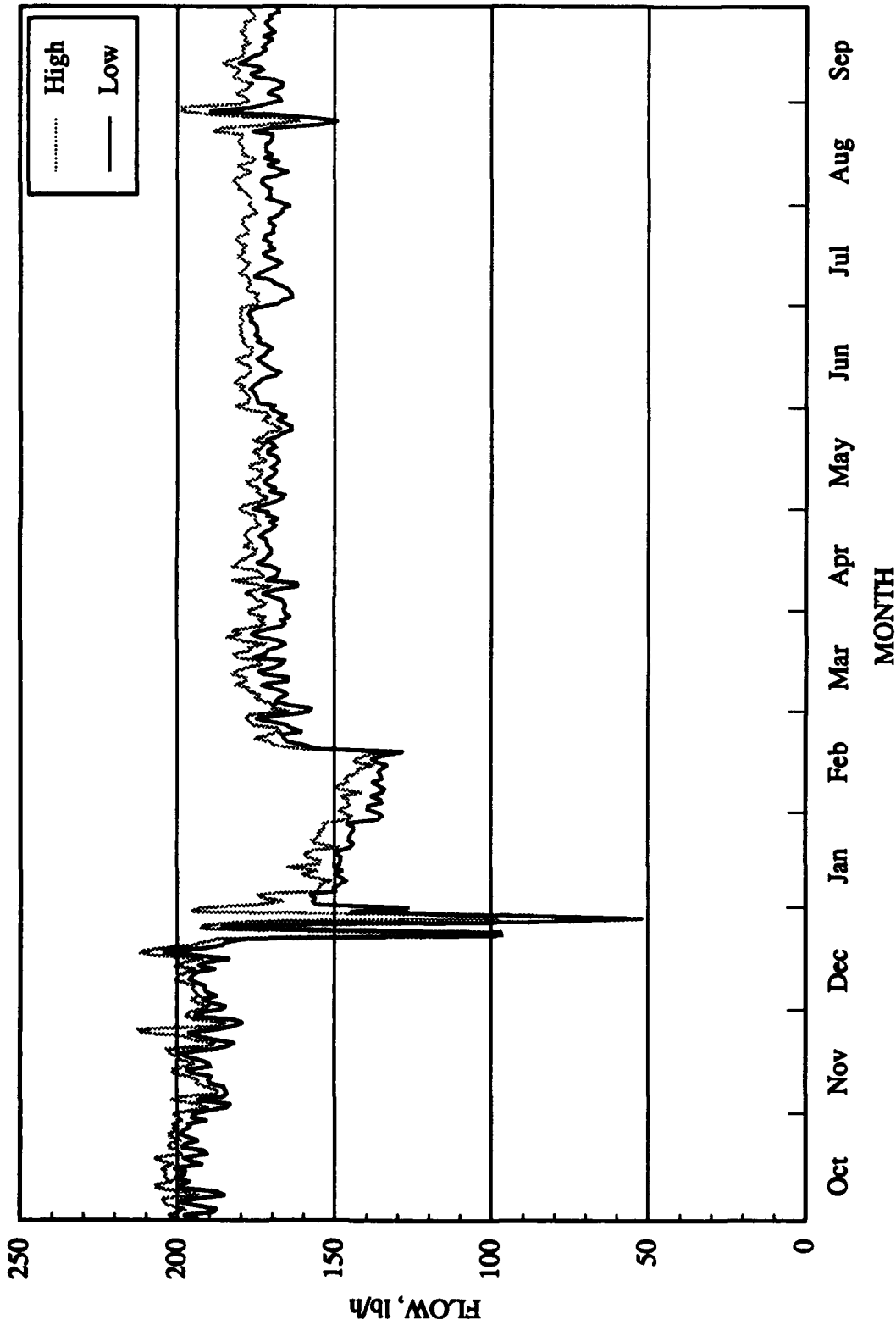


FIGURE 5. Well 4H-4 Steam Flow, 1 October 1990 Through 30 September 1991.



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Well 4H-4 was dug and cased with a string of 55-gallon barrels to a depth of approximately 20 feet before the Navy acquired the land. The well was rehabilitated and capped with an 8-inch "stove pipe" by Navy personnel specifically for use as a monitoring site. This site is equipped with a 25-inch water column meter as explained in Reference 1.

On 23 December 1990 the condensate pots froze and split open. The pots were removed from the system and new plumbing was installed from the well to the Barton block manifold, giving more consistent and stable data.

### WELLS 4A-2 AND 4A-3

The daily steam flow and steam temperature data for Wells 4A-2 and 4A-3 at Schober's Resort are presented in Appendixes A and B, Tables A-4 and B-2. The mean data and standard deviations for the highs and lows are presented for the daily steam flow (Table 6) and steam temperature (Table 7). The daily steam flow and steam temperature data are shown graphically in Figures 6 and 7. The daily ambient temperature is no longer recorded here. A hygrothermograph located at Observation Well No. 1, east of the resort area away from blowing steam is now in use, giving more accurate readings for the Coso Basin area. Further explanation is found in the Weather Station No. 1 discussion on page 51.

TABLE 6. Wells 4A-2 and 4A-3 Statistical Steam Flow.

| Date                 | High daily flow, lb/h |                    | Low daily flow, lb/h |                    |
|----------------------|-----------------------|--------------------|----------------------|--------------------|
|                      | Mean                  | Standard deviation | Mean                 | Standard deviation |
| 1 Oct 90 - 30 Sep 91 | 1312.3                | 22.0               | 1283.8               | 25.7               |

TABLE 7. Wells 4A-2 and 4A-3 Statistical Steam Temperature.

| Date                 | High daily flow, °F |                    | Low daily flow, °F |                    |
|----------------------|---------------------|--------------------|--------------------|--------------------|
|                      | Mean                | Standard deviation | Mean               | Standard deviation |
| 1 Oct 90 - 30 Sep 91 | 225.7               | 2.2                | 221.3              | 2.1                |

This site remains relatively reliable despite an estimated 10% loss of the steam flow being recorded. This loss was caused by heavy rainfall in the immediate area that eroded the soil from around the well casings, allowing steam to vent up along the well casings and in adjacent ground. Some sharp increases in steam flow were caused by the filling in of an area that was blown out by the escaping steam. The spreading of hot ground area has not increased in size or number of steam vents since the blowouts around the well casings have grown to their present size. The area is closely monitored to record any activity that may occur.

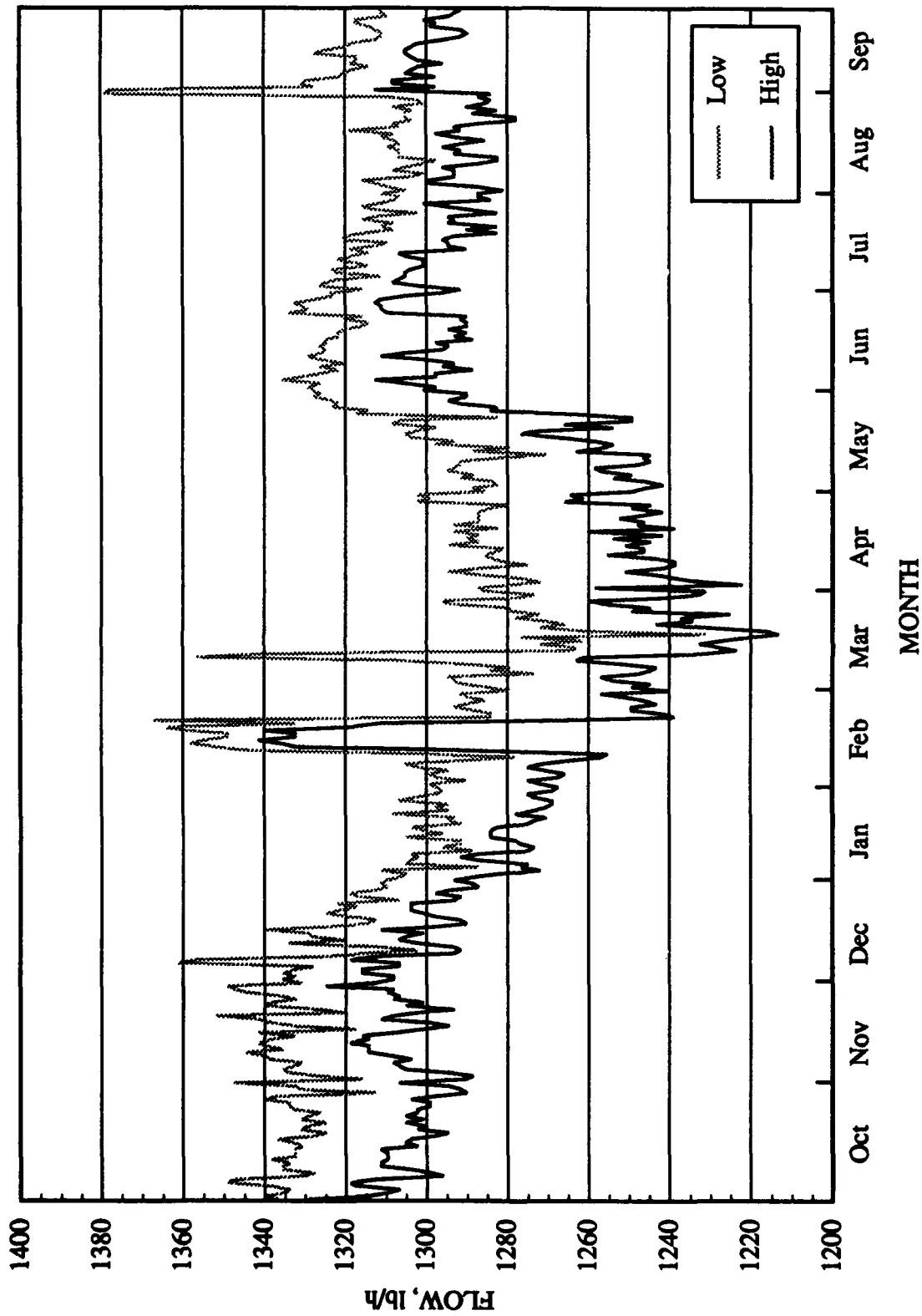


FIGURE 6. Wells 4A-2 and 4A-3 Steam Flow, 1 October 1990 Through 30 September 1991.

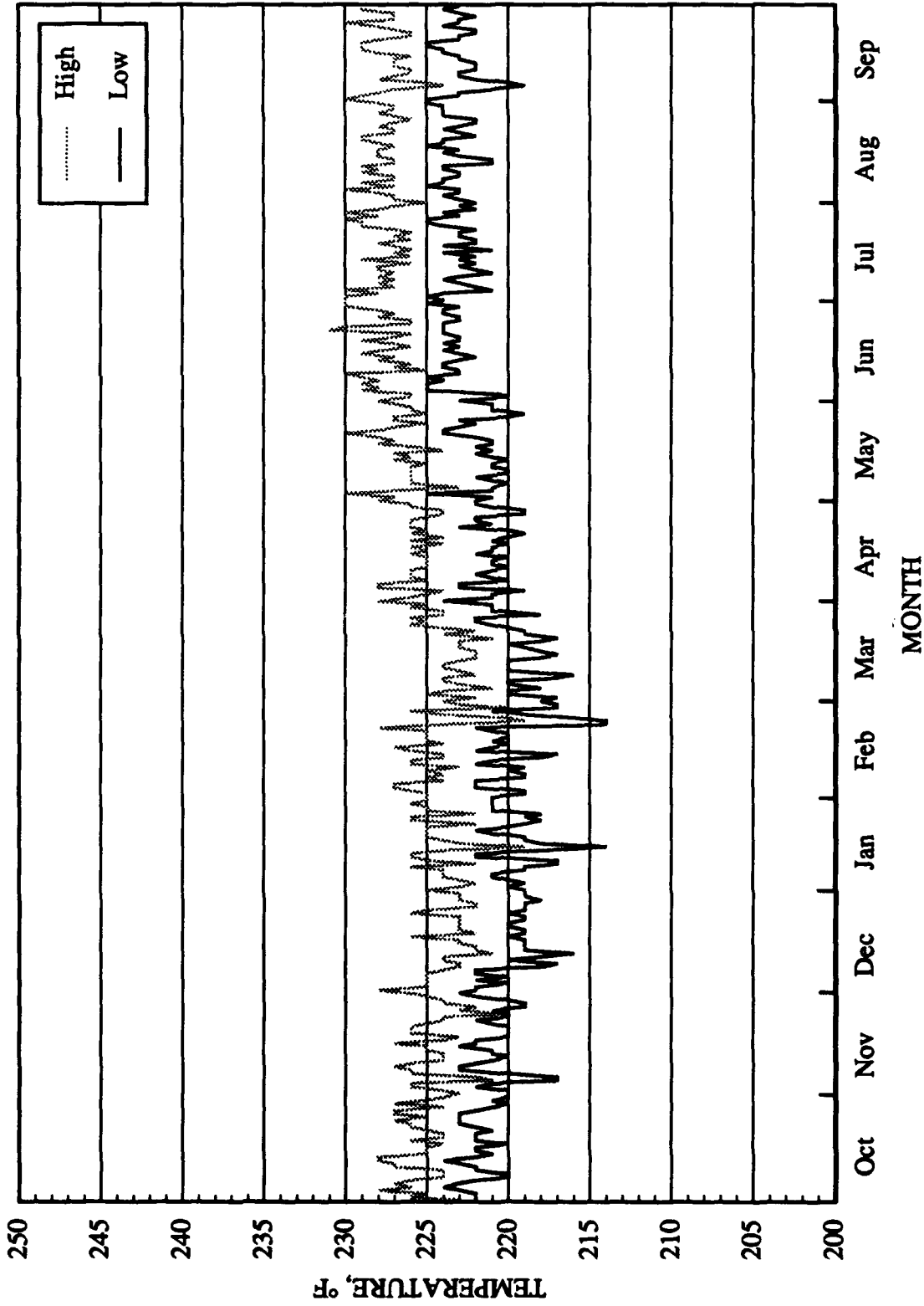


FIGURE 7. Wells 4A-2 and 4A-3 Steam Temperature, 1 October 1990 Through 30 September 1991.

# **COSO HOT SPRINGS MUDFIELD PHOTOGRAPHIC INVESTIGATION**

A weekly photographic investigation was initiated in January 1978 to document the fluctuation in fluid levels in several of the more prominent mud pots in the Coso KGRA. This project has continued into the steam-production and power-generation stages of the geothermal development.

Steam and weather conditions often combine to partially obscure the Coso Resort area, limiting the usefulness of traditional photography locations. Nine new photographic sites were chosen in February. These sites are distributed in and around the resort area so that at least four photographs can be taken each week that will clearly show the physical status of the thermal activity. Figures 8 through 19 illustrate seasonal variations at several Coso Resort sites. The sites are listed in Table 8 and are shown in Figure 20.

**TABLE 8. Photographic Sites and Views.**

| Site number | Primary view from each site  |
|-------------|--|
| 1           | South Pool looking north   |
| 2           | Overall Resort Mudfield, including Crater 4KC-8 looking west and northwest |
| 3           | Overall Resort Mudfield looking west, northwest, and south                 |
| 4           | Mudfield looking west  |
| 5           | Mudfield looking southeast   |
| 6           | Mudfield looking south with Resort   |
| 7           | North side of Mudfield looking south and southwest                         |
| 8           | Crater 4KC-8 looking south, southeast and east                             |
| 9           | Crater 4KC-8 looking northeast   |



(a) Site 1 looking north.



(b) Mudfield area looking southeast.

FIGURE 8. Coso Hot Springs, 9 October 1990.



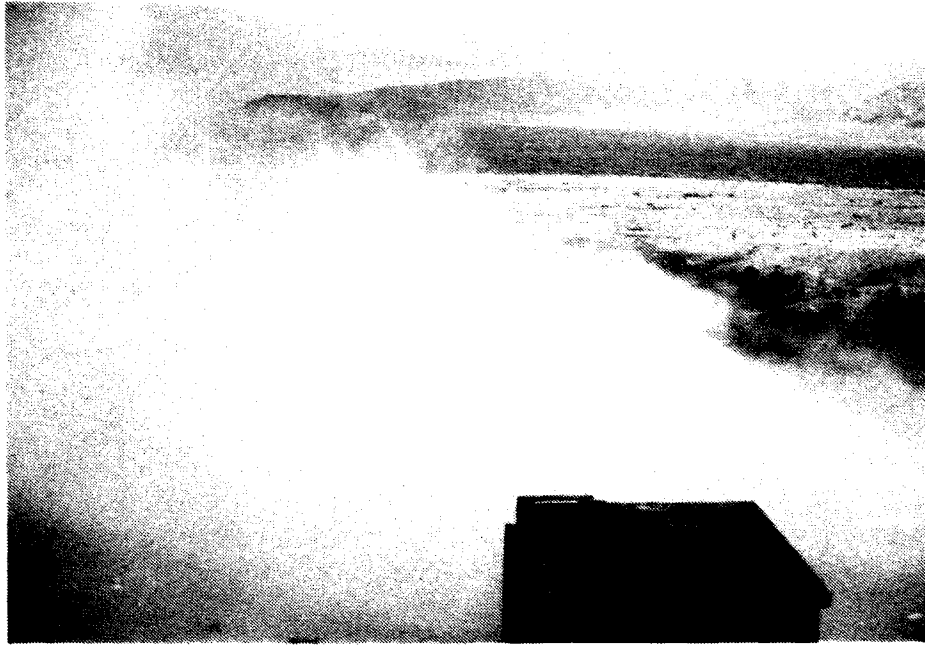
(a) Site 1 looking north.



(b) Mudfield area looking southeast.

FIGURE 9. Coso Hot Springs, 6 November 1990.

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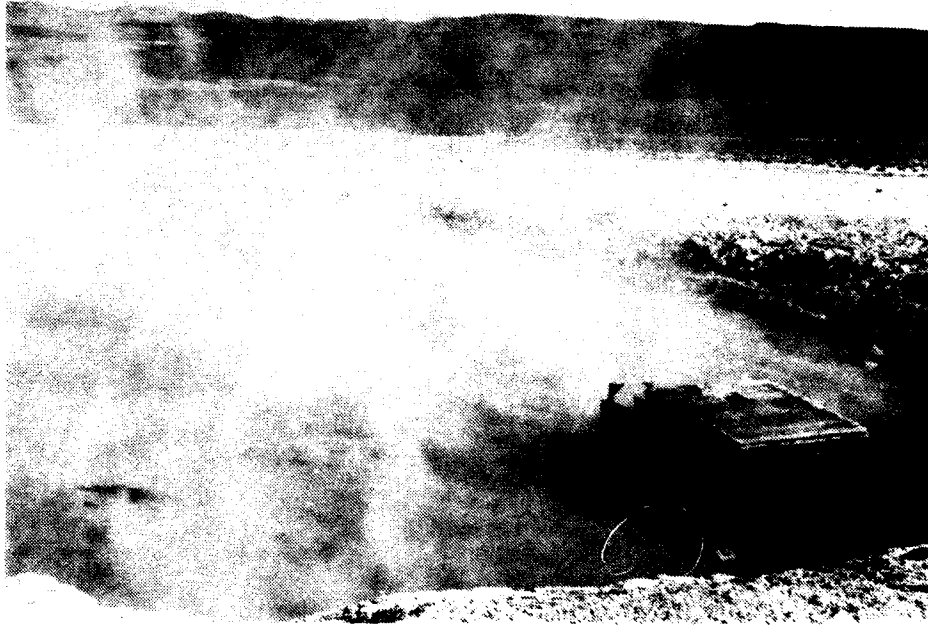


(a) Site 1 looking north.

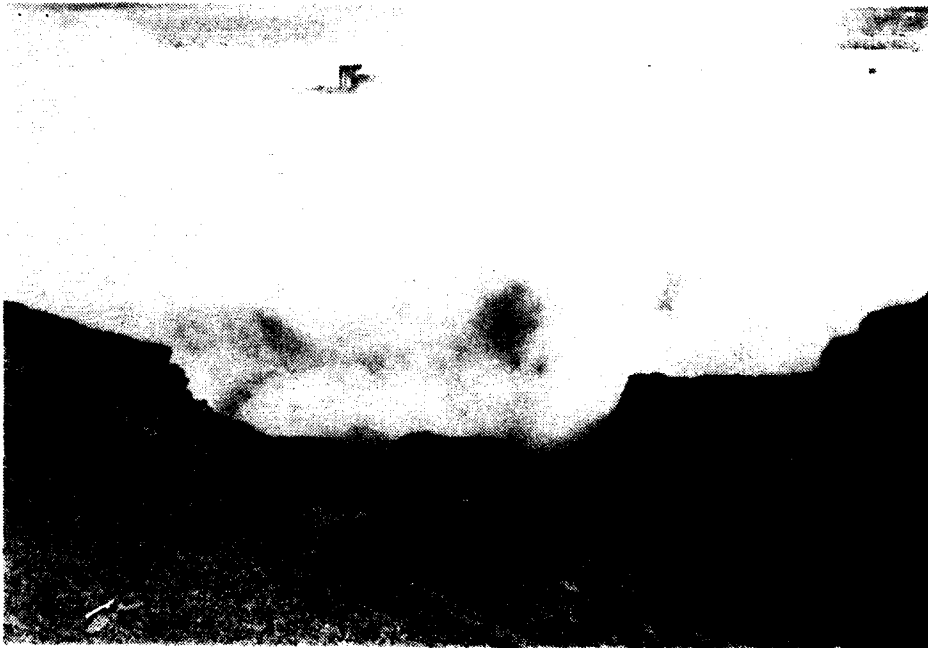


(b) Mudfield area looking south.

FIGURE 10. Coso Hot Springs, 13 December 1990.



(a) Site 1 looking north.



(b) Mudfield area looking east.

FIGURE 11. Coso Hot Springs, 2 January 1991.





(a) Site 1 looking north.

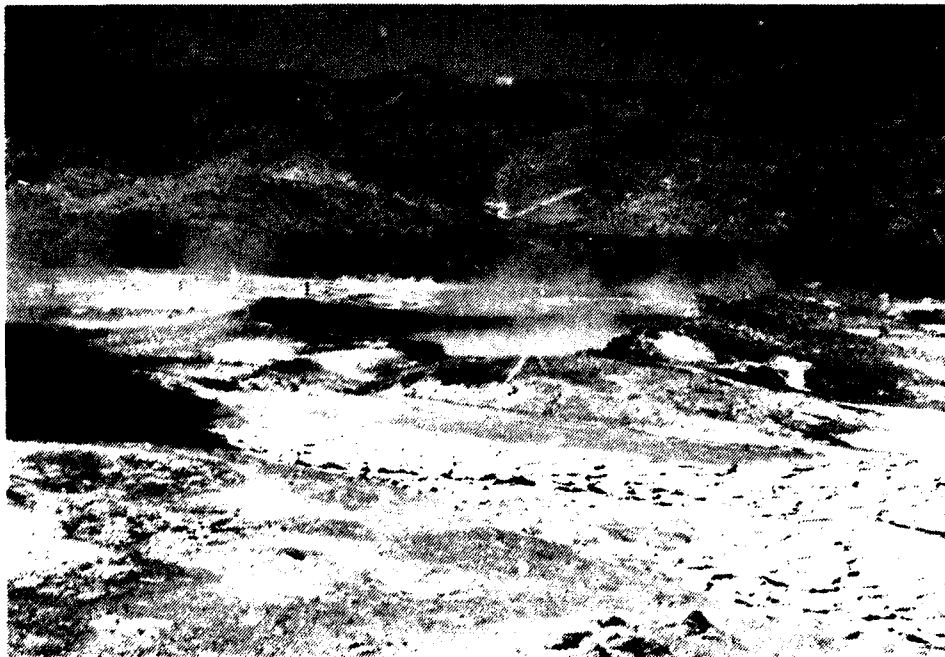


(b) Site 3 looking northwest.

FIGURE 12. Coso Hot Springs, 25 February 1991



(c) Site 8 looking south.



(d) Site 2 looking west.

FIGURE 12. Contd.

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(a) Site 1 looking north.



(b) Site 7 looking south.

FIGURE 13. Coso Hot Springs, 11 March 1991.

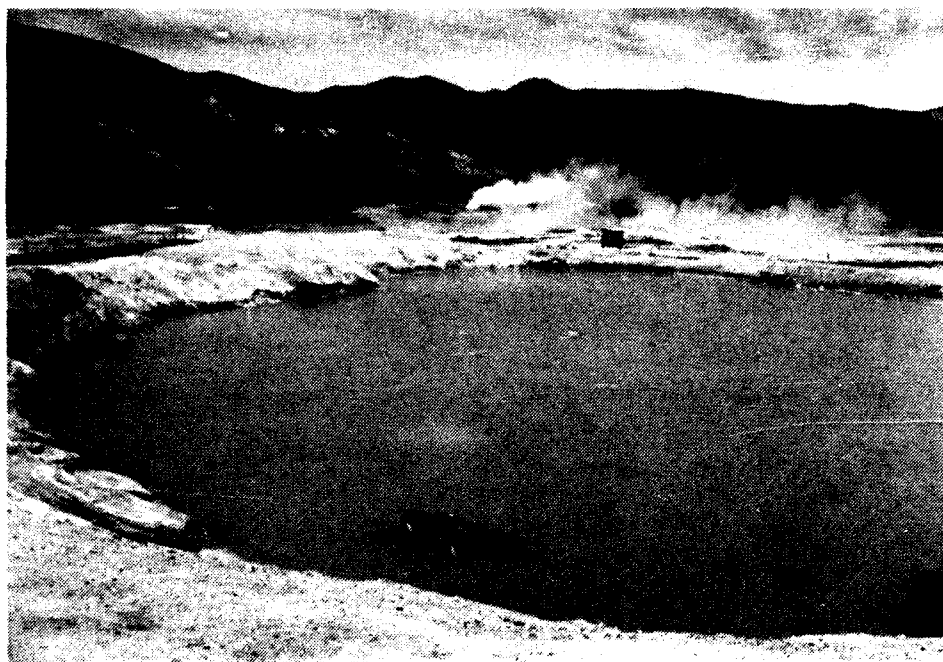


(c) Site 7 looking southwest.



(d) Site 8 looking south.

FIGURE 13. Contd.



(a) Site 1 looking north.



(b) Site 6 looking east.

FIGURE 14. Coso Hot Springs, 25 April 1991.

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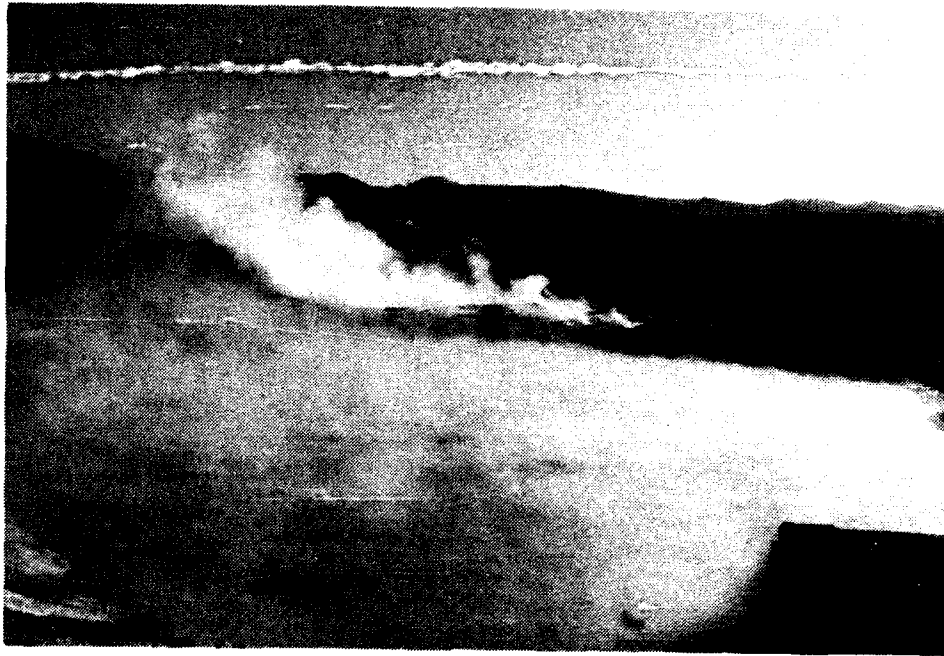


(c) Site 2 looking northwest.

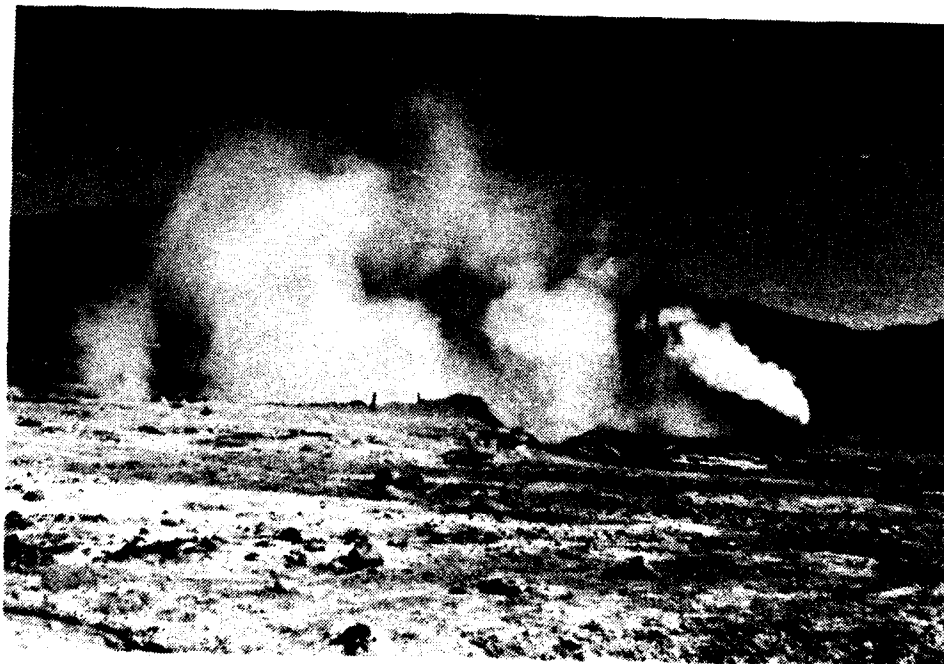


(d) Site 8 looking south.

FIGURE 14. Contd.



(a) Site 1 looking north.



(b) Site 3 looking northwest.

FIGURE 15. Coso Hot Springs, 20 May 1991.

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(c) Site 6 looking south.



(d) Site 3 looking south.

FIGURE 15. Contd.



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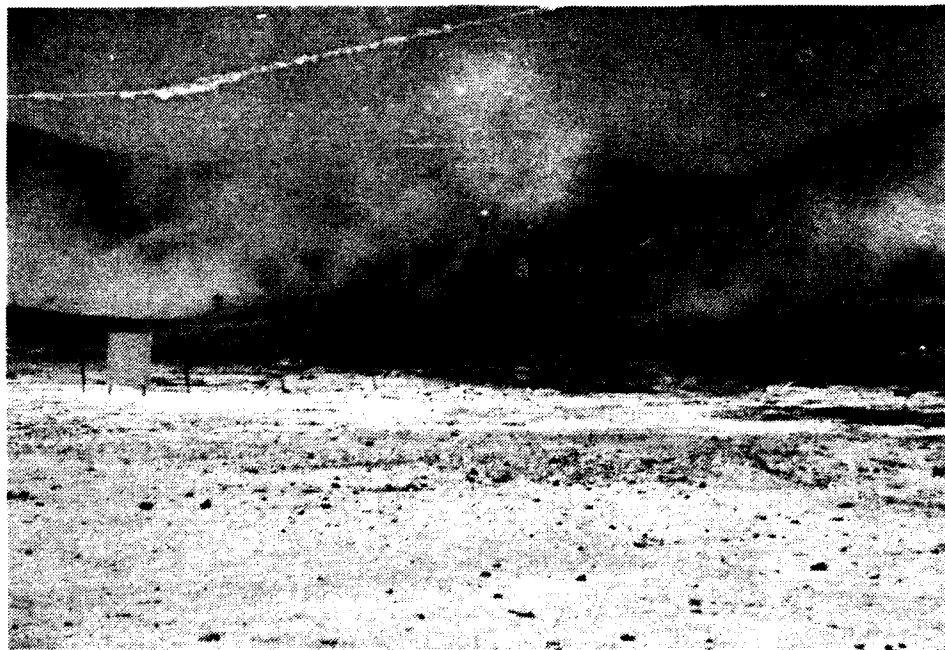


(a) Site 1 looking north.



(c) Site 7 looking south.

FIGURE 16. Coso Hot Springs, 24 June 1991.



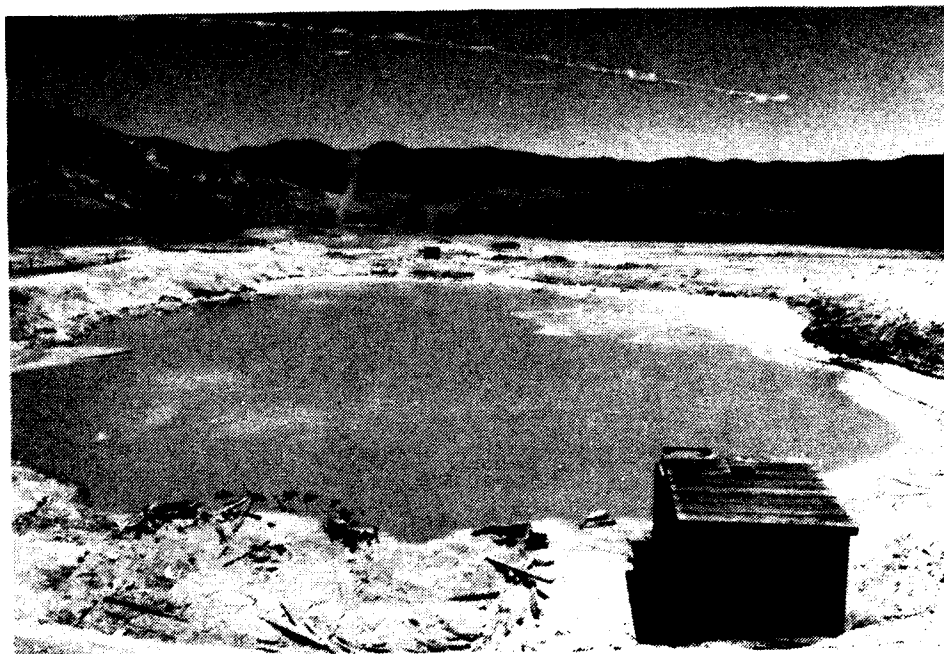
(c) Site 4 looking west.



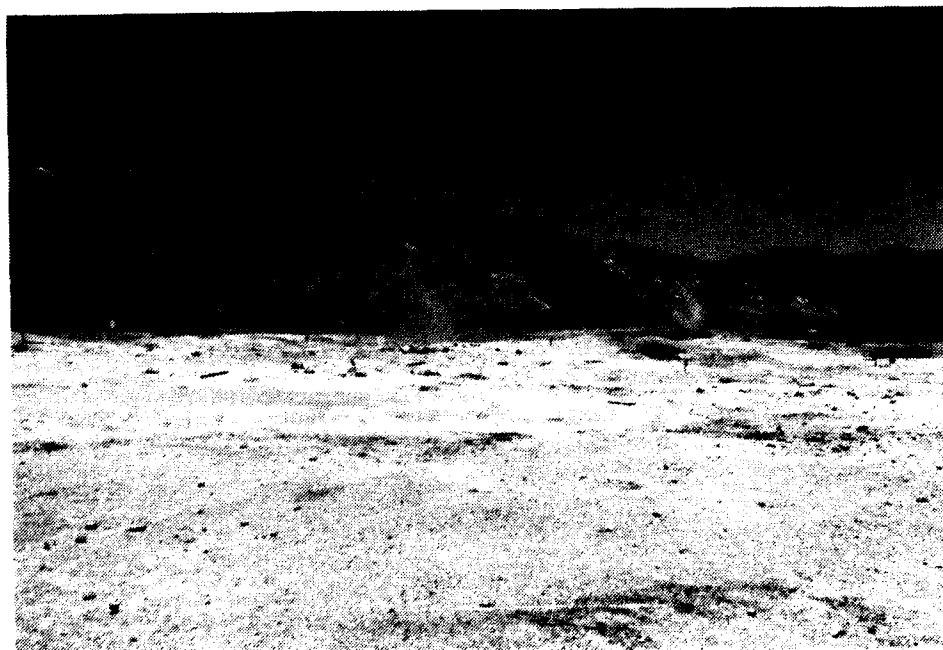
(d) Site 9 looking northeast.

FIGURE 16. Contd.

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(a) Site 1 looking north.



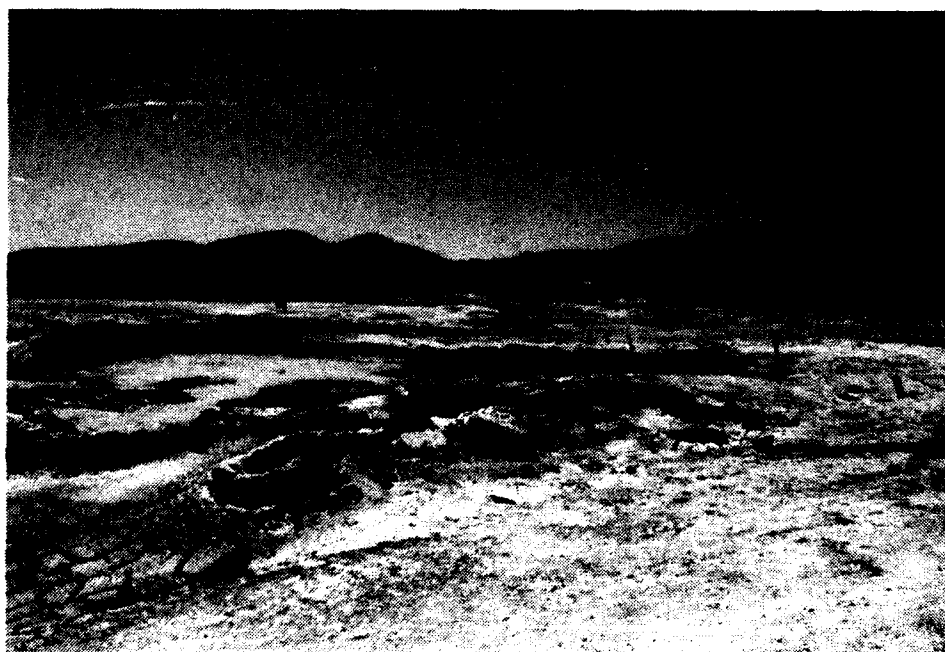
(b) Site 3 looking northwest.

FIGURE 17. Coso Hot Springs, 1 July 1991.

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(c) Site 8 looking east.



(d) Site 8 looking south.

FIGURE 17. Contd.



(a) Site 1 looking north.



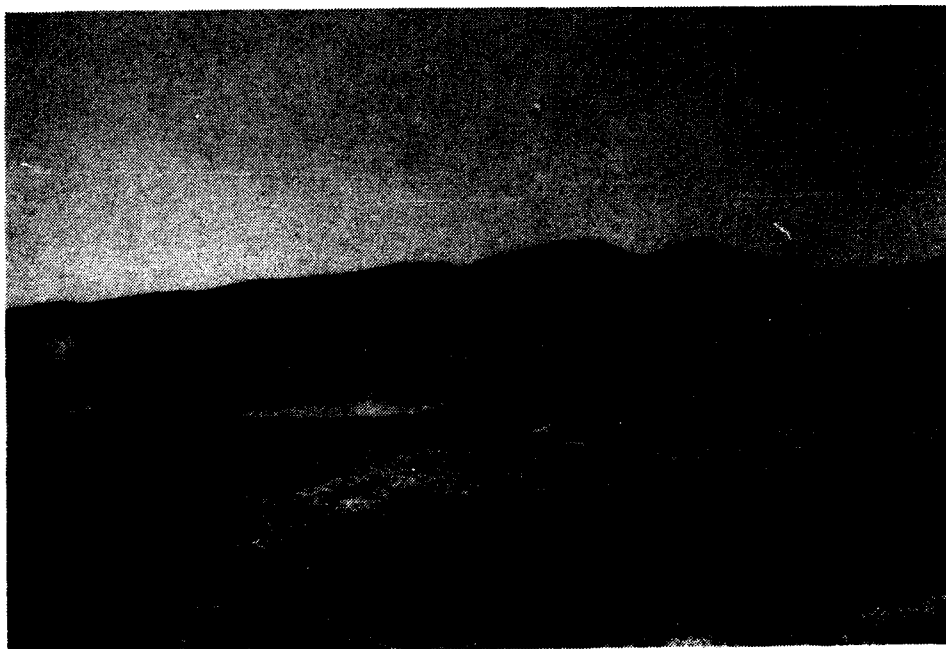
(b) Site 3 looking northwest.

FIGURE 18. Coso Hot Springs, 6 August 1991.

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(c) Site 2 looking west.



(d) Site 8 looking south.

FIGURE 18. Contd.



(a) Site 1 looking north.



(b) Site 4 looking northwest.

FIGURE 19. Coso Hot Springs, 3 September 1991.

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(c) Site 8 looking southeast.



(d) Site 8 looking south.

FIGURE 19. Contd.



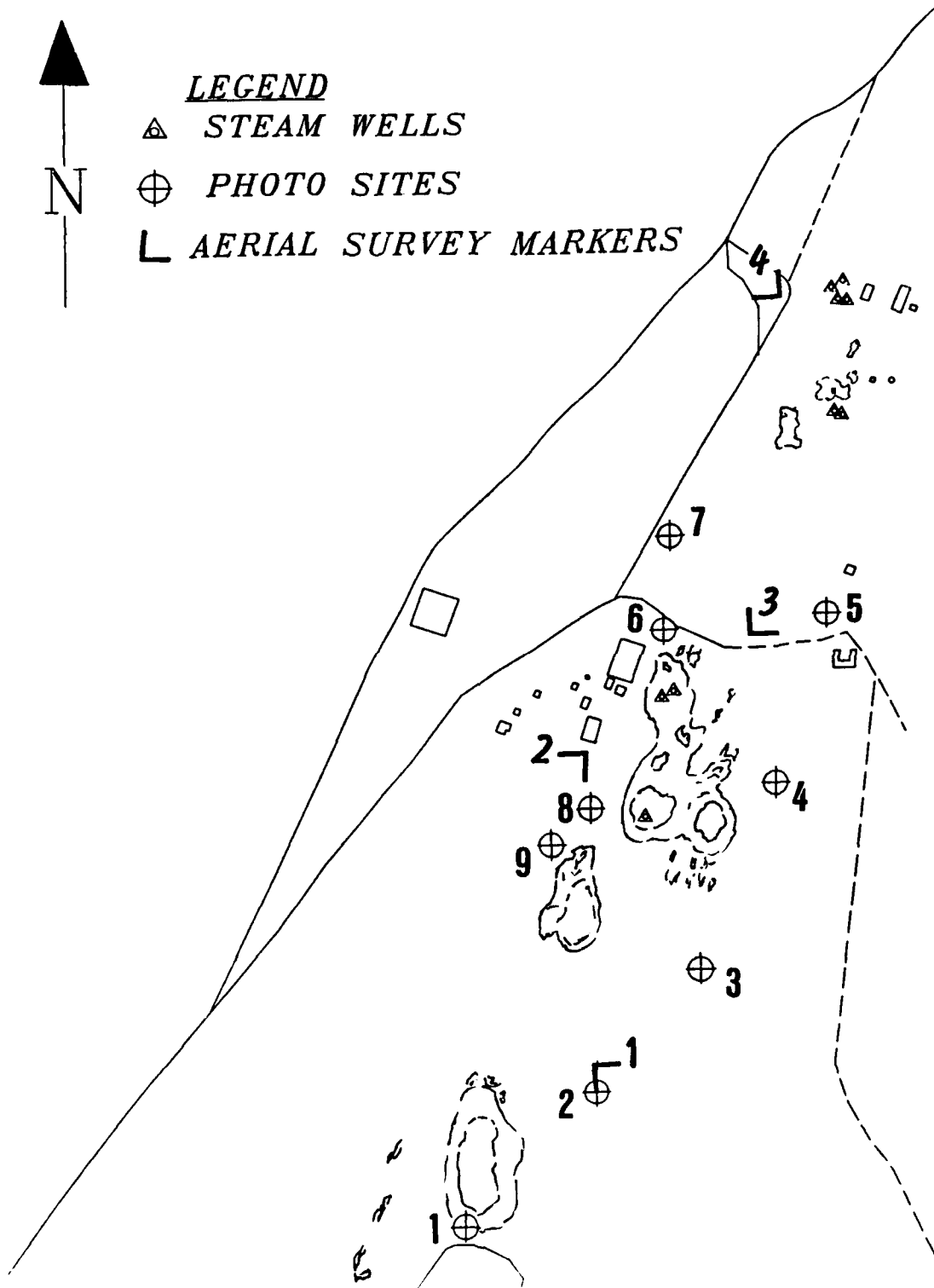


FIGURE 20. Photographic Locations.

## WATER LEVEL MONITORING

### OBSERVATION WELLS

Water levels are presently monitored in only six wells. Well 4H-8 is plugged with salt at 184.5 feet so the water level can no longer be taken. A determination has not been made whether or not this well will be reworked. Weekly water levels are taken at Wells 4P-1, Observation Wells (OB) 1, 2, and 3, and occasionally at Wells 4K-1 and 4A-4. These data can be seen in Table 9. Water level measurements at Wells 4P-1, 4K-1, and 4A-4 are taken with a modified Fisher electric water level meter because steam condensate accumulates on the probe of the Solist meter giving a false reading. The Solist meter is used at OB-1, 2 and 3. The water-filled pipe and manometer readings are used as secondary and comparison methods in case of failure of the Solist electric water level tape.

### SOUTH POOL

The South Pool water level continued the patterns of seasonal fluctuation (two to four feet) while the average level continues to be above historic levels as it has since 1988 (Figure 21). Weekly water temperature has not been recorded since 4 June 1991 when it became too hazardous to reach the water safely. From 18 June through 30 September 1991, water levels have not been taken in the traditional manner, but have been determined by the comparison of photographs with known elevations and those taken as part of the weekly monitoring program to determine present water elevations. The high water level this period was 3621.0 feet, the low was approximately 3616.8 feet. The average water temperature is still approximately 143° to 145°F except in the areas of the fumarole, where the high temperature is 185°F. Weekly water level and temperature data are presented in Table 10 and Figure 22.

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TABLE 9. Observation Well Water Level Data.

| Date      | Well depth to water, ft |       |       |       |      | Date      | Well depth to water, ft |       |       |       |      |
|-----------|-------------------------|-------|-------|-------|------|-----------|-------------------------|-------|-------|-------|------|
|           | 4P-1                    | OB-1  | OB-2  | OB-3  | 4K-1 |           | 4P-1                    | OB-1  | OB-2  | OB-3  | 4K-1 |
| 02 Oct 90 | 57.7                    | 151.6 | 196.2 | 377.6 | 54.4 | 02 Apr 91 | 56.7                    | 152.5 | 195.1 | 377.5 |      |
| 10 Oct 90 | 57.6                    | 151.6 | 196.2 | 377.6 |      | 09 Apr 91 | 56.5                    | 152.6 | 195.0 | 377.4 |      |
| 16 Oct 90 | 57.7                    | 151.6 | 196.2 | 377.6 |      | 16 Apr 91 | 56.5                    | 152.6 | 195.0 | 377.4 | 53.6 |
| 23 Oct 90 | 57.7                    | 151.7 | 196.2 | 377.6 | 54.3 | 25 Apr 91 | 56.5                    | 152.6 | 195.1 | 377.4 |      |
| 30 Oct 90 | 57.7                    | 151.7 | 196.2 | 377.6 |      | 30 Apr 91 | 56.4                    | 152.6 | 195.1 | 377.4 |      |
| 06 Nov 90 | 57.7                    | 151.8 | 196.2 | 377.6 |      | 07 May 91 | 56.4                    | 152.6 | 195.1 | 377.4 |      |
| 13 Nov 90 | 57.5                    | 151.7 | 196.2 | 377.6 |      | 14 May 91 | 56.3                    | 152.6 | 195.1 | 377.4 | 52.8 |
| 19 Nov 90 | 57.5                    | 151.8 | 196.1 | 377.7 |      | 29 May 91 | 56.3                    | 152.7 | 195.0 | 377.3 |      |
| 27 Nov 90 | 57.7                    | 151.9 | 196.1 | 377.7 | 54.3 | 04 Jun 91 | 56.4                    | 152.7 | 195.0 | 377.3 |      |
| 04 Dec 90 | 57.5                    | 151.9 | 196.0 | 377.6 |      | 11 Jun 91 | 56.4                    | 152.7 | 195.0 | 377.3 | 51.9 |
| 11 Dec 90 | 57.4                    | 152.0 | 196.0 | 377.6 |      | 18 Jun 91 | 55.8                    | 153.2 | 194.7 | 377.1 |      |
| 18 Dec 90 | 57.3                    | 152.1 | 196.0 | 377.6 |      | 25 Jun 91 | 55.8                    | 153.2 | 194.7 | 376.7 |      |
| 26 Dec 90 | 57.4                    | 152.1 | 195.9 | 377.4 |      | 02 Jul 91 | 55.9                    | 153.5 | 194.7 | 376.7 |      |
| 02 Jan 91 | 57.4                    | 152.2 | 195.9 | 377.5 | 54.7 | 11 Jul 91 | 55.9                    | 153.4 | 194.7 | 376.7 |      |
| 08 Jan 91 | 57.4                    | 152.1 | 195.8 | 377.4 |      | 15 Jul 91 | 55.9                    | 153.5 | 194.7 | 376.7 | 51.0 |
| 17 Jan 91 | 57.2                    | 152.1 | 195.7 | 377.4 |      | 22 Jul 91 | 55.9                    | 153.5 | 194.7 | 376.7 |      |
| 23 Jan 91 | 57.2                    | 152.2 | 195.7 | 377.4 |      | 29 Jul 91 | 55.8                    | 153.5 | 194.7 | 376.7 | 50.9 |
| 29 Jan 91 | 57.1                    | 152.2 | 195.5 | 377.4 |      | 05 Aug 91 | 55.6                    | 154.1 | 194.5 | 376.4 |      |
| 05 Feb 91 | 57.2                    | 152.3 | 195.5 | 377.4 | 54.4 | 12 Aug 91 | 55.6                    | 154.2 | 194.6 | 376.4 | 50.8 |
| 11 Feb 91 | 57.2                    | 152.3 | 195.4 | 377.6 |      | 19 Aug 91 | 56.0                    | 154.3 | 194.6 | 376.3 |      |
| 19 Feb 91 | 57.0                    | 152.3 | 195.4 | 377.4 |      | 26 Aug 91 | 56.0                    | 154.4 | 194.6 | 376.3 |      |
| 26 Feb 91 | 57.0                    | 152.4 | 195.4 | 377.4 |      | 03 Sep 91 | 56.1                    | 154.5 | 194.5 | 376.1 |      |
| 05 Mar 91 | 57.0                    | 152.4 | 195.3 | 377.5 |      | 10 Sep 91 | 56.1                    | 154.5 | 194.6 | 376.3 | 50.8 |
| 12 Mar 91 | 56.9                    | 152.5 | 195.2 | 377.4 |      | 16 Sep 91 | 56.1                    | 154.8 | 194.6 | 376.4 |      |
| 21 Mar 91 | 56.7                    | 152.4 | 195.2 | 377.5 | 54.0 | 24 Sep 91 | 56.2                    | 154.9 | 194.4 | 376.4 | 50.7 |
| 26 Mar 91 | 56.7                    | 152.5 | 195.2 | 377.5 |      | 30 Sep 91 | 56.2                    | 155.0 | 194.3 | 376.5 | 50.6 |

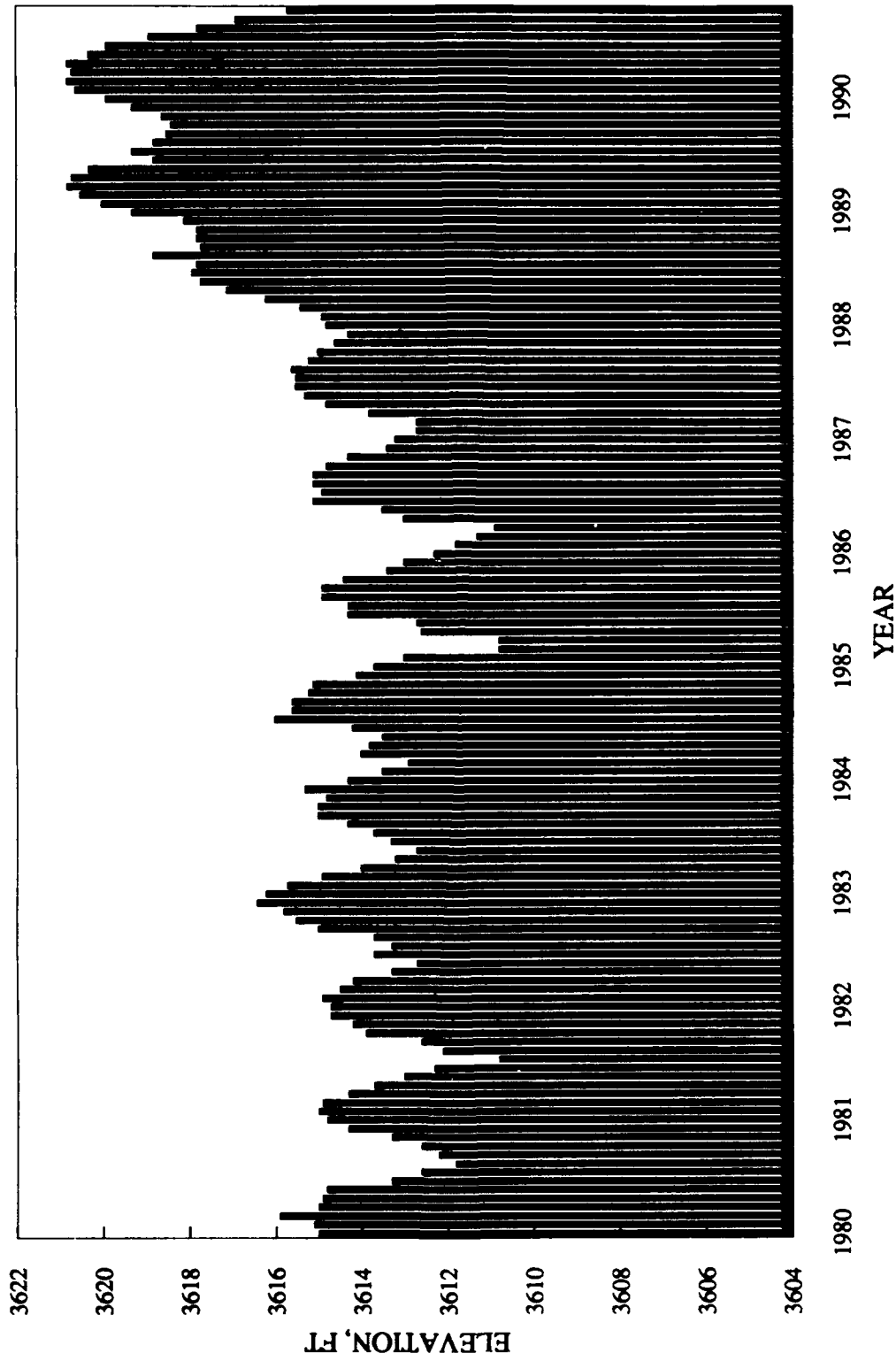


FIGURE 21. South Pool Elevations, January 1980 Through September 1991.

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TABLE 10. South Pool Elevation and Temperature Changes.

| Date      | True elevation, ft | Water temperature, °F | Date      | True elevation, ft  | Water temperature, °F |
|-----------|--------------------|-----------------------|-----------|---------------------|-----------------------|
| 2 Oct 90  | 3618.7             | 150                   | 2 Apr 91  | 3620.9              | 138                   |
| 10 Oct 90 | 3618.9             | 143                   | 9 Apr 91  | 3620.6              | 142                   |
| 16 Oct 90 | 3619.0             | 146                   | 16 Apr 91 | 3620.6              | 138                   |
| 23 Oct 90 | 3619.2             | 144                   | 25 Apr 91 | 3620.5              | 145                   |
| 30 Oct 90 | 3619.3             | 146                   | 30 Apr 91 | 3620.3              | 145                   |
| 6 Nov 90  | 3619.4             | 114                   | 7 May 91  | 3620.2              | 142                   |
| 13 Nov 90 | 3619.6             | 147                   | 14 May 91 | 3620.1              | 142                   |
| 19 Nov 90 | 3619.8             | 147                   | 21 May 91 | 3620.0              | 144                   |
| 27 Nov 90 | 3619.9             | 147                   | 29 May 91 | 3619.9              | 146                   |
| 4 Dec 90  | 3620.0             | 142                   | 4 Jun 91  | 3619.9              | <sup>a</sup> 172      |
| 11 Dec 90 | 3620.0             | 142                   | 11 Jun 91 | 3619.6              | <sup>b</sup>          |
| 18 Dec 90 | 3620.4             | 142                   | 18 Jun 91 | <sup>c</sup> 3619.2 | <sup>b</sup>          |
| 26 Dec 90 | 3620.6             | 134                   | 25 Jun 91 | <sup>c</sup> 3618.9 | <sup>b</sup>          |
| 2 Jan 91  | 3620.7             | 146                   | 2 Jul 91  | <sup>c</sup> 3618.7 | <sup>b</sup>          |
| 8 Jan 91  | 3620.8             | 142                   | 11 Jul 91 | <sup>c</sup> 3618.5 | <sup>b</sup>          |
| 17 Jan 91 | 3620.9             | 143                   | 15 Jul 91 | <sup>c</sup> 3618.2 | <sup>b</sup>          |
| 23 Jan 91 | 3620.8             | 143                   | 22 Jul 91 | <sup>c</sup> 3618.1 | <sup>b</sup>          |
| 29 Jan 91 | 3620.8             | 145                   | 29 Jul 91 | <sup>c</sup> 3617.8 | <sup>b</sup>          |
| 5 Feb 91  | 3620.8             | 143                   | 5 Aug 91  | <sup>c</sup> 3617.5 | <sup>b</sup>          |
| 11 Feb 91 | 3620.7             | 142                   | 12 Aug 91 | <sup>c</sup> 3617.3 | <sup>b</sup>          |
| 19 Feb 91 | 3620.7             | 143                   | 19 Aug 91 | <sup>c</sup> 3617.2 | <sup>b</sup>          |
| 26 Feb 91 | 3620.7             | 143                   | 26 Aug 91 | <sup>c</sup> 3616.9 | <sup>b</sup>          |
| 5 Mar 91  | 3620.7             | 145                   | 3 Sep 91  | <sup>c</sup> 3616.8 | <sup>b</sup>          |
| 12 Mar 91 | 3620.8             | 143                   | 10 Sep 91 | <sup>c</sup> 3616.8 | <sup>b</sup>          |
| 21 Mar 91 | 3621.0             | 135                   | 16 Sep 91 | <sup>c</sup> 3616.8 | <sup>b</sup>          |
| 26 Mar 91 | 3620.8             | 140                   | 24 Sep 91 | <sup>c</sup> 3616.8 | <sup>b</sup>          |
|           |                    |                       | 30 Sep 91 | <sup>c</sup> 3615.8 | <sup>d</sup> 185      |

<sup>a</sup> This temperature was taken from the southwest corner (area near fumarole) using the TD Probe.

<sup>b</sup> No temperature was taken during this time.

<sup>c</sup> Estimated elevations.

<sup>d</sup> This temperature was taken using a thermometer with a 30-inch probe attached to a 16-foot pole.

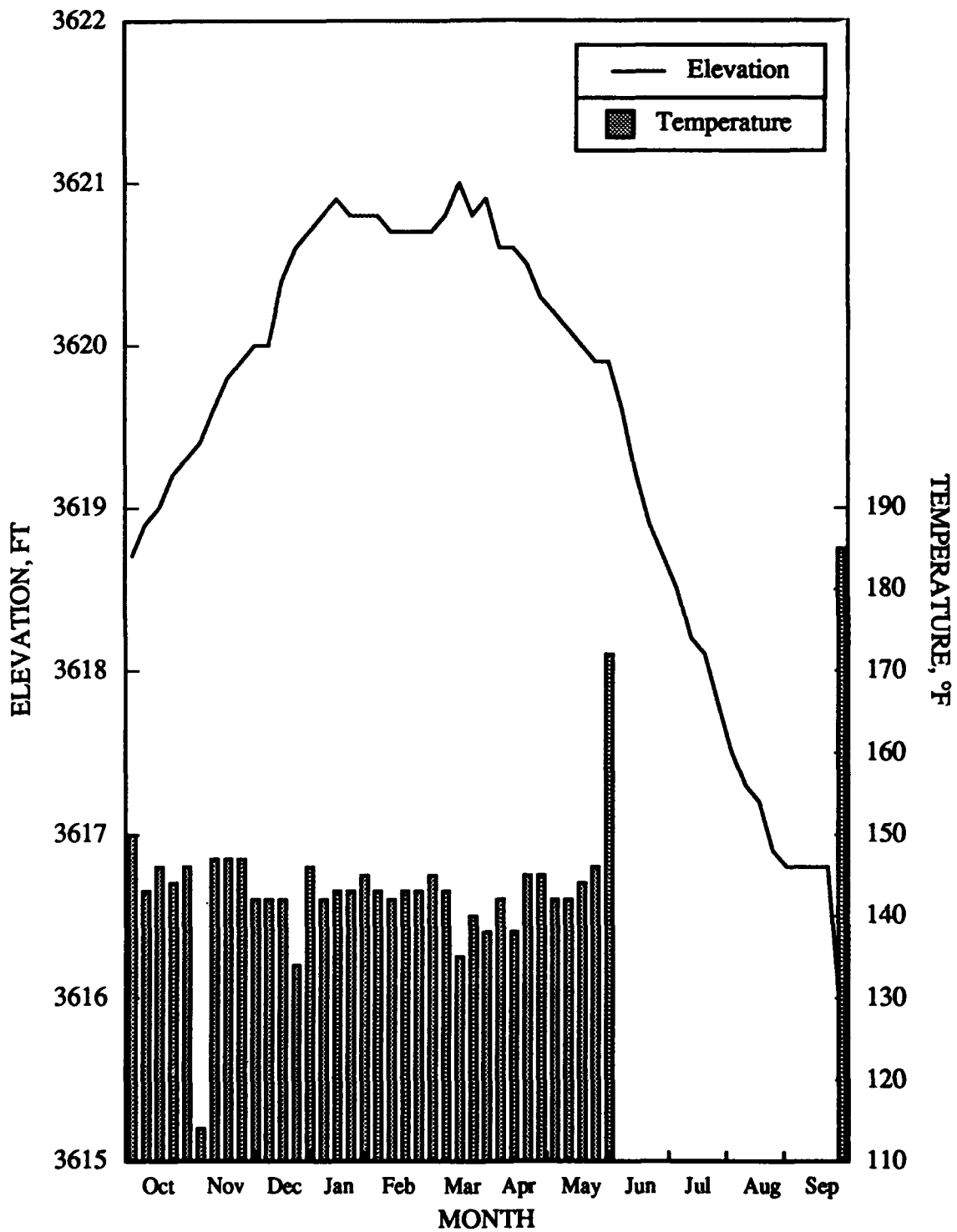


FIGURE 22. South Pool Elevation and Temperature.

## RAINFALL AT COSO RESORT AREA AND ROSE VALLEY

Rainfall in the Coso Hot Springs basin is monitored at rain station five sites, as shown in Figure 1. Instrumentation at each site consists of a battery operated long-term strip recorder that is triggered by a tipping bucket. This year there were no interruptions in rainfall data collection caused by equipment failures. Rain stations are checked for proper operation prior to any weather front that may bring rain to the area.

Data from the Coso stations presented in Table 11 show daily and cumulative rainfall. The Rose Valley data (Table 12) is collected at the Los Angeles Department of Water and Power (LADWP) Haiwee Reservoir Plant. As shown in Figures 23 and 24, the Coso area generally receives less annual rainfall than Rose Valley. This significant difference in rainfall between two such closely situated areas is not unusual given the nature of high-desert storms.

Comparative rainfall data for Coso Basin, Rose Valley, and Indian Wells Valley (IWV) can be found in Table 13. The Indian Wells Valley data were gathered at Armitage Field, NWC, and were provided by an NWC meteorologist.

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TABLE 11. Rainfall Recorded at Coso Monitoring Stations.

| Date      | Tipping bucket stations, in. |      |      |      |      |
|-----------|------------------------------|------|------|------|------|
|           | 1                            | 2    | 3    | 4    | 5    |
| 18 Oct 90 | 0.10                         | 0.10 | 0.08 | 0.06 | 0.04 |
| 01 Nov 90 | 0.08                         | 0.11 | 0.10 | ---  | 0.07 |
| 06 Nov 90 | 0.05                         | ---  | ---  | ---  | ---  |
| 04 Jan 91 | 0.13                         | 0.08 | 0.02 | ---  | 0.06 |
| 27 Feb 91 | 0.78                         | 0.42 | 0.72 | 0.04 | 0.30 |
| 28 Feb 91 | 0.60                         | ---  | 0.32 | ---  | 0.29 |
| 01 Mar 91 | 0.31                         | 0.02 | 0.17 | ---  | 0.16 |
| 03 Mar 91 | 0.01                         | ---  | ---  | 0.08 | ---  |
| 04 Mar 91 | 0.18                         | 0.12 | 0.17 | ---  | 0.03 |
| 19 Mar 91 | 0.41                         | 0.04 | 0.55 | 0.11 | 0.03 |
| 20 Mar 91 | 0.39                         | 0.02 | 0.45 | ---  | 0.19 |
| 21 Mar 91 | 0.80                         | 0.02 | ---  | ---  | ---  |
| 25 Mar 91 | 0.02                         | 0.01 | ---  | ---  | ---  |
| 26 Mar 91 | 0.02                         | 0.01 | 0.01 | ---  | 0.03 |
| 27 Mar 91 | 0.21                         | 0.02 | 0.05 | ---  | 0.03 |
| 03 May 91 | 0.06                         | ---  | ---  | ---  | ---  |
| 08 Jul 91 | 0.01                         | ---  | 0.01 | ---  | 0.01 |
| 05 Sep 91 | 0.14                         | ---  | 0.37 | 0.23 | 0.47 |
| 06 Sep 91 | 0.22                         | ---  | 0.18 | ---  | 0.04 |
| 29 Sep 91 | 0.04                         | ---  | 0.03 | 0.05 | 0.14 |
| TOTAL     | 4.56                         | 0.97 | 3.23 | 0.57 | 1.89 |



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TABLE 12. Rose Valley Cumulative Rainfall.

| Date      | Daily, in. | Snowfall, in. | Cumulative, in. |
|-----------|------------|---------------|-----------------|
| 18 Oct 90 | 0.02       | ...           | 0.02            |
| 1 Nov 90  | 0.02       | ...           | 0.04            |
| 6 Nov 90  | 0.03       | ...           | 0.07            |
| 23 Dec 90 | T          | ...           | 0.07            |
| 4 Jan 91  | 0.13       | ...           | 0.20            |
| 27 Feb 91 | 0.03       | ...           | 0.23            |
| 28 Feb 91 | 0.02       | ...           | 0.25            |
| 1 Mar 91  | 1.32       | ...           | 1.57            |
| 3 Mar 91  | 0.84       | ...           | 2.41            |
| 4 Mar 91  | 1.07       | ...           | 3.48            |
| 8 Jul 91  | 0.04       | ...           | 3.52            |
| 5 Sep 91  | 0.01       | ...           | 3.53            |

T = Trace

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TABLE 13. IWV, Rose Valley and Coso Basin  
Rainfall Comparison, 1947 Through 1990.

| Year | Rainfall, in. |             |            |
|------|---------------|-------------|------------|
|      | IWV           | Rose Valley | Coso Basin |
| 1947 | 2.03          | ...         | ...        |
| 1948 | 0.87          | ...         | ...        |
| 1949 | 1.30          | ...         | ...        |
| 1950 | 1.28          | ...         | ...        |
| 1951 | 0.84          | ...         | ...        |
| 1952 | 5.88          | ...         | ...        |
| 1953 | 0.14          | ...         | ...        |
| 1954 | 4.07          | ...         | ...        |
| 1955 | 0.56          | ...         | ...        |
| 1956 | 1.73          | ...         | ...        |
| 1957 | 2.68          | ...         | ...        |
| 1958 | 3.70          | ...         | ...        |
| 1959 | 2.98          | ...         | ...        |
| 1960 | 3.01          | ...         | ...        |
| 1961 | 2.46          | ...         | ...        |
| 1962 | 2.31          | ...         | ...        |
| 1963 | 5.45          | 8.30        | ...        |
| 1964 | 0.78          | 2.49        | ...        |
| 1965 | 9.15          | 8.66        | ...        |
| 1966 | 1.31          | 6.13        | ...        |
| 1967 | 4.28          | 4.32        | ...        |
| 1968 | 3.16          | 3.26        | ...        |
| 1969 | 5.55          | 8.80        | ...        |
| 1970 | 3.74          | 6.45        | ...        |
| 1971 | 1.47          | 2.87        | ...        |
| 1972 | 1.24          | 1.90        | ...        |
| 1973 | 2.58          | 4.56        | ...        |
| 1974 | 7.48          | 9.19        | ...        |
| 1975 | 1.64          | 2.79        | ...        |
| 1976 | 3.74          | 8.50        | ...        |
| 1977 | 4.67          | 8.34        | ...        |
| 1978 | 10.68         | 12.61       | ...        |
| 1979 | 5.65          | 4.97        | 2.67       |
| 1980 | 6.31          | 7.75        | 7.34       |
| 1981 | 4.49          | 6.34        | 4.28       |

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TABLE 13. (Contd.).

| Year | Rainfall, in. |             |            |
|------|---------------|-------------|------------|
|      | IWV           | Rose Valley | Coso Basin |
| 1982 | 4.73          | 5.26        | 4.05       |
| 1983 | 10.56         | 12.14       | 10.70      |
| 1984 | 5.95          | 7.84        | 3.23       |
| 1985 | 1.29          | 3.42        | 1.42       |
| 1986 | 3.68          | 4.68        | 4.19       |
| 1987 | 4.43          | 4.77        | 5.04       |
| 1988 | 3.76          | 5.36        | 1.51       |
| 1989 | 0.94          | 1.85        | 1.51       |
| 1990 | 1.78          | 3.53        | 2.24       |

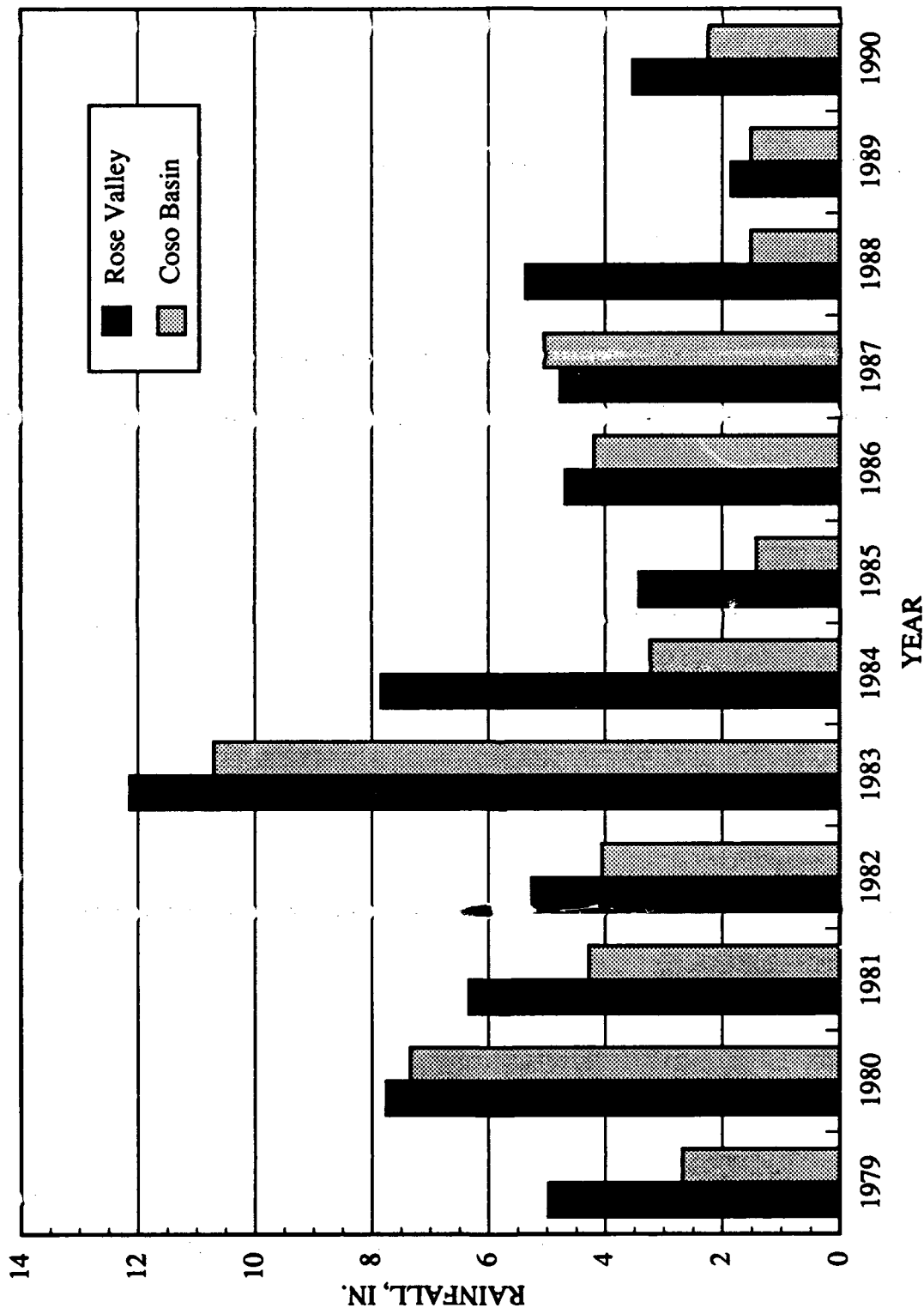


FIGURE 23. Comparison of Total Rainfall at Coso Basin and Rose Valley Sites, by Year.

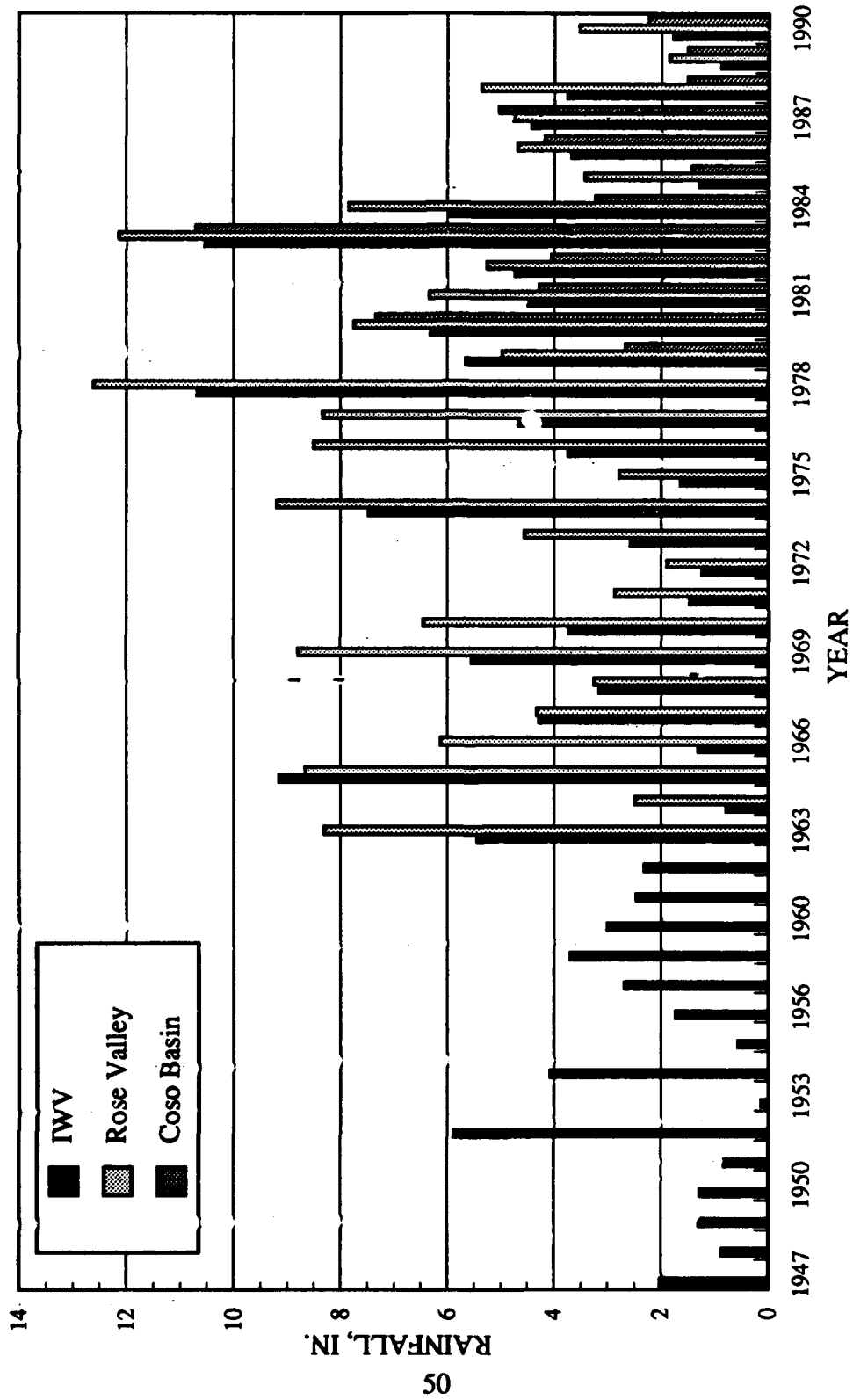


FIGURE 24. Comparison of Total Rainfall at Coso Basin, Rose Valley, and NWC Sites, by Year.

## **COSO HOT SPRINGS MINI-WEATHER RECORDING STATION**

Weather Station No. 1 is a mini-weather station consisting of a micro-baragraph and hygrothermograph. Data collection began on 13 August 1990 from the micro-baragraph and on 22 October 1990 from the hygrothermograph. With the installation of this mini-weather recording station, 24-hour recording of barometric pressure, ambient temperature, and relative humidity with minimal influence from blowing steam is possible. These data are shown graphically in Figures 25, 26, 27, and 28, respectively, and also in Appendix C. Missing data in these graphs are caused by equipment failure or dead batteries. The micro-baragraph was using a government battery, but after consistent failures a commercial brand is now being used with far better results.

As noted in Reference 1, the weather station was located adjacent to Rain Station No. 5 in the old Corrosion Array approximately 100 yards east of Wells 4H-4 and 4H-8. However, because of blowing steam caused by rare winds from the southwest, the station was moved to its present location near Observation Well No. 1 (OB-1), approximately half a mile east of the resort area.

An observation comparison study (equipment calibration) was performed at the weather station utilizing Range Support Branch (Code 6254) personnel and Rotronics equipment. This comparison will be conducted on a semi-annual basis to ensure the accuracy of the weather station equipment and data.

## **WATER ANALYSIS OF COSO HOT SPRINGS AREA SITES**

Water samples were taken from several sites in the Coso Hot Springs area during this reporting period. These samples were analyzed for a suite of geothermal constituents by B.C. Laboratories, Inc., Bakersfield, California. The results are given in Tables 14 through 20.

Wells 4K-1, 4P-1, Observation Well No. 1, Schober's Well 4A-4, and the South Pool are the regular sites used for water analysis. Other sites are also occasionally analyzed for comparison studies of the area's water.

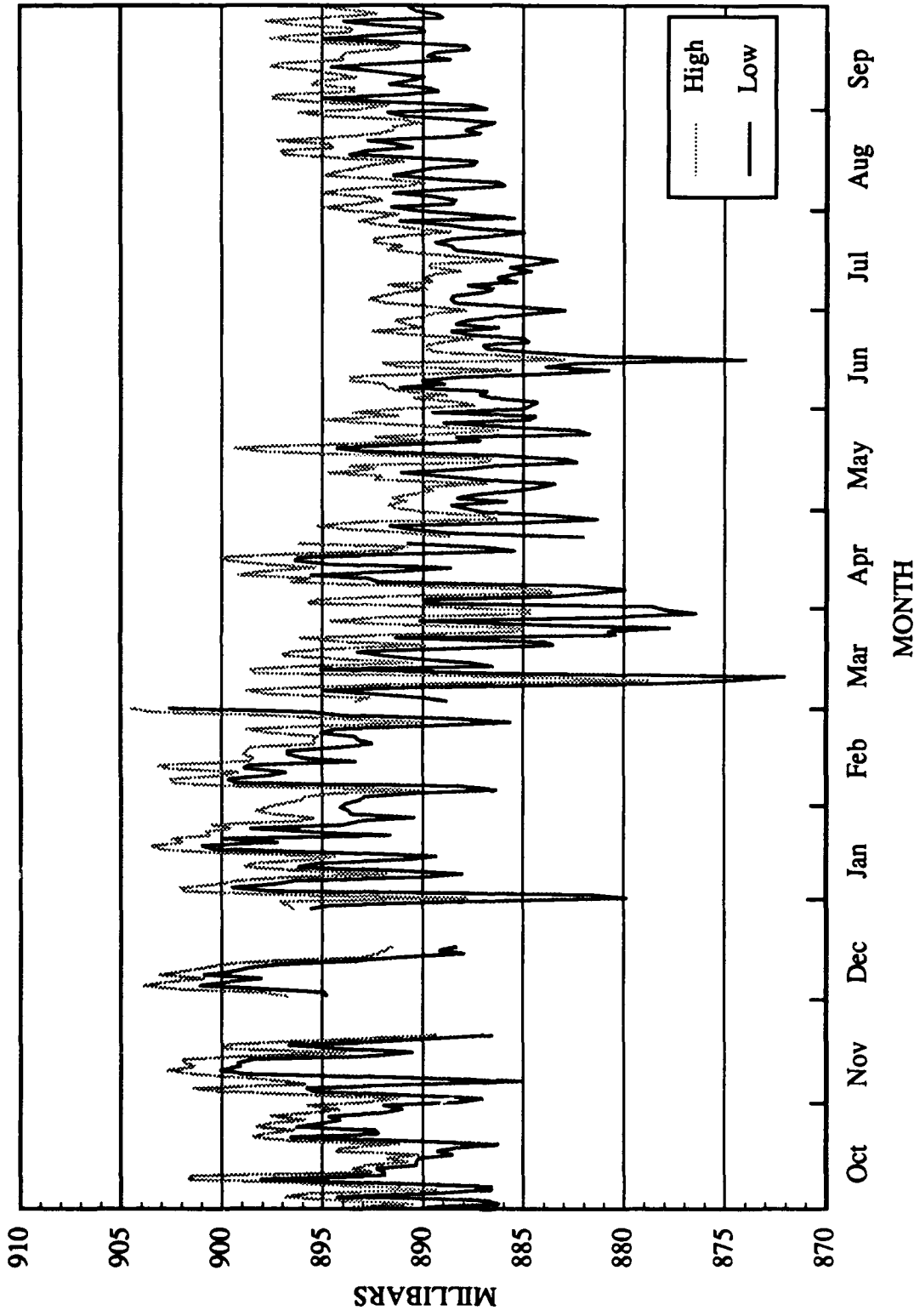


FIGURE 25. Weather Station No. 1 Barometric Pressure.

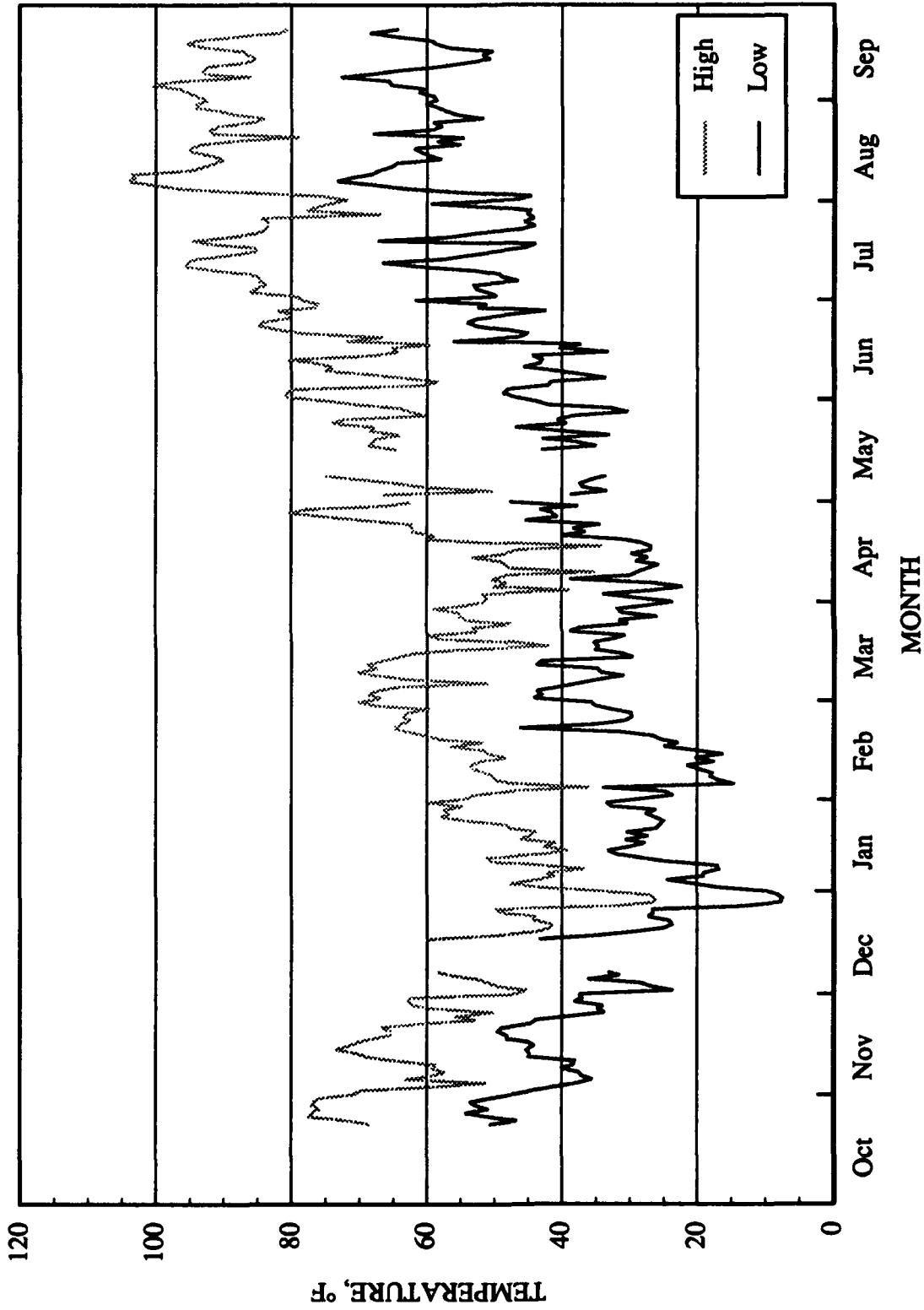


FIGURE 26. Weather Station No. 1 Ambient Temperature.



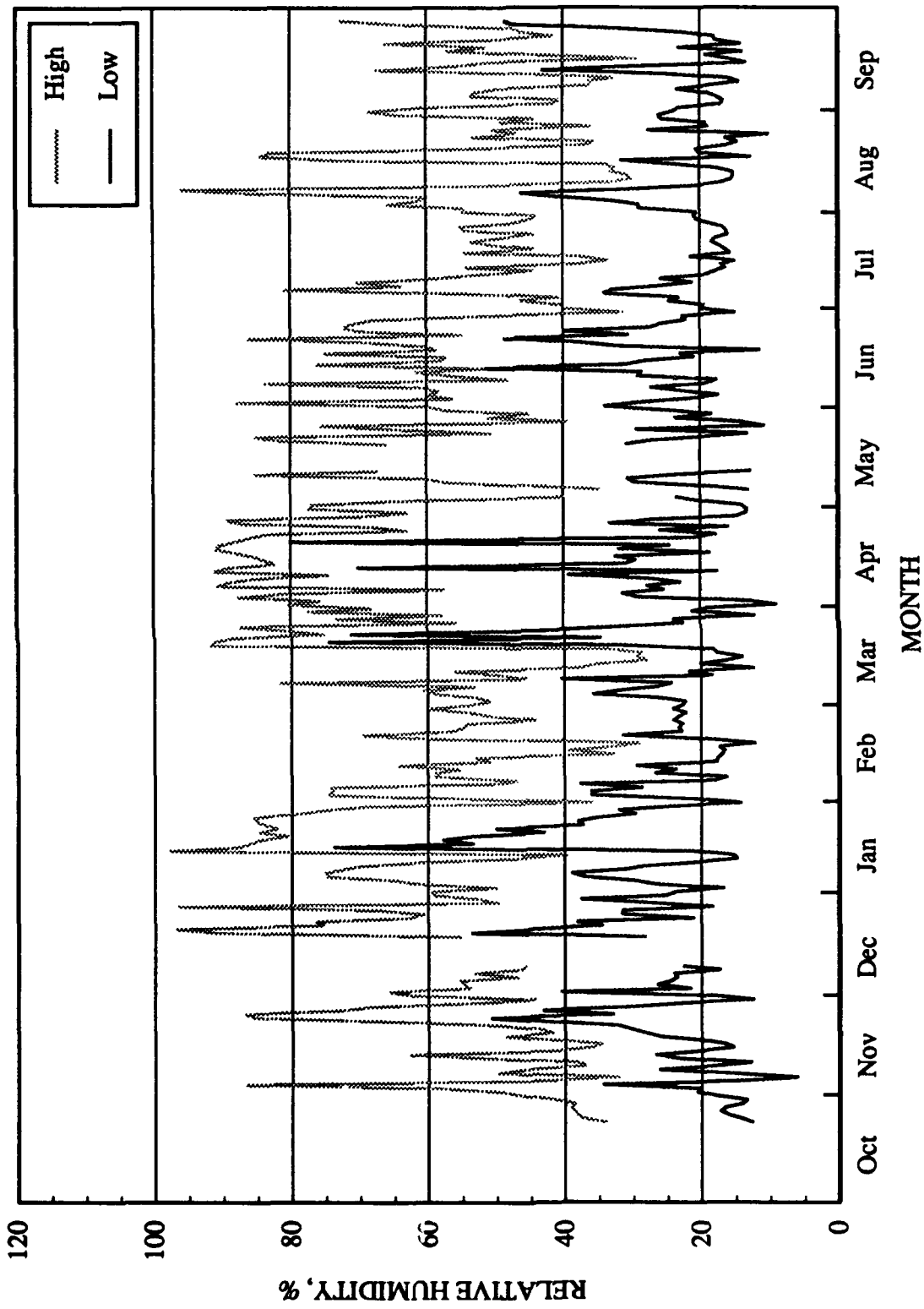


FIGURE 27. Weather Station No. 1 Relative Humidity.

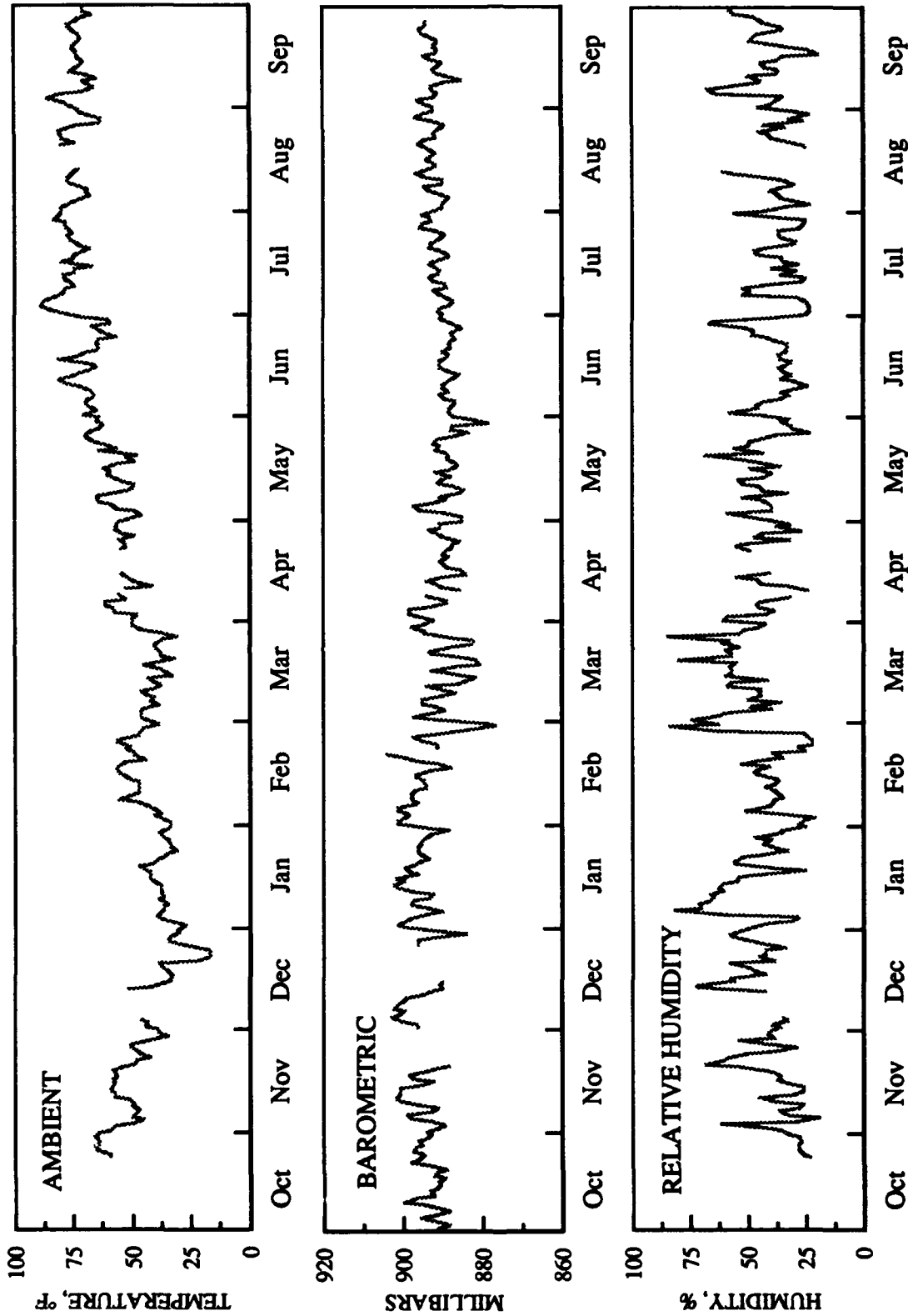


FIGURE 28. Average of Highs and Lows for Weather Station No. 1  
(Ambient Temperature, Barometric Pressure, and Relative Humidity).

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TABLE 14. Chemical Analysis of Devils Kitchen.

| Constituent                          | Units    | 19 Mar 91 | 24 Aug 91 |
|--------------------------------------|----------|-----------|-----------|
| Calcium.....                         | mg/L     | 43.0      | 63.0      |
| Magnesium.....                       | mg/L     | 16.0      | 22.0      |
| Sodium.....                          | mg/L     | 31.0      | 39.0      |
| Potassium.....                       | mg/L     | 24.0      | 36.0      |
| Carbonate.....                       | mg/L     | <i>a</i>  | <i>a</i>  |
| Bicarbonate.....                     | mg/L     | <i>a</i>  | <i>a</i>  |
| Chloride.....                        | mg/L     | <i>a</i>  | <i>a</i>  |
| Sulfate.....                         | mg/L     | 1080.0    | 1276.0    |
| Nitrate as N03.....                  | mg/L     | 0.9       | 0.9       |
| Nitrate as N.....                    | mg/L     | 0.2       | 0.2       |
| Fluoride.....                        | mg/L     | 0.48      | 0.17      |
| Bromide.....                         | mg/L     | <i>a</i>  | <i>a</i>  |
| pH.....                              | pH       | 3.0       | 2.2       |
| Electrical conductivity @ 25 °C..... | µmhos/cm | 5300.0    | 5900.0    |
| Total dissolved solids @ 180 °C..... | µg/L     | 1870.0    | 1510.0    |
| Acidity as H ion.....                | µg/L     | 17.2      | 20.0      |
| Aluminum.....                        | µg/L     | 18 390.0  | 15 900.0  |
| Antimony.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Arsenic.....                         | µg/L     | 10.0      | 12.0      |
| Boron.....                           | mg/L     | 2.8       | 3.8       |
| Copper.....                          | µg/L     | 13.0      | <i>a</i>  |
| Lithium.....                         | µg/L     | 52.0      | 85.0      |
| Manganese.....                       | µg/L     | 1218.0    | 1840.0    |
| Mercury.....                         | µg/L     | 4.0       | <i>a</i>  |
| Selenium.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Si as SiO2.....                      | µg/L     | 291.0     | 294.0     |
| Strontium.....                       | mg/L     | 85.0      | 112.0     |
| Thallium.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Zinc.....                            | µg/L     | 84.0      | 73.0      |
| Total Iron.....                      | µg/L     | 32 184.0  | 41 620.0  |
| Ammonia as N.....                    | mg/L     | 8.0       | 17.5      |
| Nitrite Nitrogen.....                | mg/L     | <i>a</i>  | <i>a</i>  |
| Ortho-phosphate.....                 | mg/L     | 0.72      | 0.81      |

*a* None detected

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TABLE 15. Chemical Analysis of Well OB-1.

| Constituent                          | Units    | 29 Aug 91 |
|--------------------------------------|----------|-----------|
| Calcium.....                         | mg/L     | 36.0      |
| Magnesium.....                       | mg/L     | 3.6       |
| Sodium.....                          | mg/L     | 1200.0    |
| Potassium.....                       | mg/L     | 104.0     |
| Carbonate.....                       | mg/L     | <i>a</i>  |
| Bicarbonate.....                     | mg/L     | 219.0     |
| Chloride.....                        | mg/L     | 1920.0    |
| Sulfate.....                         | mg/L     | 67.0      |
| Nitrate as NO <sub>3</sub> .....     | mg/L     | <i>a</i>  |
| Nitrate as N.....                    | mg/L     | <i>a</i>  |
| Fluoride.....                        | mg/L     | 4.2       |
| Bromide.....                         | mg/L     | 4.6       |
| pH.....                              | pH       | 7.0       |
| Electrical conductivity @ 25 °C..... | µmhos/cm | 6600.0    |
| Total dissolved solids @ 180 °C..... | µg/L     | 3690.0    |
| Acidity as H ion.....                | mg/L     | <i>a</i>  |
| Aluminum.....                        | µg/L     | <i>a</i>  |
| Antimony.....                        | µg/L     | <i>a</i>  |
| Arsenic.....                         | µg/L     | 405.0     |
| Boron.....                           | mg/L     | 39.7      |
| Copper.....                          | µg/L     | <i>a</i>  |
| Lithium.....                         | µg/L     | 12 2000.0 |
| Manganese.....                       | µg/L     | 261.0     |
| Mercury.....                         | µg/L     | 3.4       |
| Selenium.....                        | µg/L     | <i>a</i>  |
| Si as SiO <sub>2</sub> .....         | µg/L     | 81.0      |
| Strontium.....                       | mg/L     | 2030.0    |
| Thallium.....                        | µg/L     | <i>a</i>  |
| Zinc.....                            | µg/L     | 2470.0    |
| Total Iron.....                      | µg/L     | 812.0     |
| Ammonia as N.....                    | mg/L     | 0.05      |
| Nitrite Nitrogen.....                | mg/L     | <i>a</i>  |
| Ortho-phosphate.....                 | mg/L     | 0.39      |

<sup>a</sup> None detected

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TABLE 16. Chemical Analysis of Coso Well 4P-1.

| Constituent                          | Units    | 22 Aug 91 |
|--------------------------------------|----------|-----------|
| Calcium.....                         | mg/L     | 22.0      |
| Magnesium.....                       | mg/L     | 0.57      |
| Sodium.....                          | mg/L     | 88.0      |
| Potassium.....                       | mg/L     | 38.0      |
| Carbonate.....                       | mg/L     | <i>a</i>  |
| Bicarbonate.....                     | mg/L     | 194.0     |
| Chloride.....                        | mg/L     | 3.2       |
| Sulfate.....                         | mg/L     | 121.0     |
| Nitrate as NO <sub>3</sub> .....     | mg/L     | 14.2      |
| Nitrate as N.....                    | mg/L     | 5.5       |
| Fluoride.....                        | mg/L     | 0.56      |
| Bromide.....                         | mg/L     | 0.34      |
| pH.....                              | pH       | 7.7       |
| Electrical conductivity @ 25 °C..... | µmhos/cm | 610.0     |
| Total dissolved solids @ 180 °C..... | mg/L     | 645.0     |
| Aluminum.....                        | µg/L     | 384.0     |
| Antimony.....                        | µg/L     | <i>a</i>  |
| Arsenic.....                         | µg/L     | 3.0       |
| Boron.....                           | mg/L     | 0.22      |
| Copper.....                          | µg/L     | <i>a</i>  |
| Lithium.....                         | µg/L     | 60.0      |
| Manganese.....                       | µg/L     | 222.0     |
| Mercury.....                         | µg/L     | 4.8       |
| Selenium.....                        | µg/L     | <i>a</i>  |
| Si as SiO <sub>2</sub> .....         | mg/L     | 259.0     |
| Strontium.....                       | µg/L     | 348.0     |
| Thallium.....                        | µg/L     | <i>a</i>  |
| Zinc.....                            | µg/L     | 834.0     |
| Total Iron.....                      | µg/L     | 530.0     |
| Ammonia as N.....                    | mg/L     | 0.1       |
| Nitrite Nitrogen.....                | mg/L     | 0.1       |
| Ortho-phosphate.....                 | mg/L     | 0.51      |
| Acidity as H ion.....                | mg/L     | <i>a</i>  |

*a* None detected

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TABLE 17. Chemical Analysis of Well 4K-1.

| Constituent                           | Units    | 19 Mar 91 | 22 Aug 91 |
|---------------------------------------|----------|-----------|-----------|
| Calcium .....                         | mg/L     | 4.7       | 5.2       |
| Magnesium .....                       | mg/L     | 0.14      | 0.17      |
| Sodium .....                          | mg/L     | 38.0      | 38.0      |
| Potassium .....                       | mg/L     | 6.6       | 7.9       |
| Carbonate .....                       | mg/L     | <i>a</i>  | <i>a</i>  |
| Bicarbonate .....                     | mg/L     | 75.6      | 70.4      |
| Chloride .....                        | mg/L     | 2.5       | 3.5       |
| Sulfate .....                         | mg/L     | 40.0      | 50.0      |
| Nitrate as NO <sub>3</sub> .....      | mg/L     | 0.9       | 4.0       |
| Nitrate as N .....                    | mg/L     | 0.2       | 0.9       |
| Fluoride .....                        | mg/L     | 1.1       | 1.1       |
| Bromide .....                         | mg/L     | <i>a</i>  | <i>a</i>  |
| pH .....                              | pH       | 7.2       | 7.1       |
| Electrical conductivity @ 25 °C ..... | µmhos/cm | 240.0     | 260.0     |
| Total dissolved solids @ 180 °C ..... | mg/L     | 170.0     | 425.0     |
| Aluminum .....                        | µg/L     | 199.0     | 200.0     |
| Antimony .....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Arsenic .....                         | µg/L     | <i>a</i>  | 3.0       |
| Boron .....                           | µg/L     | <i>a</i>  | 0.11      |
| Copper .....                          | mg/L     | 12.0      | 42.0      |
| Lithium .....                         | µg/L     | 20.0      | 35.0      |
| Manganese .....                       | µg/L     | 51.0      | 74.0      |
| Mercury .....                         | µg/L     | 4.2       | 12.0      |
| Selenium .....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Si as SiO <sub>2</sub> .....          | mg/L     | 241.0     | 242.0     |
| Strontium .....                       | µg/L     | 50.0      | 44.0      |
| Thallium .....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Zinc .....                            | µg/L     | 898.0     | 640.0     |
| Total Iron .....                      | µg/L     | 200.0     | 1300.0    |
| Ammonia as N .....                    | mg/L     | 1.3       | 3.0       |
| Nitrite Nitrogen .....                | mg/L     | <i>a</i>  | <i>a</i>  |
| Ortho-phosphate .....                 | mg/L     | 0.27      | 0.51      |

<sup>a</sup> None detected

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TABLE 18. Chemical Analysis of South Pool.

| Constituent                          | Units    | 19 Mar 91 | 22 Aug 91 |
|--------------------------------------|----------|-----------|-----------|
| Calcium.....                         | mg/L     | 43.0      | 52.0      |
| Magnesium.....                       | mg/L     | 16.0      | 44.0      |
| Sodium.....                          | mg/L     | 11.8      | 13.6      |
| Potassium.....                       | mg/L     | 11.7      | 9.2       |
| Carbonate.....                       | mg/L     | <i>a</i>  | <i>a</i>  |
| Bicarbonate.....                     | mg/L     | <i>a</i>  | <i>a</i>  |
| Chloride.....                        | mg/L     | 1.8       | <i>a</i>  |
| Sulfate.....                         | mg/L     | 1450.0    | 5150.0    |
| Nitrate as N03.....                  | mg/L     | 0.4       | <i>a</i>  |
| Nitrate as N.....                    | mg/L     | 0.1       | <i>a</i>  |
| Fluoride.....                        | mg/L     | 0.3       | <i>a</i>  |
| Bromide.....                         | mg/L     | <i>a</i>  | <i>a</i>  |
| pH.....                              | pH       | 1.9       | 2.0       |
| Electrical conductivity @ 25 °C..... | µmhos/cm | 7000.0    | 13 500.0  |
| Total dissolved solids @ 180 °C..... | mg/L     | 2140.0    | 6160.0    |
| Acidity as H ion.....                | mg/L     | 24.6      | 92.0      |
| Aluminum.....                        | µg/L     | 35 730.0  | 266 000.0 |
| Antimony.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Arsenic.....                         | µg/L     | <i>a</i>  | 10.0      |
| Boron.....                           | mg/L     | 1.5       | 7.0       |
| Copper.....                          | µg/L     | 230.0     | 647.0     |
| Lithium.....                         | µg/L     | <i>a</i>  | 85.0      |
| Manganese.....                       | µg/L     | 1301.0    | 1930.0    |
| Mercury.....                         | µg/L     | <i>a</i>  | <i>a</i>  |
| Selenium.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Si as Si02.....                      | mg/L     | 218.0     | 483.0     |
| Strontium.....                       | µg/L     | 164.0     | 97.0      |
| Thallium.....                        | µg/L     | <i>a</i>  | 1830.0    |
| Zinc.....                            | µg/L     | 720.0     | 1110.0    |
| Total Iron.....                      | µg/L     | 26 744.0  | 272 000.0 |
| Ammonia as N.....                    | mg/L     | 28.0      | 63.0      |
| Nitrite Nitrogen.....                | mg/L     | <i>a</i>  | <i>a</i>  |
| Ortho-phosphate.....                 | mg/L     | 0.42      | 2.55      |

*a* None detected

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TABLE 19. Chemical Analysis of West Canyon Water.

| Constituent                          | Units    | 19 Mar 91 |
|--------------------------------------|----------|-----------|
| Calcium.....                         | mg/L     | 70.0      |
| Magnesium.....                       | mg/L     | 15.0      |
| Sodium.....                          | mg/L     | 79.0      |
| Potassium.....                       | mg/L     | 33.0      |
| Carbonate.....                       | mg/L     | <i>a</i>  |
| Bicarbonate.....                     | mg/L     | <i>a</i>  |
| Chloride.....                        | mg/L     | 3.2       |
| Sulfate.....                         | mg/L     | 490.0     |
| Nitrate as NO <sub>3</sub> .....     | mg/L     | <i>a</i>  |
| Nitrate as N.....                    | mg/L     | <i>a</i>  |
| Fluoride.....                        | mg/L     | 0.34      |
| Bromide.....                         | mg/L     | <i>a</i>  |
| pH.....                              | pH       | 3.5       |
| Electrical conductivity @ 25 °C..... | µmhos/cm | 1100.0    |
| Total dissolved solids @ 180 °C..... | mg/L     | 1000.0    |
| Acidity as H ion.....                | mg/L     | 1.0       |
| Aluminum.....                        | µg/L     | 297.0     |
| Antimony.....                        | µg/L     | <i>a</i>  |
| Arsenic.....                         | µg/L     | 20.0      |
| Boron.....                           | mg/L     | 0.14      |
| Copper.....                          | µg/L     | <i>a</i>  |
| Lithium.....                         | µg/L     | <i>a</i>  |
| Manganese.....                       | µg/L     | 342.0     |
| Mercury.....                         | µg/L     | <i>a</i>  |
| Selenium.....                        | µg/L     | <i>a</i>  |
| Si as SiO <sub>2</sub> .....         | mg/L     | 259.0     |
| Strontium.....                       | µg/L     | 195.0     |
| Thallium.....                        | µg/L     | <i>a</i>  |
| Zinc.....                            | µg/L     | 25.0      |
| Total Iron.....                      | µg/L     | 7942.0    |
| Ammonia as N.....                    | mg/L     | 0.71.     |
| Nitrite Nitrogen.....                | mg/L     | <i>a</i>  |
| Ortho-phosphate.....                 | mg/L     | 3.90      |

*a* None detected



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TABLE 20. Chemical Analysis of Well 4H-4 (Schober's H. W. Well No. 4).

| Constituent                          | Units    | 19 Mar 91 | 22 Aug 91 |
|--------------------------------------|----------|-----------|-----------|
| Calcium.....                         | mg/L     | 22.0      | 23.0      |
| Magnesium.....                       | mg/L     | 0.17      | 0.17      |
| Sodium.....                          | mg/L     | 52.0      | 46.0      |
| Potassium.....                       | mg/L     | 2.0       | 2.7       |
| Carbonate.....                       | mg/L     | <i>a</i>  | <i>a</i>  |
| Bicarbonate.....                     | mg/L     | 95.6      | 80.0      |
| Chloride.....                        | mg/L     | 1.8       | 1.8       |
| Sulfate.....                         | mg/L     | 88.0      | 89.0      |
| Nitrate as NO <sub>3</sub> .....     | mg/L     | 0.9       | 2.7       |
| Nitrate as N.....                    | mg/L     | 0.2       | 0.6       |
| Fluoride.....                        | mg/L     | 0.58      | 0.56      |
| Bromide.....                         | mg/L     | 0.05      | <i>a</i>  |
| pH.....                              | pH       | 8.1       | 7.9       |
| Electrical conductivity @ 25 °C..... | µmhos/cm | 340.0     | 350.0     |
| Total dissolved solids @ 180 °C..... | mg/L     | 255.0     | 335.0     |
| Acidity as H ion.....                | mg/L     | <i>a</i>  | <i>a</i>  |
| Aluminum.....                        | µg/L     | 1228.0    | 631.0     |
| Antimony.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Arsenic.....                         | µg/L     | 7.0       | 8.0       |
| Boron.....                           | µg/L     | <i>a</i>  | <i>a</i>  |
| Copper.....                          | mg/L     | <i>a</i>  | <i>a</i>  |
| Lithium.....                         | µg/L     | <i>a</i>  | 60.0      |
| Manganese.....                       | µg/L     | 27.0      | 48.0      |
| Mercury.....                         | µg/L     | 6.3       | 18.0      |
| Selenium.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Si as SiO <sub>2</sub> .....         | mg/L     | 103.0     | 97.0      |
| Strontium.....                       | µg/L     | 276.0     | 276.0     |
| Thallium.....                        | µg/L     | <i>a</i>  | <i>a</i>  |
| Zinc.....                            | µg/L     | 25.0      | 36.0      |
| Total Iron.....                      | µg/L     | 736.0     | 2570.0    |
| Ammonia as N.....                    | mg/L     | 0.63      | 0.37      |
| Nitrite Nitrogen.....                | mg/L     | 0.1       | 0.1       |
| Ortho-phosphate.....                 | mg/L     | 0.21      | 0.72      |

*a* None detected

**TEMPERATURE RECORDINGS OF THE  
COSO RESORT AREA WELLS**

The temperature logs from Wells 4H-8, 4K-1, 4P-1, and Schober's Well 4A-4, are graphed in Figures 29 through 32 with the data listed in Appendix D. These data were recorded using the TD Probe System, manufactured by Natural Progress Instruments, Dallas, Texas.

**WELL 4H-8**

An obstruction was found in Well 4H-8 during temperature logging at a depth of 185 feet on 24 January 1991. An unsuccessful attempt was made to clear the casing using a proven procedure as described in Reference 1. Temperature logging was attempted again on 6 June 1991 to see if the obstruction was caused by water evaporation/salt deposition at the same level. The drop in temperature was probably caused by a lack of steam/hot water entering the unobstructed section of the wellbore. The curve (temperature inversion), while taken in an "empty" wellbore, probably reflects the temperature of the surrounding ground. Temperature logging of this well will continue so any changes that may occur will be recorded.

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TEMPERATURE, °F

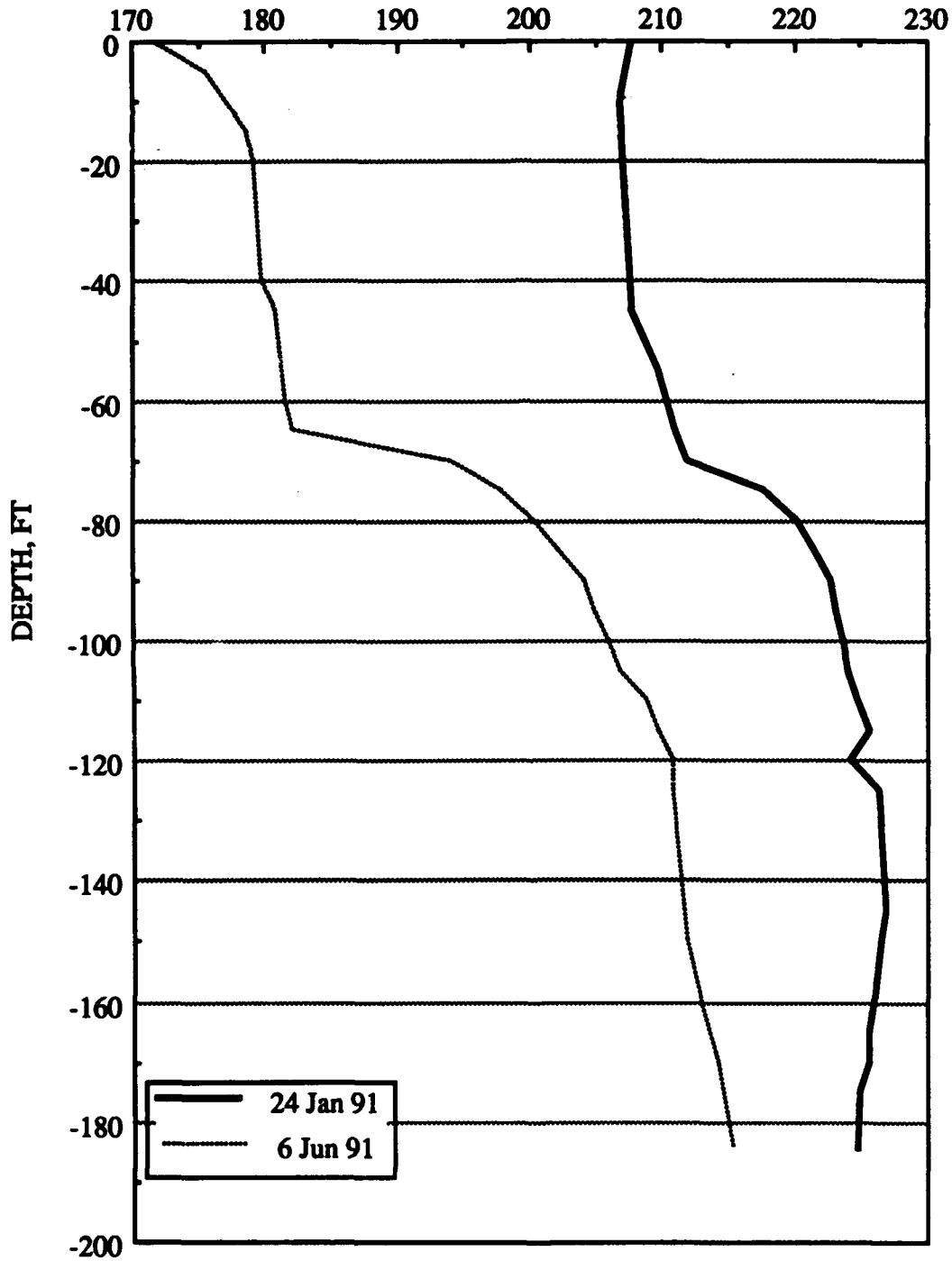


FIGURE 29. Temperature Profile, Well 4H-8.

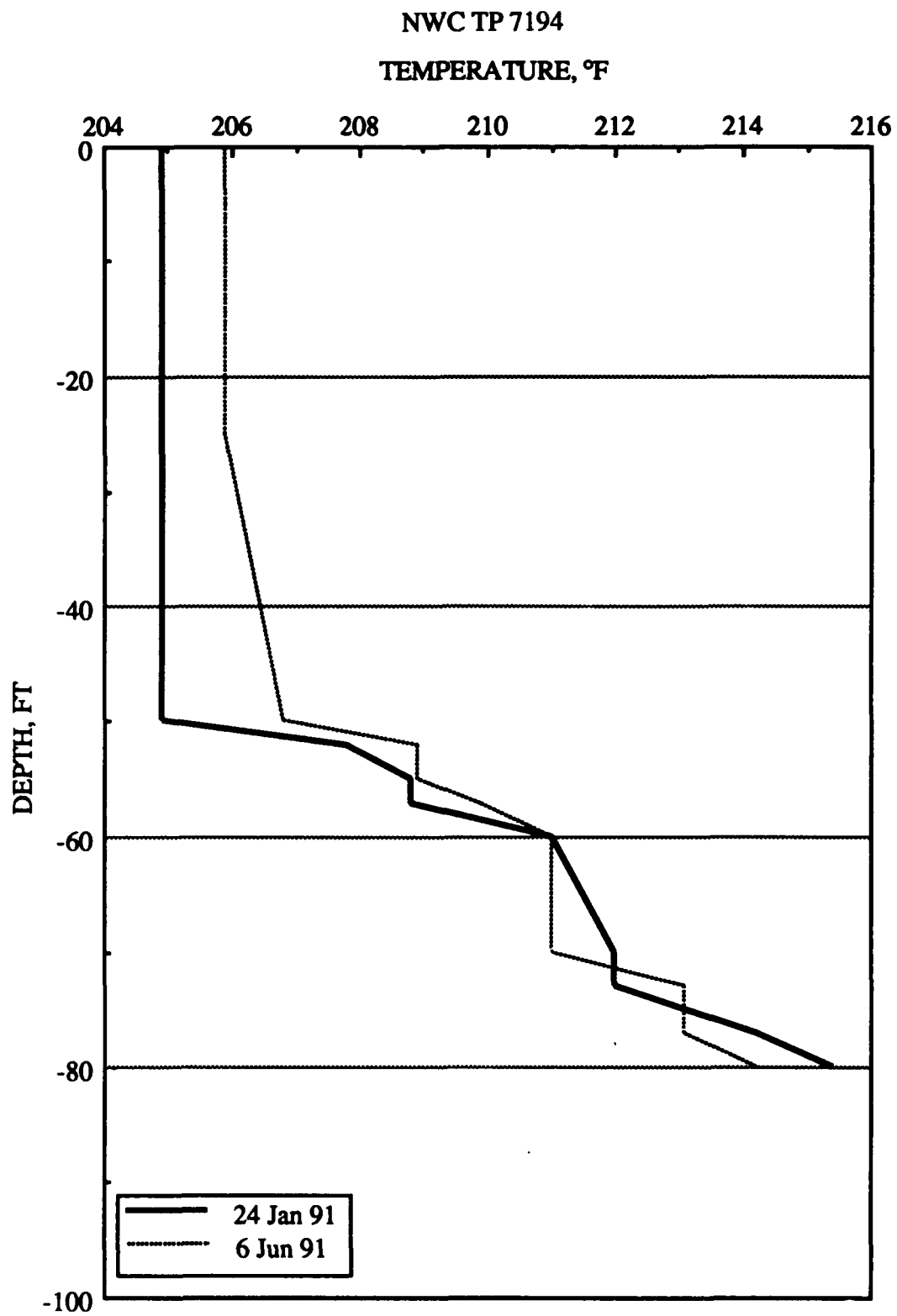


FIGURE 30. Temperature Profile, Well 4K-1.

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TEMPERATURE, °F

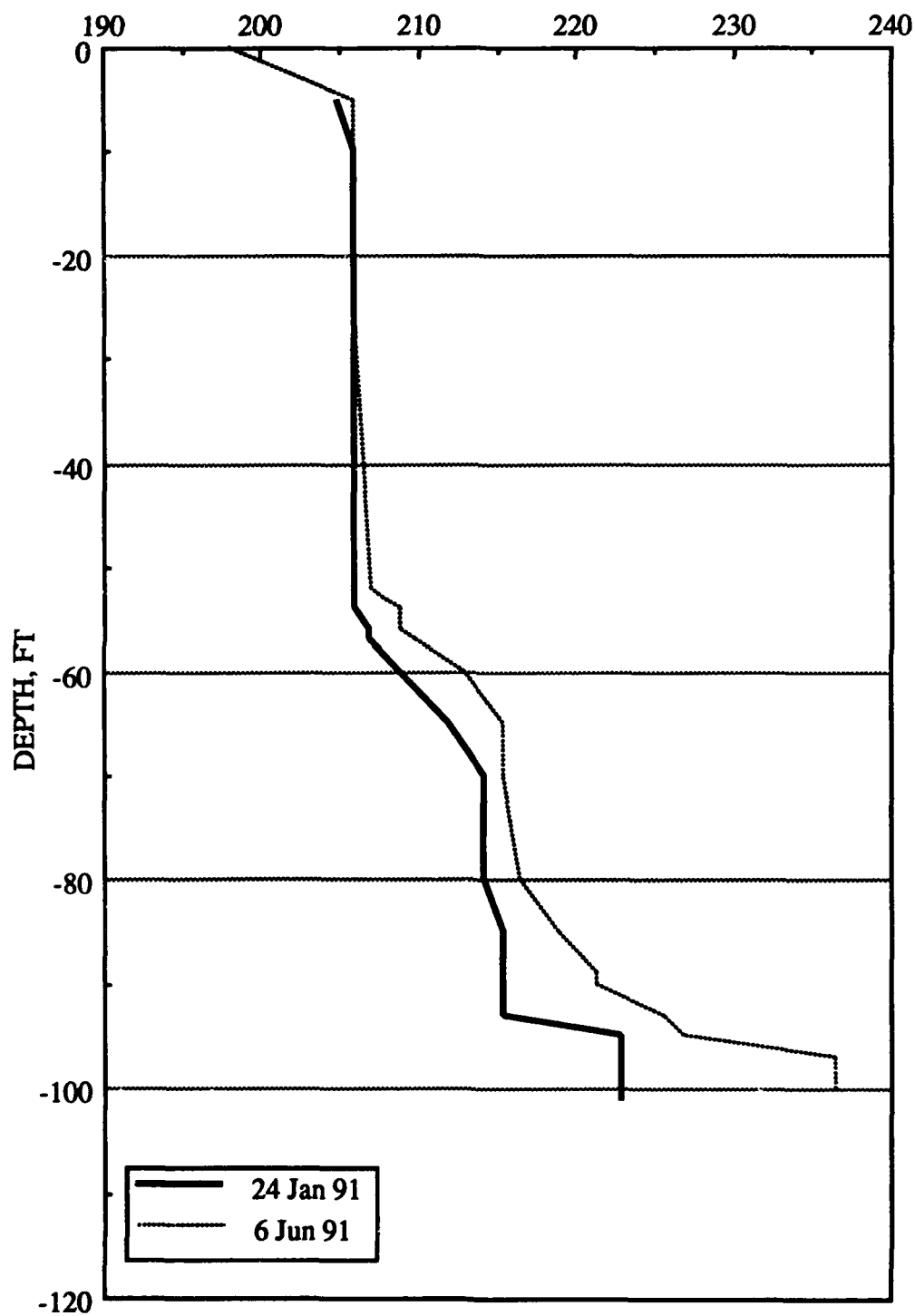


FIGURE 31. Temperature Profile, Well 4P-1.

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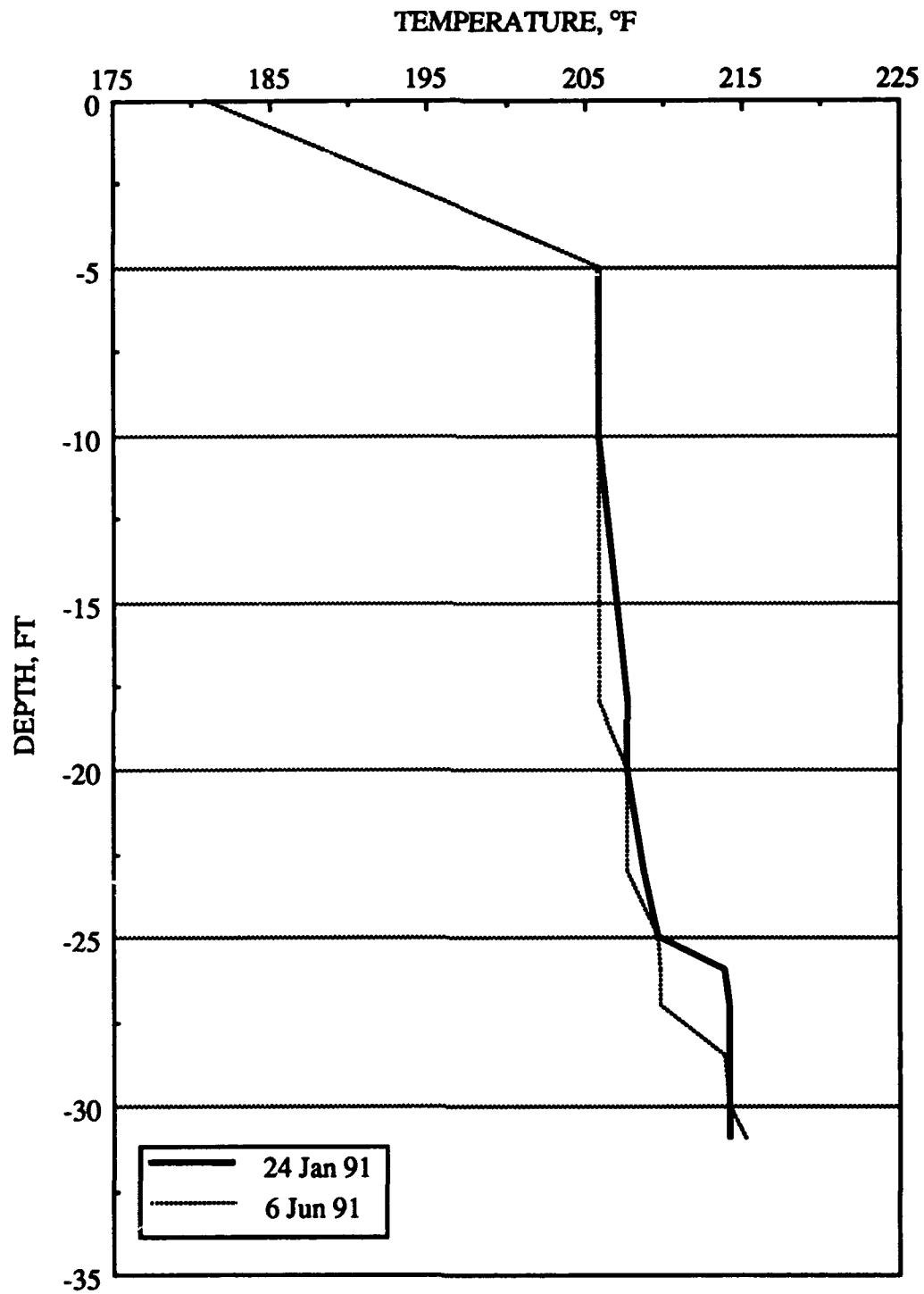


FIGURE 32. Temperature Profile, Well 4A-4.

## **OTHER GEOTHERMAL ACTIVITY AT COSO HOT SPRINGS**

### **WEST CANYONS**

Two canyons directly west of the resort have large areas of warm ground with small areas of thermal alteration. Small bubbling springs occasionally appear in the canyon directly below Rain Station No. 2 along with small scattered steam vents in the same general area. These areas are monitored monthly to record any increase in activity that might occur. Several new water/mud pools have grown in the canyon wash. Table 19 shows the chemistry of these waters.

### **MUD CRATER 4KC-8**

Since renewed activity and growth (October 1989) began in this area, 4KC-8 continued to grow at a slow pace until early summer 1991 when it reached approximately 80 by 100 feet. There are numerous small steam vents and areas of hot ground to the west of the main crater. Growth of this crater is anticipated, but it is currently in a dormant cycle.

### **MUD CRATER 4KC-9, 4KC-10, AND 4KC-11 (RESORT MUDFIELD)**

These mud craters have grown until they joined together and are now referred to as the Coso Resort Area Mudfield (Figure 33). During July the water level began to diminish rapidly with little activity in the area. At the end of the month, the area of 4KC-11 started throwing mud 25 to 35 feet in the air. This area subsided in approximately two weeks when the crater to the north became active in the same manner also lasting about two weeks. In mid September a new vent approximately 12 feet in diameter surfaced on the north bank of 4KC-11. It appears to have relieved the pressure from all the others and is now the only predominant vent blowing steam. This area is monitored several times a week to record changes that may occur.

### **ACTIVITY EAST OF THE RESORT AND NORTHEAST OF SOUTH POOL**

This area, as stated in Reference 1, has two rather large craters and several sites of minor activity. The red and the grey craters were both very active for approximately six weeks during July and August, with perking water and mud, but without growth in size. The rest of the area remained fairly calm during this reporting period.



FIGURE 33. Aerial Photo of Coso Resort Area Mudfield, 24 September 1991.



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### SUMMARY

During this reporting period, Well 4P-2 continued surging with short bursts of steam until August 1991 when the cycle slowed. During the surging there was a short burst of steam and a longer geysering period (approximately 15 seconds). Steam flow and temperature recording were discontinued at this site on 1 October 1991. Temperature logging and water sampling will start during the next reporting period.

Water levels were measured for this period with the Solist electric water level tape vice the pressurized piping and monitor reading for better accuracy.

The micro-baragraph and hygrothermograph at the mini-weather station were operational on 22 October 1991. Data from this mini-recording station will be used to better determine the relationship between barometric changes and surface thermal activity in the Coso KGRA.

### PLANS FOR 1992

#### PRECISION GRAVITY

Early in the calendar year 1991, personnel from Code 2606 completed installation of a precise gravity network consisting of 63 stations placed in and around the Coso Geothermal Field, including the Hot Springs area. The network was established in an attempt to monitor the response of the local gravity field to the extraction and reinjection of geothermal fluids.

Baseline gravity surveys were run in the spring and fall of 1991. As this report is being published, the fall survey data are being reduced. Comparisons and interpretations between spring and fall 1991 surveys will be included in next year's report as well as comparisons and interpretations with the spring 1992 survey.

#### MICROEARTHQUAKE STUDIES

Microearthquakes (MEQ) are loosely defined as earthquakes with magnitudes of 4 or less. As a result, the vast majority of microearthquakes are not felt by humans. However, sophisticated equipment known as seismometers are capable of measuring a microearthquake with magnitudes of less than 0. When numerous seismometers are placed in the ground (normally a few miles apart), the location, depth, and magnitude of the earthquakes can be determined accurately. In this manner the response of the geothermal reservoir to geothermal development can be monitored. From this information, it is possible to infer the structure of the geothermal field, as well as its response to the extraction and reinjection of geothermal fluids.

The geothermal operator, California Energy Company, installed an eight-station network in the developed area in 1990. Five additional stations were installed by Code 2606 in August 1991. These new stations will help accurately record seismic events beneath the hot springs. Data from these MEQ stations are currently being reduced and interpreted. This information will be included in next year's report.

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**REFERENCE**

1. Naval Weapons Center. *Coso Monitoring Program, October 1989 Through September 1990*, by J. H. Monahan and D. E. Condon, Comarco Weapons Support Division, Ridgecrest, Calif. China Lake, Calif., NWC, January 1991. 138 pp. (NWC TP 7138, publication UNCLASSIFIED.)

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Appendix A  
DAILY STEAM FLOW DATA

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TABLE A-1. Devils Kitchen Site Steam Flow Data.

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 1 Oct 90  | 358.4      | 356.0     | 5 Nov 90  | 358.4      | 350.8     |
| 2 Oct 90  | 358.4      | 355.2     | 6 Nov 90  | 350.8      | 337.9     |
| 3 Oct 90  | 358.4      | 354.8     | 7 Nov 90  | 357.2      | 337.1     |
| 4 Oct 90  | 359.7      | 356.4     | 8 Nov 90  | 357.6      | 346.0     |
| 5 Oct 90  | 359.7      | 357.6     | 9 Nov 90  | 358.9      | 352.8     |
| 6 Oct 90  | 359.7      | 357.2     | 10 Nov 90 | 358.9      | 351.6     |
| 7 Oct 90  | 359.3      | 350.4     | 11 Nov 90 | 355.6      | 349.6     |
| 8 Oct 90  | 358.0      | 342.4     | 12 Nov 90 | 353.6      | 348.4     |
| 9 Oct 90  | 357.6      | 348.4     | 13 Nov 90 | 356.8      | 351.2     |
| 10 Oct 90 | 357.2      | 354.0     | 14 Nov 90 | 357.2      | 354.0     |
| 11 Oct 90 | 358.4      | 355.6     | 15 Nov 90 | 358.0      | 355.2     |
| 12 Oct 90 | 359.3      | 354.8     | 16 Nov 90 | 359.3      | 356.8     |
| 13 Oct 90 | 359.7      | 357.2     | 17 Nov 90 | 358.4      | 356.0     |
| 14 Oct 90 | 359.7      | 357.2     | 18 Nov 90 | 358.9      | 355.6     |
| 15 Oct 90 | 358.9      | 355.2     | 19 Nov 90 | 356.4      | 354.0     |
| 16 Oct 90 | 358.4      | 355.2     | 20 Nov 90 | 357.6      | 350.8     |
| 17 Oct 90 | 358.4      | 352.4     | 21 Nov 90 | 355.6      | 345.2     |
| 18 Oct 90 | 359.7      | 356.8     | 22 Nov 90 | 357.2      | 344.0     |
| 19 Oct 90 | 360.1      | 346.8     | 23 Nov 90 | 357.2      | 353.6     |
| 20 Oct 90 | 359.7      | 342.4     | 24 Nov 90 | 357.6      | 355.2     |
| 21 Oct 90 | 358.4      | 347.6     | 25 Nov 90 | 358.4      | 356.0     |
| 22 Oct 90 | 358.0      | 349.6     | 26 Nov 90 | 356.8      | 340.7     |
| 23 Oct 90 | 358.9      | 350.8     | 27 Nov 90 | 356.0      | 339.9     |
| 24 Oct 90 | 357.6      | 352.8     | 28 Nov 90 | 356.0      | 341.2     |
| 25 Oct 90 | 358.4      | 354.0     | 29 Nov 90 | 356.4      | 345.2     |
| 26 Oct 90 | 358.9      | 356.4     | 30 Nov 90 | 358.0      | 352.4     |
| 27 Oct 90 | 358.9      | 354.4     | 1 Dec 90  | 358.4      | 352.0     |
| 28 Oct 90 | 360.1      | 356.8     | 2 Dec 90  | 358.0      | 349.6     |
| 29 Oct 90 | 359.7      | 355.2     | 3 Dec 90  | 358.4      | 346.8     |
| 30 Oct 90 | 357.6      | 352.0     | 4 Dec 90  | 357.6      | 354.8     |
| 31 Oct 90 | 360.9      | 354.4     | 5 Dec 90  | 357.2      | 352.8     |
| 1 Nov 90  | 357.6      | 323.9     | 6 Dec 90  | 356.4      | 350.8     |
| 2 Nov 90  | 353.2      | 337.9     | 7 Dec 90  | 358.0      | 350.4     |
| 3 Nov 90  | 359.3      | 338.7     | 8 Dec 90  | 358.4      | 351.6     |
| 4 Nov 90  | 358.4      | 347.6     | 9 Dec 90  | 358.9      | 352.8     |

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TABLE A-1 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 10 Dec 90 | 358.0      | 350.4     | 14 Jan 91 | 358.0      | 354.4     |
| 11 Dec 90 | 355.6      | 347.6     | 15 Jan 91 | 357.2      | 354.4     |
| 12 Dec 90 | 358.4      | 355.2     | 16 Jan 91 | 358.0      | 350.0     |
| 13 Dec 90 | 360.5      | 353.2     | 17 Jan 91 | 358.4      | 353.6     |
| 14 Dec 90 | 360.1      | 348.0     | 18 Jan 91 | 358.9      | 355.2     |
| 15 Dec 90 | 357.2      | 350.4     | 19 Jan 91 | 358.0      | 356.0     |
| 16 Dec 90 | 353.6      | 338.7     | 20 Jan 91 | 358.4      | 353.2     |
| 17 Dec 90 | 352.0      | 338.3     | 21 Jan 91 | 355.2      | 347.2     |
| 18 Dec 90 | 357.2      | 344.0     | 22 Jan 91 | 358.4      | 349.6     |
| 19 Dec 90 | 358.9      | 349.2     | 23 Jan 91 | 358.0      | 354.0     |
| 20 Dec 90 | 351.6      | 345.2     | 24 Jan 91 | 358.0      | 354.4     |
| 21 Dec 90 | 352.0      | 343.2     | 25 Jan 91 | 358.4      | 354.8     |
| 22 Dec 90 | 353.2      | 341.2     | 26 Jan 91 | 358.0      | 354.8     |
| 23 Dec 90 | 351.2      | 339.5     | 27 Jan 91 | 358.4      | 354.8     |
| 24 Dec 90 | 356.0      | 342.0     | 28 Jan 91 | 357.6      | 354.4     |
| 25 Dec 90 | 358.0      | 349.6     | 29 Jan 91 | 358.4      | 350.8     |
| 26 Dec 90 | 358.4      | 351.2     | 30 Jan 91 | 358.9      | 349.6     |
| 27 Dec 90 | 357.6      | 350.8     | 31 Jan 91 | 357.2      | 351.2     |
| 28 Dec 90 | 358.9      | 354.8     | 1 Feb 91  | 359.3      | 355.2     |
| 29 Dec 90 | 358.0      | 344.4     | 2 Feb 91  | 358.9      | 355.6     |
| 30 Dec 90 | 358.0      | 342.0     | 3 Feb 91  | 358.4      | 354.4     |
| 31 Dec 90 | 357.6      | 345.2     | 4 Feb 91  | 357.2      | 354.8     |
| 1 Jan 91  | 357.6      | 350.4     | 5 Feb 91  | 357.6      | 355.6     |
| 2 Jan 91  | 358.4      | 352.8     | 6 Feb 91  | 357.6      | 354.8     |
| 3 Jan 91  | 358.4      | 342.0     | 7 Feb 91  | 357.6      | 354.4     |
| 4 Jan 91  | 358.4      | 354.8     | 8 Feb 91  | 359.3      | 354.8     |
| 5 Jan 91  | 357.2      | 352.4     | 9 Feb 91  | 358.4      | 356.8     |
| 6 Jan 91  | 357.2      | 349.6     | 10 Feb 91 | 358.9      | 354.8     |
| 7 Jan 91  | 356.4      | 352.0     | 11 Feb 91 | 356.8      | 354.8     |
| 8 Jan 91  | 357.2      | 351.6     | 12 Feb 91 | 362.1      | 353.2     |
| 9 Jan 91  | 356.8      | 350.4     | 13 Feb 91 | 362.1      | 355.2     |
| 10 Jan 91 | 355.6      | 348.0     | 14 Feb 91 | 357.2      | 355.2     |
| 11 Jan 91 | 358.0      | 351.6     | 15 Feb 91 | 358.4      | 355.6     |
| 12 Jan 91 | 358.0      | 353.2     | 16 Feb 91 | 359.3      | 356.0     |
| 13 Jan 91 | 358.0      | 355.6     | 17 Feb 91 | 358.4      | 353.2     |

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TABLE A-1 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 18 Feb 91 | 356.8      | 350.0     | 25 Mar 91 | 357.2      | 355.2     |
| 19 Feb 91 | 358.4      | 352.4     | 26 Mar 91 | 357.2      | 354.4     |
| 20 Feb 91 | 358.4      | 355.6     | 27 Mar 91 | 357.2      | 354.4     |
| 21 Feb 91 | 358.9      | 355.2     | 28 Mar 91 | 359.7      | 355.2     |
| 22 Feb 91 | 360.1      | 356.4     | 29 Mar 91 | 360.5      | 356.4     |
| 23 Feb 91 | 359.3      | 356.8     | 30 Mar 91 | 358.4      | 355.6     |
| 24 Feb 91 | 359.3      | 354.8     | 31 Mar 91 | 358.4      | 356.4     |
| 25 Feb 91 | 358.4      | 354.0     | 1 Apr 91  | 357.6      | 355.6     |
| 26 Feb 91 | 360.1      | 356.4     | 2 Apr 91  | 358.9      | 354.8     |
| 27 Feb 91 | 358.9      | 356.4     | 3 Apr 91  | 358.0      | 355.2     |
| 28 Feb 91 | 358.4      | 346.0     | 4 Apr 91  | 358.0      | 354.8     |
| 1 Mar 91  | 358.4      | 333.1     | 5 Apr 91  | 358.0      | 354.8     |
| 2 Mar 91  | 356.8      | 344.4     | 6 Apr 91  | 355.6      | 350.0     |
| 3 Mar 91  | 356.0      | 353.2     | 7 Apr 91  | 356.8      | 352.4     |
| 4 Mar 91  | 357.2      | 354.0     | 8 Apr 91  | 357.6      | 355.6     |
| 5 Mar 91  | 358.4      | 355.2     | 9 Apr 91  | 357.6      | 355.2     |
| 6 Mar 91  | 358.0      | 355.6     | 10 Apr 91 | 358.0      | 355.6     |
| 7 Mar 91  | 358.4      | 354.4     | 11 Apr 91 | 358.4      | 355.2     |
| 8 Mar 91  | 359.7      | 356.4     | 12 Apr 91 | 358.4      | 355.6     |
| 9 Mar 91  | 358.4      | 355.2     | 13 Apr 91 | 357.6      | 354.8     |
| 10 Mar 91 | 359.3      | 355.2     | 14 Apr 91 | 358.0      | 355.6     |
| 11 Mar 91 | 357.2      | 354.8     | 15 Apr 91 | 358.4      | 356.0     |
| 12 Mar 91 | 360.1      | 354.8     | 16 Apr 91 | 358.9      | 355.6     |
| 13 Mar 91 | 360.5      | 356.8     | 17 Apr 91 | 356.8      | 355.2     |
| 14 Mar 91 | 357.2      | 356.4     | 18 Apr 91 | 359.3      | 354.8     |
| 15 Mar 91 | 354.8      | 338.7     | 19 Apr 91 | 358.9      | 356.4     |
| 16 Mar 91 | 357.2      | 339.5     | 20 Apr 91 | 358.9      | 355.2     |
| 17 Mar 91 | 357.2      | 354.8     | 21 Apr 91 | 358.0      | 355.2     |
| 18 Mar 91 | 357.6      | 354.4     | 22 Apr 91 | 358.0      | 355.2     |
| 19 Mar 91 | 356.0      | 342.0     | 23 Apr 91 | 358.0      | 354.4     |
| 20 Mar 91 | 356.0      | 354.8     | 24 Apr 91 | 358.4      | 354.0     |
| 21 Mar 91 | 357.6      | 354.0     | 25 Apr 91 | 358.4      | 354.4     |
| 22 Mar 91 | 358.4      | 351.6     | 26 Apr 91 | 358.4      | 355.6     |
| 23 Mar 91 | 357.6      | 351.2     | 27 Apr 91 | 358.9      | 355.2     |
| 24 Mar 91 | 358.9      | 355.6     | 28 Apr 91 | 358.9      | 356.8     |

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TABLE A-1 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 29 Apr 91 | 358.9      | 355.6     | 3 Jun 91  | 368.9      | 366.1     |
| 30 Apr 91 | 358.4      | 354.8     | 4 Jun 91  | 368.9      | 366.1     |
| 1 May 91  | 357.2      | 355.6     | 5 Jun 91  | 366.9      | 364.1     |
| 2 May 91  | 358.9      | 355.2     | 6 Jun 91  | 367.7      | 364.5     |
| 3 May 91  | 357.6      | 354.8     | 7 Jun 91  | 368.1      | 365.3     |
| 4 May 91  | 357.6      | 354.4     | 8 Jun 91  | 367.3      | 364.9     |
| 5 May 91  | 357.6      | 355.6     | 9 Jun 91  | 367.3      | 364.9     |
| 6 May 91  | 358.9      | 356.0     | 10 Jun 91 | 367.3      | 364.9     |
| 7 May 91  | 358.4      | 355.6     | 11 Jun 91 | 366.9      | 364.1     |
| 8 May 91  | 358.0      | 354.0     | 12 Jun 91 | 366.5      | 364.5     |
| 9 May 91  | 358.0      | 354.4     | 13 Jun 91 | 368.1      | 364.9     |
| 10 May 91 | 358.9      | 354.8     | 14 Jun 91 | 367.7      | 365.3     |
| 11 May 91 | 358.0      | 354.0     | 15 Jun 91 | 366.9      | 364.9     |
| 12 May 91 | 358.0      | 356.4     | 16 Jun 91 | 367.7      | 364.9     |
| 13 May 91 | 358.4      | 356.0     | 17 Jun 91 | 368.1      | 364.9     |
| 14 May 91 | 358.0      | 354.8     | 18 Jun 91 | 366.5      | 364.1     |
| 15 May 91 | 357.6      | 354.8     | 19 Jun 91 | 366.9      | 362.9     |
| 16 May 91 | 357.2      | 354.0     | 20 Jun 91 | 367.7      | 362.9     |
| 17 May 91 | 358.0      | 356.0     | 21 Jun 91 | 366.5      | 364.9     |
| 18 May 91 | 358.4      | 356.0     | 22 Jun 91 | 367.3      | 363.3     |
| 19 May 91 | 359.7      | 356.4     | 23 Jun 91 | 367.3      | 363.3     |
| 20 May 91 | 359.3      | 356.0     | 24 Jun 91 | 368.1      | 365.3     |
| 21 May 91 | 358.4      | 355.6     | 25 Jun 91 | 367.7      | 364.1     |
| 22 May 91 | 357.6      | 353.6     | 26 Jun 91 | 366.9      | 363.7     |
| 23 May 91 | 356.8      | 352.4     | 27 Jun 91 | 367.7      | 364.1     |
| 24 May 91 | 358.0      | 354.4     | 28 Jun 91 | 368.1      | 364.9     |
| 25 May 91 | 357.6      | 354.8     | 29 Jun 91 | 368.5      | 362.9     |
| 26 May 91 | 358.4      | 356.0     | 30 Jun 91 | 369.7      | 366.5     |
| 27 May 91 | 359.7      | 356.4     | 1 Jul 91  | 369.3      | 366.5     |
| 28 May 91 | 359.7      | 356.0     | 2 Jul 91  | 368.1      | 365.7     |
| 29 May 91 | 367.3      | 355.6     | 3 Jul 91  | 367.3      | 363.7     |
| 30 May 91 | 366.9      | 364.5     | 4 Jul 91  | 368.9      | 364.5     |
| 31 May 91 | 366.9      | 364.5     | 5 Jul 91  | 366.9      | 364.1     |
| 1 Jun 91  | 366.5      | 364.1     | 6 Jul 91  | 366.5      | 362.9     |
| 2 Jun 91  | 368.1      | 364.9     | 7 Jul 91  | 367.3      | 363.7     |

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TABLE A-1 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 8 Jul 91  | 368.1      | 364.5     | 12 Aug 91 | 369.7      | 365.3     |
| 9 Jul 91  | 369.3      | 365.3     | 13 Aug 91 | 368.1      | 364.9     |
| 10 Jul 91 | 369.7      | 364.9     | 14 Aug 91 | 367.3      | 364.9     |
| 11 Jul 91 | 367.7      | 365.3     | 15 Aug 91 | 368.1      | 366.5     |
| 12 Jul 91 | 366.5      | 364.1     | 16 Aug 91 | 367.7      | 365.3     |
| 13 Jul 91 | 367.3      | 363.7     | 17 Aug 91 | 366.9      | 364.1     |
| 14 Jul 91 | 366.9      | 363.7     | 18 Aug 91 | 367.3      | 363.3     |
| 15 Jul 91 | 367.3      | 363.7     | 19 Aug 91 | 367.7      | 364.5     |
| 16 Jul 91 | 367.3      | 365.3     | 20 Aug 91 | 368.1      | 365.7     |
| 17 Jul 91 | 367.3      | 364.5     | 21 Aug 91 | 367.3      | 364.9     |
| 18 Jul 91 | 368.1      | 364.9     | 22 Aug 91 | 368.9      | 365.7     |
| 19 Jul 91 | 366.9      | 364.1     | 23 Aug 91 | 367.7      | 365.3     |
| 20 Jul 91 | 367.7      | 364.5     | 24 Aug 91 | 368.1      | 363.7     |
| 21 Jul 91 | 367.7      | 364.1     | 25 Aug 91 | 368.9      | 365.7     |
| 22 Jul 91 | 367.3      | 364.9     | 26 Aug 91 | 368.9      | 366.1     |
| 23 Jul 91 | 367.7      | 365.3     | 27 Aug 91 | 368.5      | 365.7     |
| 24 Jul 91 | 366.9      | 364.5     | 28 Aug 91 | 368.9      | 365.7     |
| 25 Jul 91 | 369.7      | 365.3     | 29 Aug 91 | 367.7      | 365.3     |
| 26 Jul 91 | 367.7      | 365.7     | 30 Aug 91 | 368.1      | 364.9     |
| 27 Jul 91 | 367.7      | 364.5     | 31 Aug 91 | 368.5      | 364.9     |
| 28 Jul 91 | 368.5      | 364.9     | 1 Sep 91  | 366.5      | 350.4     |
| 29 Jul 91 | 368.9      | 365.3     | 2 Sep 91  | 366.1      | 363.7     |
| 30 Jul 91 | 369.3      | 365.9     | 3 Sep 91  | 367.7      | 364.5     |
| 31 Jul 91 | 368.5      | 366.5     | 4 Sep 91  | 366.5      | 363.3     |
| 1 Aug 91  | 368.5      | 365.7     | 5 Sep 91  | 366.1      | 362.5     |
| 2 Aug 91  | 367.7      | 365.7     | 6 Sep 91  | 367.3      | 364.5     |
| 3 Aug 91  | 368.1      | 364.9     | 7 Sep 91  | 366.5      | 364.5     |
| 4 Aug 91  | 367.7      | 364.9     | 8 Sep 91  | 366.9      | 364.1     |
| 5 Aug 91  | 367.7      | 364.9     | 9 Sep 91  | 367.7      | 363.3     |
| 6 Aug 91  | 367.7      | 364.9     | 10 Sep 91 | 368.1      | 364.9     |
| 7 Aug 91  | 367.3      | 364.9     | 11 Sep 91 | 368.5      | 364.1     |
| 8 Aug 91  | 367.7      | 364.9     | 12 Sep 91 | 368.1      | 365.7     |
| 9 Aug 91  | 368.5      | 365.7     | 13 Sep 91 | 368.5      | 365.3     |
| 10 Aug 91 | 366.9      | 365.3     | 14 Sep 91 | 368.5      | 364.5     |
| 11 Aug 91 | 367.7      | 364.9     | 15 Sep 91 | 368.1      | 366.1     |



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TABLE A-1 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 16 Sep 91 | 368.1      | 364.5     | 24 Sep 91 | 367.3      | 363.3     |
| 17 Sep 91 | 367.7      | 364.5     | 25 Sep 91 | 367.7      | 364.9     |
| 18 Sep 91 | 367.7      | 364.9     | 26 Sep 91 | 367.7      | 365.3     |
| 19 Sep 91 | 368.5      | 364.5     | 27 Sep 91 | 367.3      | 364.5     |
| 20 Sep 91 | 368.1      | 365.3     | 28 Sep 91 | 367.3      | 364.1     |
| 21 Sep 91 | 367.7      | 365.3     | 29 Sep 91 | 367.3      | 363.3     |
| 22 Sep 91 | 367.3      | 364.5     | 30 Sep 91 | 367.7      | 364.9     |
| 23 Sep 91 | 367.3      | 364.1     |           |            |           |

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TABLE A-2. 4P-2 (Two-Inch Steam Well) Flow Data.

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 1 Oct 90  | 210.4      | 196.5     | 10 Nov 90 | 153.3      | 133.1     |
| 2 Oct 90  | 219.6      | 191.1     | 11 Nov 90 | 152.0      | 131.4     |
| 3 Oct 90  | 217.9      | 199.5     | 12 Nov 90 | 155.4      | 133.1     |
| 4 Oct 90  | 218.8      | 197.4     | 13 Nov 90 | 156.6      | 130.6     |
| 5 Oct 90  | 221.7      | 201.1     | 14 Nov 90 | 155.8      | 133.1     |
| 6 Oct 90  | 216.7      | 199.5     | 15 Nov 90 | 146.1      | 131.0     |
| 7 Oct 90  | 217.9      | 196.1     | 16 Nov 90 | 146.5      | 131.0     |
| 8 Oct 90  | 218.3      | 192.3     | 17 Nov 90 | 152.8      | 137.3     |
| 9 Oct 90  | 215.0      | 196.1     | 18 Nov 90 | 152.8      | 135.2     |
| 10 Oct 90 | 216.7      | 192.3     | 19 Nov 90 | 151.6      | 135.2     |
| 11 Oct 90 | 217.9      | 195.3     | 20 Nov 90 | 150.7      | 130.2     |
| 12 Oct 90 | 220.9      | 197.4     | 21 Nov 90 | 148.6      | 123.0     |
| 13 Oct 90 | 221.7      | 199.0     | 22 Nov 90 | 146.5      | 117.2     |
| 14 Oct 90 | 221.7      | 196.1     | 23 Nov 90 | 149.5      | 120.5     |
| 15 Oct 90 | 217.9      | 195.7     | 24 Nov 90 | 154.5      | 127.2     |
| 16 Oct 90 | 215.8      | 194.8     | 25 Nov 90 | 153.7      | 129.3     |
| 17 Oct 90 | 213.3      | 194.8     | 26 Nov 90 | 138.1      | 112.5     |
| 18 Oct 90 | 213.7      | 196.9     | 27 Nov 90 | 144.9      | 102.5     |
| 19 Oct 90 | 212.5      | 198.6     | 28 Nov 90 | 138.6      | 100.8     |
| 20 Oct 90 | 213.3      | 194.8     | 29 Nov 90 | 137.3      | 103.7     |
| 21 Oct 90 | 211.6      | 194.8     | 30 Nov 90 | 144.0      | 110.9     |
| 22 Oct 90 | 207.9      | 142.8     | 1 Dec 90  | 144.0      | 109.6     |
| 23 Oct 90 | 159.6      | 141.9     | 2 Dec 90  | 137.3      | 105.8     |
| 29 Oct 90 | 162.1      | 152.4     | 3 Dec 90  | 132.7      | 105.4     |
| 30 Oct 90 | 166.3      | 131.4     | 4 Dec 90  | 136.9      | 101.6     |
| 31 Oct 90 | 161.7      | 136.5     | 5 Dec 90  | 141.9      | 112.1     |
| 1 Nov 90  | 154.1      | 137.7     | 6 Dec 90  | 141.1      | 107.9     |
| 2 Nov 90  | 148.6      | 138.6     | 7 Dec 90  | 144.0      | 116.3     |
| 3 Nov 90  | 149.1      | 131.0     | 8 Dec 90  | 146.1      | 117.2     |
| 4 Nov 90  | 147.0      | 129.3     | 9 Dec 90  | 146.1      | 114.2     |
| 5 Nov 90  | 148.6      | 126.4     | 10 Dec 90 | 139.4      | 112.5     |
| 6 Nov 90  | 150.7      | 127.6     | 11 Dec 90 | 143.6      | 107.9     |
| 7 Nov 90  | 151.2      | 129.3     | 12 Dec 90 | 133.5      | 111.3     |
| 8 Nov 90  | 151.6      | 127.2     | 13 Dec 90 | 127.6      | 110.0     |
| 9 Nov 90  | 147.3      | 133.1     | 14 Dec 90 | 136.9      | 94.1      |

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TABLE A-2 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 15 Dec 90 | 146.5      | 83.6      | 21 Jan 91 | 162.1      | 138.6     |
| 16 Dec 90 | 138.6      | 10.5      | 22 Jan 91 | 172.2      | 137.7     |
| 19 Dec 90 | 191.1      | 108.3     | 23 Jan 91 | 165.4      | 134.4     |
| 20 Dec 90 | 195.7      | 144.4     | 24 Jan 91 | 165.0      | 136.5     |
| 21 Dec 90 | 203.2      | 181.4     | 25 Jan 91 | 170.1      | 136.9     |
| 22 Dec 90 | 212.5      | 163.8     | 26 Jan 91 | 168.8      | 136.0     |
| 23 Dec 90 | 211.2      | 145.3     | 27 Jan 91 | 166.3      | 140.7     |
| 24 Dec 90 | 212.0      | 134.8     | 28 Jan 91 | 165.0      | 136.5     |
| 25 Dec 90 | 210.0      | 118.8     | 29 Jan 91 | 159.6      | 132.3     |
| 26 Dec 90 | 216.2      | 117.6     | 30 Jan 91 | 165.0      | 132.7     |
| 27 Dec 90 | 156.6      | 141.5     | 31 Jan 91 | 160.4      | 125.1     |
| 28 Dec 90 | 166.7      | 140.2     | 1 Feb 91  | 165.9      | 124.7     |
| 29 Dec 90 | 163.3      | 139.0     | 2 Feb 91  | 162.1      | 138.6     |
| 30 Dec 90 | 160.8      | 133.1     | 3 Feb 91  | 170.1      | 141.1     |
| 31 Dec 90 | 162.9      | 136.9     | 4 Feb 91  | 170.1      | 146.5     |
| 1 Jan 91  | 165.4      | 141.5     | 5 Feb 91  | 175.5      | 155.4     |
| 2 Jan 91  | 166.3      | 144.0     | 6 Feb 91  | 188.5      | 165.0     |
| 3 Jan 91  | 157.0      | 144.0     | 7 Feb 91  | 196.5      | 163.3     |
| 4 Jan 91  | 158.3      | 148.6     | 8 Feb 91  | 223.4      | 172.6     |
| 5 Jan 91  | 163.8      | 145.3     | 9 Feb 91  | 225.9      | 194.0     |
| 6 Jan 91  | 161.2      | 144.4     | 10 Feb 91 | 235.6      | 192.3     |
| 7 Jan 91  | 159.1      | 139.0     | 11 Feb 91 | 230.9      | 202.0     |
| 8 Jan 91  | 159.6      | 139.8     | 12 Feb 91 | 212.5      | 194.8     |
| 9 Jan 91  | 159.6      | 141.1     | 13 Feb 91 | 280.1      | 211.2     |
| 10 Jan 91 | 162.5      | 136.5     | 14 Feb 91 | 281.3      | 244.8     |
| 11 Jan 91 | 160.0      | 135.2     | 15 Feb 91 | 254.0      | 233.9     |
| 12 Jan 91 | 166.7      | 136.0     | 16 Feb 91 | 262.0      | 238.5     |
| 13 Jan 91 | 168.4      | 144.9     | 17 Feb 91 | 237.7      | 187.7     |
| 14 Jan 91 | 160.8      | 139.4     | 18 Feb 91 | 212.5      | 186.0     |
| 15 Jan 91 | 165.4      | 133.1     | 19 Feb 91 | 206.6      | 174.7     |
| 16 Jan 91 | 166.3      | 147.4     | 20 Feb 91 | 199.9      | 175.9     |
| 17 Jan 91 | 162.9      | 143.6     | 21 Feb 91 | 197.8      | 179.3     |
| 18 Jan 91 | 168.4      | 139.8     | 22 Feb 91 | 211.2      | 180.1     |
| 19 Jan 91 | 166.7      | 141.1     | 23 Feb 91 | 226.7      | 189.4     |
| 20 Jan 91 | 165.4      | 143.6     | 24 Feb 91 | 217.5      | 194.8     |

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TABLE A-2 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 25 Feb 91 | 211.6      | 181.8     | 1 Apr 91  | 349.4      | 197.4     |
| 26 Feb 91 | 205.8      | 175.9     | 2 Apr 91  | 352.3      | 192.7     |
| 27 Feb 91 | 189.8      | 182.2     | 3 Apr 91  | 354.0      | 208.7     |
| 28 Feb 91 | 185.6      | 177.6     | 4 Apr 91  | 355.2      | 216.2     |
| 1 Mar 91  | 191.5      | 176.8     | 5 Apr 91  | 356.5      | 210.4     |
| 2 Mar 91  | 191.9      | 176.4     | 6 Apr 91  | 355.7      | 210.8     |
| 3 Mar 91  | 187.7      | 171.7     | 7 Apr 91  | 354.8      | 203.2     |
| 4 Mar 91  | 180.1      | 173.4     | 8 Apr 91  | 350.6      | 196.5     |
| 5 Mar 91  | 184.3      | 175.1     | 9 Apr 91  | 229.7      | 189.0     |
| 6 Mar 91  | 183.5      | 173.0     | 10 Apr 91 | 212.5      | 192.3     |
| 7 Mar 91  | 182.2      | 168.8     | 11 Apr 91 | 193.6      | 186.4     |
| 8 Mar 91  | 179.3      | 168.4     | 12 Apr 91 | 202.8      | 191.5     |
| 9 Mar 91  | 182.2      | 170.9     | 13 Apr 91 | 203.2      | 191.5     |
| 10 Mar 91 | 183.1      | 172.2     | 14 Apr 91 | 206.6      | 191.9     |
| 11 Mar 91 | 181.4      | 165.0     | 15 Apr 91 | 205.8      | 189.8     |
| 12 Mar 91 | 175.1      | 162.9     | 16 Apr 91 | 202.4      | 186.4     |
| 13 Mar 91 | 182.7      | 170.5     | 17 Apr 91 | 200.7      | 190.6     |
| 14 Mar 91 | 174.7      | 170.1     | 18 Apr 91 | 198.6      | 183.1     |
| 15 Mar 91 | 174.3      | 162.5     | 19 Apr 91 | 241.0      | 167.5     |
| 16 Mar 91 | 180.1      | 162.5     | 20 Apr 91 | 233.5      | 202.4     |
| 17 Mar 91 | 177.2      | 165.4     | 21 Apr 91 | 238.1      | 202.8     |
| 18 Mar 91 | 187.3      | 166.3     | 22 Apr 91 | 240.6      | 194.8     |
| 19 Mar 91 | 176.4      | 162.9     | 23 Apr 91 | 210.4      | 191.5     |
| 20 Mar 91 | 178.0      | 164.6     | 24 Apr 91 | 207.4      | 192.3     |
| 21 Mar 91 | 173.8      | 163.8     | 25 Apr 91 | 202.4      | 133.1     |
| 22 Mar 91 | 182.2      | 168.0     | 26 Apr 91 | 139.0      | 60.5      |
| 23 Mar 91 | 183.5      | 172.2     | 27 Apr 91 | 144.4      | 122.2     |
| 24 Mar 91 | 184.3      | 169.2     | 28 Apr 91 | 152.4      | 131.0     |
| 25 Mar 91 | 182.2      | 162.5     | 29 Apr 91 | 159.1      | 128.1     |
| 26 Mar 91 | 174.3      | 158.3     | 30 Apr 91 | 153.7      | 123.9     |
| 27 Mar 91 | 192.3      | 148.2     | 1 May 91  | 143.2      | 128.5     |
| 28 Mar 91 | 191.1      | 184.3     | 2 May 91  | 149.1      | 118.0     |
| 29 Mar 91 | 199.5      | 180.6     | 3 May 91  | 130.6      | 110.9     |
| 30 Mar 91 | 244.0      | 193.2     | 4 May 91  | 153.3      | 121.4     |
| 31 Mar 91 | 209.1      | 193.6     | 5 May 91  | 167.1      | 133.9     |

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TABLE A-2 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 6 May 91  | 173.4      | 137.7     | 10 Jun 91 | 170.1      | 150.3     |
| 7 May 91  | 173.0      | 140.2     | 11 Jun 91 | 171.3      | 139.4     |
| 8 May 91  | 173.0      | 142.3     | 12 Jun 91 | 172.2      | 135.6     |
| 9 May 91  | 151.2      | 136.0     | 13 Jun 91 | 152.4      | 130.6     |
| 10 May 91 | 148.6      | 141.5     | 14 Jun 91 | 143.2      | 127.6     |
| 11 May 91 | 151.6      | 138.1     | 15 Jun 91 | 152.0      | 125.1     |
| 12 May 91 | 153.3      | 135.6     | 16 Jun 91 | 155.8      | 129.7     |
| 13 May 91 | 152.4      | 131.8     | 17 Jun 91 | 359.4      | 137.3     |
| 14 May 91 | 151.2      | 133.1     | 18 Jun 91 | 361.5      | 134.4     |
| 15 May 91 | 169.2      | 131.4     | 19 Jun 91 | 358.2      | 134.4     |
| 16 May 91 | 172.6      | 134.4     | 20 Jun 91 | 356.5      | 133.9     |
| 17 May 91 | 163.3      | 140.2     | 21 Jun 91 | 358.6      | 133.5     |
| 18 May 91 | 146.1      | 136.5     | 22 Jun 91 | 359.0      | 136.9     |
| 19 May 91 | 147.0      | 131.8     | 23 Jun 91 | 357.3      | 133.1     |
| 20 May 91 | 142.3      | 131.4     | 24 Jun 91 | 356.9      | 131.4     |
| 21 May 91 | 156.6      | 139.0     | 25 Jun 91 | 147.4      | 130.2     |
| 22 May 91 | 141.5      | 132.7     | 26 Jun 91 | 159.6      | 133.1     |
| 23 May 91 | 165.9      | 134.4     | 27 Jun 91 | 155.4      | 141.5     |
| 24 May 91 | 169.6      | 139.0     | 28 Jun 91 | 170.9      | 149.1     |
| 25 May 91 | 170.9      | 147.4     | 29 Jun 91 | 177.2      | 162.5     |
| 26 May 91 | 171.7      | 146.1     | 30 Jun 91 | 175.9      | 160.8     |
| 27 May 91 | 173.0      | 140.7     | 1 Jul 91  | 180.1      | 153.3     |
| 28 May 91 | 156.2      | 125.1     | 2 Jul 91  | 171.3      | 152.8     |
| 29 May 91 | 158.3      | 130.2     | 3 Jul 91  | 164.2      | 138.6     |
| 30 May 91 | 155.8      | 130.6     | 4 Jul 91  | 164.2      | 128.1     |
| 31 May 91 | 191.5      | 137.3     | 5 Jul 91  | 155.8      | 122.2     |
| 1 Jun 91  | 181.4      | 114.6     | 6 Jul 91  | 129.3      | 110.4     |
| 2 Jun 91  | 171.3      | 164.6     | 7 Jul 91  | 122.2      | 89.4      |
| 3 Jun 91  | 170.1      | 159.1     | 8 Jul 91  | 107.5      | 56.7      |
| 4 Jun 91  | 174.3      | 154.5     | 9 Jul 91  | 156.6      | 52.5      |
| 5 Jun 91  | 174.3      | 162.5     | 10 Jul 91 | 147.8      | 116.3     |
| 6 Jun 91  | 167.5      | 161.2     | 11 Jul 91 | 146.5      | 96.2      |
| 7 Jun 91  | 173.8      | 156.6     | 12 Jul 91 | 160.4      | 86.1      |
| 8 Jun 91  | 185.2      | 162.1     | 13 Jul 91 | 154.9      | 110.4     |
| 9 Jun 91  | 176.4      | 159.1     | 14 Jul 91 | 167.5      | 133.5     |

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TABLE A-2 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 15 Jul 91 | 184.3      | 164.2     | 19 Aug 91 | 148.2      | 132.3     |
| 16 Jul 91 | 182.2      | 159.6     | 20 Aug 91 | 154.5      | 96.6      |
| 17 Jul 91 | 175.5      | 127.6     | 21 Aug 91 | 143.2      | 83.6      |
| 18 Jul 91 | 186.4      | 138.1     | 22 Aug 91 | 143.6      | 124.3     |
| 19 Jul 91 | 180.6      | 173.0     | 23 Aug 91 | 140.2      | 121.8     |
| 20 Jul 91 | 180.6      | 167.1     | 24 Aug 91 | 141.9      | 125.6     |
| 21 Jul 91 | 181.8      | 171.3     | 25 Aug 91 | 145.7      | 122.6     |
| 22 Jul 91 | 176.4      | 170.9     | 26 Aug 91 | 145.3      | 126.8     |
| 23 Jul 91 | 178.9      | 172.2     | 27 Aug 91 | 148.6      | 129.7     |
| 24 Jul 91 | 176.4      | 170.5     | 28 Aug 91 | 152.4      | 132.3     |
| 25 Jul 91 | 176.4      | 166.3     | 29 Aug 91 | 156.6      | 126.8     |
| 26 Jul 91 | 173.8      | 166.3     | 30 Aug 91 | 148.2      | 127.6     |
| 27 Jul 91 | 171.7      | 164.2     | 31 Aug 91 | 149.1      | 128.5     |
| 28 Jul 91 | 173.8      | 169.2     | 1 Sep 91  | 146.5      | 122.6     |
| 29 Jul 91 | 177.2      | 167.1     | 2 Sep 91  | 141.1      | 122.6     |
| 30 Jul 91 | 175.5      | 168.4     | 3 Sep 91  | 140.2      | 121.8     |
| 31 Jul 91 | 171.3      | 163.8     | 4 Sep 91  | 131.8      | 118.0     |
| 1 Aug 91  | 173.0      | 160.0     | 5 Sep 91  | 152.4      | 127.6     |
| 2 Aug 91  | 173.8      | 161.2     | 6 Sep 91  | 147.8      | 133.9     |
| 3 Aug 91  | 173.8      | 155.4     | 7 Sep 91  | 156.2      | 132.3     |
| 4 Aug 91  | 171.3      | 148.6     | 8 Sep 91  | 153.3      | 133.1     |
| 5 Aug 91  | 190.2      | 172.2     | 9 Sep 91  | 154.5      | 132.7     |
| 6 Aug 91  | 293.5      | 167.1     | 10 Sep 91 | 152.0      | 133.5     |
| 7 Aug 91  | 191.1      | 175.9     | 11 Sep 91 | 149.9      | 127.6     |
| 8 Aug 91  | 184.3      | 173.4     | 12 Sep 91 | 148.6      | 123.9     |
| 9 Aug 91  | 181.8      | 176.4     | 13 Sep 91 | 149.9      | 124.7     |
| 10 Aug 91 | 181.8      | 168.8     | 14 Sep 91 | 147.8      | 126.0     |
| 11 Aug 91 | 177.6      | 135.6     | 15 Sep 91 | 144.0      | 127.2     |
| 12 Aug 91 | 142.8      | 125.6     | 16 Sep 91 | 149.1      | 127.2     |
| 13 Aug 91 | 160.8      | 128.5     | 17 Sep 91 | 147.8      | 122.2     |
| 14 Aug 91 | 144.9      | 130.2     | 18 Sep 91 | 147.8      | 121.4     |
| 15 Aug 91 | 149.9      | 132.3     | 19 Sep 91 | 146.1      | 125.6     |
| 16 Aug 91 | 148.2      | 129.3     | 20 Sep 91 | 149.9      | 127.6     |
| 17 Aug 91 | 150.3      | 129.3     | 21 Sep 91 | 151.2      | 126.8     |
| 18 Aug 91 | 150.7      | 129.3     | 22 Sep 91 | 144.4      | 124.7     |

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TABLE A-2 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 23 Sep 91 | 147.0      | 123.9     | 27 Sep 91 | 151.6      | 125.6     |
| 24 Sep 91 | 141.9      | 127.6     | 28 Sep 91 | 148.6      | 125.1     |
| 25 Sep 91 | 149.1      | 126.4     | 29 Sep 91 | 147.4      | 126.0     |
| 26 Sep 91 | 147.4      | 127.2     | 30 Sep 91 | 148.2      | 121.8     |

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TABLE A-3. 4H-4 (Eight-Inch Well) Steam Flow Data.

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 1 Oct 90  | 200.3      | 193.5     | 5 Nov 90  | 202.1      | 193.9     |
| 2 Oct 90  | 202.9      | 198.2     | 6 Nov 90  | 199.0      | 185.7     |
| 3 Oct 90  | 199.8      | 188.7     | 7 Nov 90  | 187.3      | 184.4     |
| 4 Oct 90  | 197.4      | 187.7     | 8 Nov 90  | 187.5      | 184.8     |
| 5 Oct 90  | 203.7      | 195.3     | 9 Nov 90  | 191.0      | 185.5     |
| 6 Oct 90  | 204.8      | 199.8     | 10 Nov 90 | 193.9      | 189.6     |
| 7 Oct 90  | 204.4      | 193.3     | 11 Nov 90 | 193.5      | 190.2     |
| 8 Oct 90  | 193.3      | 185.2     | 12 Nov 90 | 196.6      | 189.4     |
| 9 Oct 90  | 198.8      | 188.1     | 13 Nov 90 | 201.7      | 195.3     |
| 10 Oct 90 | 206.6      | 198.8     | 14 Nov 90 | 201.7      | 197.4     |
| 11 Oct 90 | 206.8      | 199.0     | 15 Nov 90 | 197.8      | 189.6     |
| 12 Oct 90 | 201.7      | 196.1     | 16 Nov 90 | 194.5      | 190.2     |
| 13 Oct 90 | 204.0      | 200.9     | 17 Nov 90 | 199.4      | 193.5     |
| 14 Oct 90 | 203.7      | 197.8     | 18 Nov 90 | 200.3      | 197.4     |
| 15 Oct 90 | 203.7      | 197.6     | 19 Nov 90 | 202.7      | 199.2     |
| 16 Oct 90 | 205.0      | 201.1     | 20 Nov 90 | 203.1      | 188.7     |
| 17 Oct 90 | 201.3      | 192.2     | 21 Nov 90 | 190.4      | 184.4     |
| 18 Oct 90 | 205.4      | 195.9     | 22 Nov 90 | 188.1      | 181.8     |
| 19 Oct 90 | 207.5      | 198.4     | 23 Nov 90 | 195.9      | 188.1     |
| 20 Oct 90 | 198.6      | 190.6     | 24 Nov 90 | 197.6      | 194.3     |
| 21 Oct 90 | 199.6      | 191.8     | 25 Nov 90 | 212.0      | 196.6     |
| 22 Oct 90 | 202.9      | 198.8     | 26 Nov 90 | 212.4      | 187.7     |
| 23 Oct 90 | 202.7      | 197.6     | 27 Nov 90 | 188.1      | 182.6     |
| 24 Oct 90 | 199.0      | 193.5     | 28 Nov 90 | 184.6      | 179.3     |
| 25 Oct 90 | 202.3      | 196.8     | 29 Nov 90 | 194.9      | 182.4     |
| 26 Oct 90 | 202.9      | 199.0     | 30 Nov 90 | 197.2      | 194.5     |
| 27 Oct 90 | 201.1      | 198.4     | 1 Dec 90  | 196.6      | 192.4     |
| 28 Oct 90 | 201.1      | 196.1     | 2 Dec 90  | 192.6      | 186.1     |
| 29 Oct 90 | 201.5      | 196.6     | 3 Dec 90  | 189.8      | 184.6     |
| 30 Oct 90 | 198.6      | 190.8     | 4 Dec 90  | 193.7      | 188.9     |
| 31 Oct 90 | 200.3      | 195.5     | 5 Dec 90  | 195.7      | 192.2     |
| 1 Nov 90  | 201.3      | 194.9     | 6 Dec 90  | 192.9      | 187.5     |
| 2 Nov 90  | 195.3      | 190.0     | 7 Dec 90  | 194.1      | 190.4     |
| 3 Nov 90  | 190.6      | 184.4     | 8 Dec 90  | 195.1      | 191.4     |
| 4 Nov 90  | 193.9      | 183.4     | 9 Dec 90  | 194.9      | 191.4     |



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TABLE A-3 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 10 Dec 90 | 197.8      | 194.1     | 16 Jan 91 | 155.0      | 148.4     |
| 11 Dec 90 | 200.5      | 196.1     | 17 Jan 91 | 154.6      | 148.2     |
| 12 Dec 90 | 200.3      | 195.3     | 18 Jan 91 | 158.7      | 148.0     |
| 13 Dec 90 | 196.8      | 193.9     | 19 Jan 91 | 159.3      | 149.7     |
| 14 Dec 90 | 194.5      | 188.1     | 20 Jan 91 | 157.1      | 148.4     |
| 15 Dec 90 | 201.3      | 193.3     | 21 Jan 91 | 148.6      | 144.7     |
| 16 Dec 90 | 198.4      | 191.0     | 22 Jan 91 | 156.1      | 144.3     |
| 17 Dec 90 | 191.6      | 183.4     | 23 Jan 91 | 157.1      | 145.6     |
| 18 Dec 90 | 207.7      | 194.3     | 24 Jan 91 | 154.8      | 145.2     |
| 19 Dec 90 | 212.2      | 204.4     | 25 Jan 91 | 155.2      | 144.9     |
| 20 Dec 90 | 205.0      | 192.0     | 26 Jan 91 | 154.0      | 144.1     |
| 21 Dec 90 | 194.9      | 185.9     | 27 Jan 91 | 153.2      | 144.3     |
| 22 Dec 90 | 191.6      | 184.6     | 28 Jan 91 | 153.6      | 146.4     |
| 23 Dec 90 | 186.9      | 178.3     | 29 Jan 91 | 146.4      | 136.3     |
| 25 Dec 90 | 100.1      | 96.8      | 30 Jan 91 | 144.5      | 134.9     |
| 26 Dec 90 | 143.3      | 97.2      | 31 Jan 91 | 147.2      | 136.1     |
| 28 Dec 90 | 192.4      | 186.1     | 1 Feb 91  | 148.9      | 139.6     |
| 29 Dec 90 | 191.8      | 184.4     | 2 Feb 91  | 145.4      | 139.4     |
| 30 Dec 90 | 177.8      | 83.1      | 3 Feb 91  | 146.2      | 135.1     |
| 31 Dec 90 | 97.9       | 51.8      | 4 Feb 91  | 145.8      | 135.5     |
| 1 Jan 91  | 102.6      | 96.6      | 5 Feb 91  | 147.8      | 138.6     |
| 2 Jan 91  | 195.7      | 144.9     | 6 Feb 91  | 141.5      | 134.9     |
| 3 Jan 91  | 192.6      | 126.4     | 7 Feb 91  | 148.9      | 134.3     |
| 4 Jan 91  | 174.3      | 156.1     | 8 Feb 91  | 149.7      | 135.9     |
| 5 Jan 91  | 166.5      | 157.1     | 9 Feb 91  | 145.8      | 138.0     |
| 6 Jan 91  | 172.5      | 156.5     | 10 Feb 91 | 147.0      | 135.1     |
| 7 Jan 91  | 174.6      | 157.9     | 11 Feb 91 | 144.9      | 135.5     |
| 8 Jan 91  | 154.8      | 149.9     | 12 Feb 91 | 142.7      | 136.1     |
| 9 Jan 91  | 155.0      | 150.5     | 13 Feb 91 | 142.7      | 135.3     |
| 10 Jan 91 | 154.6      | 148.6     | 14 Feb 91 | 137.3      | 133.2     |
| 11 Jan 91 | 151.5      | 146.6     | 15 Feb 91 | 144.1      | 136.9     |
| 12 Jan 91 | 156.7      | 148.0     | 16 Feb 91 | 143.1      | 138.4     |
| 13 Jan 91 | 160.6      | 149.7     | 17 Feb 91 | 139.6      | 133.6     |
| 14 Jan 91 | 155.6      | 147.6     | 18 Feb 91 | 133.6      | 128.1     |
| 15 Jan 91 | 165.1      | 149.7     | 19 Feb 91 | 161.6      | 156.5     |

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TABLE A-3 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 20 Feb 91 | 170.0      | 159.5     | 27 Mar 91 | 175.4      | 166.7     |
| 21 Feb 91 | 170.6      | 165.3     | 28 Mar 91 | 171.9      | 165.7     |
| 22 Feb 91 | 175.8      | 166.3     | 29 Mar 91 | 174.1      | 166.9     |
| 23 Feb 91 | 171.1      | 166.7     | 30 Mar 91 | 171.9      | 164.1     |
| 24 Feb 91 | 167.6      | 160.6     | 31 Mar 91 | 176.8      | 165.7     |
| 25 Feb 91 | 168.6      | 164.1     | 1 Apr 91  | 177.2      | 166.3     |
| 26 Feb 91 | 176.4      | 165.5     | 2 Apr 91  | 174.1      | 165.7     |
| 27 Feb 91 | 177.0      | 170.9     | 3 Apr 91  | 171.3      | 165.9     |
| 28 Feb 91 | 178.3      | 175.2     | 4 Apr 91  | 174.3      | 166.9     |
| 1 Mar 91  | 177.2      | 164.1     | 5 Apr 91  | 175.4      | 170.2     |
| 2 Mar 91  | 164.5      | 157.9     | 6 Apr 91  | 178.5      | 172.9     |
| 3 Mar 91  | 170.2      | 157.7     | 7 Apr 91  | 176.4      | 169.4     |
| 4 Mar 91  | 169.2      | 165.1     | 8 Apr 91  | 170.0      | 162.0     |
| 5 Mar 91  | 172.5      | 168.6     | 9 Apr 91  | 176.4      | 162.0     |
| 6 Mar 91  | 175.4      | 167.8     | 10 Apr 91 | 182.8      | 172.1     |
| 7 Mar 91  | 173.7      | 165.1     | 11 Apr 91 | 172.9      | 168.8     |
| 8 Mar 91  | 177.2      | 166.9     | 12 Apr 91 | 173.3      | 168.2     |
| 9 Mar 91  | 177.6      | 170.9     | 13 Apr 91 | 175.4      | 167.8     |
| 10 Mar 91 | 182.0      | 173.5     | 14 Apr 91 | 182.8      | 170.4     |
| 11 Mar 91 | 178.0      | 164.9     | 15 Apr 91 | 180.9      | 175.0     |
| 12 Mar 91 | 178.0      | 164.9     | 16 Apr 91 | 179.5      | 172.5     |
| 13 Mar 91 | 182.8      | 172.5     | 17 Apr 91 | 177.2      | 171.3     |
| 14 Mar 91 | 181.3      | 174.3     | 18 Apr 91 | 175.6      | 170.4     |
| 15 Mar 91 | 178.0      | 168.8     | 19 Apr 91 | 175.0      | 170.4     |
| 16 Mar 91 | 173.1      | 166.9     | 20 Apr 91 | 179.3      | 171.5     |
| 17 Mar 91 | 173.9      | 166.3     | 21 Apr 91 | 176.4      | 171.7     |
| 18 Mar 91 | 181.1      | 176.2     | 22 Apr 91 | 177.8      | 172.1     |
| 19 Mar 91 | 181.8      | 172.3     | 23 Apr 91 | 178.7      | 173.9     |
| 20 Mar 91 | 177.0      | 171.3     | 24 Apr 91 | 178.5      | 172.7     |
| 21 Mar 91 | 177.2      | 167.8     | 25 Apr 91 | 177.4      | 170.2     |
| 22 Mar 91 | 172.1      | 165.7     | 26 Apr 91 | 173.7      | 169.0     |
| 23 Mar 91 | 179.3      | 168.0     | 27 Apr 91 | 175.4      | 170.6     |
| 24 Mar 91 | 184.4      | 174.1     | 28 Apr 91 | 175.4      | 168.2     |
| 25 Mar 91 | 179.5      | 176.6     | 29 Apr 91 | 175.4      | 171.7     |
| 26 Mar 91 | 182.8      | 173.7     | 30 Apr 91 | 178.5      | 171.3     |

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TABLE A-3 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 1 May 91  | 180.5      | 176.4     | 5 Jun 91  | 180.5      | 176.8     |
| 2 May 91  | 178.9      | 173.3     | 6 Jun 91  | 178.5      | 176.0     |
| 3 May 91  | 174.6      | 169.2     | 7 Jun 91  | 182.2      | 174.3     |
| 4 May 91  | 171.5      | 166.7     | 8 Jun 91  | 180.3      | 173.1     |
| 5 May 91  | 173.3      | 166.1     | 9 Jun 91  | 178.5      | 168.8     |
| 6 May 91  | 175.2      | 171.1     | 10 Jun 91 | 176.8      | 167.6     |
| 7 May 91  | 173.9      | 168.8     | 11 Jun 91 | 176.8      | 170.2     |
| 8 May 91  | 177.4      | 171.7     | 12 Jun 91 | 177.8      | 172.1     |
| 9 May 91  | 178.3      | 172.5     | 13 Jun 91 | 180.7      | 173.5     |
| 10 May 91 | 173.9      | 171.1     | 14 Jun 91 | 181.3      | 174.6     |
| 11 May 91 | 173.7      | 169.4     | 15 Jun 91 | 177.0      | 172.3     |
| 12 May 91 | 173.3      | 168.8     | 16 Jun 91 | 176.6      | 171.3     |
| 13 May 91 | 177.2      | 170.4     | 17 Jun 91 | 176.2      | 170.2     |
| 14 May 91 | 176.8      | 168.8     | 18 Jun 91 | 178.3      | 172.1     |
| 15 May 91 | 171.7      | 167.8     | 19 Jun 91 | 179.1      | 174.6     |
| 16 May 91 | 174.1      | 168.4     | 20 Jun 91 | 178.9      | 173.9     |
| 17 May 91 | 174.6      | 171.3     | 21 Jun 91 | 179.9      | 175.4     |
| 18 May 91 | 176.2      | 171.3     | 22 Jun 91 | 179.5      | 174.6     |
| 19 May 91 | 172.9      | 169.0     | 23 Jun 91 | 180.3      | 174.8     |
| 20 May 91 | 172.3      | 170.0     | 24 Jun 91 | 179.9      | 175.4     |
| 21 May 91 | 176.2      | 172.1     | 25 Jun 91 | 179.5      | 176.8     |
| 22 May 91 | 173.3      | 168.4     | 26 Jun 91 | 179.9      | 176.6     |
| 23 May 91 | 171.9      | 166.7     | 27 Jun 91 | 180.1      | 177.6     |
| 24 May 91 | 167.2      | 163.9     | 28 Jun 91 | 179.7      | 177.2     |
| 25 May 91 | 168.4      | 163.9     | 29 Jun 91 | 179.9      | 174.6     |
| 26 May 91 | 171.1      | 166.1     | 30 Jun 91 | 175.2      | 168.4     |
| 27 May 91 | 173.3      | 168.4     | 1 Jul 91  | 174.3      | 166.7     |
| 28 May 91 | 170.9      | 165.5     | 2 Jul 91  | 175.6      | 163.7     |
| 29 May 91 | 171.3      | 168.2     | 3 Jul 91  | 174.3      | 163.9     |
| 30 May 91 | 177.6      | 170.4     | 4 Jul 91  | 178.0      | 164.7     |
| 31 May 91 | 181.8      | 169.4     | 5 Jul 91  | 177.6      | 166.3     |
| 1 Jun 91  | 177.8      | 174.3     | 6 Jul 91  | 177.0      | 169.4     |
| 2 Jun 91  | 177.2      | 174.6     | 7 Jul 91  | 177.4      | 170.2     |
| 3 Jun 91  | 177.6      | 175.0     | 8 Jul 91  | 177.8      | 175.8     |
| 4 Jun 91  | 178.3      | 175.6     | 9 Jul 91  | 180.7      | 174.3     |

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TABLE A-3 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 10 Jul 91 | 179.5      | 171.7     | 14 Aug 91 | 179.5      | 171.9     |
| 11 Jul 91 | 177.8      | 169.0     | 15 Aug 91 | 179.3      | 171.9     |
| 12 Jul 91 | 177.4      | 166.9     | 16 Aug 91 | 179.9      | 171.9     |
| 13 Jul 91 | 179.1      | 169.2     | 17 Aug 91 | 180.5      | 170.4     |
| 14 Jul 91 | 181.1      | 172.3     | 18 Aug 91 | 179.9      | 170.0     |
| 15 Jul 91 | 178.9      | 172.7     | 19 Aug 91 | 179.5      | 169.8     |
| 16 Jul 91 | 179.3      | 169.2     | 20 Aug 91 | 188.5      | 176.4     |
| 17 Jul 91 | 178.3      | 171.1     | 21 Aug 91 | 185.9      | 169.2     |
| 18 Jul 91 | 180.1      | 170.6     | 22 Aug 91 | 171.9      | 154.6     |
| 19 Jul 91 | 181.3      | 172.7     | 23 Aug 91 | 161.0      | 149.1     |
| 20 Jul 91 | 180.5      | 172.3     | 24 Aug 91 | 170.4      | 158.1     |
| 21 Jul 91 | 177.6      | 169.6     | 25 Aug 91 | 190.4      | 170.6     |
| 22 Jul 91 | 177.8      | 169.8     | 26 Aug 91 | 198.4      | 189.8     |
| 23 Jul 91 | 179.1      | 169.4     | 27 Aug 91 | 198.4      | 176.6     |
| 24 Jul 91 | 179.5      | 171.1     | 28 Aug 91 | 180.3      | 171.9     |
| 25 Jul 91 | 179.7      | 171.1     | 29 Aug 91 | 177.4      | 167.2     |
| 26 Jul 91 | 177.6      | 168.4     | 30 Aug 91 | 178.7      | 168.0     |
| 27 Jul 91 | 174.8      | 166.9     | 31 Aug 91 | 181.5      | 171.3     |
| 28 Jul 91 | 176.6      | 166.7     | 1 Sep 91  | 179.5      | 169.8     |
| 29 Jul 91 | 177.2      | 164.3     | 2 Sep 91  | 177.0      | 166.9     |
| 30 Jul 91 | 177.0      | 167.4     | 3 Sep 91  | 176.2      | 166.7     |
| 31 Jul 91 | 176.8      | 171.5     | 4 Sep 91  | 179.9      | 168.6     |
| 1 Aug 91  | 177.2      | 170.6     | 5 Sep 91  | 182.2      | 175.6     |
| 2 Aug 91  | 178.9      | 171.1     | 6 Sep 91  | 181.3      | 176.8     |
| 3 Aug 91  | 180.5      | 170.6     | 7 Sep 91  | 180.1      | 172.9     |
| 4 Aug 91  | 180.5      | 172.7     | 8 Sep 91  | 182.2      | 173.9     |
| 5 Aug 91  | 182.4      | 173.5     | 9 Sep 91  | 185.9      | 180.7     |
| 6 Aug 91  | 181.8      | 172.9     | 10 Sep 91 | 183.2      | 178.3     |
| 7 Aug 91  | 179.3      | 168.2     | 11 Sep 91 | 179.5      | 176.2     |
| 8 Aug 91  | 176.6      | 164.9     | 12 Sep 91 | 178.7      | 173.3     |
| 9 Aug 91  | 179.3      | 168.8     | 13 Sep 91 | 179.1      | 172.1     |
| 10 Aug 91 | 181.1      | 171.5     | 14 Sep 91 | 179.7      | 173.1     |
| 11 Aug 91 | 176.2      | 167.8     | 15 Sep 91 | 177.4      | 171.3     |
| 12 Aug 91 | 175.2      | 172.5     | 16 Sep 91 | 178.7      | 170.0     |
| 13 Aug 91 | 179.1      | 169.8     | 17 Sep 91 | 178.3      | 172.9     |

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TABLE A-3 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 18 Sep 91 | 180.1      | 169.0     | 25 Sep 91 | 177.4      | 168.4     |
| 19 Sep 91 | 178.7      | 170.6     | 26 Sep 91 | 178.7      | 170.6     |
| 20 Sep 91 | 178.5      | 171.5     | 27 Sep 91 | 179.3      | 173.3     |
| 21 Sep 91 | 179.1      | 172.3     | 28 Sep 91 | 179.9      | 172.3     |
| 22 Sep 91 | 175.8      | 170.4     | 29 Sep 91 | 177.0      | 167.6     |
| 23 Sep 91 | 176.0      | 170.9     | 30 Sep 91 | 175.2      | 167.4     |
| 24 Sep 91 | 176.4      | 168.0     |           |            |           |

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TABLE A-4. 4A-2 and 4A-3 (Schober's Resort Wells) Steam Flow Data.

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 1 Oct 90  | 1336.9     | 1329.3    | 5 Nov 90  | 1347.4     | 1306.7    |
| 2 Oct 90  | 1339.9     | 1314.3    | 6 Nov 90  | 1315.8     | 1290.1    |
| 3 Oct 90  | 1335.4     | 1309.7    | 7 Nov 90  | 1326.3     | 1288.6    |
| 4 Oct 90  | 1333.9     | 1306.7    | 8 Nov 90  | 1333.9     | 1294.6    |
| 5 Oct 90  | 1338.4     | 1317.3    | 9 Nov 90  | 1335.4     | 1305.2    |
| 6 Oct 90  | 1349.0     | 1318.8    | 10 Nov 90 | 1332.4     | 1306.7    |
| 7 Oct 90  | 1347.4     | 1312.7    | 11 Nov 90 | 1330.8     | 1308.2    |
| 8 Oct 90  | 1330.8     | 1296.1    | 12 Nov 90 | 1338.4     | 1303.7    |
| 9 Oct 90  | 1327.8     | 1299.2    | 13 Nov 90 | 1339.9     | 1308.2    |
| 10 Oct 90 | 1335.4     | 1303.7    | 14 Nov 90 | 1344.4     | 1314.3    |
| 11 Oct 90 | 1335.4     | 1311.2    | 15 Nov 90 | 1335.4     | 1314.3    |
| 12 Oct 90 | 1333.9     | 1311.2    | 16 Nov 90 | 1339.9     | 1314.3    |
| 13 Oct 90 | 1338.4     | 1309.7    | 17 Nov 90 | 1341.4     | 1318.8    |
| 14 Oct 90 | 1332.4     | 1309.7    | 18 Nov 90 | 1338.4     | 1314.3    |
| 15 Oct 90 | 1332.4     | 1309.7    | 19 Nov 90 | 1332.4     | 1315.8    |
| 16 Oct 90 | 1332.4     | 1311.2    | 20 Nov 90 | 1341.4     | 1308.2    |
| 17 Oct 90 | 1330.8     | 1302.2    | 21 Nov 90 | 1317.3     | 1300.7    |
| 18 Oct 90 | 1332.4     | 1305.2    | 22 Nov 90 | 1332.4     | 1294.6    |
| 19 Oct 90 | 1336.9     | 1303.7    | 23 Nov 90 | 1338.4     | 1299.2    |
| 20 Oct 90 | 1327.8     | 1297.7    | 24 Nov 90 | 1341.4     | 1311.2    |
| 21 Oct 90 | 1324.8     | 1294.6    | 25 Nov 90 | 1352.0     | 1308.2    |
| 22 Oct 90 | 1330.8     | 1302.2    | 3 Dec 90  | 1320.3     | 1302.2    |
| 23 Oct 90 | 1329.3     | 1300.7    | 4 Dec 90  | 1326.3     | 1293.1    |
| 24 Oct 90 | 1324.8     | 1305.2    | 5 Dec 90  | 1339.9     | 1305.2    |
| 25 Oct 90 | 1330.8     | 1300.7    | 6 Dec 90  | 1338.4     | 1300.7    |
| 26 Oct 90 | 1329.3     | 1305.2    | 7 Dec 90  | 1332.4     | 1308.2    |
| 27 Oct 90 | 1326.3     | 1302.2    | 8 Dec 90  | 1335.4     | 1306.7    |
| 28 Oct 90 | 1332.4     | 1302.2    | 9 Dec 90  | 1344.4     | 1309.7    |
| 29 Oct 90 | 1333.9     | 1299.2    | 10 Dec 90 | 1347.4     | 1308.2    |
| 30 Oct 90 | 1333.9     | 1299.2    | 11 Dec 90 | 1349.0     | 1324.8    |
| 31 Oct 90 | 1339.9     | 1303.7    | 12 Dec 90 | 1330.8     | 1312.7    |
| 1 Nov 90  | 1336.9     | 1297.7    | 13 Dec 90 | 1335.4     | 1308.2    |
| 2 Nov 90  | 1312.7     | 1290.1    | 14 Dec 90 | 1332.4     | 1308.2    |
| 3 Nov 90  | 1330.8     | 1291.6    | 15 Dec 90 | 1335.4     | 1315.8    |
| 4 Nov 90  | 1332.4     | 1294.6    | 16 Dec 90 | 1332.4     | 1315.8    |

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TABLE A-4 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 17 Dec 90 | 1327.8     | 1306.7    | 21 Jan 91 | 1288.6     | 1275.0    |
| 18 Dec 90 | 1361.0     | 1306.7    | 22 Jan 91 | 1296.1     | 1273.5    |
| 19 Dec 90 | 1356.5     | 1318.8    | 23 Jan 91 | 1291.6     | 1276.5    |
| 20 Dec 90 | 1324.8     | 1311.2    | 24 Jan 91 | 1291.6     | 1278.0    |
| 21 Dec 90 | 1314.3     | 1293.1    | 25 Jan 91 | 1305.2     | 1284.1    |
| 22 Dec 90 | 1302.2     | 1291.6    | 26 Jan 91 | 1296.1     | 1284.1    |
| 23 Dec 90 | 1312.7     | 1293.1    | 27 Jan 91 | 1300.7     | 1284.1    |
| 24 Dec 90 | 1333.9     | 1302.2    | 28 Jan 91 | 1303.7     | 1282.6    |
| 25 Dec 90 | 1320.3     | 1306.7    | 29 Jan 91 | 1291.6     | 1275.0    |
| 26 Dec 90 | 1327.8     | 1305.2    | 30 Jan 91 | 1294.6     | 1273.5    |
| 27 Dec 90 | 1329.3     | 1300.7    | 31 Jan 91 | 1293.1     | 1270.5    |
| 28 Dec 90 | 1339.9     | 1311.2    | 1 Feb 91  | 1308.2     | 1278.0    |
| 29 Dec 90 | 1324.8     | 1297.7    | 2 Feb 91  | 1294.6     | 1273.5    |
| 30 Dec 90 | 1314.3     | 1290.1    | 3 Feb 91  | 1297.7     | 1270.5    |
| 31 Dec 90 | 1312.7     | 1291.6    | 4 Feb 91  | 1294.6     | 1269.0    |
| 1 Jan 91  | 1318.8     | 1297.7    | 5 Feb 91  | 1306.7     | 1269.0    |
| 2 Jan 91  | 1324.8     | 1300.7    | 6 Feb 91  | 1302.2     | 1273.5    |
| 3 Jan 91  | 1321.8     | 1303.7    | 7 Feb 91  | 1297.7     | 1275.0    |
| 4 Jan 91  | 1317.3     | 1303.7    | 8 Feb 91  | 1296.1     | 1269.0    |
| 5 Jan 91  | 1321.8     | 1303.7    | 9 Feb 91  | 1297.7     | 1267.5    |
| 6 Jan 91  | 1306.7     | 1293.1    | 10 Feb 91 | 1299.2     | 1272.0    |
| 7 Jan 91  | 1317.3     | 1291.6    | 11 Feb 91 | 1290.1     | 1275.0    |
| 8 Jan 91  | 1318.8     | 1297.7    | 12 Feb 91 | 1297.7     | 1267.5    |
| 9 Jan 91  | 1312.7     | 1294.6    | 13 Feb 91 | 1299.2     | 1266.0    |
| 10 Jan 91 | 1309.7     | 1287.1    | 14 Feb 91 | 1294.6     | 1270.5    |
| 11 Jan 91 | 1311.2     | 1288.6    | 15 Feb 91 | 1302.2     | 1275.0    |
| 12 Jan 91 | 1309.7     | 1293.1    | 16 Feb 91 | 1305.2     | 1272.0    |
| 13 Jan 91 | 1306.7     | 1288.6    | 17 Feb 91 | 1290.1     | 1264.5    |
| 14 Jan 91 | 1305.2     | 1282.6    | 18 Feb 91 | 1278.0     | 1256.9    |
| 15 Jan 91 | 1311.2     | 1272.0    | 19 Feb 91 | 1302.2     | 1255.4    |
| 16 Jan 91 | 1287.1     | 1276.5    | 20 Feb 91 | 1345.9     | 1293.1    |
| 17 Jan 91 | 1305.2     | 1275.0    | 21 Feb 91 | 1352.0     | 1332.4    |
| 18 Jan 91 | 1303.7     | 1287.1    | 22 Feb 91 | 1358.0     | 1335.4    |
| 19 Jan 91 | 1302.2     | 1291.6    | 23 Feb 91 | 1355.0     | 1341.4    |
| 20 Jan 91 | 1303.7     | 1287.1    | 24 Feb 91 | 1349.0     | 1332.4    |

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TABLE A-4 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 25 Feb 91 | 1349.0     | 1332.4    | 1 Apr 91  | 1278.0     | 1237.3    |
| 26 Feb 91 | 1359.5     | 1339.9    | 2 Apr 91  | 1272.0     | 1225.2    |
| 27 Feb 91 | 1364.0     | 1318.8    | 3 Apr 91  | 1279.5     | 1249.4    |
| 28 Feb 91 | 1332.4     | 1311.2    | 4 Apr 91  | 1279.5     | 1244.8    |
| 1 Mar 91  | 1367.1     | 1269.0    | 5 Apr 91  | 1294.6     | 1255.4    |
| 2 Mar 91  | 1284.1     | 1238.8    | 6 Apr 91  | 1296.1     | 1259.9    |
| 3 Mar 91  | 1284.1     | 1241.8    | 7 Apr 91  | 1276.5     | 1241.8    |
| 4 Mar 91  | 1288.6     | 1249.4    | 8 Apr 91  | 1273.5     | 1232.8    |
| 5 Mar 91  | 1293.1     | 1249.4    | 9 Apr 91  | 1285.6     | 1231.3    |
| 6 Mar 91  | 1290.1     | 1243.3    | 10 Apr 91 | 1287.1     | 1258.4    |
| 7 Mar 91  | 1285.6     | 1246.4    | 11 Apr 91 | 1278.0     | 1222.2    |
| 8 Mar 91  | 1290.1     | 1250.9    | 12 Apr 91 | 1272.0     | 1232.8    |
| 9 Mar 91  | 1291.6     | 1256.9    | 13 Apr 91 | 1278.0     | 1238.8    |
| 10 Mar 91 | 1279.5     | 1240.3    | 14 Apr 91 | 1287.1     | 1243.3    |
| 11 Mar 91 | 1285.6     | 1249.4    | 15 Apr 91 | 1294.6     | 1250.9    |
| 12 Mar 91 | 1291.6     | 1244.8    | 16 Apr 91 | 1285.6     | 1241.8    |
| 13 Mar 91 | 1293.1     | 1253.9    | 17 Apr 91 | 1275.0     | 1238.8    |
| 14 Mar 91 | 1294.6     | 1256.9    | 18 Apr 91 | 1281.1     | 1238.8    |
| 15 Mar 91 | 1273.5     | 1247.9    | 19 Apr 91 | 1284.1     | 1243.3    |
| 16 Mar 91 | 1284.1     | 1244.8    | 20 Apr 91 | 1285.6     | 1255.4    |
| 17 Mar 91 | 1279.5     | 1243.3    | 21 Apr 91 | 1282.6     | 1246.4    |
| 18 Mar 91 | 1293.1     | 1252.4    | 22 Apr 91 | 1281.1     | 1246.4    |
| 19 Mar 91 | 1308.2     | 1262.9    | 23 Apr 91 | 1294.6     | 1250.9    |
| 20 Mar 91 | 1356.5     | 1261.4    | 24 Apr 91 | 1287.1     | 1244.8    |
| 21 Mar 91 | 1339.9     | 1232.8    | 25 Apr 91 | 1290.1     | 1253.9    |
| 22 Mar 91 | 1264.5     | 1223.7    | 26 Apr 91 | 1287.1     | 1241.8    |
| 23 Mar 91 | 1262.9     | 1228.2    | 27 Apr 91 | 1293.1     | 1259.9    |
| 24 Mar 91 | 1272.0     | 1232.8    | 28 Apr 91 | 1282.6     | 1238.8    |
| 25 Mar 91 | 1261.4     | 1226.7    | 29 Apr 91 | 1293.1     | 1247.9    |
| 26 Mar 91 | 1276.5     | 1220.7    | 30 Apr 91 | 1287.1     | 1246.4    |
| 27 Mar 91 | 1231.3     | 1213.2    | 1 May 91  | 1287.1     | 1252.4    |
| 28 Mar 91 | 1259.9     | 1216.2    | 2 May 91  | 1287.1     | 1246.4    |
| 29 Mar 91 | 1272.0     | 1231.3    | 3 May 91  | 1287.1     | 1241.8    |
| 30 Mar 91 | 1266.0     | 1243.3    | 4 May 91  | 1284.1     | 1249.4    |
| 31 Mar 91 | 1270.5     | 1234.3    | 5 May 91  | 1279.5     | 1244.8    |



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TABLE A-4 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 6 May 91  | 1302.2     | 1266.0    | 10 Jun 91 | 1326.3     | 1305.2    |
| 7 May 91  | 1299.2     | 1261.4    | 11 Jun 91 | 1335.4     | 1312.7    |
| 8 May 91  | 1302.2     | 1264.5    | 12 Jun 91 | 1330.8     | 1297.7    |
| 9 May 91  | 1285.6     | 1249.4    | 13 Jun 91 | 1326.3     | 1297.7    |
| 10 May 91 | 1288.6     | 1246.4    | 14 Jun 91 | 1321.8     | 1288.6    |
| 11 May 91 | 1282.6     | 1241.8    | 15 Jun 91 | 1326.3     | 1296.1    |
| 12 May 91 | 1284.1     | 1246.4    | 16 Jun 91 | 1320.3     | 1293.1    |
| 13 May 91 | 1291.6     | 1253.9    | 17 Jun 91 | 1326.3     | 1300.7    |
| 14 May 91 | 1288.6     | 1249.4    | 18 Jun 91 | 1329.3     | 1311.2    |
| 15 May 91 | 1294.6     | 1256.9    | 19 Jun 91 | 1326.3     | 1305.2    |
| 16 May 91 | 1293.1     | 1258.4    | 20 Jun 91 | 1324.8     | 1296.1    |
| 17 May 91 | 1291.6     | 1247.9    | 21 Jun 91 | 1326.3     | 1294.6    |
| 18 May 91 | 1291.6     | 1244.8    | 22 Jun 91 | 1324.8     | 1297.7    |
| 19 May 91 | 1281.1     | 1246.4    | 23 Jun 91 | 1324.8     | 1288.6    |
| 20 May 91 | 1270.5     | 1244.8    | 24 Jun 91 | 1321.8     | 1293.1    |
| 21 May 91 | 1288.6     | 1262.9    | 25 Jun 91 | 1321.8     | 1290.1    |
| 22 May 91 | 1279.5     | 1256.9    | 26 Jun 91 | 1320.3     | 1294.6    |
| 23 May 91 | 1297.7     | 1253.9    | 27 Jun 91 | 1315.8     | 1290.1    |
| 24 May 91 | 1293.1     | 1258.4    | 28 Jun 91 | 1314.3     | 1290.1    |
| 25 May 91 | 1303.7     | 1266.0    | 29 Jun 91 | 1320.3     | 1291.6    |
| 26 May 91 | 1305.2     | 1276.5    | 30 Jun 91 | 1315.8     | 1290.1    |
| 27 May 91 | 1302.2     | 1272.0    | 1 Jul 91  | 1333.9     | 1309.7    |
| 28 May 91 | 1297.7     | 1253.9    | 2 Jul 91  | 1329.3     | 1311.2    |
| 29 May 91 | 1308.2     | 1266.0    | 3 Jul 91  | 1330.8     | 1311.2    |
| 30 May 91 | 1306.7     | 1249.4    | 4 Jul 91  | 1332.4     | 1312.7    |
| 31 May 91 | 1282.6     | 1249.4    | 5 Jul 91  | 1327.8     | 1311.2    |
| 1 Jun 91  | 1317.3     | 1262.9    | 6 Jul 91  | 1323.3     | 1305.2    |
| 2 Jun 91  | 1314.3     | 1284.1    | 7 Jul 91  | 1323.3     | 1296.1    |
| 3 Jun 91  | 1323.3     | 1282.6    | 8 Jul 91  | 1315.8     | 1291.6    |
| 4 Jun 91  | 1321.8     | 1291.6    | 9 Jul 91  | 1326.3     | 1302.2    |
| 5 Jun 91  | 1323.3     | 1294.6    | 10 Jul 91 | 1324.8     | 1308.2    |
| 6 Jun 91  | 1327.8     | 1290.1    | 11 Jul 91 | 1321.8     | 1306.7    |
| 7 Jun 91  | 1326.3     | 1290.1    | 12 Jul 91 | 1311.2     | 1305.2    |
| 8 Jun 91  | 1327.8     | 1300.7    | 13 Jul 91 | 1321.8     | 1305.2    |
| 9 Jun 91  | 1329.3     | 1297.7    | 14 Jul 91 | 1323.3     | 1303.7    |

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TABLE A-4 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 15 Jul 91 | 1314.3     | 1300.7    | 19 Aug 91 | 1306.7     | 1291.6    |
| 16 Jul 91 | 1317.3     | 1300.7    | 20 Aug 91 | 1309.7     | 1296.1    |
| 17 Jul 91 | 1321.8     | 1300.7    | 21 Aug 91 | 1306.7     | 1291.6    |
| 18 Jul 91 | 1318.8     | 1305.2    | 22 Aug 91 | 1308.2     | 1285.6    |
| 19 Jul 91 | 1314.3     | 1306.7    | 23 Aug 91 | 1311.2     | 1293.1    |
| 20 Jul 91 | 1318.8     | 1290.1    | 24 Aug 91 | 1308.2     | 1297.7    |
| 21 Jul 91 | 1312.7     | 1294.6    | 25 Aug 91 | 1318.8     | 1291.6    |
| 22 Jul 91 | 1309.7     | 1294.6    | 26 Aug 91 | 1306.7     | 1293.1    |
| 23 Jul 91 | 1320.3     | 1296.1    | 27 Aug 91 | 1308.2     | 1287.1    |
| 24 Jul 91 | 1320.3     | 1293.1    | 28 Aug 91 | 1303.7     | 1278.0    |
| 25 Jul 91 | 1314.3     | 1282.6    | 29 Aug 91 | 1305.2     | 1278.0    |
| 26 Jul 91 | 1308.2     | 1290.1    | 30 Aug 91 | 1305.2     | 1288.6    |
| 27 Jul 91 | 1311.2     | 1282.6    | 31 Aug 91 | 1303.7     | 1282.6    |
| 28 Jul 91 | 1308.2     | 1294.6    | 1 Sep 91  | 1308.2     | 1290.1    |
| 29 Jul 91 | 1315.8     | 1293.1    | 2 Sep 91  | 1300.7     | 1285.6    |
| 30 Jul 91 | 1312.7     | 1294.6    | 3 Sep 91  | 1302.2     | 1284.1    |
| 31 Jul 91 | 1302.2     | 1282.6    | 4 Sep 91  | 1309.7     | 1287.1    |
| 1 Aug 91  | 1312.7     | 1288.6    | 5 Sep 91  | 1379.1     | 1284.1    |
| 2 Aug 91  | 1315.8     | 1294.6    | 6 Sep 91  | 1377.6     | 1312.7    |
| 3 Aug 91  | 1311.2     | 1300.7    | 7 Sep 91  | 1327.8     | 1297.7    |
| 4 Aug 91  | 1308.2     | 1284.1    | 8 Sep 91  | 1330.8     | 1308.2    |
| 5 Aug 91  | 1306.7     | 1287.1    | 9 Sep 91  | 1329.3     | 1308.2    |
| 6 Aug 91  | 1311.2     | 1287.1    | 10 Sep 91 | 1321.8     | 1297.7    |
| 7 Aug 91  | 1305.2     | 1281.1    | 11 Sep 91 | 1320.3     | 1305.2    |
| 8 Aug 91  | 1309.7     | 1287.1    | 12 Sep 91 | 1318.8     | 1303.7    |
| 9 Aug 91  | 1312.7     | 1299.2    | 13 Sep 91 | 1314.3     | 1302.2    |
| 10 Aug 91 | 1315.8     | 1299.2    | 14 Sep 91 | 1318.8     | 1296.1    |
| 11 Aug 91 | 1303.7     | 1293.1    | 15 Sep 91 | 1317.3     | 1302.2    |
| 12 Aug 91 | 1300.7     | 1293.1    | 16 Sep 91 | 1317.3     | 1303.7    |
| 13 Aug 91 | 1308.2     | 1293.1    | 17 Sep 91 | 1327.8     | 1305.2    |
| 14 Aug 91 | 1305.2     | 1296.1    | 18 Sep 91 | 1324.8     | 1305.2    |
| 15 Aug 91 | 1300.7     | 1287.1    | 19 Sep 91 | 1320.3     | 1303.7    |
| 16 Aug 91 | 1297.7     | 1282.6    | 20 Sep 91 | 1318.8     | 1302.2    |
| 17 Aug 91 | 1306.7     | 1282.6    | 21 Sep 91 | 1312.7     | 1296.1    |
| 18 Aug 91 | 1306.7     | 1293.1    | 22 Sep 91 | 1311.2     | 1291.6    |

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TABLE A-4 (Cont'd)

| Date      | High, lb/h | Low, lb/h | Date      | High, lb/h | Low, lb/h |
|-----------|------------|-----------|-----------|------------|-----------|
| 23 Sep 91 | 1311.2     | 1290.1    | 27 Sep 91 | 1317.3     | 1300.7    |
| 24 Sep 91 | 1312.7     | 1291.6    | 28 Sep 91 | 1309.7     | 1294.6    |
| 25 Sep 91 | 1314.3     | 1299.2    | 29 Sep 91 | 1311.2     | 1293.1    |
| 26 Sep 91 | 1317.3     | 1297.7    | 30 Sep 91 | 1311.2     | 1291.6    |

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Appendix B  
DAILY TEMPERATURE DATA

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TABLE B-1. 4P-2 (Two-Inch Steam Well) Steam Temperature.

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 9 Oct 90  | 207      | 196     | 15 Nov 90 | 214      | 195     |
| 10 Oct 90 | 213      | 194     | 16 Nov 90 | 218      | 200     |
| 11 Oct 90 | 213      | 199     | 17 Nov 90 | 220      | 201     |
| 12 Oct 90 | 215      | 199     | 18 Nov 90 | 215      | 201     |
| 13 Oct 90 | 213      | 200     | 19 Nov 90 | 214      | 197     |
| 14 Oct 90 | 214      | 198     | 20 Nov 90 | 211      | 196     |
| 15 Oct 90 | 212      | 199     | 21 Nov 90 | 208      | 195     |
| 16 Oct 90 | 212      | 197     | 22 Nov 90 | 209      | 193     |
| 17 Oct 90 | 209      | 199     | 23 Nov 90 | 214      | 196     |
| 18 Oct 90 | 210      | 198     | 24 Nov 90 | 214      | 199     |
| 19 Oct 90 | 208      | 189     | 25 Nov 90 | 213      | 193     |
| 20 Oct 90 | 208      | 188     | 26 Nov 90 | 194      | 192     |
| 21 Oct 90 | 209      | 195     | 27 Nov 90 | 202      | 191     |
| 22 Oct 90 | 218      | 194     | 28 Nov 90 | 206      | 192     |
| 23 Oct 90 | 212      | 198     | 29 Nov 90 | 210      | 193     |
| 24 Oct 90 | 210      | 197     | 30 Nov 90 | 208      | 199     |
| 25 Oct 90 | 214      | 195     | 1 Dec 90  | 213      | 198     |
| 26 Oct 90 | 211      | 196     | 2 Dec 90  | 212      | 194     |
| 29 Oct 90 | 208      | 205     | 3 Dec 90  | 209      | 192     |
| 30 Oct 90 | 215      | 197     | 4 Dec 90  | 213      | 195     |
| 31 Oct 90 | 219      | 200     | 5 Dec 90  | 211      | 195     |
| 1 Nov 90  | 209      | 192     | 6 Dec 90  | 208      | 196     |
| 2 Nov 90  | 197      | 181     | 7 Dec 90  | 209      | 197     |
| 3 Nov 90  | 207      | 192     | 8 Dec 90  | 209      | 197     |
| 4 Nov 90  | 217      | 198     | 9 Dec 90  | 211      | 196     |
| 5 Nov 90  | 214      | 199     | 10 Dec 90 | 210      | 196     |
| 6 Nov 90  | 206      | 181     | 11 Dec 90 | 207      | 192     |
| 7 Nov 90  | 206      | 179     | 12 Dec 90 | 205      | 193     |
| 8 Nov 90  | 213      | 195     | 13 Dec 90 | 205      | 193     |
| 9 Nov 90  | 217      | 199     | 14 Dec 90 | 205      | 188     |
| 10 Nov 90 | 220      | 203     | 15 Dec 90 | 205      | 189     |
| 11 Nov 90 | 215      | 200     | 16 Dec 90 | 198      | 182     |
| 12 Nov 90 | 216      | 200     | 17 Dec 90 | 201      | 182     |
| 13 Nov 90 | 214      | 198     | 18 Dec 90 | 207      | 190     |
| 14 Nov 90 | 212      | 197     | 19 Dec 90 | 197      | 182     |

## NWC TP 7194

TABLE B-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 20 Dec 90 | 192      | 182     | 24 Jan 91 | 208      | 189     |
| 21 Dec 90 | 196      | 184     | 25 Jan 91 | 209      | 195     |
| 22 Dec 90 | 197      | 184     | 26 Jan 91 | 208      | 194     |
| 23 Dec 90 | 200      | 184     | 27 Jan 91 | 206      | 193     |
| 24 Dec 90 | 198      | 185     | 28 Jan 91 | 205      | 192     |
| 25 Dec 90 | 201      | 186     | 29 Jan 91 | 203      | 191     |
| 26 Dec 90 | 203      | 189     | 30 Jan 91 | 206      | 190     |
| 27 Dec 90 | 207      | 189     | 31 Jan 91 | 207      | 192     |
| 28 Dec 90 | 204      | 190     | 1 Feb 91  | 213      | 196     |
| 29 Dec 90 | 205      | 189     | 2 Feb 91  | 212      | 197     |
| 30 Dec 90 | 205      | 190     | 3 Feb 91  | 210      | 196     |
| 31 Dec 90 | 207      | 189     | 4 Feb 91  | 212      | 196     |
| 1 Jan 91  | 210      | 192     | 5 Feb 91  | 211      | 196     |
| 2 Jan 91  | 207      | 194     | 6 Feb 91  | 210      | 194     |
| 3 Jan 91  | 200      | 192     | 7 Feb 91  | 209      | 195     |
| 4 Jan 91  | 200      | 194     | 8 Feb 91  | 218      | 197     |
| 5 Jan 91  | 207      | 193     | 9 Feb 91  | 215      | 201     |
| 6 Jan 91  | 205      | 194     | 10 Feb 91 | 213      | 200     |
| 7 Jan 91  | 206      | 194     | 11 Feb 91 | 213      | 201     |
| 8 Jan 91  | 205      | 194     | 12 Feb 91 | 217      | 202     |
| 9 Jan 91  | 202      | 192     | 13 Feb 91 | 213      | 202     |
| 10 Jan 91 | 206      | 192     | 14 Feb 91 | 212      | 202     |
| 11 Jan 91 | 209      | 196     | 15 Feb 91 | 212      | 203     |
| 12 Jan 91 | 211      | 197     | 16 Feb 91 | 210      | 182     |
| 13 Jan 91 | 211      | 197     | 17 Feb 91 | 210      | 183     |
| 14 Jan 91 | 209      | 193     | 18 Feb 91 | 207      | 193     |
| 15 Jan 91 | 207      | 189     | 19 Feb 91 | 211      | 195     |
| 16 Jan 91 | 196      | 187     | 20 Feb 91 | 215      | 201     |
| 17 Jan 91 | 200      | 186     | 21 Feb 91 | 214      | 200     |
| 18 Jan 91 | 208      | 191     | 22 Feb 91 | 215      | 201     |
| 19 Jan 91 | 208      | 193     | 23 Feb 91 | 211      | 197     |
| 20 Jan 91 | 205      | 186     | 24 Feb 91 | 209      | 198     |
| 21 Jan 91 | 192      | 181     | 25 Feb 91 | 211      | 196     |
| 22 Jan 91 | 206      | 187     | 26 Feb 91 | 215      | 201     |
| 23 Jan 91 | 208      | 192     | 27 Feb 91 | 209      | 195     |

## NWC TP 7194

TABLE B-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 28 Feb 91 | 200      | 193     | 4 Apr 91  | 214      | 201     |
| 1 Mar 91  | 203      | 192     | 5 Apr 91  | 216      | 203     |
| 2 Mar 91  | 207      | 192     | 6 Apr 91  | 215      | 203     |
| 3 Mar 91  | 209      | 198     | 7 Apr 91  | 212      | 201     |
| 4 Mar 91  | 205      | 195     | 8 Apr 91  | 207      | 202     |
| 5 Mar 91  | 208      | 194     | 9 Apr 91  | 218      | 204     |
| 6 Mar 91  | 209      | 194     | 10 Apr 91 | 211      | 193     |
| 7 Mar 91  | 210      | 195     | 11 Apr 91 | 197      | 186     |
| 8 Mar 91  | 211      | 200     | 12 Apr 91 | 210      | 193     |
| 9 Mar 91  | 209      | 200     | 13 Apr 91 | 209      | 197     |
| 10 Mar 91 | 209      | 193     | 14 Apr 91 | 209      | 199     |
| 11 Mar 91 | 206      | 193     | 15 Apr 91 | 211      | 197     |
| 12 Mar 91 | 210      | 196     | 16 Apr 91 | 212      | 202     |
| 13 Mar 91 | 207      | 197     | 17 Apr 91 | 212      | 201     |
| 14 Mar 91 | 206      | 190     | 18 Apr 91 | 213      | 200     |
| 15 Mar 91 | 202      | 193     | 19 Apr 91 | 215      | 202     |
| 16 Mar 91 | 207      | 193     | 20 Apr 91 | 213      | 202     |
| 17 Mar 91 | 204      | 195     | 21 Apr 91 | 213      | 202     |
| 18 Mar 91 | 207      | 193     | 22 Apr 91 | 210      | 202     |
| 19 Mar 91 | 204      | 192     | 23 Apr 91 | 217      | 203     |
| 20 Mar 91 | 203      | 192     | 24 Apr 91 | 213      | 204     |
| 21 Mar 91 | 208      | 197     | 25 Apr 91 | 212      | 202     |
| 22 Mar 91 | 207      | 201     | 26 Apr 91 | 215      | 203     |
| 23 Mar 91 | 208      | 198     | 27 Apr 91 | 216      | 203     |
| 24 Mar 91 | 209      | 187     | 28 Apr 91 | 214      | 204     |
| 25 Mar 91 | 204      | 195     | 29 Apr 91 | 213      | 203     |
| 26 Mar 91 | 203      | 195     | 30 Apr 91 | 214      | 206     |
| 27 Mar 91 | 205      | 194     | 1 May 91  | 212      | 199     |
| 28 Mar 91 | 209      | 199     | 2 May 91  | 211      | 198     |
| 29 Mar 91 | 208      | 194     | 3 May 91  | 213      | 199     |
| 30 Mar 91 | 212      | 200     | 4 May 91  | 213      | 201     |
| 31 Mar 91 | 212      | 200     | 5 May 91  | 214      | 203     |
| 1 Apr 91  | 212      | 202     | 6 May 91  | 215      | 202     |
| 2 Apr 91  | 214      | 201     | 7 May 91  | 219      | 210     |
| 3 Apr 91  | 216      | 200     | 8 May 91  | 218      | 206     |

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TABLE B-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 9 May 91  | 209      | 200     | 19 Jun 91 | 219      | 208     |
| 10 May 91 | 209      | 195     | 20 Jun 91 | 216      | 205     |
| 11 May 91 | 212      | 199     | 21 Jun 91 | 219      | 207     |
| 12 May 91 | 214      | 202     | 22 Jun 91 | 220      | 208     |
| 13 May 91 | 216      | 204     | 23 Jun 91 | 219      | 209     |
| 14 May 91 | 214      | 201     | 24 Jun 91 | 219      | 207     |
| 15 May 91 | 215      | 204     | 25 Jun 91 | 219      | 208     |
| 16 May 91 | 214      | 204     | 26 Jun 91 | 220      | 209     |
| 17 May 91 | 214      | 202     | 27 Jun 91 | 214      | 207     |
| 18 May 91 | 212      | 201     | 28 Jun 91 | 214      | 209     |
| 19 May 91 | 213      | 202     | 29 Jun 91 | 218      | 208     |
| 20 May 91 | 211      | 203     | 30 Jun 91 | 222      | 208     |
| 21 May 91 | 211      | 208     | 1 Jul 91  | 223      | 208     |
| 22 May 91 | 217      | 204     | 2 Jul 91  | 226      | 217     |
| 23 May 91 | 216      | 203     | 3 Jul 91  | 225      | 214     |
| 24 May 91 | 216      | 204     | 4 Jul 91  | 226      | 214     |
| 25 May 91 | 217      | 207     | 5 Jul 91  | 225      | 213     |
| 26 May 91 | 219      | 206     | 6 Jul 91  | 222      | 212     |
| 27 May 91 | 219      | 206     | 7 Jul 91  | 224      | 208     |
| 28 May 91 | 218      | 200     | 8 Jul 91  | 216      | 209     |
| 29 May 91 | 219      | 200     | 9 Jul 91  | 221      | 209     |
| 30 May 91 | 216      | 199     | 10 Jul 91 | 221      | 211     |
| 31 May 91 | 211      | 197     | 11 Jul 91 | 222      | 210     |
| 1 Jun 91  | 215      | 202     | 12 Jul 91 | 224      | 211     |
| 2 Jun 91  | 218      | 205     | 13 Jul 91 | 222      | 210     |
| 3 Jun 91  | 220      | 207     | 14 Jul 91 | 220      | 211     |
| 4 Jun 91  | 220      | 212     | 15 Jul 91 | 220      | 212     |
| 5 Jun 91  | 219      | 212     | 16 Jul 91 | 222      | 211     |
| 6 Jun 91  | 220      | 210     | 17 Jul 91 | 220      | 213     |
| 7 Jun 91  | 221      | 211     | 18 Jul 91 | 226      | 212     |
| 8 Jun 91  | 222      | 212     | 19 Jul 91 | 220      | 212     |
| 9 Jun 91  | 224      | 212     | 20 Jul 91 | 219      | 211     |
| 10 Jun 91 | 223      | 213     | 21 Jul 91 | 222      | 211     |
| 17 Jun 91 | 221      | 214     | 22 Jul 91 | 222      | 211     |
| 18 Jun 91 | 222      | 210     | 23 Jul 91 | 223      | 212     |



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TABLE B-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 24 Jul 91 | 223      | 213     | 28 Aug 91 | 220      | 208     |
| 25 Jul 91 | 222      | 212     | 29 Aug 91 | 219      | 206     |
| 26 Jul 91 | 224      | 213     | 30 Aug 91 | 223      | 208     |
| 27 Jul 91 | 224      | 214     | 31 Aug 91 | 225      | 208     |
| 28 Jul 91 | 224      | 214     | 1 Sep 91  | 221      | 210     |
| 29 Jul 91 | 227      | 214     | 2 Sep 91  | 223      | 209     |
| 30 Jul 91 | 224      | 215     | 3 Sep 91  | 223      | 211     |
| 31 Jul 91 | 220      | 213     | 4 Sep 91  | 224      | 212     |
| 1 Aug 91  | 223      | 216     | 5 Sep 91  | 219      | 206     |
| 2 Aug 91  | 224      | 213     | 6 Sep 91  | 217      | 203     |
| 3 Aug 91  | 224      | 214     | 7 Sep 91  | 220      | 205     |
| 4 Aug 91  | 220      | 213     | 8 Sep 91  | 219      | 209     |
| 5 Aug 91  | 218      | 213     | 9 Sep 91  | 216      | 209     |
| 6 Aug 91  | 219      | 211     | 10 Sep 91 | 217      | 210     |
| 7 Aug 91  | 222      | 210     | 11 Sep 91 | 219      | 210     |
| 8 Aug 91  | 224      | 212     | 12 Sep 91 | 222      | 209     |
| 9 Aug 91  | 225      | 212     | 13 Sep 91 | 221      | 209     |
| 10 Aug 91 | 223      | 211     | 14 Sep 91 | 221      | 209     |
| 11 Aug 91 | 221      | 210     | 15 Sep 91 | 219      | 208     |
| 12 Aug 91 | 218      | 212     | 16 Sep 91 | 221      | 208     |
| 13 Aug 91 | 222      | 211     | 17 Sep 91 | 224      | 212     |
| 14 Aug 91 | 222      | 213     | 18 Sep 91 | 225      | 215     |
| 15 Aug 91 | 221      | 211     | 19 Sep 91 | 223      | 214     |
| 16 Aug 91 | 221      | 212     | 20 Sep 91 | 222      | 213     |
| 17 Aug 91 | 223      | 212     | 21 Sep 91 | 222      | 213     |
| 18 Aug 91 | 224      | 211     | 22 Sep 91 | 221      | 212     |
| 19 Aug 91 | 221      | 210     | 23 Sep 91 | 221      | 213     |
| 20 Aug 91 | 223      | 211     | 24 Sep 91 | 222      | 212     |
| 21 Aug 91 | 223      | 213     | 25 Sep 91 | 222      | 213     |
| 22 Aug 91 | 223      | 210     | 26 Sep 91 | 219      | 213     |
| 23 Aug 91 | 222      | 212     | 27 Sep 91 | 222      | 211     |
| 24 Aug 91 | 223      | 213     | 28 Sep 91 | 221      | 211     |
| 25 Aug 91 | 226      | 213     | 29 Sep 91 | 223      | 212     |
| 26 Aug 91 | 219      | 211     | 30 Sep 91 | 224      | 215     |
| 27 Aug 91 | 218      | 208     |           |          |         |

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TABLE B-2. 4A-2 and 4A-3 (Schober's Resort Wells) Steam Temperature.

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 1 Oct 90  | 223      | 222     | 5 Nov 90  | 226      | 221     |
| 2 Oct 90  | 226      | 222     | 6 Nov 90  | 221      | 217     |
| 3 Oct 90  | 225      | 222     | 7 Nov 90  | 222      | 217     |
| 4 Oct 90  | 228      | 223     | 8 Nov 90  | 226      | 220     |
| 5 Oct 90  | 226      | 224     | 9 Nov 90  | 226      | 223     |
| 6 Oct 90  | 227      | 223     | 10 Nov 90 | 227      | 223     |
| 7 Oct 90  | 226      | 222     | 11 Nov 90 | 226      | 222     |
| 8 Oct 90  | 224      | 220     | 12 Nov 90 | 224      | 221     |
| 9 Oct 90  | 224      | 220     | 13 Nov 90 | 224      | 220     |
| 10 Oct 90 | 224      | 222     | 14 Nov 90 | 224      | 221     |
| 11 Oct 90 | 227      | 222     | 15 Nov 90 | 225      | 221     |
| 12 Oct 90 | 227      | 223     | 16 Nov 90 | 225      | 223     |
| 13 Oct 90 | 228      | 224     | 17 Nov 90 | 227      | 222     |
| 14 Oct 90 | 228      | 222     | 18 Nov 90 | 224      | 222     |
| 15 Oct 90 | 225      | 221     | 19 Nov 90 | 223      | 220     |
| 16 Oct 90 | 225      | 222     | 20 Nov 90 | 226      | 220     |
| 17 Oct 90 | 225      | 222     | 21 Nov 90 | 226      | 220     |
| 18 Oct 90 | 224      | 220     | 22 Nov 90 | 226      | 220     |
| 19 Oct 90 | 226      | 222     | 23 Nov 90 | 225      | 221     |
| 20 Oct 90 | 224      | 222     | 24 Nov 90 | 224      | 222     |
| 21 Oct 90 | 224      | 222     | 25 Nov 90 | 224      | 220     |
| 22 Oct 90 | 225      | 221     | 2 Dec 90  | 220      | 220     |
| 23 Oct 90 | 226      | 222     | 3 Dec 90  | 223      | 221     |
| 24 Oct 90 | 226      | 223     | 4 Dec 90  | 222      | 219     |
| 25 Oct 90 | 227      | 223     | 5 Dec 90  | 224      | 219     |
| 26 Oct 90 | 225      | 223     | 6 Dec 90  | 224      | 220     |
| 27 Oct 90 | 227      | 223     | 7 Dec 90  | 225      | 222     |
| 28 Oct 90 | 227      | 222     | 8 Dec 90  | 226      | 223     |
| 29 Oct 90 | 224      | 221     | 9 Dec 90  | 228      | 222     |
| 30 Oct 90 | 227      | 220     | 10 Dec 90 | 225      | 222     |
| 31 Oct 90 | 225      | 221     | 11 Dec 90 | 225      | 220     |
| 1 Nov 90  | 224      | 220     | 12 Dec 90 | 225      | 222     |
| 2 Nov 90  | 223      | 220     | 13 Dec 90 | 225      | 220     |
| 3 Nov 90  | 224      | 220     | 14 Dec 90 | 225      | 222     |
| 4 Nov 90  | 226      | 222     | 15 Dec 90 | 224      | 222     |

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TABLE B-2 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 16 Dec 90 | 223      | 218     | 20 Jan 91 | 224      | 218     |
| 17 Dec 90 | 223      | 217     | 21 Jan 91 | 219      | 214     |
| 18 Dec 90 | 224      | 220     | 22 Jan 91 | 223      | 218     |
| 19 Dec 90 | 224      | 218     | 23 Jan 91 | 224      | 219     |
| 20 Dec 90 | 221      | 216     | 24 Jan 91 | 225      | 219     |
| 21 Dec 90 | 222      | 219     | 25 Jan 91 | 225      | 221     |
| 22 Dec 90 | 222      | 219     | 26 Jan 91 | 225      | 222     |
| 23 Dec 90 | 223      | 219     | 27 Jan 91 | 225      | 220     |
| 24 Dec 90 | 223      | 219     | 28 Jan 91 | 222      | 219     |
| 25 Dec 90 | 226      | 220     | 29 Jan 91 | 226      | 218     |
| 26 Dec 90 | 222      | 219     | 30 Jan 91 | 226      | 219     |
| 27 Dec 90 | 223      | 219     | 31 Jan 91 | 222      | 218     |
| 28 Dec 90 | 223      | 220     | 1 Feb 91  | 225      | 221     |
| 29 Dec 90 | 223      | 220     | 2 Feb 91  | 225      | 221     |
| 30 Dec 90 | 223      | 219     | 3 Feb 91  | 226      | 221     |
| 31 Dec 90 | 223      | 219     | 4 Feb 91  | 225      | 221     |
| 1 Jan 91  | 226      | 220     | 5 Feb 91  | 225      | 221     |
| 2 Jan 91  | 225      | 219     | 6 Feb 91  | 225      | 219     |
| 3 Jan 91  | 222      | 219     | 7 Feb 91  | 226      | 219     |
| 4 Jan 91  | 222      | 219     | 8 Feb 91  | 227      | 222     |
| 5 Jan 91  | 223      | 218     | 9 Feb 91  | 227      | 222     |
| 6 Jan 91  | 223      | 219     | 10 Feb 91 | 224      | 222     |
| 7 Jan 91  | 223      | 219     | 11 Feb 91 | 225      | 219     |
| 8 Jan 91  | 225      | 219     | 12 Feb 91 | 224      | 219     |
| 9 Jan 91  | 223      | 220     | 13 Feb 91 | 225      | 220     |
| 10 Jan 91 | 222      | 219     | 14 Feb 91 | 223      | 219     |
| 11 Jan 91 | 223      | 220     | 15 Feb 91 | 226      | 222     |
| 12 Jan 91 | 224      | 221     | 16 Feb 91 | 226      | 221     |
| 13 Jan 91 | 224      | 221     | 17 Feb 91 | 224      | 218     |
| 14 Jan 91 | 224      | 219     | 18 Feb 91 | 224      | 217     |
| 15 Jan 91 | 226      | 219     | 19 Feb 91 | 226      | 222     |
| 16 Jan 91 | 222      | 217     | 20 Feb 91 | 227      | 221     |
| 17 Jan 91 | 225      | 217     | 21 Feb 91 | 224      | 220     |
| 18 Jan 91 | 226      | 222     | 22 Feb 91 | 225      | 221     |
| 19 Jan 91 | 226      | 222     | 23 Feb 91 | 225      | 220     |

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TABLE B-2 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 24 Feb 91 | 225      | 220     | 31 Mar 91 | 226      | 222     |
| 25 Feb 91 | 225      | 221     | 1 Apr 91  | 224      | 218     |
| 26 Feb 91 | 228      | 222     | 2 Apr 91  | 224      | 221     |
| 27 Feb 91 | 224      | 214     | 3 Apr 91  | 226      | 221     |
| 28 Feb 91 | 219      | 214     | 4 Apr 91  | 225      | 221     |
| 1 Mar 91  | 220      | 216     | 5 Apr 91  | 228      | 224     |
| 2 Mar 91  | 224      | 219     | 6 Apr 91  | 226      | 221     |
| 3 Mar 91  | 226      | 221     | 7 Apr 91  | 225      | 221     |
| 4 Mar 91  | 220      | 217     | 8 Apr 91  | 224      | 219     |
| 5 Mar 91  | 223      | 217     | 9 Apr 91  | 228      | 223     |
| 6 Mar 91  | 224      | 218     | 10 Apr 91 | 228      | 223     |
| 7 Mar 91  | 222      | 217     | 11 Apr 91 | 225      | 220     |
| 8 Mar 91  | 225      | 220     | 12 Apr 91 | 226      | 221     |
| 9 Mar 91  | 224      | 220     | 13 Apr 91 | 226      | 222     |
| 10 Mar 91 | 221      | 218     | 14 Apr 91 | 226      | 221     |
| 11 Mar 91 | 223      | 220     | 15 Apr 91 | 225      | 220     |
| 12 Mar 91 | 224      | 220     | 16 Apr 91 | 225      | 221     |
| 13 Mar 91 | 224      | 217     | 17 Apr 91 | 225      | 221     |
| 14 Mar 91 | 222      | 216     | 18 Apr 91 | 225      | 220     |
| 15 Mar 91 | 223      | 220     | 19 Apr 91 | 226      | 222     |
| 16 Mar 91 | 224      | 220     | 20 Apr 91 | 225      | 221     |
| 17 Mar 91 | 224      | 220     | 21 Apr 91 | 226      | 221     |
| 18 Mar 91 | 223      | 220     | 22 Apr 91 | 224      | 220     |
| 19 Mar 91 | 222      | 218     | 23 Apr 91 | 226      | 221     |
| 20 Mar 91 | 222      | 217     | 24 Apr 91 | 224      | 220     |
| 21 Mar 91 | 222      | 218     | 25 Apr 91 | 226      | 219     |
| 22 Mar 91 | 223      | 219     | 26 Apr 91 | 225      | 220     |
| 23 Mar 91 | 223      | 220     | 27 Apr 91 | 226      | 223     |
| 24 Mar 91 | 223      | 218     | 28 Apr 91 | 226      | 221     |
| 25 Mar 91 | 221      | 217     | 29 Apr 91 | 226      | 222     |
| 26 Mar 91 | 224      | 219     | 30 Apr 91 | 225      | 222     |
| 27 Mar 91 | 222      | 219     | 1 May 91  | 224      | 219     |
| 28 Mar 91 | 224      | 220     | 2 May 91  | 224      | 219     |
| 29 Mar 91 | 226      | 221     | 3 May 91  | 226      | 221     |
| 30 Mar 91 | 225      | 222     | 4 May 91  | 226      | 222     |

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TABLE B-2 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 5 May 91  | 228      | 222     | 9 Jun 91  | 229      | 225     |
| 6 May 91  | 227      | 221     | 10 Jun 91 | 228      | 224     |
| 7 May 91  | 230      | 225     | 11 Jun 91 | 229      | 225     |
| 8 May 91  | 227      | 221     | 12 Jun 91 | 230      | 223     |
| 9 May 91  | 223      | 221     | 13 Jun 91 | 225      | 223     |
| 10 May 91 | 226      | 220     | 14 Jun 91 | 227      | 224     |
| 11 May 91 | 226      | 221     | 15 Jun 91 | 226      | 224     |
| 12 May 91 | 226      | 222     | 16 Jun 91 | 228      | 223     |
| 13 May 91 | 226      | 220     | 17 Jun 91 | 227      | 222     |
| 14 May 91 | 226      | 220     | 18 Jun 91 | 229      | 223     |
| 15 May 91 | 226      | 221     | 19 Jun 91 | 228      | 224     |
| 16 May 91 | 225      | 221     | 20 Jun 91 | 226      | 223     |
| 17 May 91 | 227      | 220     | 21 Jun 91 | 227      | 224     |
| 18 May 91 | 226      | 221     | 22 Jun 91 | 229      | 223     |
| 19 May 91 | 227      | 222     | 23 Jun 91 | 227      | 223     |
| 20 May 91 | 224      | 221     | 24 Jun 91 | 226      | 224     |
| 21 May 91 | 226      | 222     | 25 Jun 91 | 231      | 224     |
| 22 May 91 | 228      | 221     | 26 Jun 91 | 230      | 224     |
| 23 May 91 | 227      | 221     | 27 Jun 91 | 226      | 224     |
| 24 May 91 | 228      | 222     | 28 Jun 91 | 226      | 223     |
| 25 May 91 | 230      | 224     | 29 Jun 91 | 228      | 223     |
| 26 May 91 | 228      | 224     | 30 Jun 91 | 227      | 224     |
| 27 May 91 | 227      | 223     | 1 Jul 91  | 228      | 224     |
| 28 May 91 | 225      | 222     | 2 Jul 91  | 230      | 223     |
| 29 May 91 | 227      | 223     | 3 Jul 91  | 230      | 225     |
| 30 May 91 | 227      | 220     | 4 Jul 91  | 230      | 224     |
| 31 May 91 | 225      | 219     | 5 Jul 91  | 230      | 225     |
| 1 Jun 91  | 226      | 221     | 6 Jul 91  | 228      | 224     |
| 2 Jun 91  | 226      | 221     | 7 Jul 91  | 230      | 221     |
| 3 Jun 91  | 227      | 221     | 8 Jul 91  | 227      | 222     |
| 4 Jun 91  | 228      | 223     | 9 Jul 91  | 228      | 223     |
| 5 Jun 91  | 226      | 220     | 10 Jul 91 | 227      | 224     |
| 6 Jun 91  | 226      | 221     | 11 Jul 91 | 228      | 223     |
| 7 Jun 91  | 229      | 225     | 12 Jul 91 | 227      | 221     |
| 8 Jun 91  | 228      | 225     | 13 Jul 91 | 228      | 222     |

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TABLE B-2 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 14 Jul 91 | 228      | 223     | 18 Aug 91 | 228      | 223     |
| 15 Jul 91 | 226      | 222     | 19 Aug 91 | 227      | 225     |
| 16 Jul 91 | 229      | 223     | 20 Aug 91 | 228      | 224     |
| 17 Jul 91 | 226      | 222     | 21 Aug 91 | 229      | 224     |
| 18 Jul 91 | 227      | 224     | 22 Aug 91 | 229      | 222     |
| 19 Jul 91 | 226      | 221     | 23 Aug 91 | 227      | 223     |
| 20 Jul 91 | 227      | 224     | 24 Aug 91 | 227      | 224     |
| 21 Jul 91 | 228      | 222     | 25 Aug 91 | 228      | 223     |
| 22 Jul 91 | 226      | 222     | 26 Aug 91 | 227      | 222     |
| 23 Jul 91 | 227      | 223     | 27 Aug 91 | 226      | 222     |
| 24 Jul 91 | 226      | 223     | 28 Aug 91 | 227      | 224     |
| 25 Jul 91 | 227      | 222     | 29 Aug 91 | 228      | 224     |
| 26 Jul 91 | 229      | 224     | 30 Aug 91 | 227      | 224     |
| 27 Jul 91 | 229      | 225     | 31 Aug 91 | 227      | 224     |
| 28 Jul 91 | 230      | 225     | 1 Sep 91  | 228      | 225     |
| 29 Jul 91 | 228      | 223     | 2 Sep 91  | 230      | 225     |
| 30 Jul 91 | 230      | 224     | 3 Sep 91  | 229      | 223     |
| 31 Jul 91 | 228      | 222     | 4 Sep 91  | 228      | 223     |
| 1 Aug 91  | 227      | 223     | 5 Sep 91  | 227      | 221     |
| 2 Aug 91  | 225      | 222     | 6 Sep 91  | 224      | 219     |
| 3 Aug 91  | 227      | 223     | 7 Sep 91  | 225      | 220     |
| 4 Aug 91  | 227      | 224     | 8 Sep 91  | 228      | 222     |
| 5 Aug 91  | 228      | 223     | 9 Sep 91  | 227      | 223     |
| 6 Aug 91  | 230      | 223     | 10 Sep 91 | 226      | 223     |
| 7 Aug 91  | 227      | 225     | 11 Sep 91 | 226      | 222     |
| 8 Aug 91  | 229      | 224     | 12 Sep 91 | 227      | 222     |
| 9 Aug 91  | 227      | 224     | 13 Sep 91 | 227      | 222     |
| 10 Aug 91 | 227      | 223     | 14 Sep 91 | 227      | 223     |
| 11 Aug 91 | 229      | 223     | 15 Sep 91 | 226      | 223     |
| 12 Aug 91 | 228      | 224     | 16 Sep 91 | 228      | 224     |
| 13 Aug 91 | 229      | 224     | 17 Sep 91 | 229      | 224     |
| 14 Aug 91 | 227      | 221     | 18 Sep 91 | 229      | 225     |
| 15 Aug 91 | 227      | 221     | 19 Sep 91 | 229      | 225     |
| 16 Aug 91 | 228      | 223     | 20 Sep 91 | 228      | 223     |
| 17 Aug 91 | 228      | 224     | 21 Sep 91 | 226      | 223     |

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TABLE B-2 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 22 Sep 91 | 226      | 222     | 27 Sep 91 | 227      | 222     |
| 23 Sep 91 | 227      | 222     | 28 Sep 91 | 227      | 223     |
| 24 Sep 91 | 228      | 224     | 29 Sep 91 | 229      | 224     |
| 25 Sep 91 | 230      | 223     | 30 Sep 91 | 229      | 223     |
| 26 Sep 91 | 227      | 223     |           |          |         |

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Appendix C  
WEATHER STATION NO. 1 DATA



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TABLE C-1. Weather Station No. 1 Ambient Temperature.

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 22 Oct 90 | 68       | 51      | 26 Nov 90 | 47       | 37      |
| 23 Oct 90 | 72       | 47      | 27 Nov 90 | 45       | 24      |
| 24 Oct 90 | 78       | 51      | 28 Nov 90 | 49       | 27      |
| 25 Oct 90 | 77       | 54      | 29 Nov 90 | 51       | 28      |
| 26 Oct 90 | 76       | 51      | 30 Nov 90 | 52       | 36      |
| 27 Oct 90 | 77       | 53      | 1 Dec 90  | 56       | 31      |
| 28 Oct 90 | 77       | 54      | 2 Dec 90  | 58       | 33      |
| 29 Oct 90 | 76       | 51      | 11 Dec 90 | 60       | 43      |
| 30 Oct 90 | 71       | 48      | 12 Dec 90 | 50       | 35      |
| 31 Oct 90 | 70       | 44      | 13 Dec 90 | 44       | 29      |
| 1 Nov 90  | 59       | 41      | 14 Dec 90 | 42       | 25      |
| 2 Nov 90  | 51       | 38      | 15 Dec 90 | 42       | 24      |
| 3 Nov 90  | 63       | 36      | 16 Dec 90 | 44       | 24      |
| 4 Nov 90  | 59       | 37      | 17 Dec 90 | 44       | 27      |
| 5 Nov 90  | 57       | 37      | 18 Dec 90 | 48       | 27      |
| 6 Nov 90  | 59       | 40      | 19 Dec 90 | 50       | 27      |
| 7 Nov 90  | 59       | 38      | 20 Dec 90 | 32       | 13      |
| 8 Nov 90  | 65       | 38      | 21 Dec 90 | 26       | 8       |
| 9 Nov 90  | 69       | 45      | 22 Dec 90 | 26       | 8       |
| 10 Nov 90 | 70       | 45      | 23 Dec 90 | 27       | 8       |
| 11 Nov 90 | 73       | 45      | 24 Dec 90 | 34       | 10      |
| 12 Nov 90 | 72       | 44      | 25 Dec 90 | 44       | 17      |
| 13 Nov 90 | 70       | 45      | 26 Dec 90 | 48       | 21      |
| 14 Nov 90 | 68       | 48      | 27 Dec 90 | 43       | 25      |
| 15 Nov 90 | 65       | 48      | 28 Dec 90 | 41       | 19      |
| 16 Nov 90 | 65       | 49      | 29 Dec 90 | 42       | 19      |
| 17 Nov 90 | 67       | 49      | 30 Dec 90 | 37       | 17      |
| 18 Nov 90 | 61       | 45      | 31 Dec 90 | 43       | 17      |
| 19 Nov 90 | 53       | 44      | 1 Jan 91  | 50       | 24      |
| 20 Nov 90 | 56       | 39      | 2 Jan 91  | 51       | 28      |
| 21 Nov 90 | 50       | 34      | 3 Jan 91  | 42       | 32      |
| 22 Nov 90 | 59       | 35      | 4 Jan 91  | 39       | 33      |
| 23 Nov 90 | 62       | 34      | 5 Jan 91  | 43       | 30      |
| 24 Nov 90 | 63       | 38      | 6 Jan 91  | 41       | 28      |
| 25 Nov 90 | 62       | 37      | 7 Jan 91  | 46       | 31      |

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TABLE C-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 8 Jan 91  | 45       | 27      | 12 Feb 91 | 67       | 35      |
| 9 Jan 91  | 44       | 30      | 13 Feb 91 | 70       | 36      |
| 10 Jan 91 | 48       | 26      | 14 Feb 91 | 67       | 44      |
| 11 Jan 91 | 48       | 26      | 15 Feb 91 | 69       | 43      |
| 12 Jan 91 | 54       | 25      | 16 Feb 91 | 67       | 44      |
| 13 Jan 91 | 58       | 26      | 17 Feb 91 | 64       | 40      |
| 14 Jan 91 | 57       | 28      | 18 Feb 91 | 51       | 37      |
| 15 Jan 91 | 58       | 26      | 19 Feb 91 | 63       | 35      |
| 16 Jan 91 | 55       | 33      | 20 Feb 91 | 67       | 31      |
| 17 Jan 91 | 60       | 33      | 21 Feb 91 | 70       | 34      |
| 18 Jan 91 | 54       | 28      | 22 Feb 91 | 67       | 35      |
| 19 Jan 91 | 53       | 24      | 23 Feb 91 | 69       | 44      |
| 20 Jan 91 | 48       | 25      | 24 Feb 91 | 67       | 43      |
| 21 Jan 91 | 36       | 34      | 25 Feb 91 | 64       | 30      |
| 22 Jan 91 | 47       | 15      | 26 Feb 91 | 62       | 31      |
| 23 Jan 91 | 50       | 17      | 27 Feb 91 | 55       | 35      |
| 24 Jan 91 | 50       | 18      | 28 Feb 91 | 42       | 35      |
| 25 Jan 91 | 51       | 18      | 1 Mar 91  | 47       | 35      |
| 26 Jan 91 | 53       | 20      | 2 Mar 91  | 58       | 33      |
| 27 Jan 91 | 54       | 22      | 3 Mar 91  | 60       | 31      |
| 28 Jan 91 | 52       | 18      | 4 Mar 91  | 53       | 39      |
| 29 Jan 91 | 48       | 20      | 5 Mar 91  | 53       | 37      |
| 30 Jan 91 | 51       | 16      | 6 Mar 91  | 47       | 30      |
| 31 Jan 91 | 52       | 21      | 7 Mar 91  | 54       | 31      |
| 1 Feb 91  | 56       | 25      | 8 Mar 91  | 55       | 26      |
| 2 Feb 91  | 52       | 23      | 9 Mar 91  | 55       | 31      |
| 3 Feb 91  | 58       | 25      | 10 Mar 91 | 59       | 32      |
| 4 Feb 91  | 60       | 27      | 11 Mar 91 | 54       | 27      |
| 5 Feb 91  | 63       | 32      | 12 Mar 91 | 51       | 24      |
| 6 Feb 91  | 65       | 46      | 13 Mar 91 | 51       | 29      |
| 7 Feb 91  | 64       | 35      | 14 Mar 91 | 52       | 34      |
| 8 Feb 91  | 62       | 31      | 15 Mar 91 | 39       | 27      |
| 9 Feb 91  | 64       | 30      | 16 Mar 91 | 50       | 22      |
| 10 Feb 91 | 63       | 30      | 17 Mar 91 | 48       | 27      |
| 11 Feb 91 | 60       | 33      | 18 Mar 91 | 50       | 39      |

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TABLE C-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 19 Mar 91 | 48       | 30      | 30 Apr 91 | 72       | 41      |
| 20 Mar 91 | 35       | 29      | 1 May 91  | 60       | 38      |
| 21 Mar 91 | 48       | 27      | 2 May 91  | 62       | 30      |
| 22 Mar 91 | 48       | 26      | 3 May 91  | 64       | 33      |
| 23 Mar 91 | 49       | 29      | 4 May 91  | 70       | 42      |
| 24 Mar 91 | 53       | 27      | 5 May 91  | 75       | 44      |
| 25 Mar 91 | 48       | 30      | 6 May 91  | 81       | 47      |
| 26 Mar 91 | 46       | 27      | 7 May 91  | 81       | 49      |
| 27 Mar 91 | 34       | 27      | 8 May 91  | 80       | 48      |
| 28 Mar 91 | 52       | 28      | 9 May 91  | 61       | 42      |
| 29 Mar 91 | 60       | 31      | 10 May 91 | 58       | 42      |
| 30 Mar 91 | 59       | 40      | 11 May 91 | 63       | 34      |
| 31 Mar 91 | 62       | 37      | 12 May 91 | 69       | 37      |
| 1 Apr 91  | 62       | 38      | 13 May 91 | 75       | 41      |
| 2 Apr 91  | 62       | 34      | 14 May 91 | 74       | 46      |
| 3 Apr 91  | 69       | 45      | 15 May 91 | 76       | 43      |
| 4 Apr 91  | 75       | 41      | 16 May 91 | 80       | 43      |
| 5 Apr 91  | 80       | 41      | 17 May 91 | 68       | 44      |
| 6 Apr 91  | 78       | 43      | 18 May 91 | 64       | 33      |
| 7 Apr 91  | 66       | 38      | 19 May 91 | 65       | 40      |
| 8 Apr 91  | 62       | 48      | 20 May 91 | 59       | 37      |
| 10 Apr 91 | 66       | 39      | 21 May 91 | 72       | 56      |
| 11 Apr 91 | 50       | 33      | 22 May 91 | 67       | 46      |
| 12 Apr 91 | 60       | 37      | 23 May 91 | 78       | 45      |
| 13 Apr 91 | 65       | 37      | 24 May 91 | 82       | 49      |
| 14 Apr 91 | 70       | 36      | 25 May 91 | 85       | 53      |
| 15 Apr 91 | 75       | 34      | 26 May 91 | 84       | 54      |
| 22 Apr 91 | 65       | 43      | 27 May 91 | 81       | 52      |
| 23 Apr 91 | 69       | 35      | 28 May 91 | 80       | 48      |
| 24 Apr 91 | 68       | 38      | 29 May 91 | 82       | 42      |
| 25 Apr 91 | 67       | 43      | 30 May 91 | 77       | 52      |
| 26 Apr 91 | 64       | 33      | 31 May 91 | 76       | 51      |
| 27 Apr 91 | 68       | 40      | 1 Jun 91  | 79       | 62      |
| 28 Apr 91 | 68       | 47      | 2 Jun 91  | 79       | 50      |
| 29 Apr 91 | 74       | 39      | 3 Jun 91  | 86       | 51      |

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TABLE C-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 4 Jun 91  | 85       | 53      | 9 Jul 91  | 90       | 58      |
| 5 Jun 91  | 84       | 53      | 10 Jul 91 | 92       | 60      |
| 6 Jun 91  | 85       | 47      | 11 Jul 91 | 94       | 61      |
| 7 Jun 91  | 85       | 49      | 12 Jul 91 | 95       | 62      |
| 8 Jun 91  | 86       | 49      | 13 Jul 91 | 93       | 55      |
| 9 Jun 91  | 91       | 53      | 14 Jul 91 | 89       | 59      |
| 10 Jun 91 | 95       | 61      | 15 Jul 91 | 79       | 55      |
| 11 Jun 91 | 95       | 67      | 16 Jul 91 | 92       | 68      |
| 12 Jun 91 | 94       | 58      | 17 Jul 91 | 92       | 59      |
| 13 Jun 91 | 89       | 54      | 18 Jul 91 | 91       | 58      |
| 14 Jun 91 | 85       | 50      | 19 Jul 91 | 86       | 59      |
| 15 Jun 91 | 85       | 45      | 20 Jul 91 | 84       | 52      |
| 16 Jun 91 | 92       | 44      | 21 Jul 91 | 88       | 55      |
| 17 Jun 91 | 95       | 67      | 22 Jul 91 | 91       | 57      |
| 18 Jun 91 | 89       | 57      | 23 Jul 91 | 94       | 58      |
| 19 Jun 91 | 85       | 53      | 24 Jul 91 | 94       | 60      |
| 20 Jun 91 | 84       | 46      | 25 Jul 91 | 92       | 59      |
| 21 Jun 91 | 84       | 44      | 26 Jul 91 | 94       | 59      |
| 22 Jun 91 | 83       | 46      | 27 Jul 91 | 95       | 61      |
| 23 Jun 91 | 84       | 44      | 28 Jul 91 | 96       | 60      |
| 24 Jun 91 | 67       | 45      | 29 Jul 91 | 101      | 65      |
| 25 Jun 91 | 78       | 45      | 30 Jul 91 | 96       | 66      |
| 26 Jun 91 | 77       | 50      | 31 Jul 91 | 86       | 73      |
| 27 Jun 91 | 74       | 59      | 1 Aug 91  | 92       | 68      |
| 28 Jun 91 | 72       | 47      | 2 Aug 91  | 93       | 64      |
| 29 Jun 91 | 75       | 45      | 3 Aug 91  | 92       | 58      |
| 30 Jun 91 | 87       | 55      | 4 Aug 91  | 87       | 54      |
| 1 Jul 91  | 96       | 63      | 5 Aug 91  | 85       | 51      |
| 2 Jul 91  | 100      | 68      | 6 Aug 91  | 86       | 52      |
| 3 Jul 91  | 104      | 73      | 7 Aug 91  | 87       | 50      |
| 4 Jul 91  | 103      | 71      | 8 Aug 91  | 92       | 57      |
| 5 Jul 91  | 103      | 68      | 9 Aug 91  | 95       | 59      |
| 6 Jul 91  | 95       | 67      | 10 Aug 91 | 94       | 59      |
| 7 Jul 91  | 93       | 65      | 11 Aug 91 | 88       | 64      |
| 8 Jul 91  | 91       | 64      | 12 Aug 91 | 81       | 68      |

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TABLE C-1 (Cont'd)

| Date      | High, °F | Low, °F | Date      | High, °F | Low, °F |
|-----------|----------|---------|-----------|----------|---------|
| 20 Aug 91 | 90       | 70      | 10 Sep 91 | 93       | 47      |
| 21 Aug 91 | 92       | 57      | 11 Sep 91 | 94       | 58      |
| 22 Aug 91 | 95       | 64      | 12 Sep 91 | 90       | 57      |
| 23 Aug 91 | 96       | 64      | 13 Sep 91 | 87       | 55      |
| 24 Aug 91 | 96       | 65      | 14 Sep 91 | 87       | 54      |
| 25 Aug 91 | 93       | 65      | 15 Sep 91 | 87       | 57      |
| 26 Aug 91 | 87       | 60      | 16 Sep 91 | 89       | 57      |
| 27 Aug 91 | 77       | 51      | 17 Sep 91 | 93       | 54      |
| 28 Aug 91 | 80       | 46      | 18 Sep 91 | 93       | 58      |
| 29 Aug 91 | 84       | 50      | 19 Sep 91 | 90       | 58      |
| 30 Aug 91 | 88       | 56      | 20 Sep 91 | 88       | 57      |
| 31 Aug 91 | 91       | 54      | 21 Sep 91 | 87       | 56      |
| 1 Sep 91  | 92       | 61      | 22 Sep 91 | 87       | 57      |
| 2 Sep 91  | 91       | 64      | 23 Sep 91 | 87       | 61      |
| 3 Sep 91  | 94       | 76      | 24 Sep 91 | 91       | 61      |
| 4 Sep 91  | 96       | 66      | 25 Sep 91 | 90       | 64      |
| 5 Sep 91  | 81       | 59      | 26 Sep 91 | 88       | 59      |
| 6 Sep 91  | 72       | 59      | 27 Sep 91 | 84       | 61      |
| 7 Sep 91  | 81       | 55      | 28 Sep 91 | 81       | 53      |
| 8 Sep 91  | 83       | 58      | 29 Sep 91 | 84       | 56      |
| 9 Sep 91  | 77       | 53      | 30 Sep 91 | 86       | 55      |

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TABLE C-2. Weather Station No. 1 Relative Humidity.

| Date      | High, % | Low, % | Date      | High, % | Low, % |
|-----------|---------|--------|-----------|---------|--------|
| 22 Oct 90 | 33.8    | 12.6   | 26 Nov 90 | 65.7    | 40.6   |
| 23 Oct 90 | 37.3    | 14.1   | 27 Nov 90 | 53.8    | 21.5   |
| 24 Oct 90 | 38.4    | 16.1   | 28 Nov 90 | 54.9    | 26.5   |
| 25 Oct 90 | 38.6    | 17.2   | 29 Nov 90 | 55.2    | 24.5   |
| 26 Oct 90 | 39.2    | 16.6   | 30 Nov 90 | 46.8    | 23.6   |
| 27 Oct 90 | 38.6    | 14.1   | 1 Dec 90  | 53.3    | 23.9   |
| 28 Oct 90 | 41.5    | 13.4   | 2 Dec 90  | 46.6    | 17.2   |
| 29 Oct 90 | 45.8    | 17.6   | 3 Dec 90  | 45.7    | 22.8   |
| 30 Oct 90 | 49.3    | 20.7   | 11 Dec 90 | 55.3    | 28.2   |
| 31 Oct 90 | 58.3    | 20.3   | 12 Dec 90 | 90.3    | 53.7   |
| 1 Nov 90  | 87.0    | 34.6   | 13 Dec 90 | 96.8    | 44.5   |
| 2 Nov 90  | 42.4    | 14.2   | 14 Dec 90 | 75.4    | 34.5   |
| 3 Nov 90  | 32.1    | 6.0    | 15 Dec 90 | 76.4    | 38.3   |
| 4 Nov 90  | 49.8    | 15.2   | 16 Dec 90 | 62.8    | 21.1   |
| 5 Nov 90  | 46.1    | 26.3   | 17 Dec 90 | 60.5    | 31.6   |
| 6 Nov 90  | 36.9    | 18.2   | 18 Dec 90 | 67.2    | 31.5   |
| 7 Nov 90  | 38.3    | 12.7   | 19 Dec 90 | 96.7    | 18.2   |
| 8 Nov 90  | 50.8    | 23.2   | 20 Dec 90 | 49.7    | 27.0   |
| 9 Nov 90  | 62.8    | 26.8   | 21 Dec 90 | 52.5    | 37.7   |
| 10 Nov 90 | 41.3    | 20.4   | 22 Dec 90 | 59.2    | 25.2   |
| 11 Nov 90 | 35.9    | 15.4   | 23 Dec 90 | 59.4    | 23.7   |
| 12 Nov 90 | 34.7    | 16.7   | 24 Dec 90 | 49.9    | 16.6   |
| 13 Nov 90 | 42.4    | 20.4   | 25 Dec 90 | 61.3    | 26.6   |
| 14 Nov 90 | 48.7    | 26.0   | 26 Dec 90 | 64.8    | 30.0   |
| 15 Nov 90 | 41.8    | 28.2   | 27 Dec 90 | 74.7    | 37.3   |
| 16 Nov 90 | 43.7    | 30.3   | 28 Dec 90 | 75.0    | 39.0   |
| 17 Nov 90 | 49.7    | 32.2   | 29 Dec 90 | 72.3    | 31.0   |
| 18 Nov 90 | 64.5    | 42.3   | 30 Dec 90 | 69.9    | 28.4   |
| 19 Nov 90 | 85.2    | 50.9   | 31 Dec 90 | 60.9    | 20.8   |
| 20 Nov 90 | 86.8    | 32.8   | 1 Jan 91  | 46.8    | 14.8   |
| 21 Nov 90 | 73.0    | 43.2   | 2 Jan 91  | 39.6    | 15.2   |
| 22 Nov 90 | 68.5    | 30.4   | 3 Jan 91  | 97.9    | 21.5   |
| 23 Nov 90 | 52.9    | 22.7   | 4 Jan 91  | 87.9    | 74.0   |
| 24 Nov 90 | 44.4    | 12.4   | 5 Jan 91  | 86.0    | 53.3   |
| 25 Nov 90 | 62.1    | 18.0   | 6 Jan 91  | 84.5    | 57.9   |

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TABLE C-2 (Cont'd)

| Date      | High, % | Low, % | Date      | High, % | Low, % |
|-----------|---------|--------|-----------|---------|--------|
| 7 Jan 91  | 80.5    | 53.5   | 11 Feb 91 | 54.0    | 22.8   |
| 8 Jan 91  | 84.8    | 42.9   | 12 Feb 91 | 50.8    | 22.3   |
| 9 Jan 91  | 82.2    | 50.2   | 13 Feb 91 | 52.8    | 26.4   |
| 10 Jan 91 | 83.9    | 37.2   | 14 Feb 91 | 58.5    | 35.9   |
| 11 Jan 91 | 85.1    | 38.2   | 15 Feb 91 | 60.7    | 32.1   |
| 12 Jan 91 | 85.6    | 35.1   | 16 Feb 91 | 53.2    | 26.5   |
| 13 Jan 91 | 79.0    | 29.6   | 17 Feb 91 | 81.7    | 24.2   |
| 14 Jan 91 | 75.1    | 32.2   | 18 Feb 91 | 45.4    | 40.6   |
| 15 Jan 91 | 68.9    | 24.5   | 19 Feb 91 | 49.3    | 18.4   |
| 16 Jan 91 | 35.8    | 14.1   | 20 Feb 91 | 56.0    | 21.9   |
| 17 Jan 91 | 54.1    | 21.2   | 21 Feb 91 | 37.5    | 12.3   |
| 18 Jan 91 | 74.7    | 36.1   | 22 Feb 91 | 35.4    | 20.3   |
| 19 Jan 91 | 74.0    | 36.1   | 23 Feb 91 | 27.9    | 16.3   |
| 20 Jan 91 | 74.4    | 28.6   | 24 Feb 91 | 29.3    | 14.0   |
| 21 Jan 91 | 49.8    | 37.9   | 25 Feb 91 | 29.0    | 17.8   |
| 22 Jan 91 | 47.0    | 18.3   | 26 Feb 91 | 33.7    | 18.3   |
| 23 Jan 91 | 59.0    | 16.3   | 27 Feb 91 | 91.8    | 31.6   |
| 24 Jan 91 | 58.8    | 26.7   | 28 Feb 91 | 91.2    | 74.6   |
| 25 Jan 91 | 55.2    | 23.5   | 1 Mar 91  | 88.7    | 34.7   |
| 26 Jan 91 | 64.3    | 29.5   | 2 Mar 91  | 75.2    | 71.5   |
| 27 Jan 91 | 50.8    | 17.8   | 3 Mar 91  | 81.2    | 42.1   |
| 28 Jan 91 | 53.1    | 17.6   | 4 Mar 91  | 87.6    | 31.5   |
| 29 Jan 91 | 32.8    | 17.0   | 5 Mar 91  | 55.8    | 22.5   |
| 30 Jan 91 | 39.4    | 16.6   | 6 Mar 91  | 73.3    | 24.1   |
| 31 Jan 91 | 32.6    | 17.4   | 7 Mar 91  | 57.7    | 12.0   |
| 1 Feb 91  | 28.9    | 12.0   | 8 Mar 91  | 77.4    | 21.4   |
| 2 Feb 91  | 58.5    | 19.3   | 9 Mar 91  | 68.0    | 19.1   |
| 3 Feb 91  | 69.6    | 31.6   | 10 Mar 91 | 80.5    | 8.8    |
| 4 Feb 91  | 56.6    | 22.8   | 11 Mar 91 | 75.7    | 12.8   |
| 5 Feb 91  | 54.8    | 23.3   | 12 Mar 91 | 87.7    | 29.3   |
| 6 Feb 91  | 54.4    | 22.8   | 13 Mar 91 | 80.5    | 31.5   |
| 7 Feb 91  | 44.1    | 23.9   | 14 Mar 91 | 57.4    | 25.3   |
| 8 Feb 91  | 50.8    | 23.2   | 15 Mar 91 | 90.8    | 27.9   |
| 9 Feb 91  | 53.8    | 22.1   | 16 Mar 91 | 89.2    | 22.8   |
| 10 Feb 91 | 60.1    | 24.2   | 17 Mar 91 | 85.4    | 27.7   |

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TABLE C-2 (Cont'd)

| Date      | High, % | Low, % | Date      | High, % | Low, % |
|-----------|---------|--------|-----------|---------|--------|
| 18 Mar 91 | 74.3    | 39.4   | 29 Apr 91 | 51.1    | 23.8   |
| 19 Mar 91 | 91.4    | 17.4   | 30 Apr 91 | 44.9    | 18.3   |
| 20 Mar 91 | 89.1    | 70.3   | 1 May 91  | 57.3    | 24.8   |
| 21 Mar 91 | 82.2    | 31.1   | 2 May 91  | 59.9    | 34.1   |
| 22 Mar 91 | 83.8    | 29.4   | 3 May 91  | 87.9    | 29.1   |
| 23 Mar 91 | 85.2    | 32.6   | 4 May 91  | 55.9    | 21.9   |
| 24 Mar 91 | 87.9    | 18.5   | 5 May 91  | 60.0    | 17.3   |
| 25 Mar 91 | 90.9    | 32.1   | 6 May 91  | 58.3    | 22.3   |
| 26 Mar 91 | 90.5    | 24.4   | 7 May 91  | 61.1    | 27.3   |
| 27 Mar 91 | 88.3    | 80.1   | 8 May 91  | 83.7    | 19.2   |
| 28 Mar 91 | 86.2    | 21.2   | 9 May 91  | 48.0    | 17.6   |
| 29 Mar 91 | 83.8    | 17.6   | 10 May 91 | 56.1    | 29.0   |
| 30 Mar 91 | 62.9    | 26.1   | 11 May 91 | 61.8    | 28.7   |
| 31 Mar 91 | 68.0    | 15.9   | 12 May 91 | 51.5    | 51.5   |
| 1 Apr 91  | 87.0    | 33.5   | 13 May 91 | 76.2    | 30.9   |
| 2 Apr 91  | 89.3    | 27.1   | 14 May 91 | 58.2    | 27.9   |
| 3 Apr 91  | 69.3    | 14.7   | 15 May 91 | 57.3    | 20.9   |
| 4 Apr 91  | 62.9    | 13.3   | 16 May 91 | 75.3    | 23.1   |
| 5 Apr 91  | 77.3    | 13.3   | 17 May 91 | 58.6    | 11.3   |
| 6 Apr 91  | 77.0    | 14.2   | 18 May 91 | 60.4    | 32.2   |
| 7 Apr 91  | 65.7    | 20.1   | 19 May 91 | 68.1    | 37.5   |
| 8 Apr 91  | 39.8    | 23.6   | 20 May 91 | 86.2    | 48.8   |
| 10 Apr 91 | 34.6    | 12.9   | 21 May 91 | 54.8    | 30.5   |
| 11 Apr 91 | 44.4    | 19.6   | 22 May 91 | 70.1    | 40.1   |
| 12 Apr 91 | 57.4    | 29.7   | 23 May 91 | 72.2    | 27.2   |
| 13 Apr 91 | 60.2    | 30.7   | 24 May 91 | 70.7    | 25.8   |
| 14 Apr 91 | 85.3    | 23.4   | 25 May 91 | 68.1    | 22.1   |
| 15 Apr 91 | 66.8    | 12.6   | 26 May 91 | 51.8    | 22.7   |
| 22 Apr 91 | 65.8    | 30.8   | 27 May 91 | 31.3    | 14.9   |
| 23 Apr 91 | 81.9    | 27.1   | 28 May 91 | 40.1    | 20.1   |
| 24 Apr 91 | 85.2    | 19.9   | 29 May 91 | 40.5    | 19.4   |
| 25 Apr 91 | 50.5    | 13.1   | 30 May 91 | 46.4    | 24.6   |
| 26 Apr 91 | 63.9    | 29.4   | 31 May 91 | 40.5    | 23.0   |
| 27 Apr 91 | 75.5    | 10.6   | 1 Jun 91  | 54.5    | 34.1   |
| 28 Apr 91 | 39.4    | 14.1   | 2 Jun 91  | 80.8    | 32.9   |



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TABLE C-2 (Cont'd)

| Date      | High, % | Low, % | Date      | High, % | Low, % |
|-----------|---------|--------|-----------|---------|--------|
| 3 Jun 91  | 63.5    | 26.1   | 8 Jul 91  | 84.2    | 12.5   |
| 4 Jun 91  | 70.2    | 21.1   | 9 Jul 91  | 83.2    | 20.2   |
| 5 Jun 91  | 59.0    | 25.9   | 10 Jul 91 | 55.4    | 20.5   |
| 6 Jun 91  | 53.0    | 19.3   | 11 Jul 91 | 37.0    | 16.2   |
| 7 Jun 91  | 44.3    | 17.8   | 12 Jul 91 | 35.4    | 14.6   |
| 8 Jun 91  | 54.4    | 16.4   | 13 Jul 91 | 53.3    | 16.4   |
| 9 Jun 91  | 38.2    | 16.9   | 14 Jul 91 | 46.7    | 9.9    |
| 10 Jun 91 | 33.4    | 14.9   | 15 Jul 91 | 50.3    | 27.6   |
| 11 Jun 91 | 37.7    | 21.5   | 16 Jul 91 | 35.9    | 19.0   |
| 12 Jun 91 | 54.6    | 15.6   | 17 Jul 91 | 49.2    | 19.3   |
| 13 Jun 91 | 44.2    | 16.3   | 18 Jul 91 | 44.3    | 25.7   |
| 14 Jun 91 | 50.0    | 17.2   | 19 Jul 91 | 64.2    | 26.0   |
| 15 Jun 91 | 53.5    | 18.3   | 20 Jul 91 | 68.6    | 24.0   |
| 16 Jun 91 | 49.4    | 17.9   | 21 Jul 91 | 60.8    | 23.1   |
| 17 Jun 91 | 44.2    | 16.0   | 22 Jul 91 | 41.3    | 16.9   |
| 18 Jun 91 | 54.5    | 16.2   | 23 Jul 91 | 40.5    | 16.7   |
| 19 Jun 91 | 55.2    | 16.7   | 24 Jul 91 | 53.6    | 17.7   |
| 20 Jun 91 | 47.0    | 18.9   | 25 Jul 91 | 53.2    | 19.0   |
| 21 Jun 91 | 44.9    | 20.6   | 26 Jul 91 | 49.6    | 23.5   |
| 22 Jun 91 | 44.2    | 20.9   | 27 Jul 91 | 36.1    | 18.9   |
| 23 Jun 91 | 54.6    | 20.6   | 28 Jul 91 | 36.3    | 14.3   |
| 24 Jun 91 | 54.7    | 28.9   | 29 Jul 91 | 32.6    | 15.9   |
| 25 Jun 91 | 65.7    | 28.9   | 30 Jul 91 | 46.5    | 25.1   |
| 26 Jun 91 | 61.0    | 33.0   | 31 Jul 91 | 67.3    | 43.1   |
| 27 Jun 91 | 60.4    | 40.5   | 1 Aug 91  | 56.2    | 30.0   |
| 28 Jun 91 | 85.0    | 46.2   | 2 Aug 91  | 51.2    | 13.3   |
| 29 Jun 91 | 95.8    | 31.5   | 3 Aug 91  | 29.1    | 15.7   |
| 30 Jun 91 | 52.6    | 20.9   | 4 Aug 91  | 44.2    | 19.3   |
| 1 Jul 91  | 32.7    | 16.9   | 5 Aug 91  | 57.2    | 13.8   |
| 2 Jul 91  | 30.0    | 15.5   | 6 Aug 91  | 51.3    | 23.2   |
| 3 Jul 91  | 30.4    | 15.2   | 7 Aug 91  | 66.2    | 14.1   |
| 4 Jul 91  | 32.9    | 15.2   | 8 Aug 91  | 49.8    | 17.8   |
| 5 Jul 91  | 32.5    | 17.6   | 9 Aug 91  | 41.5    | 18.0   |
| 6 Jul 91  | 34.0    | 23.8   | 10 Aug 91 | 46.5    | 22.5   |
| 7 Jul 91  | 72.5    | 31.5   | 11 Aug 91 | 47.6    | 32.1   |

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TABLE C-2 (Cont'd)

| Date      | High, % | Low, % | Date      | High, % | Low, % |
|-----------|---------|--------|-----------|---------|--------|
| 12 Aug 91 | 63.4    | 47.7   | 9 Sep 91  | 75.9    | 11.0   |
| 13 Aug 91 | 72.6    | 48.7   | 10 Sep 91 | 74.4    | 25.6   |
| 20 Aug 91 | 29.6    | 20.6   | 11 Sep 91 | 50.3    | 24.2   |
| 21 Aug 91 | 38.6    | 12.1   | 12 Sep 91 | 52.3    | 20.2   |
| 22 Aug 91 | 43.3    | 27.1   | 13 Sep 91 | 64.2    | 20.1   |
| 23 Aug 91 | 50.3    | 27.3   | 14 Sep 91 | 64.4    | 23.3   |
| 24 Aug 91 | 52.0    | 29.3   | 15 Sep 91 | 53.1    | 20.3   |
| 25 Aug 91 | 58.8    | 30.4   | 16 Sep 91 | 52.1    | 16.2   |
| 26 Aug 91 | 52.0    | 14.6   | 17 Sep 91 | 28.4    | 9.8    |
| 27 Aug 91 | 54.9    | 30.3   | 18 Sep 91 | 35.4    | 13.0   |
| 28 Aug 91 | 38.8    | 12.8   | 19 Sep 91 | 41.8    | 20.9   |
| 29 Aug 91 | 44.3    | 17.8   | 20 Sep 91 | 58.3    | 26.6   |
| 30 Aug 91 | 28.6    | 16.6   | 21 Sep 91 | 72.0    | 25.2   |
| 31 Aug 91 | 41.5    | 15.6   | 22 Sep 91 | 63.1    | 31.1   |
| 1 Sep 91  | 67.6    | 22.6   | 23 Sep 91 | 58.5    | 31.0   |
| 2 Sep 91  | 51.5    | 27.9   | 24 Sep 91 | 51.6    | 17.6   |
| 3 Sep 91  | 46.4    | 27.2   | 25 Sep 91 | 43.5    | 24.4   |
| 4 Sep 91  | 42.7    | 26.8   | 26 Sep 91 | 58.0    | 27.1   |
| 5 Sep 91  | 88.9    | 36.8   | 27 Sep 91 | 55.9    | 31.8   |
| 6 Sep 91  | 84.3    | 50.4   | 28 Sep 91 | 64.9    | 31.4   |
| 7 Sep 91  | 87.3    | 30.3   | 29 Sep 91 | 75.4    | 35.1   |
| 8 Sep 91  | 80.9    | 11.5   | 30 Sep 91 | 88.3    | 25.6   |

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TABLE C-3. Weather Station No. 1 Barometric Pressure Data.

| Date      | High, mbar | Low, mbar | Date      | High, mbar | Low, mbar |
|-----------|------------|-----------|-----------|------------|-----------|
| 1 Oct 90  | 893.5      | 889.8     | 5 Nov 90  | 895.7      | 889.9     |
| 2 Oct 90  | 890.4      | 886.2     | 6 Nov 90  | 897.0      | 885.1     |
| 3 Oct 90  | 894.3      | 886.8     | 7 Nov 90  | 899.2      | 891.7     |
| 4 Oct 90  | 896.9      | 894.3     | 8 Nov 90  | 901.4      | 898.9     |
| 5 Oct 90  | 895.7      | 889.2     | 9 Nov 90  | 902.7      | 900.1     |
| 6 Oct 90  | 889.3      | 886.6     | 10 Nov 90 | 901.3      | 899.1     |
| 7 Oct 90  | 893.3      | 886.6     | 11 Nov 90 | 901.8      | 899.2     |
| 8 Oct 90  | 896.6      | 893.4     | 12 Nov 90 | 901.9      | 898.4     |
| 9 Oct 90  | 901.7      | 898.1     | 13 Nov 90 | 898.4      | 892.4     |
| 10 Oct 90 | 901.4      | 891.9     | 14 Nov 90 | 893.6      | 890.5     |
| 11 Oct 90 | 892.4      | 891.9     | 15 Nov 90 | 899.8      | 893.7     |
| 12 Oct 90 | 893.5      | 892.3     | 16 Nov 90 | 900.0      | 896.7     |
| 13 Oct 90 | 892.8      | 890.3     | 17 Nov 90 | 897.1      | 892.4     |
| 14 Oct 90 | 890.7      | 890.3     | 18 Nov 90 | 892.4      | 889.0     |
| 15 Oct 90 | 891.8      | 890.2     | 19 Nov 90 | 889.3      | 886.5     |
| 16 Oct 90 | 890.2      | 888.5     | 30 Nov 90 | 896.7      | 894.8     |
| 17 Oct 90 | 894.4      | 889.3     | 1 Dec 90  | 898.1      | 894.9     |
| 18 Oct 90 | 894.0      | 888.3     | 2 Dec 90  | 902.2      | 897.8     |
| 19 Oct 90 | 891.1      | 886.2     | 3 Dec 90  | 903.9      | 901.1     |
| 20 Oct 90 | 896.5      | 891.1     | 4 Dec 90  | 902.6      | 899.5     |
| 21 Oct 90 | 898.5      | 896.6     | 5 Dec 90  | 900.8      | 898.0     |
| 22 Oct 90 | 897.9      | 892.2     | 6 Dec 90  | 903.1      | 900.9     |
| 23 Oct 90 | 896.4      | 892.4     | 7 Dec 90  | 902.0      | 899.4     |
| 24 Oct 90 | 898.3      | 896.3     | 8 Dec 90  | 900.8      | 898.6     |
| 25 Oct 90 | 897.6      | 895.0     | 9 Dec 90  | 900.0      | 897.1     |
| 26 Oct 90 | 895.8      | 894.1     | 10 Dec 90 | 897.3      | 893.2     |
| 27 Oct 90 | 897.6      | 894.7     | 11 Dec 90 | 892.9      | 891.2     |
| 28 Oct 90 | 895.8      | 892.0     | 12 Dec 90 | 892.2      | 887.9     |
| 29 Oct 90 | 894.1      | 891.0     | 13 Dec 90 | 891.9      | 889.2     |
| 30 Oct 90 | 895.8      | 892.0     | 14 Dec 90 | 891.5      | 888.3     |
| 31 Oct 90 | 892.6      | 888.1     | 25 Dec 90 | 896.4      | 895.6     |
| 1 Nov 90  | 891.1      | 887.0     | 26 Dec 90 | 896.7      | 894.6     |
| 2 Nov 90  | 895.4      | 890.9     | 27 Dec 90 | 897.1      | 887.8     |
| 3 Nov 90  | 900.1      | 895.4     | 28 Dec 90 | 887.7      | 879.8     |
| 4 Nov 90  | 901.4      | 895.8     | 29 Dec 90 | 897.6      | 881.6     |

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TABLE C-3 (Cont'd)

| Date      | High, mbar | Low, mbar | Date      | High, mbar | Low, mbar |
|-----------|------------|-----------|-----------|------------|-----------|
| 30 Dec 90 | 901.9      | 897.6     | 3 Feb 91  | 902.7      | 898.9     |
| 31 Dec 90 | 902.0      | 899.5     | 4 Feb 91  | 903.2      | 898.6     |
| 1 Jan 91  | 900.1      | 897.3     | 5 Feb 91  | 898.6      | 893.3     |
| 2 Jan 91  | 899.2      | 896.4     | 6 Feb 91  | 898.4      | 895.9     |
| 3 Jan 91  | 896.6      | 889.8     | 7 Feb 91  | 898.9      | 896.7     |
| 4 Jan 91  | 891.8      | 888.0     | 8 Feb 91  | 898.8      | 896.7     |
| 5 Jan 91  | 896.3      | 891.7     | 9 Feb 91  | 898.5      | 894.2     |
| 6 Jan 91  | 898.9      | 896.2     | 10 Feb 91 | 895.4      | 892.5     |
| 7 Jan 91  | 898.4      | 895.3     | 11 Feb 91 | 895.4      | 893.2     |
| 8 Jan 91  | 895.6      | 890.7     | 12 Feb 91 | 895.2      | 893.4     |
| 9 Jan 91  | 894.3      | 889.3     | 13 Feb 91 | 897.6      | 895.1     |
| 10 Jan 91 | 900.4      | 894.2     | 14 Feb 91 | 898.8      | 894.4     |
| 11 Jan 91 | 902.9      | 900.3     | 15 Feb 91 | 895.1      | 889.8     |
| 12 Jan 91 | 903.5      | 901.0     | 16 Feb 91 | 890.1      | 885.6     |
| 13 Jan 91 | 901.9      | 897.2     | 17 Feb 91 | 894.0      | 888.1     |
| 14 Jan 91 | 902.5      | 899.9     | 18 Feb 91 | 897.9      | 894.0     |
| 15 Jan 91 | 900.6      | 891.6     | 19 Feb 91 | 903.4      | 895.7     |
| 16 Jan 91 | 900.8      | 895.7     | 20 Feb 91 | 904.5      | 902.6     |
| 17 Jan 91 | 899.5      | 898.6     | 22 Feb 91 | 893.4      | 888.8     |
| 18 Jan 91 | 900.5      | 894.0     | 23 Feb 91 | 892.6      | 889.9     |
| 19 Jan 91 | 896.2      | 893.2     | 24 Feb 91 | 897.6      | 892.4     |
| 20 Jan 91 | 895.4      | 890.4     | 25 Feb 91 | 898.8      | 894.9     |
| 21 Jan 91 | 897.5      | 893.6     | 26 Feb 91 | 895.7      | 889.9     |
| 22 Jan 91 | 898.3      | 893.7     | 27 Feb 91 | 889.9      | 878.3     |
| 23 Jan 91 | 897.7      | 894.1     | 28 Feb 91 | 878.7      | 874.8     |
| 24 Jan 91 | 897.0      | 893.9     | 1 Mar 91  | 885.8      | 872.0     |
| 25 Jan 91 | 896.1      | 893.2     | 2 Mar 91  | 898.3      | 885.9     |
| 26 Jan 91 | 895.9      | 892.9     | 3 Mar 91  | 898.6      | 895.1     |
| 27 Jan 91 | 894.4      | 890.3     | 4 Mar 91  | 895.9      | 886.5     |
| 28 Jan 91 | 890.2      | 886.3     | 5 Mar 91  | 890.4      | 887.7     |
| 29 Jan 91 | 899.5      | 888.1     | 6 Mar 91  | 893.9      | 890.1     |
| 30 Jan 91 | 902.4      | 899.3     | 7 Mar 91  | 897.0      | 892.1     |
| 31 Jan 91 | 902.6      | 899.7     | 8 Mar 91  | 896.6      | 893.3     |
| 1 Feb 91  | 899.9      | 897.5     | 9 Mar 91  | 894.5      | 888.8     |
| 2 Feb 91  | 899.1      | 896.8     | 10 Mar 91 | 889.8      | 883.5     |

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TABLE C-3 (Cont'd)

| Date      | High, mbar | Low, mbar | Date      | High, mbar | Low, mbar |
|-----------|------------|-----------|-----------|------------|-----------|
| 11 Mar 91 | 893.9      | 883.9     | 16 Apr 91 | 887.0      | 883.4     |
| 12 Mar 91 | 896.1      | 891.4     | 17 Apr 91 | 889.9      | 887.0     |
| 13 Mar 91 | 891.4      | 880.4     | 18 Apr 91 | 891.4      | 887.9     |
| 14 Mar 91 | 885.3      | 880.8     | 19 Apr 91 | 891.7      | 888.6     |
| 15 Mar 91 | 884.9      | 877.7     | 20 Apr 91 | 890.8      | 885.8     |
| 16 Mar 91 | 892.2      | 885.0     | 21 Apr 91 | 891.5      | 888.3     |
| 17 Mar 91 | 894.6      | 890.2     | 22 Apr 91 | 890.5      | 887.3     |
| 18 Mar 91 | 891.8      | 880.6     | 23 Apr 91 | 889.5      | 885.6     |
| 19 Mar 91 | 884.7      | 876.4     | 24 Apr 91 | 890.0      | 884.2     |
| 20 Mar 91 | 884.7      | 877.9     | 25 Apr 91 | 886.8      | 883.4     |
| 21 Mar 91 | 890.0      | 878.6     | 26 Apr 91 | 892.4      | 886.8     |
| 22 Mar 91 | 895.8      | 890.0     | 27 Apr 91 | 892.0      | 889.1     |
| 23 Mar 91 | 895.2      | 889.8     | 28 Apr 91 | 894.7      | 891.1     |
| 24 Mar 91 | 891.1      | 883.4     | 29 Apr 91 | 892.3      | 887.9     |
| 25 Mar 91 | 883.5      | 881.2     | 30 Apr 91 | 893.7      | 886.5     |
| 26 Mar 91 | 884.0      | 879.9     | 1 May 91  | 886.9      | 882.3     |
| 27 Mar 91 | 892.2      | 882.3     | 2 May 91  | 886.6      | 882.9     |
| 28 Mar 91 | 896.6      | 892.2     | 3 May 91  | 892.8      | 886.6     |
| 29 Mar 91 | 895.6      | 892.8     | 4 May 91  | 898.0      | 892.8     |
| 30 Mar 91 | 899.2      | 895.6     | 5 May 91  | 899.4      | 894.3     |
| 31 Mar 91 | 897.9      | 891.2     | 6 May 91  | 894.5      | 890.5     |
| 1 Apr 91  | 895.3      | 888.6     | 7 May 91  | 889.8      | 887.1     |
| 2 Apr 91  | 897.9      | 894.6     | 8 May 91  | 892.4      | 888.4     |
| 3 Apr 91  | 899.7      | 896.4     | 9 May 91  | 889.2      | 881.7     |
| 4 Apr 91  | 900.1      | 896.2     | 10 May 91 | 886.1      | 882.3     |
| 5 Apr 91  | 896.2      | 890.6     | 11 May 91 | 889.4      | 885.7     |
| 6 Apr 91  | 891.6      | 885.4     | 12 May 91 | 893.1      | 889.0     |
| 7 Apr 91  | 890.8      | 887.0     | 13 May 91 | 894.9      | 884.7     |
| 8 Apr 91  | 896.2      | 890.8     | 14 May 91 | 891.2      | 884.4     |
| 10 Apr 91 | 888.6      | 882.0     | 15 May 91 | 893.5      | 889.6     |
| 11 Apr 91 | 890.8      | 888.6     | 16 May 91 | 891.0      | 885.0     |
| 12 Apr 91 | 893.8      | 890.7     | 17 May 91 | 887.4      | 884.6     |
| 13 Apr 91 | 895.3      | 891.7     | 18 May 91 | 888.4      | 884.3     |
| 14 Apr 91 | 893.3      | 885.1     | 19 May 91 | 890.5      | 886.5     |
| 15 Apr 91 | 886.3      | 881.3     | 20 May 91 | 888.8      | 887.2     |

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TABLE C-3 (Cont'd)

| Date      | High, mbar | Low, mbar | Date      | High, mbar | Low, mbar |
|-----------|------------|-----------|-----------|------------|-----------|
| 21 May 91 | 891.2      | 886.8     | 25 Jun 91 | 889.7      | 885.7     |
| 22 May 91 | 891.8      | 891.2     | 26 Jun 91 | 889.6      | 884.5     |
| 23 May 91 | 892.0      | 888.9     | 27 Jun 91 | 886.0      | 883.3     |
| 24 May 91 | 893.6      | 890.1     | 28 Jun 91 | 887.9      | 884.7     |
| 25 May 91 | 893.6      | 888.2     | 29 Jun 91 | 890.4      | 886.8     |
| 26 May 91 | 889.7      | 884.0     | 30 Jun 91 | 891.8      | 888.4     |
| 27 May 91 | 885.6      | 880.7     | 1 Jul 91  | 891.0      | 888.6     |
| 28 May 91 | 891.2      | 883.9     | 2 Jul 91  | 892.4      | 889.4     |
| 29 May 91 | 892.1      | 882.4     | 3 Jul 91  | 892.4      | 888.5     |
| 30 May 91 | 882.8      | 873.9     | 4 Jul 91  | 890.6      | 886.0     |
| 31 May 91 | 885.3      | 881.2     | 5 Jul 91  | 888.6      | 884.9     |
| 1 Jun 91  | 889.3      | 884.4     | 6 Jul 91  | 890.5      | 887.6     |
| 2 Jun 91  | 889.8      | 886.8     | 7 Jul 91  | 892.2      | 888.8     |
| 3 Jun 91  | 889.8      | 887.0     | 8 Jul 91  | 893.2      | 891.2     |
| 4 Jun 91  | 889.0      | 884.7     | 9 Jul 91  | 892.2      | 885.4     |
| 5 Jun 91  | 887.5      | 885.0     | 10 Jul 91 | 891.2      | 887.8     |
| 6 Jun 91  | 890.5      | 887.6     | 11 Jul 91 | 893.5      | 890.2     |
| 7 Jun 91  | 892.6      | 888.6     | 12 Jul 91 | 894.9      | 891.6     |
| 8 Jun 91  | 890.0      | 886.2     | 13 Jul 91 | 893.2      | 888.5     |
| 9 Jun 91  | 890.9      | 888.4     | 14 Jul 91 | 892.0      | 888.4     |
| 10 Jun 91 | 891.4      | 887.8     | 15 Jul 91 | 893.0      | 889.5     |
| 11 Jun 91 | 890.1      | 886.3     | 16 Jul 91 | 895.0      | 891.5     |
| 12 Jun 91 | 889.4      | 884.5     | 17 Jul 91 | 893.9      | 888.7     |
| 13 Jun 91 | 887.8      | 882.9     | 18 Jul 91 | 890.8      | 885.9     |
| 14 Jun 91 | 889.9      | 885.6     | 19 Jul 91 | 889.9      | 886.3     |
| 15 Jun 91 | 891.9      | 888.4     | 20 Jul 91 | 892.1      | 889.3     |
| 16 Jun 91 | 892.7      | 888.6     | 21 Jul 91 | 894.9      | 891.5     |
| 17 Jun 91 | 891.9      | 888.5     | 22 Jul 91 | 894.4      | 890.5     |
| 18 Jun 91 | 891.1      | 887.0     | 23 Jul 91 | 893.3      | 889.6     |
| 19 Jun 91 | 889.8      | 886.5     | 24 Jul 91 | 892.5      | 887.5     |
| 20 Jun 91 | 891.8      | 887.8     | 25 Jul 91 | 890.9      | 887.3     |
| 21 Jun 91 | 889.5      | 885.3     | 26 Jul 91 | 894.0      | 890.2     |
| 22 Jun 91 | 889.9      | 886.3     | 27 Jul 91 | 896.9      | 893.7     |
| 23 Jun 91 | 889.5      | 885.6     | 28 Jul 91 | 897.1      | 892.7     |
| 24 Jun 91 | 888.1      | 884.6     | 29 Jul 91 | 894.5      | 890.5     |

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TABLE C-3 (Cont'd)

| Date      | High, mbar | Low, mbar | Date      | High, mbar | Low, mbar |
|-----------|------------|-----------|-----------|------------|-----------|
| 30 Jul 91 | 894.7      | 891.4     | 29 Aug 91 | 897.6      | 895.0     |
| 31 Jul 91 | 897.3      | 892.8     | 30 Aug 91 | 896.4      | 892.2     |
| 1 Aug 91  | 894.3      | 888.7     | 31 Aug 91 | 893.7      | 889.9     |
| 2 Aug 91  | 892.2      | 887.1     | 1 Sep 91  | 893.5      | 890.1     |
| 3 Aug 91  | 891.5      | 887.9     | 2 Sep 91  | 896.4      | 892.6     |
| 4 Aug 91  | 891.5      | 887.3     | 3 Sep 91  | 897.8      | 894.0     |
| 5 Aug 91  | 890.1      | 886.4     | 4 Sep 91  | 895.4      | 889.0     |
| 6 Aug 91  | 891.0      | 888.1     | 5 Sep 91  | 892.2      | 889.3     |
| 7 Aug 91  | 894.7      | 891.0     | 6 Sep 91  | 893.2      | 890.4     |
| 8 Aug 91  | 896.2      | 891.8     | 7 Sep 91  | 895.0      | 890.7     |
| 9 Aug 91  | 893.0      | 886.8     | 8 Sep 91  | 892.4      | 886.2     |
| 10 Aug 91 | 891.7      | 887.5     | 9 Sep 91  | 886.6      | 882.7     |
| 11 Aug 91 | 895.3      | 891.8     | 10 Sep 91 | 892.1      | 886.6     |
| 12 Aug 91 | 897.5      | 895.0     | 11 Sep 91 | 893.2      | 890.1     |
| 13 Aug 91 | 897.3      | 891.2     | 12 Sep 91 | 894.1      | 890.4     |
| 14 Aug 91 | 893.4      | 889.2     | 13 Sep 91 | 893.2      | 888.8     |
| 15 Aug 91 | 893.4      | 889.7     | 14 Sep 91 | 891.2      | 888.0     |
| 16 Aug 91 | 895.5      | 891.7     | 15 Sep 91 | 894.5      | 890.7     |
| 17 Aug 91 | 895.3      | 890.8     | 16 Sep 91 | 896.0      | 892.0     |
| 18 Aug 91 | 893.3      | 889.9     | 17 Sep 91 | 892.3      | 890.4     |
| 19 Aug 91 | 894.2      | 891.2     | 18 Sep 91 | 893.0      | 889.4     |
| 20 Aug 91 | 895.6      | 892.9     | 19 Sep 91 | 893.9      | 889.9     |
| 21 Aug 91 | 897.6      | 894.6     | 20 Sep 91 | 893.3      | 888.5     |
| 22 Aug 91 | 897.0      | 891.5     | 21 Sep 91 | 892.2      | 889.2     |
| 23 Aug 91 | 894.0      | 888.6     | 22 Sep 91 | 896.2      | 891.2     |
| 24 Aug 91 | 894.1      | 889.8     | 23 Sep 91 | 896.5      | 893.1     |
| 25 Aug 91 | 893.8      | 889.4     | 24 Sep 91 | 896.6      | 894.5     |
| 26 Aug 91 | 891.7      | 887.7     | 25 Sep 91 | 896.4      | 891.6     |
| 27 Aug 91 | 891.1      | 887.9     | 26 Sep 91 | 894.4      | 893.4     |
| 28 Aug 91 | 895.2      | 891.2     |           |            |           |

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Appendix D  
WELL TEMPERATURE DATA



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TABLE D-1. Well 4H-8 (Coso Well No. 1) Temperature.

| 24 January 1991 |          | 6 June 1991 |          |
|-----------------|----------|-------------|----------|
| Depth, ft       | Temp, °F | Depth, ft   | Temp, F° |
| 0               | 207.8    | 0           | 171.6    |
| 10              | 206.8    | 5           | 175.6    |
| 45              | 207.8    | 15          | 178.7    |
| 55              | 209.8    | 20          | 179.3    |
| 65              | 210.99   | 40          | 179.8    |
| 70              | 211.99   | 45          | 180.9    |
| 75              | 217.72   | 60          | 181.5    |
| 80              | 220.2    | 65          | 182.1    |
| 85              | 221.49   | 70          | 194.0    |
| 90              | 222.8    | 75          | 197.9    |
| 95              | 223.1    | 80          | 200.4    |
| 100             | 223.6    | 85          | 202.2    |
| 105             | 224.1    | 90          | 204.1    |
| 110             | 224.8    | 95          | 204.9    |
| 115             | 225.6    | 100         | 205.9    |
| 120             | 224.2    | 105         | 206.8    |
| 125             | 226.4    | 110         | 208.8    |
| 145             | 226.9    | 115         | 209.8    |
| 150             | 226.5    | 120         | 210.9    |
| 160             | 226.1    | 125         | 210.9    |
| 165             | 225.7    | 150         | 211.9    |
| 170             | 225.7    | 160         | 213.1    |
| 175             | 225.0    | 170         | 214.2    |
| 185             | 224.8    | 184         | 215.4    |

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TABLE D-2. Well 4K-1 Temperature.

| 24 January 1991 |          | 6 June 1991 |          |
|-----------------|----------|-------------|----------|
| Depth, ft       | Temp, °F | Depth, ft   | Temp, F° |
| 0               | 204.9    | 0           | 205.9    |
| 5               | 204.9    | 5           | 205.9    |
| 10              | 204.9    | 10          | 205.9    |
| 25              | 204.9    | 25          | 205.9    |
| 50              | 204.9    | 50          | 206.8    |
| 52              | 207.8    | 52          | 208.9    |
| 55              | 208.8    | 55          | 208.9    |
| 57              | 208.8    | 57          | 209.9    |
| 60              | 211.0    | 60          | 211.0    |
| 70              | 212.0    | 70          | 211.0    |
| 73              | 212.0    | 73          | 213.09   |
| 77              | 214.2    | 77          | 213.09   |
| 80              | 215.4    | 80          | 214.2    |

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TABLE D-3. Well 4P-1 Temperature.

| 24 January 1991 |          | 6 June 1991 |          |
|-----------------|----------|-------------|----------|
| Depth, ft       | Temp, °F | Depth, ft   | Temp, F° |
| 5               | 204.9    | 0           | 197.9    |
| 10              | 205.9    | 5           | 205.9    |
| 25              | 205.9    | 10          | 205.9    |
| 52              | 205.9    | 25          | 205.9    |
| 53              | 205.9    | 52          | 206.9    |
| 54              | 205.9    | 53          | 207.7    |
| 56              | 206.8    | 54          | 208.8    |
| 57              | 206.8    | 56          | 208.8    |
| 60              | 208.8    | 57          | 209.8    |
| 65              | 211.9    | 60          | 212.9    |
| 70              | 214.2    | 65          | 215.4    |
| 80              | 214.2    | 70          | 215.4    |
| 85              | 215.4    | 80          | 216.5    |
| 89              | 215.4    | 85          | 218.9    |
| 90              | 215.4    | 89          | 221.4    |
| 93              | 215.4    | 90          | 221.4    |
| 95              | 222.8    | 93          | 225.6    |
| 97              | 222.8    | 95          | 226.9    |
| 100             | 222.8    | 97          | 236.5    |
| 101             | 222.8    | 100         | 236.5    |
|                 |          | 101         |          |

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TABLE D-4. Well 4A-4 Temperature.

| 24 January 1991 |          | 6 June 1991 |          |
|-----------------|----------|-------------|----------|
| Depth, ft       | Temp, °F | Depth, ft   | Temp, F° |
| 5               | 205.9    | 0           | 180.9    |
| 10              | 205.9    | 5           | 205.9    |
| 18              | 207.8    | 10          | 205.9    |
| 20              | 207.8    | 18          | 205.9    |
| 23              | 208.9    | 20          | 207.8    |
| 25              | 209.8    | 23          | 207.8    |
| 26              | 213.9    | 25          | 209.8    |
| 27              | 214.2    | 26          | 209.9    |
| 28.5            | 214.2    | 27          | 209.9    |
| 30              | 214.2    | 28.5        | 213.9    |
| 31              | 214.2    | 30          | 214.2    |
|                 |          | 31          | 215.4    |

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