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BARRICK MERCUR GOLD MINE

RESERVATION CANYON TAILING IMPOUNDMENT

ANNUAL REPORT FOR 1998
TAIL WATER HEAD
VERSUS
PIEZOMETRIC PRESSURE
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Barrick Resources USA, Inc.

TAIL WATER HEAD VERSUS PIEZOMETRIC PRESSURE FOR 1998

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INTRODUCTION

This report illustrates the difference between pore pressures and tail water head rise at the Reservation Canyon Tailing Impoundment from Dec. 30, 1997 through Dec. 31, 1998. While the tail water elevation increased 4.22 feet during this period, piezometric pressure varied with proximity to open water and overall depth. The maximum tailwater head, during 1998, occurred during mid to late June. The behavior of individual piezometers and their relationship to tail water head is presented in the Analysis section. Raw data for this analysis is found in Appendix C, while plots of this data are presented in Appendix B.

Piezometers

Between November 19 and 22, 1989, sixteen vibrating wire piezometers were installed at the Reservation Canyon Tailing Impoundment. Units 3, 4, 5, and 6 were installed in the conventional earth fill main dam, downstream of the clay core and chimney drain. Units 1, 2, 7, 8, 9, 13, and 14 were installed underneath or adjacent to the main buttress, and Units 15, 16, 17, 21, and 22, underneath or adjacent to the levee buttress. Of these 16 piezometers, 13 remain functional, with Units 2, 8, and 14 ceasing to operate during 1991.

An additional six vibrating wire piezometers were installed between March 7 and April 7, 1993. Of these, three were twinned with open standpipes. Units 23, 24; 27, 28; and 29, 30 are the twinned pairs, with the odd numbered units being open standpipes. Units 23, 24, 27, 28, and 31 were installed in the tails, while Units 25, 26, 29, and 30 were installed in the engineered clay fill on the upstream face of the main dam.

Three more vibrating wire piezometers were installed downstream of the chimney drain. Each is twinned with an open standpipe piezometer, Units 32, 33; 34, 35; 36, 37, with the odd numbers representing the open standpipes. All six units were installed between July 17 and August 10, 1993. Two of the twinned sets were installed in the engineered earth fill, while the third pair was installed in previously grouted bedrock, (Upper Member of the Mississippian Great Blue Limestone [Mgbu]) beneath the dam. The bedrock was grouted across the footprint of the engineered earthen dam during initial construction.

An additional seven vibrating wire piezometers were installed between October 22 and November 16, 1993. Three of these were twinned with open standpipe piezometers. Two vibrating wire piezometers (38 and 39) were installed along the upstream crest of the main buttress in the tails. Two more vibrating wire piezometers (42 and 47) were installed in the tails approximately 150 feet inshore of the levee buttress toe. The remaining three twinned sets (40, 41; 43, 44; 45, 46), were installed under the levee buttress in tailing material. Of these, Unit 40 ceased operating in late February 1994, and Unit 39 ceased operating in late November 1995.

The piezometers were installed to monitor the hydraulic behavior of the impounding structures. That behavior could be critical to the long-term stability of the facility. A number of phenomena require consideration in assessing the piezometric record, including:

1. Tailing Rise.

During this reporting period (Dec. 30, 1997 thru Dec. 31, 1998), the tail water elevation increased from 7331.43 to 7335.65. This 4.22 foot rise in water level would be expected to influence the piezometers, especially those closest to the tailing surface. Appendix B contains plots of each piezometer's behavior in relationship to tail water head and actual tail water elevation. Appendix C contains the data from which these plots were derived, along with the date of each reading. The pore pressure readings presented in Appendix C (reported in feet of head) can be added to the piezometer gauge elevation to obtain the piezometric surface elevation that is plotted on the graphs in Appendix B.

2. Precipitation.

Appendix A contains the meteorological data for May, 1998 through December, 1998. The information from January-April was lost during plant shut down. There is a possibility for single precipitation events to affect shallow gauge installations.

3. Runoff.

In the past, March and April have been the months of greatest runoff. Shallow gauge installations (Units 42 and 47) reflect the impact of runoff and infiltration impact on pore pressure readings.

4. Location.

Both proximity to open water and depth from water level would be expected to influence relative behavior among gauge installations. More global effects can also be expected, such as main dam confinement to the 7250 foot elevation versus Saddle Dam Confinement to the 7225 elevation.

5. Evaporation.

Studies on site indicate the greatest evaporation rates occur during the months of June-September. This tends to reduce tail water rise and may affect near surface moisture. After review of the data in Appendix C, it was noted that evaporation did not impact pore pressures significantly.

6. Deposition Cycle.

Tailing was deposited in a cyclic manner from twelve pair of slurry drop bars. Nominally, 24 hours of deposition from one pair is followed by thirteen full days of drying at that location. It would be expected that gauges installed in close proximity would detect these alternating wet and dry periods. Tailing deposition ceased on April 4, 1999.

7. Construction Effects.

During this reporting period tailing deposition ceased. Reclamation activities were

completed which included covering, topsoiling, and revegetating the embankments. This should significantly reduce surface water infiltration. Excess embankment crest height was regraded onto the tailing beach approximately 100 ft and approximately 4 ft of filled was placed around piezometers 42 and 47. Embankment crest regrading took place during late August to early September.

8. Monitoring Schedule.

A total of 44 piezometric observations were made during this reporting period. These readings were taken every Wednesday, depending upon accessibility.

Settlement Monitors

Six surface settlement monitors were installed on the main buttress and two were installed on the levee in April 1991. An additional six settlement monitors were installed on the main dam in April of 1992. Settlement monitors 7, 8, and 9 were installed to monitor the 1991 buttress construction settlement. Monitors 7-1, 8-1, and 9-1 were installed and fixed to the 1992 buttress crest. Six additional settlement monitors were installed on the main buttress on November 11, 1993. Settlement monitors 10, 11, and 12 were installed to monitor 1992 buttress construction settlement, while monitors 10-1, 11-1, and 12-1 were installed and fixed to the 1993 buttress crest. On October 22, 1992, four settlement monitors were added to the levee buttress. Settlement monitors 3 and 4 were installed to monitor the 1992 levee construction settlement, while monitors 3-1 and 4-1 were installed and fixed to the 1993 levee crest. Locations of all 24 prisms are shown on Figure 2.

Settlement along both the main dam and levee buttresses is expected and is due to overall settling of the upstream buttress fill material into the tailing beach. Plots of the settlement monitor data for the years 1996 through 1998 are found in Appendix D, and the raw data for 1998 only in Appendix E.

Main dam settlement monitors 1 through 3 on the drain apron, show little or no actual movement. Monitors located on the crest of the upstream buttresses show the most movement. The average elevation change of the main dam settlement monitors shows a net elevation change of –0.04 feet during this reporting period. The greatest amount of elevation change, -0.35 feet occurred at monitor MD4 however this movement occurred suddenly on 8/31/98 and is most likely the result of being bumped during construction activities. Aside from MD4 the greatest amount of movement occurred on MD-11 and MD11-1 which both experienced 0.15 downward vertical movement during the reporting period.

Settlement monitors on the levee indicate little movement with the exception of Levee4 and Levee4-1 which were affected by construction in 1996. Prisms Levee1 through Levee3 inclusive show a virtually no net elevation change within the accuracy of the survey. Prism Levee4 has moved vertically downward 0.06 feet during this reporting period.

Plots of the prism vertical and horizontal displacement are found in Appendix D and the raw data in Appendix E.

SUMMARY

A data summary supporting major conclusions follows. The behavior of individual piezometers is discussed in the analysis section. Piezometer plots are provided in Appendix B with the raw data in Appendix C. Settlement monitor plots are found in Appendix D while raw settlement monitor data is in Appendix E. The data reduction calculations are found in Appendix F.

The twenty-seven vibrating-wire piezometers and nine open standpipes at the Reservation Canyon Tailing Impoundment gave a consistent overall indication of stable hydraulic behavior during this reporting period (Dec. 30, 1997 – Dec. 31, 1998).

The salient features are:

1. Negative or low pore water pressure within the conventional downstream structure remains constant, although Unit 4 has reacted in the past to spring thaw through what is believed to be infiltration at its collar. The collar area was resealed with bentonite and a concrete cap during spring of 1996. Pressures recorded by the vibrating wire piezometers remained negative throughout the 1998 reporting period.

2. The average difference between final and initial pore pressures for the seven downstream vibrating wire piezometers (3, 4, 5, 6, 32, 34, 36,) was an decrease of 0.44 feet H_20 . The largest reliable pressure decrease occurred in piezometer 34 which had a pressure decrease of 0.54 feet. The least pressure decrease, 0.35 feet H_2O, occurred at piezometer 3. All vibrating wire piezometers recorded negative pore pressures throughout the reporting period. The open standpipes (33, 35, 37) were dry throughout this reporting period.

3. Critical pore pressures were not approached by <u>any</u> of the downstream units during this reporting period.

4. Table II shows the average piezometric head in the tailing along the main buttress decreased 1.80 feet. Table III shows that critical pore pressures were not approached along the main buttress during the reporting period.

5. Piezometers along the levee buttress decreased an average of 1.63 feet during this reporting period. Table III shows that critical pore pressures were not approached along the main buttress during the reporting period

6. The winter and spring of 1998 were the wettest on record and the tail water level reached a maximum elevation of 7337.7 feet above mean sea level in June due to precipitation and runoff. During reclamation activities that were completed during 1998, improvements were made to the diversions that will reduce or eliminate contribution to the pond from runoff.

7. The upstream piezometers show a marked lowering of pore pressures after the cessation of tailings deposition.

9. The resultant piezometric surface indicates a slight gradient to the southeast, toward the reclaim pond. There is a concomitant damming of water adjacent to the main dam core, with minor seepage into the reclaim pond. These phenomena are desirable, and indicate the levee is free draining as intended. Figures 3, 4, and 5 show piezometric elevations at different times during this reporting period.

ANALYSIS

During the second half of 1998, a detailed investigation of the tailings impoundment was performed by Golder associates, Inc. in support of a final closure design. As a part of that study, a monitoring plan was developed for the closure and post-closure period. This monitoring plan formalizes the monitoring schedule requirements and responses to be taken in the event that alert level piezometer readings are obtained. The details of the closure and post-closure monitoring plan was submitted to the State Engineer under separate cover. The new alert levels will be in effect during 1999 and thereafter. For the 1998 reporting period presented in this document, we have retained the critical pore pressures that have been applied in previous years.

The tail water head increased 4.22 feet during 1998 from 7331.43 feet above mean sea level (amsl) to 7335.65 feet amsl at the end of the year. A maximum pond elevation of 7337.7 occurred in mid-June and the pond elevation decreased steadily from that time with some fluctuations due to pumping to and from the East Bay.

Piezometer 1.

This unit is located in the tails beach at Station 3+00, at an elevation of 7233.1. This unit is covered by upstream buttress material as can be seen in Figure 1.

The initial pore pressure for this reporting period was 22.03 feet H_2O while the final pressure was 21.30 feet H_2O for an annual pressure decrease of 0.73 feet H_2O. The annual low pressure of 21.30 feet H_2O occurred on Dec.31,1998. The annual high pressure, 24.16 feet H_2O occurred on April,15, 1998. The overall low to high pressure differential for 1998 was 2.86 feet H_2O.

The critical pore pressure for Unit 1 is 75 feet H_2O which corresponds to a piezometric head of 7308 feet amsl.

Piezometer 2.

This unit was installed along Station 3+00, approximately 60 feet inshore of Unit 1. It is at an elevation of 7227.8 feet.

There is no data for this unit as it failed during November 1991.

Piezometer 3.

This piezometer is installed in a vertical bore hole along Station 6+00, in Zone II of the main dam, at a depth of 137.6 feet (7115.0 ft. amsl).

The unit is separated from the tails basin by the dam core and chimney drain. That should isolate it from the potential head within the basin.

The initial pore pressure during this reporting period was –1.49 feet H_2O while the final pore pressure was –1.84 feet H_2O for an annual decrease of 0.35 feet H_2O. The annual low pressure of –2.41 feet H_2O occurred on April 15, 1998, while the annual high pressure of –1.38 feet H_2O occurred on August 12, 1998 for an annual low versus high pressure differential of –1.03 feet H_2O. All pore pressure readings were negative and computed piezometric head elevations probably do not reflect actual water table levels.

The simulated critical pore pressure for Unit 3 is 115 feet H_2O which corresponds to a piezometric head of 7230 feet amsl.

Piezometer 4.

This unit is located in the same vertical bore hole as Piezometer 3 at a depth of 219.5 feet (7033.1).

The initial reading of this reporting period was -1.15feet H_2O while the final pressure was –1.61 feet H_2O, for an overall annual increase of 0.46 feet H_2O. The annual high pressure of –1.09 feet H_2O occurred on August 12, 1998 while the annual low pressure of –1.77 feet H_2O occurred on May 13,1998. The annual high versus low pressure differential was 0.68 feet H_2O.

This piezometer appears to be affected by infiltration at the collar during runoff.

The tail water head increased 4.22 feet during 1998, from 7331.43 to 7335.65. All pore pressure readings were negative and computed piezometric head elevations probably do not reflect actual water table levels.

The simulated critical pore pressure for Unit 4 is 184 feet H_2O which corresponds to a piezometric head of 7217 feet amsl.

Piezometer 5.

Piezometer 5 is installed in an angle borehole along Station 6+00 adjacent to the chimney drain. It is placed at a vertical depth of 156.1 feet at the 7096.1 elevation.

The unit is separated from the tails basin by the dam core and chimney drain. That should isolate it from the potential head within the basin.

The initial pressure during this reporting period was –1.22 feet H_2O while the final pressure was –1.67 feet H_2O, for an annual decrease of 0.45 feet H_2O. The annual high pressure of –1.11 H_2O occurred on December 12, 1998, while the annual low pressure of –17.01 feet H_2O occurred on June 6, 1998. This low reading may be an input error or a short lived atmospheric aberration The overall annual high to low pressure differential (discounting the -17.01 reading) was 0.66 feet H_2O.

The tail water head increased 4.22 feet during 1998 from 7331.43 to 7335.65. All pore pressure

readings were negative and computed piezometric head elevations probably do not reflect actual water table levels.

The simulated critical pore pressure for Unit 5 is 152 feet H_2O which corresponds to a piezometric head of 7193 feet amsl.

Piezometer 6.

This unit is paired with Unit 5 at a vertical depth of 211.2 feet (7041.0 elevation).

The initial reading during this reporting period was –1.52 feet H_2O, while the final reading was –1.88 feet H_2O for an annual decrease of 0.36 feet H_2O. The annual high pressure of –1.25 feet H_2O occurred on July 15, 1998 while the annual low pressure of –2.05 feet H_2O occurred on April 15, 1998. The annual high to low pressure differential was 0.80 feet H_2O.

The tail water head increased 4.22 feet during 1998 from 7331.43 to 7335.65. . All pore pressure readings were negative and computed piezometric head elevations probably do not reflect actual water table levels.

The critical pore pressure for Unit 6 is 208 feet H_2O which corresponds to a piezometric head of 7249 feet amsl.

Piezometer 7.

This unit was installed along Station 6+00 in the tails at an elevation of 7232.9 feet. This unit is now covered by upstream buttress material as can be seen in Figure 1.

The initial reading for this reporting period was 18.70 feet H_2O while the final pressure was 17.21 feet H_2O for an annual decrease of 1.49 feet H_2O. The annual low pressure of 17.21 feet H_2O occurred on December 18, 1998, while the annual high pressure of 22.59 feet H_2O occurred on April 22, 1998 for an overall low to high pressure differential of 5.38 feet H_2O.

The critical pore pressure for Unit 7 is 101 feet H_2O which corresponds to a piezometric head of 7334 feet amsl.

Piezometer 8.

This unit was installed along Station 6+00 approximately 40 feet inshore of Unit 7 at an elevation of 7227.3.

There is no data for this unit as it failed during April 1991.

Piezometer 9.

This unit was installed along Station 6+00 at the 7230.3 elevation approximately 120 feet toward

the pond from Unit 7.

The initial pore pressure for this reporting period was 27.13 feet H_2O, while the final pressure was 24.36 feet H_2O for an annual decrease of 2.77 feet H_2O. The annual low pressure of 24.36 feet H_2O occurred on December 31, 1998, while the annual high pressure of 30.41 feet H_2O was recorded on April 22, 1998 for an annual low to high pressure differential of 6.05 feet H_2O.

The simulated critical pore pressure for Unit 9 is 162 feet H_2O which corresponds to a piezometric head of 7392.3 feet amsl.

Piezometer 13.

This unit was installed in the tails along Station 9+00, at an elevation of 7232.7. Unit 13 is now covered with upstream buttress fill material as can be seen in Figure 1.

The initial reading of this reporting period was 13.69 feet H_2O while the final pressure was 8.51 feet H_2O for an annual decrease of 5.18 feet H_2O. The annual low pressure of 8.51 feet H_2O occurred on 12/18/98, while the annual high pressure of 21.11 feet H_2O occurred on 4/29/98 for an overall low to high pressure differential of 12.60 feet H_2O.

The simulated critical pore pressure for Unit 13 is 68 feet H_2O which corresponds to a piezometric head of 7301 feet amsl.

Piezometer 14.

This unit was installed along Station 9+00 at an elevation of 7229.3. It is located approximately 45 feet inshore of Unit 13.

There is no data for this unit as it failed during August 1991.

Piezometer 15.

Unit 15 is in the tails along Station 5+00 on the levee. It was installed at the 7231.4 elevation and is covered with upstream levee buttress fill (Figure 1).

The initial pore pressure during this reporting period was 14.38 feet H_2O while the final pressure was12.70 feet H_2O for an annual decrease of 1.68 feet H_2O. The annual high pressure of 16.45 feet H_2O occurred on 3/25/98, while the annual low pressure of 12.70 feet H_2O occurred on 12/18/98. The overall high to low pressure differential was 3.75 feet H_2O.

The simulated critical pore pressure for Unit 15 is 122 feet H_2O which corresponds to a piezometric head of 7353.4 feet amsl.

Piezometer 16.

This unit is located along Station 5+00 on the levee approximately 45 feet inshore of Unit 15. It was installed at an elevation of 7216.7 and is now covered with upstream levee buttress fill (Figure 1).

The first reading of this reporting period was 5.95 feet H_2O, while the final pressure was 4.77 feet H_2O for an annual decrease of 1.18 feet. The annual high pressure of 7.74 feet occurred on 3/25/98, while the annual low pressure of 1.57 feet H_2O occurred on 4/29/98 for an annual high to low differential of 6.17 feet H_2O.

The simulated critical pore pressure for Unit 16 is 138 feet H_2O which corresponds to a piezometric head of 7355 feet amsl.

Piezometer 17.

This piezometer is located on the levee along Station 5+00. It is approximately 70 feet inshore of Unit 15 at an elevation of 7230.4 under approximately 60 feet of levee buttress fill.

The initial reading for unit 17 was 17.63 feet H_2O while the final pressure was 13.71 feet H_2O for an annual decrease of 2.01 feet H_2O. The annual high pressure of 19.28 feet H_2O occurred on 3/25/98, while the annual low pressure of 15.62 feet H_2O occurred on 12/18/98. The annual high to low pressure differential for unit 17 was 3.66 feet H_2O.

The simulated critical pore pressure for Unit 17 is 185 feet H_2O which corresponds to a piezometric head of 7415 feet amsl.

Piezometer 21.

This unit was installed on the levee along Station 7+00 at an elevation of 7216.9 under approximately 200 feet of levee buttress fill.

The initial reading for unit 21 was 14.73 feet H_2O while the final reading was 13.17 feet for an annual decrease of 1.02 feet. The annual low pressure of 13.65 feet H_2O occurred on 12/03/98 , while the annual high pressure of 15.42 occurred on 3/25/98, for an overall low to high pressure differential of 1.77 feet H_2O.

The simulated critical pore pressure for Unit 21 is 156 feet H_2O which corresponds to a piezometric head of 7373 feet amsl

Piezometer 22.

Unit 22 was installed approximately 40 feet northwest of Unit 21 along Station 7+00 on the levee. The installed elevation was 7230.9

The first reading of this reporting period was 9.70 feet H_2O while the final reading was 8.88 feet H_2O for an annual pressure decrease of 0.82 feet H_2O. The annual low pressure of 8.88 feet H_2O occurred on 12/18/98 , while the annual high pressure of 10.27 feet H_2O occurred on 3/25/98 for an overall low versus high pressure differential of 1.39 feet H_2O.

The simulated critical pore pressure for Unit 22 is 133 feet H_2O which corresponds to a piezometric head of 7364 feet amsl.

Piezometer 23.

This open standpipe was installed on the main buttress approximately 45 feet northwest of Station 3+00 at an elevation of 7212.52.

The initial reading of this reporting period was 30.04 feet H_2O, while the final pressure reading was 30.04 feet H_2O for an annual decrease of 0.00 feet H_2O. The annual low pressure of 29.29 feet H_2O occurred on 1/22/98, while the annual high pressure of 32.16 feet H_2O occurred on 4/15/98. The overall low versus high pressure differential was 2.87 feet H_2O.

The simulated critical pore pressure for Unit 23 is 111 feet H_2O which corresponds to a piezometric head of 7323 feet amsl.

Piezometer 24.

This unit is located in the same vertical bore hole as Piezometer 23 at a depth of 75 feet at elevation 7216.52.

The initial reading for this unit was 18.57 feet H_2O while the final reading was 17.89 feet H_2O, for an annual decrease of 0.68 feet H_2O. The annual low reading of 17.83 feet H_2O occurred on 12/03/98 , while the annual high pressure of 20.36 feet H_2O occurred on 4/22/98 . The overall low versus high pressure differential was 2.53 feet H_2O.

The simulated critical pore pressure for Unit 24 is 106 feet H_2O which corresponds to a piezometric head of 7323 feet amsl.

Piezometer 25.

This unit was installed on the main buttress approximately 30 feet northwest of Station 3+00 at an elevation of 7146.48.

The initial reading of this reporting period was 38.65 feet H_2O , while the final pressure was 37.61 feet H_2O for an annual decrease of 1.04 feet H_2O. The annual low pressure of 37.22 feet H_2O occurred on 12/03/98, while the annual high pressure of 40.73 feet H_2O occurred on 4/22/98.. The overall low versus high pressure differential was 3.51 feet H_2O.

The simulated critical pore pressure for Unit 25 is 202 feet H_2O which corresponds to a piezometric head of 7348 feet amsl.

Piezometer 26.

This unit ceased to function after May 21, 1997 due to a broken wire.

The simulated critical pore pressure for Unit 26 is 127 feet H_2O which corresponds to a piezometric head of 7328 feet amsl. The final reading for this piezometer was –9.82 feet H_2O

Piezometer 27.

This open standpipe was installed on the main buttress approximately 45 feet northwest of Station 6+00 at an elevation of 7209.55.

The initial pressure for this reporting period was 30.32 feet H_2O while the final pressure was 29.45 feet H_2O for an annual decrease of 0.87 feet H_2O. The low pressure of 29.01 feet H_2O occurred on 12/10/98 , while the annual high pressure of 34.50 feet H_2O occurred on 4/29/98 resulting in a low to high pressure differential of 5.49 feet H_2O.

The simulated critical pore pressure for Unit 27 is 120 feet H_2O which corresponds to a piezometric head of 7330 feet amsl.

Piezometer 28.

This unit is located in the same vertical bore hole as Piezometer 27 at a depth of 80 feet at elevation 7214.55.

The first reading of this reporting period was 17.97 feet H_2O while the final reading was 16.42 feet H_2O for an annual decrease of 1.55 feet H_2O. The annual low pressure of 16.42 feet occurred on 12/31/98 , while the annual high pressure of 21.97 feet occurred on 4/29/98 , for an overall low versus high pressure differential of 5.55 feet H_2O.

The simulated critical pore pressure for Unit 28 is 113 feet H_2O which corresponds to a piezometric head of 7328 feet amsl.

Piezometer 29.

This open standpipe was installed on the main buttress, approximately 30 feet northwest of Station 6+00 at an elevation of 7125.74.

The initial pressure for this unit was 75.21 feet H_2O while the final pressure of this reporting period was 68.58 feet H_2O. The overall final versus initial pressure was an decrease of 6.63 feet H_2O. The annual high pressure of 76.56 feet H_2O occurred on 3/25/98, while the annual low of 69.21 feet H_20 occurred on 12/10/98 . The overall high versus low pressure differential was 7.30

H_2O.

The simulated critical pore pressure for Unit 29 is 236 feet H_2O which corresponds to a piezometric head of 7362 feet amsl.

Piezometer 30.

This unit is located in the same vertical bore hole as Piezometer 29 at a depth of 164 feet at elevation 7130.74.

The first reading of this reporting period was 65.13 feet H_2O while the final pressure was 57.07 feet H_2O for an overall decrease of 8.06. The annual low pressure of 57.07 feet H_2O occurred on 12/18/98. The annual high pressure of 67.96 feet H_2O was recorded on 3/25/98 for an annual high versus low pressure differential of 10.98 feet H_2O.

The simulated critical pore pressure for Unit 30 is 229 feet H_2O which corresponds to a piezometric head of 7360 feet amsl.

Piezometer 31.

This unit was installed on the main buttress approximately 15 feet northwest of Station 6+00. Its installed elevation is 7200.08.

The initial pore pressure of this reporting period was 26.72 feet H_2O, while the final pressure was 24.79 feet H_2O for an overall annual decrease of 1.93 feet H_2O. The annual low pressure of 24.79 feet H_2O occurred on 12/18/98, while the annual high pressure of 31.08 feet H_2O occurred on 4/29/98. The overall annual low pressure versus high pressure differential was 6.29 feet H_2O.

The simulated critical pore pressure for Unit 31 is 133 feet H_2O which corresponds to a piezometric head of 7334 feet amsl.

Piezometer 32.

This unit was installed at the downstream crest of the main dam approximately 70 feet northwest of Station 6+00. The installed elevation for Unit 32 is 7030.78.

The initial pore pressure for this reporting period was –7.28 feet H_2O, while the final pore pressure was –7.72 feet H_2O for an overall increase of -o.44 feet H_2O for the year. The annual high pressure of –6.39 feet H_2O occurred on 8/12/98 while the annual low pressure of –10.60 feet H_2O occurred on 4/08/98. The high versus low pressure differential was 3.67 feet H_2O for the year.

The simulated critical pore pressure for Unit 32 is 186 feet H_2O which corresponds to a piezometric head of 7217 feet amsl.

Piezometer 33.

This unit was installed in the same vertical bore hole as Piezometer 32. The bottom of the screen is at an elevation of 7030.78.

Actual pore pressure at Piezometer 33 was 0.00 feet H_2O, while the comparative pressure relative to piezometer 32 was –0.20 feet H_2O. A pressure of –0.20 feet H_2O is indicative of a dry standpipe.

The simulated critical pore pressure for Unit 33 is 186 feet H_2O which corresponds to a piezometric head of 7217 feet amsl.

Piezometer 34.

This unit was installed at the downstream crest of the main dam approximately 50 feet northwest of Station 6+00. The installed elevation of Unit 34 is 7122.66.

The initial pore pressure for this reporting period was –8.04 feet H_2O while the final pressure was –8.58 feet H_2O for an overall final versus initial difference of +0.54 feet H_2O. The annual high pressure of -8.03 feet H_2O occurred on 8/21/98, while the annual low pressure of –8.89 feet H2O occurred on 1/22/98. The annual high versus low pressure differential was 0.86 feet H_2O.

The simulated critical pore pressure for Unit 34 is 109 feet H_2O which corresponds to a piezometric head of 7232 feet amsl.

Piezometer 35.

This open standpipe was installed in the same borehole as Unit 34. The bottom of the screen is at an elevation of 7117.16

Actual pore pressure at Piezometer 35 was 0.00 feet H_2O. Pressure of 0.00 is indicative of a dry standpipe.

The simulated critical pore pressure for Unit 35 is 114 feet H_2O which corresponds to a piezometric head of 7231 feet amsl.

Piezometer 36.

This unit was installed at the downstream crest of the main dam approximately 30 feet northwest of Station 6+00. The installed elevation of Unit 36 is 6963.83.

The initial pore pressure for this reporting period was –7.05 feet H_2O, while the final pressure was –7.56 feet H_2O for an overall final versus initial differential of –0.51 feet H_2O. The annual high pressure of -6.95 feet H_2O occurred on 12/10/98, while the annual low, -7.16 feet H_2O occurred on 4/15/98. The overall high versus low pressure differential was –0.66 feet H_2O.

The simulated critical pore pressure for Unit 36 is 245 feet H_2O which corresponds to a piezometric head of 7209 feet amsl.

Piezometer 37.

This open standpipe is located in the same vertical bore hole as piezometer 36. The installed elevation of the screen bottom is 6958.83.

Actual pore pressure at Piezometer 37 was 0.00 feet H_2O. Pressure of 0.00 feet H_2O is indicative of a dry standpipe.

The simulated critical pore pressure for Unit 37 is 250 feet H_2O which corresponds to a piezometric head of 7209 feet amsl.

Piezometer 38.

This unit was installed on the main buttress approximately 30 feet northwest of Station 3+00 at an elevation of 7191.34.

The initial poor pressure for unit 38 was 38.81 feet H_2O while the final pressure was 36.99 feet H_2O, for an overall annual decrease of 1.82 feet H_2O. The annual low pressure of 36.99 feet H_2O occurred on 12/18/98 while the annual high of 40.35 feet H_2O occurred on 6/17/98 .The low versus high pressure differential for the year was 3.36 feet H_2O.

The simulated critical pore pressure for Unit 38 is 157 feet H_2O which corresponds to a piezometric head of 7348 feet amsl.

Piezometer 39.

This unit was installed on the main buttress approximately 25 feet northwest of Station 6+00 at an elevation of 7173.30.

This unit failed on November 28,1995.

Piezometer 40

This unit was installed on the levee buttress, in the same bore hole as Unit 41 approximately 20 feet northeast of Station 5+00. The installed elevation of Unit 40 is 7193.49.

This unit failed in February 1994.

Piezometer 41.

This open standpipe was installed on the levee buttress in the same borehole as Unit 40,

approximately 20 feet northeast of Station 5+00. The installed elevation of the screen bottom is 7189.49

The initial reading for unit 41 was 48.00 feet H_2O while the final pressure was 46.20 feet H_2O. The annual pressure decrease was 1.80, while the annual high pressure of 49.60 feet H_2O occurred on 4/08/98. The annual low pressure of 45.42 feet occurred on 10/14/98, for a low versus high differential of 4.18 feet H_2O.

The simulated critical pore pressure for Unit 41 is 225 feet H_2O which corresponds to a piezometric head of 7414 feet amsl.

Piezometer 42.

This unit was installed in the tails along Station 5+00 approximately 230 feet inshore of Unit 40. The installed elevation of unit 42 is 7282.50.

The initial reading for unit 42 was 13.65 feet H_2O, while the final pressure was 10.42 feet H_2O, for an overall annual decrease of 3.23 feet H_2O. The annual low reading of 10.50 feet H_2O was recorded on 12/03/98, while the annual high of 14.67 feet H_2O was recorded on 3/25/98.The annual low versus high pressure differential was 4.17 feet H_2O.

The simulated critical pore pressure for unit 42 is 111 feet H_2O which corresponds to a piezometric head of 7393 feet amsl.

Piezometer 43.

This unit was installed on the levee buttress in the same bore hole as Unit 44 approximately 20 feet northeast of Station 7+00. The installed elevation of Unit 43 is 7188.98.

The initial pore pressure for this reporting period was 27.22 feet H_2O while the final pressure was 26.44 feet H_2O for an annual decrease of 0.78 feet H_2O. The annual low pressure of 26.44 feet H_2O was recorded on 12/18/98, while the annual high pressure of 27.57 feet H_2O was recorded on 4/22/98. The overall low versus high pressure differential was 1.03 feet H_2O.

The simulated critical pore pressure for Unit 43 is 224 feet H_2O which corresponds to a piezometric head of 7413 feet amsl.

Piezometer 44.

This open standpipe was installed on the levee buttress in the same bore hole as Unit 43 approximately 20 feet northeast of Station 7+00. The installed elevation of the screen bottom is 7182.98.

The initial pore pressure for this reporting period was 46.48 feet H_2O, while the final pressure was 46.10 feet H_2O for an annual decrease of 0.38 feet H_2O. The high pressure of 47.35 feet H_2O

occurred on 3/25/98, while the annual low of 46.19 feet H_2O occurred on 2/12/98.The overall high to low pressure differential was 1.16feet H_2O.

The simulated critical pore pressure for Unit 44 is 234 feet H_2O which corresponds to a piezometric head of 7417 feet amsl.

Piezometer 45.

This unit was installed on the levee buttress, in the same bore hole as Unit 46 approximately 20 feet southwest of Station 7+00. The installed elevation of Unit 45 is 7231.26.

The initial pore pressure for this reporting period was 10.11 feet H_2O, while the final pressure was 8.73 H_2O for an annual decrease of 1.48 feet H_2O. The annual low pressure of 8.62 feet H_2O occurred on 12/03/98, while the annual high pressure of 10.59 feet H_2O occurred on 3/25/98. The overall annual low versus high pressure differential was 1.97 feet H_2O.

The simulated critical pore pressure for Unit 45 is 158 feet H_2O which corresponds to a piezometric head of 7389 feet amsl.

Piezometer 46.

This open standpipe was installed on the levee buttress in the same bore hole as Unit 45 approximately 20 feet southwest of Station 7+00. The installed elevation of Unit 46 is 7223.26.

The first reading of this reporting period was 21.86 feet H_2O while the final pressure reading was 21.09 feet H_2O for an annual decrease of 0.77 feet H_2O. The annual low pressure of 20.67 feet H_2O occurred on 12/10/98 while the annual high pressure of 22.84 feet H_2O occurred on 3/25/98.The overall high to low pressure differential was 1.16 feet .

The simulated critical pore pressure for Unit 46 is 172 feet H_2O which corresponds to a piezometric head of 7395.3 feet amsl which would result in artesian conditions.

Piezometer 47.

This unit was installed in the tails on Station 7+00 approximately 250 feet inshore of Unit 43. The installed elevation of Unit 47 is 7283.12.

The first reading of this reporting period was 7.65 feet H_2O, while the final pressure was 5.74 feet H_2O for an annual decrease of 1.91 feet H_2O. The annual low pressure of 5.74 feet H_2O was recorded on 12/10/98 while the annual high pressure 8.09 feet H_2O occurred on 3/25/98. The overall low versus high pressure differential was 2.35 feet H_2O.

The simulated critical pore pressure for Unit 47 is 110 feet H_2O which corresponds to a piezometric head of 7393 feet amsl.

CONCLUSIONS

The array of piezometers at the Reservation Canyon Tailing Impoundment give a consistent overall indication of stable hydraulic behavior throughout this reporting period.

The 27 upstream piezometers generally recorded a rise in pore pressures during the first half of the year in response to high tail water head due to a record setting winter and spring precipitation. The upstream piezometers also record a lowering of pore pressures during the second half of the year as the tail water elevation dropped in response to the cessation of tailing deposition and dryer conditions through the summer and fall.

The resultant piezometric surface indicates a slight gradient to the southeast toward the reclaim pond. There is a concomitant damming of water adjacent to the main dam core with minor seepage into the reclaim pond. These phenomena are desirable and indicate the levee is free draining as intended.

Settlement of the upstream structure has decreased compared to previous years. Settlement along both the main and levee buttress is expected and is due to overall settling of the buttress fill into the tailing beach.

Main dam settlement monitors 1 through 12-1 inclusive show a net elevation change of –0.06 feet during this reporting period. The greatest amount of elevation change -0.15 ft., occurred at monitor MD11, while the least amount, 0.01 ft., occurred at monitor MD2.

Levee prisms 1 through 4-1 inclusive show a net elevation change of –0.08 feet during this reporting period. The greatest amount of elevation change -0.18 ft., occurred at monitor LEVEE1, while the least amount, 0.02 ft., occurred at monitor LEVEE2.

The overall conclusion of this report is that the Reservation Canyon Tailing Impoundment is a hydraulically stable facility. Exhibited by both the piezometer and settlement monitor behavior.

TABLES

PIEZOMETER GAUGE LOCATION TABLE

Piezometer No	Location	Northing	Easting	Elevation	Installed Vertical Depth	Original Surf.El.	Current Surf.El.	Remarks
				MAIN BUTTRESS				
1	Tails	26,454.21	24,026.08	7,233.1	4.5	7,237.57	90′ Rockfill	
3[1]	Dam Z II	26,125.13	24,105.42	7,115.0	137.6	7,252.59	--	
4[1]	Dam Z II	26,125.13	24,105.42	7,033.1	219.5	7,252.59	--	
5[2]	Dam Z II	26,134.79	24,110.32			7,252.22	--	Collar
		26,181.68	24,166.00	7,096.1	156.1		--	Probe
6[2]	Dam Z II	26,134.79	24,110.32			7,252.22	73′ Rockfill	Collar
		26,198.22	24,185.64	7,041.0	211.2		--	Probe
7	Tails	26,218.30	24,214.86	7,232.9	4.3	7,237.23	88′ Rockfill	
9	Tails	26,296.53	24,308.12	7,230.3	5.3	7,235.62	89′ Tails	
13	Tails	25,987.82	24,410.69	7,232.7	5.0	7,237.68	87′ Rockfill	
23[1,3]	Tails	26,488,83	23,980.52	7,212.6	79.0	7,291.52	15′ Rockfill	
24[1]	Tails	26,488.83	23,980.52	7,216.6	75.0	7,291.52	15′ Rockfill	
25	Dam Z V	26,465.00	23,999.71	7,201.3	91.0	7,292.27	15′ Rockfill	
26	Dam Z V	26,447.13	23,991.56	7,146.5	145.0	7,291.48	15′ Rockfill	
27[1,3]	Tails	26,258.87	24,187.40	7,210.6	84.0	7,294.55	15′ Rockfill	
28[1]	Tails	26,258.87	24,187.40	7,214.6	80.0	7,294.55	15′ Rockfill	
29[1,3]	Dam Z V	26,248.23	24,187.79	7,125.7	169.0	7,294.74	15′ Rockfill	
30[1]	Dam Z V	26,248.23	24,187.79	7,130.7	164.0	7,294.74	15′ Rockfill	
31	Dam Z VI	26,236.23	24,196.53	7,200.1	95.0	7,295.08	15′ Rockfill	
32[1]	Dam Z II	26,176.36	24,060.16	7,030.8	222.0	7,257.05	--	
33[1,3]	Dam Z II	26,176.36	24,060.16	7,030.8	222.0	7,257.05	--	
34[1]	Dam Z II	26,161.23	24,073.49	7,122.7	130.0	7,256.93	--	
35[1,3]	Dam Z II	26,161.23	24,073.49	7,117.2	135.5	7,256.93	--	
36[1]	Dm Bdrk[4]	26,146.47	24,086.41	6,963.8	289.0	7,256.93	--	
37[1,3]	Dm Bdrk[4]	26,146.47	24,086.41	6.958.8	294.0	7,256.93	--	
38	Tails	26,530.75	24,054.77	7,191.3	115.0	7,306.34	--	
39	Tails	26,299.22	24,250.13	7,174.3	135.0	7,309.30	--	

TABLE I

Piezometer No	Location	Northing	Easting	Elevation	Installed Vertical Depth	Original Surf.El.	Current Surf.El.	Remarks
				LEVEE				
15	Tails	25,991.37	25,029.36	7,231.4	5.3	7,236.66	88′ Rockfill	
16	Levee	25,959.21	25,056.59	7,216.7	34.6	7,251.33	74′ Rockfill	
17	Tails	26,044.89	24,985.18	7,230.4	5.3	7,235.66	89′ Rockfill	
21	Levee	26,087.56	25,209.57	7,216.9	34.1	7,250.97	74′ Rockfill	
22	Tails	26,120.22	25,182.00	7,230.9	5.3	7,236.17	89′ Rockfill	
40(1)	Tails	26,015.32	24,971.63	7,193.5	120.0	7,313.49	--	
41(1,3)	Tails	26,015.32	24,971.63	7,189.5	124.0	7,313.49	--	
42	Tails	26,198.07	24,830.47	7,280.5	2.0	7,282.50	2.5′ Tails	
43(1)	Tails	26,138.75	25,219.09	7,189.0	120.0	7,308.98	--	
44(1,3)	Tails	26,138.75	25,219.09	7,183.0	126.0	7,308.98	--	
45(1)	Tails	26,159.58	25,164.60	7,231.3	77.0	7,308.26	--	
46(1,3)	Tails	26,159.58	25,164.60	7,223.3	85.0	7,308.26	--	
47	Tails	26,328.53	25,043.54	7,281.1	2.0	7,283.12	1.5′ Tails	

(1) The following pairs are installed in the same vertical drill holes: 3,4; 23,24; 27,28; 29,30; 32,33; 34,35; 36,37; 40,41; 43,44; 45, 46.
(2) Units 5 and 6 are installed in the same angle (65°) drill hole.
(3) Open standpipe with Johnson 8 slot screen, 40x60 pack.
(4) Upper limestone member of the Mississippian Great Blue Formation (Mgbu)

TABLE I

PIEZOMETRIC BEHAVIOR: 1997-1998

			30 Dec. 1997		31-Dec-98		PIEZOMETRIC PEAK (JAN 97 - DEC 98)					
Piezo No. No.	Location	Gauge Elevation	Potential Piezometer Head	Pore Pressure (feet H20)	Potential Piezometer Head	Pore Pressure (feet H20)	Date	Tail H20 Elevation	Potential Piezometer Head	Pore Pressure (ft H20)	Annual Change in Pore Pressure[1]	Peak Var. From Tail Head
1	Tails	7,233.1	98.33	22.03	102.55	21.30	4/15/98	7337.42	104.32	24.16	-0.73	80.16
3	Dam ZII	7,115.0	216.43	-1.49	220.65	-1.84	8/12/98	7336.75	221.75	-1.38	-0.35	223.13
4	Dam ZII	7,033.1	298.33	-1.15	302.55	-1.61	8/12/98	7336.75	303.65	-1.09	-0.46	304.74
5	Dam ZII	7,096.1	235.33	-1.22	239.55	-1.67	8/12/98	7336.75	240.65	-1.11	-0.45	241.76
6	Dam ZII	7,041.0	290.43	-1.52	294.65	-1.88	7/15/98	7336.95	295.95	-1.25	-0.36	297.20
7	Tails	7,232.9	98.53	18.70	102.75	17.21	4/22/98	7337.42	104.52	22.59	-1.49	81.93
9	Tails	7,230.3	101.13	27.13	105.35	24.36	4/22/98	7337.42	107.12	30.41	-2.77	76.71
13	Tails	7,232.7	98.73	13.69	102.95	8.51	4/29/98	7337.52	104.82	21.11	-5.18	83.71
15	Tails	7,231.4	100.03	14.38	104.25	12.70	3/25/98	7336.34	104.94	16.45	-1.68	88.49
16	Levee	7,216.7	114.73	5.95	118.95	4.77	3/25/98	7336.34	119.64	7.74	-1.18	111.90
17	Tails	7,230.4	101.03	17.63	105.25	13.71	3/25/98	7336.34	105.94	19.28	-3.92	86.66
21	Levee	7,216.9	114.53	14.73	118.75	13.17	3/25/98	7336.34	119.44	15.42	-1.56	104.02
22	Tails	7,230.9	100.53	9.70	104.75	8.88	3/25/98	7336.34	105.44	10.27	-0.82	95.17
23	Tails	7,212.5	118.93	30.04	123.15	30.04	4/15/98	7337.42	124.92	32.16	0.00	92.76
24	Tails	7,216.5	114.93	18.57	119.15	17.89	4/22/98	7337.42	120.92	20.36	-0.68	100.56
25	Dam ZV	7,201.3	130.13	38.65	134.35	37.61	4/22/98	7337.42	136.12	40.73	-1.04	95.39
27	Tails	7,210.6	120.83	30.32	125.05	29.45	4/29/98	7337.52	126.92	34.50	-0.87	92.42
28	Tails	7,214.5	116.93	17.97	121.15	16.42	4/29/98	7337.52	123.02	21.97	-1.55	101.05
29	Dam ZV	7,125.7	205.73	75.21	209.95	68.58	3/25/98	7336.34	210.64	76.56	-6.63	134.08
30	Dam ZV	7,130.7	200.73	65.13	204.95	57.07	3/25/98	7336.34	205.64	67.96	-8.06	137.68
31	Dam ZVI	7,200.1	131.33	26.72	135.55	24.79	4/29/98	7337.52	137.42	31.08	-1.93	106.34
32	Dam ZII	7,030.8	300.63	-7.28	304.85	-7.72	8/12/98	7336.75	305.95	-6.93	-0.44	312.88
33	Dam ZII	7,030.8	300.63	0.00	304.85	0.00	1/17/98	7331.98	301.18	0.00	0.00	301.18
34	Dam ZII	7,122.7	208.73	-8.04	212.95	-8.58	8/12/98	7336.75	214.05	-8.03	-0.54	222.08
35	Dam ZII	7,117.2	214.23	0.00	218.45	0.00	1/17/98	7331.98	214.78	0.00	0.00	214.78
36	Dam Bed	6,963.8	367.63	-7.05	371.85	-7.56	8/12/98	7336.75	372.95	-6.95	-0.51	379.90
37	Dam Bed	6,958.8	372.63	0.00	376.85	0.00	1/17/98	7331.98	373.18	0.00	0.00	373.18
38	Tails	7,191.3	140.13	38.81	144.35	36.99	6/17/98	7337.70	146.40	40.35	-1.82	106.05
41	Tails	7,189.5	141.93	48.00	146.15	46.20	4/8/98	7337.34	147.84	49.60	-1.80	98.24
42	Tails	7,282.5	48.93	13.65	53.15	10.42	3/25/98	7336.34	53.84	14.67	-3.23	39.17
43	Tails	7,188.9	142.53	27.22	146.75	26.44	8/31/98	7336.71	147.81	27.23	-0.78	120.58
44	Tails	7,182.9	148.53	46.48	152.75	46.10	3/25/98	7336.34	153.44	47.39	-0.38	106.05
45	Tails	7,231.3	100.13	10.11	104.35	8.73	3/25/98	7336.34	105.04	10.59	-1.38	94.45
46	Tails	7,223.3	108.13	21.86	112.35	21.09	3/25/98	7336.34	113.04	22.84	-0.77	90.20
47	Tails	7,283.1	48.33	7.65	52.55	5.74	3/25/98	7336.34	53.24	8.09	-1.91	45.15
AVERAGES			164.31	18.07	168.53	16.49			169.33	19.62	-1.58	149.71

[1] Negative numbers indicate lowering of pore pressures

TABLE II

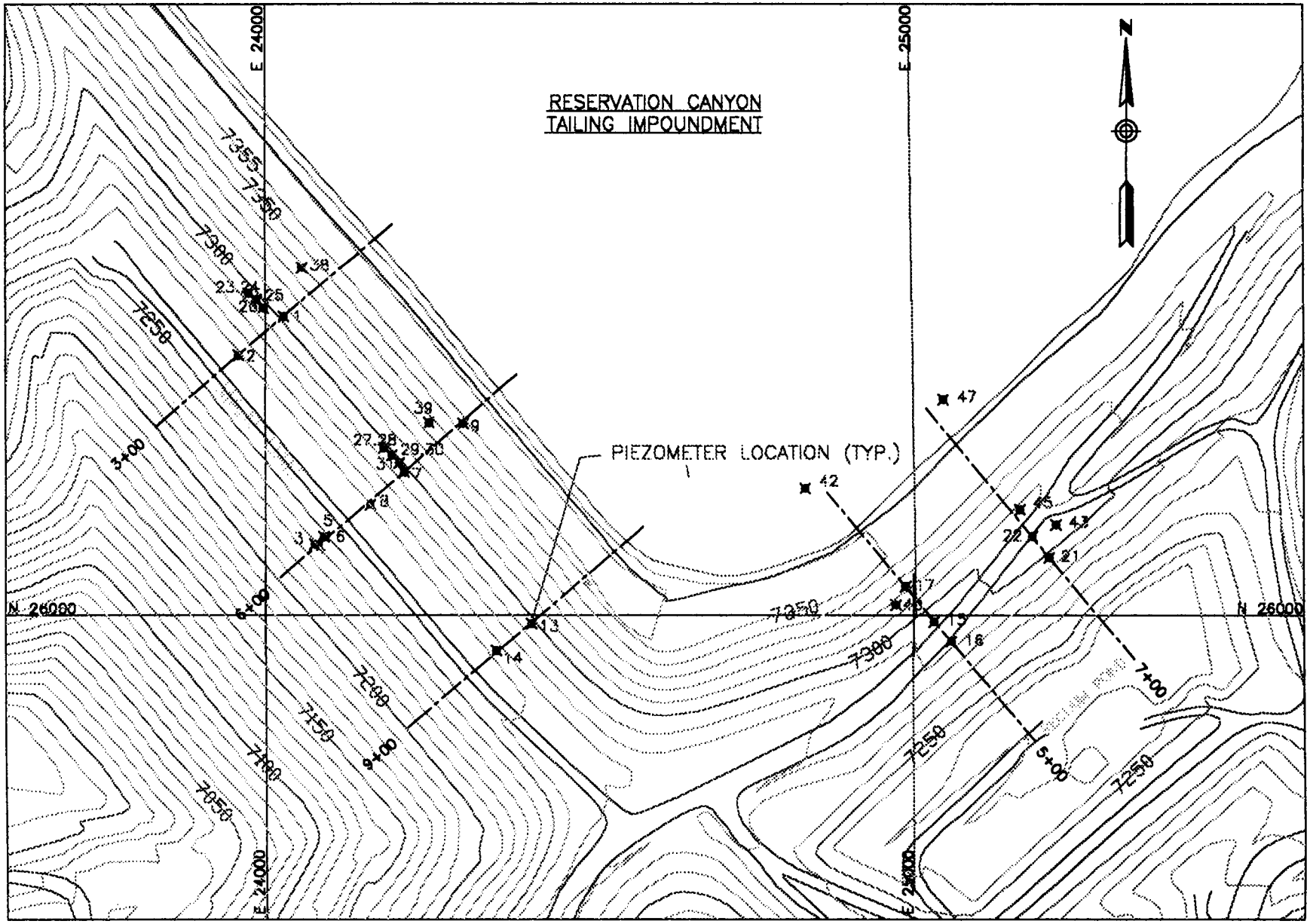
PORE PRESSURE NOTIFICATION LEVEL

Piezometer No	Location	Gauge Elevation (ft.)	7310 Pore Press (ft. H_2O[1])	Simulated Critical Core Pressure (ft. H_2O) 7350
		MAIN BUTTRESS		
1	Tails	7,233.1	22	75
3[2,3]	Dam Z II	7,115.0	(2)	115
4[2,3]	Dam Z II	7,033.1	(2)	184
5[2,4]	Dam Z II	7,096.1	(2)	152
6[2,4]	Dam Z II	7,041.0	(2)	208
7	Tails	7,232.9	19	101
9	Tails	7,230.3	27	162
13	Tails	7,232.7	14	68
23[3,5]	Tails	7,212.6	31	111
24[3]	Tails	7,216.6	20	106
25	Dam Z V	7,146.5	39	202
26	Dam Z V	7,201.3	(9)	127
27[3,5]	Tails	7,210.6	31	120
28[3]	Tails	7,214.6	18	113
29[3,5]	Dam Z V	7,125.7	82	236
30[3]	Dam Z V	7,130.7	71	229
31	Dam Z VI	7,200.1	27	133
32[3]	Dam Z II	7,030.8	(9)	186
33[3,5]	Dam Z II	7,030.8	0	186
34[3]	Dam Z II	7,122.7	(8)	109
35[3,5]	Dam Z II	7,117.2	0	114
36[3,6]	Dm Bdrk	6,963.8	(7)	245
37[3,5,6]	Dm Bdrk	6,958.8	0	250
38	Tails	7,191.3	40	157
39	Tails	7,174.3	30	181
		LEVEE		
15	Tails	7,231.4	14	122
16	Levee	7,216.7	6	138
17	Tails	7,230.4	18	185
21	Levee	7,216.9	15	156
22	Tails	7,230.9	9	133
41[3,5]	Tails	7,189.5	46	225
42	Tails	7,280.5	8	111
43[3]	Tails	7,189.0	26	224
44[3,5]	Tails	7,183.0	44	234
45[3]	Tails	7,231.3	10	158
46[3,5]	Tails	7,223.3	18	172
47	Tails	7,281.1	4	110

NOTES: Exceedance of these critical pressures will require notification of the Directing Engineer for Dam Safety within 24 hours of analysis. Simulated pore pressures at limiting equilibrium based on apparent pressures at Units 1, 7, and 9.

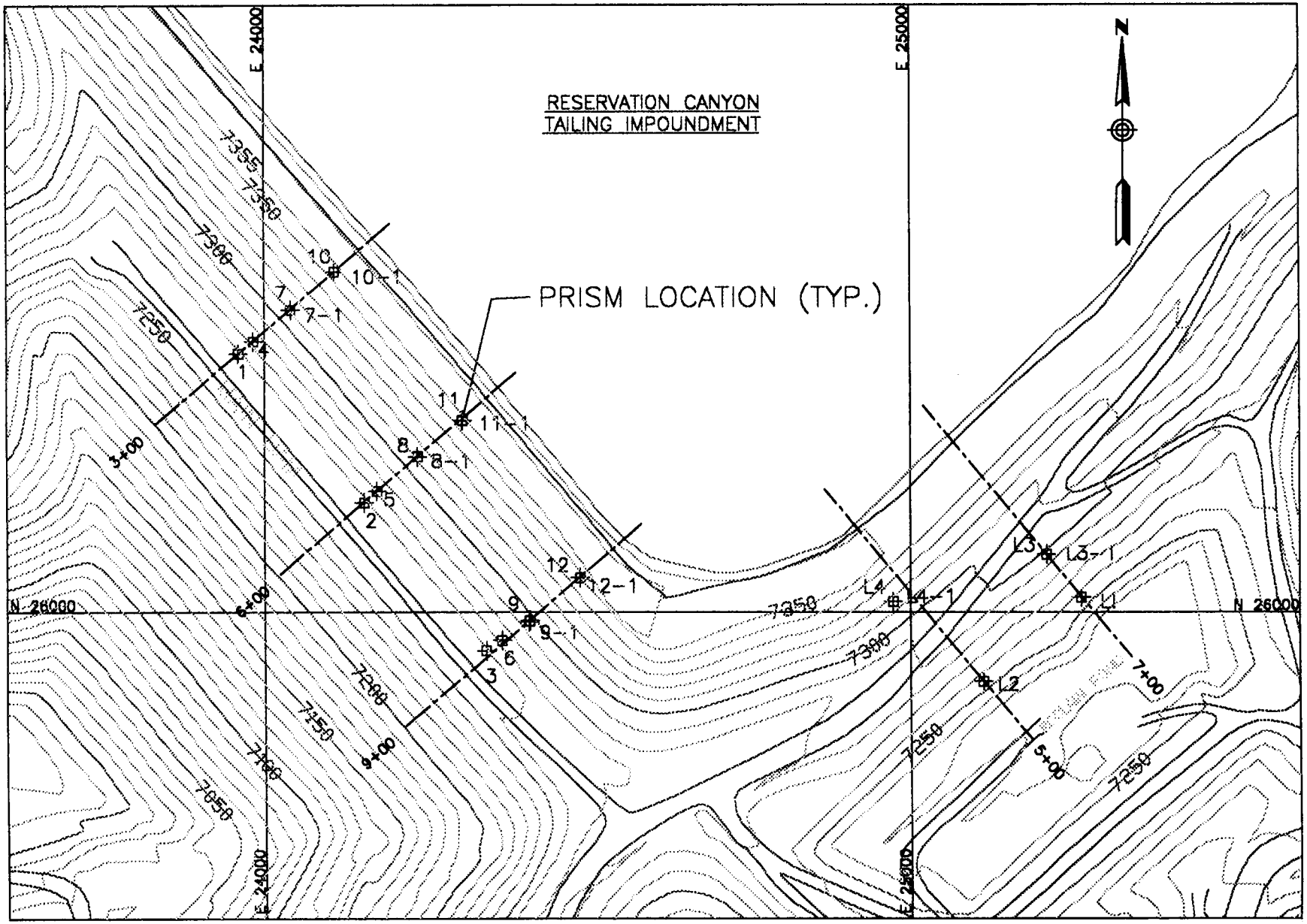
TABLE III

FIGURES



PIEZOMETER LOCATION MAP

Figure 1



PRISM LOCATION MAP
FIGURE 2

SCALE IN FEET
0 100 200 400

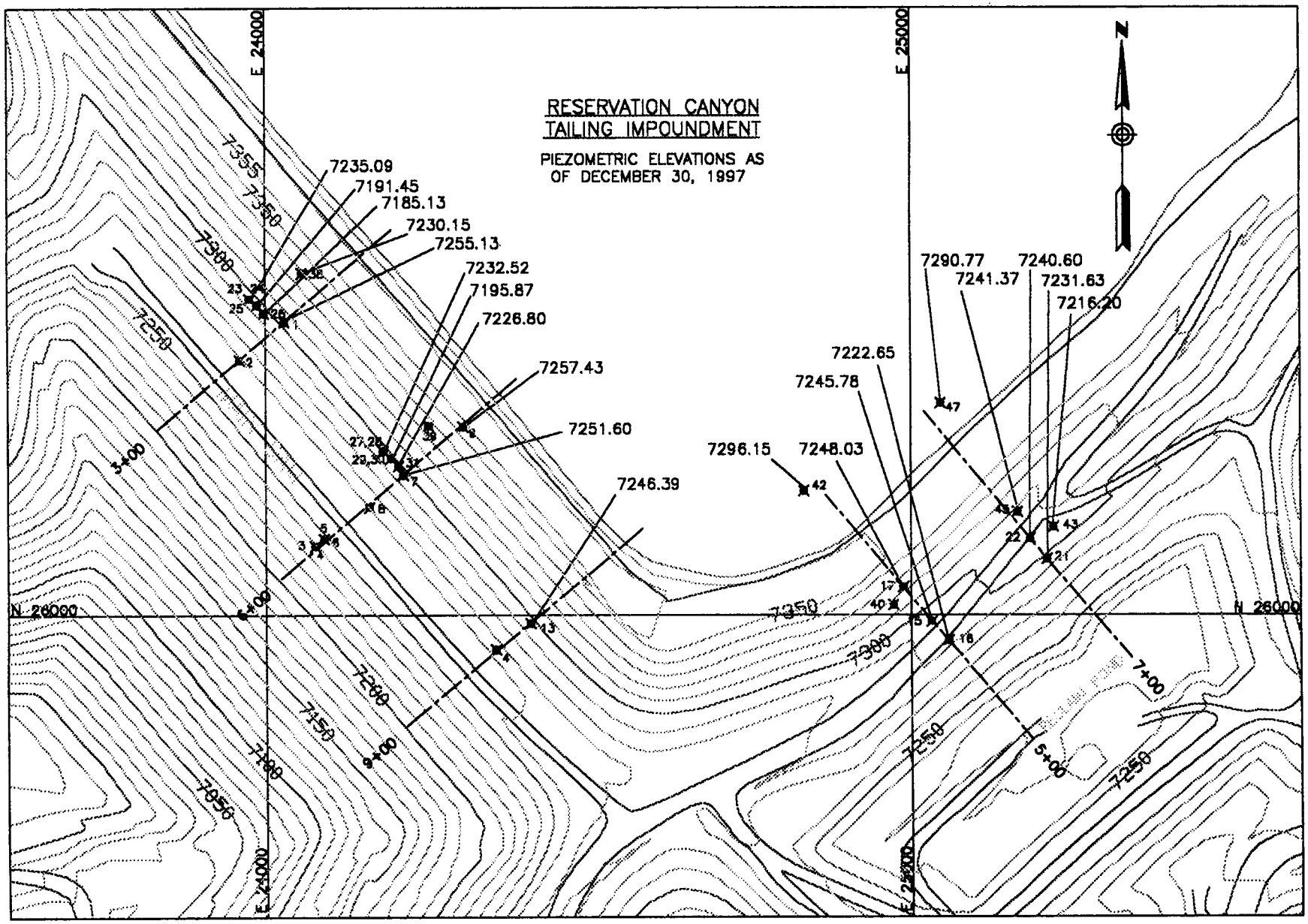
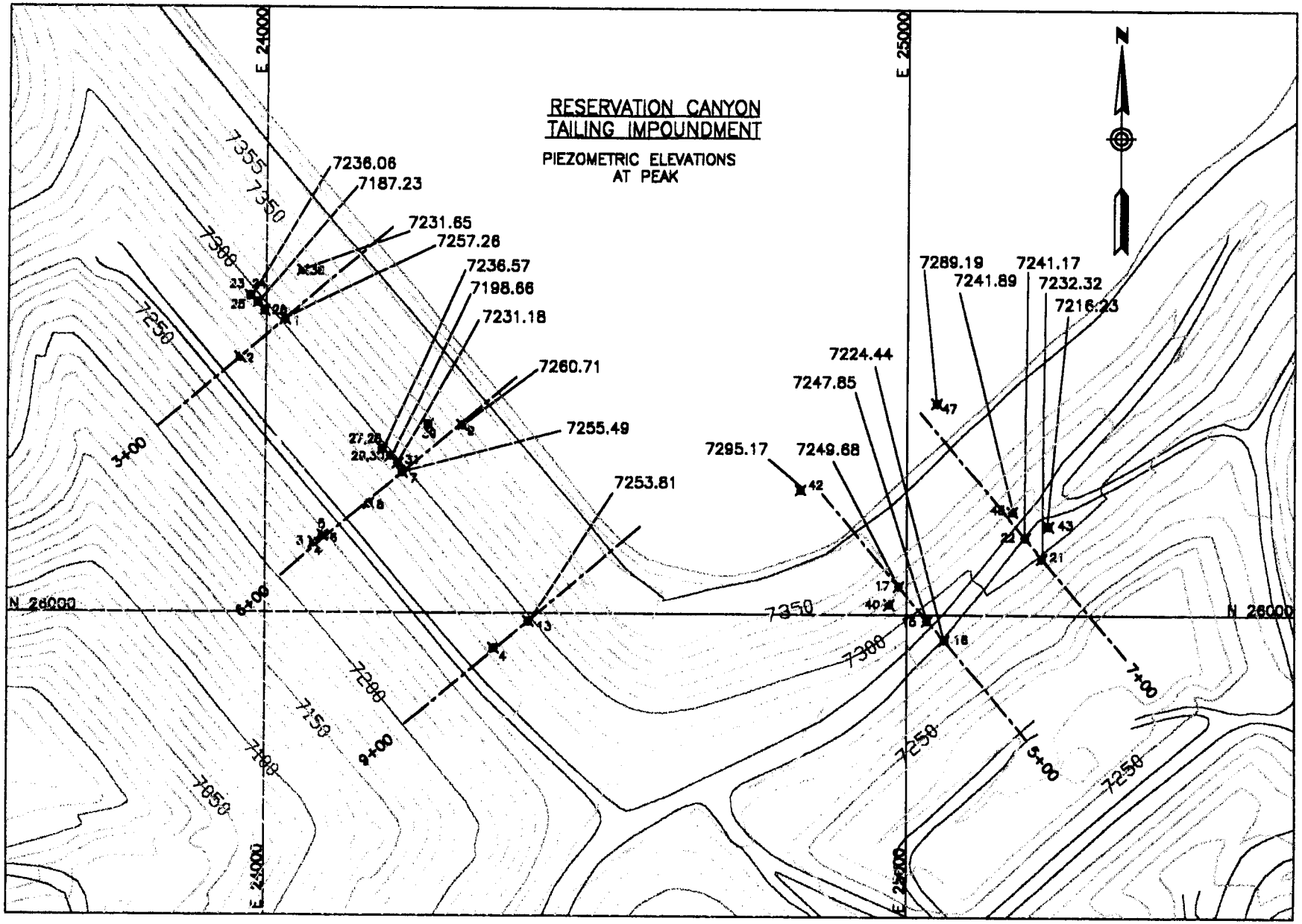


Figure 3

SCALE IN FEET

0 100 200 400


RESERVATION CANYON
TAILING IMPOUNDMENT
PIEZOMETRIC ELEVATIONS
AT PEAK
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E 24000
E 25000
N 26000
7236.06
7187.23
7231.65
7257.26
7236.57
7198.66
7231.18
7260.71
7255.49
7253.81
7289.19
7241.17
7241.89
7232.32
7216.23
7224.44
7247.85
7295.17
7249.68
3+00
4+00
5+00
7+00
9+00
7355
7350
7300
7250
7200
7150
7100
7050
SCALE IN FEET
0
100
200
400

Figure 4

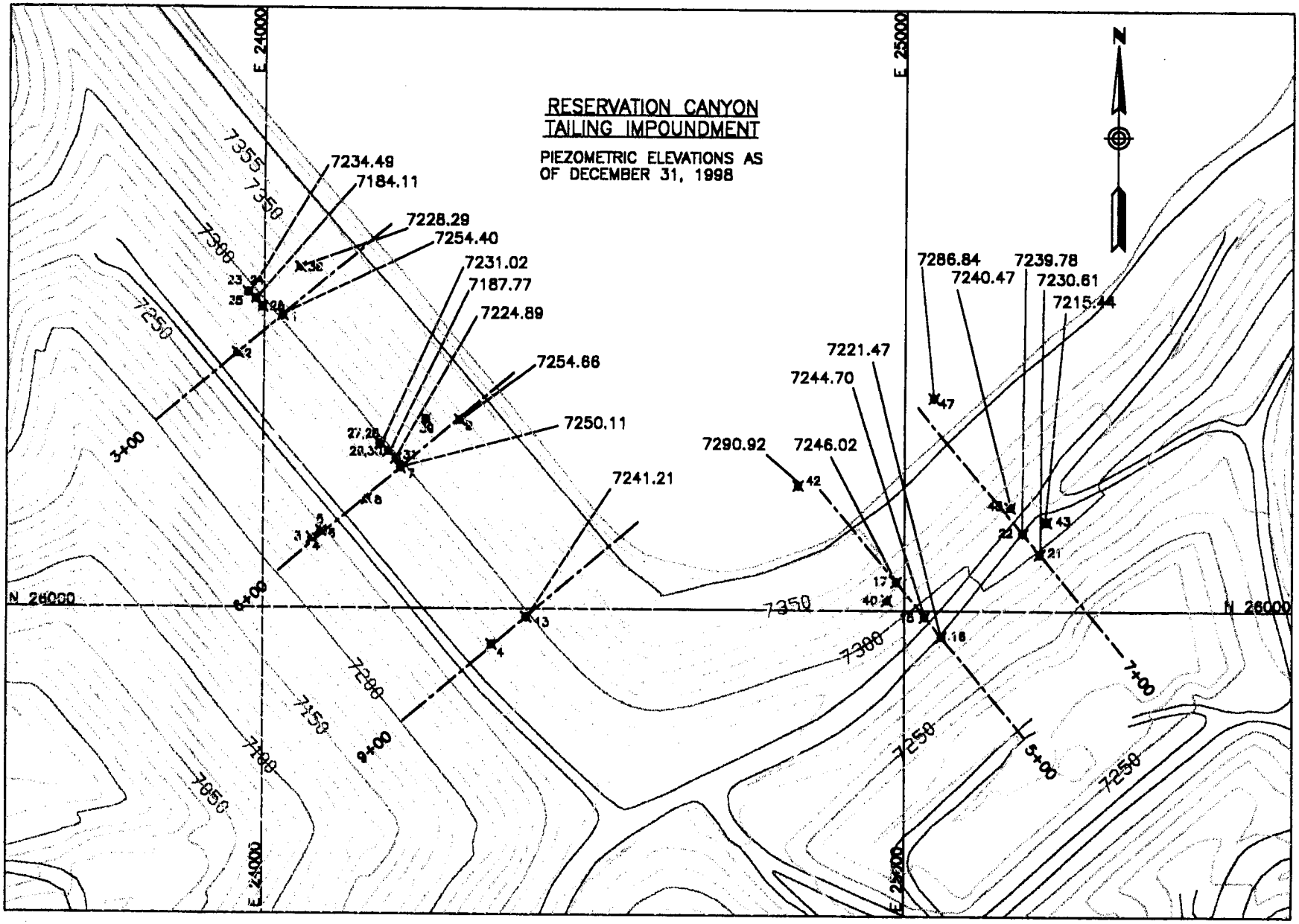
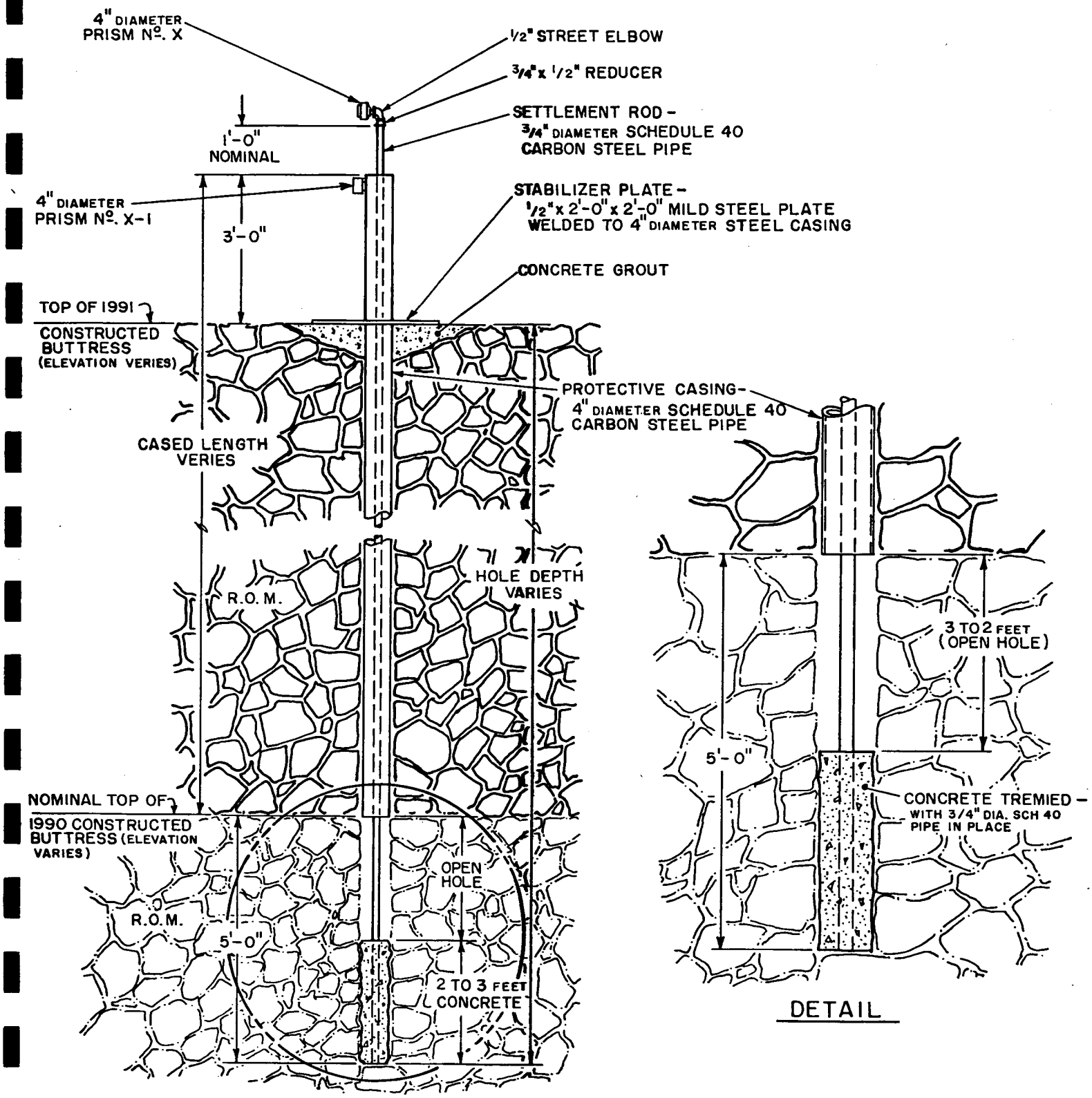

RESERVATION CANYON
TAILING IMPOUNDMENT
PIEZOMETRIC ELEVATIONS AS
OF DECEMBER 31, 1998
N
E 24000
E 25000
N 26000
7234.49
7184.11
7228.29
7254.40
7231.02
7187.77
7224.89
7254.66
7250.11
7241.21
7290.92
7246.02
7244.70
7221.47
7286.84
7240.47
7239.78
7230.61
7215.44
3+00
6+00
9+00
7+00
5+00
7355
7350
7300
7250
7200
7150
7100
7050
SCALE IN FEET
0
100
200
400

Figure 5



RESERVATION CANYON TAILING IMPOUNDMENT

SETTLEMENT MONITORS - SCHEMATIC

FIGURE 6

VIBRATING WIRE AND STANDPIPE PIEZOMETER CONSTRUCTION (TYPICAL)

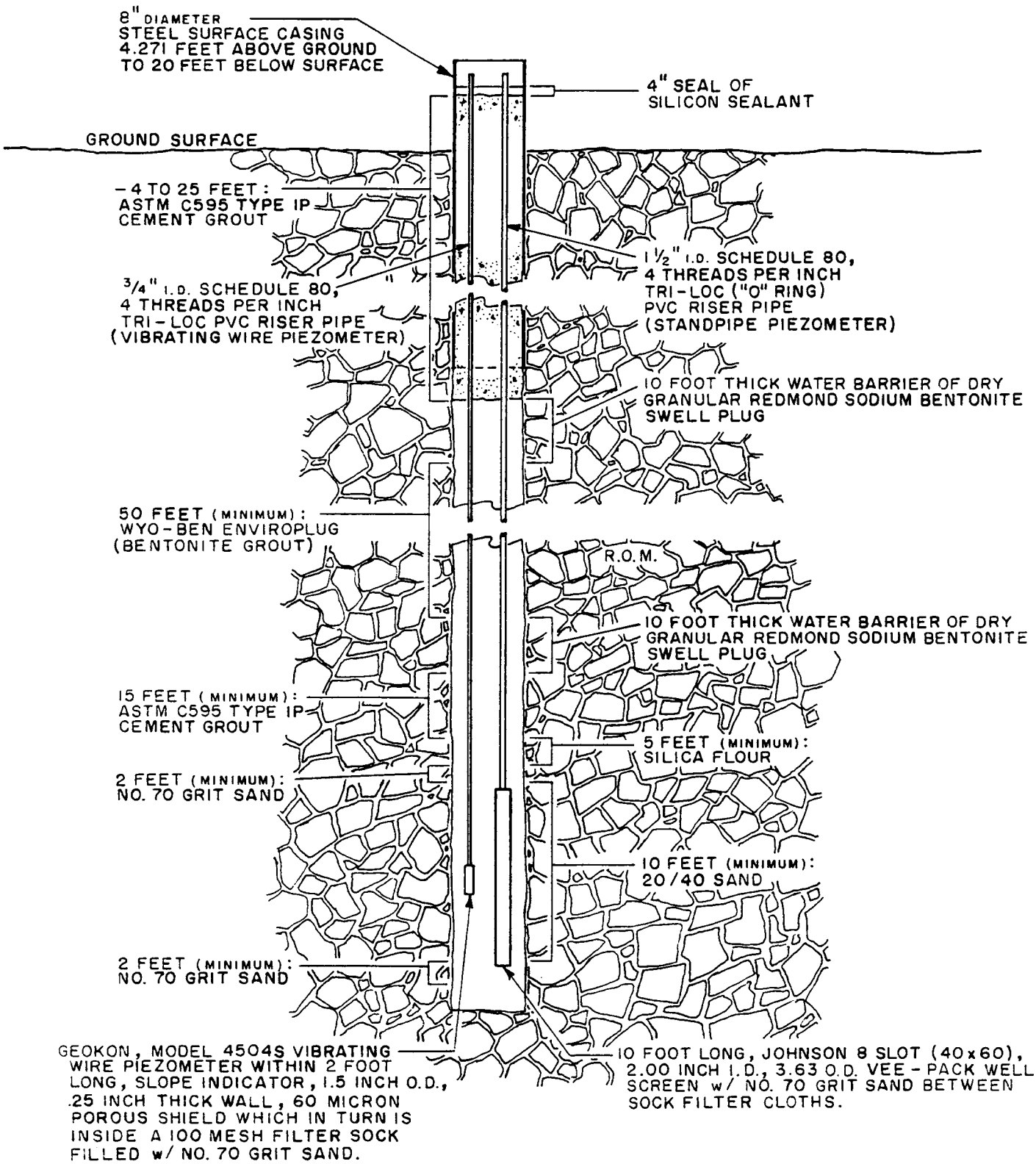


FIGURE 7

APPENDIX A

METEOROLOGICAL DATA

[redacted] [redacted] [redacted] [redacted] [redacted] BA[redacted] MERC[redacted]OLD M[redacted]
HISTORIC TEMPERATURE DATA [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]

YEAR	MONTH	MIN TEMP RANGE LOW	MIN TEMP RANGE HIGH	MIN TEMP AVE	MAX TEMP RANGE LOW	MAX TEMP RANGE HIGH	MAX TEMP AVE
1983	JAN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	FEB	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	MAR	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	APR	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	MAY	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	JUN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	JUL	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	AUG	Begin recordin					
	SEP	22	47	41			
	OCT	17	46	37			
	NOV	11	38	22			
	DEC	1	33	24			
MIN/MAX/AVE		N/A	N/A	N/A	N/A	N/A	N/A
1984	JAN	-9	32	15	11	50	32
	FEB	7	29	17	28	45	36
	MAR	2	29	22	12	59	38
	APR	15	35	25	25	70	48
	MAY	18	53	40	38	83	62
	JUN	38	64	48	58	88	75
	JUL	50	78	60	70	88	82
	AUG	42	62	44	78	84	80
	SEP	20	60	44	52	80	67
	OCT	18	42	30	28	68	44
	NOV	3	44	25	18	52	41
	DEC	4	26	16	18	48	27
MIN/MAX/AVE		(9)	78	33	11	88	53
1985	JAN	-9	34	14	19	51	33
	FEB	-8	29	14	21	51	32
	MAR	8	35	22	22	63	45
	APR	25	56	37	30	66	52
	MAY	24	56	41	54	77	66
	JUN	30	64	50	52	90	78
	JUL	46	65	57	54	100	81
	AUG	44	63	55	66	88	79
	SEP	24	58	43	46	82	66
	OCT	24	44	34	36	68	52
	NOV	N/A					
	DEC	-2	30	17	16	48	34
MIN/MAX/AVE		(2)	65	35	16	100	56
1986	JAN	10	36	23	32	52	44
	FEB	-2	39	23	22	63	39
	MAR	12	46	30	31	68	50
	APR	17	45	29	34	71	51
	MAY	24	56	41	39	78	61
	JUN	36	64	55	58	88	78
	JUL	40	64	55	61	87	77
	AUG	51	64	58	71	88	81
	SEP	27	58	42	42	80	62
	OCT	22	44	35	44	64	56
	NOV	12	36	25	26	57	45
	DEC	6	32	20	22	50	37
MIN/MAX/AVE		(2)	64	36	22	88	57
1987	JAN	0	33	14	15	53	33
	FEB	9	34	20	26	52	39
	MAR	6	38	23	22	56	43
	APR	20	52	36	37	74	58
	MAY	33	55	42	43	74	62
	JUN	40	63	50	63	84	77
	JUL	44	64	55	64	85	77
	AUG	42	61	53	64	86	78
	SEP	38	54	47	54	85	71
	OCT	30	51	40	43	76	62
	NOV	12	42	25	31	58	43
	DEC	-4	40	15	18	54	32
MIN/MAX/AVE		(4)	64	35	15	86	56

YEAR	MONTH	MIN TEMP RANGE LOW	MIN TEMP RANGE HIGH	MIN. TEMP AVE	MAX TEMP. RANGE LOW	MAX TEMP. RANGE HIGH	MAX TEMP AVE
1988	JAN	2	28	14	20	56	33
	FEB	7	35	21	27	54	40
	MAR	10	36	22	20	62	40
	APR	20	48	33	41	70	56
	MAY	22	56	40	32	76	64
	JUN	36	68	53	62	88	76
	JUL	48	64	59	78	88	83
	AUG	48	65	56	70	89	80
	SEP	34	62	46	45	82	68
	OCT	39	50	44	53	76	65
	NOV	11	40	24	20	64	43
	DEC	0	32	17	20	52	34
MIN/MAX/AVE		0	68	36	20	89	57
1989	JAN	4	29	16	10	47	34
	FEB	-15	42	16	4	56	36
	MAR	6	42	29	24	64	49
	APR	28	54	39	39	74	58
	MAY	30	58	40	42	76	62
	JUN	29	56	46	54	85	70
	JUL	51	72	60	79	91	85
	AUG	39	66	54	58	84	78
	SEP	42	58	49	56	80	70
	OCT	20	54	37	30	72	57
	NOV	18	40	27	32	62	47
	DEC	10	34	22	24	52	39
MIN/MAX/AVE		(15)	72	36	4	91	57
1990	JAN	8	39	21	20	54	37
	FEB	3	33	17	14	52	36
	MAR	18	39	29	24	63	47
	APR	20	51	38	34	69	55
	MAY	28	56	39	44	72	61
	JUN	30	63	49	59	90	75
	JUL	51	65	57	71	90	83
	AUG	50	62	57	66	91	79
	SEP	40	63	41	59	87	75
	OCT	21	52	37	40	71	59
	NOV	14	44	27	34	64	47
	DEC	-14	36	12	12	54	31
MIN/MAX/AVE		(14)	65	36	12	91	57
1991	JAN	4	36	20	20	52	37
	FEB	10	34	27	30	54	46
	MAR	14	36	23	22	58	41
	APR	20	42	29	26	71	60
	MAY	29	48	37	38	69	56
	JUN	38	62	49	54	82	73
	JUL	52	68	60	70	88	82
	AUG	50	62	57	72	88	79
	SEP	36	58	47	56	82	69
	OCT	11	52	38	34	76	61
	NOV	4	42	25	20	59	42
	DEC	2	34	21	26	58	40
MIN/MAX/AVE		2	68	36	20	86	57
1992	JAN	7	32	21	28	56	41
	FEB	18	34	26	36	58	46
	MAR	24	38	31	42	60	51
	APR	29	52	40	36	76	61
	MAY	36	58	45	56	80	71
	JUN	36	60	49	56	101	77
	JUL	40	62	55	62	93	82
	AUG	39	73	56	68	103	88
	SEP	38	56	48	60	88	71
	OCT	20	49	38	42	80	66
	NOV	4	34	20	28	62	44
	DEC	0	31	16	23	59	40
MIN/MAX/AVE		0	73	37	23	103	62

YEAR	MONTH	MIN TEMP RANGE LOW	MIN TEMP RANGE HIGH	MIN TEMP AVE	MAX TEMP RANGE LOW	MAX TEMP RANGE HIGH	MAX TEMP AVE
1993	JAN	-5	31	16	14	58	39
	FEB	10	32	19	26	50	39
	MAR	16	52	30	34	75	51
	APR	22	39	31	36	70	55
	MAY	30	54	43	40	89	70
	JUN	34	59	44	53	90	72
	JUL	41	67	51	60	99	76
	AUG	47	64	56	71	98	83
	SEP	34	59	47	59	89	76
	OCT	24	54	38	42	79	59
	NOV	2	36	20	25	64	44
	DEC	4	42	20	25	56	40
MIN/MAX/AVE		(5)	67	35	14	99	59
1994	JAN	9	36	25	26	55	41
	FEB	6	32	19	28	58	40
	MAR	14	44	30	39	63	55
	APR	24	54	35	39	76	56
	MAY	28	51	43	52	88	70
	JUN	40	64	54	68	100	83
	JUL	48	68	59	74	102	91
	AUG	53	68	61	70	100	89
	SEP	34	68	50	60	90	78
	OCT	10	44	35	40	80	58
	NOV	3	38	16	16	60	38
	DEC	0	32	19	22	56	40
MIN/MAX/AVE		0	68	37	16	102	62
1995	JAN	0	32	16	20	53	37
	FEB	8	38	23	26	72	48
	MAR	18	40	29	36	67	51
	APR	24	42	31	34	65	47
	MAY	30	48	38	36	78	56
	JUN	30	60	44	49	90	68
	JUL	45	70	56	54	104	86
	AUG	40	74	58	82	100	90
	SEP	34	60	50	58	92	81
	OCT	20	52	35	30	84	65
	NOV	20	40	31	33	70	54
	DEC	10	40	23	25	64	43
MIN/MAX/AVE		0	74	36	20	104	61
1996	JAN	7	36	19	22	56	38
	FEB	2	38	20	22	68	43
	MAR	-1	42	26	36	72	55
	APR	9	48	30	40	79	57
	MAY	31	56	42	54	92	68
	JUN	40	64	52	60	98	79
	JUL	54	72	60	78	100	92
	AUG	42	66	58	80	102	91
	SEP	30	64	47	50	94	75
	OCT	19	54	37	30	90	65
	NOV	11	42	27	32	67	50
	DEC	6	38	20	20	54	39
MIN/MAX/AVE		(1)	72	37	22	102	63
1997	JAN	5	34	19	28	60	38
	FEB	9	32	17	22	59	37
	MAR	10	40	26	34	76	58
	APR	18	44	30	40	70	53
	MAY	28	54	44	36	91	74
	JUN	34	60	48	60	94	78
	JUL	40	70	56	77	106	89
	AUG	52	62	58	68	99	86
	SEP	39	59	49	59	94	76
	OCT	22	52	37	31	83	65
	NOV	15	40	28	34	68	51
	DEC						
MIN/MAX/AVE		5	70	38	22	106	64

YEAR	MONTH	MIN TEMP. RANGE LOW	MIN TEMP. RANGE HIGH	MIN. TEMP. AVE	MAX TEMP. RANGE LOW	MAX TEMP. RANGE HIGH	MAX. TEMP. AVE
1998	JAN	8	32	20	30	56	42
	FEB	10	32	22	28	52	38
	MAR						
	APR						
	MAY						
	JUN						
	JUL						
	AUG						
	SEP						
	OCT						
	NOV						
	DEC						
MIN/MAX/AVE			32	21		56	40

MONTH		14/15 YR LOW AVERAGE	14/15 HIGH AVE	MINIMUM TEMP.	MAX. TEMP.
JAN.	15 yr.	18	37	(5)	60
FEB.	15 yr.	20	40	(16)	72
MAR	14 yr.	27	48	(1)	75
APR	14 yr.	33	54	9	79
MAY	14 yr.	41	65	16	92
JUN	14 yr.	49	76	29	101
JUL.	14 yr.	57	83	40	106
AUG	14 yr.	56	83	39	103
SEP	14 yr.	47	72	20	94
OCT	14 yr.	37	60	10	90
NOV	14 yr.	23	42	0	70
DEC	13 yr.	18	37	(14)	64
14 YR AVE		36	58	(MIN)	(MAX)
EXTREMES				-15	106

BARRICK MERCUR GOLD MINE
HISTORIC PRECIPITATION DATA

MONTH	PRECIP. (in.)	DAILY MAX(in)	DATE OF MAXIMUM
983 JAN.	N.D.	N.D.	N.D.
FEB.	N.D.	N.D.	N.D.
MAR.	N.D.	N.D.	N.D.
APR.	N.D.	N.D.	N.D.
MAY	N.D.	N.D.	N.D.
JUN.	N.D.	N.D.	N.D.
JUL.	N.D.	N.D.	N.D.
AUG.	1.80	1.50	8/18/83
SEP.	1.43	0.36	9/02/83
OCT.	1.12	0.35	10/01/83
NOV.	1.4[illegible]	0.18	10/24/83
DEC.	3.07	0.66	12/25/83
Total:	8.88	1.50	AUG. '83

JAN.	1.39	0.52	1/13/84
FEB.	1.38	0.60	2/26/84
MAR.	1.30	0.32	3/31/84
APR.	1.60	0.43	4/01/84
MAY	0.85	0.46	5/31/84
JUN.	1.60	0.90	6/06/84
JUL.	1.56	0.52	7/30/84
AUG.	1.34	0.38	8/17/84
SEP.	1.47	0.71	9/20/84
OCT.	2.04	0.79	10/02/84
NOV.	1.16	0.35	11/08/84
DEC.	1.13	0.35	12/19/84
Total:	16.82	0.90	JUN. '84

JAN.	1.50	0.40	1/05/85
FEB.	0.95	0.26	2/09/85
MAR.	1.60	0.58	3/10/85
APR.	0.59	0.30	4/24/85
MAY	3.30	0.82	5/10/85
JUN.	1.20	0.52	6/24/85
JUL.	3.79	1.28	7/22/85
AUG.	0.13	0.11	8/05/85
SEP.	1.76	0.84	9/11/85
OCT.	1.49	0.65	10/06/85
NOV.	2.00	N.D.	N.D.
DEC.	0.89	0.47	12/02/85
Total:	19.20	1.28	JUL. '85

JAN.	1.61	0.56	1/30/86
FEB.	3.55	0.85	2/17/86
MAR.	2.56	0.68	3/08/86
APR.	3.45	0.85	4/01/86
MAY	1.44	0.49	5/08/86
JUN.	0.42	0.30	6/04/86
JUL.	2.03	0.69	7/15/86
AUG.	3.20	1.52	8/21/86
SEP.	2.04	0.45	9/24/86
OCT.	1.39	0.59	10/01/86
NOV.	0.95	0.40	11/07/86
DEC.	0.41	0.21	12/05/86
Total:	23.05	1.52	AUG. '86

JAN.	1.23	0.34	1/05/87
FEB.	1.80	0.73	2/13/87
MAR.	1.93	0.40	3/18/87
APR.	1.43	0.91	4/05/87
MAY	2.02	0.54	5/18/87
JUN.	1.75	0.83	6/29/87
JUL.	2.84	0.67	7/21/87
AUG.	1.47	0.40	8/24/87
SEP.	0.33	0.23	9/03/87
OCT.	1.74	0.44	10/13/87
NOV.	1.97	0.42	11/01/87
DEC.	1.27	0.53	12/22/87
Total:	19.78	0.91	APR. '87

YEAR MONTH	PRECIP. (in.)	DAILY MAX(in)	DATE OF MAXIMUM
1986 JAN.	1.63	0.57	1/05/88
FEB.	0.07	0.05	2/18/88
MAR.	1.75	0.50	3/10/88
APR.	1.86	0.69	4/18/88
MAY	1.70	0.75	5/29/88
JUN.	0.60	0.33	6/22/88
JUL.	1.52	0.91	7/30/88
AUG.	0.50	0.37	8/06/88
SEP.	0.78	0.45	9/13/88
OCT.	0.89	0.62	10/12/88
NOV.	2.01	0.36	11/03/88
DEC.	0.96	0.34	12/22/88
Total:	14.27	0.91	JUL. '88

1989 JAN.	0.66	0.17	1/06/89
FEB.	2.73	0.80	2/02/89
MAR.	1.95	0.40	3/19/89
APR.	0.90	N.D.	N.D.
MAY	0.79	0.22	5/31/89
JUN.	0.57	0.14	6/04/89
JUL.	1.51	0.48	7/12/89
AUG.	1.64	0.55	8/10/89
SEP.	0.78	0.65	9/20/89
OCT.	1.39	0.45	10/25/89
NOV.	0.67	0.39	11/26/89
DEC.	0.28	0.20	12/10/89
Total:	13.87	0.80	FEB. '89

1990 JAN.	1.11	0.32	1/14/90
FEB.	1.31	0.26	2/17/90
MAR.	1.47	0.68	3/28/90
APR.	2.19	0.98	4/08/90
MAY	1.34	0.45	5/30/90
JUN.	1.07	0.29	6/11/90
JUL.	1.01	0.26	7/14/90
AUG.	0.73	0.28	8/11/90
SEP.	1.21	0.31	9/23/90
OCT.	1.51	0.98	10/19/90
NOV.	1.22	0.33	11/01/90
DEC.	0.74	0.17	12/12/90
Total:	14.91	0.98	APR/OC

1991 JAN.	1.92	1.04	1/15/91
FEB.	1.06	0.73	2/16/91
MAR.	2.63	0.60	3/01/91
APR.	2.41	0.53	4/10/91
MAY	2.98	0.59	5/14/91
JUN.	0.94	0.55	6/02/91
JUL.	1.66	0.99	7/08/91
AUG.	2.20	0.32	8/04/91
SEP.	2.04	0.60	9/06/91
OCT.	1.66	0.45	10/23/91
NOV.	1.71	0.39	11/17/91
DEC.	0.62	0.23	12/02/91
Total:	21.83	1.04	JAN. '91

1992 JAN.	0.91	0.43	1/06/92
FEB.	2.94	1.10	2/11/92
MAR.	1.03	0.26	3/26/92
APR.	0.51	0.18	4/21/92
MAY	1.65	0.55	5/09/92
JUN.	0.79	0.22	6/13/92
JUL.	0.99	0.28	7/12/92
AUG.	0.43	0.23	8/30/92
SEP.	0.46	0.26	9/04/92
OCT.	1.85	0.54	10/30/92
NOV.	1.77	0.80	11/02/92
DEC.	1.71	0.30	12/28/92
Total:	15.04	1.10	F[illegible]B. '92

YEAR MONTH	PRECIP. (in.)	DAILY MAX(in)	DATE OF MAXIMUM
1993 JAN.	3.41	0.52	1/18/93
FEB.	2.63	0.49	2/19/93
MAR.	1.88	0.55	3/28/93
APR.	0.99	0.60	4/05/93
MAY	2.82	0.82	5/06/93
JUN.	1.62	0.56	6/07/93
JUL.	1.33	1.00	7/03/93
AUG.	0.53	0.29	8/05/93
SEP.	0.49	0.29	9/17/93
OCT.	2.89	0.51	10/15/93
NOV.	0.81	0.50	11/22/93
DEC.	0.63	0.38	12/12/93
Total:	20.03	1.00	JUL. '93

1994 JAN.	0.73	0.40	1/6/94
FEB.	2.41	0.60	2/20/94
MAR.	2.03	0.72	3/10/94
APR.	2.03	0.32	4/27/94
MAY	1.49	0.48	5/12/94
JUN.	0.00	0.00	—
JUL.	0.52	0.30	7/22/94
AUG.	3.98	0.90	8/12/94
SEP.	0.75	0.70	9/29/94
OCT.	2.45	0.70	10/5/94
NOV.	3.47	0.63	11/2/94
DEC.	2.55	0.70	12/3/94
Total:	22.41	0.90	Aug. '94

1995 JAN.	2.22	0.52	1/11/95
FEB.	1.42	0.50	2/14/95
MAR.	3.73	0.90	3/11/95
APR.	4.22	0.90	4/18/95
MAY	5.33	0.61	5/11/95
JUN.	2.67	0.53	6/03/95
JUL.	0.55	0.30	7/03/95
AUG.	2.65	1.69	8/21/95
SEP.	0.67	0.40	9/30/95
OCT.	0.47	0.34	10/22/95
NOV.	0.34	0.15	11/26/95
DEC.	2.87	1.27	12/30/95
Total:	27.14	1.69	AUG. '95

1996 JAN.	4.88	1.30	01/17/96
FEB.	3.08	0.66	02/26/96
MAR.	3.12	0.70	03/11/96
APR.	1.98	0.39	04/19/96
MAY	2.15	0.70	05/26/96
JUN.	0.19	0.16	06/11/96
JUL.	0.48	0.40	07/16/96
AUG.	0.08	0.08	08/26/96
SEP.	0.82	0.50	09/15/96
OCT.	1.94	0.71	10/24/96
NOV.	3.87	0.96	11/21/96
DEC.	4.49	0.80	12/11/96
Total:	27.08	1.30	JAN. '96

1997 JAN.	4.30	0.85	01/25/97
FEB.	2.47	0.82	02/27/97
MAR.	0.59	0.29	03/02/97
APR.	2.65	0.59	04/23/97
MAY	0.94	0.39	05/24/97
JUN.	1.78	0.38	06/18/97
JUL.	0.59	0.21	07/12/97
AUG.	2.73	0.71	08/31/97
SEP.	3.26	0.97	09/19/97
OCT.	1.95	0.51	10/24/97
NOV.	2.00	0.50	11/27/97
DEC.			
Total:	23.26	0.97	SEP. '97

1998 JAN.	4.02	0.70	01/15/98
FEB.	6.32	1.00	02/23/98
MAR.			
APR.			
MAY	3.03		
JUN.	3.18		
JUL.	3.61		
AUG.	1.25	0.8	8/25/98
SEP.	1.18		
OCT.	3.32	1.1	10/30/98
NOV.	1.04	0.32	11/2/98
DEC.	1.9		
Total:	10.34	1.00	02/23/98

MONTH	14YR.AVE MONTHLY	MONTHLY MAXIMUM	YEAR OF MAXIMUM
JAN.	2.10	4.88	1995
FEB.	2.27	6.32	1998
MAR.	1.97	3.73	1995
APR.	1.92	4.22	1995
MAY	2.06	5.33	1995
JUN.	1.09	2.67	1995
JUL.	1.46	3.79	1985
AUG.	1.67	3.98	1994
SEP.	1.31	3.26	1986
OCT.	1.77	2.89	1993
NOV.	1.82	3.87	1996
DEC.	1.66	4.49	1996
14 YR. AVE.	1.76	(MAX) 6.32	FEB. 1998

HISTORIC SNOW PACK

YEAR	SNOW PK (in.)	EQUIV. PRECIP.	% MOISTURE
1984	98.38	6.62	6.73
1985	80.00	4.94	6.18
1986	84.50	8.87	10.50
1987	69.75	6.89	9.87
1988	77.75	7.06	9.08
1989	80.25	7.66	9.55
1990	89.75	6.64	7.40
1991	112.20	11.21	9.99
1992	85.75	7.59	8.85
1993	97.29	7.80	8.02
1994	90.91	9.02	9.92
1995	45.31	6.49	14.32
1996	120.50	13.69	11.36
* 1997	101.5	8.67	8.54
AVE.	'84-'97 88.13	8.08	9.31

Maximum Snowfall:

MAX. DAILY = 18.50 in. (FEB. 8, '86)
MAX. MONTHLY = 57.75 in. (JAN., '93)
MAX. ANNUAL = 120.50 in. (1996)

*Through November 1997

[illegible]AGE MONTHLY PRECIP. (AUG. 1983-->OCT. 1997) 1.76
[illegible]AGE ANNUAL PRECIPITAION (1984-->1997) = 19.91

[illegible]XIMUM DAILY PRECIPITATION = 1.69 in. (AUG. 21, 1995)
[illegible]UM MONTHLY PRECIPITATION = 6.32 in. (FEB. 1998)
[illegible]UM ANNUAL PRECIPITATION = 27.14 in.(1995)

BARRICK MERCUR GOLD MINES INC.

ENV./HEALTH

Mercur Mine

METEOROLOGICAL DATA

MONTH: May YEAR: 98

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	44	70					
2	44	78					
3	46	94					
4	42	76	.10				
5	49	58	.20				
6	40	56					
7	42	72					
8	39	58	.40	—			
9	39	70	.10				
10	40	60	.10				
1	42	62					
2	38	56	.18				
3	34	50	.30				
4	30	60	.10				
5	36	68					
6	36	68					
7	36	68					
8	36	72	.45	—			
9	44	76	.03	—			
20	52	78					
1	32	52	.70				
2	34	50	.22	—			
3	34	59	—	—			
4	44	74	—	—			
5	43	73	—	—			
6	29	50	—	—			
7	36	74	.05	—			
8	42	72	—	—			
9	51	74	—	—			
30	53	76	—	—			
31	54	85	—	—			
MONTH TOTALS	Range: 29-54 Avg:	Range: 50-85 Avg:	3.03		Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

* Source: Mercur Security

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: June YEAR: 98

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	63	84	—	—			
2	65	98	—	—			
3	53	92	.1	—			
4	40	80	.10	—			
5							
6							
7							
8							
9	38	70	.62				
10	42	72	.10	—			
1	40	68	.06	—			
2	41	67	1.15	—			
3	41	67	.09				
4	42	68					
5	42	66	—	—			
6	34	58	.40	2 1/4"			recorded Snow 5:00AI
7	34	48	[illegible]				
8	40	82					
9	44	78	—	—			
20	42	78	—	—			
1	50	82	—	—			
2	60	84	—	—			
3	62	89	—	—			
4	49	80	—	—			
5	54	79	—	—			
6	54	89	—	—			
7	51	84	—	—			Nice Night
8	68	98					Very Warm Night
9	55	95					
30	58	98					
1							
MONTH TOTALS	Range: 34-68 Avg:	Range: 48-99 Avg:	3.18/[illegible]		Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: July YEAR: 1998

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	51	102	—	—			Nice Night
2	48	76	—	—			Nice Night
3	55	89					
4	60	93					
5	59	80					
6	55	85					
7	56	88					
8	55	89	—	—			
9	60	90	—	—			
10	60	92					
1	60	92					
2	62	99	—	—			
3	64	100	—	—			
4	62	94	—	—			
5	64	98					
6	64	102					
7	68	104					
8	66	104					
9	66	102					
20	58	103	0.2	—	—	—	
1	64	98	—	—	—	—	
2	60	80	0.09	—			
3	59	84	1.57	3.61"			Flash Flood
4	44	64	0.70	—	—	—	Raining Night
5	41	80	0.40	—	—	—	Cool Night
6	54	82	trace				
7	60	83	—	—			
8	60	87	0.60				
9	58	86	0.05				
30	52	84	—				
1	60	80					
MONTH TOTALS	Range: 41/68 Avg:	Range: 64/104 Avg:	3.61		Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: Aug YEAR: 1998

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	53	80					
2	53	85	—	—			
3	60	90					
4	56	96					
5	60	95	—				
6	60	100	—	—			
7	64	92					
8	62	96					
9							
10	56	90	.20	—			
1	54	88	—	—			
2	60	96					
3	60	96					
4	60	98	—	—			
5	62	96	.03	—			
6	63	86	—	—			
7	42	78	.03	—			Raining
8	46	80	.02	—			
9	56	84	.02	—			
20	56	80	.03	—			
1	48	80	—	—			
2	52	81	—	—			Nice Night
3	40	89	—	—			
4	54	92?	~~.80~~	—			
5	54	78	.80				
6	42	78	.12				
7	52	76	—	—			
8	52	88	—	—			
9	58	92	—	—			
30	58	94	trace				
1	56	72					
MONTH TOTALS	Range: Avg:	Range: Avg:	1.25"		Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: Sept YEAR: 1998

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	58	78					
2	56	88	—	—			
3	56	91	—	—			
4	61	87					
5	61	88					
6	58	78	.03	—			
7	69	89	—	—			
8	69	89					
9	68	72					
10	52	70	.40				
1	50	64	.05	—			
2	49	72	.03	—			
3	46	74	—	—			
4	45	72	—	—			
5	54	89	—	—			
6	56	92	—	—			
7	46	89					
8	41	71	—	—			Winding Night
9	49	72	—	—	—	—	
20	48	73	—	—			
1	34	58	.30	—			
2	41	69	—	—			
3	42	68	—	—	—		
4	43	70	—	—	—		
5	46	68	.12	—			
6	48	74	—	—			
7	48	80	—	—			
8	48	88					
9	48	88	.15				
30	50	79	.10	—			
1							
MONTH TOTALS	Range: Avg:	Range: Avg:			Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

C. M. [illegible] Env./Health Coordinator

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: Oct YEAR: 1998

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	45	60	.50				
2	43	59	—	—			
3	—	—					
4	—	—					
5	30	68	.72	—			
6	32	70	—	—			
7	42	78					
8							
9	42	82	—	—			
10	45	79	—	—			
1	34	79	—	—			
2	30	72	—	—			
3	33	63	—	—	—		
4	40	78	—	—			
5	32	46	.15	—			
6	31	44	—	—			
7	31	45					
8	23	42					
9	28	64	—				
20	38	70	—				
1	38	60	.10				
2	39	64					
3	38	66	~~.05~~				
4	34	64	.05				
5	38	50	.70				
6	39	65	—	—			
7	39	64	—	—			
8	37	52	—	—			
9	38	51	.70				
30	10	30	1.06	1"			
1	25	58	—	—			
MONTH TOTALS	Range: Avg:	Range: Avg:			Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

G. M. Eurick Env./Health Coordinator

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: Nov YEAR: 1998

DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	32	59	–	–	–	–	–
2	32	50	.32	–			
3	28	40	.12	–			
4	29	48	–	–			
5	25	50	–	–			
6	22	48	–	–			
7	28	38					Snowing/Blowing
8	22	30	.21				
9	14	28	.16				
10	10	32					
1	~~10~~ 7	30		Snowing			
2	19	40			8		
3	24	54	.20				
4	24	64					
5	10	60					
6	~~31~~	~~51~~					
7	31	51					
8	33	60					
9	28	62					
20	24	56					
1	22	58					
2	20	56	Trace				Pt. Clo.
3	38	60	~~Trace~~	–			Windy
4	28	44					Clear
5	26	40					
6	30	56					
7	34	62	–	–			Partly Cloudy
8	32	64					
9	30	58					
30	34	40	.025				clear
DEC. 1	36	60	–	–			cloudy
MONTH TOTALS	Range: Avg:	Range: Avg:			Average (MPH):		

NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

BARRICK MERCUR GOLD MINES INC. ENV./HEALTH

Mercur Mine METEOROLOGICAL DATA

MONTH: Dec YEAR: 1998

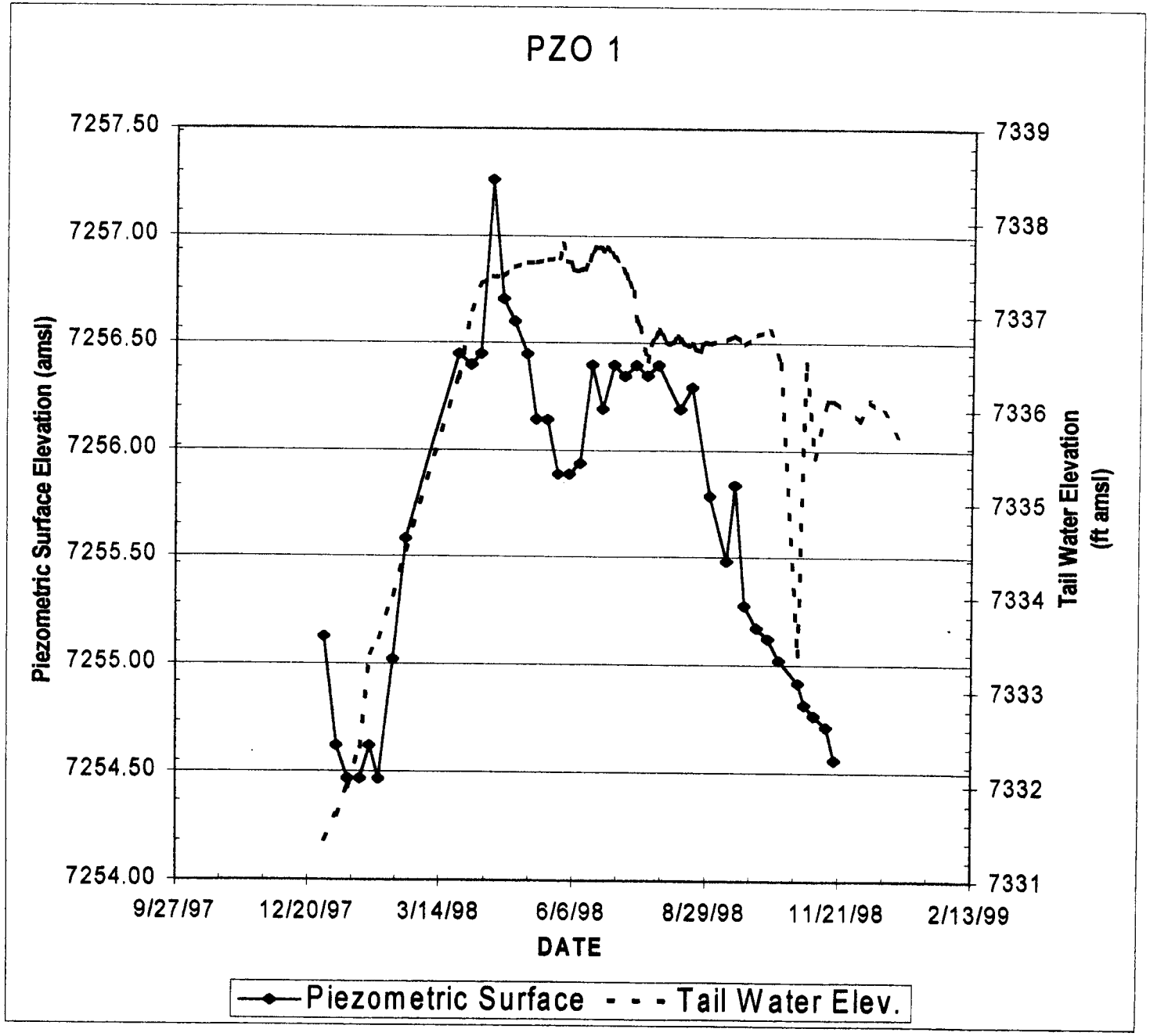
DAY	TEMPERATURE MINIMUM	TEMPERATURE MAXIMUM	PRECIPITATION RAIN (inches)	PRECIPITATION SNOWFALL (inches)	ANEMOMETER METER (miles)	ANEMOMETER TIME	COMMENTS
1	36	60	Ø	Ø			
2	33	54	Ø	Ø			
3	32	56	Ø	Ø			
4	20	32	Ø	Ø			
5	10	26	Ø	Ø			
6	12	30		TRACE			
7	6	18	Ø	.30			
8	6	36	Ø	TRACE			
9	10	38	Ø	.01			
10	8	36	Ø	Ø			
1	12	35	Ø	Ø			
2	18	36	Ø	Ø			
3	22	60	Ø	Ø			
4	33	58	Ø	Ø			
5	27	58	Ø	Ø			
6	33	57	Ø	Ø			
7	27	53	Ø	Ø			
8	30	60	Ø	Ø			
9	16	34	[illegible]	2½			
20	4	16	[illegible]	.5			
1	-5	10	[illegible]	.15			
2	-6	13		TRACE			
3	-4	20	Ø	Ø			
4	-4	20	Ø	Ø			
5							
6							
7	12	44	Ø	Ø			
8	15	45	Ø	Ø			
9	26	49	Ø	Ø			
30	28	52	Ø	Ø			
1	13	38	Ø	Ø			
MONTH TOTALS	Range: Avg:	Range: Avg:			Average (MPH):		

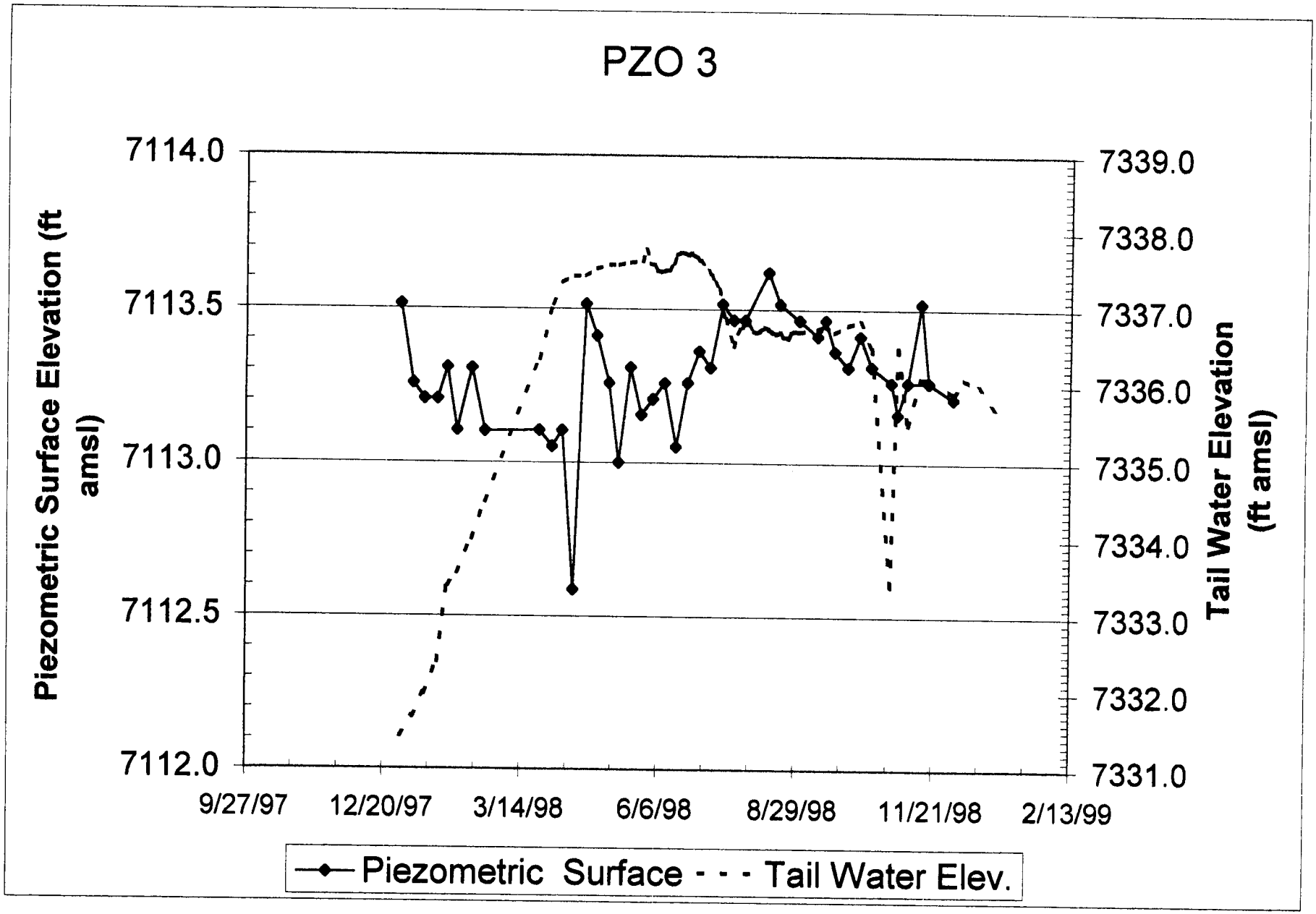
NOTE: Thaw Out Rain Guage To Obtain Precipitation Values During Freezing Conditions

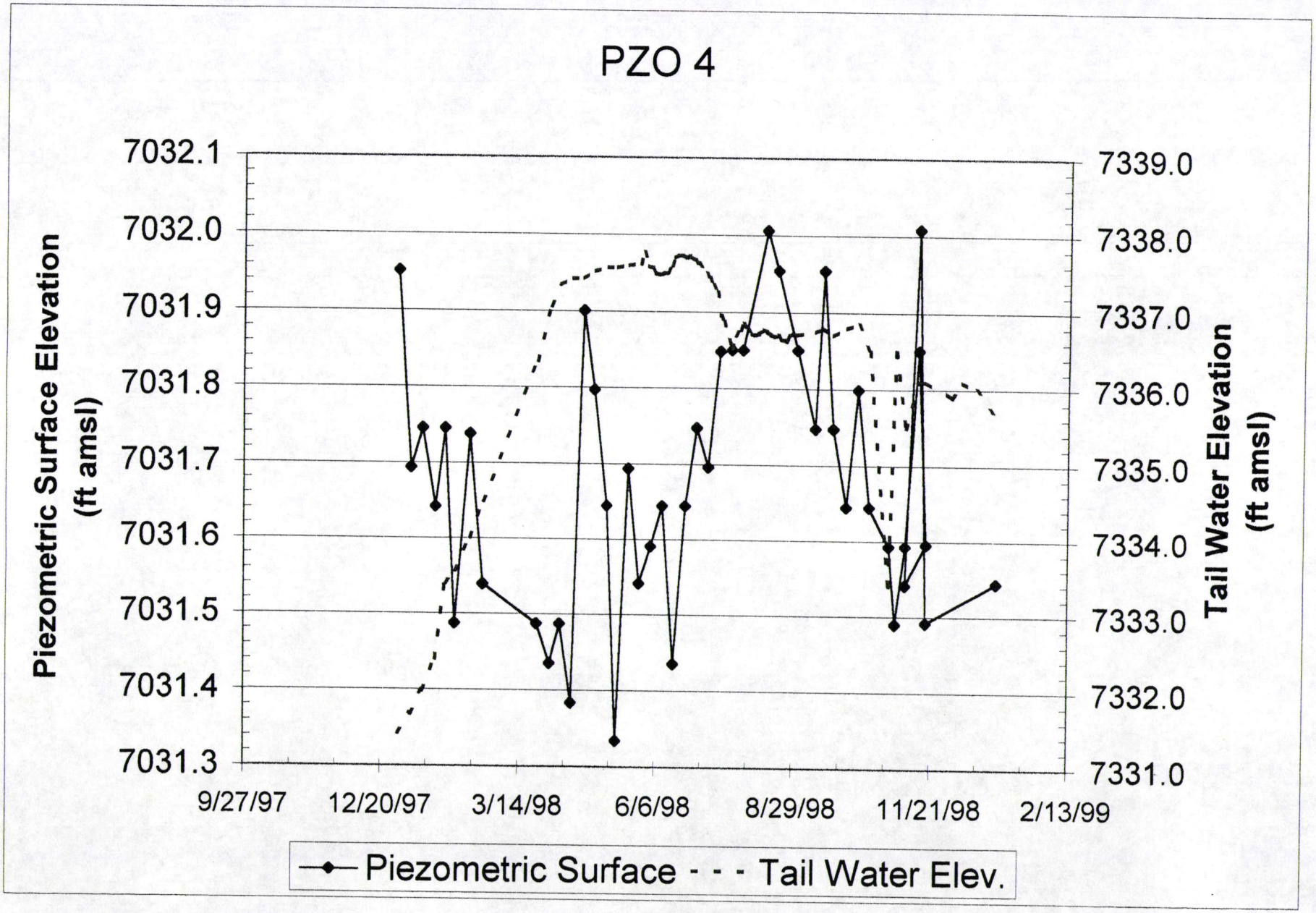
G. M. Eurick Env./Health Coordinator

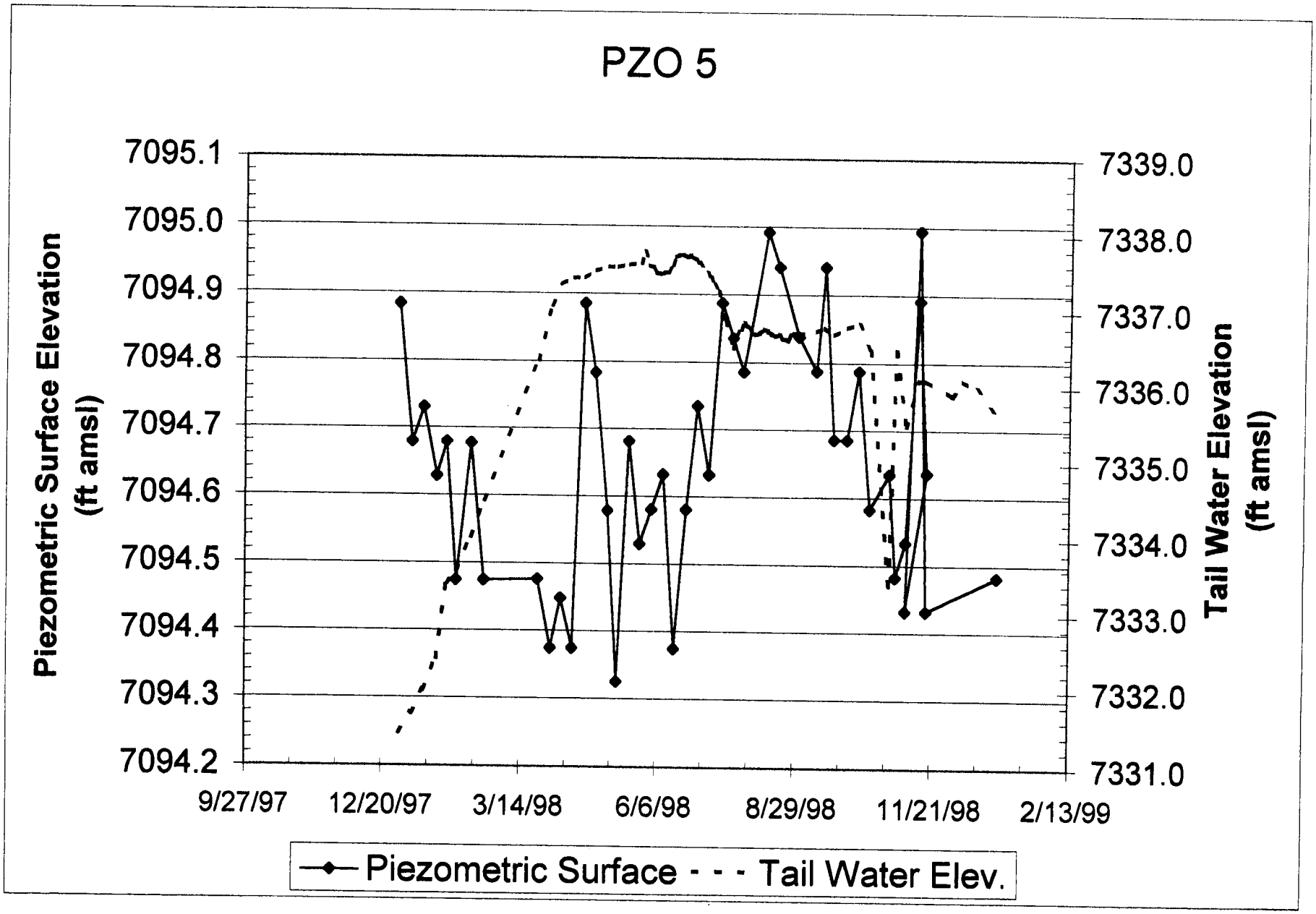
APPENDIX B

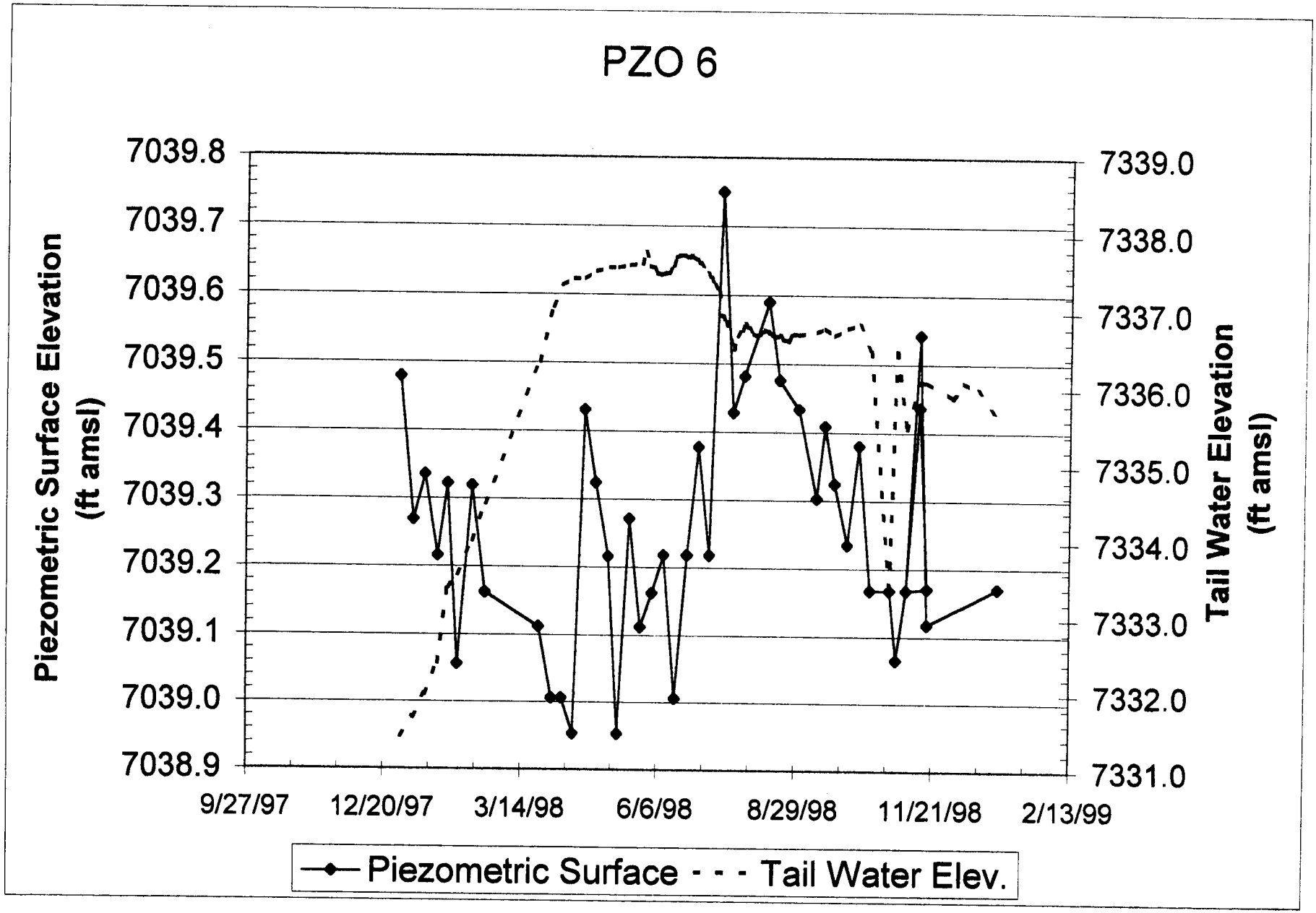
TAIL WATER HEAD vs PIEZOMETER PLOTS

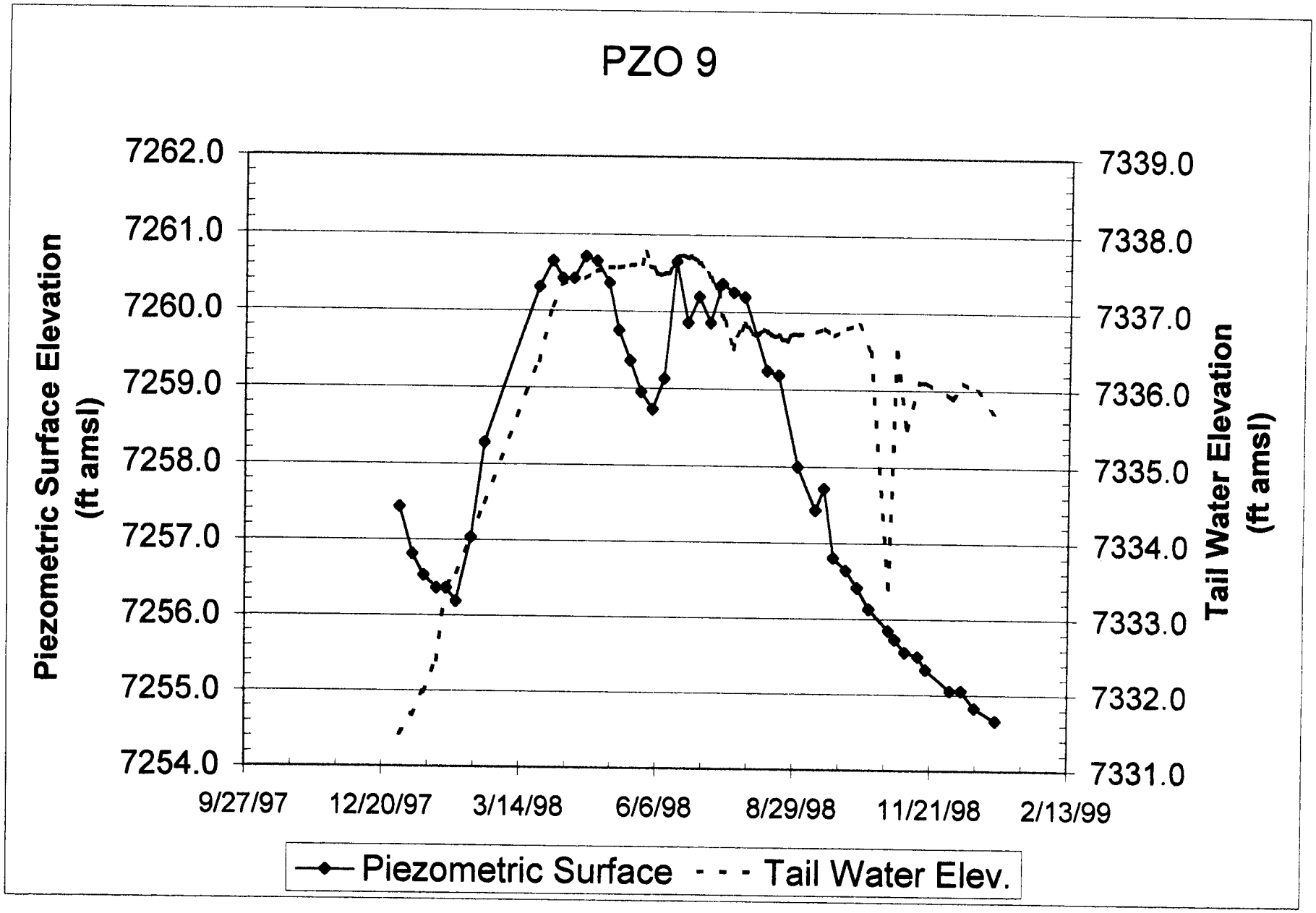

PZO 1
7257.50
7257.00
7256.50
7256.00
7255.50
7255.00
7254.50
7254.00
Piezometric Surface Elevation (amsl)
7339
7338
7337
7336
7335
7334
7333
7332
7331
Tail Water Elevation (ft amsl)
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
DATE
Piezometric Surface
Tail Water Elev.

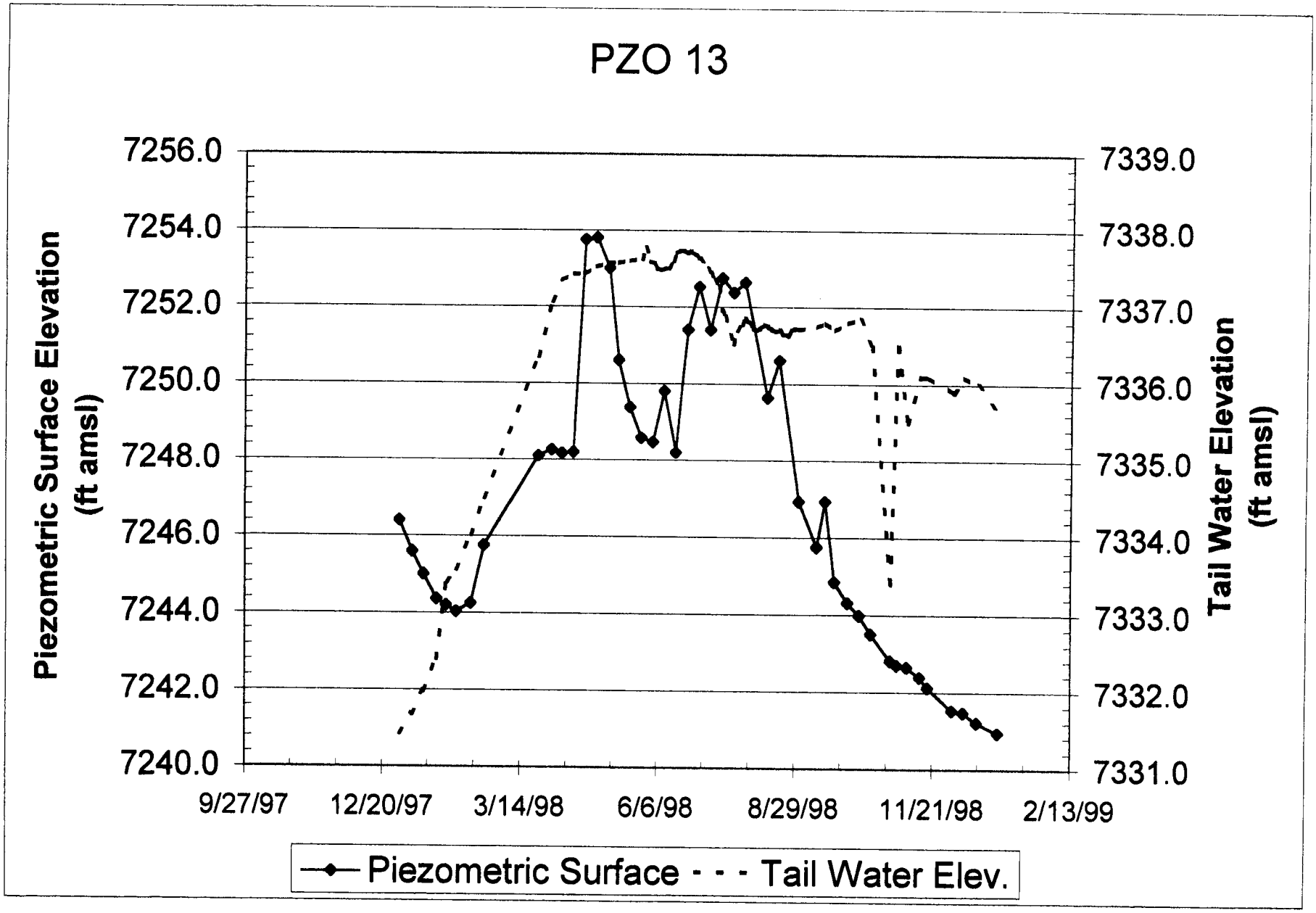

PZO 3
Piezometric Surface Elevation (ft amsl)
7114.0
7113.5
7113.0
7112.5
7112.0
Tail Water Elevation (ft amsl)
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

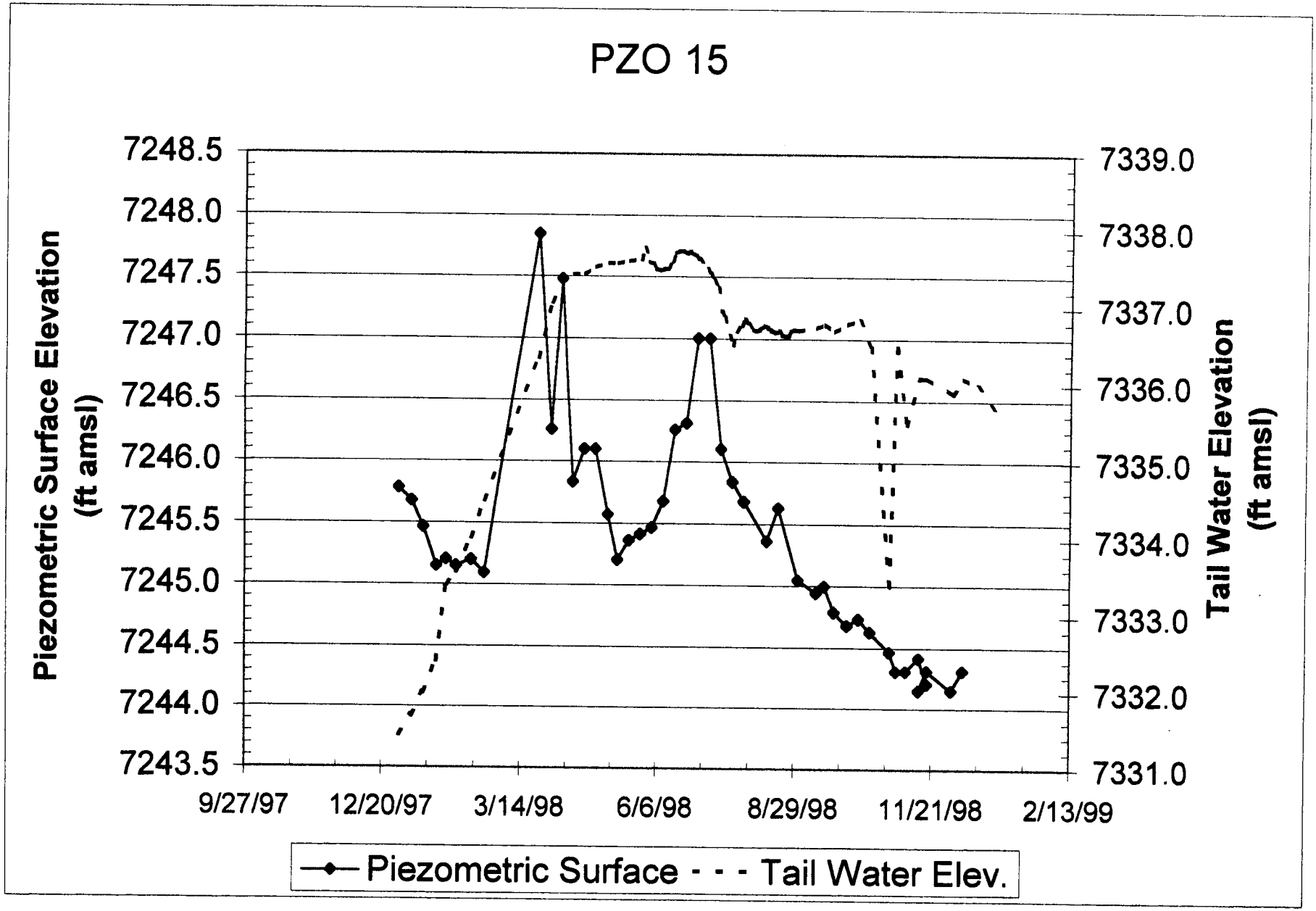

PZO 4
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7032.1
7032.0
7031.9
7031.8
7031.7
7031.6
7031.5
7031.4
7031.3
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

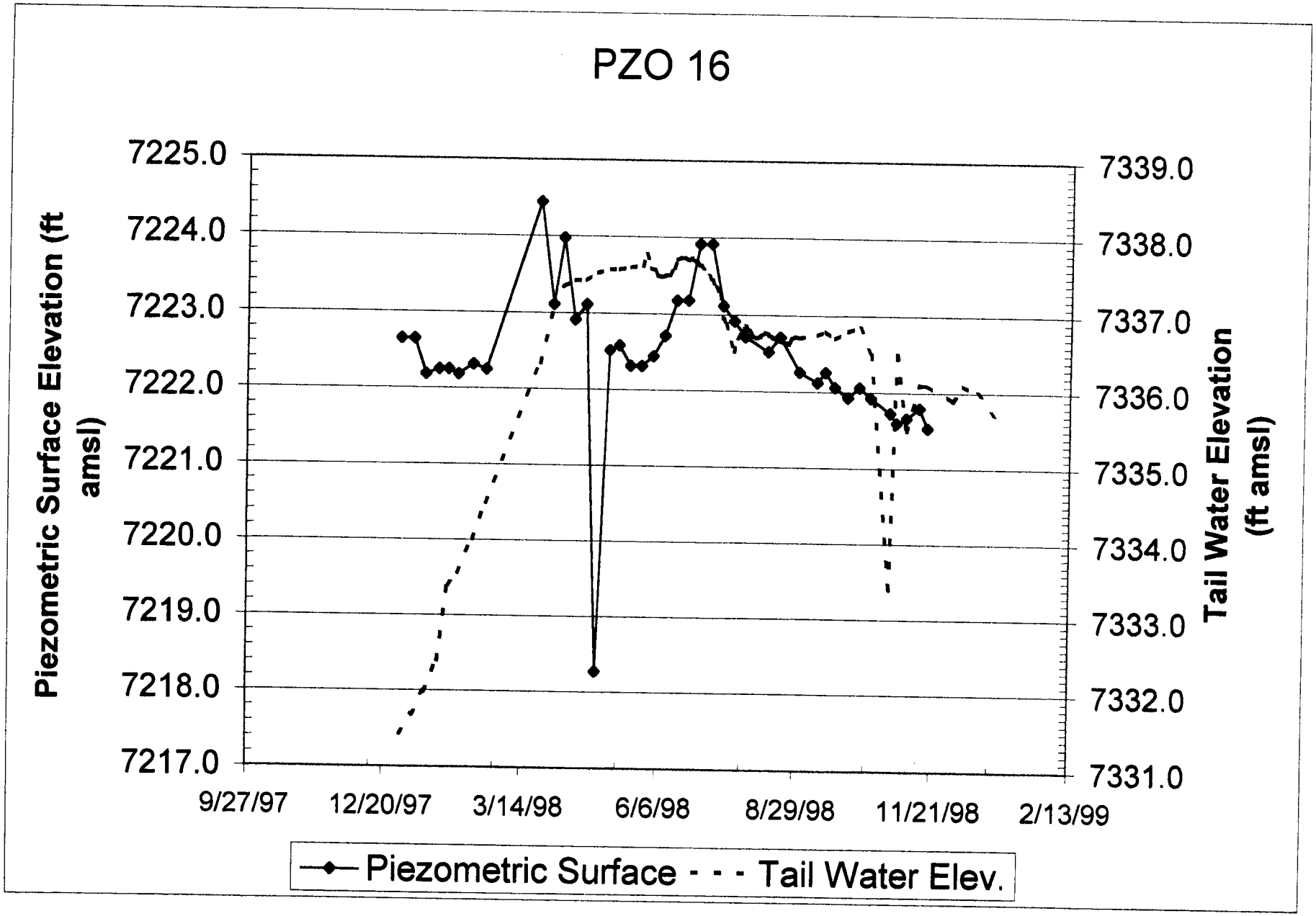

PZO 5
Piezometric Surface Elevation (ft amsl)
7095.1
7095.0
7094.9
7094.8
7094.7
7094.6
7094.5
7094.4
7094.3
7094.2
Tail Water Elevation (ft amsl)
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

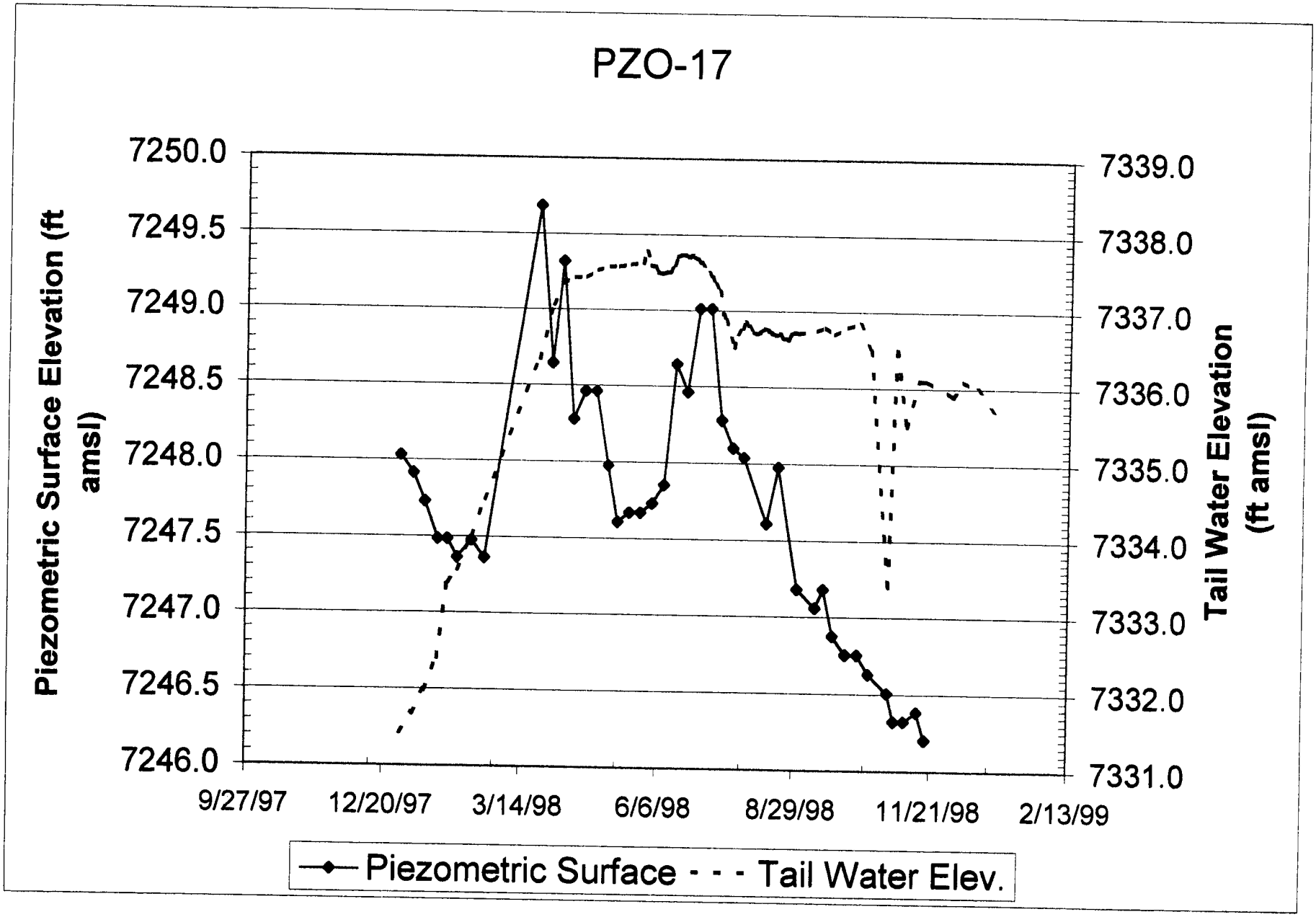

PZO 6
Piezometric Surface Elevation (ft amsl)
7039.8
7039.7
7039.6
7039.5
7039.4
7039.3
7039.2
7039.1
7039.0
7038.9
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
Tail Water Elevation (ft amsl)
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

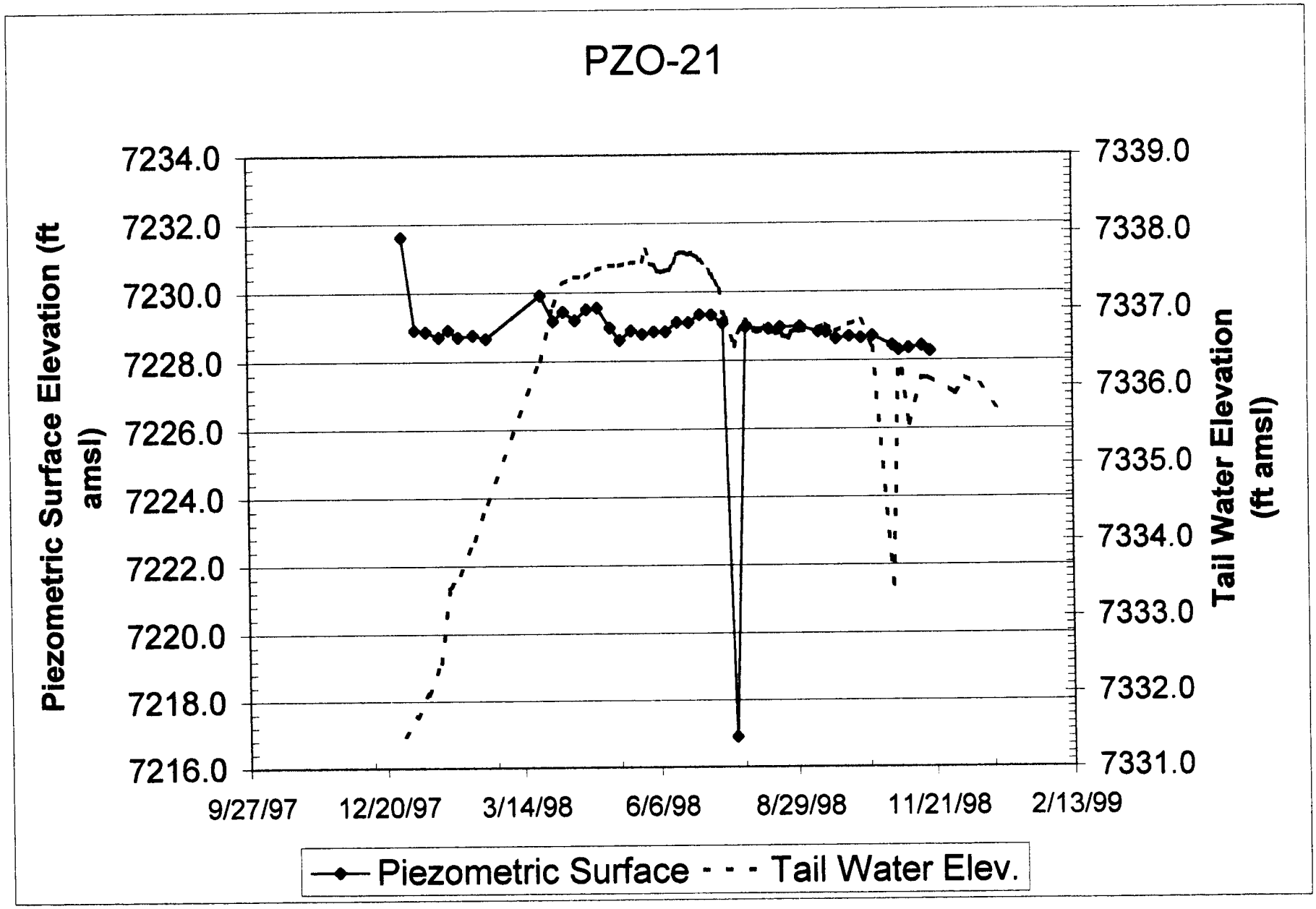

PZO 9
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7262.0
7261.0
7260.0
7259.0
7258.0
7257.0
7256.0
7255.0
7254.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

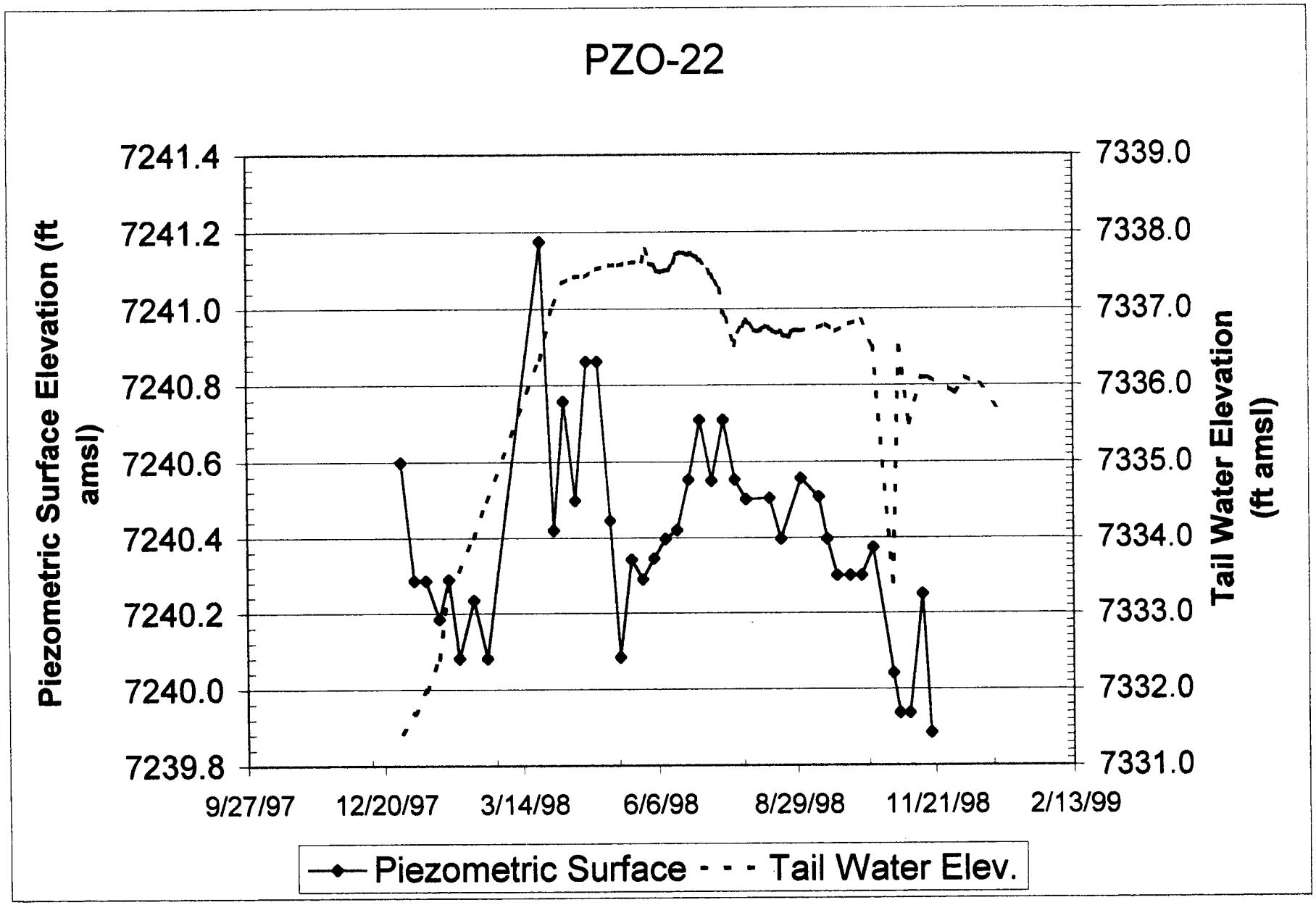

PZO 13
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7256.0
7254.0
7252.0
7250.0
7248.0
7246.0
7244.0
7242.0
7240.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

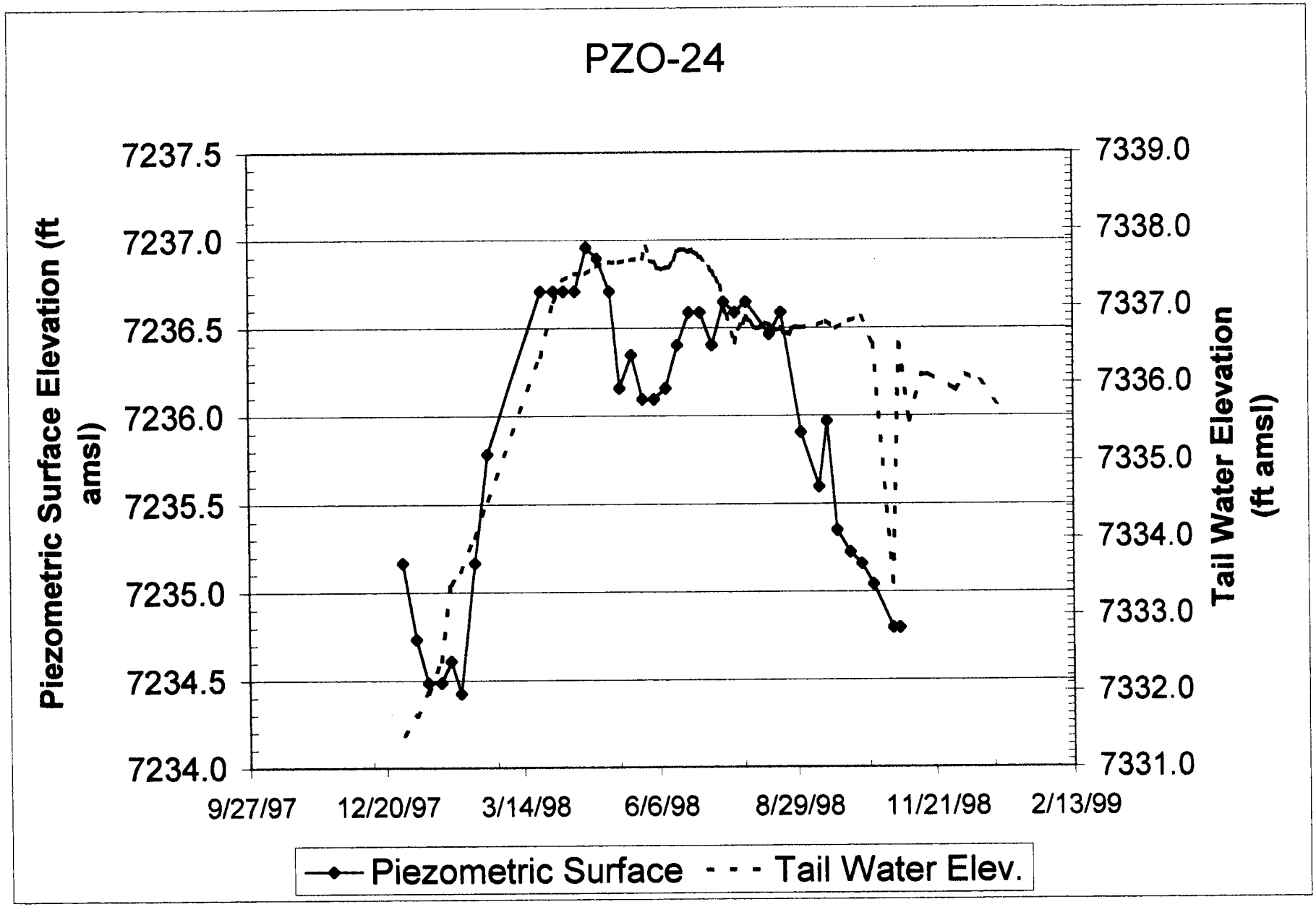

PZO 15
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7248.5
7248.0
7247.5
7247.0
7246.5
7246.0
7245.5
7245.0
7244.5
7244.0
7243.5
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

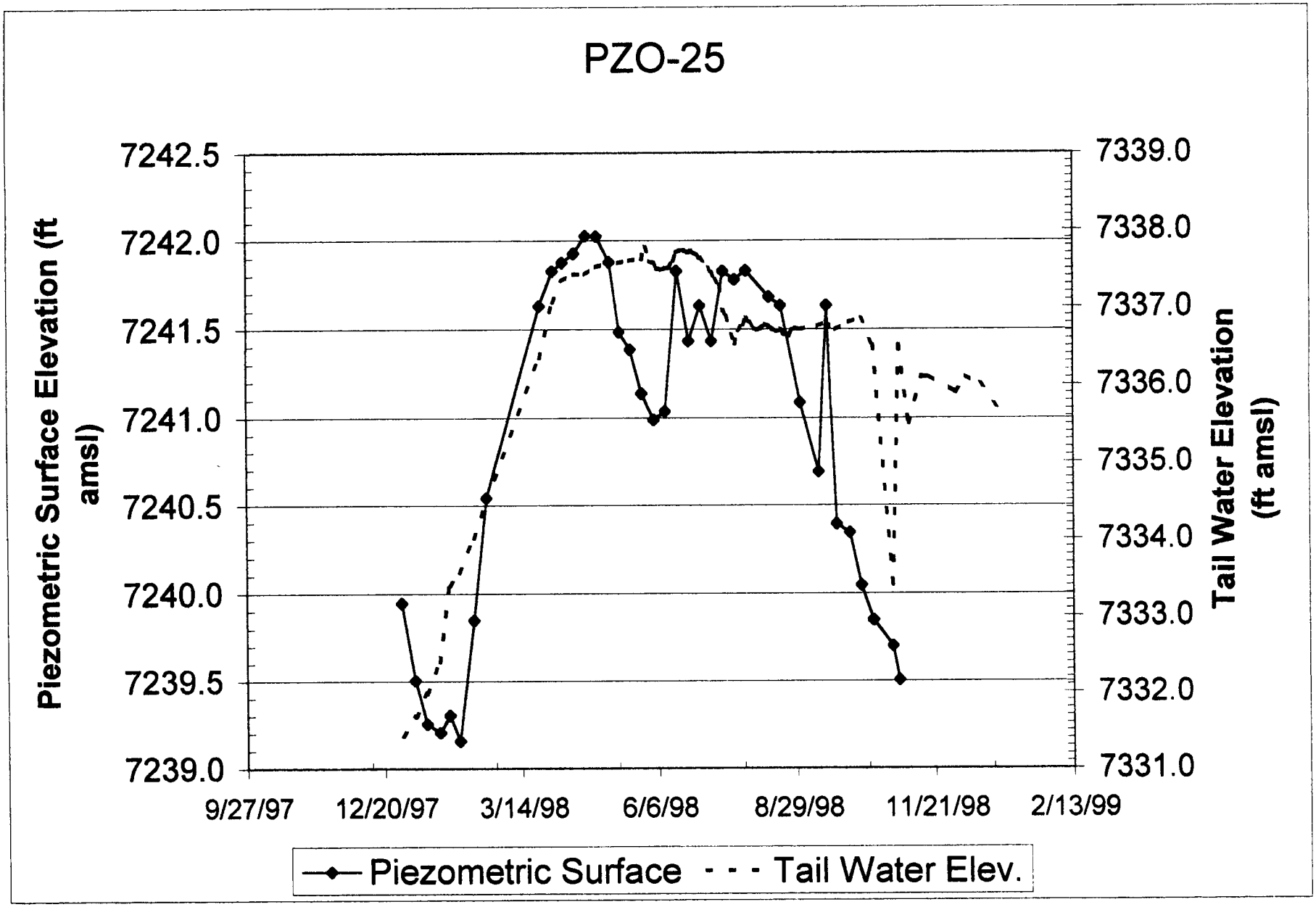

PZO 16
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7225.0
7224.0
7223.0
7222.0
7221.0
7220.0
7219.0
7218.0
7217.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

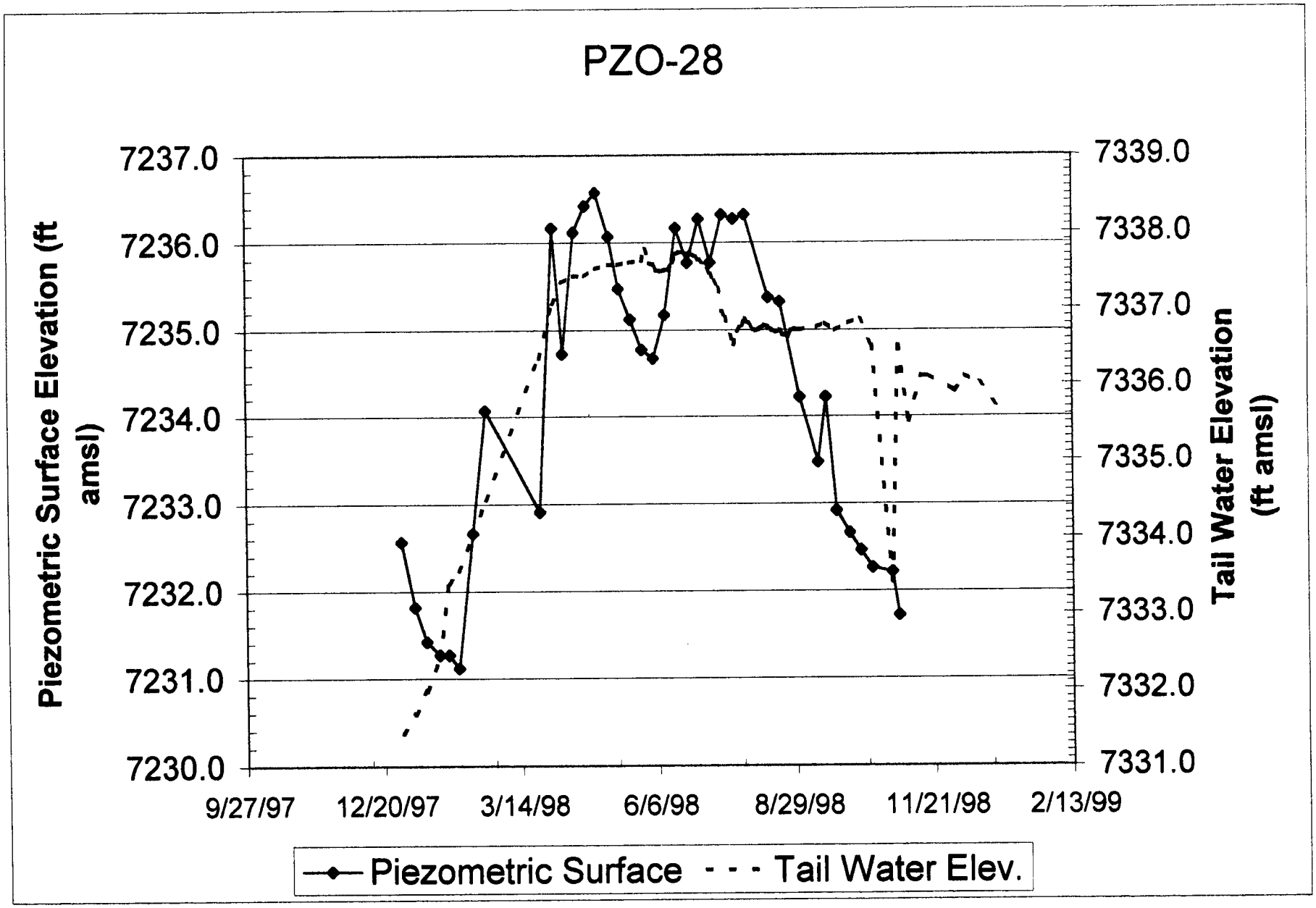

PZO-17
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7250.0
7249.5
7249.0
7248.5
7248.0
7247.5
7247.0
7246.5
7246.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

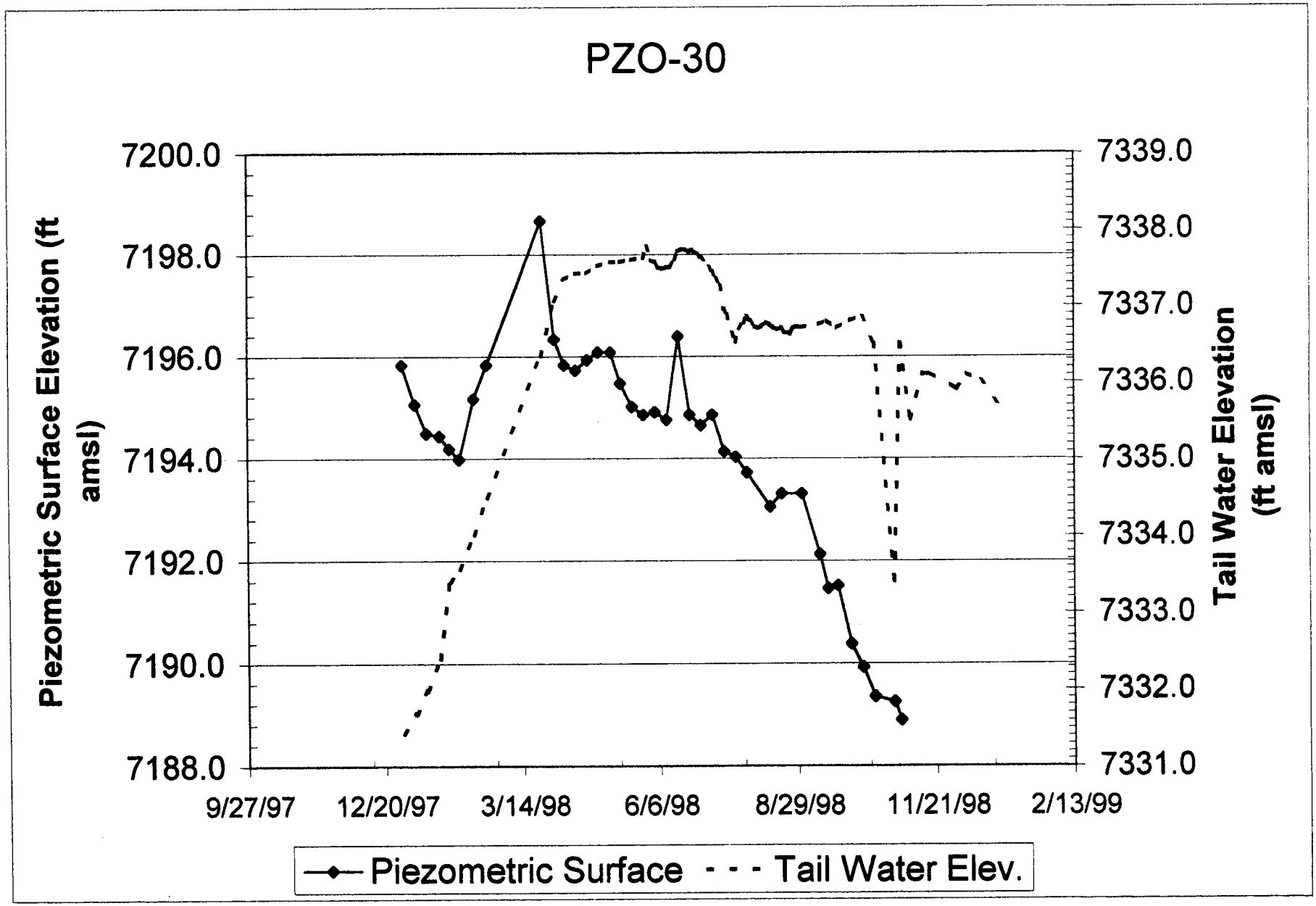

PZO-21
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7234.0
7232.0
7230.0
7228.0
7226.0
7224.0
7222.0
7220.0
7218.0
7216.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

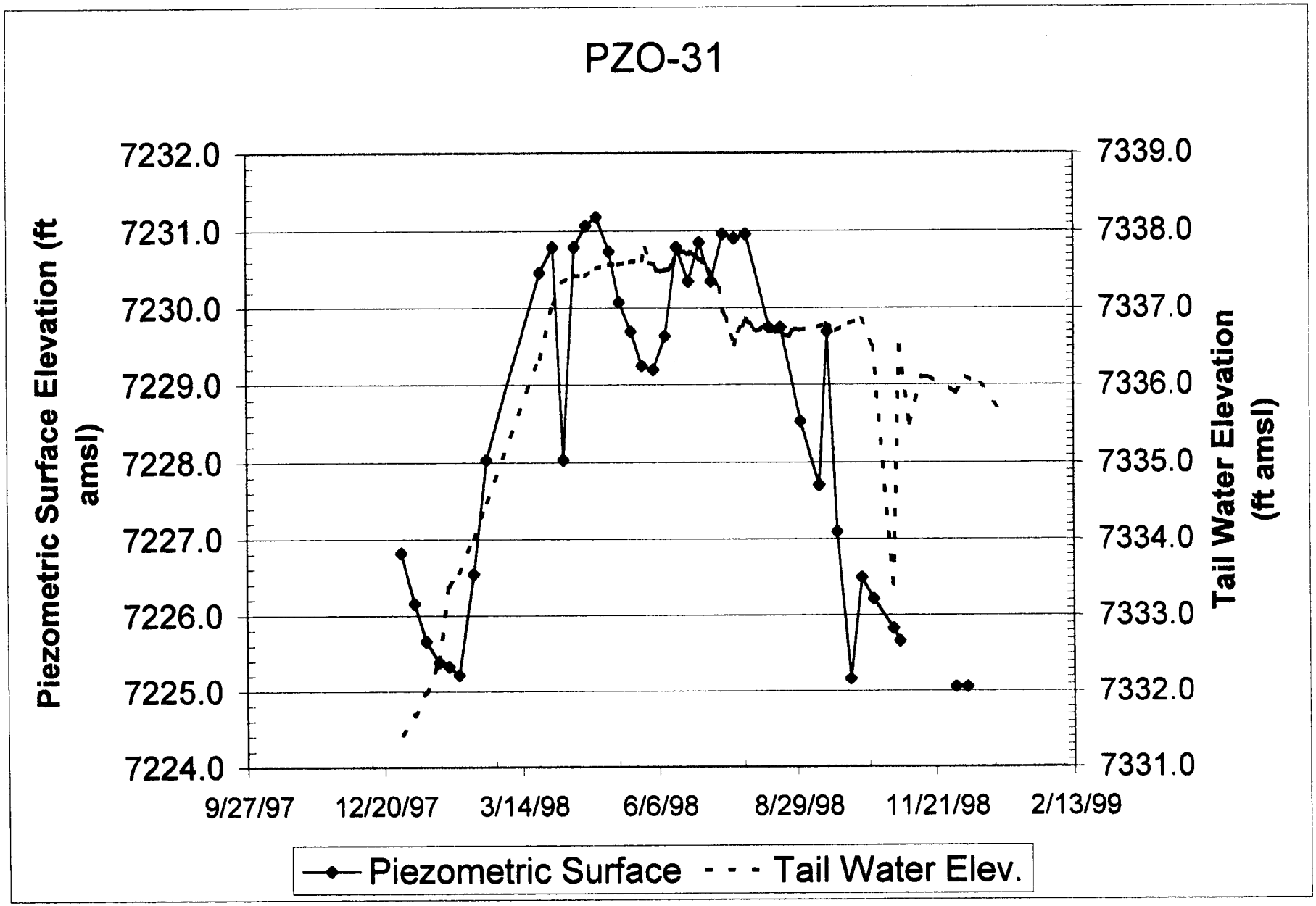

PZO-22
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7241.4
7241.2
7241.0
7240.8
7240.6
7240.4
7240.2
7240.0
7239.8
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

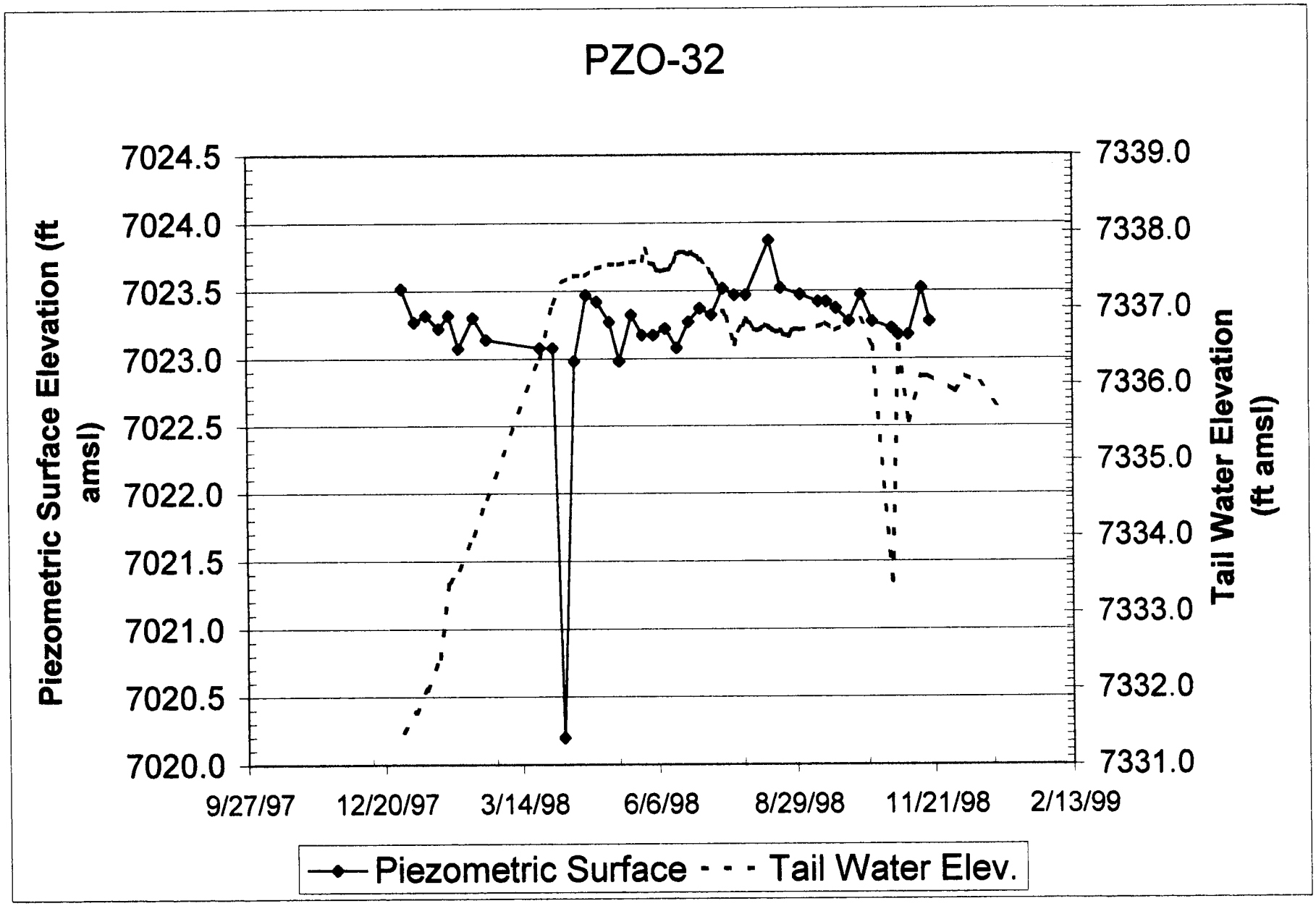

PZO-24
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7237.5
7237.0
7236.5
7236.0
7235.5
7235.0
7234.5
7234.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

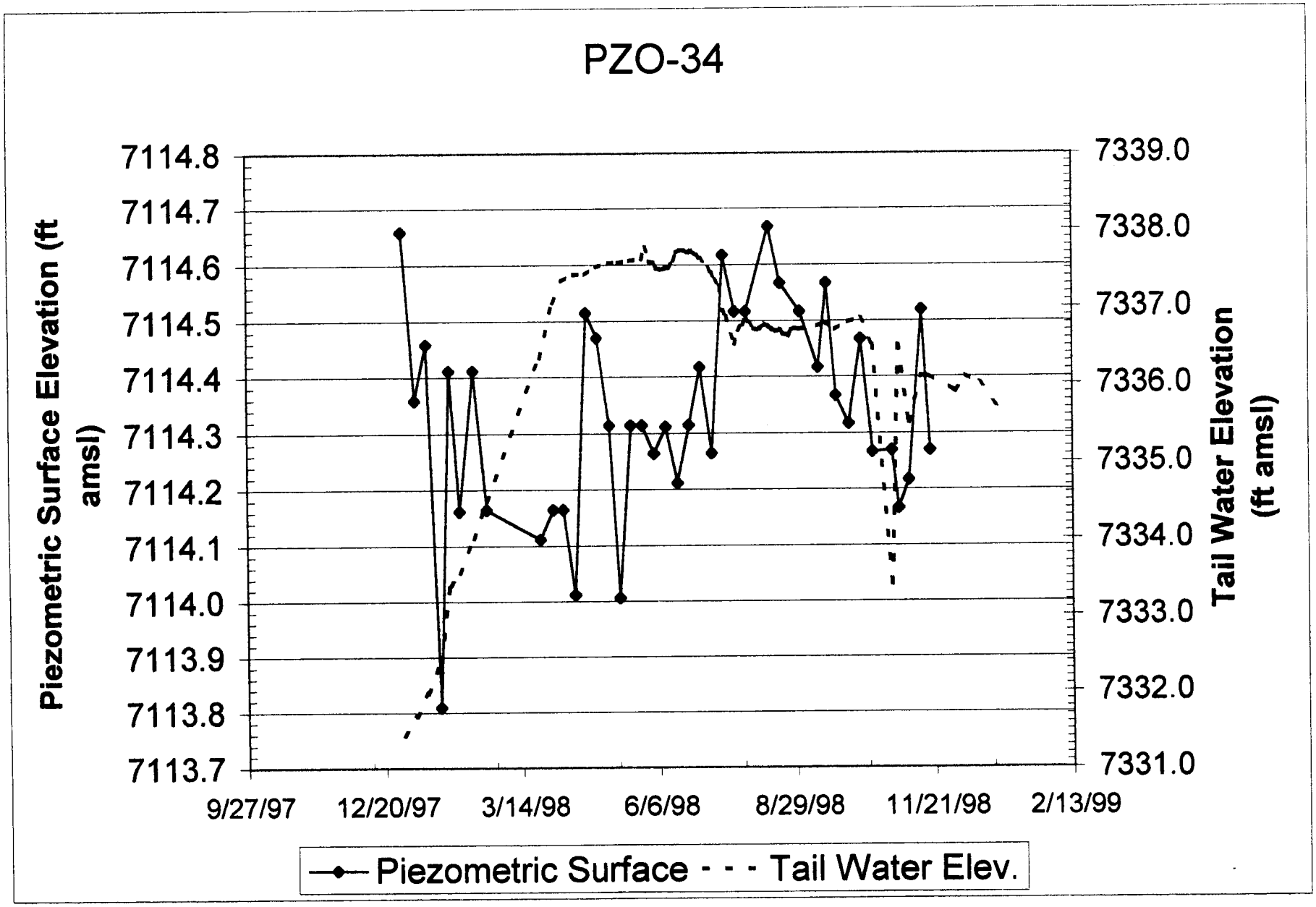

PZO-25
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7242.5
7242.0
7241.5
7241.0
7240.5
7240.0
7239.5
7239.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

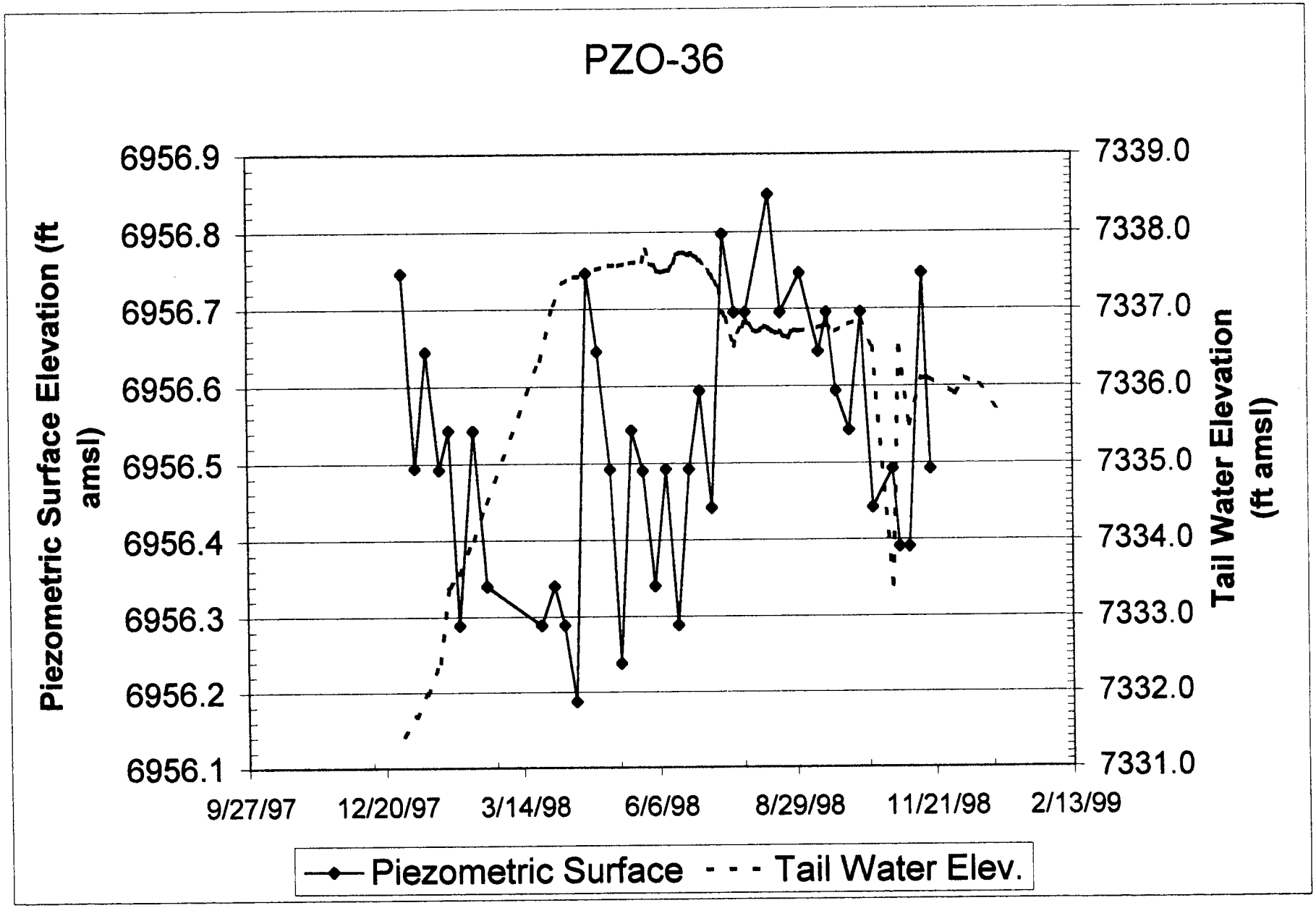

PZO-28
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7237.0
7236.0
7235.0
7234.0
7233.0
7232.0
7231.0
7230.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

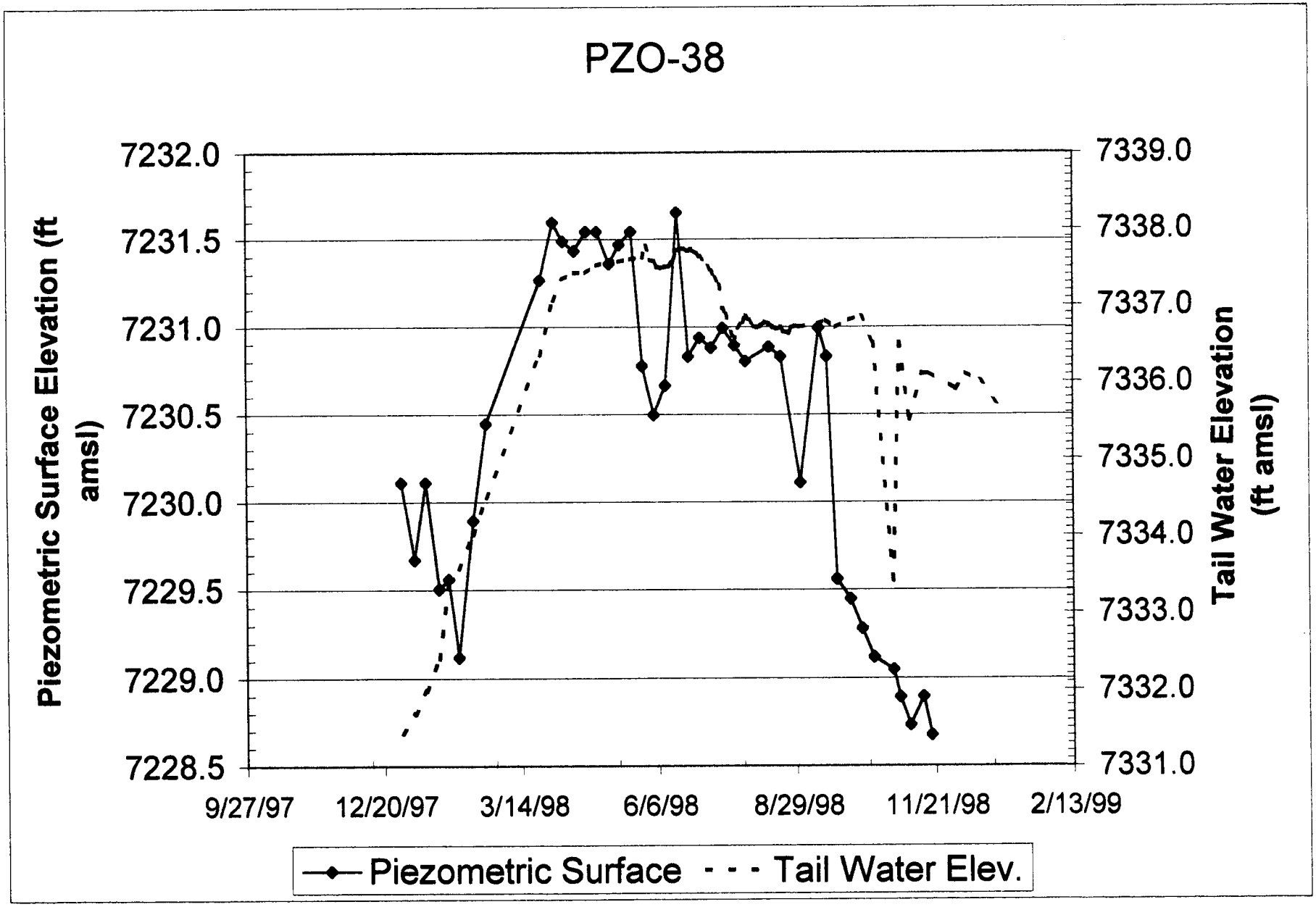

PZO-30
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7200.0
7198.0
7196.0
7194.0
7192.0
7190.0
7188.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

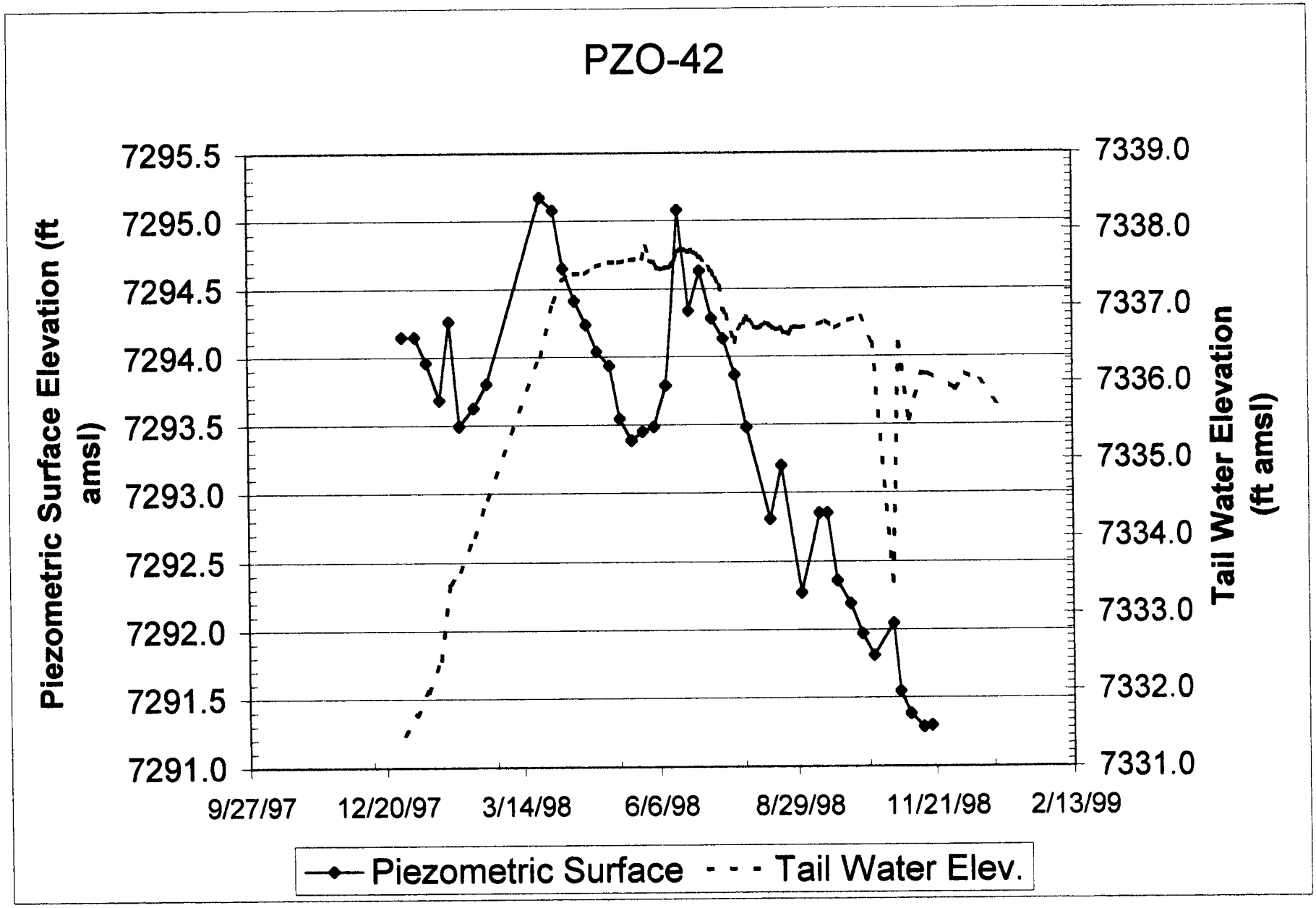

PZO-31
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7232.0
7231.0
7230.0
7229.0
7228.0
7227.0
7226.0
7225.0
7224.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

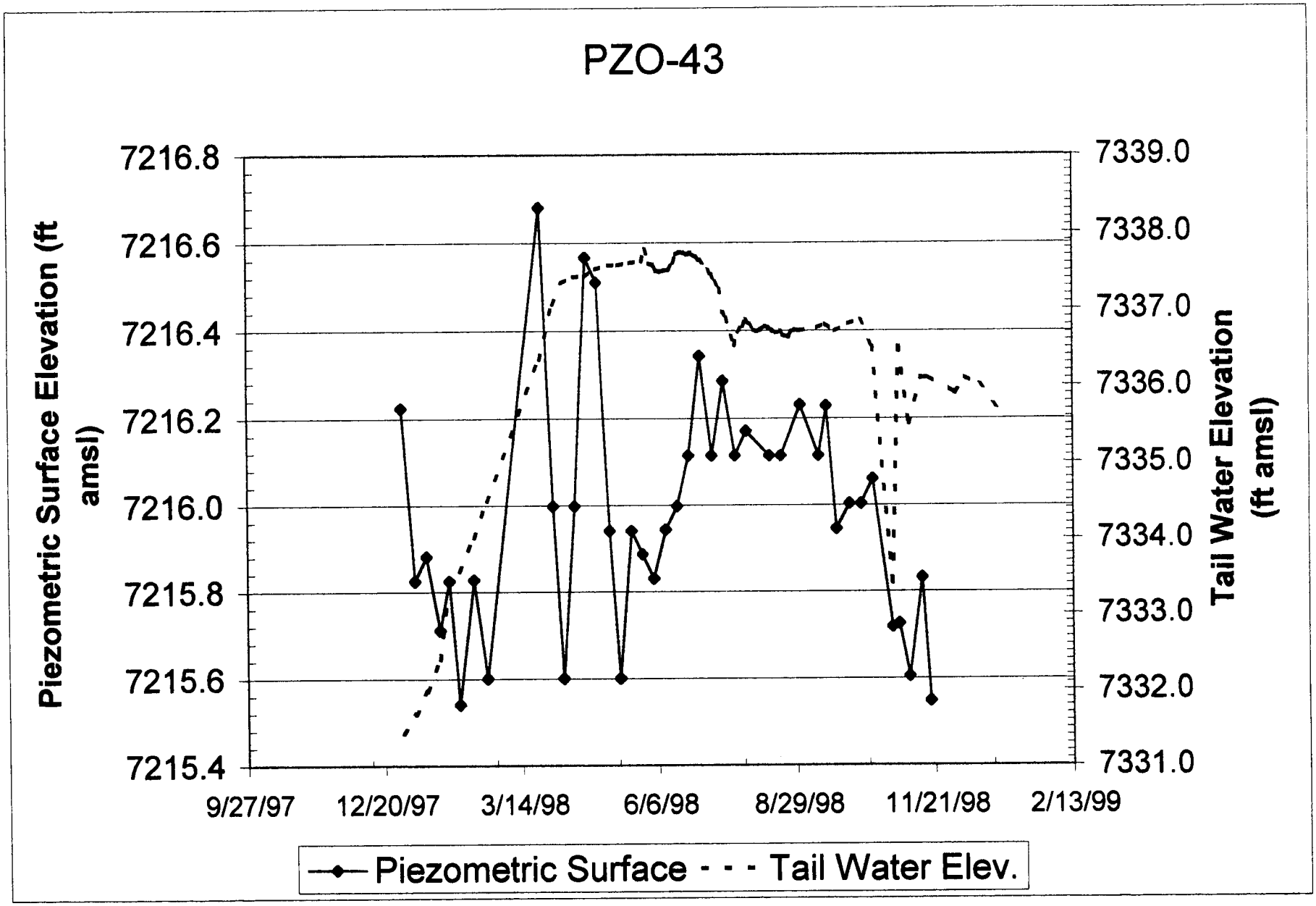

PZO-32
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7024.5
7024.0
7023.5
7023.0
7022.5
7022.0
7021.5
7021.0
7020.5
7020.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

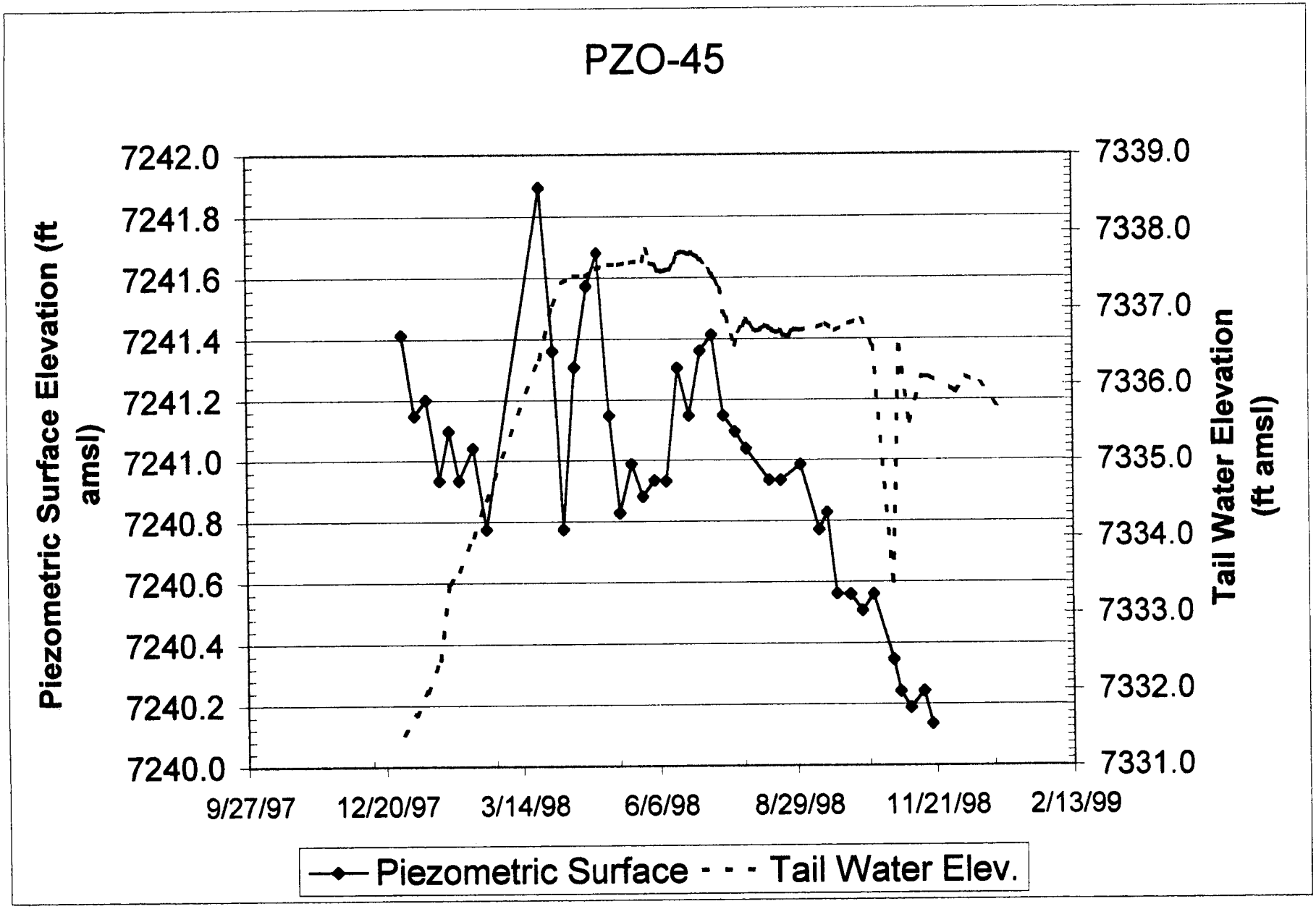

PZO-34
Piezometric Surface Elevation (ft amsl)
7114.8
7114.7
7114.6
7114.5
7114.4
7114.3
7114.2
7114.1
7114.0
7113.9
7113.8
7113.7
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
Tail Water Elevation (ft amsl)
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

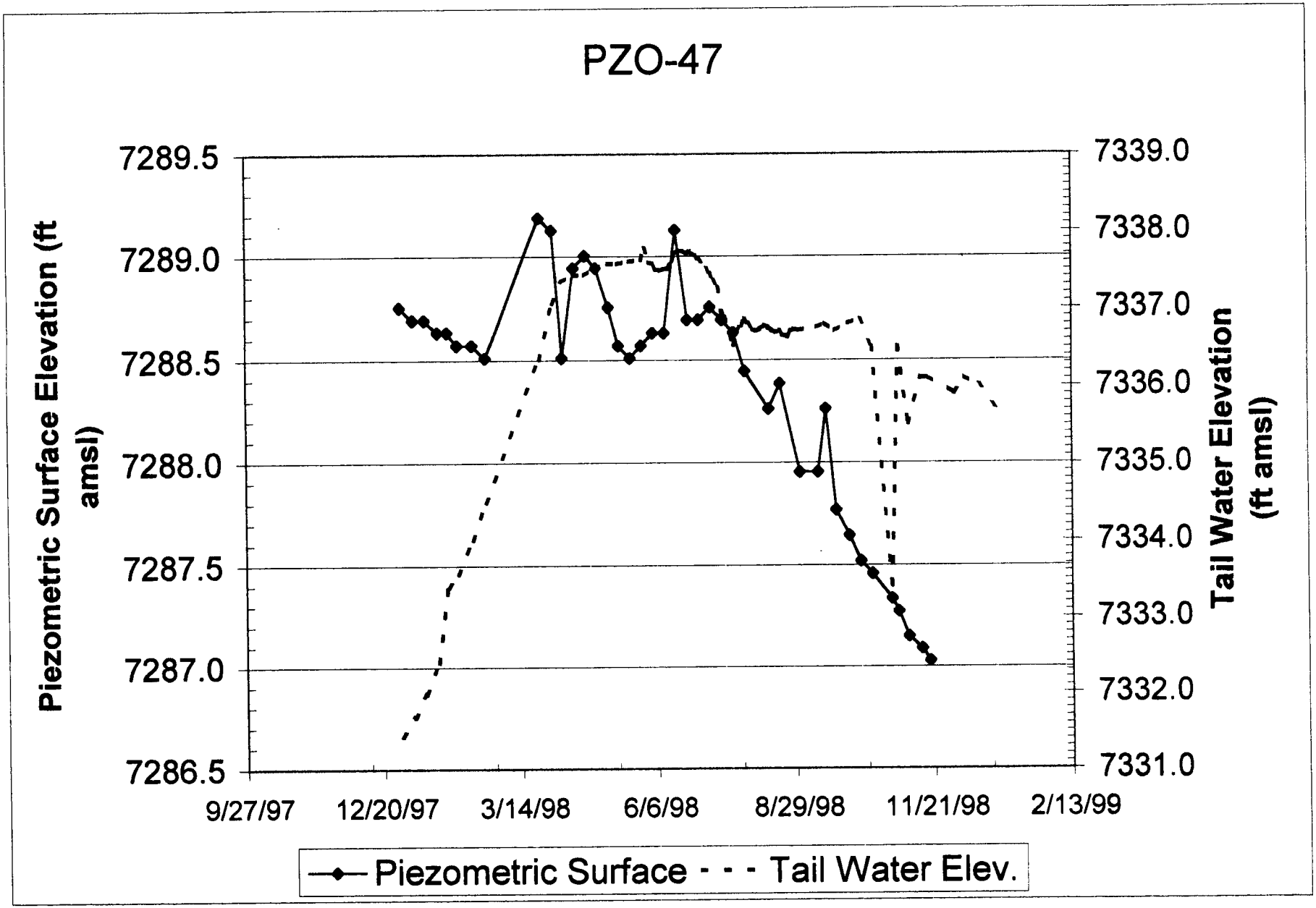

PZO-36
Piezometric Surface Elevation (ft amsl)
6956.9
6956.8
6956.7
6956.6
6956.5
6956.4
6956.3
6956.2
6956.1
Tail Water Elevation (ft amsl)
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.


PZO-38
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7232.0
7231.5
7231.0
7230.5
7230.0
7229.5
7229.0
7228.5
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.


PZO-42
Piezometric Surface Elevation (ft amsl)
Tail Water Elevation (ft amsl)
7295.5
7295.0
7294.5
7294.0
7293.5
7293.0
7292.5
7292.0
7291.5
7291.0
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.


PZO-43
Piezometric Surface Elevation (ft amsl)
7216.8
7216.6
7216.4
7216.2
7216.0
7215.8
7215.6
7215.4
Tail Water Elevation (ft amsl)
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.


PZO-45
Piezometric Surface Elevation (ft amsl)
7242.0
7241.8
7241.6
7241.4
7241.2
7241.0
7240.8
7240.6
7240.4
7240.2
7240.0
Tail Water Elevation (ft amsl)
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.


PZO-47
Piezometric Surface Elevation (ft amsl)
7289.5
7289.0
7288.5
7288.0
7287.5
7287.0
7286.5
Tail Water Elevation (ft amsl)
7339.0
7338.0
7337.0
7336.0
7335.0
7334.0
7333.0
7332.0
7331.0
9/27/97
12/20/97
3/14/98
6/6/98
8/29/98
11/21/98
2/13/99
Piezometric Surface
Tail Water Elev.

APPENDIX C

TAIL WATER HEAD vs PIEZOMETER DATA

Piezometer 9- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	27.13	101.13	162
1/7/98	7331.68	26.51	101.38	162
1/14/98	7331.98	26.23	101.68	162
1/22/98	7332.40	26.06	102.10	162
1/28/98	7333.40	26.06	103.10	162
2/3/98	7333.56	25.89	103.26	162
2/12/98	7334.01	26.73		162
2/20/98	7334.49	27.98	104.19	162
3/25/98	7336.34	30.02	106.04	162
4/2/98	7337.06	30.36	106.76	162
4/8/98	7337.34	30.13	107.04	162
4/15/98	7337.42	30.13		162
4/22/98	7337.42	30.41	107.12	162
4/29/98	7337.52	30.36	107.22	162
5/7/98	7337.57	30.07	107.27	162
5/13/98	7337.57	29.45	107.27	162
5/20/98	7337.60	29.05	107.30	162
5/27/98	7337.62	28.66	107.32	162
6/3/98	7337.57	28.43		162
6/10/98	7337.50	28.83		162
6/17/98	7337.70	30.36		162
6/24/98	7337.70	29.56	107.40	162
7/1/98	7337.63	29.90	107.33	162
7/8/98	7337.45	29.56	107.15	162
7/15/98	7337.95	30.07	107.65	162
7/22/98	7336.64	29.96	106.34	162
7/29/98	7336.85	29.90		162
8/12/98	7336.75	28.94	106.45	162
8/19/98	7336.70	28.88	106.40	162
8/31/98	7336.71	27.69	106.41	162
9/11/98	7336.75	27.13	106.45	162
9/16/98	7336.80	27.41	106.50	162
9/22/98	7336.70	26.51	106.40	162
9/30/98	7336.80	26.34	106.50	162
10/7/98	7336.85	26.11		162
10/14/98	7336.50	25.83	106.20	162
10/26/98	7333.40	27.98	103.10	162
10/30/98	7336.50	25.55	106.20	162
11/18/98	7336.10	25.21	105.80	162
12/3/98	7335.90	25.04	105.60	162
12/10/98	7336.10	24.75	105.80	162
12/18/98	7336.00	24.75	105.70	162
12/31/98	7335.65	27.30	105.35	162
12/30/97	7331.43	27.13	101.13	162

Piezometer 13- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	13.69	99.13	68
1/7/98	7331.68	12.89	99.38	68
1/14/98	7331.98	12.30	99.68	68
1/22/98	7332.40	11.66	100.10	68
1/28/98	7333.40	11.50	101.10	68
2/3/98	7333.56	11.34	101.26	68
2/12/98	7334.01	11.55		68
2/20/98	7334.49	13.05	102.19	68
3/25/98	7336.34	15.40	104.04	68
4/2/98	7337.06	15.56	104.76	68
4/8/98	7337.34	15.47	105.04	68
4/15/98	7337.42	15.50		68
4/22/98	7337.42	21.06	105.12	68
4/29/98	7337.52	21.11	105.22	68
5/7/98	7337.57	20.31	105.27	68
5/13/98	7337.57	17.91	104.87	68
5/20/98	7337.60	16.68	105.30	68
5/27/98	7337.62	15.88	105.32	68
6/3/98	7337.57	15.77		68
6/10/98	7337.50	17.11		68
6/17/98	7337.70	15.50		68
6/24/98	7337.70	18.71	105.40	68
7/1/98	7337.63	19.83	105.33	68
7/8/98	7337.45	18.71	105.15	68
7/15/98	7337.95	20.05	105.65	68
7/22/98	7336.64	19.67	104.34	68
7/29/98	7336.85	19.94		68
8/12/98	7336.75	16.95	104.45	68
8/19/98	7336.70	17.91	104.40	68
8/31/98	7336.71	14.23	104.41	68
9/11/98	7336.75	13.05	104.45	68
9/16/98	7336.80	14.23	104.50	68
9/22/98	7336.70	12.15	104.40	68
9/30/98	7336.80	11.61	104.50	68
10/7/98	7336.85	11.29		68
10/14/98	7336.50	10.81	104.20	68
10/26/98	7333.40	10.12	101.10	68
10/30/98	7336.50	10.01	104.20	68
11/5/98	7335.50	9.96	103.20	68
11/13/98	7336.10	9.69	103.80	68
11/18/98	7336.10	9.42	103.80	68
12/3/98	7335.90	8.83	103.60	68
12/10/98	7336.10	8.78	103.80	68
12/18/98	7336.00	8.51	103.70	68
12/31/98	7335.65			

Piezometer 15- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	14.28	100.03	122
1/7/98	7331.68	14.07	100.28	122
1/14/98	7331.98	13.75	100.58	122
1/22/98	7332.40	13.80	101.00	122
1/28/98	7333.40	13.75	102.00	122
2/3/98	7333.56	13.80	102.16	122
2/12/98	7334.01	13.70		122
2/20/98	7334.49	16.45	103.09	122
3/25/98	7336.34	14.86	104.94	122
4/2/98	7337.06	16.08	105.66	122
4/8/98	7337.34	14.44	105.94	122
4/15/98	7337.42	14.70		122
4/22/98	7337.42	14.70	106.02	122
4/29/98	7337.52	14.17	106.12	122
5/7/98	7337.57	13.80	106.17	122
5/13/98	7337.57	13.96	106.17	122
5/20/98	7337.60	14.02	106.20	122
5/27/98	7337.62	14.07	106.22	122
6/3/98	7337.57	14.28		122
6/10/98	7337.50	14.86		122
6/17/98	7337.70	14.91		122
6/24/98	7337.70	15.60	106.30	122
7/1/98	7337.63	15.60	106.23	122
7/8/98	7337.45	14.71	106.05	122
7/15/98	7337.95	14.44	106.55	122
7/22/98	7336.64	14.28	105.24	122
7/29/98	7336.85	13.97		122
8/12/98	7336.75	14.23	105.35	122
8/19/98	7336.70	13.65	105.30	122
8/31/98	7336.71	13.54	105.31	122
9/11/98	7336.75	13.60	105.35	122
9/16/98	7336.80	13.39	105.40	122
9/22/98	7336.70	13.28	105.30	122
9/30/98	7336.80	13.33	105.40	122
10/7/98	7336.85	13.23		122
10/14/98	7336.50	13.07	105.10	122
10/26/98	7333.40	13.07	102.00	122
10/30/98	7336.50	12.91	105.10	122
11/5/98	7335.50	13.02	104.10	122
11/13/98	7336.10	12.80	104.70	122
11/18/98	7336.10	12.75	104.70	122
12/3/98	7335.90	12.91	104.50	122
12/10/98	7336.10	12.70	104.70	122
12/18/98	7336.00	0.00	104.60	122
12/31/98	7335.65			

Piezometer 16- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	5.95	114.73	138
1/7/98	7331.68	5.95	114.98	138
1/14/98	7331.98	5.49	115.28	138
1/22/98	7332.40	5.55	115.70	138
1/28/98	7333.40	5.55	116.70	138
2/3/98	7333.56	5.49	116.86	138
2/12/98	7334.01	5.61		138
2/20/98	7334.49	5.55	117.79	138
3/25/98	7336.34	7.74	119.64	138
4/2/98	7337.06	6.41	120.36	138
4/8/98	7337.34	7.28	120.64	138
4/15/98	7337.42	6.21		138
4/22/98	7337.42	6.41	120.72	138
4/29/98	7337.52	1.57	120.82	138
5/7/98	7337.57	5.82	120.87	138
5/13/98	7337.57	5.88	120.87	138
5/20/98	7337.60	5.62	120.90	138
5/27/98	7337.62	5.62	120.92	138
6/3/98	7337.57	5.75		138
6/10/98	7337.50	6.02		138
6/17/98	7337.70	6.48		138
6/24/98	7337.70	6.48	121.00	138
7/1/98	7337.63	7.21	120.93	138
7/8/98	7337.45	7.21	120.75	138
7/15/98	7337.95	6.42	121.25	138
7/22/98	7336.64	6.22	119.94	138
7/29/98	7336.85	6.02		138
8/12/98	7336.75	5.82	120.05	138
8/19/98	7336.70	6.02	120.00	138
8/31/98	7336.71	5.56	120.01	138
9/11/98	7336.75	5.43	120.05	138
9/16/98	7336.80	5.56	120.10	138
9/22/98	7336.70	5.36	120.00	138
9/30/98	7336.80	5.23	120.10	138
10/7/98	7336.85	5.36		138
10/14/98	7336.50	5.23	119.80	138
10/26/98	7333.40	5.03	116.70	138
10/30/98	7336.50	5.03	119.80	138
11/5/98	7335.50	4.97	118.80	138
11/13/98	7336.10	5.10	119.40	138
11/18/98	7336.10	4.84	119.40	138
12/3/98	7335.90	4.84	119.20	138
12/10/98	7336.10	5.03	119.40	138
12/18/98	7336.00	4.77	119.30	138
12/31/98	7335.65			

Piezometer 17- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	17.08	101.03	185
1/7/98	7331.68	16.96	101.28	185
1/14/98	7331.98	17.08	101.58	185
1/22/98	7332.40	16.96	102.00	185
1/28/98	7333.40	19.28	103.00	185
2/3/98	7333.56	18.25	103.16	185
2/12/98	7334.01	18.92		185
2/20/98	7334.49	17.88	104.09	185
3/25/98	7336.34	18.06	105.94	185
4/2/98	7337.06	18.06	106.66	185
4/8/98	7337.34	17.57	106.94	185
4/15/98	7337.42	17.21		185
4/22/98	7337.42	17.27	107.02	185
4/29/98	7337.52	17.27	107.12	185
5/7/98	7337.57	17.33	107.17	185
5/13/98	7337.57	17.45	107.17	185
5/20/98	7337.60	18.25	107.20	185
5/27/98	7337.62	18.06	107.22	185
6/3/98	7337.57	18.61		185
6/10/98	7337.50	18.61		185
6/17/98	7337.70	17.88		185
6/24/98	7337.70	17.70	107.30	185
7/1/98	7337.63	17.64	107.23	185
7/8/98	7337.45	17.21	107.05	185
7/15/98	7337.95	17.57	107.55	185
7/22/98	7336.64	16.78	106.24	185
7/29/98	7336.85	16.66		185
8/12/98	7336.75	16.78	106.35	185
8/19/98	7336.70	16.47	106.30	185
8/31/98	7336.71	16.35	106.31	185
9/11/98	7336.75	16.35	106.35	185
9/16/98	7336.80	16.23	106.40	185
9/22/98	7336.70	16.18	106.30	185
9/30/98	7336.80	16.11	106.40	185
10/7/98	7336.85	15.92		185
10/14/98	7336.50	15.99	106.10	185
10/26/98	7333.40	15.80	103.00	185
10/30/98	7336.50	15.68	106.10	185
11/5/98	7335.50	15.86	105.10	185
11/13/98	7336.10	15.62	105.70	185
11/18/98	7336.10	0.00	105.70	185
12/3/98	7335.90	0.00	105.50	185
12/10/98	7336.10	0.00	105.70	185
12/18/98	7336.00	0.00	105.60	185
12/31/98	7335.65			

Piezometer 21- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	14.42	114.53	156
1/7/98	7331.68	14.37	114.78	156
1/14/98	7331.98	14.22	115.08	156
1/22/98	7332.40	14.42	115.50	156
1/28/98	7333.40	14.21	116.50	156
2/3/98	7333.56	14.27	116.66	156
2/12/98	7334.01	14.17		156
2/20/98	7334.49	15.42	117.59	156
3/25/98	7336.34	14.68	119.44	156
4/2/98	7337.06	14.94	120.16	156
4/8/98	7337.34	14.69	120.44	156
4/15/98	7337.42	15.01		156
4/22/98	7337.42	15.06	120.52	156
4/29/98	7337.52	14.48	120.62	156
5/7/98	7337.57	14.11	120.67	156
5/13/98	7337.57	14.39	120.67	156
5/20/98	7337.60	14.29	120.70	156
5/27/98	7337.62	14.35	120.72	156
6/3/98	7337.57	14.35		156
6/10/98	7337.50	14.62		156
6/17/98	7337.70	14.62		156
6/24/98	7337.70	14.84	120.80	156
7/1/98	7337.63	14.83	120.73	156
7/8/98	7337.45	14.59	120.55	156
7/15/98	7337.95	0.03	121.05	156
7/22/98	7336.64	14.48	119.74	156
7/29/98	7336.85	14.43		156
8/12/98	7336.75	14.48	119.85	156
8/19/98	7336.70	14.49	119.80	156
8/31/98	7336.71	14.34	119.81	156
9/11/98	7336.75	14.33	119.85	156
9/16/98	7336.80	14.14	119.90	156
9/22/98	7336.70	14.21	119.80	156
9/30/98	7336.80	14.16	119.90	156
10/7/98	7336.85	14.21		156
10/14/98	7336.50	13.94	119.60	156
10/26/98	7333.40	13.94	116.50	156
10/30/98	7336.50	13.85	119.60	156
11/5/98	7335.50	13.92	118.60	156
11/13/98	7336.10	13.76	119.20	156
11/18/98	7336.10	13.65	119.20	156
12/3/98	7335.90	13.87	119.00	156
12/10/98	7336.10	13.71	119.20	156
12/18/98	7336.00	0.00	119.10	156
12/31/98	7335.65			

Piezometer 22- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	9.70	100.53	133
1/7/98	7331.68	9.39	100.78	133
1/14/98	7331.98	9.39	101.08	133
1/22/98	7332.40	9.29	101.50	133
1/28/98	7333.40	9.39	102.50	133
2/3/98	7333.56	9.18	102.66	133
2/12/98	7334.01	9.33		133
2/20/98	7334.49	9.18	103.59	133
3/25/98	7336.34	10.27	105.44	133
4/2/98	7337.06	9.52	106.16	133
4/8/98	7337.34	9.86	106.44	133
4/15/98	7337.42	9.60		133
4/22/98	7337.42	9.96	106.52	133
4/29/98	7337.52	9.96	106.62	133
5/7/98	7337.57	9.55	106.67	133
5/13/98	7337.57	9.18	106.67	133
5/20/98	7337.60	9.44	106.70	133
5/27/98	7337.62	9.39	106.72	133
6/3/98	7337.57	9.44		133
6/10/98	7337.50	9.50		133
6/17/98	7337.70	9.52		133
6/24/98	7337.70	9.65	106.80	133
7/1/98	7337.63	9.81	106.73	133
7/8/98	7337.45	9.65	106.55	133
7/15/98	7337.95	9.81	107.05	133
7/22/98	7336.64	9.65	105.74	133
7/29/98	7336.85	9.60		133
8/12/98	7336.75	9.60	105.85	133
8/19/98	7336.70	9.50	105.80	133
8/31/98	7336.71	9.66	105.81	133
9/11/98	7336.75	9.61	105.85	133
9/16/98	7336.80	9.50	105.90	133
9/22/98	7336.70	9.40	105.80	133
9/30/98	7336.80	9.40	105.90	133
10/7/98	7336.85	9.40		133
10/14/98	7336.50	9.48	105.60	133
10/26/98	7333.40	9.14	102.50	133
10/30/98	7336.50	9.14	105.60	133
11/5/98	7335.50	9.04	104.60	133
11/13/98	7336.10	9.19	105.20	133
11/18/98	7336.10	8.99	105.20	133
12/3/98	7335.90	8.99	105.00	133
12/10/98	7336.10	9.25	105.20	133
12/18/98	7336.00	8.88	105.10	133
12/31/98	7335.65			

Piezometer 23- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	118.93	111
1/7/98	7331.68	0.00	119.18	111
1/14/98	7331.98	0.00	119.48	111
1/22/98	7332.40	0.00	119.90	111
1/28/98	7333.40	0.00	120.90	111
2/3/98	7333.56	0.00	121.06	111
2/12/98	7334.01	0.00		111
2/20/98	7334.49	0.00	121.99	111
3/25/98	7336.34	0.00	123.84	111
4/2/98	7337.06	0.00	124.56	111
4/8/98	7337.34	0.00	124.84	111
4/15/98	7337.42	0.00		111
4/22/98	7337.42	0.00	124.92	111
4/29/98	7337.52	0.00	125.02	111
5/7/98	7337.57	0.00	125.07	111
5/13/98	7337.57	0.00	125.07	111
5/20/98	7337.60	0.00	125.10	111
5/27/98	7337.62	0.00	125.12	111
6/3/98	7337.57	0.00		111
6/10/98	7337.50	0.00		111
6/17/98	7337.70	0.00		111
6/24/98	7337.70	0.00	125.20	111
7/1/98	7337.63	0.00	125.13	111
7/8/98	7337.45	0.00	124.95	111
7/15/98	7337.95	0.00	125.45	111
7/22/98	7336.64	0.00	124.14	111
7/29/98	7336.85	0.00		111
8/12/98	7336.75	0.00	124.25	111
8/19/98	7336.70	0.00	124.20	111
8/31/98	7336.71	0.00	124.21	111
9/11/98	7336.75	0.00	124.25	111
9/16/98	7336.80	0.00	124.30	111
9/22/98	7336.70	0.00	124.20	111
9/30/98	7336.80	0.00	124.30	111
10/7/98	7336.85	0.00		111
10/14/98	7336.50	0.00	124.00	111
10/26/98	7333.40	0.00	120.90	111
10/30/98	7336.50	0.00	124.00	111
11/5/98	7335.50	0.00	123.00	111
11/13/98	7336.10	0.00	123.60	111
11/18/98	7336.10	0.00	123.60	111
12/3/98	7335.90	0.00	123.40	111
12/10/98	7336.10	0.00	123.60	111
12/18/98	7336.00	0.00	123.50	111
12/31/98	7335.65			

Piezometer 24- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	18.57	114.93	106
1/7/98	7331.68	18.13	115.18	106
1/14/98	7331.98	17.89	115.48	106
1/22/98	7332.40	17.89	115.90	106
1/28/98	7333.40	18.01	116.90	106
2/3/98	7333.56	17.82	117.06	106
2/12/98	7334.01	18.57		106
2/20/98	7334.49	19.18	117.99	106
3/25/98	7336.34	20.11	119.84	106
4/2/98	7337.06	20.11	120.56	106
4/8/98	7337.34	20.11	120.84	106
4/15/98	7337.42	20.11		106
4/22/98	7337.42	20.36	120.92	106
4/29/98	7337.52	20.30	121.02	106
5/7/98	7337.57	20.11	121.07	106
5/13/98	7337.57	19.55	121.07	106
5/20/98	7337.60	19.74	121.10	106
5/27/98	7337.62	19.49	121.12	106
6/3/98	7337.57	19.49		106
6/10/98	7337.50	19.55		106
6/17/98	7337.70	19.80		106
6/24/98	7337.70	19.99	121.20	106
7/1/98	7337.63	19.99	121.13	106
7/8/98	7337.45	19.80	120.95	106
7/15/98	7337.95	20.05	121.45	106
7/22/98	7336.64	19.99	120.14	106
7/29/98	7336.85	20.05		106
8/12/98	7336.75	19.86	120.25	106
8/19/98	7336.70	19.99	120.20	106
8/31/98	7336.71	19.31	120.21	106
9/11/98	7336.75	19.00	120.25	106
9/16/98	7336.80	19.37	120.30	106
9/22/98	7336.70	18.75	120.20	106
9/30/98	7336.80	18.63	120.30	106
10/7/98	7336.85	18.56		106
10/14/98	7336.50	18.44	120.00	106
10/26/98	7333.40	18.32	116.90	106
10/30/98	7336.50	18.32	120.00	106
11/5/98	7335.50	#VALUE!	119.00	106
11/13/98	7336.10	#VALUE!	119.60	106
11/18/98	7336.10	#VALUE!	119.60	106
12/3/98	7335.90	17.83	119.40	106
12/10/98	7336.10	17.89	119.60	106
12/18/98	7336.00	17.89	119.50	106
12/31/98	7335.65			

Piezometer 25- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Tail Elev	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	38.65	184.95	202
1/7/98	7331.68	38.20	185.20	202
1/14/98	7331.98	37.96	185.50	202
1/22/98	7332.40	37.91	185.92	202
1/28/98	7333.40	38.00	186.92	202
2/3/98	7333.56	37.86	187.08	202
2/12/98	7334.01	38.55	187.53	202
2/20/98	7334.49	39.24	188.01	202
3/25/98	7336.34	40.33	189.86	202
4/2/98	7337.06	40.53	190.58	202
4/8/98	7337.34	40.58	190.86	202
4/15/98	7337.42	40.63	190.94	202
4/22/98	7337.42	40.73	190.94	202
4/29/98	7337.52	40.73	191.04	202
5/7/98	7337.57	40.58	191.09	202
5/13/98	7337.57	40.18	191.09	202
5/20/98	7337.60	40.08	191.12	202
5/27/98	7337.62	39.84	191.14	202
6/3/98	7337.57	39.69	191.09	202
6/10/98	7337.50	39.74	191.02	202
6/17/98	7337.70	40.53	191.22	202
6/24/98	7337.70	40.13	191.22	202
7/1/98	7337.63	40.33	191.15	202
7/8/98	7337.45	40.13	190.97	202
7/15/98	7337.95	40.53	191.47	202
7/22/98	7336.64	40.48	190.16	202
7/29/98	7336.85	40.53	190.37	202
8/12/98	7336.75	40.38	190.27	202
8/19/98	7336.70	40.33	190.22	202
8/31/98	7336.71	39.79	190.23	202
9/11/98	7336.75	39.39	190.27	202
9/16/98	7336.80	40.33	190.32	202
9/22/98	7336.70	39.09	190.22	202
9/30/98	7336.80	39.05		202
10/7/98	7336.85	38.75	190.37	202
10/14/98	7336.50	38.55	190.02	202
10/26/98	7333.40	38.40	186.92	202
10/30/98	7336.50	38.40		202
11/5/98	7335.50	#VALUE!		202
11/13/98	7336.10	#VALUE!	189.62	202
11/18/98	7336.10	#VALUE!	189.62	202
12/3/98	7335.90	37.22	189.42	202
12/10/98	7336.10	37.22	189.62	202
12/18/98	7336.00	37.61	189.52	202
12/31/98	7335.65	0.00	189.17	202

Piezometer 27- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	120.83	120
1/7/98	7331.68	0.00	121.08	120
1/14/98	7331.98	0.00	121.38	120
1/22/98	7332.40	0.00	121.80	120
1/28/98	7333.40	0.00	122.80	120
2/3/98	7333.56	0.00	122.96	120
2/12/98	7334.01	0.00		120
2/20/98	7334.49	0.00	123.89	120
3/25/98	7336.34	0.00	125.74	120
4/2/98	7337.06	0.00	126.46	120
4/8/98	7337.34	0.00	126.74	120
4/15/98	7337.42	0.00		120
4/22/98	7337.42	0.00	126.82	120
4/29/98	7337.52	0.00	126.92	120
5/7/98	7337.57	0.00	126.97	120
5/13/98	7337.57	0.00	126.97	120
5/20/98	7337.60	0.00	127.00	120
5/27/98	7337.62	0.00	127.02	120
6/3/98	7337.57	0.00		120
6/10/98	7337.50	0.00		120
6/17/98	7337.70	0.00		120
6/24/98	7337.70	0.00	127.10	120
7/1/98	7337.63	0.00	127.03	120
7/8/98	7337.45	0.00	126.85	120
7/15/98	7337.95	0.00	127.35	120
7/22/98	7336.64	0.00	126.04	120
7/29/98	7336.85	0.00		120
8/12/98	7336.75	0.00	126.15	120
8/19/98	7336.70	0.00	126.10	120
8/31/98	7336.71	0.00	126.11	120
9/11/98	7336.75	0.00	126.15	120
9/16/98	7336.80	0.00	126.20	120
9/22/98	7336.70	0.00	126.10	120
9/30/98	7336.80	0.00	126.20	120
10/7/98	7336.85	0.00		120
10/14/98	7336.50	0.00	125.90	120
10/26/98	7333.40	0.00	122.80	120
10/30/98	7336.50	0.00	125.90	120
11/5/98	7335.50	0.00	124.90	120
11/13/98	7336.10	0.00	125.50	120
11/18/98	7336.10	0.00	125.50	120
12/3/98	7335.90	0.00	125.30	120
12/10/98	7336.10	0.00	125.50	120
12/18/98	7336.00	0.00	125.40	120
12/31/98	7335.65			

Piezometer 28- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	17.22	116.93	113
1/7/98	7331.68	16.82	117.18	113
1/14/98	7331.98	16.67	117.48	113
1/22/98	7332.40	16.67	117.90	113
1/28/98	7333.40	16.52	118.90	113
2/3/98	7333.56	18.07	119.06	113
2/12/98	7334.01	19.47		113
2/20/98	7334.49	18.31	119.99	113
3/25/98	7336.34	21.57	121.84	113
4/2/98	7337.06	20.12	122.56	113
4/8/98	7337.34	21.52	122.84	113
4/15/98	7337.42	21.82		113
4/22/98	7337.42	21.97	122.92	113
4/29/98	7337.52	21.47	123.02	113
5/7/98	7337.57	20.87	123.07	113
5/13/98	7337.57	20.52	123.07	113
5/20/98	7337.60	20.17	123.10	113
5/27/98	7337.62	20.07	123.12	113
6/3/98	7337.57	20.57		113
6/10/98	7337.50	21.57		113
6/17/98	7337.70	21.17		113
6/24/98	7337.70	21.67	123.20	113
7/1/98	7337.63	21.17	123.13	113
7/8/98	7337.45	21.72	122.95	113
7/15/98	7337.95	21.67	123.45	113
7/22/98	7336.64	21.72	122.14	113
7/29/98	7336.85	20.77		113
8/12/98	7336.75	20.72	122.25	113
8/19/98	7336.70	19.62	122.20	113
8/31/98	7336.71	18.87	122.21	113
9/11/98	7336.75	19.62	122.25	113
9/16/98	7336.80	18.32	122.30	113
9/22/98	7336.70	18.07	122.20	113
9/30/98	7336.80	17.87	122.30	113
10/7/98	7336.85	17.67		113
10/14/98	7336.50	17.62	122.00	113
10/26/98	7333.40	17.12	118.90	113
10/30/98	7336.50	#VALUE!	122.00	113
11/5/98	7335.50	#VALUE!	121.00	113
11/13/98	7336.10	#VALUE!	121.60	113
11/18/98	7336.10	16.57	121.60	113
12/3/98	7335.90	16.62	121.40	113
12/10/98	7336.10	16.42	121.60	113
12/18/98	7336.00	0.00	121.50	113
12/31/98	7335.65			

Piezometer 29- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	205.73	236
1/7/98	7331.68	0.00	205.98	236
1/14/98	7331.98	0.00	206.28	236
1/22/98	7332.40	0.00	206.70	236
1/28/98	7333.40	0.00	207.70	236
2/3/98	7333.56	0.00	207.86	236
2/12/98	7334.01	0.00		236
2/20/98	7334.49	0.00	208.79	236
3/25/98	7336.34	0.00	210.64	236
4/2/98	7337.06	0.00	211.36	236
4/8/98	7337.34	0.00	211.64	236
4/15/98	7337.42	0.00		236
4/22/98	7337.42	0.00	211.72	236
4/29/98	7337.52	0.00	211.82	236
5/7/98	7337.57	0.00	211.87	236
5/13/98	7337.57	0.00	211.87	236
5/20/98	7337.60	0.00	211.90	236
5/27/98	7337.62	0.00	211.92	236
6/3/98	7337.57	0.00		236
6/10/98	7337.50	0.00		236
6/17/98	7337.70	0.00		236
6/24/98	7337.70	0.00	212.00	236
7/1/98	7337.63	0.00	211.93	236
7/8/98	7337.45	0.00	211.75	236
7/15/98	7337.95	0.00	212.25	236
7/22/98	7336.64	0.00	210.94	236
7/29/98	7336.85	0.00		236
8/12/98	7336.75	0.00	211.05	236
8/19/98	7336.70	0.00	211.00	236
8/31/98	7336.71	0.00	211.01	236
9/11/98	7336.75	0.00	211.05	236
9/16/98	7336.80	0.00	211.10	236
9/22/98	7336.70	0.00	211.00	236
9/30/98	7336.80	0.00	211.10	236
10/7/98	7336.85	0.00		236
10/14/98	7336.50	0.00	210.80	236
10/26/98	7333.40	0.00	207.70	236
10/30/98	7336.50	0.00	210.80	236
11/5/98	7335.50	0.00	209.80	236
11/13/98	7336.10	0.00	210.40	236
11/18/98	7336.10	0.00	210.40	236
12/3/98	7335.90	0.00	210.20	236
12/10/98	7336.10	0.00	210.40	236
12/18/98	7336.00	0.00	210.30	236
12/31/98	7335.65			

Piezometer 30- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	65.13	200.73	229
1/7/98	7331.68	64.36	200.98	229
1/14/98	7331.98	63.79	201.28	229
1/22/98	7332.40	63.74	201.70	229
1/28/98	7333.40	63.48	202.70	229
2/3/98	7333.56	63.28	202.86	229
2/12/98	7334.01	64.46		229
2/20/98	7334.49	65.13	203.79	229
3/25/98	7336.34	67.96	205.64	229
4/2/98	7337.06	65.64	206.36	229
4/8/98	7337.34	65.13	206.64	229
4/15/98	7337.42	65.02		229
4/22/98	7337.42	65.23	206.72	229
4/29/98	7337.52	65.38	206.82	229
5/7/98	7337.57	65.38	206.87	229
5/13/98	7337.57	64.77	206.87	229
5/20/98	7337.60	64.30	206.90	229
5/27/98	7337.62	64.15	206.92	229
6/3/98	7337.57	64.20		229
6/10/98	7337.50	64.05		229
6/17/98	7337.70	65.69		229
6/24/98	7337.70	64.15	207.00	229
7/1/98	7337.63	63.95	206.93	229
7/8/98	7337.45	64.15	206.75	229
7/15/98	7337.95	63.43	207.25	229
7/22/98	7336.64	63.33	205.94	229
7/29/98	7336.85	63.02		229
8/12/98	7336.75	62.35	206.05	229
8/19/98	7336.70	62.61	206.00	229
8/31/98	7336.71	61.43	206.01	229
9/11/98	7336.75	60.76	206.05	229
9/16/98	7336.80	60.81	206.10	229
9/22/98	7336.70	59.68	206.00	229
9/30/98	7336.80	59.22	206.10	229
10/7/98	7336.85	59.02		229
10/14/98	7336.50	58.66	205.80	229
10/26/98	7333.40	63.90	202.70	229
10/30/98	7336.50	58.56	205.80	229
11/5/98	7335.50	#VALUE!	204.80	229
11/13/98	7336.10	#VALUE!	205.40	229
11/18/98	7336.10	#VALUE!	205.40	229
12/3/98	7335.90	57.63	205.20	229
12/10/98	7336.10	57.68	205.40	229
12/18/98	7336.00	57.07	205.30	229
12/31/98	7335.65			

Piezometer 31- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	26.72	131.33	133
1/7/98	7331.68	26.06	131.58	133
1/14/98	7331.98	25.56	131.88	133
1/22/98	7332.40	25.28	132.30	133
1/28/98	7333.40	25.23	133.30	133
2/3/98	7333.56	25.12	133.46	133
2/12/98	7334.01	26.44		133
2/20/98	7334.49	27.93	134.39	133
3/25/98	7336.34	30.36	136.24	133
4/2/98	7337.06	30.69	136.96	133
4/8/98	7337.34	27.93	137.24	133
4/15/98	7337.42	30.69		133
4/22/98	7337.42	30.97	137.32	133
4/29/98	7337.52	31.08	137.42	133
5/7/98	7337.57	30.64	137.47	133
5/13/98	7337.57	29.98	137.47	133
5/20/98	7337.60	29.59	137.50	133
5/27/98	7337.62	29.15	137.52	133
6/3/98	7337.57	29.09		133
6/10/98	7337.50	29.53		133
6/17/98	7337.70	30.69		133
6/24/98	7337.70	30.25	137.60	133
7/1/98	7337.63	30.75	137.53	133
7/8/98	7337.45	30.25	137.35	133
7/15/98	7337.95	30.86	137.85	133
7/22/98	7336.64	30.80	136.54	133
7/29/98	7336.85	30.86		133
8/12/98	7336.75	29.65	136.65	133
8/19/98	7336.70	29.65	136.60	133
8/31/98	7336.71	28.43	136.61	133
9/11/98	7336.75	27.60	136.65	133
9/16/98	7336.80	29.59	136.70	133
9/22/98	7336.70	27.00	136.60	133
9/30/98	7336.80	25.06	136.70	133
10/7/98	7336.85	26.39		133
10/14/98	7336.50	26.11	136.40	133
10/26/98	7333.40	25.73	133.30	133
10/30/98	7336.50	25.73	136.40	133
11/5/98	7335.50	#VALUE!	135.40	133
11/13/98	7336.10	#VALUE!	136.00	133
11/18/98	7336.10	#VALUE!	136.00	133
12/3/98	7335.90	24.95	135.80	133
12/10/98	7336.10	24.95	136.00	133
12/18/98	7336.00	24.79	135.90	133
12/31/98	7335.65			

Piezometer 32- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	-7.28	300.63	186
1/7/98	7331.68	-7.53	300.88	186
1/14/98	7331.98	-7.48	301.18	186
1/22/98	7332.40	-7.58	301.60	186
1/28/98	7333.40	-7.48	302.60	186
2/3/98	7333.56	-7.72	302.76	186
2/12/98	7334.01	-7.50		186
2/20/98	7334.49	-7.66	303.69	186
3/25/98	7336.34	-7.72	305.54	186
4/2/98	7337.06	-7.72	306.26	186
4/8/98	7337.34	-10.60	306.54	186
4/15/98	7337.42	-7.82		186
4/22/98	7337.42	-7.33	306.62	186
4/29/98	7337.52	-7.38	306.72	186
5/7/98	7337.57	-7.53	306.77	186
5/13/98	7337.57	-7.82	306.77	186
5/20/98	7337.60	-7.48	306.80	186
5/27/98	7337.62	-7.62	306.82	186
6/3/98	7337.57	-7.62		186
6/10/98	7337.50	-7.57		186
6/17/98	7337.70	-7.72		186
6/24/98	7337.70	-7.53	306.90	186
7/1/98	7337.63	-7.43	306.83	186
7/8/98	7337.45	-7.48	306.65	186
7/15/98	7337.95	-7.28	307.15	186
7/22/98	7336.64	-7.33	305.84	186
7/29/98	7336.85	-7.33		186
8/12/98	7336.75	-6.93	305.95	186
8/19/98	7336.70	-7.28	305.90	186
8/31/98	7336.71	-7.33	305.91	186
9/11/98	7336.75	-7.38	305.95	186
9/16/98	7336.80	-7.38	306.00	186
9/22/98	7336.70	-7.43	305.90	186
9/30/98	7336.80	-7.52	306.00	186
10/7/98	7336.85	-7.33		186
10/14/98	7336.50	-7.52	305.70	186
10/26/98	7333.40	-7.57	302.60	186
10/30/98	7336.50	-7.57	305.70	186
11/5/98	7335.50	-7.62	304.70	186
11/13/98	7336.10	-7.28	305.30	186
11/18/98	7336.10	-7.52	305.30	186
12/3/98	7335.90	-7.62	305.10	186
12/10/98	7336.10	-7.18	305.30	186
12/18/98	7336.00	-7.72	305.20	186
12/31/98	7335.65			

Piezometer 33- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	300.63	186
1/7/98	7331.68	0.00	300.88	186
1/14/98	7331.98	0.00	301.18	186
1/22/98	7332.40	0.00	301.60	186
1/28/98	7333.40	0.00	302.60	186
2/3/98	7333.56	0.00	302.76	186
2/12/98	7334.01	0.00		186
2/20/98	7334.49	0.00	303.69	186
3/25/98	7336.34	0.00	305.54	186
4/2/98	7337.06	0.00	306.26	186
4/8/98	7337.34	0.00	306.54	186
4/15/98	7337.42	0.00		186
4/22/98	7337.42	0.00	306.62	186
4/29/98	7337.52	0.00	306.72	186
5/7/98	7337.57	0.00	306.77	186
5/13/98	7337.57	0.00	306.77	186
5/20/98	7337.60	0.00	306.80	186
5/27/98	7337.62	0.00	306.82	186
6/3/98	7337.57	0.00		186
6/10/98	7337.50	0.00		186
6/17/98	7337.70	0.00		186
6/24/98	7337.70	0.00	306.90	186
7/1/98	7337.63	0.00	306.83	186
7/8/98	7337.45	0.00	306.65	186
7/15/98	7337.95	0.00	307.15	186
7/22/98	7336.64	0.00	305.84	186
7/29/98	7336.85	0.00		186
8/12/98	7336.75	0.00	305.95	186
8/19/98	7336.70	0.00	305.90	186
8/31/98	7336.71	0.00	305.91	186
9/11/98	7336.75	0.00	305.95	186
9/16/98	7336.80	0.00	306.00	186
9/22/98	7336.70	0.00	305.90	186
9/30/98	7336.80	0.00	306.00	186
10/7/98	7336.85	0.00		186
10/14/98	7336.50	0.00	305.70	186
10/26/98	7333.40	0.00	302.60	186
10/30/98	7336.50	0.00	305.70	186
11/5/98	7335.50	0.00	304.70	186
11/13/98	7336.10	0.00	305.30	186
11/18/98	7336.10	0.00	305.30	186
12/3/98	7335.90	0.00	305.10	186
12/10/98	7336.10	0.00	305.30	186
12/18/98	7336.00	0.00	305.20	186
12/31/98	7335.65			

Piezometer 34- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	-8.04	208.73	109
1/7/98	7331.68	-8.34	208.98	109
1/14/98	7331.98	-8.24	209.28	109
1/22/98	7332.40	-8.89	209.70	109
1/28/98	7333.40	-8.29	210.70	109
2/3/98	7333.56	-8.54	210.86	109
2/12/98	7334.01	-8.29		109
2/20/98	7334.49	-8.54	211.79	109
3/25/98	7336.34	-8.59	213.64	109
4/2/98	7337.06	-8.54	214.36	109
4/8/98	7337.34	-8.54	214.64	109
4/15/98	7337.42	-8.69		109
4/22/98	7337.42	-8.19	214.72	109
4/29/98	7337.52	-8.23	214.82	109
5/7/98	7337.57	-8.39	214.87	109
5/13/98	7337.57	-8.69	214.87	109
5/20/98	7337.60	-8.39	214.90	109
5/27/98	7337.62	-8.39	214.92	109
6/3/98	7337.57	-8.44		109
6/10/98	7337.50	-8.39		109
6/17/98	7337.70	-8.49		109
6/24/98	7337.70	-8.39	215.00	109
7/1/98	7337.63	-8.28	214.93	109
7/8/98	7337.45	-8.44	214.75	109
7/15/98	7337.95	-8.08	215.25	109
7/22/98	7336.64	-8.18	213.94	109
7/29/98	7336.85	-8.18		109
8/12/98	7336.75	-8.03	214.05	109
8/19/98	7336.70	-8.13	214.00	109
8/31/98	7336.71	-8.18	214.01	109
9/11/98	7336.75	-8.28	214.05	109
9/16/98	7336.80	-8.13	214.10	109
9/22/98	7336.70	-8.33	214.00	109
9/30/98	7336.80	-8.38	214.10	109
10/7/98	7336.85	-8.23		109
10/14/98	7336.50	-8.43	213.80	109
10/26/98	7333.40	-8.43	210.70	109
10/30/98	7336.50	-8.53	213.80	109
11/5/98	7335.50	-8.48	212.80	109
11/13/98	7336.10	-8.18	213.40	109
11/18/98	7336.10	-8.43	213.40	109
12/3/98	7335.90	-8.58	213.20	109
12/10/98	7336.10	-8.08	213.40	109
12/18/98	7336.00	-8.58	213.30	109
12/31/98	7335.65			

Piezometer 35- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0 ft H2O is l	214.23	114
1/7/98	7331.68	0.00	214.48	114
1/14/98	7331.98	0.00	214.78	114
1/22/98	7332.40	0.00	215.20	114
1/28/98	7333.40	0.00	216.20	114
2/3/98	7333.56	0.00	216.36	114
2/12/98	7334.01	0.00		114
2/20/98	7334.49	0.00	217.29	114
3/25/98	7336.34	0.00	219.14	114
4/2/98	7337.06	0.00	219.86	114
4/8/98	7337.34	0.00	220.14	114
4/15/98	7337.42	0.00		114
4/22/98	7337.42	0.00	220.22	114
4/29/98	7337.52	0.00	220.32	114
5/7/98	7337.57	0.00	220.37	114
5/13/98	7337.57	0.00	220.37	114
5/20/98	7337.60	0.00	220.40	114
5/27/98	7337.62	0.00	220.42	114
6/3/98	7337.57	0.00		114
6/10/98	7337.50	0.00		114
6/17/98	7337.70	0.00		114
6/24/98	7337.70	0.00	220.50	114
7/1/98	7337.63	0.00	220.43	114
7/8/98	7337.45	0.00	220.25	114
7/15/98	7337.95	0.00	220.75	114
7/22/98	7336.64	0.00	219.44	114
7/29/98	7336.85	0.00		114
8/12/98	7336.75	0.00	219.55	114
8/19/98	7336.70	0.00	219.50	114
8/31/98	7336.71	0.00	219.51	114
9/11/98	7336.75	0.00	219.55	114
9/16/98	7336.80	0.00	219.60	114
9/22/98	7336.70	0.00	219.50	114
9/30/98	7336.80	0.00	219.60	114
10/7/98	7336.85	0.00		114
10/14/98	7336.50	0.00	219.30	114
10/26/98	7333.40	0.00	216.20	114
10/30/98	7336.50	0.00	219.30	114
11/5/98	7335.50	#NUM!	218.30	114
11/13/98	7336.10	#NUM!	218.90	114
11/18/98	7336.10	#NUM!	218.90	114
12/3/98	7335.90	#NUM!	218.70	114
12/10/98	7336.10	#NUM!	218.90	114
12/18/98	7336.00	#NUM!	218.80	114
12/31/98	7335.65			

Piezometer 36- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	-7.05	367.63	245
1/7/98	7331.68	-7.31	367.88	245
1/14/98	7331.98	-7.16	368.18	245
1/22/98	7332.40	-7.31	368.60	245
1/28/98	7333.40	-7.26	369.60	245
2/3/98	7333.56	-7.51	369.76	245
2/12/98	7334.01	-7.26		245
2/20/98	7334.49	-7.46	370.69	245
3/25/98	7336.34	-7.51	372.54	245
4/2/98	7337.06	-7.46	373.26	245
4/8/98	7337.34	-7.51	373.54	245
4/15/98	7337.42	-7.61		245
4/22/98	7337.42	-7.05	373.62	245
4/29/98	7337.52	-7.16	373.72	245
5/7/98	7337.57	-7.31	373.77	245
5/13/98	7337.57	-7.56	373.77	245
5/20/98	7337.60	-7.26	373.80	245
5/27/98	7337.62	-7.31	373.82	245
6/3/98	7337.57	-7.46		245
6/10/98	7337.50	-7.31		245
6/17/98	7337.70	-7.51		245
6/24/98	7337.70	-7.31	373.90	245
7/1/98	7337.63	-7.21	373.83	245
7/8/98	7337.45	-7.36	373.65	245
7/15/98	7337.95	-7.00	374.15	245
7/22/98	7336.64	-7.10	372.84	245
7/29/98	7336.85	-7.10		245
8/12/98	7336.75	-6.95	372.95	245
8/19/98	7336.70	-7.10	372.90	245
8/31/98	7336.71	-7.05	372.91	245
9/11/98	7336.75	-7.16	372.95	245
9/16/98	7336.80	-7.10	373.00	245
9/22/98	7336.70	-7.21	372.90	245
9/30/98	7336.80	-7.26	373.00	245
10/7/98	7336.85	-7.10		245
10/14/98	7336.50	-7.36	372.70	245
10/26/98	7333.40	-7.31	369.60	245
10/30/98	7336.50	-7.31	372.70	245
11/5/98	7335.50	-7.41	371.70	245
11/13/98	7336.10	-7.05	372.30	245
11/18/98	7336.10	-7.31	372.30	245
12/3/98	7335.90	-7.51	372.10	245
12/10/98	7336.10	-6.95	372.30	245
12/18/98	7336.00	-7.56	372.20	245
12/31/98	7335.65			

Piezometer 37- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	372.63	250
1/7/98	7331.68	0.00	372.88	250
1/14/98	7331.98	0.00	373.18	250
1/22/98	7332.40	0.00	373.60	250
1/28/98	7333.40	0.00	374.60	250
2/3/98	7333.56	0.00	374.76	250
2/12/98	7334.01	0.00		250
2/20/98	7334.49	0.00	375.69	250
3/25/98	7336.34	0.00	377.54	250
4/2/98	7337.06	0.00	378.26	250
4/8/98	7337.34	0.00	378.54	250
4/15/98	7337.42	0.00		250
4/22/98	7337.42	0.00	378.62	250
4/29/98	7337.52	0.00	378.72	250
5/7/98	7337.57	0.00	378.77	250
5/13/98	7337.57	0.00	378.77	250
5/20/98	7337.60	0.00	378.80	250
5/27/98	7337.62	0.00	378.82	250
6/3/98	7337.57	0.00		250
6/10/98	7337.50	0.00		250
6/17/98	7337.70	0.00		250
6/24/98	7337.70	0.00	378.90	250
7/1/98	7337.63	0.00	378.83	250
7/8/98	7337.45	0.00	378.65	250
7/15/98	7337.95	0.00	379.15	250
7/22/98	7336.64	0.00	377.84	250
7/29/98	7336.85	0.00		250
8/12/98	7336.75	0.00	377.95	250
8/19/98	7336.70	0.00	377.90	250
8/31/98	7336.71	0.00	377.91	250
9/11/98	7336.75	0.00	377.95	250
9/16/98	7336.80	0.00	378.00	250
9/22/98	7336.70	0.00	377.90	250
9/30/98	7336.80	0.00	378.00	250
10/7/98	7336.85	0.00		250
10/14/98	7336.50	0.00	377.70	250
10/26/98	7333.40	0.00	374.60	250
10/30/98	7336.50	0.00	377.70	250
11/5/98	7335.50	0.00	376.70	250
11/13/98	7336.10	0.00	377.30	250
11/18/98	7336.10	0.00	377.30	250
12/3/98	7335.90	0.00	377.10	250
12/10/98	7336.10	0.00	377.30	250
12/18/98	7336.00	0.00	377.20	250
12/31/98	7335.65			

Piezometer 38- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore pressure
12/30/97	7331.43	38.81	140.13	157
1/7/98	7331.68	38.37	140.38	157
1/14/98	7331.98	38.81	140.68	157
1/22/98	7332.40	38.20	141.10	157
1/28/98	7333.40	38.26	142.10	157
2/3/98	7333.56	37.82	142.26	157
2/12/98	7334.01	38.59		157
2/20/98	7334.49	39.15	143.19	157
3/25/98	7336.34	39.97	145.04	157
4/2/98	7337.06	40.30	145.76	157
4/8/98	7337.34	40.19	146.04	157
4/15/98	7337.42	40.13		157
4/22/98	7337.42	40.24	146.12	157
4/29/98	7337.52	40.24	146.22	157
5/7/98	7337.57	40.06	146.27	157
5/13/98	7337.57	40.17	146.27	157
5/20/98	7337.60	34.73	146.30	157
5/27/98	7337.62	39.48	146.32	157
6/3/98	7337.57	39.20		157
6/10/98	7337.50	39.36		157
6/17/98	7337.70	40.35		157
6/24/98	7337.70	39.53	146.40	157
7/1/98	7337.63	39.64	146.33	157
7/8/98	7337.45	39.58	146.15	157
7/15/98	7337.95	39.69	146.65	157
7/22/98	7336.64	39.59	145.34	157
7/29/98	7336.85	39.50		157
8/12/98	7336.75	39.58	145.45	157
8/19/98	7336.70	39.53	145.40	157
8/31/98	7336.71	38.81	145.41	157
9/11/98	7336.75	39.69	145.45	157
9/16/98	7336.80	39.53	145.50	157
9/22/98	7336.70	38.26	145.40	157
9/30/98	7336.80	38.15	145.50	157
10/7/98	7336.85	37.98		157
10/14/98	7336.50	37.82	145.20	157
10/26/98	7333.40	37.75	142.10	157
10/30/98	7336.50	37.75	145.20	157
11/5/98	7335.50	37.43	144.20	157
11/13/98	7336.10	37.60	144.80	157
11/18/98	7336.10	37.38	144.80	157
12/3/98	7335.90	37.32	144.60	157
12/10/98	7336.10	37.21	144.80	157
12/18/98	7336.00	36.99	144.70	157
12/31/98	7335.65			

Piezometer 41- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	141.93	225
1/7/98	7331.68	0.00	142.18	225
1/14/98	7331.98	0.00	142.48	225
1/22/98	7332.40	0.00	142.90	225
1/28/98	7333.40	0.00	143.90	225
2/3/98	7333.56	0.00	144.06	225
2/12/98	7334.01	0.00		225
2/20/98	7334.49	0.00	144.99	225
3/25/98	7336.34	0.00	146.84	225
4/2/98	7337.06	0.00	147.56	225
4/8/98	7337.34	0.00	147.84	225
4/15/98	7337.42	0.00		225
4/22/98	7337.42	0.00	147.92	225
4/29/98	7337.52	0.00	148.02	225
5/7/98	7337.57	0.00	148.07	225
5/13/98	7337.57	0.00	148.07	225
5/20/98	7337.60	0.00	148.10	225
5/27/98	7337.62	0.00	148.12	225
6/3/98	7337.57	0.00		225
6/10/98	7337.50	0.00		225
6/17/98	7337.70	0.00		225
6/24/98	7337.70	0.00	148.20	225
7/1/98	7337.63	0.00	148.13	225
7/8/98	7337.45	0.00	147.95	225
7/15/98	7337.95	0.00	148.45	225
7/22/98	7336.64	0.00	147.14	225
7/29/98	7336.85	0.00		225
8/12/98	7336.75	0.00	147.25	225
8/19/98	7336.70	0.00	147.20	225
8/31/98	7336.71	0.00	147.21	225
9/11/98	7336.75	0.00	147.25	225
9/16/98	7336.80	0.00	147.30	225
9/22/98	7336.70	0.00	147.20	225
9/30/98	7336.80	0.00	147.30	225
10/7/98	7336.85	0.00		225
10/14/98	7336.50	0.00	147.00	225
10/26/98	7333.40	0.00	143.90	225
10/30/98	7336.50	0.00	147.00	225
11/5/98	7335.50	0.00	146.00	225
11/13/98	7336.10	0.00	146.60	225
11/18/98	7336.10	0.00	146.60	225
12/3/98	7335.90	0.00	146.40	225
12/10/98	7336.10	0.00	146.60	225
12/18/98	7336.00	0.00	146.50	225
12/31/98	7335.65			

Piezometer 42- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	13.65	48.93	111
1/7/98	7331.68	13.65	49.18	111
1/14/98	7331.98	13.46	49.48	111
1/22/98	7332.40	13.18	49.90	111
1/28/98	7333.40	13.76	50.90	111
2/3/98	7333.56	12.99	51.06	111
2/12/98	7334.01	13.12		111
2/20/98	7334.49	13.30	51.99	111
3/25/98	7336.34	14.67	53.84	111
4/2/98	7337.06	14.58	54.56	111
4/8/98	7337.34	14.15	54.84	111
4/15/98	7337.42	13.92		111
4/22/98	7337.42	13.74	54.92	111
4/29/98	7337.52	13.54	55.02	111
5/7/98	7337.57	13.43	55.07	111
5/13/98	7337.57	13.05	55.07	111
5/20/98	7337.60	12.88	55.10	111
5/27/98	7337.62	12.95	55.12	111
6/3/98	7337.57	12.98		111
6/10/98	7337.50	13.29		111
6/17/98	7337.70	14.58		111
6/24/98	7337.70	13.84	55.20	111
7/1/98	7337.63	14.13	55.13	111
7/8/98	7337.45	13.78	54.95	111
7/15/98	7337.95	13.63	55.45	111
7/22/98	7336.64	13.37	54.14	111
7/29/98	7336.85	12.98		111
8/12/98	7336.75	12.31	54.25	111
8/19/98	7336.70	12.70	54.20	111
8/31/98	7336.71	11.77	54.21	111
9/11/98	7336.75	12.35	54.25	111
9/16/98	7336.80	12.35	54.30	111
9/22/98	7336.70	11.86	54.20	111
9/30/98	7336.80	11.69	54.30	111
10/7/98	7336.85	11.47		111
10/14/98	7336.50	11.31	54.00	111
10/26/98	7333.40	11.54	50.90	111
10/30/98	7336.50	11.15	54.00	111
11/5/98	7335.50	10.88	53.00	111
11/13/98	7336.10	10.79	53.60	111
11/18/98	7336.10	10.80	53.60	111
12/3/98	7335.90	10.50	53.40	111
12/10/98	7336.10	10.52	53.60	111
12/18/98	7336.00	10.42	53.50	111
12/31/98	7335.65			

Piezometer 43- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	27.22	142.53	224
1/7/98	7331.68	26.83	142.78	224
1/14/98	7331.98	26.88	143.08	224
1/22/98	7332.40	26.71	143.50	224
1/28/98	7333.40	26.83	144.50	224
2/3/98	7333.56	26.54	144.66	224
2/12/98	7334.01	26.83		224
2/20/98	7334.49	26.60	145.59	224
3/25/98	7336.34	27.68	147.44	224
4/2/98	7337.06	27.00	148.16	224
4/8/98	7337.34	26.60	148.44	224
4/15/98	7337.42	27.00		224
4/22/98	7337.42	27.57	148.52	224
4/29/98	7337.52	27.51	148.62	224
5/7/98	7337.57	26.94	148.67	224
5/13/98	7337.57	26.60	148.67	224
5/20/98	7337.60	26.94	148.70	224
5/27/98	7337.62	26.89	148.72	224
6/3/98	7337.57	26.83		224
6/10/98	7337.50	26.94		224
6/17/98	7337.70	27.00		224
6/24/98	7337.70	27.11	148.80	224
7/1/98	7337.63	27.34	148.73	224
7/8/98	7337.45	27.11	148.55	224
7/15/98	7337.95	27.29	149.05	224
7/22/98	7336.64	27.11	147.74	224
7/29/98	7336.85	27.17		224
8/12/98	7336.75	27.11	147.85	224
8/19/98	7336.70	27.11	147.80	224
8/31/98	7336.71	27.23	147.81	224
9/11/98	7336.75	27.11	147.85	224
9/16/98	7336.80	27.23	147.90	224
9/22/98	7336.70	26.95	147.80	224
9/30/98	7336.80	27.00	147.90	224
10/7/98	7336.85	27.00		224
10/14/98	7336.50	27.06	147.60	224
10/26/98	7333.40	26.72	144.50	224
10/30/98	7336.50	27.35	147.60	224
11/5/98	7335.50	26.61	146.60	224
11/13/98	7336.10	26.83	147.20	224
11/18/98	7336.10	26.55	147.20	224
12/3/98	7335.90	26.49	147.00	224
12/10/98	7336.10	26.83	147.20	224
12/18/98	7336.00	26.44	147.10	224
12/31/98	7335.65			

Piezometer 44- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	148.53	234
1/7/98	7331.68	0.00	148.78	234
1/14/98	7331.98	0.00	149.08	234
1/22/98	7332.40	0.00	149.50	234
1/28/98	7333.40	0.00	150.50	234
2/3/98	7333.56	0.00	150.66	234
2/12/98	7334.01	0.00		234
2/20/98	7334.49	0.00	151.59	234
3/25/98	7336.34	0.00	153.44	234
4/2/98	7337.06	0.00	154.16	234
4/8/98	7337.34	0.00	154.44	234
4/15/98	7337.42	0.00		234
4/22/98	7337.42	0.00	154.52	234
4/29/98	7337.52	0.00	154.62	234
5/7/98	7337.57	0.00	154.67	234
5/13/98	7337.57	0.00	154.67	234
5/20/98	7337.60	0.00	154.70	234
5/27/98	7337.62	0.00	154.72	234
6/3/98	7337.57	0.00		234
6/10/98	7337.50	0.00		234
6/17/98	7337.70	0.00		234
6/24/98	7337.70	0.00	154.80	234
7/1/98	7337.63	0.00	154.73	234
7/8/98	7337.45	0.00	154.55	234
7/15/98	7337.95	0.00	155.05	234
7/22/98	7336.64	0.00	153.74	234
7/29/98	7336.85	0.00		234
8/12/98	7336.75	0.00	153.85	234
8/19/98	7336.70	0.00	153.80	234
8/31/98	7336.71	0.00	153.81	234
9/11/98	7336.75	0.00	153.85	234
9/16/98	7336.80	0.00	153.90	234
9/22/98	7336.70	0.00	153.80	234
9/30/98	7336.80	0.00	153.90	234
10/7/98	7336.85	0.00		234
10/14/98	7336.50	0.00	153.60	234
10/26/98	7333.40	0.00	150.50	234
10/30/98	7336.50	0.00	153.60	234
11/5/98	7335.50	0.00	152.60	234
11/13/98	7336.10	0.00	153.20	234
11/18/98	7336.10	0.00	153.20	234
12/3/98	7335.90	0.00	153.00	234
12/10/98	7336.10	0.00	153.20	234
12/18/98	7336.00	0.00	153.10	234
12/31/98	7335.65			

Piezometer 45- Time vs. Water Elevation
Pore Pressure and Tail Water Head

DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	10.11	100.13	158
1/7/98	7331.68	9.85	100.38	158
1/14/98	7331.98	9.90	100.68	158
1/22/98	7332.40	9.63	101.10	158
1/28/98	7333.40	9.80	102.10	158
2/3/98	7333.56	9.63	102.26	158
2/12/98	7334.01	9.74		158
2/20/98	7334.49	9.47	103.19	158
3/25/98	7336.34	10.59	105.04	158
4/2/98	7337.06	10.06	105.76	158
4/8/98	7337.34	9.47	106.04	158
4/15/98	7337.42	10.01		158
4/22/98	7337.42	10.27	106.12	158
4/29/98	7337.52	10.38	106.22	158
5/7/98	7337.57	9.85	106.27	158
5/13/98	7337.57	9.53	106.27	158
5/20/98	7337.60	9.69	106.30	158
5/27/98	7337.62	9.58	106.32	158
6/3/98	7337.57	9.63		158
6/10/98	7337.50	9.63		158
6/17/98	7337.70	10.00		158
6/24/98	7337.70	9.85	106.40	158
7/1/98	7337.63	10.06	106.33	158
7/8/98	7337.45	10.11	106.15	158
7/15/98	7337.95	9.85	106.65	158
7/22/98	7336.64	9.79	105.34	158
7/29/98	7336.85	9.74		158
8/12/98	7336.75	9.63	105.45	158
8/19/98	7336.70	9.63	105.40	158
8/31/98	7336.71	9.69	105.41	158
9/11/98	7336.75	9.47	105.45	158
9/16/98	7336.80	9.53	105.50	158
9/22/98	7336.70	9.26	105.40	158
9/30/98	7336.80	9.26	105.50	158
10/7/98	7336.85	9.21		158
10/14/98	7336.50	9.26	105.20	158
10/26/98	7333.40	9.05	102.10	158
10/30/98	7336.50	8.94	105.20	158
11/5/98	7335.50	8.89	104.20	158
11/13/98	7336.10	8.94	104.80	158
11/18/98	7336.10	8.84	104.80	158
12/3/98	7335.90	8.62	104.60	158
12/10/98	7336.10	8.73	104.80	158
12/18/98	7336.00	9.17	104.70	158
12/31/98	7335.65			

Piezometer 46- Time vs. Water Elevation
Pore Pressure and Tail Water Head

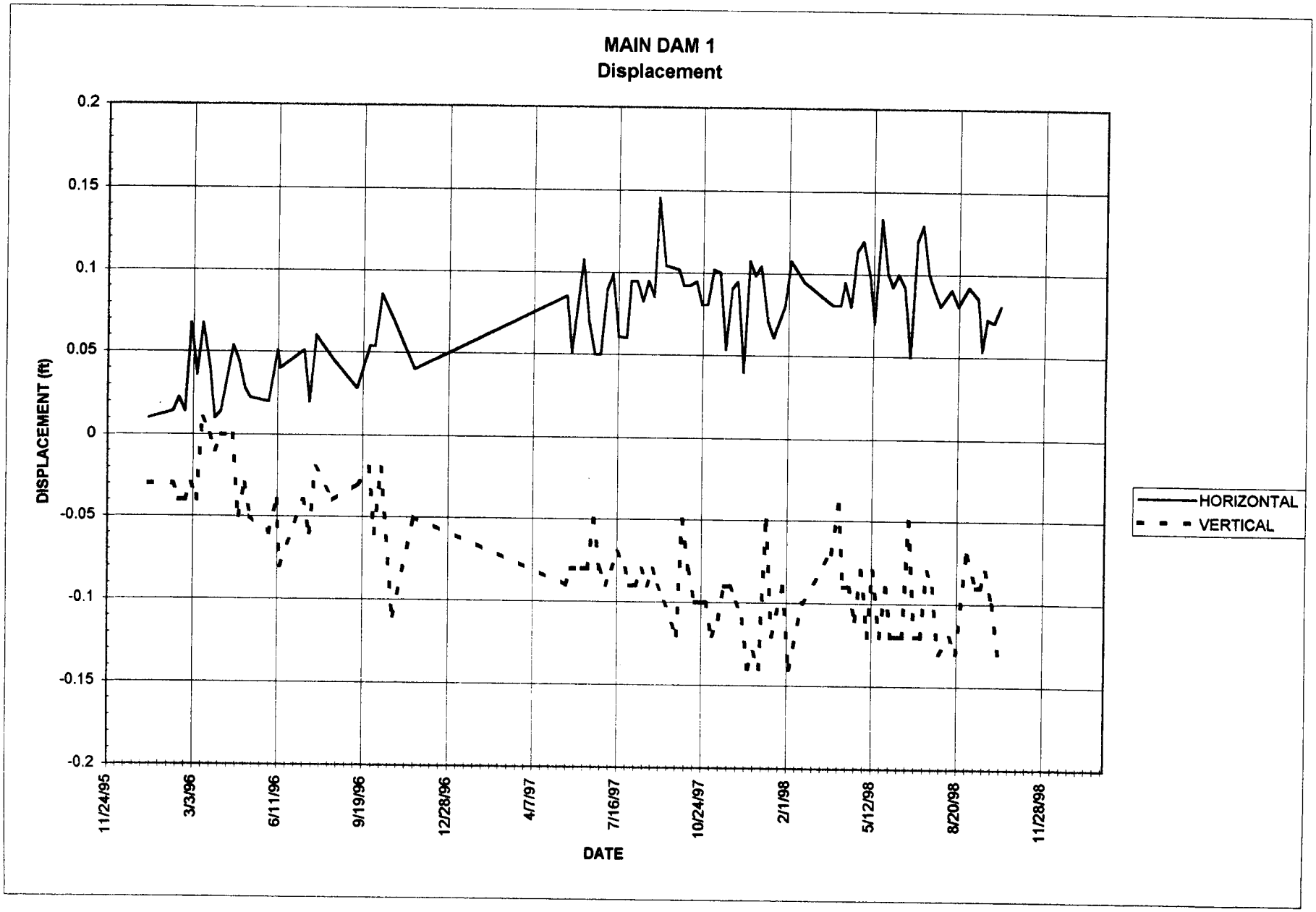
DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	0.00	108.13	172
1/7/98	7331.68	0.00	108.38	172
1/14/98	7331.98	0.00	108.68	172
1/22/98	7332.40	0.00	109.10	172
1/28/98	7333.40	0.00	110.10	172
2/3/98	7333.56	0.00	110.26	172
2/12/98	7334.01	0.00		172
2/20/98	7334.49	0.00	111.19	172
3/25/98	7336.34	0.00	113.04	172
4/2/98	7337.06	0.00	113.76	172
4/8/98	7337.34	0.00	114.04	172
4/15/98	7337.42	0.00		172
4/22/98	7337.42	0.00	114.12	172
4/29/98	7337.52	0.00	114.22	172
5/7/98	7337.57	0.00	114.27	172
5/13/98	7337.57	0.00	114.27	172
5/20/98	7337.60	0.00	114.30	172
5/27/98	7337.62	0.00	114.32	172
6/3/98	7337.57	0.00		172
6/10/98	7337.50	0.00		172
6/17/98	7337.70	0.00		172
6/24/98	7337.70	0.00	114.40	172
7/1/98	7337.63	0.00	114.33	172
7/8/98	7337.45	0.00	114.15	172
7/15/98	7337.95	0.00	114.65	172
7/22/98	7336.64	0.00	113.34	172
7/29/98	7336.85	0.00		172
8/12/98	7336.75	0.00	113.45	172
8/19/98	7336.70	0.00	113.40	172
8/31/98	7336.71	0.00	113.41	172
9/11/98	7336.75	0.00	113.45	172
9/16/98	7336.80	0.00	113.50	172
9/22/98	7336.70	0.00	113.40	172
9/30/98	7336.80	0.00	113.50	172
10/7/98	7336.85	0.00		172
10/14/98	7336.50	0.00	113.20	172
10/26/98	7333.40	0.00	110.10	172
10/30/98	7336.50	0.00	113.20	172
11/5/98	7335.50	0.00	112.20	172
11/13/98	7336.10	0.00	112.80	172
11/18/98	7336.10	0.00	112.80	172
12/3/98	7335.90	0.00	112.60	172
12/10/98	7336.10	0.00	112.80	172
12/18/98	7336.00	0.00	112.70	172
12/31/98	7335.65			

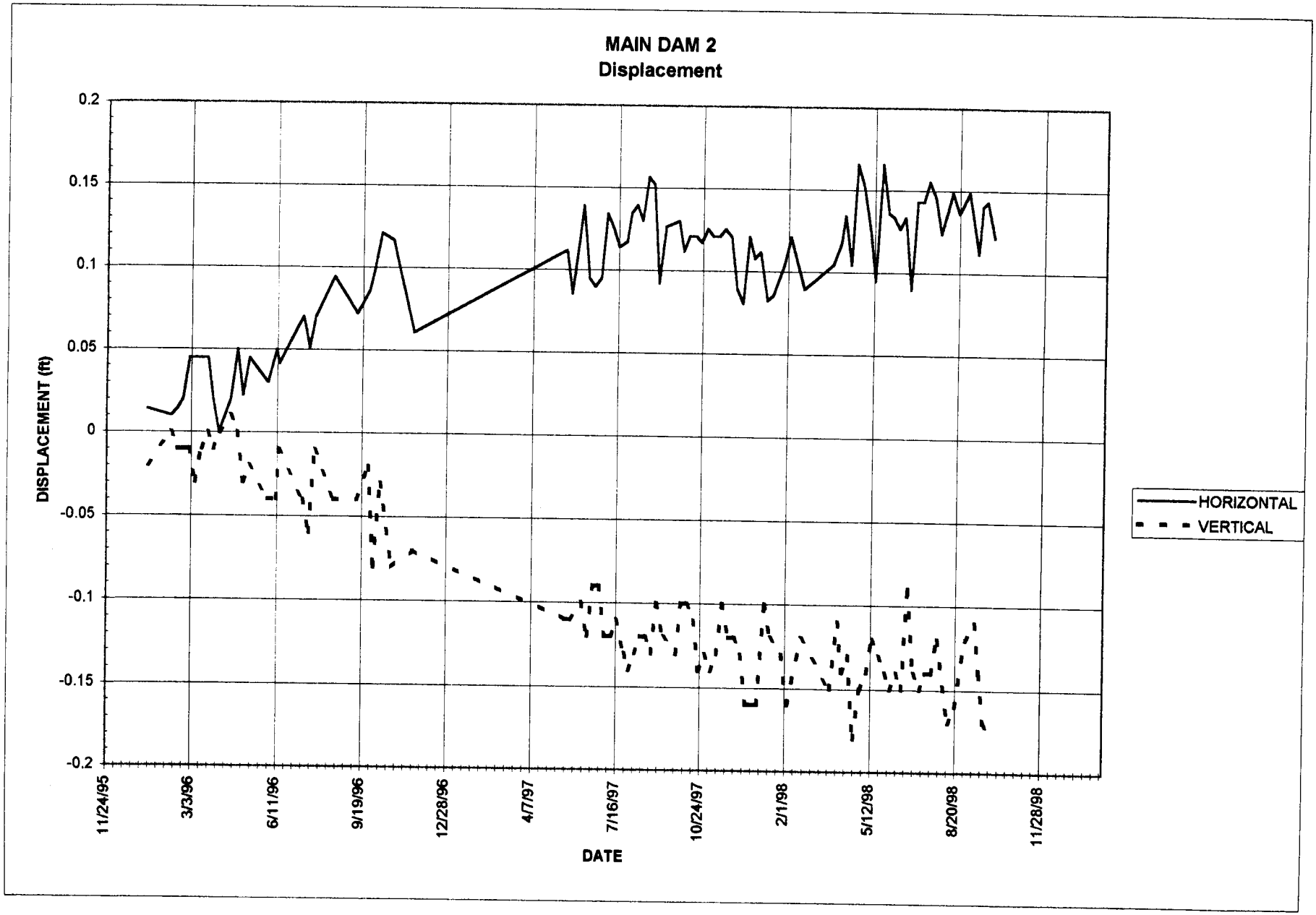
Piezometer 47- Time vs. Water Elevation
Pore Pressure and Tail Water Head

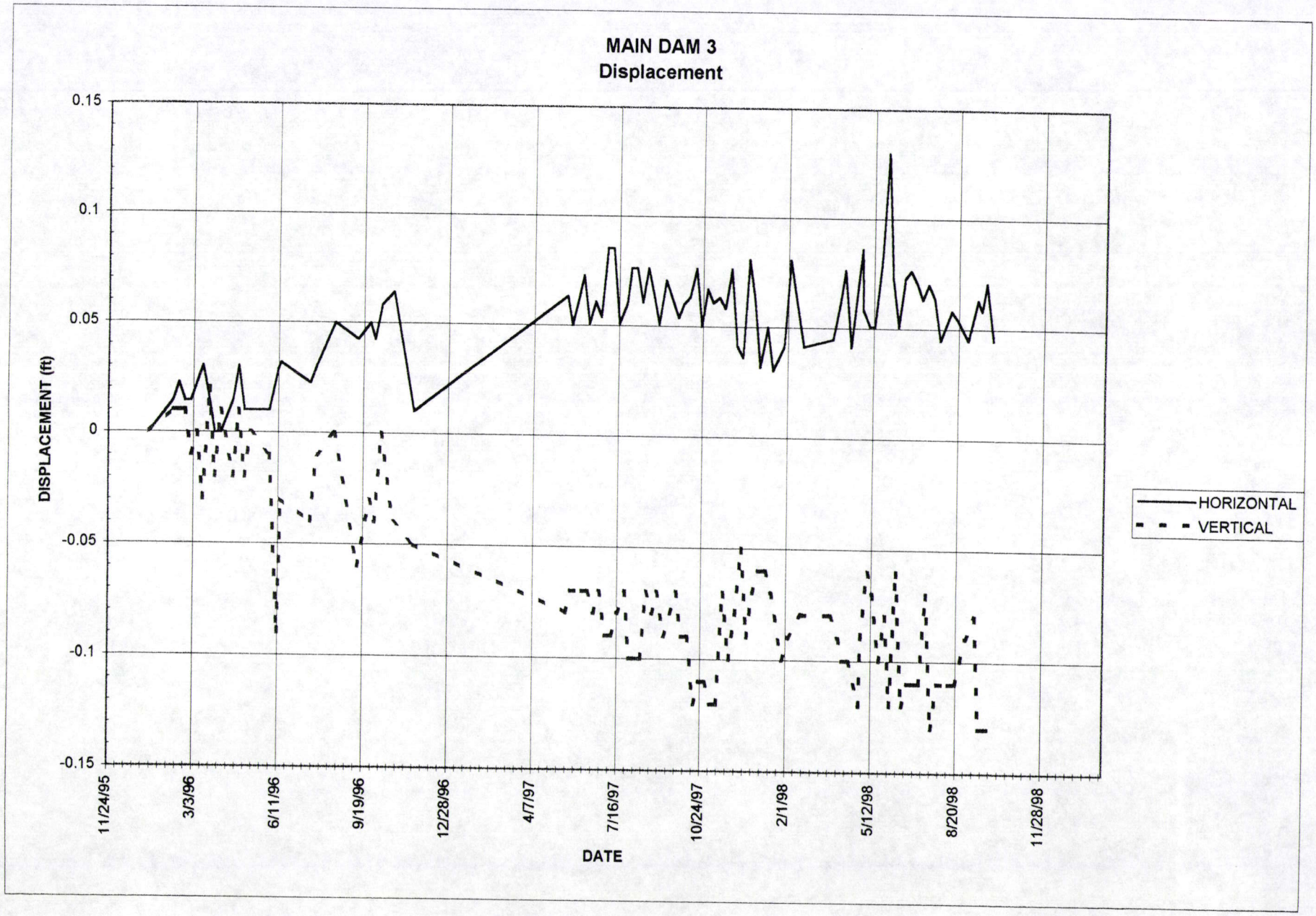
DATE	Water Elevation	Pore Pressure	H2O Head	Critical Pore Pressure
12/30/97	7331.43	7.65	48.33	110
1/7/98	7331.68	7.59	48.58	110
1/14/98	7331.98	7.59	48.88	110
1/22/98	7332.40	7.53	49.30	110
1/28/98	7333.40	7.53	50.30	110
2/3/98	7333.56	7.47	50.46	110
2/12/98	7334.01	7.47		110
2/20/98	7334.49	7.41	51.39	110
3/25/98	7336.34	8.09	53.24	110
4/2/98	7337.06	8.03	53.96	110
4/8/98	7337.34	7.41	54.24	110
4/15/98	7337.42	7.84		110
4/22/98	7337.42	7.90	54.32	110
4/29/98	7337.52	7.84	54.42	110
5/7/98	7337.57	7.65	54.47	110
5/13/98	7337.57	7.47	54.47	110
5/20/98	7337.60	7.41	54.50	110
5/27/98	7337.62	7.47	54.52	110
6/3/98	7337.57	7.53		110
6/10/98	7337.50	7.53		110
6/17/98	7337.70	8.03		110
6/24/98	7337.70	7.59	54.60	110
7/1/98	7337.63	7.59	54.53	110
7/8/98	7337.45	7.65	54.35	110
7/15/98	7337.95	7.59	54.85	110
7/22/98	7336.64	7.53	53.54	110
7/29/98	7336.85	7.35		110
8/12/98	7336.75	7.16	53.65	110
8/19/98	7336.70	7.28	53.60	110
8/31/98	7336.71	6.85	53.61	110
9/11/98	7336.75	6.85	53.65	110
9/16/98	7336.80	7.16	53.70	110
9/22/98	7336.70	6.67	53.60	110
9/30/98	7336.80	6.54	53.70	110
10/7/98	7336.85	6.42		110
10/14/98	7336.50	6.36	53.40	110
10/26/98	7333.40	6.24	50.30	110
10/30/98	7336.50	6.17	53.40	110
11/5/98	7335.50	6.05	52.40	110
11/13/98	7336.10	5.99	53.00	110
11/18/98	7336.10	5.93	53.00	110
12/3/98	7335.90	5.80	52.80	110
12/10/98	7336.10	5.74	53.00	110
12/18/98	7336.00	5.74	52.90	110
12/31/98	7335.65			

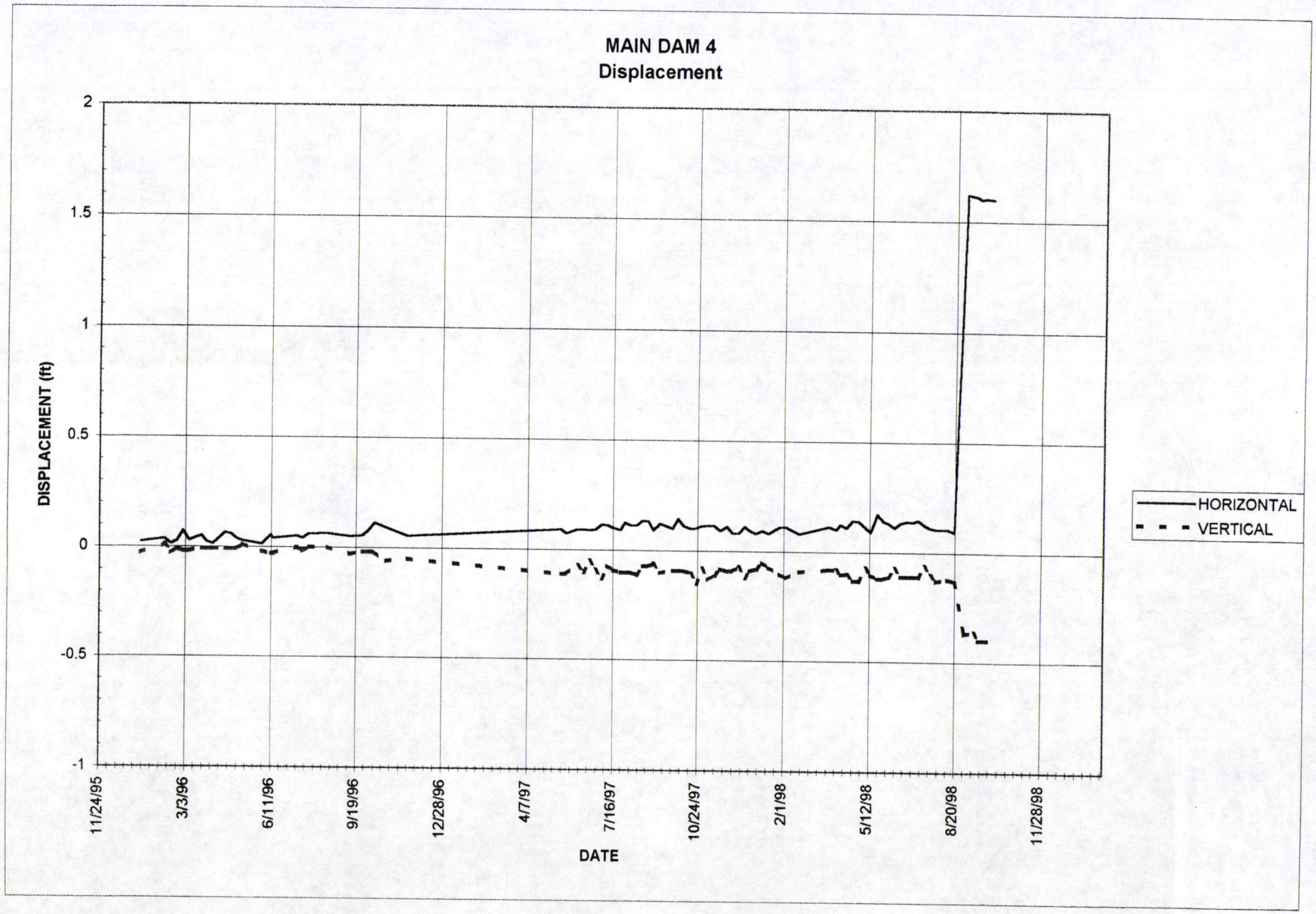
APPENDIX D

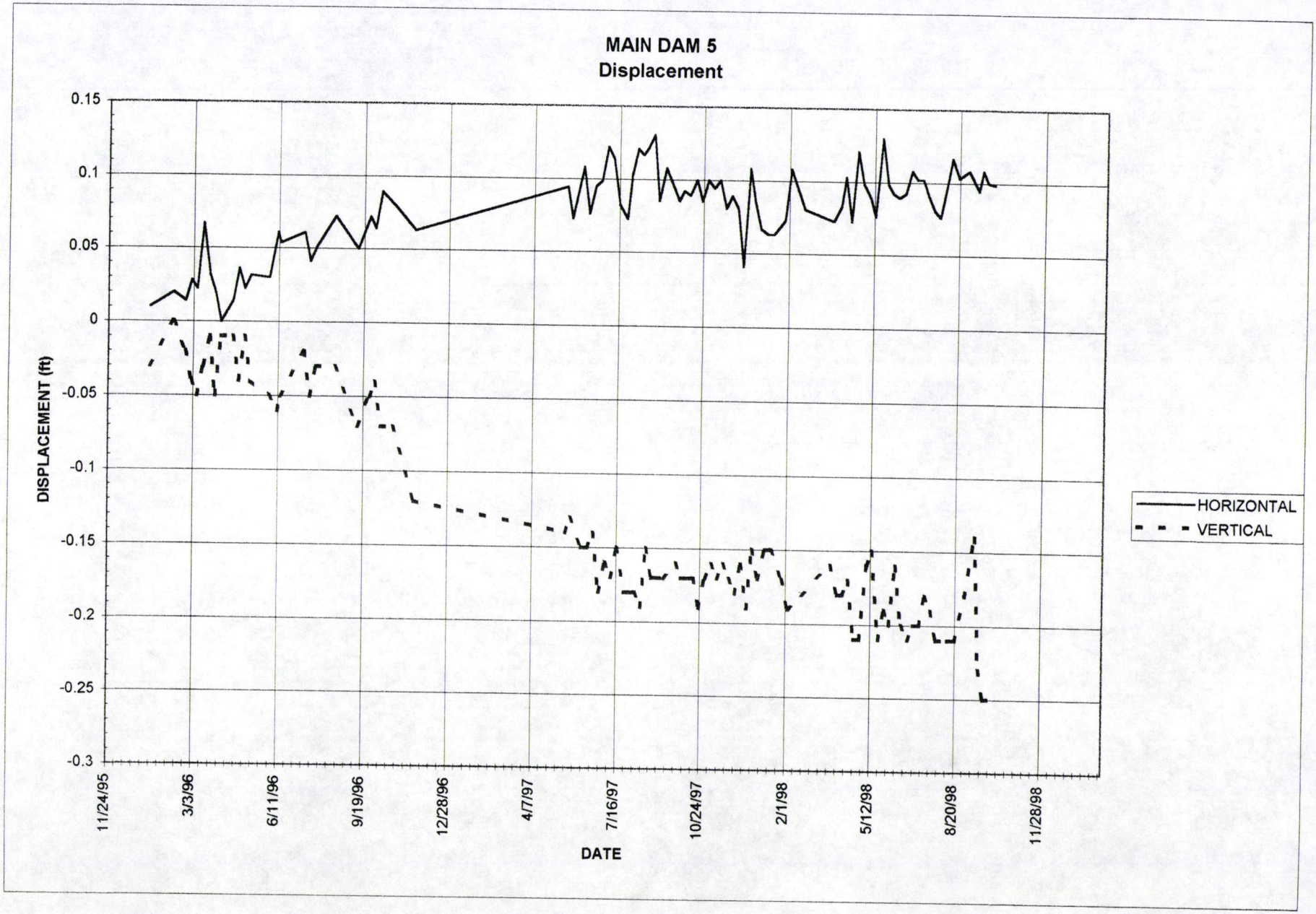
PRISMS PLOTS

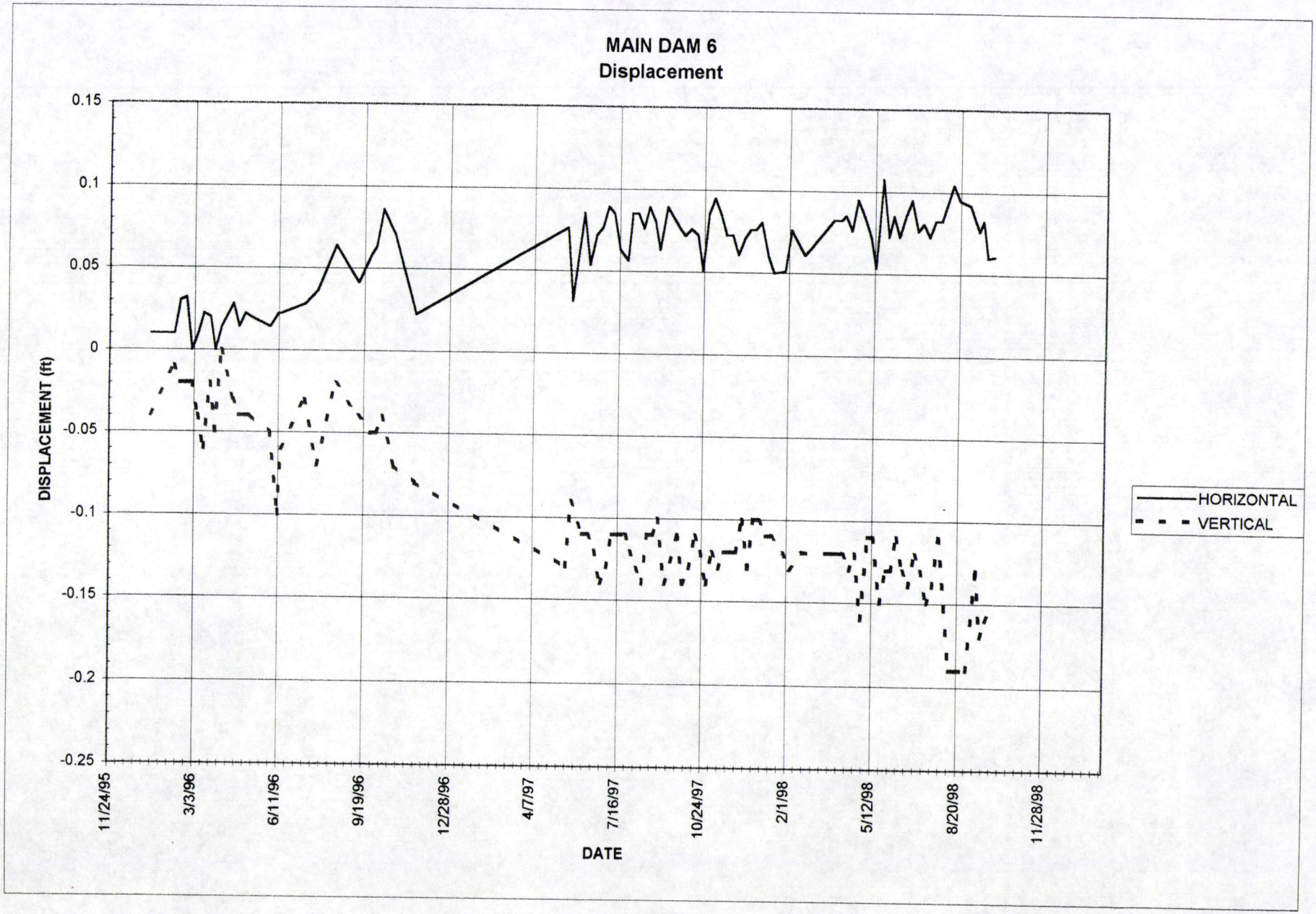

MAIN DAM 1
Displacement
DISPLACEMENT (ft)
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

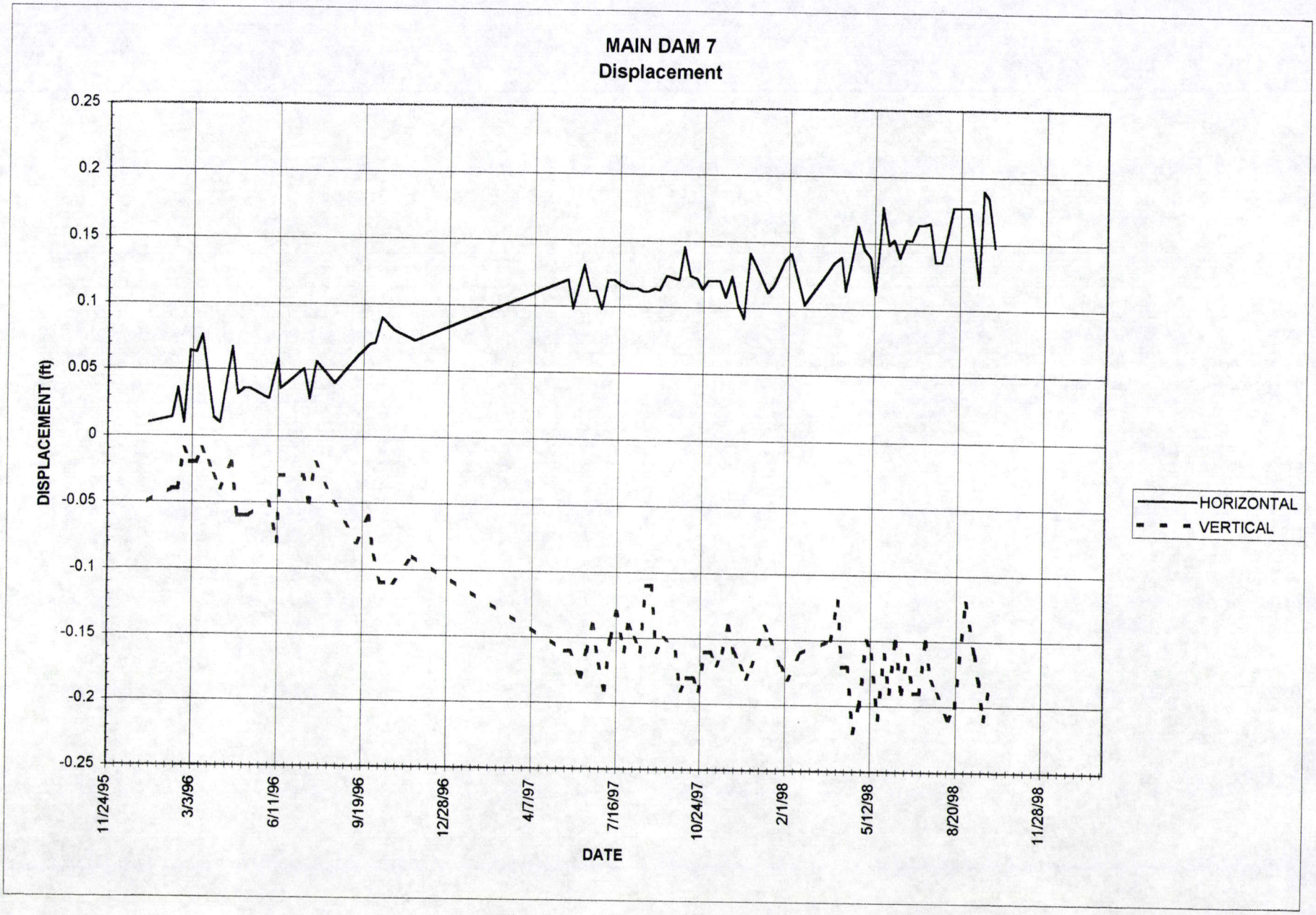

MAIN DAM 2
Displacement
DISPLACEMENT (ft)
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

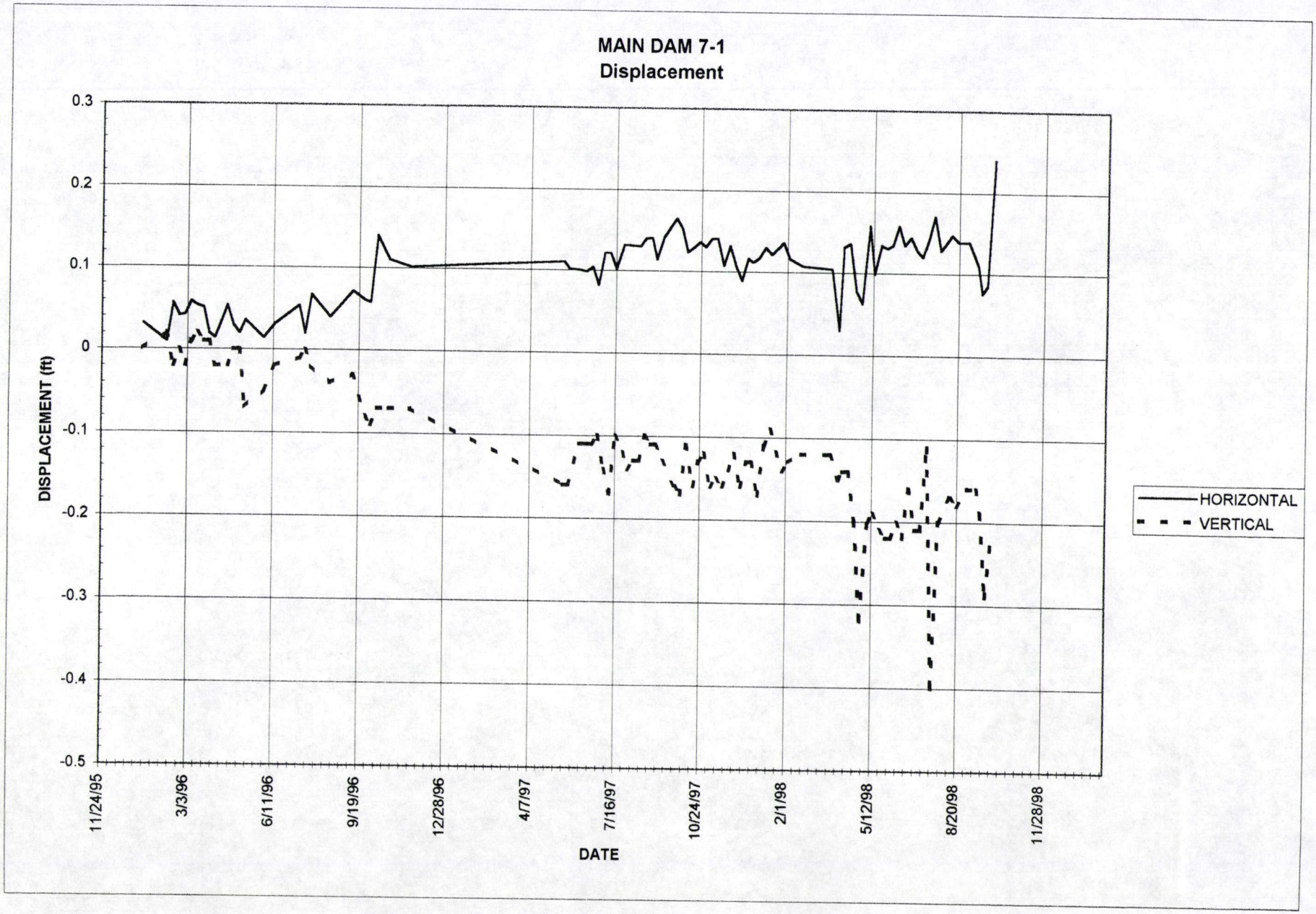

MAIN DAM 3
Displacement
DISPLACEMENT (ft)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

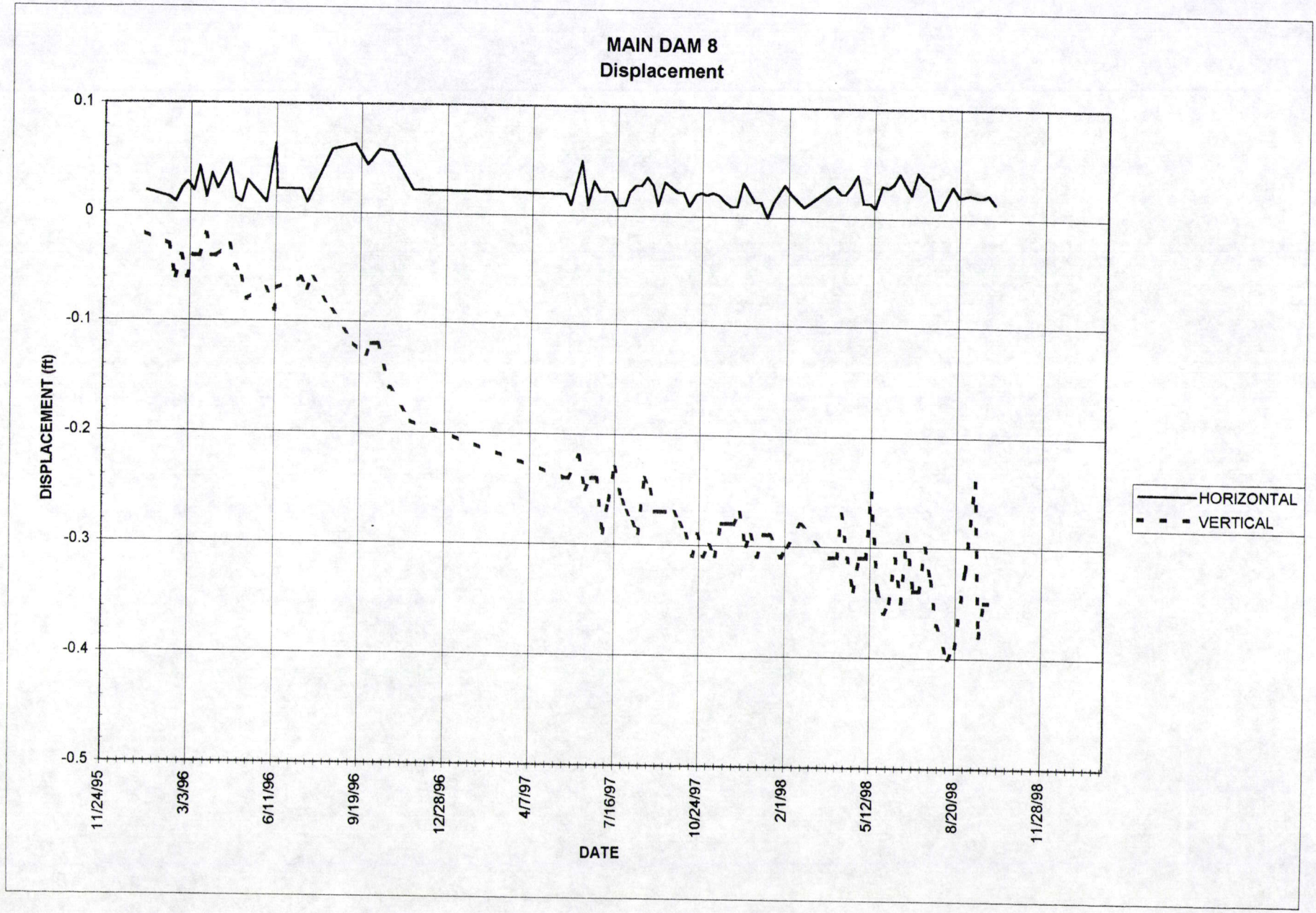

MAIN DAM 4
Displacement
DISPLACEMENT (ft)
2
1.5
1
0.5
0
-0.5
-1
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

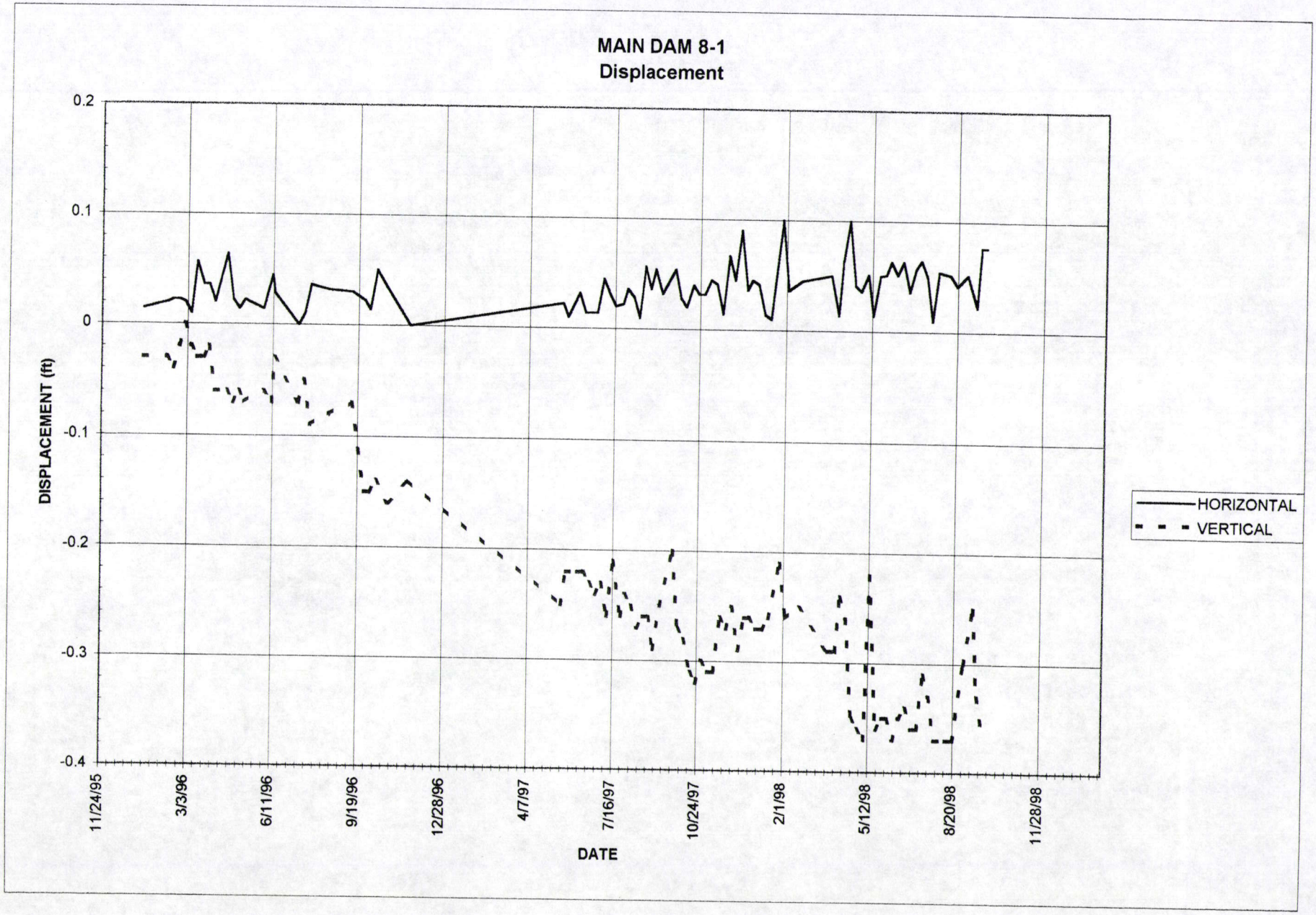

MAIN DAM 5
Displacement
DISPLACEMENT (ft)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

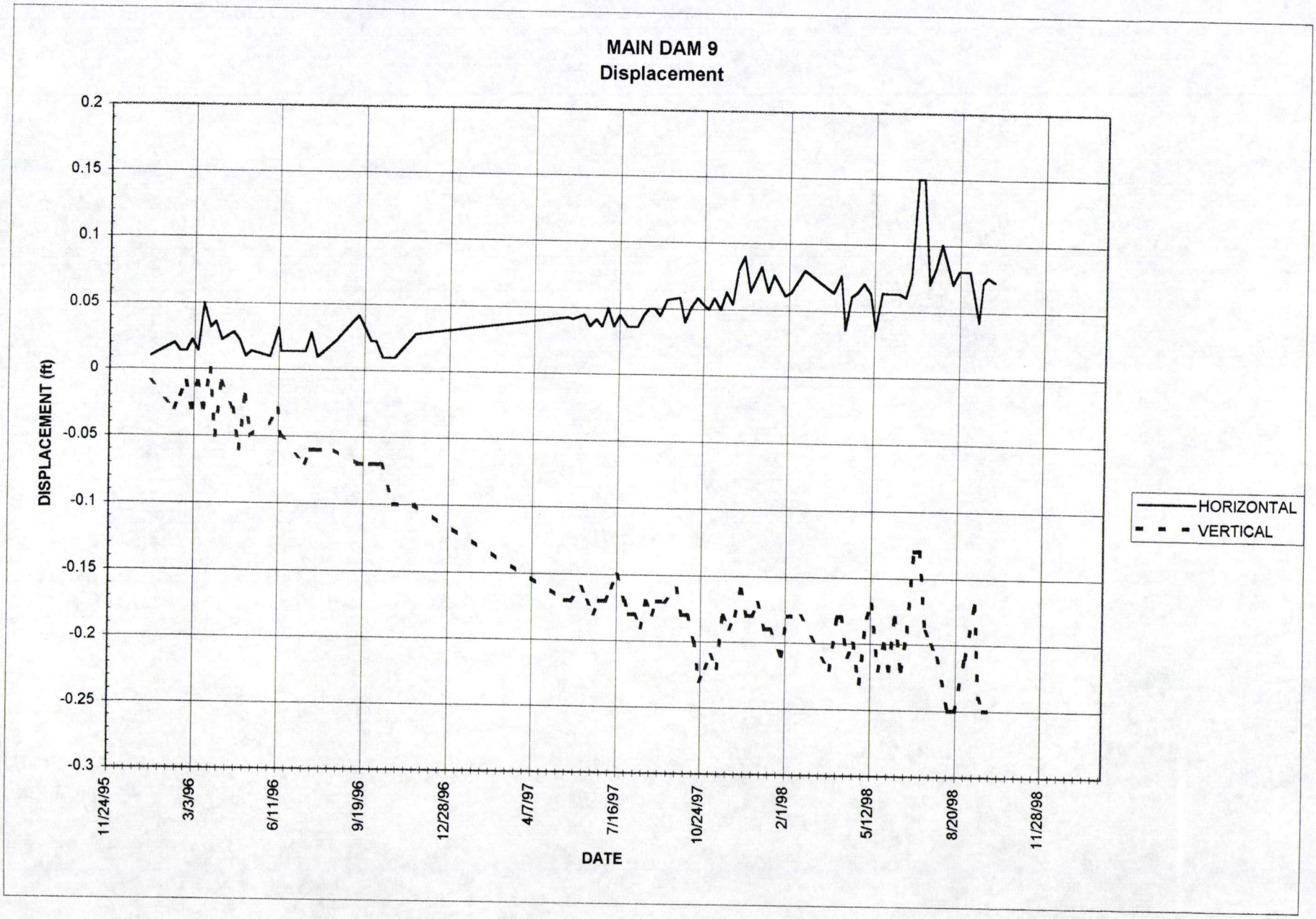

MAIN DAM 6
Displacement
DISPLACEMENT (ft)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

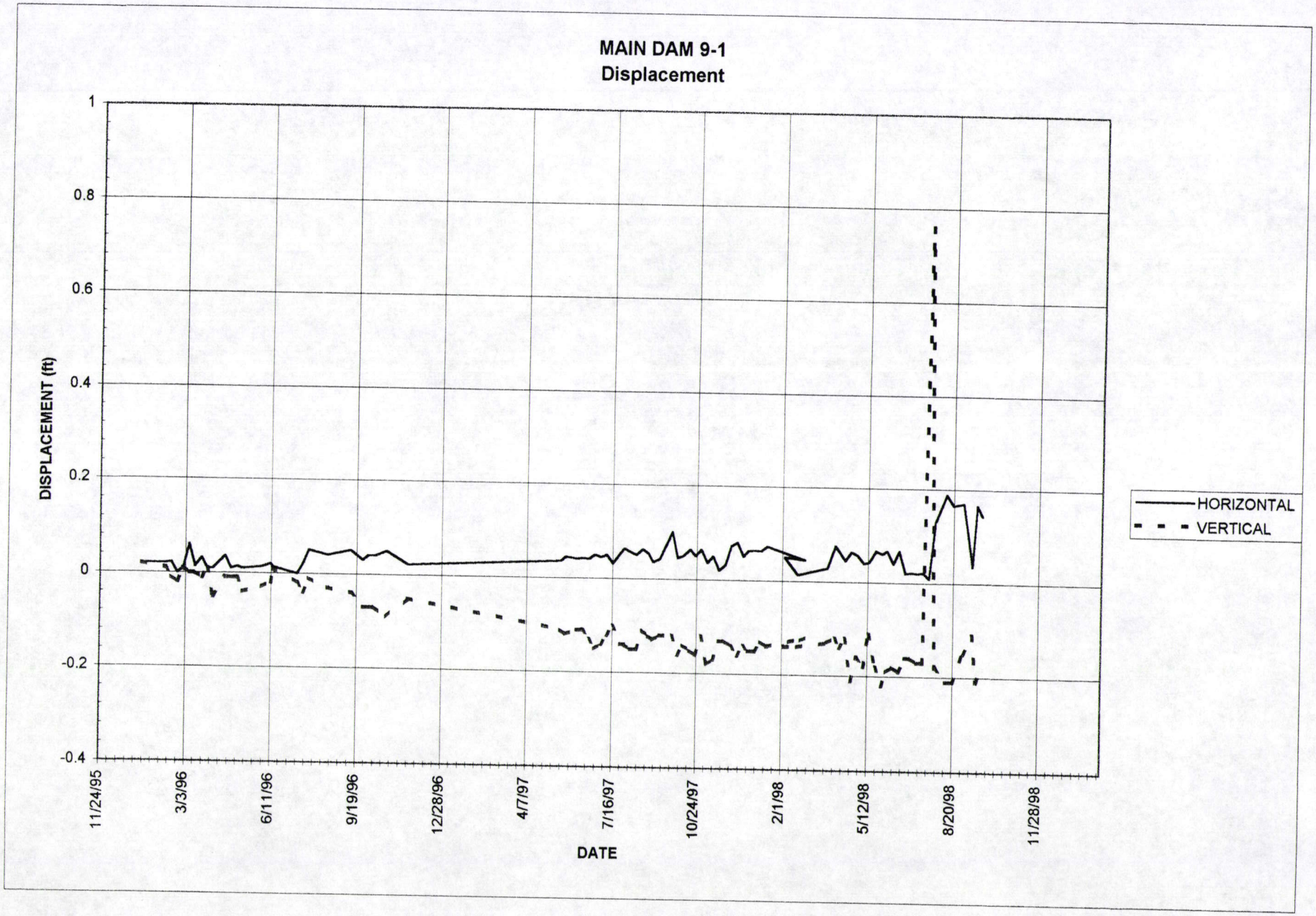

MAIN DAM 7
Displacement
DISPLACEMENT (ft)
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

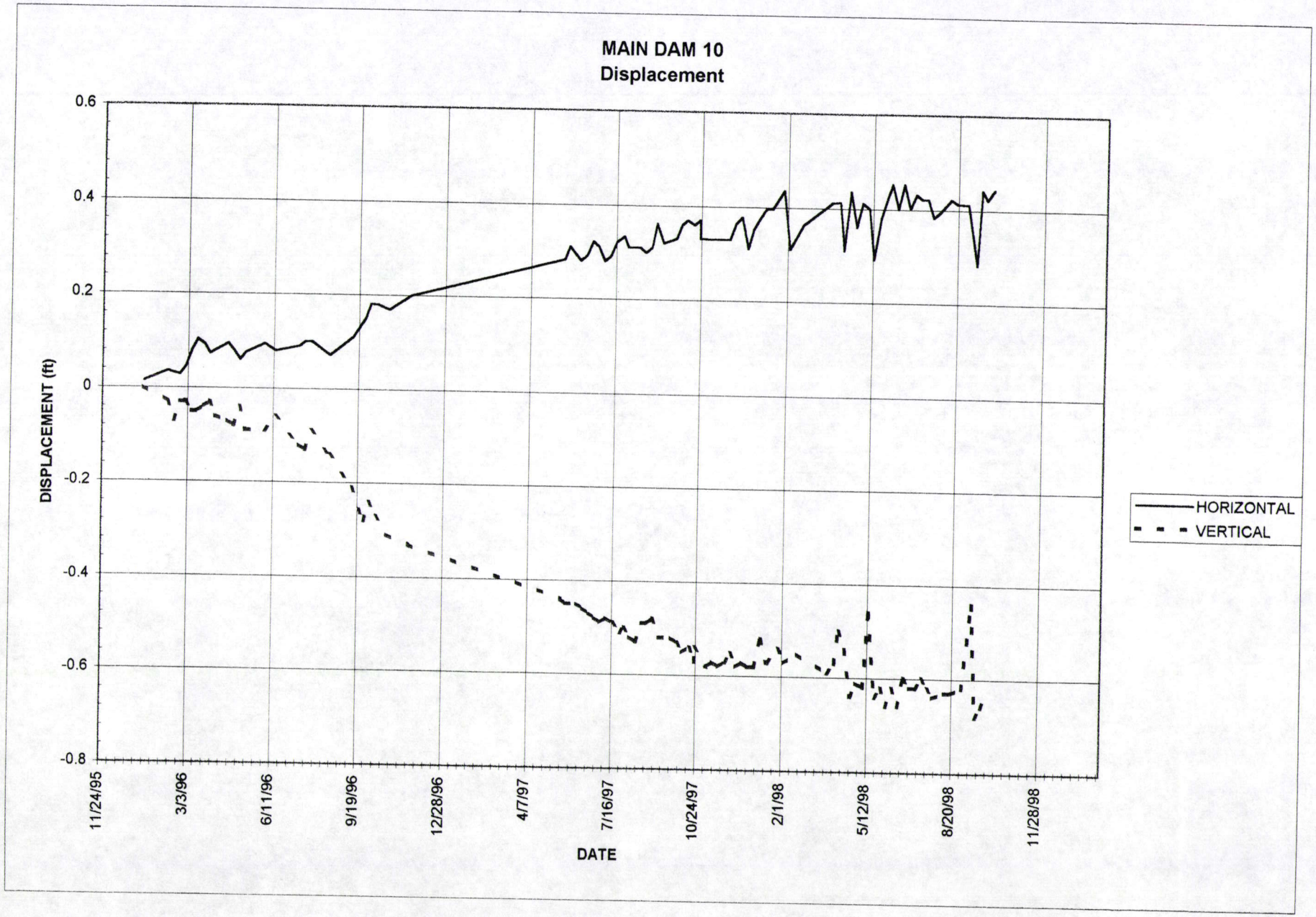

MAIN DAM 7-1
Displacement
DISPLACEMENT (ft)
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

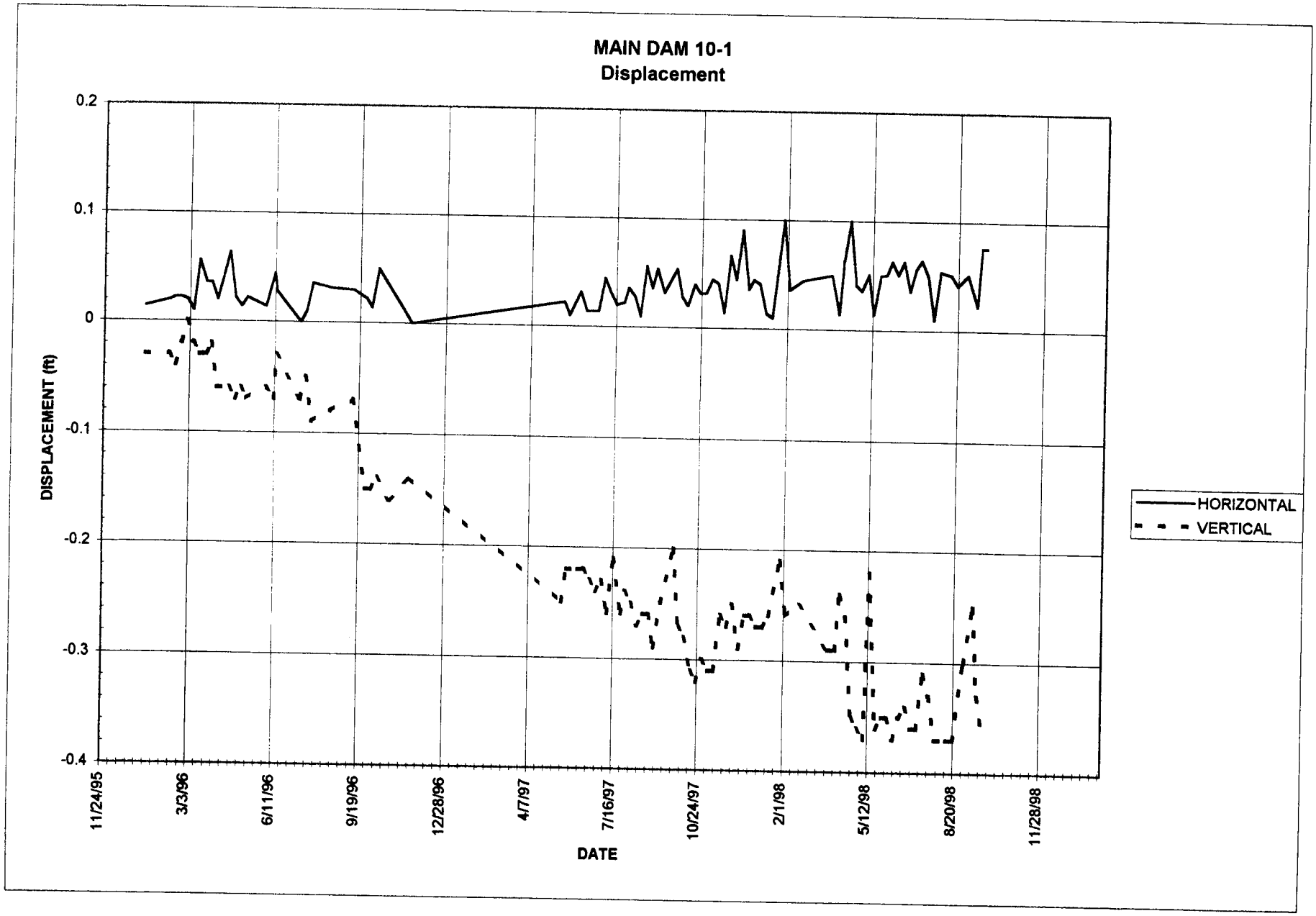

MAIN DAM 8
Displacement
DISPLACEMENT (ft)
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

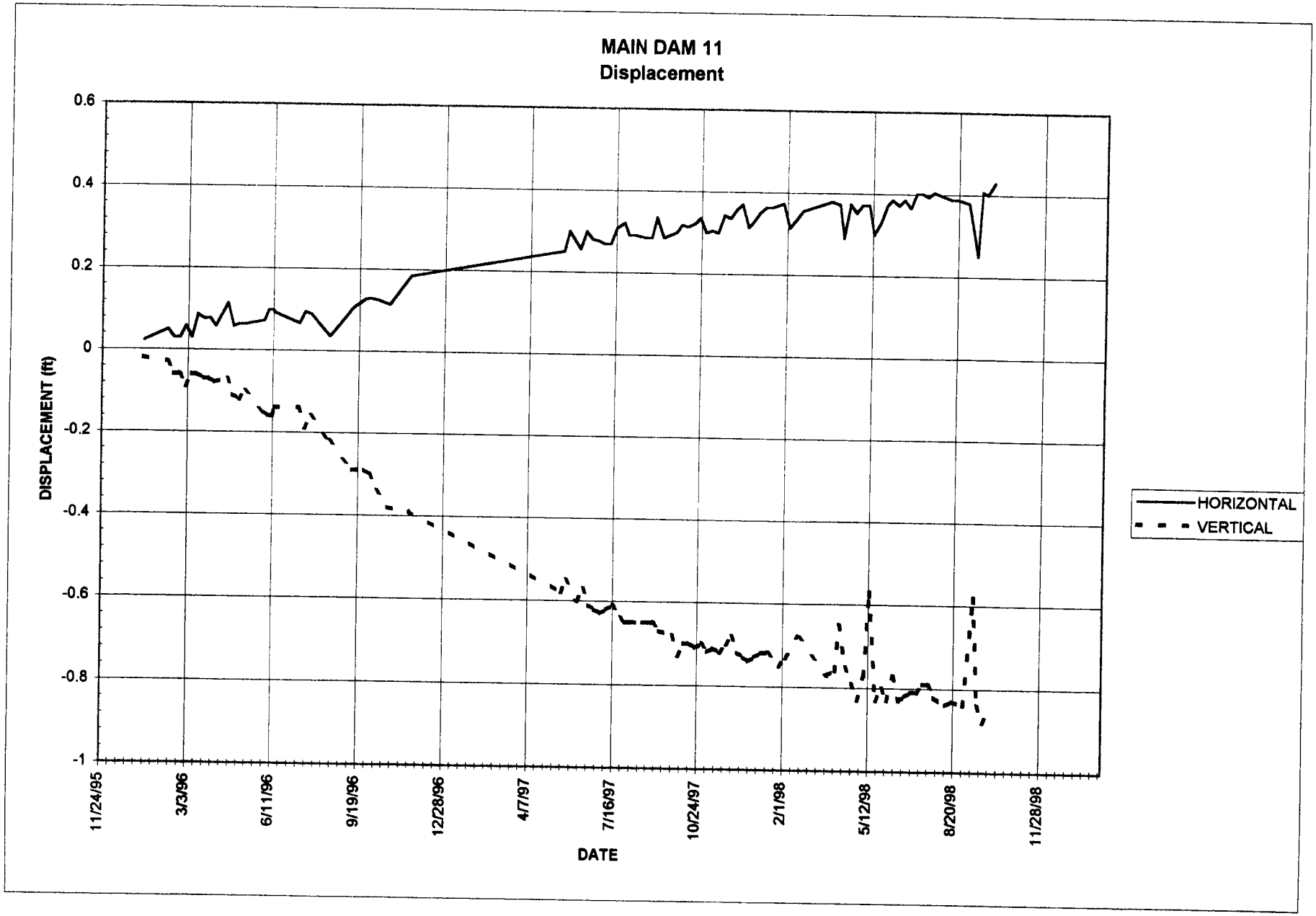

MAIN DAM 8-1
Displacement
DISPLACEMENT (ft)
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

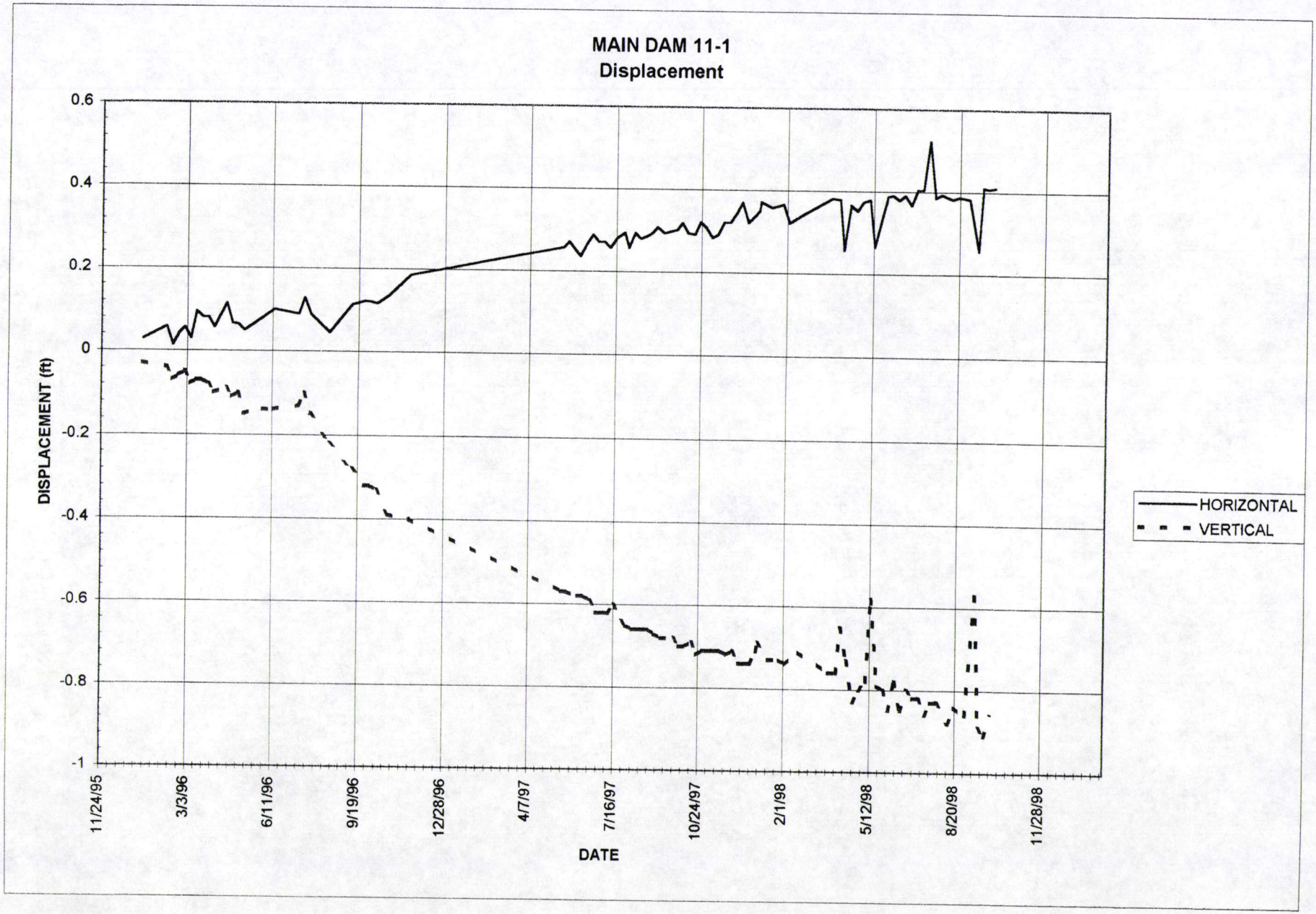

MAIN DAM 9
Displacement
DISPLACEMENT (ft)
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

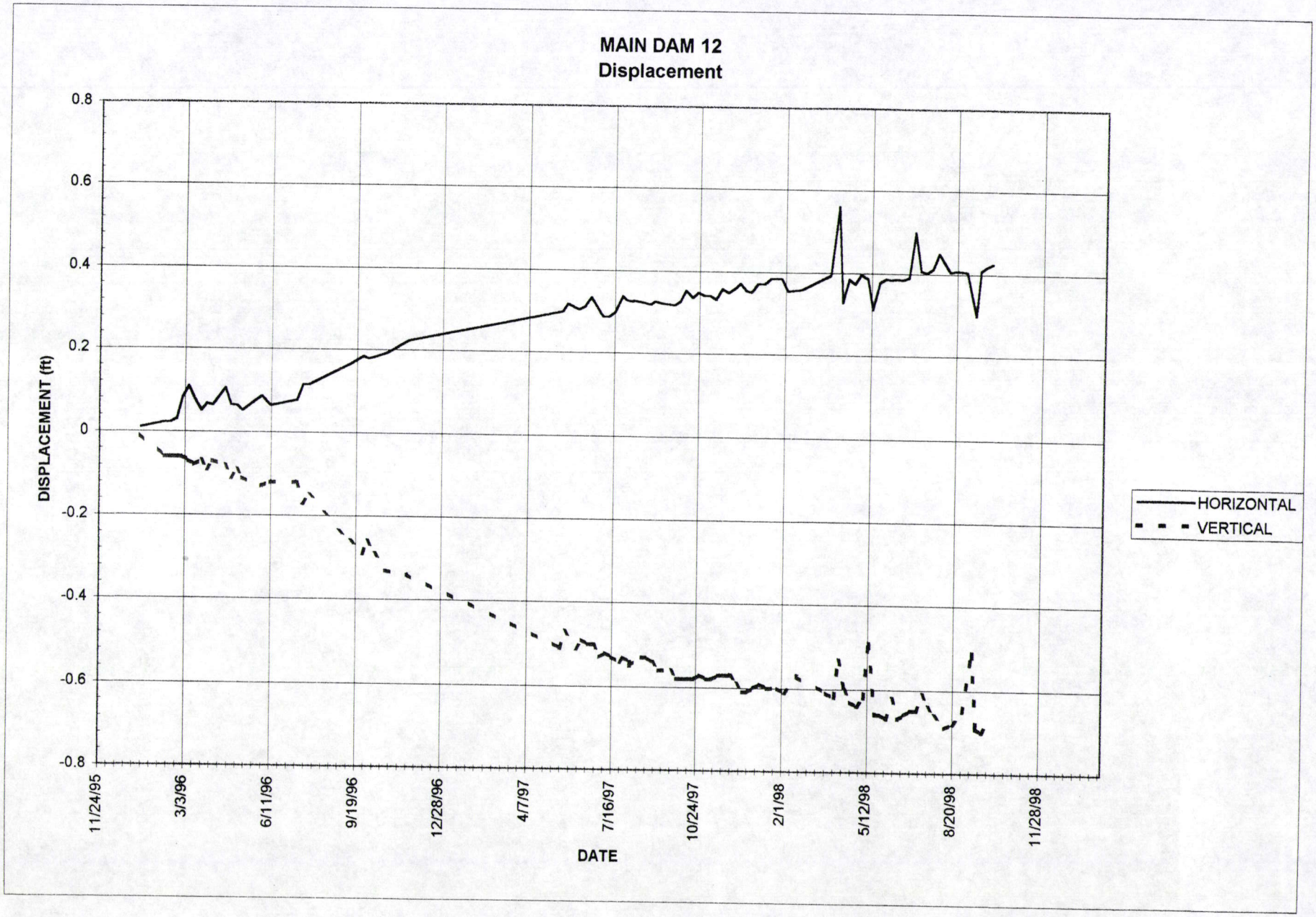

MAIN DAM 9-1
Displacement
DISPLACEMENT (ft)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

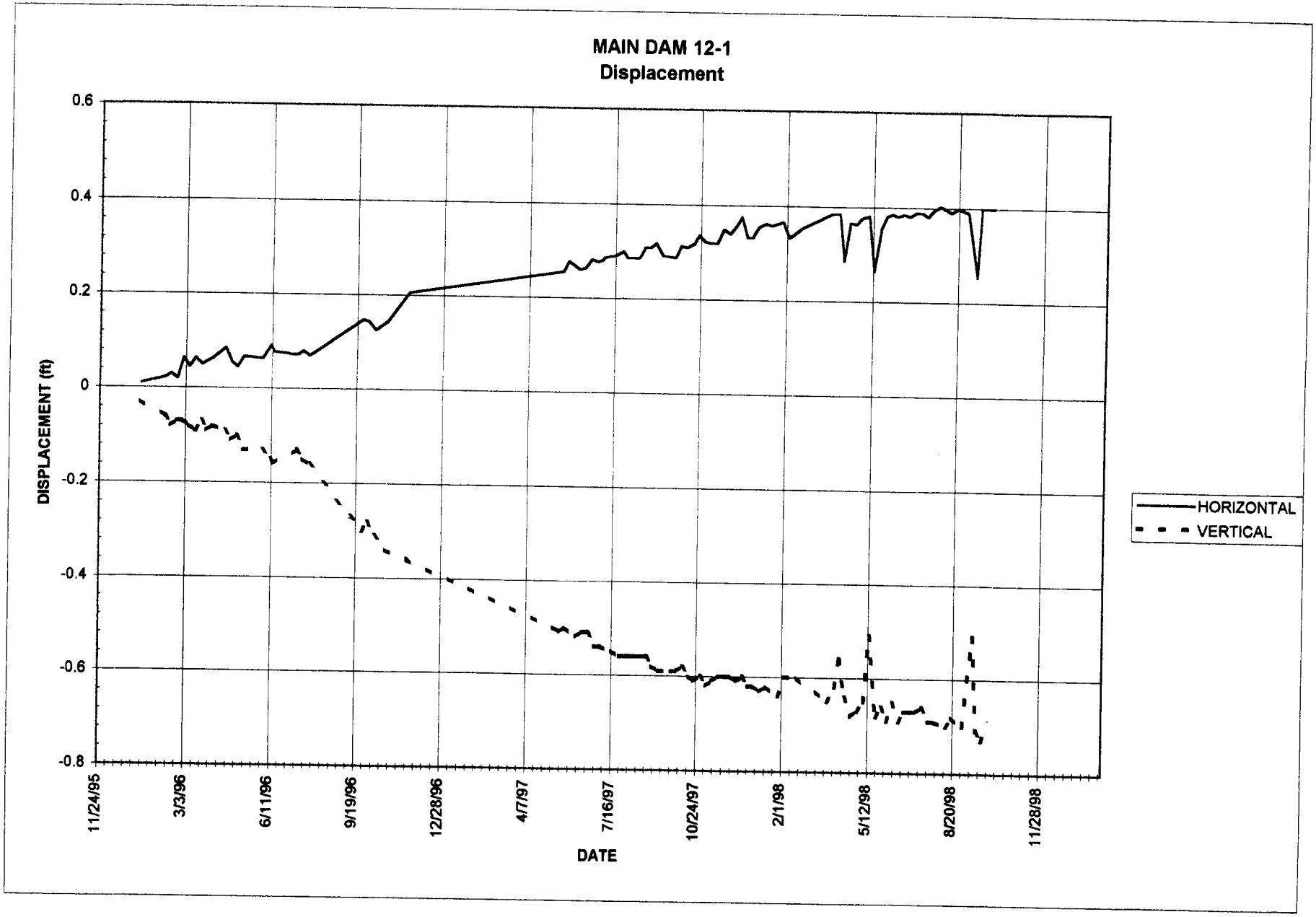

MAIN DAM 10
Displacement
DISPLACEMENT (ft)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

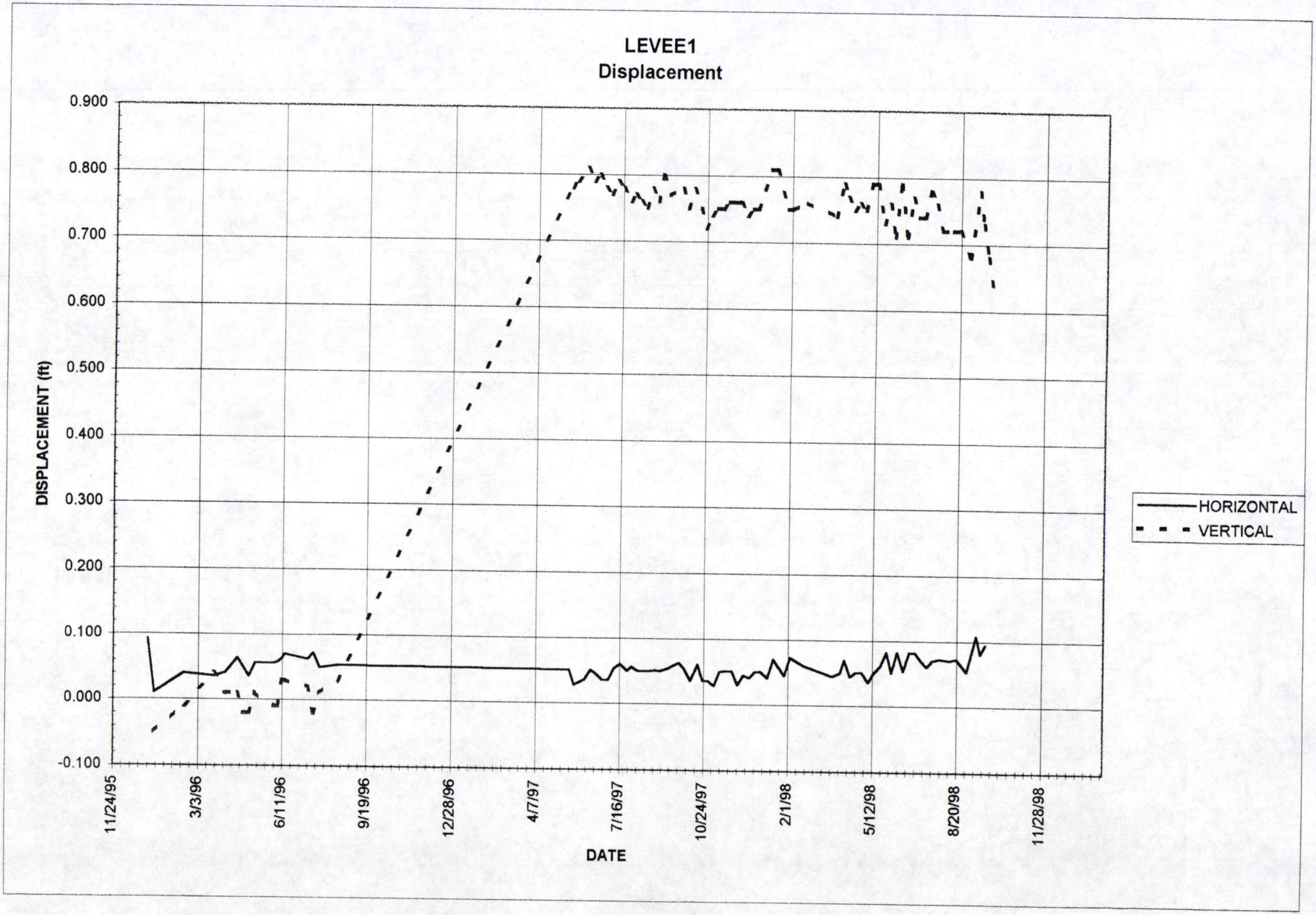

MAIN DAM 10-1
Displacement
DISPLACEMENT (ft)
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

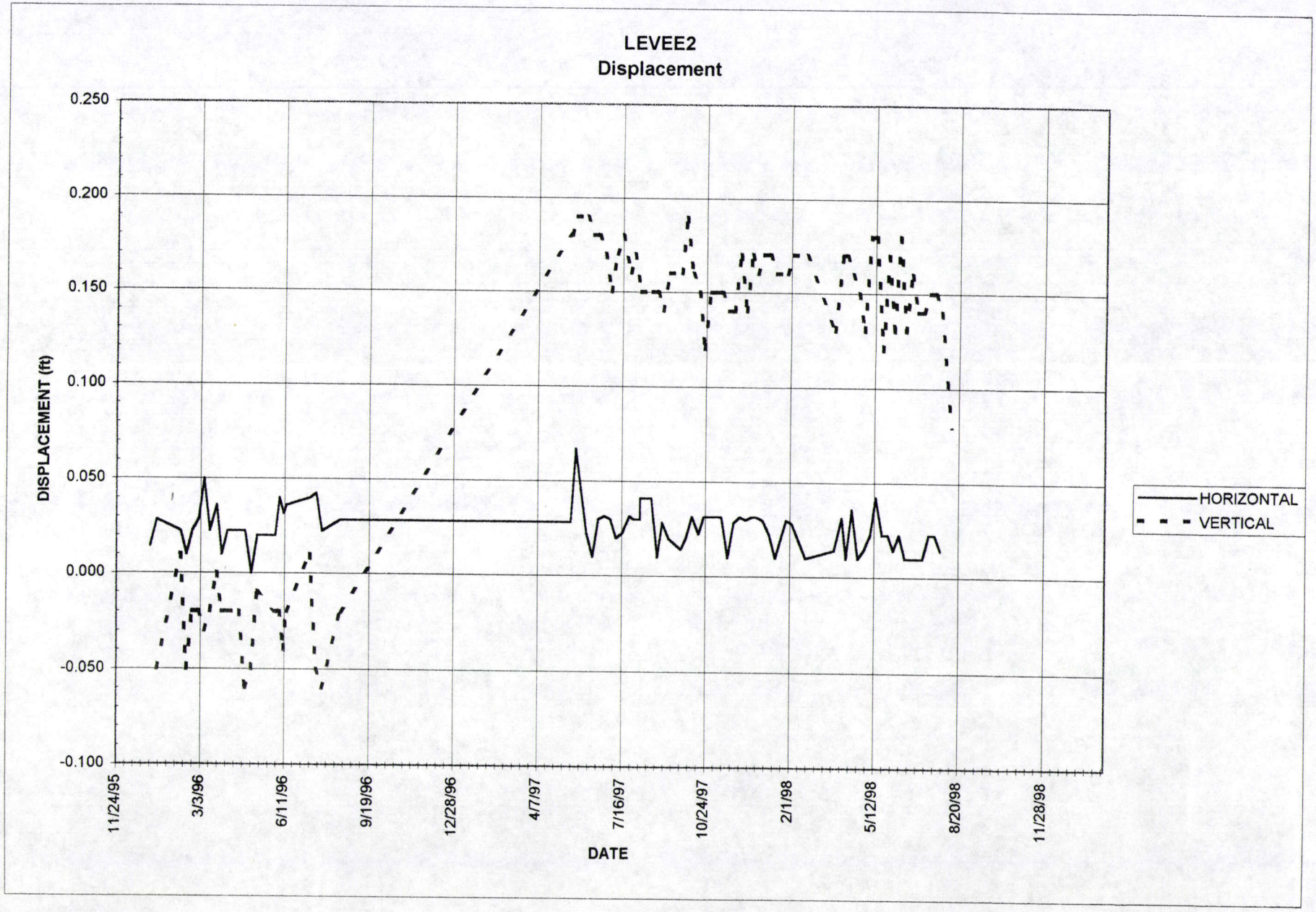

MAIN DAM 11
Displacement
DISPLACEMENT (ft)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

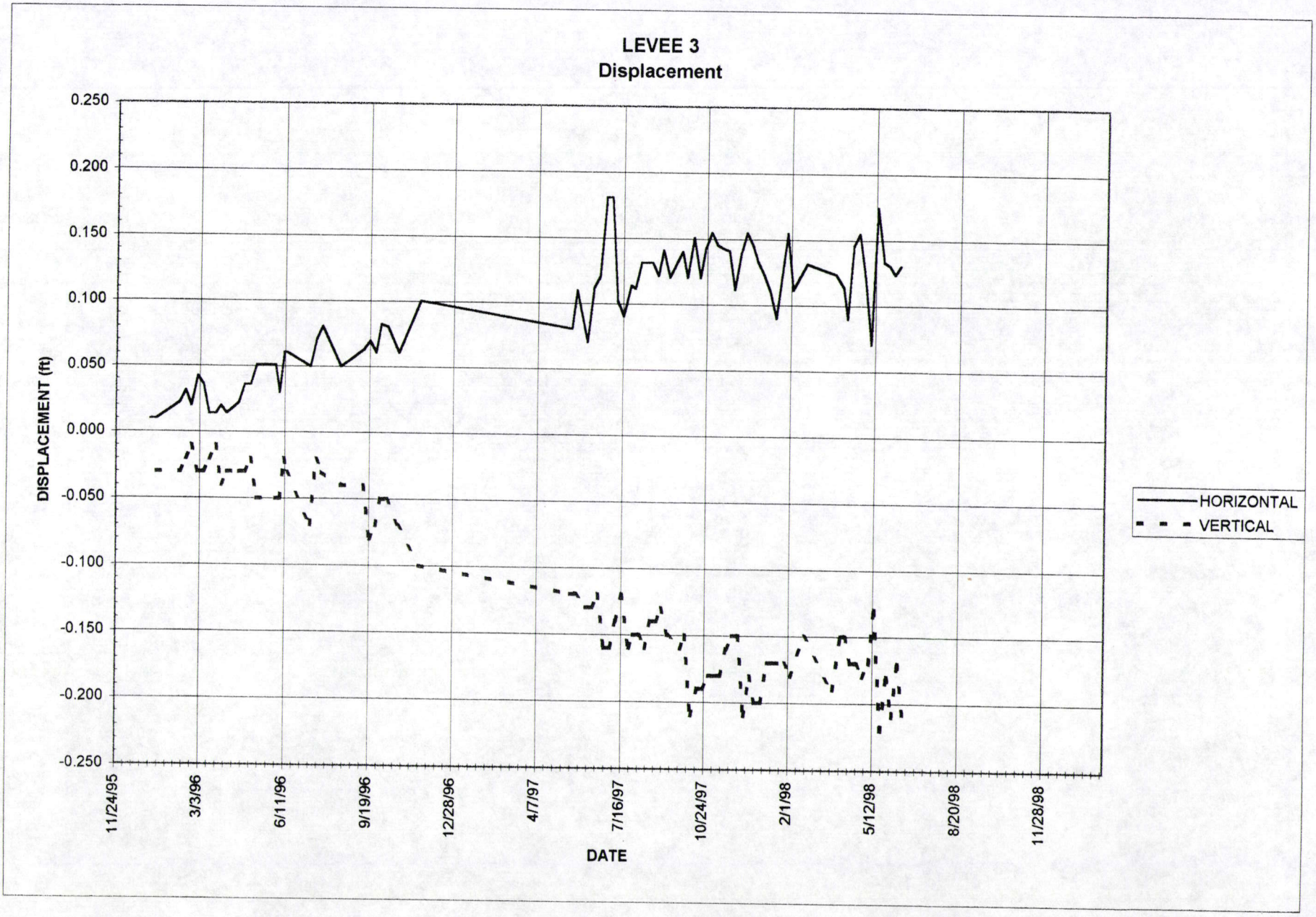

MAIN DAM 11-1
Displacement
DISPLACEMENT (ft)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

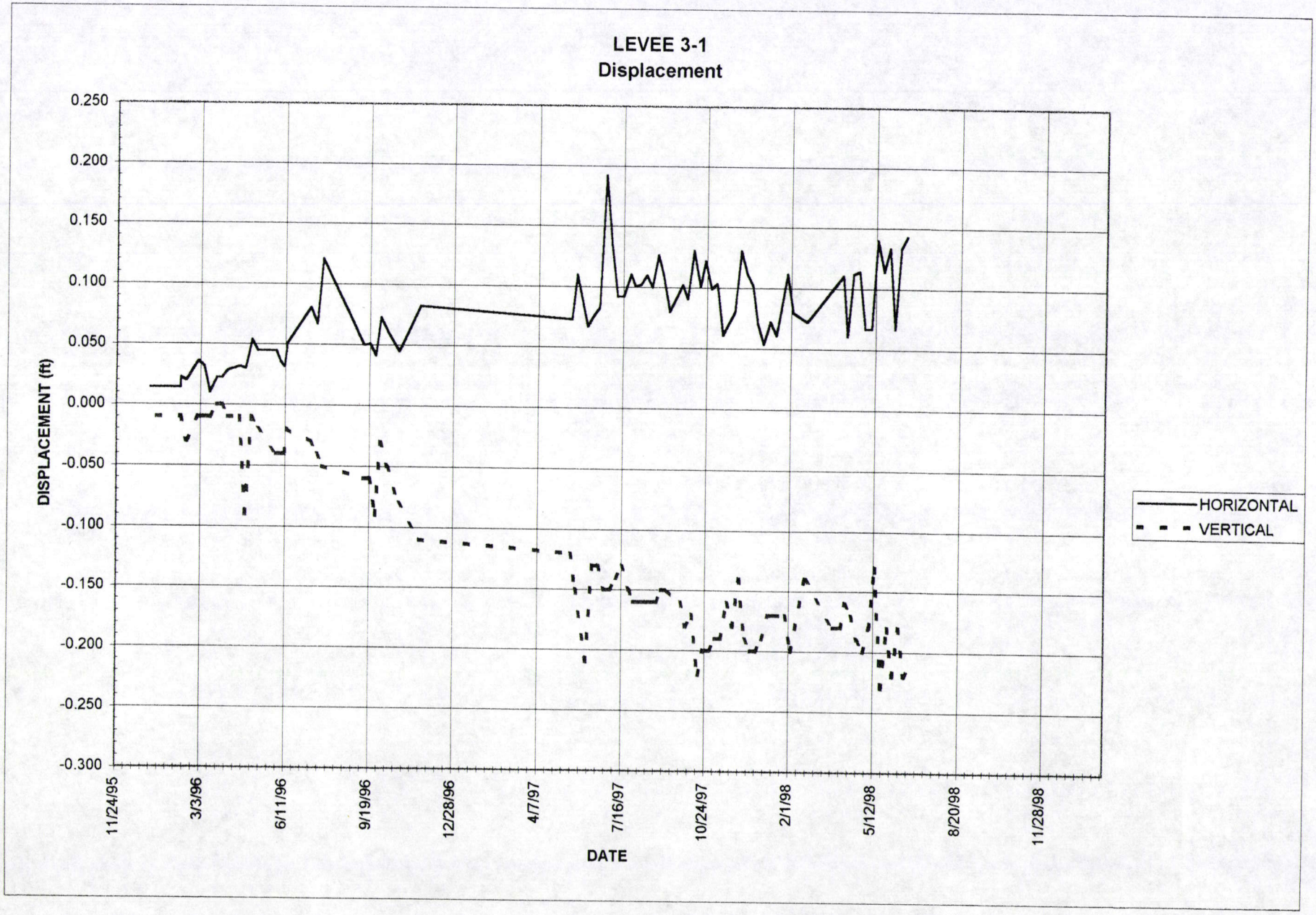

MAIN DAM 12
Displacement
DISPLACEMENT (ft)
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL


MAIN DAM 12-1
Displacement
DISPLACEMENT (ft)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

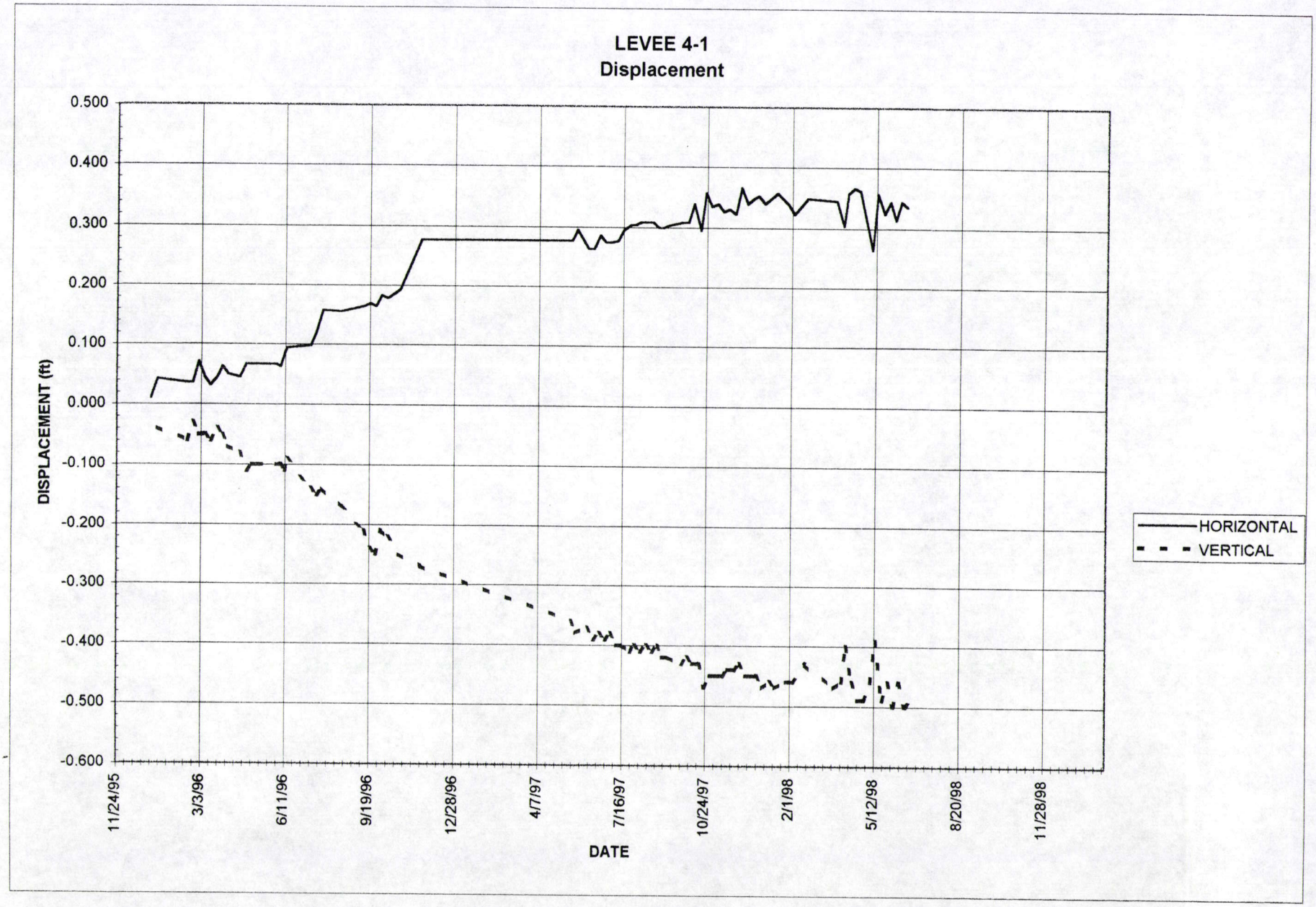

LEVEE1
Displacement
DISPLACEMENT (ft)
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL


LEVEE2
Displacement
DISPLACEMENT (ft)
0.250
0.200
0.150
0.100
0.050
0.000
-0.050
-0.100
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL


LEVEE 3
Displacement
DISPLACEMENT (ft)
0.250
0.200
0.150
0.100
0.050
0.000
-0.050
-0.100
-0.150
-0.200
-0.250
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL


LEVEE 3-1
Displacement
DISPLACEMENT (ft)
0.250
0.200
0.150
0.100
0.050
0.000
-0.050
-0.100
-0.150
-0.200
-0.250
-0.300
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

LEVEE 4
Displacement
DISPLACEMENT (ft)
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
-0.600
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL


LEVEE 4-1
Displacement
DISPLACEMENT (ft)
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
-0.600
11/24/95
3/3/96
6/11/96
9/19/96
12/28/96
4/7/97
7/16/97
10/24/97
2/1/98
5/12/98
8/20/98
11/28/98
DATE
HORIZONTAL
VERTICAL

APPENDIX E

SURFACE PRISM DATA

Displacment of Main Dam - 1

1/7/98	23941.40	26379.57	7254.15
1/14/98	23941.42	26379.58	7254.08
1/27/98	23941.41	26379.56	7254.11
2/3/98	23941.37	26379.54	7254.06
2/19/98	23941.38	26379.55	7254.1
3/25/98	23941.42	26379.56	7254.13
4/3/98	23941.40	26379.56	7254.16
4/8/98	23941.38	26379.55	7254.11
4/15/98	23941.41	26379.56	7254.11
4/22/98	23941.38	26379.53	7254.09
4/29/98	23941.41	26379.52	7254.12
5/7/98	23941.41	26379.54	7254.08
5/13/98	23941.41	26379.57	7254.12
5/21/98	23941.38	26379.51	7254.08
5/28/98	23941.40	26379.54	7254.11
6/3/98	23941.43	26379.55	7254.08
6/10/98	23941.41	26379.54	7254.08
6/17/98	23941.43	26379.55	7254.08
6/24/98	23941.41	26379.59	7254.15
7/1/98	23941.40	26379.52	7254.08
7/8/98	23941.41	26379.51	7254.08
7/15/98	23941.42	26379.54	7254.12
7/22/98	23941,41	26379.55	7254.11
7/29/98	23941.42	26379.56	7254.07
8/11/98	23941.42	26379.55	7254.08
8/19/98	23941.42	26379.56	7254.07
8/31/98	23941.43	26379.55	7254.13
9/11/98	23941.38	26379.56	7254.11
9/16/98	23941.43	26379.59	7254.11
9/22/98	23941.39	26379.57	7254.12
9/30/98	23941.42	26379.57	7254.1
10/7/98	23941.40	26379.56	7254.07

Displacement of Main Dam - 2

1/7/98	24134.23	26150.59	7253.24
1/14/98	24134.22	26150.59	7253.22
1/27/98	24134.22	26150.57	7253.21
2/3/98	24134.20	26150.56	7253.18
2/19/98	24134.21	26150.59	7253.22
3/25/98	24134.22	26150.57	7253.19
4/3/98	24134.21	26150.56	7253.23
4/8/98	24134.19	26150.55	7253.20
4/15/98	24134.22	26150.57	7253.21
4/22/98	24134.18	26150.52	7253.16
4/29/98	24134.19	26150.53	7253.19
5/7/98	24134.21	26150.55	7253.20
5/13/98	24134.22	26150.58	7253.22
5/21/98	24134.18	26150.52	7253.21
5/28/98	24134.21	26150.54	7253.20
6/3/98	24134.22	26150.54	7253.19
6/10/98	24134.21	26150.55	7253.20
6/17/98	24134.22	26150.54	7253.19
6/24/98	24134.25	26150.58	7253.25
7/1/98	24134.22	26150.53	7253.20
7/8/98	24134.22	26150.53	7253.19
7/15/98	24134.21	26150.52	7253.20
7/22/98	24134.21	26150.53	7253.20
7/29/98	24134.22	26150.55	7253.22
8/11/98	24134.20	26150.53	7253.17
8/19/98	24134.21	26150.54	7253.18
8/31/98	24134.20	26150.53	7253.22
9/11/98	24134.20	26150.57	7253.23
9/16/98	24134.24	26150.53	7253.20
9/22/98	24134.19	26150.54	7253.17
9/30/98	24134.23	26150.55	7253.16
10/7/98	24134.23	26150.56	7253.17

Displacment of Main Dam - 3

1/7/98	24328.57	25919.43	7257.86
1/14/98	24328.54	25919.44	7257.85
1/27/98	24328.53	25919.43	7257.82
2/3/98	24328.50	25919.40	7257.83
2/19/98	24328.53	25919.43	7257.84
3/25/98	24328.52	25919.43	7257.84
4/3/98	24328.52	25919.41	7257.83
4/8/98	24328.51	25919.40	7257.82
4/15/98	24328.53	25919.43	7257.82
4/28/98	24328.49	25919.40	7257.80
4/29/98	24328.51	25919.42	7257.83
5/7/98	24328.53	25919.42	7257.86
5/13/98	24328.53	25919.42	7257.85
5/21/98	24328.50	25919.40	7257.82
5/28/98	24328.42	25919.42	7257.84
6/3/98	24328.52	25919.40	7257.80
6/10/98	24328.53	25919.42	7257.86
6/17/98	24328.52	25919.40	7257.80
6/24/98	24328.51	25919.40	7257.81
7/1/98	24328.53	25919.40	7257.81
7/8/98	24328.52	25919.41	7257.81
7/15/98	24328.54	25919.40	7257.85
7/22/98	24328.50	25919.42	7257.79
7/29/98	24328.52	25919.43	7257.81
8/11/98	24328.51	25919.42	7257.81
8/19/98	24328.52	25919.42	7257.81
8/31/98	24328.52	25919.43	7257.83
9/11/98	24328.52	25919.41	7257.84
9/16/98	24328.51	25919.42	7257.79
9/22/98	24328.49	25919.42	7257.79
9/30/98	24328.52	25919.43	7257.79
10/7/98	24328.51	25919.43	7257.80

Displacement of Main Dam - 4

1/7/98	23962.98	26398.40	7260.98
1/14/98	23962.96	26398.41	7260.96
1/27/98	23962.96	26398.38	7260.93
2/3/98	23962.95	26398.38	7260.91
2/19/98	23962.97	26398.41	7260.94
3/25/98	23962.99	26398.38	7260.95
4/3/98	23962.98	26398.39	7260.95
4/8/98	23962.93	26398.37	7260.93
4/15/98	23962.96	26398.38	7260.93
4/22/98	23962.94	26398.35	7260.90
4/29/98	23962.96	26398.35	7260.90
5/7/98	23962.98	26398.38	7260.96
5/13/98	23962.96	26398.40	7260.93
5/21/98	23962.94	26398.32	7260.91
5/28/98	23962.96	26398.35	7260.91
6/3/98	23962.97	26398.36	7260.92
6/10/98	23962.98	26398.38	7260.96
6/17/98	23962.97	26398.36	7260.92
6/24/98	23962.97	26398.35	7260.92
7/1/98	23963.00	26398.36	7260.92
7/8/98	23963.00	26398.35	7260.92
7/15/98	23962.99	26398.37	7260.97
7/22/98	23962.97	26398.38	7260.93
7/29/98	23962.99	26398.39	7260.90
8/11/98	23962.99	26398.39	7260.91
8/19/98	23962.98	26398.40	7260.90
8/31/98	23961.60	26397.61	7260.66
9/11/98	23961.61	26397.61	7260.67
9/16/98	23961.63	26397.60	7260.63
9/22/98	23961.62	26397.61	7260.63
9/30/98	23961.63	26397.60	7260.63
10/7/98	23961.62	26397.60	7260.60

Displacement of Main Dam - 5

1/7/98	24156.17	26167.05	7260.25
1/14/98	24156.17	26167.05	7260.25
1/27/98	24156.17	26167.04	7260.23
2/3/98	24156.13	26167.02	7260.21
2/19/98	24156.15	26167.04	7260.22
3/25/98	24156.17	26167.04	7260.24
4/3/98	24156.17	26167.03	7260.22
4/8/98	24156.14	26167.02	7260.22
4/15/98	24156.17	26167.04	7260.23
4/22/98	24156.14	26167.00	7260.19
4/29/98	24156.15	26167.02	7260.19
5/7/98	24156.15	26167.03	7260.24
5/13/98	24156.16	26167.04	7260.25
5/21/98	24156.14	26166.99	7260.19
5/28/98	24156.15	26167.02	7260.21
6/3/98	24156.17	26167.02	7260.20
6/10/98	24156.15	26167.03	7260.24
6/17/98	24156.17	26167.02	7260.20
6/24/98	24156.15	26167.01	7260.19
7/1/98	24156.17	26167.01	7260.20
7/8/98	24156.17	26167.01	7260.20
7/15/98	24156.18	26167.02	7260.22
7/22/98	24156.15	26167.04	7260.21
7/29/98	24156.16	26167.04	7260.19
8/11/98	24156.13	26167.01	7260.19
8/19/98	24156.14	26167.02	7260.19
8/31/98	24156.13	26167.02	7260.22
9/11/98	24156.14	26167.03	7260.26
9/16/98	24156.13	26167.02	7260.17
9/22/98	24156.13	26167.03	7260.15
9/30/98	24156.15	26167.02	7260.15
10/7/98	24156.15	26167.03	7260.16

Displacement of Main Dam - 6

1/7/98	24347.42	25934.36	7260.35
1/14/98	24347.43	25934.36	7260.35
1/27/98	24347.43	25934.35	7260.34
2/3/98	24347.41	25934.33	7260.33
2/19/98	24347.42	25934.35	7260.34
3/25/98	24347.40	25934.34	7260.34
4/3/98	24347.40	25934.34	7260.34
4/8/98	24347.40	25934.33	7260.34
4/15/98	24347.41	25934.33	7260.33
4/22/98	24347.39	25934.33	7260.34
4/29/98	24347.40	25934.33	7260.30
5/7/98	24347.41	25934.34	7260.35
5/13/98	24347.43	25934.34	7260.35
5/21/98	24347.38	25934.32	7260.31
5/28/98	24347.41	25934.34	7260.33
6/3/98	24347.40	25934.33	7260.33
6/10/98	24347.41	25934.34	7260.35
6/17/98	24347.40	25934.33	7260.33
6/24/98	24347.39	25934.33	7260.32
7/1/98	24347.41	25934.33	7260.34
7/8/98	24347.41	25934.32	7260.33
7/15/98	24347.41	25934.34	7260.31
7/22/98	24347.40	25934.34	7260.32
7/29/98	24347.40	25934.34	7260.35
8/11/98	24347.38	25934.33	7260.27
8/19/98	24347.39	25934.33	7260.27
8/31/98	24347.39	25934.34	7260.27
9/11/98	24347.41	25934.33	7260.33
9/16/98	24347.40	25934.34	7260.29
9/22/98	24347.42	25934.36	7260.30
9/30/98	24347.42	25934.35	7260.31
10/7/98	24347.39	25934.34	7260.30

Displacement of Main Dam - 7

1/7/98	23993.42	26423.55	7279.27
1/14/98	23993.41	26423.54	7279.26
1/27/98	23993.41	26423.52	7279.24
2/3/98	23993.39	26423.51	7279.23
2/19/98	23993.32	26423.56	7279.25
3/25/98	23993.46	26423.55	7279.26
4/3/98	23993.44	26423.53	7279.29
4/8/98	23993.40	26423.54	7279.24
4/15/98	23993.41	26423.52	7279.24
4/22/98	23993.40	26423.49	7279.19
4/29/98	23993.41	26423.51	7279.21
5/7/98	23993.44	26423.53	7279.22
5/13/98	23993.39	26423.54	7279.25
5/21/98	23993.42	26423.48	7279.20
5/28/98	23993.42	26423.51	7279.25
6/3/98	23993.45	26423.52	7279.22
6/10/98	23993.44	26423.53	7279.26
6/17/98	23993.45	26423.52	7279.22
6/24/98	23993.43	26423.51	7279.25
7/1/98	23993.47	26423.52	7279.22
7/8/98	23993.47	26423.52	7279.22
7/15/98	23993.44	26423.50	7279.26
7/22/98	23993.41	26423.52	7279.23
7/29/98	23993.45	26423.54	7279.22
8/11/98	23993.42	26423.48	7279.20
8/19/98	23993.42	26423.48	7279.21
8/31/98	23993.42	26423.48	7279.29
9/11/98	23993.37	26423.53	7279.25
9/16/98	23993.43	26423.47	7279.23
9/22/98	23993.41	26423.47	7279.20
9/30/98	23993.44	26423.52	7279.23
10/7/98	23993.42	26423.52	7279.17

Displacement of Main Dam - 7.1

1/7/98	23993.43	26423.46	7278.08
1/14/98	23993.45	26423.47	7278.10
1/27/98	23993.47	26423.46	7278.05
2/3/98	23993.49	26423.49	7278.06
2/19/98	23993.47	26423.49	7278.07
3/25/98	23993.46	26423.49	7278.07
4/3/98	23993.40	26423.59	7278.04
4/8/98	23993.45	26423.46	7278.05
4/15/98	23993.47	26423.46	7278.05
4/22/98	23993.37	26423.54	7277.99
4/29/98	23993.41	26423.53	7277.87
5/7/98	23993.48	26423.44	7277.99
5/13/98	23993.47	26423.50	7278.00
5/21/98	23993.31	26423.65	7277.98
5/28/98	23993.36	26423.70	7277.97
6/3/98	23993.34	26423.69	7277.97
6/10/98	23993.48	26423.44	7277.99
6/17/98	23993.34	26423.69	7277.97
6/24/98	23993.31	26423.67	7278.03
7/1/98	23993.35	26423.69	7277.98
7/8/98	23993.35	26423.68	7277.98
7/15/98	23993.32	26423.68	7278.08
7/22/98	23993.30	26423.70	7277.97
7/29/98	23993.35	26423.69	7277.99
8/11/98	23993.30	26423.66	7278.02
8/19/98	23993.31	26423.66	7278.01
8/31/98	23993.31	26423.66	7278.03
9/11/98	23993.44	26423.48	7278.03
9/16/98	23993.36	26423.62	7278.00
9/22/98	23993.35	26423.62	7277.90
9/30/98	23993.36	26423.63	7277.98
10/7/98	23993.42	26423.53	7277.98

Displacement of Main Dam - 8

1/7/98	24192.54	26199.26	7282.27
1/14/98	24192.55	26199.27	7282.27
1/27/98	24192.57	26199.26	7282.25
2/3/98	24192.52	26199.25	7282.26
2/19/98	24192.54	26199.27	7282.28
3/25/98	24192.57	26199.26	7282.25
4/3/98	24192.56	26199.25	7282.25
4/8/98	24192.52	26199.25	7282.29
4/15/98	24192.57	26199.26	7282.25
4/22/98	24192.54	26199.22	7282.22
4/29/98	24192.55	26199.25	7282.25
5/7/98	24192.55	26199.25	7282.25
5/13/98	24192.54	26199.25	7282.31
5/21/98	24192.54	26199.23	7282.22
5/28/98	24192.56	26199.24	7282.20
6/3/98	24192.57	26199.25	7282.21
6/10/98	24192.50	26199.25	7282.25
6/17/98	24192.57	26199.25	7282.21
6/24/98	24192.55	26199.24	7282.27
7/1/98	24192.57	26199.23	7282.22
7/8/98	24192.56	26199.23	7282.22
7/15/98	24192.57	26199.25	7282.26
7/22/98	24192.55	26199.26	7282.23
7/29/98	24192.55	26199.26	7282.19
8/11/98	24192.54	26199.23	7282.16
8/19/98	24192.54	26199.24	7282.17
8/31/98	24192.55	26199.24	7282.24
9/11/98	24192.54	26199.24	7282.32
9/16/98	24192.54	26199.24	7282.18
9/22/98	24192.56	26199.27	7282.21
9/30/98	24192.55	26199.25	7282.21
10/7/98	24192.56	26199.26	7282.21

isplacement of Main Dam 8.1

1/7/98	24192.50	26199.33	7281.19
1/14/98	24192.52	26199.34	7281.20
1/27/98	24192.57	26199.26	7281.25
2/3/98	24192.49	26199.31	7281.20
2/19/98	24192.53	26199.30	7281.21
3/25/98	24192.55	26199.31	7281.17
4/3/98	24192.52	26199.33	7281.17
4/8/98	24192.57	26199.32	7281.22
4/15/98	24192.57	26199.26	7281.20
4/22/98	24192.52	26199.30	7281.11
4/29/98	24192.54	26199.32	7281.10
5/7/98	24192.56	26199.33	7281.09
5/13/98	24192.52	26199.35	7281.24
5/21/98	24192.51	26199.29	7281.10
5/28/98	24192.56	26199.33	7281.11
6/3/98	24192.57	26199.32	7281.11
6/10/98	24192.56	26199.33	7281.09
6/17/98	24192.57	26199.32	7281.11
6/24/98	24192.53	26199.31	7281.12
7/1/98	24192.55	26199.30	7281.10
7/8/98	24192.55	26199.29	7281.10
7/15/98	24192.54	26199.30	7281.15
7/22/98	24192.51	26199.33	7281.13
7/29/98	24192.46	26199.36	7281.09
8/11/98	24192.46	26199.35	7281.09
8/19/98	24192.47	26199.35	7281.09
8/31/98	24192.46	26199.35	7281.16
9/11/98	24192.50	26199.32	7281.21
9/16/98	24192.48	26199.41	7281.13
9/22/98	24192.48	26199.41	7281.10
9/30/98	24192.47	26199.44	7281.09
10/7/98	24192.51	26199.36	7281.08

Displacement of Main Dam - 9

1/7/98	24394.16	25970.26	7285.41
1/14/98	24394.15	25970.27	7285.41
11/27/98	24394.17	25970.26	7285.39
2/3/98	24394.16	25970.26	7285.42
2/19/98	24394.18	25970.28	7285.42
3/25/98	24394.16	25970.26	7285.38
4/3/98	24394,15	25970.27	7285.42
4/8/98	24394.16	25970.23	7285.42
4/15/98	24394.17	25970.26	7285.39
4/22/98	24394.14	25970.25	7285.40
4/29/98	24394.17	25970.27	7285.37
5/7/98	24394.16	25970.26	7285.42
5/13/98	24394.16	25970.23	7285.43
5/21/98	24394.14	25970.25	7285.38
5/28/98	24394.16	25970.26	7285.40
6/3/98	24394.16	25970.26	7285.38
6/10/98	24394.16	25970.26	7285.42
6/17/98	24394.17	25970.26	7285.38
6/24/98	24394.15	25970.27	7285.41
7/1/98	24394.18	25970.35	7285.47
7/8/98	24394.18	25970.35	7285.47
7/15/98	24394.17	25970.27	7285.41
7/22/98	24394.16	25970.28	7285.40
7/29/98	24394.17	25970.30	7285.39
8/11/98	24394.17	25970.27	7285.35
8/19/98	24394.17	25970.28	7285.35
8/31/98	24394.17	25970.28	7285.39
9/11/98	24394.15	25970.23	7285.43
9/16/98	24394.14	25970.26	7285.36
9/22/98	24394.15	25970.27	7285.35
9/30/98	24394.16	25970.27	7285.35
10/7/98	24394.15	25970.28	7285.36

Displacement of Main Dam - 9.1

1/7/98	24394.13	25970.31	7284.50
1/14/98	24394.17	25970.36	7284.49
1/14/98	24394.17	25970.36	7284.49
2/27/98	24394.15	25970.31	7284.5
2/3/98	24394.14	25970.30	7284.49
2/19/98	24394.18	25970.28	7284.49
3/25/98	24394.21	25970.27	7284.50
4/3/98	24394.16	25970.36	7284.51
4/8/98	24394.14	25970.33	7284.49
4/15/98	24394.15	25970.31	7284.51
4/22/98	24394.15	25970.34	7284.42
4/29/98	24394.16	25970.34	7284.47
5/7/98	24394.19	25970.33	7284.45
5/13/98	24394.16	25970.32	7284.52
5/21/98	24394.16	25970.35	7284.45
5/28/98	24394.18	25970.35	7284.41
6/3/98	24394.16	25970.35	7284.44
6/10/98	24394.19	25970.33	7284.45
6/17/98	24394.16	25970.35	7284.44
6/24/98	24394.19	25970.27	7284.47
7/1/98	24394.20	25970.27	7284.47
7/8/98	24394.19	25970.31	7284.46
7/15/98	24394.17	25970.30	7284.46
7/22/98	24394.18	25970.29	7284.39
7/29/98	24394.14	25970.41	7284.45
8/11/98	24394.09	25970.45	7284.42
8/19/98	24394.12	25970.44	7284.42
8/31/98	24394.11	25970.44	7284.48
9/11/98	24394.17	25970.32	7284.52
9/16/98	24394.12	25970.44	7284.42
9/22/98	24394.16	25970.43	7284.46
9/30/98	24394.22	25970.25	7284.46
10/7/98	24394.23	25970.20	7284.46

Displacement of Main Dam - 10

1/7/98	24038.50	26462.24	7308.85
1/14/98	24038.50	26462.24	7308.80
1/27/98	24038.54	26462.24	7308.83
2/3/98	24038.42	26462.20	7308.80
2/19/98	24038.47	26462.22	7308.82
3/25/98	24038.52	26462.21	7308.78
4/3/98	24038.52	26462.22	7308.80
4/8/98	24038.42	26462.19	7308.87
4/15/98	24038.54	26462.24	7308.83
4/22/98	24038.47	26462.20	7308.73
4/29/98	24038.52	26462.21	7308.76
5/7/98	24038.51	26462.19	7308.75
5/13/98	24038.40	26462.21	7308.91
5/21/98	24038.49	26462.18	7308.73
5/28/98	24038.53	26462.21	7308.75
6/3/98	24038.56	26462.22	7308.71
6/10/98	24038.51	26462.19	7308.75
6/17/98	24038.56	26462.22	7308.71
6/24/98	24038.51	26462.20	7308.77
7/1/98	24038.54	26462.21	7308.75
7/8/98	24038.53	26462.21	7308.75
7/15/98	24038.53	26462.21	7308.77
7/22/98	24038.49	26462,22	7308.75
7/29/98	24038.50	26462.23	7308.73
8/11/98	24038.53	26462.21	7308.74
8/19/98	24038.52	26462.22	7308.74
8/31/98	24038.52	26462.21	7308.75
9/11/98	24038.39	26462.21	7308.93
9/16/98	24038.55	26462.21	7308.69
9/22/98	24038.53	26462.21	7308.71
9/30/98	24038.55	26462.22	7308.75
10/7/98	24038.56	26462.22	7308.70

Displacement Main Dam - 10.1

1/7/98	24038.60	26461.96	7307.50
1/14/98	24038.61	26461.97	7307.13
1/27/98	24038.62	26461.95	7307.10
2/3/98	24038.53	26461.91	7307.11
2/19/98	24038.56	26461.94	7307.17
3/25/98	24038.63	26461.94	7307.09
4/3/98	24038.62	26461.95	7307.11
4/8/98	24038.53	26461.92	7307.16
4/15/98	24038.62	26461.95	7307.10
4/22/98	24038.58	26461.91	7307.03
4/29/98	24038.62	26461.93	7307.06
5/7/98	24038.62	26461.94	7307.09
5/13/98	24038.51	26461.93	7307.21
5/21/98	24038.59	26461.91	7307.08
5/28/98	24038.62	26461.94	7307.07
6/3/98	24038.66	26461.94	7307.03
6/10/98	24038.62	26461.94	7307.09
6/17/98	24038.66	26461.94	7307.03
6/24/98	24038.61	26461.91	7307.07
7/1/98	24038.64	26461.92	7307.05
7/8/98	24038.64	26461.92	7307.05
7/15/98	24038.65	26461.93	7307.07
7/22/98	24038.63	26461.95	7307.04
7/29/98	24038.66	26461.97	7307.06
8/11/98	24038.66	26461.97	7307.06
8/19/98	24038.66	26461.98	7307.07
8/31/98	24038.66	26461.97	7307.07
9/11/98	24038.49	26461.92	7307.23
9/16/98	24038.64	26461.94	7307.04
9/22/98	24038.66	26461.96	7307.02
9/30/98	24038.66	26461.94	7307.01
10/7/98	24038.64	26461.95	7306.98

Displacement of Main Dam - 11

1/7/98	24240.31	26235.88	7311.37
1/14/98	24240.31	26235.88	7311.37
1/27/98	24240.33	26235.87	7311.34
2/3/98	24240.27	26235.85	7311.36
2/19/98	24240.30	26235.88	7311.41
3/25/98	24240.33	26235.88	7311.32
4/3/98	24240.32	26235.88	7311.33
4/8/98	24240.25	26235.84	7311.44
4/15/98	24240.33	26235.87	7311.34
4/22/98	24240.31	26235.86	7311.30
4/29/98	24240.32	26235.88	7311.26
5/7/98	24240.32	26235.88	7311.32
5/13/98	24240.26	26235.84	7311.52
5/21/98	24240.29	26235.85	7311.26
5/28/98	24240.32	26235.88	7311.29
6/3/98	24240.35	26235.86	7311.26
6/10/98	24240.32	26235.88	7311.32
6/17/98	24240.35	26235.86	7311.26
6/24/98	24240.32	26235.87	7311.27
7/1/98	24240.35	26235.89	7311.28
7/8/98	24240.35	26235.89	7311.28
7/15/98	24240.34	26235.89	7311.30
7/22/98	24240.33	26235.92	7311.30
7/29/98	24240.33	26235.91	7311.27
8/11/98	24240.34	26235.88	7311.25
8/19/98	24240.34	26235.88	7311.26
8/31/98	24240.33	26235.88	7311.25
9/11/98	24240.22	26235.81	7311.51
9/16/98	24240.35	26235.90	7311.25
9/22/98	24240.34	26235.90	7311.21
9/30/98	24240.37	26235.91	7311.24
10/7/98	24240.35	26235.90	7311.21

Displacement of Main Dam - 11.1

1/1/98	24240.43	26235.64	7309.75
1/14/98	24240.42	26235.63	7309.71
1/27/98	24240.43	26235.63	7309.71
2/3/98	24240.39	26235.61	7309.70
2/19/98	24240.40	26235.63	7309.73
3/25/98	24240.45	26235.63	7309.68
4/3/98	24240.44	26235.64	7309.68
4/8/98	24240.34	26235.57	7309.79
4/15/98	24240.43	26235.63	7309.71
4/22/98	24240.42	26235.62	7309.61
4/29/98	24240.44	26235.63	7309.64
5/7/98	24240.44	26235.64	7309.66
5/13/98	24240.35	26235.57	7309.86
5/21/98	24240.40	26235.61	7309.65
5/28/98	24240.45	26235.64	7309.64
6/3/98	24240.46	26235.63	7309.59
6/10/98	24240.44	26235.64	7309.66
6/17/98	24240.46	26235.63	7309.59
6/24/98	24240.45	26235.60	7309.64
7/1/98	24240.47	26235.64	7309.62
7/8/98	24240.47	26235.64	7309.62
7/15/98	24240.36	26235.89	7309.58
7/22/98	24240.44	26235.65	7309.61
7/29/98	24240.45	26235.65	7309.61
8/11/98	24240.45	26235.63	7309.56
8/19/98	24240.45	26235.64	7309.60
8/31/98	24240.45	26235.63	7309.58
9/11/98	24240.34	26235.57	7309.87
9/16/98	24240.47	26235.65	7309.55
9/22/98	24240.46	26235.66	7309.53
9/30/98	24240.47	26235.65	7309.58
10/7/98	24240.45	26235.65	7309.55

Displacement of Main Dam -12

1/7/98	24441.85	26008.21	7315.46
1/14/98	24441.86	26008.22	7315.45
1/27/98	24441.86	26008.22	7315.45
2/3/98	24441.83	26008.20	7315.44
2/19/98	24441.84	26008.20	7315.48
3/25/98	24441.86	26008.23	7315.44
4/3/98	24441.44	26008.42	7315.43
4/8/98	24441.81	26008.18	7315.52
4/15/98	24441.86	26008.22	7315.45
4/22/98	24441.83	26008.22	7315.42
4/29/98	24441.84	26008.24	7315.41
5/7/98	24441.84	26008.23	7315.43
5/13/98	24441.84	26008.15	7315.56
5/21/98	24441.84	26008.22	7315.39
5/28/98	24441.84	26008.23	7315.39
6/3/98	24441.86	26008.22	7315.38
6/10/98	24441.84	26008.23	7315.43
6/17/98	24441.86	26008.22	7315.38
6/24/98	24441.85	26008.23	7315.39
7/1/98	24441.87	26008.34	7315.40
7/8/98	24441.87	26008.24	7315.40
7/15/98	24441.88	26008.23	7315.44
7/22/98	24441.86	26008.25	7315.41
7/29/98	24441.86	26008.29	7315.39
8/11/98	24441.84	26008.25	7315.36
8/19/98	24441.85	26008.25	7315.37
8/31/98	24441.84	26008.25	7315.40
9/11/98	24441.83	26008.14	7315.54
9/16/98	24441.85	26008.25	7315.36
9/22/98	24441.85	26008.26	7315.35
9/30/98	24441.87	26008.26	7315.38

Displacement of Main Dam - 12.1

1/7/98	24441.92	26008.00	7313.95
1/14.98	24441.91	26008.00	7313.96
1/27/98	24441.93	26008.00	7313.94
2/3/98	24441.89	26007.98	7313.98
2/19/98	24441.90	26008.00	7313.98
3/25/98	24441.93	26008.02	7313.93
4/3/98	24441.93	26008.02	7313.96
4/8/98	24441.89	26007.93	7314.02
4/15/98	24441.93	26008.00	7313.94
4/22/98	24441.90	26008.01	7313.90
4/29/98	24441.91	26008.02	7313.91
5/7/98	24441.92	26008.02	7313.93
5/13/98	24441.88	26007.91	7314.07
5/21/98	24441.90	26008.00	7313.90
5/28/98	24441.92	26008.02	7313.92
6/3/98	24441.93	26008.02	7313.89
6/10/98	24441.92	26008.02	7313.93
6/17/98	24441.93	26008.02	7313.89
6/24/98	24441.92	26008.02	7313.91
7/1/98	24441.94	26008.02	7313.91
7/8/98	24441.94	26008.02	7313.91
7/15/98	24441.92	26008.02	7313.92
7/22/98	24441.91	26008.04	7313.89
7/29/98	24441.93	26008.04	7313.89
8/11/98	24441.92	26008.03	7313.88
8/19/98	24441.92	26008.04	7313.90
8/31/98	24441.92	26008.03	7313.88
9/11/98	24441.88	26007.90	7314.07
9/16/98	24441.92	26008.04	7313.87
9/22/98	24441.92	26008.04	7313.85
9/30/98	24441.92	26008.04	7313.89
10/7/98	24441.92	26008.05	7313.84

Displacement of Levee - 1

1/7/98	25264.06	26022.38	7260.19
1/14/98	25264.06	26022.39	7260.19
1/27/98	25264.05	26022.36	7260.13
2/3/98	25264.03	26022.39	7260.13
2/19/98	25264.03	26022.36	7260.14
3/25/97	25264.04	26022.37	7260.12
4/3/98	25264.03	26022.39	7260.17
4/8/98	25264.01	26022.40	7260.15
4/15/98	25264.05	26022.36	7260.13
4/22/98	25264.03	26022.39	7260.14
4/29/98	25264.04	26022.38	7260.13
5/7/98	25264.04	26022.38	7260.17
5/13/98	25264.03	26022.40	7260.17
5/21/98	25264.01	26022.40	7260.11
5/28/98	25264.04	26022.37	7260.14
6/3/98	25264.03	26022.35	7260.09
6/10/98	25264.04	26022.38	7260.17
6/17/98	25264.03	26022.35	7260.09
6/24/98	25264.03	26022.38	7260.15
7/1/98	25264.03	26022.35	7260.12
7/8/98	25264.03	26022.35	7260.12
7/15/98	25264.05	26022.36	7260.16
7/22/98	25264.06	26022.37	7260.14
7/29/98	25264.06	26022.36	7260.10
8/11/98	25264.07	26022.36	7260.10
8/19/98	25264.06	26022.36	7260.10
8/31/98	25264.07	26022.36	7260.06
9/11/98	25264.07	26022.38	7260.16
9/16/98	25264.11	26022.34	7260.11
9/22/98	25264.06	26022.35	7260.06
9/30/98	25264.08	26022.34	7260.00
10/7/98	25264.07	26022.35	7260.09

Displacement of Levee - 2

1/7/98	25111.94	25893.90	7259.51
1/14/98	25111.95	25893.89	7259.50
1/27/98	25111.94	25893.88	7259.50
2/3/98	25111.94	25893.90	7259.51
2/19/98	25111.96	25893.89	7259.51
3/25/98	25111.94	25893.88	7259.47
4/3/98	25111.95	25893.88	7259.51
4/8/98	25111.93	25893.90	7259.51
4/15/98	25111.94	25893.88	7259.50
4/22/98	25111.92	25893.90	7259.49
4/29/98	25111.94	25893.88	7259.47
5/7/98	25111.95	25893.88	7259.52
5/13/98	25111.95	25893.89	7259.52
5/21/98	25111.91	25893.90	7259.46
5/28/98	25111.93	25893.89	7259.51
6/3/98	25111.92	25893.88	7259.47
6/10/98	25111.95	25893.88	7259.52
6/17/98	25111.92	25893.88	7259.47
6/24/98	25111.94	25893.88	7259.50
7/1/98	25111.93	25893.87	7259.48
7/8/98	25111.93	25893.87	7259.48
7/15/98	25111.95	25893.87	7259.49
7/22/98	25111.96	25893.88	7259.49
7/29/98	25111.96	25893.88	7259.48
8/11/98	25111.95	25893.88	7259.42
8/19/98	25111.95	25893.88	7259.43
8/31/98	25111.94	25893.87	7259.49
9/11/98	25111.96	25893.89	7259.52
9/16/98	25111.97	25893.85	7259.46
9/22/98	25111.95	25893.88	7259.44
9/30/98	25111.96	25893.87	7259.49
10/7/98	25111.95	25893.87	7259.46

Displacement of Levee - 3

1/7/98	25184.20	26100.80	7308.96
1/14/98	25184.21	26100.78	7308.96
1/27/98	25184.23	26100.77	7308.96
2/3/98	25184.17	26100.81	7308.95
2/19/98	25184.21	26100.79	7308.98
3/25/98	25184.19	26100.79	7308.94
4/3/98	25184.20	26100.80	7308.98
4/8/98	25184.21	26100.80	7308.98
4/15/98	25184.23	26100.77	7308.96
4/22/98	25184.18	26100.81	7308.96
4/29/98	25184.17	26100.81	7308.95
5/7/98	25184.20	26100.80	7308.96
5/13/98	25184.25	26100.76	7309.00
5/21/98	25184.15	26100.73	7308.91
5/28/98	25184.19	26100.80	7308.95
6/3/98	25184.19	26100.78	7308.92
6/10/98	25184.20	26100.80	7308.96
6/17/98	25184.19	26100.78	7308.92
6/24/98	25184.17	26100.78	7308.94
7/1/98	25184.19	26100.76	7308.95
7/8/98	25184.19	26100.76	7308.95
7/15/98	25184.25	26100.73	7308.95
7/22/98	25184.23	26100.71	7308.95
7/29/98	25184.23	26100.71	7308.92
8/11/98	25184.22	26100.75	7308.92
8/19/98	25184.21	26100.74	7308.92
8/31/98	25184.22	26100.75	7308.92
9/11/98	25184.22	26100.76	7309.01
9/16/98	25184.25	26100.73	7308.90
9/22/98	25184.23	26100.73	7308.91
9/30/98	25184.24	26100.73	7308.93
10/7/98	25184.23	26100.74	7308.91

Displacement of Levee 3.1

1/7/98	25184.14	26100.65	7307.67
1/14/98	25184.13	26100.67	7307.67
1/27/98	25184.13	26100.64	7307.67
2/3/98	25184.08	26100.65	7307.64
2/19/98	25184.11	26100.63	7307.70
3/25/98	25184.15	26100.69	7307.66
4/3/98	25184.09	26100.61	7307.66
4/8/98	25184.08	26100.62	7307.68
4/15/98	25184.13	26100.64	7307.67
4/22/98	25184.08	26100.65	7307.65
4/29/98	25184.08	26100.66	7307.64
5/7/98	25184.13	26100.66	7307.66
5/13/98	25184.13	26100.60	7307.71
5/21/98	25184.05	26100.63	7307.61
5/28/98	25184.08	26100.60	7307.66
6/3/98	25184.06	26100.60	7307.62
6/10/98	25184.13	26100.66	7307.66
6/17/98	25184.06	26100.60	7307.62
6/24/98	25184.05	26100.60	7307.63
7/1/98	25184.07	26100.58	7307.65
7/8/98	25184.07	26100.58	7307.65
7/15/98	25184.09	26100.55	7307.63
7/22/98	25184.10	26100.56	7307.62
7/29/98	25184.12	26100.55	7307.60
8/11/98	25184.08	26100.56	7307.58
8/19/98	25184.09	26100.55	7307.59
8/31/98	25184.09	26100.55	7307.62
9/11/98	25184.11	26100.61	7307.72
9/16/98	25184.11	26100.54	7307.59
9/22/98	25184.09	26100.54	7307.58
9/30/98	25184.10	26100.55	7307.59
10/7/98	25184.11	26100.57	7307.58

Displacement of Levee - 4

1/7/98	24934.17	25978.65	7316.21
1/14/98	24934.18	25978.65	7316.19
1/27/98	24934.16	25978.65	7316.19
2/3/98	24934.15	25978.65	7316.2
2/19/98	24934.19	25978.65	7316.2
3/25/98	24934.18	25978.66	7316.2
4/3/98	24934.16	25978.67	7316.18
4/8/98	24934.17	25978.61	7316.24
4/15/98	24934.16	25978.65	7316.19
4/22/98	24934.14	25978.68	7316.17
4/29/98	24934.16	25978.67	7316.16
5/7/98	24934.17	25978.67	7316.19
5/13/98	24934.21	25978.59	7316.26
5/21/98	24934.14	25978.68	7316.13
5/28/98	24934.16	25978.68	7316.16
6/3/98	24934.16	25978.67	7316.14
6/10/98	24934.17	25978.67	7316.19
6/17/98	24934.16	25978.67	7316.14
6/24/98	24934.16	25978.68	7316.14
7/1/98	24934.16	25978.67	7316.16
7/8/98	24934.16	25978.67	7316.16
7/15/98	24934.17	25978.67	7316.17
7/22/98	24934.13	25978.7	7316.15
7/29/98	24934.17	25978.68	7316.15
8/11/98	24934.16	25978.67	7316.15
8/19/98	24934.17	25978.67	7316.15
8/31/98	24934.16	25978.67	7316.14
9/11/98	24934.21	25978.59	7316.3
9/16/98	24934.16	25978.68	7316.11
9/22/98	24934.15	25978.7	7316.11
9/30/98	24934.15	25978.69	7316.13
10/7/98	24934.16	25978.7	7316.1

Displacement of Levee 4.1

1/7/98	24934.06	25978.50	7314.89
1/14/98	24934.06	25978.51	7314.88
1/27/98	24934.04	25978.51	7314.89
2/3/98	24934.04	25978.49	7314.89
2/19/98	24934.08	25978.49	7314.92
3/25/98	24934.06	25978.51	7314.88
4/3/98	24934.07	25978.51	7314.89
4/8/98	24934.06	25978.46	7314.95
4/15/98	24934.04	25978.51	7314.89
4/22/98	24934.04	25978.52	7314.86
4/29/98	24934.03	25978.51	7314.86
5/7/98	24934.04	25978.46	7314.89
5/13/98	24934.09	25978.43	7314.96
5/21/98	24934.04	25978.51	7314.86
5/28/98	24934.02	25978.46	7314.89
6/3/98	24934.05	25978.50	7314.85
6/10/98	24934.04	25978.46	7314.89
6/17/97	24934.05	25978.50	7314.85
6/24/98	24934.00	25978.46	7314.86
7/1/98	24934.05	25978.50	7314.85
7/8/98	24934.04	25978.50	7314.86
7/15/98	24934.12	25978.65	7314.87
7/22/98	24934.05	25978.51	7314.85
7/29/98	24934.05	25978.52	7314.83
8/11/98	24934.04	25978.52	7314.83
8/19/98	24934.05	25978.52	7314.83
8/31/98	24934.06	25978.51	7314.82
9/11/98	24934.08	25978.44	7314.99
9/16/98	24934.05	25978.51	7314.81
9/22/98	24934.03	25978.53	7314.80
9/30/98	24934.04	25978.53	7314.81
10/7/98	24934.04	25978.53	7314.79

APPENDIX F

DATA REDUCTION CALCULATIONS

CALCULATIONS USED IN THE REDUCTION OF PIEZOMETER DATA

$$T1 = LN\ (THERMISTOR * 1000) * -21.7177 + 199.216 \quad (1)$$

$$P\ (ft\ H_2O) = [\{(T1 - T0) * K\} + \{(R0 - R1) * C\}] * 2.307 \quad (2)$$

$$CHANGE = P\ present - P\ previous \quad (3)$$

where:

P = pressure corrected for temperature
T0 = initial temperature
T1 = current temperature
R0 = initial reading at zero pressure
R1 = reading at subsequent pressure
C = calibration factor
K = thermal factor
THERMISTOR = resistance (k Ohm)

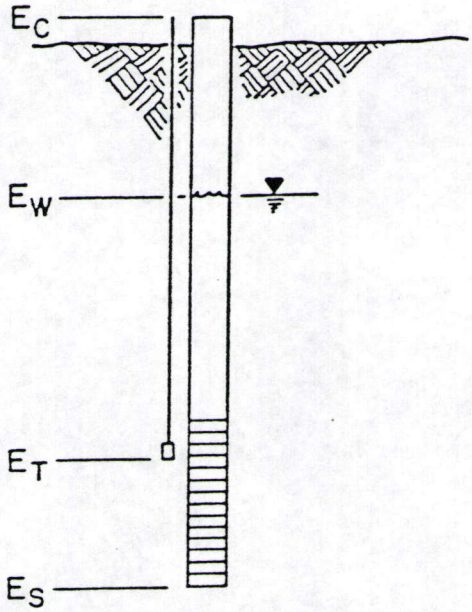
2.307: 1 psi = 2.307 ft H_2O

-21.7177, 199.216 Thermistor calibration coefficient for temperature vs resistance.

Note: Date, time, temperature (abient) and barometric pressure are reported as possible contributing factors to pore pressure. The temperature correction is shown in egns. (1) and (2). Barometric corrections are insignificant for the data included in this report.

Ref: Instruction Manual - Vibrating Wire Piezometers,
Model 4500 Rev. 3/89
GEOKON, Inc.
48 Spencer Street
Lebanon, NH 03766

STANDPIPE PIEZOMETER DATA REDUCTION



E_C : Collar Elevation

E_W : Water Elevation

E_T : Transducer Elevation

E_S : Standpipe Elevation

EQUATIONS :

Standpipe Head : $P_S = E_W - E_S$ (ft H_2O)

Comparative Head : $P_C = E_W - E_T$ (ft H_2O)

Comparative Head is the value to be compared to the Transducer Head.

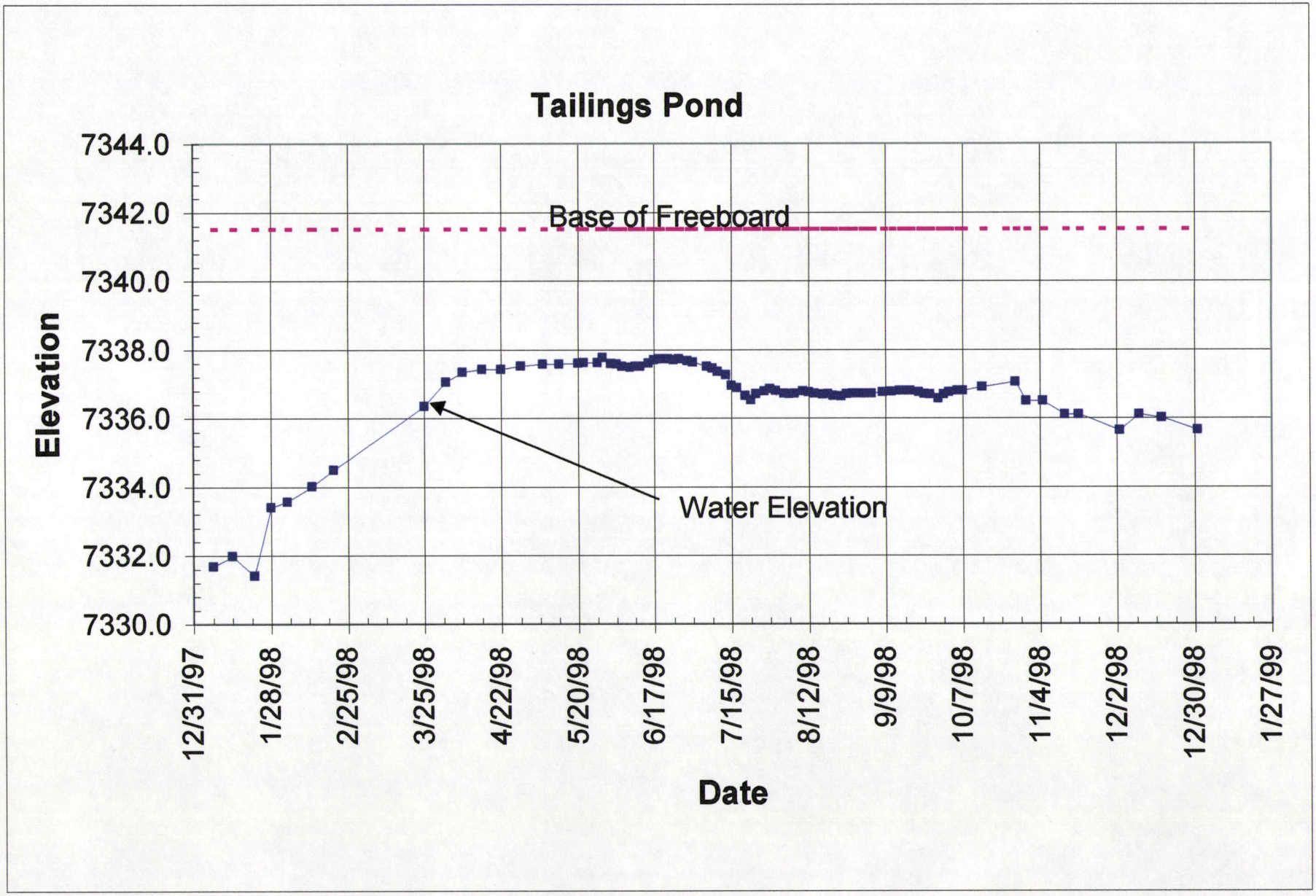
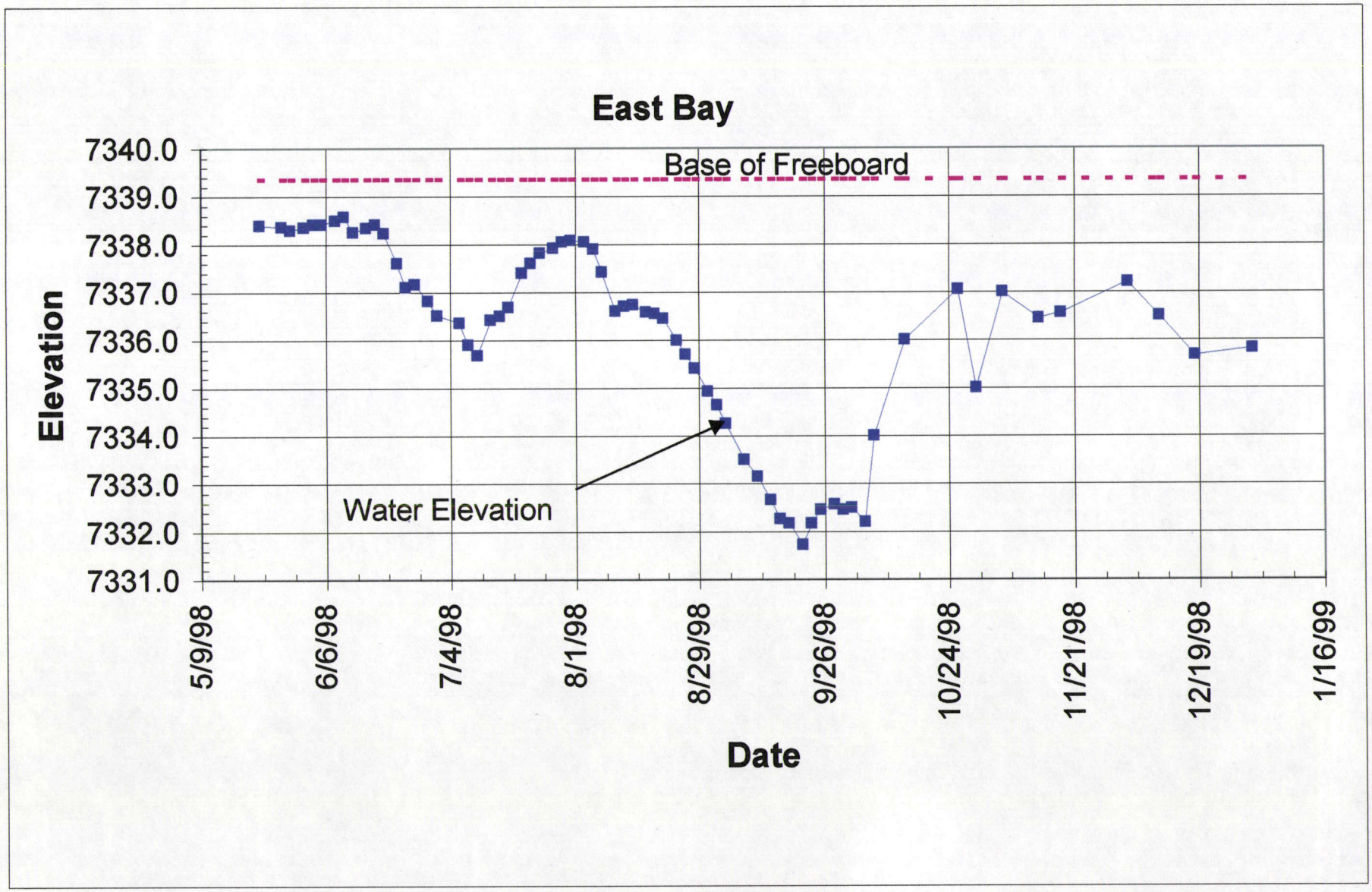
APPENDIX G

RESERVATION CANYON TAILINGS IMPOUNDMENT

Barrick Resources (USA) - Mercur Mine
Reservation Canyon Tailings Impoundment
Pool Water Level Monitoring
1998

Pool Water Elevations				
	Tailings Pond		East Bay	
Date	Water Elev.	Freeboard Elev.	Water Elev.	Freeboard Elev.
01/07/98	7331.68	7341.5		7339.35
01/14/98	7331.98	7341.5		7339.35
01/22/98	7331.40	7341.5		7339.35
01/28/98	7333.40	7341.5		7339.35
02/03/98	7333.56	7341.5		7339.35
02/12/98	7334.01	7341.5		7339.35
02/20/98	7334.49	7341.5		7339.35
03/25/98	7336.34	7341.5		7339.35
04/02/98	7337.06	7341.5		7339.35
04/08/98	7337.34	7341.5		7339.35
04/15/98	7337.42	7341.5		7339.35
04/22/98	7337.42	7341.5		7339.35
04/29/98	7337.52	7341.5		7339.35
05/07/98	7337.57	7341.5		7339.35
05/13/98	7337.57	7341.5		7339.35
05/20/98	7337.60	7341.5		7339.35
05/22/98	7337.62	7341.5	7338.39	7339.35
05/27/98	7337.62	7341.5	7338.36	7339.35
05/29/98	7337.77	7341.5	7338.29	7339.35
06/01/98	7337.59	7341.5	7338.35	7339.35
06/03/98	7337.57	7341.5	7338.41	7339.35
06/05/98	7337.5	7341.5	7338.41	7339.35
06/08/98	7337.48	7341.5	7338.5	7339.35
06/10/98	7337.5	7341.5	7338.58	7339.35
06/12/98	7337.51	7341.5	7338.25	7339.35
06/15/98	7337.6	7341.5	7338.34	7339.35
06/17/98	7337.7	7341.5	7338.41	7339.35
06/19/98	7337.73	7341.5	7338.23	7339.35
06/22/98	7337.73	7341.5	7337.6	7339.35
06/24/98	7337.7	7341.5	7337.1	7339.35
06/26/98	7337.73	7341.5	7337.16	7339.35
06/29/98	7337.67	7341.5	7336.82	7339.35
07/01/98	7337.63	7341.5	7336.51	7339.35
07/06/98	7337.5	7341.5	7336.36	7339.35
07/08/98	7337.45	7341.5	7335.9	7339.35
07/10/98	7337.35	7341.5	7335.68	7339.35
07/13/98	7337.26	7341.5	7336.42	7339.35
07/15/98	7336.95	7341.5	7336.5	7339.35
07/17/98	7336.88	7341.5	7336.68	7339.35
07/20/98	7336.64	7341.5	7337.4	7339.35
07/22/98	7336.52	7341.5	7337.6	7339.35
07/24/98	7336.7	7341.5	7337.81	7339.35
07/27/98	7336.78	7341.5	7337.92	7339.35
07/29/98	7336.85	7341.5	7338.05	7339.35
07/31/98	7336.8	7341.5	7338.08	7339.35
08/03/98	7336.72	7341.5	7338.05	7339.35
08/05/98	7336.7	7341.5	7337.9	7339.35
08/07/98	7336.72	7341.5	7337.42	7339.35
08/10/98	7336.78	7341.5	7336.6	7339.35
08/12/98	7336.75	7341.5	7336.71	7339.35
08/14/98	7336.71	7341.5	7336.74	7339.35
08/17/98	7336.68	7341.5	7336.58	7339.35
08/19/98	7336.7	7341.5	7336.55	7339.35
08/21/98	7336.65	7341.5	7336.45	7339.35
08/24/98	7336.63	7341.5	7335.99	7339.35
08/26/98	7336.7	7341.5	7335.7	7339.35
08/28/98	7336.72	7341.5	7335.4	7339.35
08/31/98	7336.71	7341.5	7334.93	7339.35
09/02/98	7336.71	7341.5	7334.64	7339.35
09/04/98	7336.72	7341.5	7334.25	7339.35
09/08/98	7336.75	7341.5	7333.5	7339.35
09/11/98	7336.77	7341.5	7333.15	7339.35
09/14/98	7336.8	7341.5	7332.66	7339.35
09/16/98	7336.8	7341.5	7332.26	7339.35
09/18/98	7336.8	7341.5	7332.17	7339.35
09/21/98	7336.75	7341.5	7331.72	7339.35
09/23/98	7336.7	7341.5	7332.17	7339.35
09/25/98	7336.68	7341.5	7332.45	7339.35
09/28/98	7336.57	7341.5	7332.57	7339.35
09/30/98	7336.68	7341.5	7332.45	7339.35
10/02/98	7336.75	7341.5	7332.5	7339.35
10/05/98	7336.8	7341.5	7332.2	7339.35
10/07/98	7336.8	7341.5	7334	7339.35
10/14/98	7336.91	7341.5	7336	7339.35
10/26/98	7337.05	7341.5	7337.05	7339.35
10/30/98	7336.5	7341.5	7335	7339.35
11/05/98	7336.5	7341.5	7337	7339.35
11/13/98	7336.1	7341.5	7336.45	7339.35
11/18/98	7336.1	7341.5	7336.56	7339.35
12/03/98	7335.63	7341.5	7337.2	7339.35
12/10/98	7336.1	7341.5	7336.5	7339.35
12/18/98	7336	7341.5	7335.68	7339.35
12/31/98	7335.65	7341.5	7335.82	7339.35

RESERVATION CANYON TAILINGS FACILITY



RESERVATION CANYON TAILINGS FACILITY